

**Measuring rural household food security in the Nkonkobe local municipality, Eastern
Cape Province of South Africa**

by

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Declaration

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Dedication

I dedicate this master's thesis to my grandmother, Funiwe Matebeni, who has been my constant source of inspiration. She has given me the drive and discipline to tackle any task with enthusiasm and determination. Without her love and support, this project would have not been a success.

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Firstly, I would like to thank the Almighty God, without whose will, spirit and guidance I would not have completed this study.

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Abstract

Although South Africa is considered to be food secure at the country level, large numbers of households within the country remain food insecure (De Cock *et al.*, 2013). Food inaccessibility in many rural areas of South Africa has manifested itself in many formats, *-but has positioned poor households to struggle to meet their basic household requirements and be more vulnerable to food insecurity. Details of such food insecurity, however, may differ (De Cock *et al.*, 2013; D'Haese *et al.*, 2013). The objective of this study was to measure and interpret the food security status of particular rural settings by examining households in the Sheshegu, Dyamala, Gqumashe and Roxeni villages of the Eastern Cape province of South Africa. Data was collected from 60 households using a survey questionnaire as the main instrument. The study utilised both a qualitative and quantitative approach. To obtain a representative picture of the food security status in this environment, the study used different food indicators, such as the Household Food Insecurity Access Scale (HFIAS), the Household Dietary Diversity Score (HDDS), Months of Adequate Household Food Provisioning (MAHFP) and Food Expenditure. Comparisons with a similar study in rural Limpopo Province of South Africa was also conducted.

The results show that more than half of the interviewed rural households were food insecure. Thirty-one (51.7%) households were found to be severely food insecure, followed by 14 (23.3%) households that were moderately food insecure. Eight (13.3%) rural households were food secure, and seven (11.7%) were mildly food insecure. Household food security in rural areas is a significant matter, as it is necessary to have appropriate access to healthy foods to lead an active life.

When comparing the Limpopo study conducted by D'Haese in 2013 and the selected villages of the Eastern Cape, the results show different findings in terms of the average household size and age of household heads. The majority of household heads interviewed in the Eastern Cape were female, at 55%, with 45% males, whereas in Limpopo males were dominating, at 60.5%, with 39.5% females. The results also show similarities between the study areas, such as having a lack of or low education, the high rate of food-insecure households (more than 50% of households were food insecure), and dependence on grants as their source of income. These studies illustrate that more than half of the household heads owned livestock, although this was not for food security purposes.

Recommendations are made on actions to enhance and reduce the vulnerability of households to food insecurity in the Eastern Cape. Challenges such as improved gender equity, focus in the education

system, labour market policy, natural resources management, infrastructural development, health awareness, lack of purchasing power/increase in household incomes and community support need to be addressed to improve the food security status of rural households.

Keywords: Food security, Rural household, Nkonkobe local municipality, Household Food Insecurity Access Scale (HFIAS)

Opsomming

Alhoewel Suid-Afrika as voedselseker op nasionale vlak beskou word, bly 'n groot aantal huishoudings in die land voedselonseker (De Cock *et al.*, 2013). Die ontoeganklikheid van voedsel in baie landelike gebiede van Suid-Afrika word in verskeie formate geopenbaar, maar het arm huishoudings só geposisioneer dat hulle sukkel om aan hul basiese huishoudelike vereistes te voldoen en meer vatbaar is vir voedselonsekerheid. Die besonderhede van sodanige voedselonsekerheid kan egter verskil (De Cock *et al.*, 2013; D'Haese *et al.*, 2013). Die doel van hierdie studie was om die voedselsekerheidstatus van spesifieke landelike liggings te meet en te interpreteer deur huishoudings in die Sheshegu-, Dyamala-, Gqumashe- en Roxeni-dorpe in die Oos-Kaap provinsie van Suid-Afrika te ondersoek. 'n Vergelyking met 'n soortgelyke studie in landelike Limpopo is ook gedoen.

Data is van 60 huishoudings versamel deur gebruik te maak van 'n opname-vraelys as hoofinstrument. Die studie het beide kwalitatiewe en kwantitatiewe benaderings gebruik. Om 'n verteenwoordigende beeld van die voedselsekerheidstatus in hierdie omgewing te verkry, het die studie voedselaanwysers soos die Huishoudelike Voedselonsekerheid Toegangskaal (*Household Food Insecurity Access Scale*, HFIAS), die Huishoudelike Dieetdiversiteitstelling (*Household Dietary Diversity Score*, HDDS), Maande van Voldoende Huishoudelike Voedselvoorsiening (*Months of Adequate Household Food Provisioning*, MAHFP)) en Voedseluitgawes gebruik.

Die resultate toon dat meer as die helfte van die ondervraagde landelike huishoudings voedselonseker was. 'n Totaal van 31 (51.7%) huishoudings was swaar voedselonseker, gevolg deur 14 (23.3%) wat matig voedselonseker was. Agt (13.3%) landelike huishoudings was voedselseker en sewe (11.7%) was matig voedselonseker. Huishoudelike voedselsekerheid in landelike gebiede is 'n belangrike saak, aangesien dit nodig is om toepaslike toegang tot gesonde voedsel te hê om 'n aktiewe lewe te kan lei.

'n Vergelyking van die resultate van D'Haese se Limpopo-studie van 2013 en die geselekteerde dorpe in die Oos-Kaap toon verskillende bevindinge in terme van die gemiddelde huishoudelike grootte en ouderdom van die hoofde van die huishoudings. Die meeste huishoudingshoofde wat in die Oos-Kaap ondervra is, was vrouens, teen 55%, met 45% mans, terwyl mans in Limpopo 60.5% gedomineer het, met 39.5% vroue. Die resultate toon ook ooreenkomste tussen die studiegebiede, soos gebrek aan of

lae onderwys, die hoë koers van voedselonseker huishoudings (meer as 50% van huishoudings was voedselonseker) en afhanklikheid van toelaes as hul bron van inkomste. Hierdie studies wys dat meer as die helfte van die huishoudingshoofde vee besit het, hoewel nie vir voedselsekerheidsdoeleindes nie.

Aanbevelings word gemaak oor aksies om die kwesbaarheid van huishoudings vir voedselonsekerheid in die Oos-Kaap te verbeter en te verminder. Uitdagings soos geslagsgelykheid, die onderwysstelsel, arbeidsmarkbeleid, natuurlike hulpbronbestuur, infrastruktuurontwikkeling, gesondheidsbewustheid, gebrek aan koopkrag/toename in huishoudelike inkomste en gemeenskapsondersteuning moet aangespreek word om die voedselsekerheidstatus van landelike huishoudings te verbeter.

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CHAPTER 1

INTRODUCTION

1.1 Background

In 2000, all member nations gathered to adopt the United Nations Millennium Declaration, setting out a series of global targets to be met by 2015, which became known as the Millennium Development Goals (MDGs). These goals expressed the world's commitment to improving the lives of billions of people and to address development challenges, from 2000 to 2015. One of the MDGs' aims was to eliminate extreme poverty and hunger (FAO, 2013). The FAO (2015) reports on achieving these MDGs that the population living in extreme poverty around the world declined by more than half, viz. from 1.9 billion in 1990 to 836 million in 2015. The proportion of people living on less than \$1.25 a day dropped to 14%, that of undernourished people fell by almost half since 1990, from 18.6% in 1990/1992 to 10.9% in 2014-2016 around the world, while it dropped from 23.3% in 1990/1992 to 12.9% in 2014/2016 in developing regions (FAO, IFAD & WFP, 2015; United Nations, 2015). The population living on more than \$4 a day has almost tripled in developing countries from 1990 to 2015. This therefore shows that the MDGs have played a significant role worldwide in the period from 2000 to 2015, improving the majority of livelihoods. However, this refers to a "whole nation database" or macro measurement of the problem of food security. There is clearly still a need to note differences within a particular nation and strategise accordingly to reduce all levels of food insecurity, including at household and individual levels, and create a world of dignity for all (United Nations [UN], 2015).

Although the global community has managed to uplift a large segment of the poor and vulnerable population, the continuation of global development goals is clear in better understanding the linkage of economic, social and environmental conditions. The UN (2012) reported at its conference in Rio de Janeiro, Brazil in June 2012 that one of the priorities was to develop a set of Sustainable Development Goals (SDG) to build on the MDGs and to achieve these in the period from 2015 to 2030. The conference agreed on a range of interlinked challenges that called for an urgent attention, namely decent jobs, energy, sustainable cities, food security and sustainable agriculture, clean water and oceans, and disaster readiness (United Nations, 2012). According to the International Council for Science (ICSU) and the International Social Science Council (ISSC) (ICSU & ISSC, 2015), these goals are interrelated in terms of their achievement.

For instance, SDG 1, the ending of poverty, and better health and wellbeing for all (SDG 3) cannot be achieved without achieving progress in food security (SDG 2). No implementation of macroeconomic policies related to targets for full and productive employment and decent work, under SDG 8, can be achieved without the reduction of inequality under SDG 10, and without enhancing resilience to climate change under SDG 13.

In the South African context, the government also committed to the MDG targets. The South African government did not separate the effort of an implementation plan to achieve MDGs from its national, regional and local plans. Plans were thus structured to align with achieving MDGs in all spheres, such as the National Development Plan (NDP) of South Africa, the Provincial Growth and Development Plans (PGDP), and the Integrated Development Plans (IDP) of municipalities (Statistics South Africa [StatsSA], 2013). Despite these plans, the South African Constitution, as a guiding force, also established the right to adequate nutrition for all, and the government devised a national Integrated Food Security Strategy (IFSS) in 2002. Its vision is “to attain universal physical, social and economic access to sufficient, safe and nutritious food by all South Africans at all times to meet their dietary and food preferences for an active and healthy life” (Koch, 2011:4). This vision is aligned with the definition of food security by the Food and Agriculture Organization (FAO), as it considers the multidimensionality of the food security system.

The aim of the IFSS was designed to focus on eradication of hunger, malnutrition and food insecurity at all levels of society. The IFSS was subsequently translated into the Integrated Food Security and Nutrition Program (IFSNP), which has a task team in the National Department of Agriculture (NDA) to oversee the implementation of the program (Jacobs, 2009). This is the broad developmental approach to food security and it mainly targets household food security without forgetting national food security (Koch, 2011).

South Africa has made significant progress towards MDG 1. This is proven by the decrease in the number of South African households with inadequate or severely inadequate access to food, which declined from 23.9% in 2010 to 22.3% in 2016 (StatsSA, 2017). According to StatsSA (2017), the percentage of individuals who were at risk decreased from 28.6% to 24.9% during the same period. Households and individuals who experienced hunger decreased from 23.8% to 11.8% and from 29.3% to 13.4% respectively between 2002 and 2016. As the MDGs were revamped, the South African government is continuing to implement its policies and programmes to achieve the SDGs

by 2030. These statistics show that South Africa has progressed towards the reduction of food insecurity.

According to De Cock *et al.* (2013) and D’Haese *et al.* (2013), despite the aforementioned results, South Africa still experiences food insecurity at the household level – in particular in rural areas. Food insecurity is still a big concern for many people in the country, and this situation is associated with the high poverty levels that exist in South Africa. Findings from rural household literature show that experience-based food insecurity levels are still high, despite assistance from government support programmes. In the case of KwaZulu-Natal, a survey conducted by D’Haese *et al.* (2013) found that about 55.4% of the sampled population was labelled as severely food insecure in 2010. Additionally, Limpopo province was reported to have 53% of sampled rural households being severely food insecure (De Cock *et al.*, 2013). Furthermore, the literature indicates that food insecurity has also struck urban areas. For instance, in the Western Cape, Ocean View and Khayelitsha were classified as having 80% and 89% of households respectively that were food insecure in 2011 (Battersby, 2011). Frayne *et al.* (2009) reported that food-insecure households in Msunduzi in Durban in KwaZulu-Natal and in Johannesburg amounted to 87% and 42% respectively.

According to several authors (De Cock *et al.*, 2013; D’Haese *et al.*, 2013; Melgar-Quinonez & Hackett, 2008), despite a high prevalence of food insecurity, there is still uncertainty regarding the extent to which rural households are food insecure and to what degree they are affected. The measurement of the causes and consequences of food insecurity is a critical aspect of addressing the problem, because it enables a better targeting of high-risk population groups and the establishment of reliable monitoring and evaluation systems. As such, the adoption of food-insecurity measurements will create an enabling environment for effective food security policies. Following that, South Africa still has to develop such a well-defined set of food-security measurements (Jacobs, 2009).

Therefore, in considering the extent to which rural households are food insecure, the interest of this study focuses mainly on measuring food security status in the poor rural household context. This was inspired by recent studies conducted in the rural areas of KwaZulu-Natal (D’Haese *et al.*, 2013) and Limpopo (De Cock *et al.*, 2013). This interest emanates from a well-published notion that food insecurity is still a big concern for many people in South Africa. The studies of D’Haese *et al.* (2013) and De Cock *et al.* (2013), about measuring food security at the household level, inspired this study, particularly because of the comprehensive view taken of the causes and effects of food insecurity and

vulnerability in rural households, and the framework of analysis used to investigate these matters. This investigation's focus is on a "typical" rural setting in the Eastern Cape province of South Africa, and the aim was to discover more about household food security levels at the village level. Four villages, namely Dyamala, Gqumashe, Roxeni and Sheshegu, which fall under the Nkonkobe local municipality in the Eastern Cape province, were targeted for a comprehensive analysis of the food security status.

The only noticeable difference between these villages, other than the usual constraints faced by households in general, is the distance from town (Alice in this study). The villages were randomly selected for the study, and are large enough and reachable. The study investigates the understanding of food security status in these villages – how it is experienced and what rural households do to sustain their living. In addition, this study is also concerned to discover the coping strategies employed by these rural households in order to mitigate food insecurity.

1.2 Problem Statement

The availability of food worldwide is perceived to be enough to feed everyone. However, to supply such food quantities and qualities, the produce often cannot reach where it should be delivered to be consumed. A general estimate is that around 30% of edible food is lost in the value chain. Problems also focus on providing sufficient food at the *right time, and in the right place and format*, for the required accessibility for consumption. Such inaccessibility of food might be due to economic conditions, such as lack of income and infrastructure, the organisation of food production, the presence of social provisions and political and institutional stability (Economist Intelligence Unit [EIU], 2012; FAO, IFAD & WFP, 2013). In the case of South Africa, the EIU (2016) identified that the country produces a sufficient quality and quantity of food, and has the ability to import foods where required, to meet the nutritional needs of the population. Nevertheless, the available data at the micro level suggests that this is not always the case for many households; there are large numbers of households that remain food insecure. This is in particular so in rural households (Altman, Hart & Jacobs, 2009; De Cock *et al.*, 2013; D'Haese *et al.*, 2013). This is partly attributed to South Africa's high inequality status, with a Gini coefficient of 0.63 (World Bank, 2016), i.e. households do not have enough funds to gain access to the required food. The high prevailing inequality among South Africans may be led by factors such as poverty and inappropriate spending patterns in general, but is also due to race-based socio-economic and spatial development (Aliber & Cousins, 2013; O'Laughlin

et al., 2013; StatsSA, 2012). An important cause of this legacy is historical and to be found in the various measures of racial exclusion, especially in the apartheid period, including the impact of the Native Land Act of 1913 and a range of other political measures (Pienaar & Von Fintel, 2014b). These laws were established to suppress black economic development and entrepreneurship. Generally, income generation opportunities were scarce, with rural farming households in particular being affected negatively. This led to inequality, poverty and food insecurity and created a basis for inequality. South Africa, however, is now more than 20 years into a non-racial democratic system striving for equality, with a strong set of support policies and measures for the poor, including social grants, reaching more than 17 million poor black families, along with measures to redress economic inequalities such as Black Economic Empowerment programmes, etc.

A fresh look at the problems of inequalities, including food insecurity, unemployment, poverty and exclusion, was recently taken by the National Development Plan 2030 (2011), with special attention given to the place and role of rural development in aspects such as household food insecurity. Apart from ‘new’ problem definitions, appropriate datasets and methods of measurements will be required for such a fresh view on the problem of food insecurity in South Africa’s rural areas. This study will also focus on such aspects.

D’Haese *et al.* (2013) state that it became clear that securing access to food and good nutrition at the rural household level will require multiple sets of support measures – at the policy and operational levels. These would include education to support nutritional food consumption patterns; increased income levels and in some cases targeted grants to buy food; reduced food wastage and improved food safety levels; and in some cases access to agricultural land and support to improve farming productivity. Access to land for food production purposes remains important to poor rural households, and the matters of accelerating land reform and agrarian transformation in South Africa are still at the forefront of public policy and in the National Development Plan. However, little has been done on the productive use of high-potential farm land already being distributed through state mechanisms – restitution and land grants (D’Haese *et al.*, 2013; Kloppers & Pienaar, 2014a; O’Laughlin *et al.*, 2013; Pienaar & Von Fintel, 2014).

Overall, the spatial (time and distance) and non-spatial (socio-economic characteristics) factors, together with aspects such as agricultural potential, racial base, economic and employment linkages of a particular situation, to name the few, are clearly important in the context of exploring food

security status at the micro- or household level in both rural and urban environments. This is important to develop the necessary information baseline and intelligence about the prevailing situation and the manner in which it manifests in food security in order to generate a sound decision base for the design of particular interventions and support programmes to manage food security effectively.

This study measures and interprets food security status as a concept measured from a (poor) rural household perspective.

From a “problem statement” concept to inform the analysis, the following must be noted (De Cock *et al.*, 2013; D’Haese *et al.* 2013):

- insufficient investigation has been done at the micro rural household food security level to provide adequate knowledge to devise effective plans and to support interventions to alleviate such insecurities; and
- There is a limited database and measurements methods that are *adequate* to be used to examine the food security status at the micro level in South Africa to allow the design of effective policies and meaningful interventions.

In South Africa, there are various surveys that have been done to assess food security at the household level; however, these surveys have different results (D’Haese, 2016). Dube (2013) explains that these surveys generally focus only on a particular dimension at the exclusion of other dimensions of food security, viz. food security national surveys such as the Income and Expenditure Survey, General Household Survey, National Food Consumption Survey, a dietary diversity study and the South African Social Attitudes Survey. In addition, at the national level there is a paucity of literature with regard to the national survey that was conducted to assess all the dimensions of food insecurity in South Africa (Altman *et al.*, 2009; Dube, 2013; Labadarios Steyn, Gericke, Maunder, Davids and Parker (2011). An analysis of national surveys that were used to measure food security focused on their interest of study. The current statistical database to provide adequate information is thus somewhat restrictive for the design of local/micro level interventions in food insecurity policies/projects.

This study was motivated by the orientation and findings of De Cock *et al.* (2013) and D’Haese *et al.* (2013), which provide a useful overview of instruments that can contribute to providing an in-depth analysis of rural household food insecurity. The Limpopo study conducted by De Cock *et al.* (2013)

used comprehensive indicators, partly derived from the KZN study conducted by D’Haese (2013), to measure the range of dimensions constituting food security. These methods were applied to measure food security in the rural setting in the Eastern Cape province of South Africa.

The focal point of this study was thus to investigate food security status, not only at the macro- or broader regional levels, but also at particular spatial points and at household (or micro) level in the rural environment. Therefore, the aforementioned propels the discussion of this study to be directed at making use of all the dimensions to discover and measuring microlevel or household food security levels. The targeted areas for this analysis are four rural settings in the Eastern Cape province of South Africa, viz. the Dyamala, Gqumashe, Roxeni and Sheshegu villages of the Nkonkobe local municipality in the Eastern Cape (EC).

1.3 Research Objectives

The main objective of this study was to:

- Measure and interpret the food security status in rural households in the Nkonkobe local municipality in the Eastern Cape.

This main objective encompasses sub-objectives, as follows:

- To identify appropriate indicators that influence food security at the rural household level
- To analyse to what level of food insecurity affects the rural households of the selected villages;
- To determine coping strategies that rural households employ in order to mitigate food insecurity;
- To recommend policies and strategies for effective interventions to improve the food security status in rural households; and
- To identify focus areas for further research.

1.4 Research Questions

The central research questions are:

- What are the appropriate indicators that influence food security at the rural household level?
- What are the coping strategies that rural households employ in order to mitigate food insecurity?
- What policies and strategies should be considered to improve household food security?
- Which aspects within the food security measurements/data surveys and analytical literature require further research?

1.5 Hypotheses

The main view of the study is to measure food security status at the rural households level.

The hypotheses of this study are thus stated as:

- The inaccessibility of sufficient food at the household level, especially in rural settings, causes households to be vulnerable to food insecurity.

1.6 Delimitation

The study was carried out in four villages, Sheshegu, Dyamala, Gqumashe and Roxeni, in Nkonkobe local municipality under the Amathole Municipality of the Eastern Cape. Household heads were used as the subjects for the elicitation of information. The study adopted a cross-sectional research design. Therefore, due to the nature of the study, the sample covered the population of the entire municipality (viz. Nkonkobe local municipality) in the Eastern Cape in South Africa. Any generalisation of the study findings should thus be done with circumspection and the needs in a particular rural context.

As such, the study focused on four villages to provide an in-depth analysis of food security. This information may, however, contribute to improve the understanding of the problem of food insecurity in rural households, and thus could assist with policies and strategies to alleviate such food insecurity.

1.7 Outline of the Study

This study is composed of five chapters; Chapter 1 is the general introduction to the study and provides the background, problem statement, study objectives, research questions, hypotheses and delimitation of the study. Chapter 2 reviews the literature on food security and the measurement of food security status from the global to the household level. Chapter 3 describes the methodology and data used in this study in detail – the various methods used to assess food security at the household level, as well as the method used to interpret the data. Chapter 4 describes the study sites (Nkonkobe local municipality). Chapter 5 presents the major results and findings on the status of food security in these villages. It reports on the localised characteristics – demographics, income sources, as well expenditure patterns of the households. Chapter 6 draws conclusions and presents recommendations.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter considers the complexity of understanding, describing, measuring and analysing food security, in particular as it relates to household applications from a theoretical perspective, reviewing recent studies on the topic and drawing ‘lessons from experience’ for application in this study. It also reviews current thinking on challenges facing food security, focusing on South Africa’s rural environment. Food security measurement at the macro- and microlevel in South Africa is reviewed. Food security in this study is considered in terms of the following definition (as stated in Chapter 1):

“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, 1996:1), as explained in the following section.

2.2 Concepts and definitions of food security

Food security is a subject of keen concern among policy makers, practitioners and academics around the world, in large part because the consequences of food insecurity affect almost every facet of society (Jones *et al.*, 2013). Food security as a concept in the policy and academic discourse originated in the 1970s in the discussion of international food problems at a time of global food and “oil” crises and the findings of the Club of Rome (Bardi, 2011; Turner, 2008; Vink & Van Rooyen, 2009). It was developed from the perspective of food supply or shortfalls compared to requirements at the international, national and regional level to ensure that all people everywhere have enough food. The Food Balance Sheet method, measuring food supply and demand at the national level, was used as the major “measurement” indicating the status at regional and country levels (Maxwell, 1996). However, the matter was debatable concerning the agreed arrangement of investing only in food production as the main aspect of adequate food supply (Reutlinger, 1978).

Food security has many definitions and models, with over 200 as early as 1993 (De Cock *et al.*, 2013; Maxwell, 1996). A first generally accepted definition of food security was established in 1974 at the World Food Summit of the United Nations, where food security was defined as the “availability at all times of adequate world food supplies of basic foodstuffs to sustain the steady expansion of food

consumption and to offset fluctuations in production and prices” (FAO, 1976:43). This definition reflected the global concerns of the time, focusing on the volume and stability of food supplies.

The presence of an adequate food supply at the international and national level, while evidence of hunger persisted, was noted by Sen (1981), highlighting that food-related problems are influenced not only by food production but by the importance of access and entitlements, which include the structure of and programmes governing entire economies and societies. Following Sen’s view, the concern was ensuring that people have physical, institutional and economic access to adequate food. Following the food entitlement logic, which implies a balance between the inter-linkage of micro- and macro-economies, the FAO (1983:28) came up with a definition of food security linking the supply and demand sides so that they are balanced, viz. “ensuring that all people at all times have both physical and economic access to the basic food that they need”.

The World Bank (1986:1), concerned about economic shock effects that disturbed both physical and economic access to a healthy life for people, redefined food security as “access by all people at all times to enough food for an active, healthy life”. This definition focused on the dynamics of individuals to have adequate food for active participation in society at all times. The Rome World Food Summit, held in 1996, adopted and emphasised the multidimensionality of food security. It states 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, 1996:1).

This definition was revised by including social access to food by the FAO. It states that 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). The definition of food security became a significant concern from the global to the individual level, as it includes nutritional balance. Pinstrup-Andersen (2009), the director of International Food Policy Research Institute (IFPRI), concurs that food security was originally used to measure the extent to which a country has the means to make food available to its people, that is, the food needed or demanded, irrespective of whether the food is domestically produced or imported.

As food security is a multidimensional phenomenon, as elaborated on in the above definition (FAO, 2002), it reviews key dimensions of food supply and of the demand side, viz. availability, accessibility, utilisation and stability. A household is vulnerable when one or more of the four dimensions are not met (FAO, 2008). The conceptual framework of Webb and Rogers (2003) in the figure below is along the lines of D’Haese *et al.* (2013) and De Cock *et al.* (2013) and addresses the dimensions, levels and components of food security.

The conceptual framework shows the drivers of food supply and demand, both in the short and long run. It describes the channels through which both micro- and macro-level policies are related to food security, and the relationships that exist between them. It also shows how these relationships are critically influenced by factors within the wider policy and social environments. Figure 2.1 provides a schematic overview of food security and reflects an abstraction of reality.

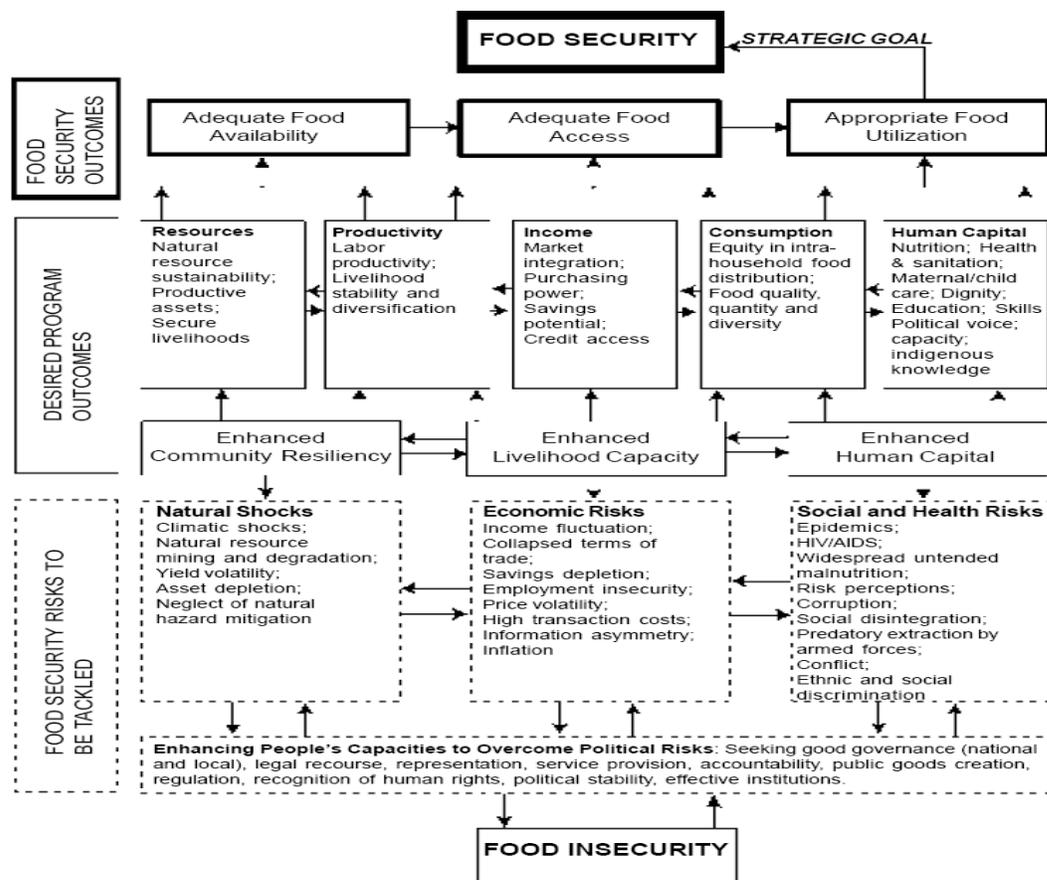


Figure 0.1: Conceptual framework of food security
Source: Webb and Rogers (2003)

The first dimension covers the availability of a sufficient quantity and quality of food from local, regional and international sources. It reflects the supply side and is therefore affected by all the factors that have an impact on the domestic supply of food and the ability to finance food imports. It therefore includes domestic production, food imports as well as food that is received in the form of food aid from foreign countries or donor partners. However, the availability of food on its own does not ensure food security, as food surpluses can exist alongside hunger and malnutrition (FAO, 2008).

The second dimension covers physical and economic access to adequate food for an active healthy life. Food accessibility by households is determined by food production, market purchase and other sources (transfers, gifts). Market purchase depends on the access of individuals or households to adequate resources to acquire food (entitlements). According to Sen (1984) and Devereux (2001), entitlements are defined as the entire set of commodity bundles over which a person can establish command, given the legal, political, economic and social arrangements of the community in which they live, including traditional rights such as access to common resources. This highlights the importance of income-generating activities as one of the major determinants of the ability of households to gain access to food through purchase. In general, every household has a limited amount of resources at its disposal, including assets, labour, human capital and natural resources. Other sources are obtained from governmental or non-governmental organisations, community support systems, and food banks.

The third dimension covers utilisation, which is concerned with individuals' and households' dietary intake to absorb nutrients contained in the prepared food. It focuses on how households consume nutritionally essential foods that they can afford or how they choose a nutritional diet (Barrett, 2010). It is noteworthy that an increase in household income does not necessarily lead to an increase in sufficient quantity or quality of food consumed; it can be disbursed on other items such as alcohol or fast food. The importance of food utilisation is determined primarily by people's nutrition, health and sanitation status (Webb & Rogers, 2003).

The fourth dimension covers the concept of stability; it refers to the availability, access and proper utilisation dimensions of food security. Stability refers to vulnerability and resilience to the state of an individual or households. It relates to and focuses on what happens to livelihoods when households are hit by temporary negative shocks and whether households are able to recover easily or if they are pushed into a poverty trap from which recovery is difficult (FAO, 2008). For instance, the instability of the market price of staple foods, natural disasters, political instability and unemployment are the

major factors affecting the stability of the dimensions of food security. For food security objectives to be realised, all four dimensions must be fulfilled simultaneously. For example, the availability and affordability of food may be of insignificant importance if people do not acquire sufficient nutrients in order to be food secure (Ericksen *et al.*, 2011).

In defining food security in a rural household context, different definitions and references to food security are explained from the above paragraphs. To analyse the interest and concerns of this study, food security is defined 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, 1996.1). This definition of food security is applicable and relevant to all levels (macro, regional, community and household level), interprets food security dimensions (availability, access, utilisation or stability) and describes its components (quantity, quality, safety, cultural acceptability and preferences). The definition covers the ability of an individual or household to be able to make choices and consume culturally acceptable food without ignoring adequate food for health and productivity outcomes.

2.3 Considering the time factor (duration) of food (in) security

According to the FAO (2008), food insecurity is a daily reality for hundreds of millions of people around the world. Some households that are classified as food insecure experience only a single episode (short-term) of food insecurity during the year, whereas other households are food insecure for the entire year (long-term). It should thus be noted that households generally experienced food insecurity or hunger at different time frequencies. Information and classification in quantifying the frequency and duration of episodes of food insecurity therefore require an adequate, basic monitoring function (Nord, Andrews & Winicki, 2002). The table below analyses the concepts of duration and occurrence of food insecurity.

Table 0.1: General types of food insecurity

CHRONIC FOOD INSECURITY	TRANSITORY FOOD INSECURITY
Long term or persistent	Short term
People are unable to meet their minimum food requirements over a sustained period.	There is a sudden drop in the ability to produce or access enough food to maintain a good nutritional status.
Extended periods of poverty, lack of assets and inadequate access to productive or financial resources.	Short-term shocks and fluctuations in food availability and food access, including year-to-year variations in domestic food production, food prices and household incomes.
Typical long-term development measures used to address poverty, such as education, or access to productive resources, such as credit. They may also need more direct access to food to enable them to raise their productive capacity.	Transitory food insecurity is relatively unpredictable and can emerge suddenly. This makes planning and programming more difficult and requires different capacities and types of interventions, including early warning capacity and safety net programmes.

Source: FAO (2008)

Table 2.1 distinguishes concepts of food insecurity by defining chronic food insecurity as when the household is unable to meet minimum food consumption requirements for a long period, while transitory food insecurity occurs when there is a sudden drop in the ability to produce or access enough food to maintain a good nutritional status. This is primarily caused by short-term shocks and fluctuations in food availability and access (Devereux, 2006). Interventions that address essential basic and consequences of chronic and transitory food insecurity require different tackling strategies and responses in terms of content and occurrence (WFP, 2009). The two conditions are in fact interconnected and households may experience both at different times.

2.4. Global food security status

It is important to identify the global food security status, as it is critical for targeting food and economic aid; supporting early famine warnings and global monitoring systems; evaluating nutrition, health and development programmes; and informing government policy across many sectors (Jones

et al., 2013). Food security is an adaptable and flexible concept that can be applied at any level of aggregation: national, regional, and household or individual. In addition, global trends cover divergent trends at the national and regional levels affecting food security (Headey, 2013).

Despite the fact that global food production over the past half century has kept ahead of demand, there still are a large number of people experiencing food insecurity (Misselhorn *et al.*, 2012). The world's nations gathered to reduce the level of food insecurity. The World Food Summit (WFS), which was held in Rome in 1996, was followed by the establishment of the Millennium Development Goals (MDGs) in 2000 (FAO *et al.*, 2013; United Nations, 2015). World leaders gathered in 2000 and made a commitment to reduce extreme poverty and hunger among people by 2015.

From the global perspective, according to the FAO *et al.* (2017) report, the number of undernourished people increased to about 815 million in 2016 compared to 777 million in 2015. However, this is still down from an estimated 900 million people in 2000. Undernourishment is defined as when a person is not able to acquire enough food to meet the daily minimum dietary energy requirements over a period of one year (FAO, 2015). Between 1990/1992 and 2014/2016, the number of undernourished people declined by 216 million in a growing global population. This means that about one in every nine people in the world still has insufficient food for an active and healthy life.

Table 2.2: Prevalence of undernourishment in the world by region (2000-2016)

	2000	2005	2010	2011	2012	2013	2014	2015	2016 ¹
	Percentage								
WORLD	14.7	14.2	11.5	11.2	11.0	10.8	10.7	10.6	11.0
AFRICA	24.3	20.8	18.3	17.9	17.8	17.8	18.1	18.5	20.0
Northern Africa	6.8	6.3	5.1	4.8	8.5	8.4	8.3	8.3	8.3
Sub-Saharan Africa	28.1	23.7	20.6	20.2	20.0	20.0	20.4	20.8	22.7
Eastern Africa	39.3	34.3	30.9	30.2	30.6	30.6	30.9	31.1	33.9
Middle Africa	37.4	29.4	23.8	23.1	22.5	22.3	24.0	24.4	25.8
Southern Africa	7.1	6.4	6.7	6.3	6.2	6.2	6.5	6.6	8.0
Western Africa	15.1	12.0	10.0	9.9	9.9	9.8	9.8	10.4	11.5
ASIA	16.7	17.0	13.2	12.8	12.5	12.2	11.9	11.6	11.7
Central Asia and Southern Asia	17.6	20.1	15.7	15.7	15.6	15.4	15.1	14.7	14.2
Central Asia	15.7	14.2	10.6	9.9	9.1	8.4	8.2	8.2	8.4
Southern Asia	17.7	20.4	15.9	15.9	15.9	15.7	15.3	14.9	14.4
Eastern Asia and South-Eastern Asia	16.6	15.2	11.6	10.9	10.4	9.9	9.6	9.2	9.7
Eastern Asia	14.6	14.1	11.3	10.7	10.3	9.9	9.5	9.1	9.0
South-Eastern Asia	22.0	18.1	12.4	11.3	10.7	10.0	9.7	9.4	11.5
Western Asia	11.3	10.5	9.4	9.1	8.9	8.7	8.9	9.3	10.6
LATIN AMERICA AND THE CARIBBEAN	12.0	9.1	6.8	6.6	6.4	6.3	6.3	6.3	6.6
Latin America	11.1	8.0	5.9	5.7	5.5	5.4	5.4	5.5	5.9
Central America	8.1	8.3	7.1	7.2	7.1	7.1	6.9	6.7	6.5
South America	12.2	7.9	5.4	5.1	4.8	4.7	4.8	5.0	5.6
Caribbean	23.8	23.3	19.9	19.3	19.4	19.2	18.9	18.4	17.7
OCEANIA	5.3	5.3	5.0	5.2	5.3	5.7	6.0	6.4	6.8
NORTHERN AMERICA AND EUROPE	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
<i>Other country group:</i>									
Western Asia and Northern Africa	9.3	8.7	7.6	7.3	8.7	8.5	8.6	8.8	9.5

¹ Projected values (see Box 1 on p. 4 and Methodological notes in Annex 1, p. 95).

Source: FAO, IFAD & WFP (2017)

Table 2.2 illustrates the state of the undernourished population worldwide in different regions for the period 2000 to 2015 and the projected value for 2016. The FAO *et al.* (2017) analysed the average prevalence of undernourished people and found that there was no progress in the world from 2013 to 2015, due to two offsetting changes at the regional level: in sub-Saharan Africa, the share of undernourished people increased, while there was a continued decline in Asia in the same period. Nevertheless, in 2016, the prevalence of undernourished people increased in most regions except

North Africa, South Asia, East Asia, Central America and the Caribbean, and this was due to the most severe deterioration in sub-Saharan Africa and South-Eastern Asia (FAO *et al*, 2017). It is noteworthy that sub-Saharan Africa remains the region with the highest prevalence of undernourished people, affecting an alarming 22.7% of the population in 2016. The situation is especially urgent in East Africa, where one-third of the population is estimated to be undernourished – the sub-region's prevalence of undernourished people increased from 31.1% in 2015 to 33.9% in 2016.

According to the United Nations (2015), the MDGs helped the global community to free more than one billion people from an extreme poverty situation. However, with the current world statistics of the number of people who do not have access to sufficient food or are food insecure, an effective and functioning global system is needed to meet this goal, especially in developing regions (McGuire, 2013). The end-point of the MDGs made world nations continue to achieve global challenges, such as undernourished and hungry people, and to ensure a sustainable future and a dignified life for all people.

According to the CRS (2012) and Sachs (2012), the execution of the set of Sustainable Development Goals (SDGs) that was put forward by the Rio+20 Summit in 2012 continued after the deadline of the MDGs. According to United Nations (2015) and Sachs (2012), the new global agenda of the SDG is constructed from the MDGs, especially the reasons for their success and to correct some of their most important shortcomings. The SDG captured the broad range of global priorities that needed active participants worldwide. World leaders have prioritised and target to achieve the SDGs by 2030. One of the aims of the SDGs, for instance, SDG 1 and 2, is to end poverty, hunger and food insecurity altogether by 2030. This was driven by the fact that more than 800 million people still live on less than \$1.25 a day and nearly one out of every nine people goes to bed hungry every night around the world (FAO, 2015).

Various methods used to measure global food security are analysed in section 2.4, such as the Global Food Security Index (GFSI). The Economist Intelligence Unit (EIU) established this index in 2012 in Washington DC. Several wide-ranging trusted international organisations were included, viz. the United Nations (UN), the IMF, the Food and Agricultural Organization (FAO), the World Health Organization (WHO), the World Bank and many others, to establish this index, which uses 25 appropriate indicators to measure the performance of food security worldwide. The EIU selected 109 countries to be included in the Global Food Security Index based on regional diversity, economic

importance, and the size of the population, with the goal of representing regions across the globe. The Global Food Security Index (GFSI) used the well-known definition of food security that was formulated by the World Food Summit in Rome in 1996. The GFSI determines or assesses macroeconomic factors that affect food security at the macrolevel (EIU, 2012).

2.5 Challenges in the global food security perspective

Global food security focuses on the importance of food production, and many other factors need to be considered to recognise the food security situation (Ericksen, Ingram & Liverman, 2009). According to Misselhorn *et al.* (2012), the pressure of global food insecurity is facing changes in both the supply and demand side. It is a multifaceted issue that is influenced by multiple factors, such as population and consumption growth, economic development, and political and climate factors. Together, these factors impede people's access to sufficient and nutritious food. In addition, Godfray *et al.* (2010 b) explain the challenges that inhibit the ability of the world to provide healthy and environmentally sustainable diets for all its population. Addressing these challenges will require the work of different agencies and policy makers to bring sustainable improvements and to reduce pressure on food security (Misselhorn *et al.*, 2012). The EIU (2016) states that climate change, population growth and potential spikes in food prices, among others, lead to food insecurity in many regions of the world, especially in low-income countries.

2.5.1 Population pressure

According to Godfray *et al.* (2010a), the global population will continue to grow and varies considerably across countries. The World Bank (2016) reported that the forecast was that global food production would have to increase by at least 50% to feed nine billion people by 2050. Kearney (2010) explains that global population forecast and trends will result from major shifts in dietary patterns in 2050. Beddington (2010) states that the major increase will occur on continents such as Asia and Africa, which are expected to have a rapid increase in population compared to the rest of the world. The rate of rising population is projected at six million people per month, with Africa's population alone projected to double from one billion to two billion. Beddington (2010) explains that the population increase would also result in an increase in urbanisation that is people moving from rural livelihoods to cities. Half of the world's population live in cities and this will rise to 60% by 2030. High urbanisation will require additional services such as food, water and energy.

Tomlinson (2013) explains those international policy makers and others actors have to play a significant role in attaining the goal of improving the future direction of global food production. Forecasting population growth helps to determine which challenges will be faced by the world to maintain dignity for all in terms of food production. According to Rakotoarisoa, Iafrate and Paschali (2011), some parts of the world have already experienced the effect of production dynamics, for example Africa (sub-Saharan Africa) is already a net importer of food and one of the reasons is due to high population growth.

Furthermore, Holt-Giménez *et al.* (2012) states that the problem arises when the production of biofuels is prioritised over food to feed people, and considering the need for growing animals as well. The growing of corn and other grains is being diverted for use as the demand for biofuels and feedstocks is increasing, especially in Asia (Tenenbaum, 2008). The food supply for people is affected adversely, as most farmers take advantage of feedstock demand instead of non-feedstock, such as rice and wheat. The magnitude of a high population will definitely affect the scale of production factors (supply or demand side) in feeding people healthily and sustainably (Godfray *et al.*, 2010a).

2.5.2 Climate change

The USDA (2015) reports that climate change is a long-term trend that can be described as changes in the average or variability of properties such as temperature and precipitation. The FAO (2016) reported that climate change affects agricultural activities, which causes an adverse impact on livelihoods and food security in every region of the world. Agricultural activities are affected since they have adapted to prevailing climatic conditions. Climate-related disasters such as droughts, floods and storms have the potential to destroy crops, critical infrastructure and key community assets, therefore deteriorating livelihoods and exacerbating poverty. The EUI (2016) and USDA (2015) explain that climate change would have a significant impact in the long term, potentially increasing production volatility, and disrupting trade (availability of food) and food prices (food access).

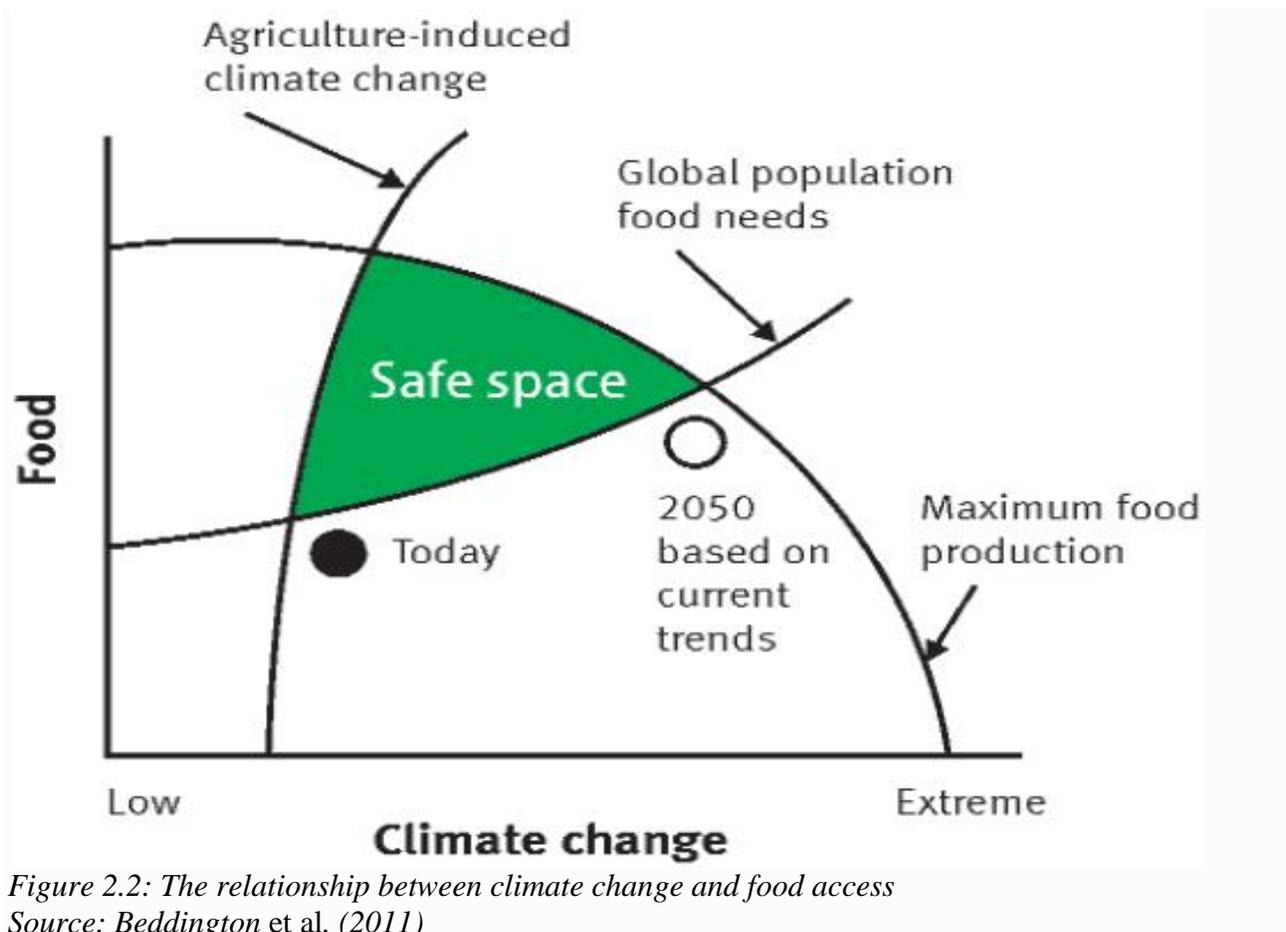


Figure 2.2 illustrates that, at present, the planet operates outside the safe space. If current trends in population growth, diets, crop yields and climate change continue, the world will still be outside the safe operating space (the green circle) in 2050 (Beddington *et al.*, 2011). This requires various changes to enlarge the safe space or move into the safe space. If there are no actions to mitigate climate change, it will lead to crop yield losses of as high as 5% by 2030, which would drive up food prices (EIU, 2016). Climate change leads to additional risks for the food security and nutrition (utilisation) of people, especially those who directly depend on agriculture for their food and livelihood. There will be a lack of dietary diversity, care practices and health. Furthermore, more frequent and intense weather events can upset the stability of individuals' (health) and governments' strategies for food security, creating fluctuations in food availability, access and utilisation (stability).

The number of people at risk of hunger by 2050 will decline if the existing climate change is mitigated. However, with climate change, the population living in poverty could increase by between 35 and 122 million by 2030, relative to a future without climate change, largely due to its negative

impacts on incomes in the agricultural sector. The increase in the number of poor would be biggest in sub-Saharan Africa, partly because its population is more reliant on agriculture (USDA, 2015).

2.5.3 Political instability

According to Hackett and Melgar-Quionez (2008), international agencies identify that food insecurity not only increases the risk for malnutrition and illness, but also worsens conflict and political instability in many developing countries. Barrett (2013) defines political instability as the situation when there is an absence of local conflict and violent behaviour that is where there is a peaceful environment to abide the society where decision-making occurred. In most regions where political instability exists, food availability and access are always affected. Food insecurity has been linked to political instability (such as war, protest and rioting) in that region, especially in African countries. They may not be directly responsible for food crises, but they exacerbate the scarcity of food and unexpectedly high food prices (i.e. a higher-than-normal rise in food prices), which has an immediate impact on individuals' purchasing power. For example, conflict or violence do not only lead to loss of human life, but also to a loss of livestock and food stores, and the disruption of the input and output of the marketing system that regulates food production and distribution (Barrett, 2013). When national governance or the stakeholders involved fail, food scarcity and famine become part of a vicious cycle of instability (Simmons, 2013).

According to the EIU (2016) and Brinkman and Hendrix (2011), most political risk and corruption frequently occurs in low-income countries, where the population often has the inability to access and afford nutritious food. The United Nations (1993) reports that most consequences of political instability affect the ability to produce, trade and access food, destroy physical and social capital, damage the environment, decrease school attendance and discourage investment. According to Simmons (2013), the affected populations adopt coping strategies that reduce their food dietary consumption, and this leads individuals of any age to be vulnerable to illness and malnutrition.

2.5.4 Health services

According to Cook *et al.* (2004), food insecurity may worsen the onset or persistence of adverse health conditions, which results in chronic diseases. Weight, nutritional and pregnancy outcomes, as well as the effect on the progression of diseases such as HIV infection, are widely agreed to be the results of food insecurity among some subpopulations (Ivers & Cullen, 2011). Food insecurity is a concern for everyone in all age groups (children and adults). It is critical both among young ones, as

it complicates the child's health or development in several ways, and includes diet-sensitive chronic diseases such as hypertension and diabetes in adults (Seligman *et al.*, 2010), which can arise from food insufficiency. Most households that experience food budget shortages (food insufficient) are likely to be food insecure, as they have the narrow choice of a purchasing nutritious diet, and women affected the most (Alaimo *et al.*, 2001).

For example, in the case of a pregnant woman who is food insecure, the negative consequences will affect the unborn child. This is because the pregnant woman demands nutrients, the effort required for food preparation may be more difficult, and pregnant women may be obliged to leave the workforce, especially in later pregnancy, which leads to financial strain (Ivers & Cullen, 2011). Undernourished pregnant women are more likely to bear babies with low birth weight and other deficiency diseases. In addition, Skalicky *et al.* (2006) analysed the effect of iron deficiency anaemia, the most prevalent nutritional deficiency worldwide, among hungry and food-insecure children in the early stages. The deficiency can cause delays in development and learning in children. In people of every age group, iron deficiency anaemia can cause fatigue, weakness, shortness of breath and irregular heart rhythms, among other symptoms. According to the EIU (2012), food insecurity has negative health outcomes, which are costly worldwide. These include inpatient hospitalisation, home-care services, physician services and prescription drugs (nutrients).

2.6 Monitoring rural household food security in affected countries

As the concept of food security is defined in 2.2.1, it simply indicates that a household is food secure when all its members have access to enough food for an active, healthy life at all times (quantity, quality and stability). The aim of this sub-section is to briefly analyse the rural household food security status at the international level in randomly selected countries. The focus of the study is to measure and interpret the food security status of particular rural settings at the household level. This sub-section describes the food security status in rural settings in the USA, Brazil, Uganda and Zambia.

2.6.1 United States of America (USA)

The Economic Research Service (ERS) of the USDA (United States Department of Agriculture) analysed a survey of 39 948 households (US representative sample) in 2015. IN relation to the US households, it was reported that 87.3% (109.3 million) were food secure throughout 2015, which was an increase from 86.0% in 2014 (Coleman-Jensen *et al.*, 2016). This means that only 12.7% of US

households were food insecure, while 7.7% (9.5 million) and 5.0% (6.3 million) were low food secure and very low food secure respectively in 2015. In terms of geographic distribution, nonmetropolitan (rural) areas were reported to have the highest number of food-insecure households, at 15.4%, which means that 84.6% were food secure in 2015. This is growth compared to the 2014 survey, when 17.1% of nonmetropolitan (rural) households were food secure, hence 82.9% of households were food insecure (Coleman-Jensen *et al.* 2015).

2.6.2 Brazil

Brazil is one of the countries in Latin America with the strongest economic, agricultural and industrial sectors, which are the main keys for economic development (IFPRI, 2016). According to the FAO, IFAD and WFP (2014), the reduction of poverty in Brazil has been a concern, as the country adopted internationally established goals by collaborating with the FAO in the Zero Hunger Program. Poverty fell from 24.3% to 8.4% of the population between 2001 and 2012, while extreme poverty dropped from 14.0% to 3.5%. The national survey done using the Household Food Insecurity Scale (HFIS) in Brazil showed a 25% decrease in severe food insecurity from 2004 to 2009. The decrease in food insecurity was greater among people living in extreme poverty. However, IFPRI (2016) documented that, despite recent improvements, poverty remains widespread, with income inequality a significant challenge at the root of rural poverty. The population living on less than two dollars a month (R27.00) is approximately 35%, which is 51% of the population in the rural areas of Brazil. The largest concentration of rural poverty in Latin America is the North Eastern region of Brazil (IFPRI, 2016).

2.6.3 Uganda

Uganda has rich natural resources, such as fertile soils, regular rainfall, abundant lakes and rivers, and deposits of copper, gold and other minerals. This comes from the analysis of the Uganda National Panel Survey (UNPS) 2009/2010, which included 2 563 households. The survey reported that about 48% of Ugandans were food insecure between September 2009 and August 2010 (WFP, 2013). Food insecurity was higher in rural areas in Uganda. Uganda rural households were consuming same diet as long they boost the energy level to carry out the daily duties. It is documented that Uganda is progressing with poverty reduction, although other factors include the growth rate of the population, which has increased among poor households in rural areas, especially in the northern region. The majority of the poorest households are the most dependent on purchasing their food, and therefore

are vulnerable to high food prices. About 30% of all rural people still live below the national rural poverty line.

2.6.4 Zambia

Zambia is a landlocked country in Southern Africa. It is one of the very unequal countries, with a Gini coefficient of 0.65% (WFP, 2016). There has not been an improvement in poverty and food insecurity in both the rural and urban areas of Zambia. There has been slight progress in reducing stunted children, although 40% of children aged between six and 59 months are reported to be stunted (WFP, 2016). According to Wineman (2016), between 54% and 68% rural households in Zambia were energy deficient in 2008.

2.7 South Africa in the context of global food security

As stated in Chapter 1, South Africa is positioned at the macro level to have enough food to feed its citizens; however, this is not the case at all household levels, where food insecurity has been recorded (De Cock *et al.*, 2013; EIU, 2016). Although the focus of this study is on measuring and interpreting the food security status of particular rural settings at the household level, it is important to analyse South Africa in the global context.

The main objective of the global food security index is to examine in depth which countries have been the most and least vulnerable to food insecurity since 2012 (EIU, 2016). The index measures the core issues of affordability, availability and quality across 113 countries. Table 2.3 demonstrates the ranking of selected countries. The United States (86.6), Ireland (84.3) and Singapore (83.9) scored the highest among the 113 countries assessed. The sub-Saharan Africa region received the lowest regional score in the 2016 GFSI. Among sub-Saharan African countries, South Africa ranks first, followed by Botswana (57.8), Ghana (47.8), Uganda (44.2) and Kenya (42.7). South Africa's overall score is 10th highest among upper-middle-income countries, with Malaysia (69.0) Costa Rica (68.3), Mexico (68.1), Brazil (67.6) and China (65.5) claiming the first five positions (EIU, 2016). South Africa was ranked 47th in the index and top country in the sub-Saharan Africa region (EIU, 2016).

Table 0.3: Overview of 2016 GFSI: Weighted total of all category scores (0-100, where 100 = most favourable)

2016 GFSI overall rankings table					
Rank	100	Rank	100	Rank	100
1 United States	86.6	39 Mexico	68.1	77 Honduras	48.2
2 Ireland	84.3	40 Slovakia	67.7	78 Ghana	47.8
3 Singapore	83.9	41 Brazil	67.6	78 Pakistan	47.8
4 Australia	82.6	42 China	65.5	80 Myanmar	46.5
4 Netherlands	82.6	42 Romania	65.5	81 Uganda	44.2
6 France	82.5	44 Panama	64.4	82 Nepal	42.9
6 Germany	82.5	45 Turkey	63.6	83 Kenya	42.7
8 Canada	81.9	46 Belarus	63.1	84 Cote d'Ivoire	42.3
8 United Kingdom	81.9	47 South Africa	62.9	85 Cameroon	41.6
10 Sweden	81.3	48 Russia	62.3	86 Senegal	41.0
11 New Zealand	81.1	49 Colombia	61.0	87 Rwanda	40.7
12 Norway	81.0	50 Bulgaria	60.6	88 Benin	40.2
13 Switzerland	80.9	51 Thailand	59.5	89 Cambodia	39.8
14 Denmark	80.0	52 Serbia	59.4	90 Nigeria	39.4
14 Portugal	80.0	53 Tunisia	57.9	91 Mali	39.3
16 Austria	79.3	54 Botswana	57.8	92 Tajikistan	38.6
17 Finland	78.9	55 Peru	57.7	93 Togo	37.9
17 Israel	78.9	56 Ecuador	57.5	94 Tanzania	36.9
19 Spain	77.7	57 Azerbaijan	57.1	95 Bangladesh	36.8
20 Qatar	77.5	57 Egypt	57.1	96 Syria	36.3
21 Belgium	77.4	57 Vietnam	57.1	97 Guinea	35.0
22 Italy	75.9	60 Jordan	56.9	98 Ethiopia	34.7
22 Japan	75.9	60 Venezuela	56.9	98 Sudan	34.7
24 Chile	74.4	62 Morocco	55.5	100 Yemen	34.0
25 Czech Republic	73.9	63 Ukraine	55.2	101 Angola	33.7
26 Oman	73.6	64 Dominican Rep	55.1	102 Zambia	33.3
27 Kuwait	73.5	65 Sri Lanka	54.8	103 Laos	32.7
28 South Korea	73.3	66 Algeria	54.3	104 Madagascar	31.6
29 Poland 72.4	72.4	67 Paraguay	54.2	105 Malawi	31.4
30 United Arab Emirates	71.8	68 Kazakhstan	53.7	106 Burkina Faso	31.0
31 Greece	71.5	69 El Salvador	53.3	107 Congo (Dem. Rep)	30.5
32 Saudi Arabia	71.1	70 Bolivia	51.6	108 Haiti	29.4
33 Bahrain	70.1	71 Indonesia	50.6	108 Mozambique	29.4
34 Hungary	69.3	72 Uzbekistan	49.8	110 Niger	29.0
35 Malaysia	69.0	73 Guatemala	49.6	111 Chad	28.6
36 Uruguay	68.4	74 Philippines	49.5	112 Sierra Leone	26.1
37 Argentina	68.3	75 India	49.4	113 Burundi	24.0
38 Costa Rica	68.3	75 Nicaragua	49.4		

Source: Economic Intelligence Unit (2016)

Table 2.4 demonstrates the ranking of South Africa in terms of affordability, availability, quality and safety in the index. South Africa achieved a higher score in 2016, climbing 0.6 points from its 2015 position to 62.9 out of 100 points, as illustrated below (Table 2.4). However, in terms of global ranking, South Africa fell from 46th to 47th out of 113 countries in 2016. In the index in 2016, South Africa received strong scores in five indicators of food security. It achieves the maximum of 100 points for the country's nutritional standards, which includes national nutrition plans, dietary guidelines and nutritional monitoring, and the presence of food 'safety net' programmes, that is public initiatives that protect the poor from food-related shocks. This was followed by the sufficiency of the country's food supply, agricultural infrastructure and the national average percentage of household expenditure on food, which received moderate scores (25 to 75). Table 2.4 illustrates the ranking of South Africa in terms of global food security index dimensions.

Table 2.4: South Africa's ranking in global food security index

Score	Score / 100					Rank / 113				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Years										
Overall score	60.8	61.0	62.3	62.3	62.9	47	48	46	46	47
Affordability	55.5	55.1	58.8	58.8	58.6	55	56	53	54	53
Availability	66.5	67.4	66.8	66.5	68.1	36	29	31	33	31
Quality & safety	58.3	58.4	58.8	59.6	59.7	55	54	54	53	53

Source: EIU (2016)

There is no doubt that food security remains a top priority for South Africa. The GFSI highlights opportunities that South Africa should adopt for improvement based on performance, i.e. diet diversification, high-quality protein, and increasing investment in agricultural research and development (R&D).

2.8 Dimensions of food security in South Africa

The following section focuses on dimensions of food security in the specific context of South Africa. This is done by conceptualising and identifying who and where the vulnerable groups and individuals

are in the country. This section will also deal with measuring food security and assessing food security national surveys.

2.8.1 Measuring food security in South Africa

With some impediments to measuring food security status in the country, including the paucity of food security information, the little and inconsistent available data reveals that South Africa has been able to meet the demand for food required by its growing population (D’Haese *et al.*, 2013; Dube 2013). The absence of an indicator to measure all dimensions of food security in South Africa results in unclear statistics to ascertain food insecurity at the household level, especially in the rural areas of South Africa (Dube, 2013; Hendriks, 2013). This makes it difficult to determine whether levels of hunger are the same or have changed over time, or to draw baseline information about food security in the country (Hendriks, 2013). The inconsistency of food security data results from the use of different dimensions of food security as per a particular focus point under investigation, indicators and sampling methodologies (Dube, 2013). The following measurements have been used in measuring food security in South Africa.

(i) The October Household Survey (OHS) was implemented annually between 1994 and 1999. Its main question was on the ability of the household to feed children as an assessment of food insecurity as a proxy indicator (Dube, 2013). OHS has been inconsistent in phrasing the questions between years, which have made comparisons over time difficult. Nevertheless, it enabled certain patterns to emerge and suggests that between 25% and 33% of households were unable to buy food to meet the dietary requirements of children at any given time.

(ii) The National Food Consumption Survey (NFCS) was conducted twice – in 1999 and 2005. The focus of this survey was households with children between the ages of one and nine years. The survey assessed food procurement, anthropometric indicators and food inventories of households (Labadarios *et al.*, 2009).

(iii) The Food Insecurity Vulnerability Information and Mapping System (FIVIMS) was used in selected areas of Mpumalanga and Limpopo in 2004 and 2006. Its focus was on food consumption, food production, food availability and the anthropometric status of children in the household. It was inadequate in focusing on the multidimensionality of food security. The effort to establish a FIVIMS system was abandoned, largely because the FIVIMS system is data intensive and did not render clear

indicators for food security. It was successful in identifying ‘hunger hot spots’ across the country (Chitiga-Mabugu *et al.*, 2013).

(iv) The General Household Survey (GHS) is a household survey that has been carried out annually by Statistics South Africa since 2002. The survey was specifically designed to measure multiple facets of the living conditions of South African households, as well as the quality of service delivery in a number of key service sectors (StatsSA, 2011b).

(v) The Income and Expenditure Survey (IES) was first conducted in 2005. It aimed to inform the Consumer Price Index (CPI) by identifying goods and services that focus on food spending and home production patterns. (vi) The Integrated Food Security Strategy (IFSS) was introduced in 2002 (Drimie & Ruysenaar, 2010). It used adequacy of daily energy intake (set at 2 000 kcal/day), based on the World Health Organization (WHO), as the best direct measure of food insecurity. It used income-earning capacity of households to measure food insecurity and the average price of the food

basket compared to household income and expenditure to assess food insecurity at the household level.

(vii) The South African Medical Research Council (MRC) measures food insecurity in relation to undernourishment. The MRC classifies someone as food insecure if he receives less than 2 261 kJ per day. In monetary terms, this is R211 per person based on 2000 prices.

Table 0.5: Summary of national surveys conducted in South Africa, 1995-2011

Year	Survey	Percentage food insecurity estimates from different indicators							
		Food access indicators				Food consumption and utilization indicators			
		Socio-economic	Hunger scale	HFIAS	Food poverty	Dietary diversity	Stunting	Underweight	Individual energy and nutrient intake
1995	Income and expenditure survey				43				
1999	National Food Consumption survey		52			57,4	21,6	10,3	
2000	Income and expenditure survey				40				
2002	General Household survey	70,4	23,5						
2003	General Household survey	67,2	22,5						
2004	General Household survey	61,2	18,2						
2005	National Food Consumption survey		51,6				18	9,3	
	General Household survey	62,1	16						
	Income and expenditure survey				70				
2006	General Household survey	63,8	11,4						
2007	General Household survey	59,6	10,5						
2008	South African Social Attitudes Survey (SASAS)		25,9						
	General Household survey	51,6	13						
2009	Dietary diversity Study					38,3			
	General Household survey	47,6		19,6					
2010	Income and expenditure survey				80				
	General Household survey	46,8	13	21,9					
2011	General Household survey	41,6	11,5	21,1					

Source: Dube (2013); Labadarios *et al.* (2009, 2011)

Table 2.5 above provides a summary of South Africa national surveys that were collected from the period 1995 to 2011. The national surveys illustrate different datasets and prove the absence of a national survey that includes all dimensions of food security.

This shows that there is still a need to develop a well-defined indicator to have reliable baseline information for food security targets in South Africa. The lack of such an indicator makes it impossible for government and other relevant stakeholders to monitor the progress of food security over time and target vulnerable households in South Africa (Dube, 2013; Jacobs, 2009).

2.8.2 Analysing food security dimensions

Food security dimensions cannot be isolated from development questions, such as those relating to education, sources of income, rural and urban development, changing household structures or livelihood, retail markets and nutritional knowledge (Altman *et al.*, 2009). This section provides a comprehensive overview of food security dimensions in the South African context, relating to production, trade and imports, food access and distribution, and stability.

2.8.2.1 Food production in South Africa

According to Vink (2012), the definition of food security has changed since 1975. It changed from a focus on food availability (macro-level) to emphasis on access to food as equally important, and more recently to the nutritional value of food along with its social acceptability. For South Africa, as with any other country, its food security depends on the country's food production and stocks and on its food imports (DAFF, 2011). Carletto, Zezza and Banerjee (2012) report that the country's ability to produce food depends on its resource endowments, climate, the capital of all types, policies, and on the productivity with which the available resources are employed. The ability to import food depends on a country's national income, the availability of foreign exchange, and the conditions and prices on international markets. Food aid may also be an external addition or emergency addition to national food supply when it is needed (Carletto *et al.*, 2012).

Jacobs (2009) concurs that the country's food security condition is considered to be food secure, as it produces sufficient amounts of staple foods and has the ability to import foods where required to meet the nutritional needs of its citizens. Analysing food availability in the context of South Africa, several studies (De Cock *et al.*, 2013; D'Haese *et al.*, 2013; Altman, *et al.*, 2009) confirm that, at the national level, South Africa is food secure, i.e. it produces enough food for its citizens, whereas at the household level the food security status is unacceptable. The recent result of the global food security index also validates that South Africa is in a good environment when compared with other countries, as it ranks 47th in the 2016 index (EIU, 2016). This means that the South African agricultural sector has the ability to compete with other countries global.

Hendriks (2014) explains that political uncertainty, global price volatility, high input prices and agronomic factors also put South African agriculture under strain. Greyling, Vink and Mabaya (2015) agree that food production in South Africa thus remains risky and is highly connected to local and

global influences. The South African agriculture sector represented only 2.3% of the economy in 2013 and has declined in the economy since 1994 due to the relatively faster growth of the non-agricultural sectors, which expanded by 41.5% during 2014. As to the structure of South African agriculture and possible structural changes to expand agricultural production, there still is largely a “two agriculture” perspective in South Africa. One is of agriculture characterised by the highly developed white-owned and technologically advanced commercial farms. It consists of 40 000 farmers who produce most of the marketed agricultural produce. About 1.3 million households have access to land for farming purposes. However, smallholder also known as traditional agriculture, were estimated to have 97% of these households engage in some farming activity, mostly on relatively small plots of land (Vink & Van Rooyen, 2009).

South Africa has a dual agricultural economy, which is well-developed commercial and small-scale farming (Greyling, 2012). Policies have to be devised to close the bridge between these agricultures, the implementation, however, has been slow due to the slow pace of land reform and redistribution of land, as well as a lack of well-designed support services and structures (Vink & Van Rooyen, 2009). Therefore, proper facilitation of factors such as infrastructure, extension services and training should be considered, as they will enable an increase in food production

The BFAP (2016) points out that, despite the volatility of global markets and the climate, South African agriculture has improved its gross value added by more than 15% in real terms since 2005. In 2014, the gross value added reached its peak of over 30%, before it declined drastically in the past two seasons because of the extreme drought. According to Vink and van Rooyen (2009) and the BFAP (2016), the performance of South African agriculture is aligned with poor natural resources, and is strongly influenced by weather occurrences. Historically, there has been a severe countrywide drought in at least one year of each of the preceding decades (the most severe being in 1966, between 1982 and 1984, and from 1992 to 1993). The period from 1994 to 2008 is an exception to this trend, as there was no countrywide drought for more than a decade. Nevertheless, the BFAP (2015b) explains that 2015 represented the lowest national annual rainfall, hence drought, in South Africa. Drought affects current prices, the level of import and export parity, price bands and every stage of the food value chain. Vink and Van Rooyen (2009) also highlight that the agricultural sector is highly exposed to global markets, as farmers receive few subsidies; international trade (imports and exports) makes up a large proportion of total production; and trade at the country’s borders has been

substantially liberalised. Farmers' incomes are therefore highly dependent on movements in the exchange rate and on global economic conditions.

Regarding people active in agriculture, StatsSA (2017) reported that only 14.8% of South African households were involved in agricultural production. Food production consisted of fruit and vegetables (50.8%), grains (45.5%), livestock farming (36.0%) and poultry (33.1%). In 2014, StatsSA (2016) reported that households that were getting agriculture-related support, training and dipping/livestock vaccination services from the government were only 12.1%, 2.1% and 6.8% respectively. According to StatsSA (2017), only 11.1% of the households involved in agriculture were receiving agriculture-related support from the government.

2.8.2.2 Trade and import food commodities in South Africa

In terms of trade, the NAMC (2015) reports that South Africa is a net exporter of agricultural products. There have been fluctuations in agricultural trade. Between 2012 and 2015, fruit exports such as lemons and limes, fresh apples, fresh grapes, wine and oranges increased sharply, by 80%, 29%, 24%, 21% and 20% respectively. In 2015, South African agricultural exports and imports were valued R111.9 billion and R76 billion respectively. In 2015, the largest agricultural product destinations/markets were Africa, the European Union (EU) and Asia, with a market share of 58%, 29% and 13% respectively (NAMC, 2015). However, the impact of the current drought in South Africa has reduced domestic production, which has induced significant changes in trade volumes to meet domestic demand, even when it implies substantial price increases (BFAP, 2016).

For instance, the BFAP (2016) reports that almost 30% in the national area planted to maize has been impacted by the severity of the drought. South African white maize production decreased by 40% in 2015. The demand for white maize is very inelastic because it is the most affordable food staple in the Southern African region. According to the BFAP (2016), South Africa has always been a reliable supplier of white maize to the rest of the region. However, to supplement the South African production, South Africa is expected to import almost one million tons of white maize. Mexico and the United States were identified to be the potential main sources of South African imports. Figure 2.3 illustrates the trend in white maize parameters. The production has been higher than the domestic use, shown by the positive net exports between 2005 and 2015. In 2016, the net export was negative, as the demand for white maize exceeded what was produced. However, white maize production is estimated to recover in 2017 until 2018, as depicted under the reviewed period.

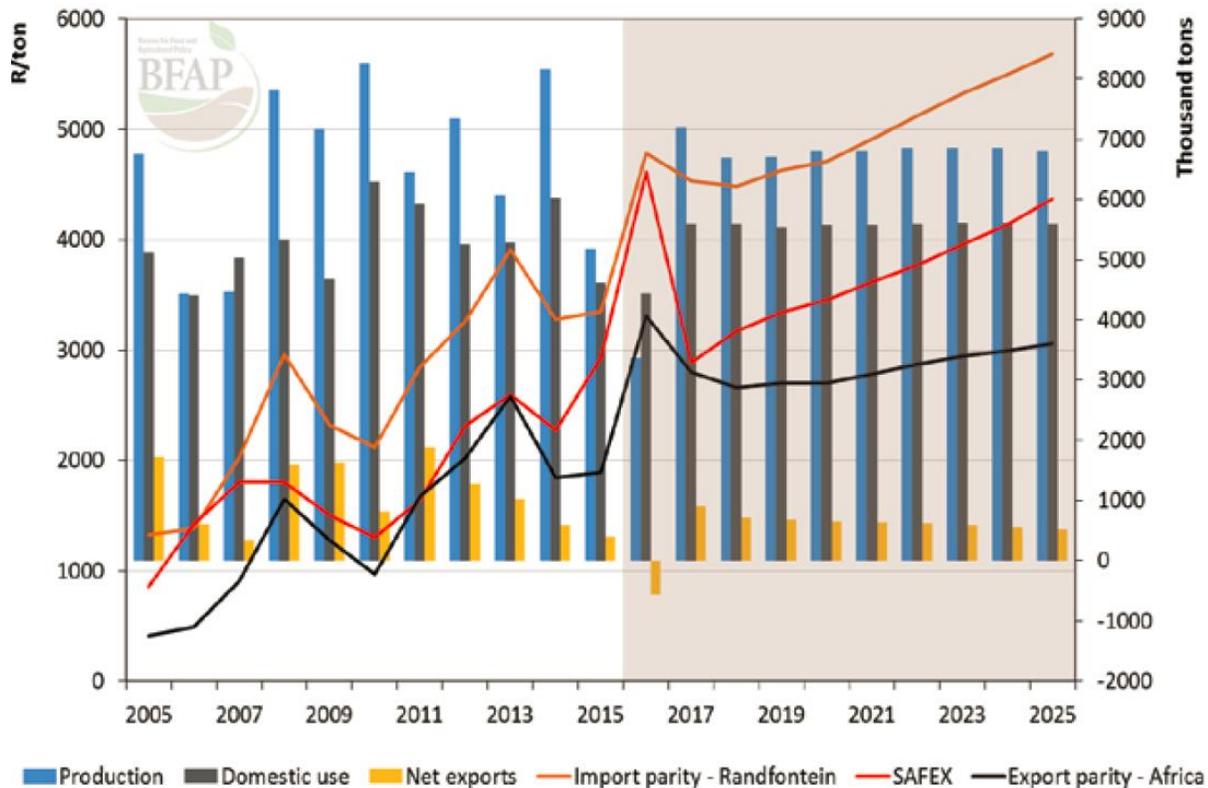


Figure 2.3: Trends in white maize from 2015 to 2025
Source: BFAP (2016b)

2.8.2.3 Food accessibility at the household level

In this subsection, the focus is on adequate access to food that is culturally and nutritionally appropriate for the household all the time. Food accessibility at the household level does not mean food security for individuals, but this depends on the intra-household allocation of food between its members, as well as the biological utilisation of that food for nutritional wellbeing. Altman *et al.* (2009) emphasise the importance of investigating and understanding factors affecting the access by households to adequate food. Household food accessibility is affected by spatial and non-spatial factors. Spatial factors include the geographic barrier between households and retailers, while non-spatial factors include non-geographic barriers or facilitators such as age, sex, ethnicity, income, social class, education and language ability.

2.8.2.3.1 Spatial factors affecting food security

Sharkey, Johnson and Dean (2010) state that poor infrastructure or physical access results in a major problem, especially for residents in rural areas. Due to poor infrastructure, transport systems are unreliable, which forces rural residents to pay a fortune for transport to access basic services (Linard

et al., 2012). Sharkey *et al.* (2010) explain that, because of a lack of access to supermarkets, vulnerable populations may struggle to obtain adequate food and this increases the risk of diet-related chronic disease. Pinard *et al.* (2016) agree that many small food stores in rural areas lack healthy food options, largely because storeowners perceived that their customers would not purchase healthier items due to challenges with distribution. Rural communities might face different challenges with access to healthy food in small food stores when compared to urban settings. This is notably the distinction between urban and rural areas, since food stores in rural areas tend to offer a smaller selection of more healthful foods than urban areas.

A steady increase in supermarkets in South Africa since the late 1990s resulted in radical transformations in the food retail systems. For instance, in Cape Town, supermarket expansion coincided with rapid urbanisation and food insecurity (D'Haese & Huylenbroeck, 2005). Supermarkets have become a powerful market-driven process influencing food access for citizens (Peyton *et al.*, 2015). However, in the rural setting, the majority of households make their food purchases from the nearest supermarket that is outside of their villages (D'Haese & Huylenbroeck, 2005). The long distance travelled to reach supermarkets in rural settings makes household struggle to get adequate food, as it is costly to reach those supermarkets. StatsSA (2015) reported that about 40.3% of households in the Eastern Cape depend on social grants.

2.8.2.3.2 Non-spatial factors affecting food security

The central concern among non-spatial factors is the analysis of household socio-economic characteristics. To identify a few, education and household income are among the non-spatial factors. The key findings of D'Haese *et al.* (2013) explain the importance of education at the household level, especially in rural settings. StatsSA (2017) reported that, between 2002 and 2016, individuals aged 20 years and older who attained Grade 12 as their highest level of education increased from 21.9% to 28.4% respectively. It was also noted that individuals with tertiary qualifications improved from 9.3% to 14.0%. During the same period, individuals without any schooling decreased from 10.6% to 4.9%. StatsSA (2017) observed that the adult literacy rate was not progressing, with an average of 94.4% at the national level, with the Northern Cape at 89.8%, North West at 90.1% and Limpopo at 90.7%. According to De Cock *et al.* (2013), the lack of education may contribute negatively to food security at the household level.

StatsSA (2017) reports that households are dependent on salaries and grants by 65.4% and 45.7% respectively. The Western Cape and Gauteng were found to have the largest percentage of households that earned salaries, at 76.7% and 74.8% respectively. Although salaries are the leading source of income, Altman *et al.* (2009) highlight that social grants have played an important role in improving household food security since the early 2000s. Social grants are the most prevalent source of income across all provinces of South Africa.

Koch (2011) explains that there are five major social security grants, all part of the national comprehensive social programme: Old Age Pension, Disability Grant, Child Support Grant, Foster Child Grant and Care Dependency Grant. StatsSA (2017) reports that the number of individuals who benefited from social grants consistently increased from 2003 to 2016, from 12.7% to 29.9%. In addition, the number of households that received at least one grant increased from 29.9% to 44.8% in 2016. The largest receivers of social grants were from the Eastern Cape (40.8%), Limpopo (37.6%), Northern Cape (37.1%) and KwaZulu-Natal (36.0%), compared to 16.9% in Gauteng and 22.0% in Western Cape. The majority of racial groups receiving the grants are black African individuals, among whom 32.9% received a social grant, compared to 27.2% of coloured individuals, 11.5% of Indian/Asian individuals and 6.2% of the white population.

Although these grants play a significant role in alleviating hunger, they are insufficient to lift people out of poverty or ensure adequate nutrition. Furthermore, the growing number of social grant beneficiaries places strain on the national budget. Grant receivers are highly susceptible to food and service delivery price increases and lack the purchasing power to escape food insecurity (Hendriks, 2013). StatsSA (2017) reports that remittances are also an important source of income, especially in Limpopo, the Eastern Cape and Mpumalanga, at 25.2%, 23.7% and 19.5% respectively.

2.8.2.4 Food utilisation

Food utilisation is determined by appropriate food consumption processing, dietary intake, adequate knowledge of nutrition, and childcare practices and health status (FAO, 2002). In the South African context, Pereira (2014) states that the majority of poor households cannot afford to meet their daily dietary requirements. Household heads feed their family members with large portions of their staple food, such as maize meal or samp, depending on the area, just to reduce hunger. Temple and Steyn (2011) concur that South Africans, particularly those with a low income, may select a relatively less healthy diet that is associated with obesity or malnutrition. Pereira (2014) explains that healthy foods

are likely to be less desired than many other foods, such as junk food. These fast foods are less healthy, although they have a similar cost. The increase in an unhealthy diet has resulted in a high prevalence of overweight and obesity, especially among black urban women (Temple *et al.*, 2011). Generally, a healthy diet is unaffordable for most South Africans. This shows the importance of not only educating people about the importance of a healthy diet, but also an affordable healthy diet, in developing countries. A more effective strategy is government intervention that handles food prices on fast foods.

The South African government has supplied food for poor individuals who attend public schools. It is estimated that 76.2% of individuals have benefited from a school nutrition programme. StatsSA (2015) reports that learners who benefit the most from school nutrition programmes are from Limpopo, the Eastern Cape, Mpumalanga and the Northern Cape, at 94.1%, 84.8%, 89.2% and 84.8% respectively. Learners in Gauteng and the Western Cape were least likely to benefit, at 50.4% and 55.1% respectively.

2.8.2.5 Stability

In 2000, the South African government was among those that were committed to reducing poverty to ensure a better livelihood for all. Several studies (Altman *et al.*, 2009; De Cock *et al.*, 2013; FAO, 2015) explain that South Africa is food sufficient through local production and food imports to feed its citizens. The government has established a rights-based developmental framework within its national development plans and strategies with the aim of achieving food security (StatsSA, 2015). The DAFF (2014) reports that government has established several national policies and programmes that have contributed to the common goal of improving food security. Government has also prioritised the promotion and empowerment of smallholder producers.

The support from government was, among others, by providing inputs, training and advisory services, as well as access to finance and credit to these producers. The government is implementing IFSS, the NDP, the Fetsa Tlala Food Production Initiative “*Defeat Hunger*”, a Comprehensive Agricultural Support Programme (CASP), Ilima/Letsema and MAFISA, with the aim of providing better livelihoods for all (DAFF, 2014; FAO, 2015). This has increased their competitive edge towards becoming sustainable producers to provide products to markets and maintain the stability of food supply in South Africa (DAFF, 2014).

2.8.2.5.1 Food prices

This subsection shows how real prices of some selected food items changed over time. The NAMC (2015) reports that the average annual retail prices of specific food items in urban areas increased between 2014 and 2015. The retail prices of bread and cereal products, a 700 g loaf of brown bread and a 700 g loaf of white bread increased by 3.38%, 6.81% and 5.95% respectively. However, the retail price of special maize products decreased from 14.94% to 6.10% between 2014 and 2015. Households in rural areas experience the pressure of high food prices. Between 2014 and 2015, the average annual retail price for 2.5 kg special maize meal, a 700 g loaf of brown bread, a 700 g loaf of white bread and 2 kg of rice increased by 9.32%, 7.27%, 6.30% and 2.30% respectively (NAMC, 2015).

The combination of drought and the weaker exchange rate have already had a severe impact on agricultural commodity prices in South Africa. The drought has forced South Africa to import maize (affordable staple food) to make up the shortfall. In addition, the weakness of the rand has driven up the prices of other imports such as wheat, and concern has grown over rising food inflation (BFAP, 2015; StatsSA, 2016). StatsSA (2016) reported that households dependent on grain-based products are likely to be affected. Both rural and urban households are affected by the increase in food prices. About 22% of households ran out of money to buy food, particularly in the North West, the Eastern Cape and the Northern Cape, at 41%, 32% and 31% respectively.

2.8.2.5.2 Food safety

The WHO (2015) explains food safety as ensuring the limit of hazard, whether chronic or acute, to the health of food consumers. Food safety should be assured in the agrofood value chain up to the preparing of food. Food loss or waste occurs through the supply chain, from the primary agricultural production to the final household consumption. Food loss occurs where food is discarded at the primary stage, while food waste is food that is not consumed by retailers. About one-third of food produced for human consumption is lost or wasted globally, which amounts to about 1.3 billion tons per year (FAO, 2011a). According to the FAO (2011a), in medium- and high-income countries, food is mostly wasted at the consumption stage, while in low-income countries it is mainly wasted at the early and middle stages of the food supply chain. Challenges such as financial, managerial and technical limitations in harvesting techniques, storage and cooling facilities in difficult climatic conditions, infrastructure, packaging and marketing systems are the main causes of food loss or waste.

Due to the margins of food insecurity in these countries, food losses have an immediate and significant impact on their livelihoods. The FAO (2011a) reports that the estimation per capita food waste by consumers in Europe and North America is 95 to 115 kg/year, whereas in sub-Saharan Africa and South/Southeast Asia it is only 6 to 11 kg/year.

The CSIR (2017) reports that, in South Africa, about R71.4 billion of food was wasted or lost in 2013. About 12.6 million tonnes per year of food for human consumption is being wasted or lost in South Africa (CSIR, 2017). Food loss or waste has a negative impact on food security, inputs in food production and in the overall environment throughout the supply chain (FAO, 2011a). According to the DAFF (2013), South Africa has various custodians of the current food safety and quality control systems. The various regulations are determined by different pieces of legislation, such as the Department of Health (Food Inspection Services), the Department of Agriculture, Forestry and Fisheries (Perishable Products Export Control Board) and the Department of Trade and Industry (South African Bureau of Standards). The mandate of these custodians is to develop a food safety policy for South Africa to regulate domestic and international food safety standards and obligations, or to review the current legislation regulating food safety, integrate the enforcement of regulations by the industry, and harmonise the domestic food safety standards with international standards (DAFF, 2013). In addition, the CSIR has a strategic plan to assist both the public and private sectors to assess the total cost of food waste in South Africa (CSIR, 2017).

The promotion of a reduction in food loss alone has a considerable potential to increase the efficiency of the whole food chain and food security. In regions where there are limited natural resources and cost-effective solutions are to be found to produce enough safe and nutritious food for all, reducing food losses should not be a forgotten priority. Food safety custodians in the food supply chain in developing countries need to be strengthened and encouraged through investment in infrastructure, transportation, food industries and packaging industries.

2.9 A framework for household food security

Household food insecurity is no longer seen as a failure of food production at the national level, but nonetheless as a livelihood failure. The focus has shifted from national food production (availability), as the problem lies at the household level (Hendriks, 2005). Sen (1981) highlights that food access by households and individuals may be constrained by economic, social and cultural factors, which are not directly related to national-level food supply. Numerous studies reveal that the majority of

South African citizens are experiencing food and nutritionally insecurity at the household level (De Cock *et al.*, 2013). Koch (2011) and Van der Merwe (2011) also argue that South Africa's food security situation has become worse after 1994, as its citizens continue struggling to meet their basic household needs. According to Pinstrup-Andersen (2012), food insecurity undermines people's health, productivity and often their very survival. Efforts to overcome the development challenges posed by food insecurity necessarily begin with accurate measurement of key indicators at the household level (Leroy *et al.* 2015). Hence, the focus of this study is on measuring and interpreting food security at the household level.

The importance of undertaking measurement of food security at the household level is to determine the accessibility of available adequate food, what causes their food insecurity, and what should be done to reduce household-level food insecurity (Benson, 2004). Household food insecurity is defined as the *lack of access to amounts of food of the right quality to satisfy the dietary needs of all its members throughout the year* (Hoddinott, 1999; Rose & Charlton, 2001). According to Benson (2004), it is possible that the degree to which individuals within the same households have access to sufficient food may vary. The extent of households having access to sufficient food depends on several factors, such as their composition (size, age and gender) and sources of income (employment, remittances). If food is in the marketplace but the household does not have resources to acquire it, then the household is food insecure. Food availability is necessary, but entitlements to food in the household to assure food security are essential (Sen, 1981).

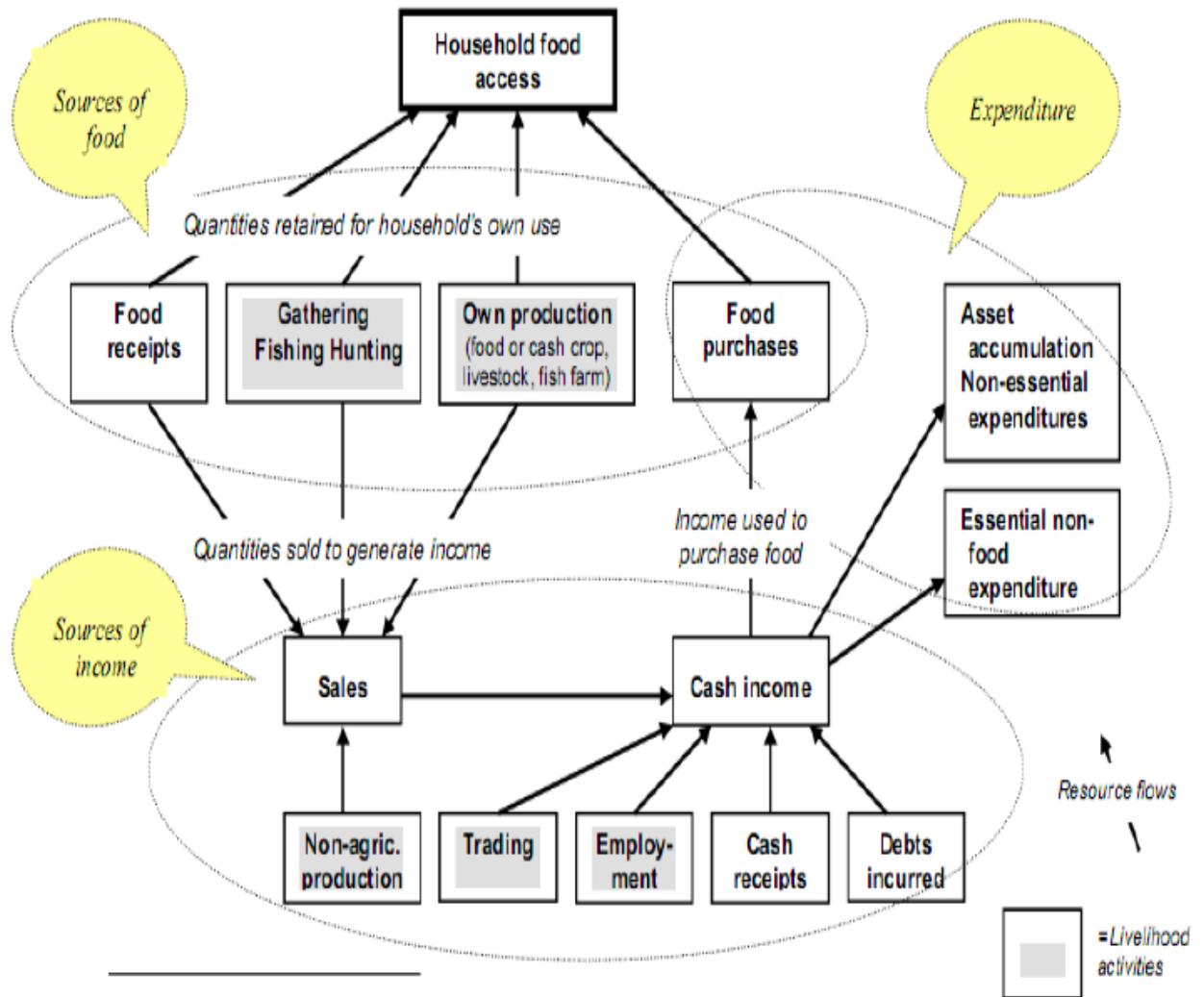


Figure 0.4: Food security framework at the household level
 Source: Sakyi (2012); World Food Program (2005)

Figure 2.4 above outlines the interrelationship between the determinants that affect the household. The figure provides an overview of factors relating to how the household accesses food, that is own production, food gathering, food receipts and purchase from the market place. It also shows the activities done to sustain household livelihood.

Figure 2.10 below shows that households that experienced problems accessing adequate food were the most common in North West, at 39.6%. Inadequate or severely inadequate access to food was also observed in the Eastern Cape (29.7%), Northern Cape (29.3%), Mpumalanga (27.4%) and Free State (21.8%).

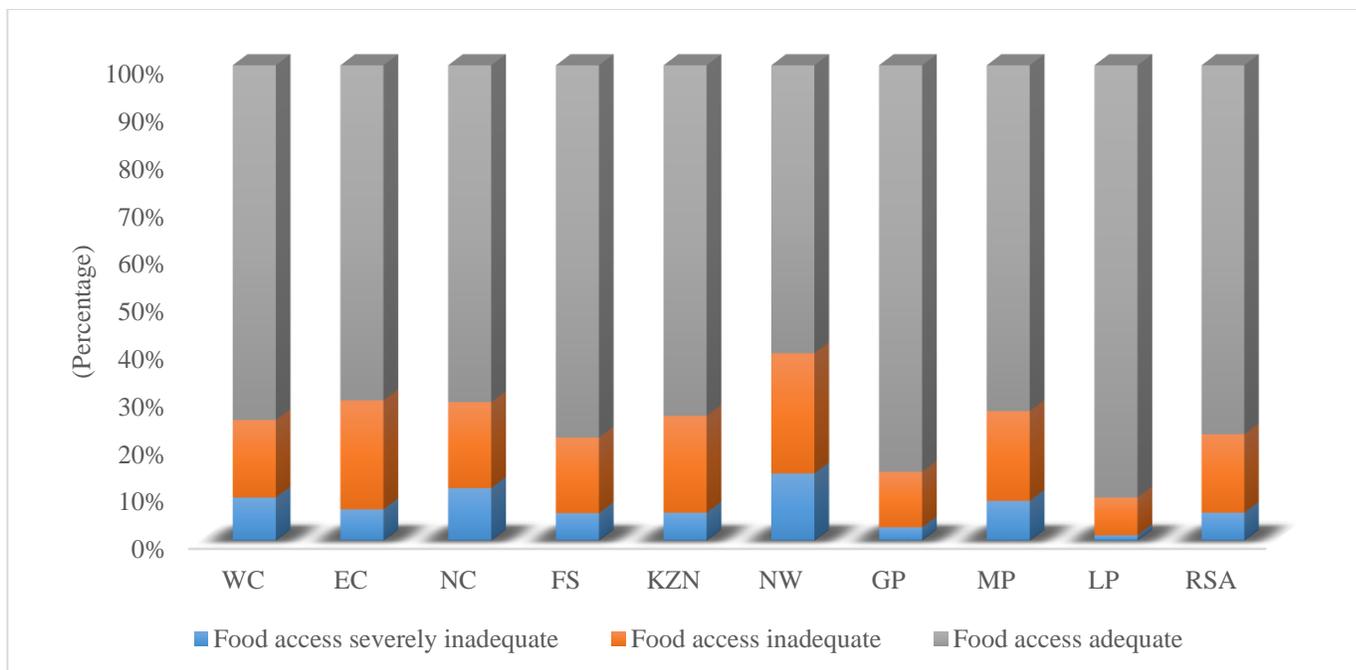


Figure 0.5: Food accessibility at the household level

Source: StatsSA (2015)

The inability for households to access adequate food can easily lead to marginal vitamin A status, iron-deficiency anaemia and stunting, a symptom of chronic energy deficiency (Rose & Charlton, 2001). For instance, the 2007/2008 global economic meltdown led to high prices in grain commodities (including wheat and maize) in world markets. These are staple foods in South Africa and the situation affected the country adversely (Heady & Fan, 2008). Dysfunction in the food system at the household level results in inadequate food and an unhealthy environment (obesity, overweight, underweight, etc.) due to fewer resources or entitlements (Pinstrup-Andersen, 2012). In South Africa in 2001, the prevalence of obesity was high in mothers (27.9%), particularly in the 26- to 35-year-old (older) group (32.3%), where the prevalence of overweight in women was 54.9% and the body mass index [BMI] was 25 kg/m² (Steyn *et al.*, 2011).

Recent studies reveal that poverty and food insecurity manifest themselves differently in rural and urban areas (Drimie & McLachlan 2013). Poverty in South Africa is increasingly becoming associated with urban regions, although is still worse in rural areas. Limpopo province was found to have 53% of households that were food insecure, and 32% lived on the equivalent of less than \$1 a day (D'Haese *et al.*, 2013). It was found that about 55.4% were severely food insecure in KwaZulu-Natal.

2.10 Concluding remarks

In conclusion, this chapter has explained the evolution of the concept of food security by referring to various definitions, as applied in different times. The definition emphasises the multidimensionality of food security, which links with indicators required to measure and determine the food security status of rural households – the focus point of this study. Furthermore, the definition of food security that responds to analysing the overall interest and concern of this research is as follow:

“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.”

This chapter explained the food security status and challenges at the global level. A comparison of food security status between South Africa and internationally was provided. The methods and techniques (OHS, NFCS FIVIMS, GHS and IFSS) used in measuring food security status at the household level in South Africa were reviewed and their limitations outlined. The situation of food security at the national and household level were discussed. This chapter analysed the conceptual framework of food security (Figure 2.1), and identified different steps in food security analysis at the household level. Briefly, the following key findings arose in this chapter:

- the relevance of spatial matters, i.e. rural versus urban, and that there is a need for the measurement of food security at rural household level;
- from the problem statement definition proposed, it was verified in this chapter that the current database and food security measurement methods in South Africa need to be examined to ensure that they are adequate to provide such “micro-level” statistics to allow the design of effective policies and meaningful interventions. This chapter illustrated the overlaps and differences when different methods were used to measure food security.
- The problem statement of this study also highlights that not enough investigation has been done at rural household security level to provide adequate knowledge to devise effective plans and support interventions to alleviate such insecurities. According to EIU (2017), South Africa is food secure at the national level; however, this is not the case at the household level. This triggered the issue of the unknown food security status at the household level and what

should be done. Hence, the focal point of the study was to measure and interpret food security status as a concept from a rural household perspective.

- The study will adapt the household food security framework considered in this chapter, to undertake the main objective of the research.
- The information provided in Chapter 1 and in this chapter also provides the theoretical and conceptual justification of the analytical framework in the next chapter.

Chapter 3

Framework and Research Methodology

3.1 Introduction

Chapter 3 describes the framework of analysis, research methodology and data collection and analysis for the study. The focus of this chapter is on establishing the methodology and data requirements to measure and interpret the food security status of particular rural settings at the household level of selected villages in the Eastern Cape.

3.2 Analytical framework

The framework will systematically employ a number of steps and was derived from similar frameworks used by De Cock *et al.* (2013), D’Haese *et al.* (2013) and Sakyi (2012). The framework, in Figure 3.1, focuses on examining the status of household food security in a particular rural setting in the Eastern Cape province of South Africa. The following sequential steps of the framework were followed to give a comprehensive measure and analysis of food security status in the rural setting.

3.2.1 Defining food security (step 1)

Step 1 of the designed framework (already dealt with Chapter 2) was to define 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, 1996:1). This definition emphasises the multidimensionality of food security’s links with indicators required to determine the food security status of rural households – the focus point of this study. This definition of food security is applicable and relevant to all levels (macro-, regional, community and household level).

3.2.2 Identify the indicators influencing food security at the household level (step 2)

Step 2 identified factors that affect the vulnerability of households to food insecurity. Several authors (Hoddinott, 1999; Rose & Charlton, 2001) emphasise that a household is food insecure when there is a lack of *access* to nutritious food to satisfy the dietary needs of all its members throughout the year. In other words, although all dimensions are important in food security, the accessibility of adequate food at all times is fundamental at the household level. According to Sakyi (2012), factors that contribute to food accessibility at the household level are clustered as follows:

- **Physical access** – an adequate amount of food must be within the physical reach of all households through own production and via physical infrastructure such as markets, road transport facilities and food distribution.
- **Economic access** – refers to the capability to acquire adequate effective demand for food at the household level through own production, income-generating activities (wage employment), ownership of assets, remittances and government transfers.
- **Cultural access** – refers to adequate food that fits the community.
- **Technological access** – refers to the convenience of technological facilities that a household has to prepare or preserve food. The household should have access to electricity or firewood to cook their nutritious food.
- **Sustainability of access to food** – refers to the ability of the household to ensure continuous access to nutritious food over time (Sakyi, 2012).

The aim of step 2 is to determine the key enhancing and constraining factors that affect the food security of rural households.

3.2.3 Analytical techniques to evaluate food security status at the rural household level (step 3)

Step 3 evaluates the status of rural household food security in Alice, which falls under the Nkonkobe local municipality in the Eastern Cape province. As highlighted in the previous chapters, food security is a multidimensional concept that cannot easily be measured due to its complexity. As mentioned in Chapter 2, several authors (Altman *et al.*, 2009; Dube, 2013; Jacobs, 2009) explained that several surveys probed different dimensions to serve their objective interests when measuring food security, such as food expenditure, hunger or household food production. Step 3 is directed to select an appropriate set of methods to be used in this study to measure and interpret the status of food security for poor rural households from the measures that are reviewed in this chapter. As a result, this study employed various techniques to measure the food security status of rural households. The analytical techniques to be employed are discussed in 3.3.

3.2.4 Determine the household food security status in Nkonkobe local municipality in the Eastern Cape (step 4)

Steps 1 and 2 provided the definition of food security that the study employs and the factors that affect the livelihood at the rural household level respectively. Step 3 identified the importance of accessibility of adequate food at all times by the households, especially in rural settings. Step 3 consolidated step 1 and step 2 to provide a comprehensive indication of the food security status of rural households in Alice in the Nkonkobe local municipality in the Eastern Cape. The study's focus was to measure and interpret the food security status of rural households. Therefore, this study looked at the determinants of rural households, such as demographics, source of income, etc. in Alice in the Nkonkobe local municipality in the Eastern Cape.

3.2.5 Analysis, findings and recommendations (step 5)

Step 5 provides the analysis, findings and recommendations of the study. The information gathered from the above steps provided an analysis of the household food security situation in the study area. Step 5 also deals with the proposed research questions and hypotheses of the study. Findings are made on coping strategies that rural households employ in order to mitigate food insecurity; what policies and strategies should be considered to improve household food security; and related matters. From these steps, conclusions are drawn, inter alia related to further research required on this topic. The food security framework in Figure 3.1 below was used to analyse food security status at the household level in the selected villages in the Eastern Cape.

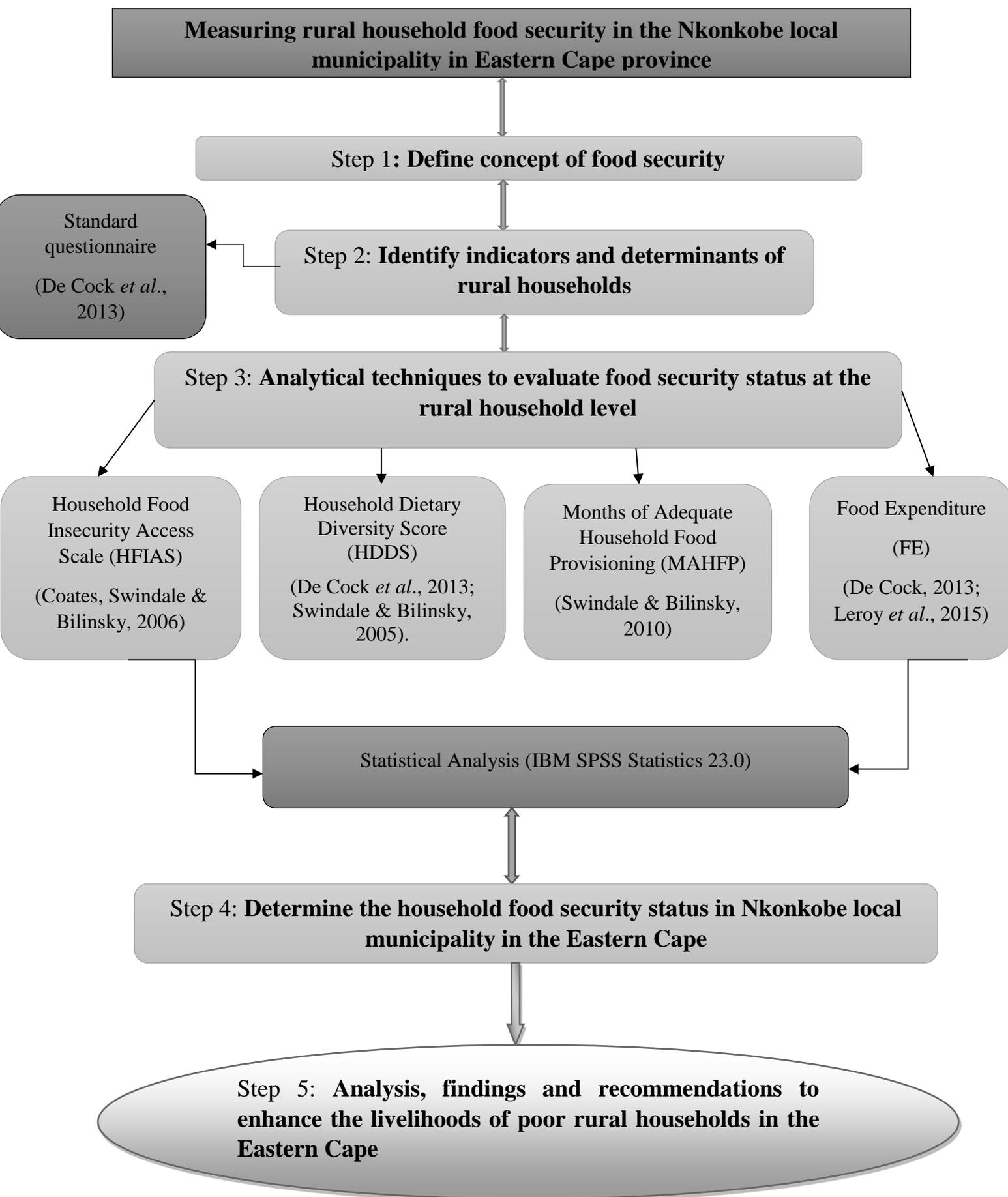


Figure 0.1: Framework to measure poor rural household food security in the Eastern Cape

Source: De Cock *et al.*, (2013), D’Haese *et al.* (2013) and own compilation

3.3 Analytical techniques used to analyse food security

Based on a consideration of the limitations of the various methods discussed in Chapter 2, the study used various and appropriate techniques as used by Coates, Swindale and Bilinsky (2006), De Cock *et al.* (2013), D’Haese (2013), Bilinsky, and Swindale (2006). The appropriate techniques are the Household Food Insecurity Access Scale (HFIAS), the Household Dietary Diversity Score (HDDS), and the Months of Adequate Household Food Provisioning (MAHFP). These techniques were used as guidelines in constructing a questionnaire to measure food security at the rural household level. Furthermore, the Limpopo study by D’Haese *et al.* (2013) and that in KwaZulu-Natal by De Cock *et al.* (2013) motivated this study to measure and interpret the extent of households experiencing food insecurity in villages. The proposed definition of food security referred to in this study complemented the aforementioned indicators in achieving the objectives of the study.

3.3.1 Household Food Insecurity Access Scale (HFIAS)

The Food and Nutrition Technical Assistance (FANTA) project and its partners supported a series of research initiatives to explore and test different options on a suitable and possible analytical system to measure household food security using different population theories. FANTA identified a set of questions that are needed when distinguishing food-secure from food-insecure households (Coates *et al.*, 2006). According to Coates *et al.* (2006), the information gathered by the HFIAS is used to assess whether households had experienced problems accessing food in the preceding 30 days. The tool is composed of nine questions that ask about modifications that households made in their diet or food consumption patterns due to limited resources to acquire food. It measures the continuum of severity, i.e. from food secure to severely food insecure households in the past 30 days.

The household is expected to answer a question intending to discover how often or how many times the event happened in the preceding four weeks (yes or no). If the respondent answers “yes” to an occurrence question, a frequency of occurrence question is asked to determine whether the condition happened rarely (once or twice), sometimes (three to ten times) or often (more than ten times) in the

previous four weeks. A brief summary of these questions is illustrated in Table 8. The codes and their meanings are explained below (Coates, Swindale & Bilinsky, 2007; De Cock *et al.*, 2013):

Q1. In the past four weeks, did you worry that your household would not have enough food?

0 means No (if no, skip to Q2), 1 means Yes

Q1. a. How often did this happen?

1 means rarely (once or twice in the past four weeks)

2 means sometimes (three to ten times in the past four weeks)

3 means often (more than ten times in the past four weeks)

Table 0.1: Household Food Insecurity Access Scale questions

No.	Occurrence questions
1	In the past four weeks, did you worry that your household would not have enough food?
2	In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?
3	In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?
4	In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?
5	In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?
6	In the past four weeks, did you or any household member have to eat fewer meals in a day because there was not enough food?
7	In the past four weeks, was there ever no food to eat of any kind in your household because of lack resources to get food?
8	In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?
9	In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?

Source: Coates *et al.* (2007)

Two indicators can be extracted from Table 3.1 above. Firstly, the HFIAS score is calculated by summing the codes for each frequency-of-occurrence question about the degree of food insecurity (access) in the household for the past 30 days. The researcher should code frequency of occurrence as 0 for all cases where the answer to the corresponding occurrence question is “no”, before summing

the frequency-of-occurrence codes. The maximum score for a household is 27. The maximum score is when the household response to all nine frequency-of-occurrence questions is “often”, coded with the response code of three, which means more than ten times in the past four weeks. The minimum score is 0; when the household responds “no” to all occurrence questions, frequency-of-occurrence questions are skipped by the interviewer and subsequently coded as 0. The higher the total of codes, the more food insecurity the household experienced, and the lower the total of codes, the less food insecure the household (Coates *et al.*, 2007). It is calculated as:

$$\text{HFIAS score} = \text{Q1} + \text{Q2} + \text{Q3} + \text{Q4} + \text{Q5} + \text{Q6} + \text{Q7} + \text{Q8} + \text{Q9}$$

According to Coates *et al.* (2007) and De Cock *et al.* (2013), the second indicator, Household Food Insecurity Access Prevalence (HFIAP), is an indicator that categorises households into four levels of household food insecurity (access): food secure, and mild, moderately and severely food insecure. The researcher categorised households if they responded affirmatively to more severe conditions more frequently. The HFIAS score is a continuous variable and, as indicated above, the HFIAP indicator should be reported in addition to, rather than instead of, the average HFIAS score for programme monitoring and evaluation.

When the household does not experience any food insecurity or rarely worries about food it is categorised as food secure. A mildly food insecure household worries about not having enough food sometimes or often, or is unable to eat preferred foods and/or eats the same diet rather than what is desired, or some foods considered undesirable but only rarely. However, HFIAS does not leave the quantity nor experience any of three most severe conditions, such as running out of food, going to bed hungry and/or going a whole day and night without eating. When the quantity is more important than the quality of food, eating the same diet or undesirable foods sometimes or often, or even reducing the size of meals or number of meals, and the aforementioned happen rarely and sometimes, the household is categorised as moderately food insecure. A severely food insecure household has cut back on meal size or the number of meals often or experiences running out of food, going to bed hungry and/or going a whole day and night without eating. This means any households that have experienced these three conditions even once in the last 30 days is categorised as severely food insecure. The below table shows the categories of food insecurity (Coates *et al.*, 2007; De Cock *et al.*, 2013):

Table 0.2: Calculation of the four categories of food insecurity

Question	Rarely 1	Sometimes 2	Often 3
1a			
2a			
3a			
4a			
5a			
6a			
7a			
8a			
9a			

Source: Coates *et al.* (2007); De Cock *et al.* (2013)

- food secure
- mildly food insecure
- moderately food insecure
- severely food insecure

Table 0.3: Calculation of the four HFIAP categories

Food secure	Mildly food insecure	Moderately food insecure	Severely food insecure
HFIAP category = 1	HFIAP category = 2	HFIAP category = 3	HFIAP category = 4
If [(Q1a = 0 or Q1a = 1) and Q2 = 0 and Q3 = 0 and Q4 = 0 and Q5 = 0 and Q6 = 0 and Q7 = 0 and Q8 = 0 and Q9 = 0]	If [{Q1a = 2 or Q1a = 3 or Q2a = 1 or Q2a = 2 or Q2a = 3 or Q3a = 1 or Q4a = 1) and Q5 = 0 and Q6 = 0 and Q7 = 0 and Q8 = 0 and Q9 = 0]	If [(Q3a = 2 or Q3a = 3 or Q4a = 2 or Q4a = 3 or Q5a = 1 or Q5a = 2 or Q6a = 1 or Q6a = 2 or Q7 = 0 and Q8 = 0 and Q9 = 0]	If [(Q5a = 3 or Q6a = 3 or Q7a = 1 or Q7a = 2 or Q8a = 2 or Q8a = 3 or Q9a = 1 or Q9a = 2 or Q9a = 3)]

Source: Coates *et al.* (2007); De Cock *et al.* (2013)

3.3.2 Household Dietary Diversity Score (HDDS)

According to Bilinsky and Swindale (2006), the Household Dietary Diversity Score (HDDS) is an indicator that reflects the number of different food groups consumed over a given reference period. The reasons for the importance of HDDS are as follow:

- A more diversified diet is an important outcome in and of itself. It is associated with a number of improved outcomes in areas such as child anthropometric status.

- A more diversified diet is highly correlated with factors such as household income. (even in very poor households, increased household expenditure resulting from additional income is associated with increased quantity and quality of the diet).
- Questions on dietary diversity are asked at the household or individual level, making it possible to examine food security at the household and intra-household levels. Questions based on HDDS are relatively straightforward. Field experience indicates that training field staff to obtain information on dietary diversity is not complicated and that respondents find such questions relatively straightforward to answer, not especially intrusive or especially burdensome. Asking these questions typically takes less than a few minutes per respondent.

As mentioned earlier, obtaining data on dietary diversity makes it possible to examine the food security status at the household level. FANTA set out a number of different groups of food that households consume. HDDS is used to investigate the socio-economic levels in a household and reflects a better quality of nutrients by listing the set of 12 groups of foods. HDDS does not consider foods consumed outside the household (De Cock *et al.*, 2013; Bilinsky & Swindale, 2010). Table 3.4 below illustrates the 12 groups of food that are extracted from the work on the dietary diversity of South Africans aged sixteen years and older in all population groups.

Table 0.4: Different food groups for HDDS

A. Cereals/Roots/Tubers	G. Meat/ Poultry/Fish
B. Vit. A-rich Fruits and Vegetables	H. Dairy
C. Other fruits not Vit. A rich	I. Eggs
D. Other vegetables not Vit. A rich	
E. Legumes and Nuts	
F. Oil and Fats	

Source: De Cock *et al.* (2013)

HDDS is calculated by summing all food groups consumed by household members in the past seven days. HDDS values range from “0” to “9”.

$$HDDS = F1 + F2 + F3 + F4 + F5 + F6 + F7 + F8 + F9$$

Source: De Cock *et al.* (2013)

3.3.3 Months of Adequate Household Food Provisioning (MAHFP)

Months of Adequate Household Food Provisioning (MAHFP) was designed to measure the number of months a household was able to provide enough food for itself in the previous year (Bilinsky & Swindale, 2005). Data is collected by asking the respondent to think back over the previous 12 months. Questions are then asked to identify in which months (during the past 12 months) they did not have access to sufficient food to meet their household needs. The focus of these questions is the months in which there was limited access to food, regardless of the source of the food – whether it is purchased, bartered or produced (Bilinsky & Swindale, 2005) The MAHFP questions should be asked of the person responsible for food preparation for the whole household, and not just any individual:

- 1) In the past twelve months, were there months in which you did not have enough food to meet your family's needs?
- 2) If yes, which were the months (in the past twelve months) in which you did not have enough food to meet your family's needs?

The MAHFP is then calculated as followed:

- A. January
- B. February
- C. March
- D. April
- E. May
- F. June
- G. July
- H. August
- I. September
- J. October
- K. November
- L. December

$$\text{MAHFP} = 12 - (A + B + C + D + E + F + G + H + I + J + K + L)$$

with A to L being either 0 or 1, reflecting yes or no to question number two.

3.3.4 Food Expenditure (FE)

Food expenditure (FE) is how much a household spent from its budget on food in one month (De Cock *et al.*, 2013; Leroy *et al.*, 2015). FE is calculated by summing all the household food expenses in one month. The share of the budget spent on food is computed by dividing food expenditure by household expenditure. Household expenditure is calculated by summing food expenditure, farm expenditure and other expenditures (De Cock *et al.*, 2013).

3.5 Data collection and sampling procedures

In order to achieve the measurement of the food security status of the selected villages, data was extracted from a comprehensive questionnaire, administered on a person-to-person basis by the researcher (see appendices). Household heads were adopted as the unit of analysis, on the assumption that they are the ones with information concerning the household situation. The local language in the selected villages was Xhosa. In this study, 64 households participated in the survey. This sample size was considered adequate and relevant to permit satisfactory statistical power and analysis. The study adopted a non-probability convenience sampling technique. This is used when the study used certain number from the population because the population was not defined (Battaglia, 2011). Similarly, in this study, a convenience-sampling technique was used to select 64 household as participants to give their view with regard to their food security status.

The questionnaire was structured within the framework of Coates *et al.* (2007), De Cock *et al.* (2013), D'Haese *et al.* (2013) and Bilinsky & Swindale (2006), in terms of which food security indicators were formulated in a unique set of questions extracted from Coates *et al.* (2007), D'Haese *et al.* (2013) and Bilinsky & Swindale (2006). The questionnaire consisted of closed-ended and open-ended questions. The respondents then indicated and expressed their perceptions by rating their answers using a point-scale, yes or no, and indicating a frequency for question asked rarely, sometimes and often (De Cock *et al.*, 2013).

Interviews were done in the local language, which is IsiXhosa, although answers were recorded in English or in codes. Data from the interviews provide information regarding household demography, food availability, characteristics of the household, food consumption, dietary diversity, agricultural production, income and expenditure of the household, stresses and shocks, as well as coping and intervention strategies affecting the household. A detailed overview of the quantitative and qualitative data that was collected for this study at the household level can be found in the appendices.

Consequently, this type of data was collected using structured questions to guide the process of achieving the intended objectives of the study. All the analytical techniques (HFIAS, HDDS, MAHFP and FE) used in the questionnaire could extract all the data required to achieve the objective of the study.

3.6 Data-capturing procedures

As mentioned above, a sample of 64 households was selected from four villages. Availability sampling was used for the study. The study directly interviewed household heads on a one-on-one basis through the comprehensive questionnaire (see annexure). Only 60 questionnaires (93.75%) (each village accounted for 15 questionnaires) were valid and used in the analysis for this study. The researcher observed that four of the respondents were blatantly giving biased information, thinking that the study would provide job opportunities for the participants. The invalid response rate accounted for only 6.25 % of the total sample size. The 93.75% response rate was considered sufficient to be used in analysing the food security status of the rural households.

3.7 Methodology of data analysis

The first stage of data analysis was capturing the raw data into a computer-readable format of a data-capturing spreadsheet. Data capturing and data cleaning were done using Microsoft Office Excel 2007, after which all statistical analyses were done using the SPSS package. Descriptive analysis was used in this study with a view to understanding the distribution of the sample in terms of the variables that were analysed. In order to achieve the study objectives, the data was analysed using the relevant analysis tool for the objectives. The statistical methods adopted in the study were also used in the studies done in Limpopo by De Cock *et al.* (2013) and in KZN by D'Haese *et al.* (2013).

3.8 Challenges in data collection

The main challenge was in the data-collection process. The encountered limitations included:

- Lack of interest by respondents

Some of households selected were not interested in the study because they felt that they would not benefit from the study. However, to overcome this, the interviewer explained thoroughly the questioner to the interviewees before conducting the survey. The purpose of the study was presented

to all the respondents, namely that it was for academic purposes and policy implementation, which would benefit future citizens with regard to issues of food security.

- Unknown population

The population of this study was unknown. As a result, it was difficult to select the number of respondents. To solve this, the study was limited to four villages and a non-random convenience technique was used to select the participants. This technique made it easier to select the accessible households to interview with regard to food security status.

3.9 Concluding remarks

This chapter outlined the methodological approach and analytical framework used in the study. The main objective was to measure and interpret the food security status in rural households in Nkonkobe local municipality in the Eastern Cape. The current database and measurement methods in South Africa need to be examined to ensure that they are adequate to provide such “micro-level” statistics to allow the design of effective policies and meaningful interventions. Analytical techniques of food security in poor rural households have been discussed and justified, viz. HFIAS, DHHS, MAHFP and FE, and the data to be used in the analysis has been identified. These measures and proposed analytical framework were applied to present the analysis, research findings and results of this study. The next chapter provides the analysis of the situation in the selected villages in the Eastern Cape.

Chapter 4

Description of area and research site

4.1 Introduction

This section provides a description and situation analysis of the Eastern Cape Province, as well as of the research sites for the study, viz. Nkonkobe local municipality. It describes socio-economic indicators, referring to food security status, inequality and unemployment, and agriculture potential in the target area, and the government expenditure on food and welfare.

4.1.1 Population

Based on the mid-year population estimates that were generated by applying modelled projections that incorporated the results of Census 2011 by StatsSA, the Eastern Cape is home to 6.7 million residents. The Eastern Cape is the third largest province after Gauteng and KwaZulu-Natal, which have 13 million and 10.8 million residents respectively (StatsSA, 2017). The number of households in the Eastern Cape were estimated at 1.7 million. The majority population of the Eastern Cape is black Africans, with isiXhosa as the most spoken language. It had a greater proportion of women (52.9%) than men (47.1%) (StatsSA, 2014).

4.1.2 Geographic description

The Eastern Cape covers a land area of 168 966 km², representing 13.8% of the total area of South Africa, and is roughly the size of Uruguay (DEDEAT, 2013). It is situated on the South-Eastern South African coast, between the Western Cape province and KwaZulu-Natal (ECSECC, 2012). The Eastern Cape was divided into two former homelands, Ciskei and Transkei, during the apartheid and colonial eras. These former homelands face extreme poverty, unemployment and underdevelopment. The Eastern Cape is divided into two metropolitan municipalities, the Nelson Mandela Metropolitan Municipality and Buffalo City Metropolitan Municipality, and six district municipalities (namely Amatole, Alfred Nzo, Cacadu, Chris Hani, Joe Gqabi and OR Tambo district municipalities), which are further subdivided into 37 local municipalities (Department of National Treasury, 2010). The two metropolitan municipalities in the province are known for economic activity production zones with better opportunities, as they have high employment levels (DEDEAT, 2013). Figure 4.1 illustrates the composition of the districts and metros in the Eastern Cape province.



Figure 4.1: Map of the Eastern Cape

Source: ECSECC (2012)

4.1.3 Education

In terms of education, StatsSA (2017) reported that, in 2016, and based on access to early child development (ECD), young children in the Eastern Cape aged between 0 and 4 years were attending Grade R (33.3%), day mothers (3.7%), were at home with a parent or guardian (55.1%), or were in someone else's dwelling 7.0% and 0.1%. Individuals aged five years and older attended educational institutions such as pre-school (2.4%), school (90.9%), Adult Basic Education and Training (AET) (0.8%), literacy classes (0.1%), higher education institutions (2.2%), Technical and Vocational Education and Training (TVET) (2.2%), other colleges (1.3%), home schooling (0.1%) and other

(0.1%). Challenges faced by all learners who attended public schools in the Eastern Cape were lack of learners, bad facilities, classes too large and lack of books.

4.1.4 Healthcare provision

StatsSA (2017) recorded that the users of public healthcare facilities who were satisfied were 885 000, while 27 000 were very dissatisfied in the Eastern Cape province in 2016. In addition, about 238 000 individuals used private healthcare and were satisfied, whereas 2 000 indicated dissatisfaction. The Eastern Cape was indicated to have 9.6% of individuals who are covered by medical aid schemes.

4.1.5 Social security services

More than one-third of individuals in the Eastern Cape (40.8%) were grant beneficiaries in 2016. A total of 58.5% of households received social grants. A further total of 33.0% and 30.6% individuals and households from Buffalo City and Nelson Mandela Bay respectively benefitted from social grants (StatsSA, 2017).

4.1.6 Employment

According to StatsSA (2017), 1 421 000 people in the Eastern Cape were employed in the third quarter of 2017 (July-September). The number of employed people increased by 5 000 between the second quarter (April-June) and the third quarter of 2017. Compared to the third quarter in 2016, the Eastern Cape lost 22 000 employment positions. The official unemployment rate in the Eastern Cape is 35.5% (StatsSA, 2017). The flux of unemployment in the province makes the majority of the population in the Eastern Cape vulnerable. StatsSA (2011) reported that about 58.4% of the population between 15 and 64 years old was not economically active, while 26% were employed and 15.6% were unemployed during the census in 2011. The employed population comprised white people, at 62.5% of the population group, 53.9% of Indian people, 38.4% of coloured people and 22.1% of Black African people (StatsSA, 2011).

4.1.7 Food security status

StatsSA (2017) reported that household access to food has improved since 2002; however, it has remained static since 2011. In 2017, the Household Food Insecurity Access Scale, which is aimed at determining households' access to food, showed that 20.55% and 5.9% of Eastern Cape province

households had inadequate or severely inadequate access to food respectively. The ECSECC (2017) stated that the Eastern Cape has remained among the poorest provinces since 2001. However, there has been a notable 17.5% drop in multidimensional poverty in the Eastern Cape since 2001.

4.1.8 Agriculture

Agriculture in the Eastern Cape contributes to the development of the economy and significantly to household food security. In 2016, 29.4% of households were involved in agricultural activities, followed by 38.3% in Limpopo Province (StatsSA, 2017). The main reasons for agricultural involvement in Eastern Cape province are for an extra source of food (81.4%), main source of food for the household (7.2%), leisure activity (5.6%), main source of income (3.8%) and extra source of income (1.9%). The nature of agricultural production activities practised in the Eastern Cape province are poultry production, livestock production, grains and food crops, fruits and vegetable crops, fodder grazing/pasture grass of animals and industrial crops, by 61.4% (317), 58.6% (303), 52.8% (273), 43.4% (224), 1.0% (5) and 0.2% (1) respectively (StatsSA, 2017).

4.2 Description of Nkonkobe Local Municipality

4.2.1 Geographical description

The selected villages for the study, Gqumashe, Dyamala, Roxeni and Sheshegu, are situated in the Nkonkobe local municipality, which is one of seven local municipalities that fall within the jurisdiction of the Amathole District Municipality. Nkonkobe is the second largest local municipality, covering 362 618 km² (Nkonkobe Municipality, 2012). Nkonkobe local municipality is situated at the foot of the imposing Winterberg mountain range (Intaba ze Nkonkobe). Nkonkobe is situated about 140 km north-west of East London on the R63, and is approximately 200 km North-east of Port Elizabeth. Figure 4.2 below illustrates the Nkonkobe local municipality.

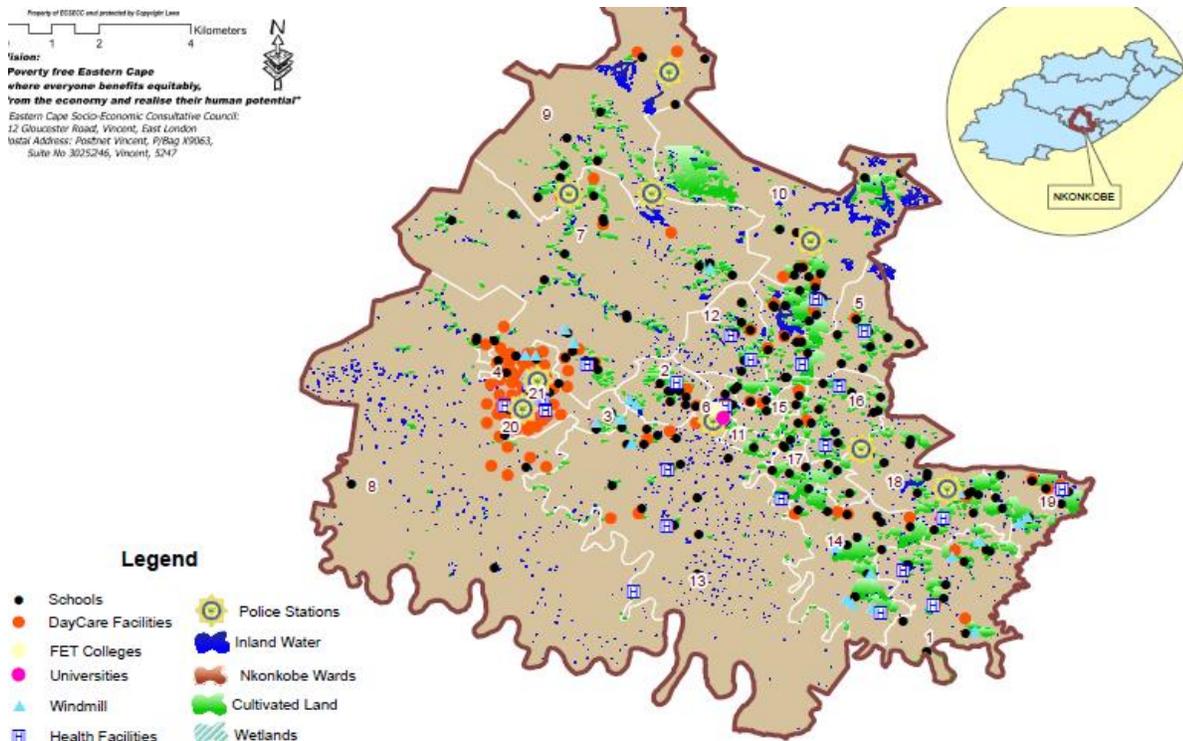


Figure 4.2: Map of Nkonkobe local municipality
Source: ECSECC (2017)

4.2.2 Population

According to the Nkonkobe local municipality (2017), Nkonkobe local municipality is populated by 127 115 people in 35 355 households. The Nkonkobe local municipality had 51.91% followed by 48.09% during the census of 2011. Population groups that are dominant are black African, coloured, white, other and Indian, with 120 178 (94.54%), 5 088 (4.00%), 1 296 (1.02%), 332 (0.26%) and 220 (0.17%) respectively. IsiXhosa is the dominant language (90.06%), followed by Afrikaans (4.97%) and English (2.66%).

The majority of the population in Nkonkobe local municipality lives in villages and on farms, and only about 28% resides in urban areas. The main towns of the local municipality are Alice and Fort Beaufort, which both serve as commercial, administrative and economic centres. Nkonkobe local municipality is also the home of Fort Hare University, Lovedale FET College and Fort Cox Agricultural College (Nkonkobe Municipality, 2012).

4.2.3 Education

The educational level of residents in the Nkonkobe local municipality aged above 20 years was 17.0% with matric, 7.2% with no schooling, followed by 7.1% with higher education (Nkonkobe Municipality, 2017).

4.3 Socioeconomic factors

Like many South African rural communities, the majority of the Eastern Cape's rural communities face problems of food insecurity due to the high unemployment rate and poverty. SALGA (2016) reports that Nkonkobe local municipality has an unemployment rate and poverty level at an average of 58% and 85% respectively. Nkonkobe local municipality has different tertiary economic activities, such as commerce and trade, transport and communication, financial and business services, and social services. Social services include government services, which provides the largest source of income in the Nkonkobe local municipality. These dominant sectors do not guarantee job security, and the associated wage rate is generally below the poverty line.

The primary sector, agriculture and mining contribute 18%, while the secondary sector, manufacturing, electricity, water, gas and construction and contribute 13% to the local economy (SALGA, 2016). This local municipality depends mainly on assistance from national government and community service. This is followed by forestry and citrus production, although citrus production has experienced a decline in recent years. The secondary sector makes relatively small contributions to job creation in this local municipality.

4.4 The overview of the selected villages

Rural households in Gqumashe, Dyamala, Roxeni and Sheshegu in the Nkonkobe local municipality in the Eastern Cape were sampled to achieve the objective of the study. For the purpose of representativeness, villages were chosen according to accessibility, their proximity to the town, reachability, and their size (should be large enough). In order for the sample in selected villages to be representative, data was collected randomly, using a sub-sample from the centre of the village and from all sides of the village. Table 3.2 below illustrates the distances of the selected villages from town.

Table 4.1: Proximity of selected villages

Number of villages	Village	Distance
1	Gqumashe	7.8 km
2	Dyamala	9.2 km
3	Roxeni	11.3 km
4	Sheshegu	28 km

4.5 Summary

In summary, the interest of this study was to measure and interpret the food security status at household level of particular rural settings in the Eastern Cape. The province of the Eastern Cape is divided into seven districts; one of them is Amathole District, where Nkonkobe local municipality is situated. The Household Food Insecurity Access Scale, which is aimed at determining households' access to food, showed that households in the Eastern Cape province with inadequate or severely inadequate access to food were 20.55% and 5.9% respectively. ECSECC (2017) states that the Eastern Cape has remained among the poorest provinces since 2001.

The selected study area (Roxeni, Dyamala, Gqumashe and Sheshegu) is situated in Nkonkobe local municipality. Nkonkobe local municipality is predominantly rural and formed part of the former homeland of the Ciskei. A narrow economic base that contributes to the high levels of unemployment and poverty characterises this local municipality. This study was interested in investigating food security in households in Roxeni, Dyamala, Gqumashe and Sheshegu. It is important to note that measuring food security status at the household level, especially in a rural setting, will assist in improving the livelihoods or quality of life of that community.

Chapter 5

Analysis, findings and results

5.1 Introduction

Chapter 5 presents the results from the collected data to measure food security at the household level in the rural setting. The study defined 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, 1996:1). This chapter uses the analytical framework (Figure 3.1) to analyse important findings and reach conclusions. In this study, the data analysis was extended from other related studies on food security at the rural household level in South Africa, such as those by D’Haese et al. (2013) and the National Food Consumption Survey by Labadarios (1999). Based on the findings in this study and the analysis therein, Step 4 will be attended to in the next chapter, in which policies, strategies and activities to enhance rural household food security.

5.2 Identifying appropriate indicators that influence food security at the rural household level (step 2)

As stated in Chapter 3, data was obtained from poor rural household heads through a comprehensive questionnaire. In this section, descriptive statistics such as mean, maximum and minimum values, percentages and standard deviation are used. Since this is an assessment and comparison of vulnerability indicators, the analysis and discussion of demographics were done first for each village, after which the same aspects were looked at again for the aggregated area that is the selected study area. Demographic aspects include household head characteristics such as age, gender, marital status, education and employment status, the level of income and sources of income. The accessibility of infrastructure development (electricity, water, town, school) was also discussed. Research objectives, questions and hypotheses were interpreted by analysing variables that described data extracted from each village, and aggregate conclusions for the study area will be discussed.

5.2.1 An analysis of household characteristics by village

Table 5.1 illustrates a comparison between all selected villages with regard to their household size, gender, age, education level, active population and employment status of the household head. These

are important aspects of demographic information in relation to the household head, as they tend to influence the head's decisions in the process of coordinating household activities.

All the respondents were black Africans, who form the population in the selected villages. The respondents indicated that they had been staying in these communities from the day they were born – this shows high stability in the community.

Table 5.1 illustrates that most of the households with three to five members were situated in Dyamala and Gqumashe – nine households (60.00%) and seven households (46.67%) respectively. Households with six to 10 members were mostly found at Sheshegu (10 households; 66.67%), while Gqumashe and Roxeni both had eight households (53.33%). A household with eleven members was reported at Roxeni (one household; 6.67%). The majority of households headed by women were in Roxeni and Sheshegu (10 households each; 66.67%). The youngest household heads interviewed (in the age group 19 to 34) were found at Dyamala (two households; 13.33%) and Gqumashe and Roxeni (one household each; 6.67%), while household heads older than 66 were found at Gqumashe (eight households; 53.33%) and Sheshegu, Dyamala and Roxeni, with six households each (40.00%). The economically active population (aged 18 to 65) was found in nine households in Sheshegu, Dyamala and Roxeni (60.00%), while Gqumashe had seven households (46.67%).

Household heads indicated no schooling at all were as follows: four in Dyamala (26.67%), two each in Gqumashe and Sheshegu (13.33%), and one in Roxeni (6.67%). Household heads with matric were as follows: six in Gqumashe (40.00%), three each in Sheshegu and Dyamala (20.00%), and two in Roxeni (13.33%). All villages had a high unemployment rate, with 13 households (86.67) in Sheshegu, 12 (80.00%) in Roxeni, 10 (66.67%) in Dyamala and nine (60.00%) in Gqumashe. Some of the reasons for unemployment highlighted by household heads were household members too young or too old – seven households (46.67%) in Sheshegu and two households (13.33%) in Dyamala. Two households in Dyamala cited cannot find suitable work (13.33%), while seven households in Gqumashe (46.67%) and four households in Roxeni (26.67) gave the same reason.

Table 5.1: Research study demographics

Variables	Study area							
	Sheshegu		Dyamala		Gqumashe		Roxeni	
Household size								
	n	Percent	n	Percent	n	Percent	n	Percent
3-5	5	33.33%	9	60.00%	7	46.67%	6	40.00%
6-10	10	66.67%	6	40.00%	8	53.33%	8	53.33%
11	0	0.00%	0	0.00%	0	0.00%	1	6.67%
Gender								
Female	10	66.67%	7	46.67%	6	40.00%	10	66.67%
Male	5	33.33%	8	53.33%	9	60.00%	5	33.33%
Age								
0-18	0	0.00%	0	0.00%	0	0.00%	0	0.00%
19-34	0	0.00%	2	13.33%	1	6.67%	1	6.67%
35-54	4	26.67%	5	33.33%	3	20.00%	6	40.00%
55-65	5	33.33%	2	13.33%	3	20.00%	2	13.33%
66<	6	40.00%	6	40.00%	8	53.33%	6	40.00%
Active population (18-65)								
Yes	9	60.00%	9	60.00%	7	46.67%	9	60.00%
No	6	40.00%	6	53.33%	8	53.33%	6	40.00%
Education								
No school	2	13.33%	4	26.67%	2	13.33%	1	6.67%
Primary school	6	40.00%	6	40.00%	2	13.33%	2	13.33%
Secondary school	3	20.00%	1	6.67%	3	20.00%	6	40.00%
Matric	3	20.00%	3	20.00%	6	40.00%	2	13.33%
Accredited certificate	1	6.67%	1	6.67%	2	13.33%	3	20.00%
Tertiary	0	0.00%	0	0.00%	0	0.00%	1	6.67%
Employment status								
Yes	2	13.33%	5	33.33%	6	40.00%	3	20.00%
No	13	86.67%	10	66.67%	9	60.00%	12	80.00%
Reason unemployment								
Housewife/ Home keeper	1	6.67%	2	13.33%	1	6.67%	4	26.67%
Illness/ Disability/ Handicapped	1	6.67%	0	0.00%	1	6.67%	3	20.00%
Too young/old	7	46.67%	2	13.33%	3	20.00%	3	20.00%
Lack of qualification	0	0.00%	0	0.00%	0	0.00%	1	6.67%

for available jobs								
Cannot find suitable work	1	6.67%	2	13.33%	7	46.67%	1	6.67%
Retrenched	2	13.33%	1	6.67%	0	0.00%	1	6.67%

Source: Own calculation (2016)

5.2.2 Demographic characteristics of aggregated villages

This section analyses and discusses the demographic characteristics of household heads in all the study villages combined.

5.2.2.1 Household size and age distribution of the household head

Table 5.2 presents the average age and household size of the study villages. The household size ranged from three to 11 individuals per household. The household size was calculated at an average of 6.1 per household. The study reported an average age of the household head as 59.8 years. The youngest household head was 34 years old and the oldest was 80.

Table 5.2: Household size and age distribution of the study area

Descriptive statistics				
	Minimum	Maximum	Mean	Std. deviation
Household size	3	11	6.1333	1.96121
Age	34	80	59.8333	12.34005

5.3.2.2 Gender distribution of the household head

Gender is crucial when it comes to household decision making, particularly for rural households. The findings of this study show that females were the majority of household heads. Figure 5.1 illustrates that women-headed households comprised 55%, while 45% of households were headed by males. These results show that females had decision-making powers in most of the households interviewed.

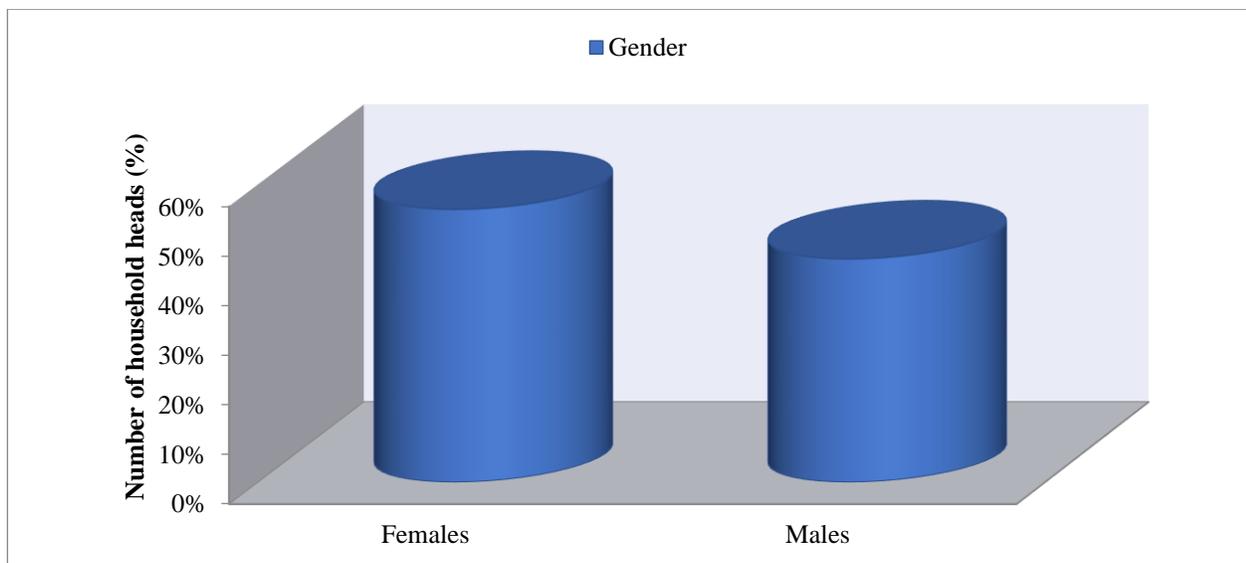


Figure 5.1: Gender distribution of the household heads (N = 60)

Source: Own calculation (2016)

5.2.2.2 Education level of the household head

Education is one of the key components of human capital and provides a quality dimension to the standard of living in the community. Figure 5.2 interprets the educational levels of the sampled households in the study area. The levels of education in the study were grouped into six categories: no school, primary school, secondary school, matric, accredited certificate and tertiary. Sixteen household heads (26.67%) reported having a primary school education, 14 (23.33%) household heads had matric, 13 (21.67%) had finished secondary school, nine (15.00%) had no schooling, seven (11.67%) had an accredited certificate and one household head (1.67%) had a tertiary education. The lack of education indicates the lack of human capital and of a quality dimension for labour that requires education.

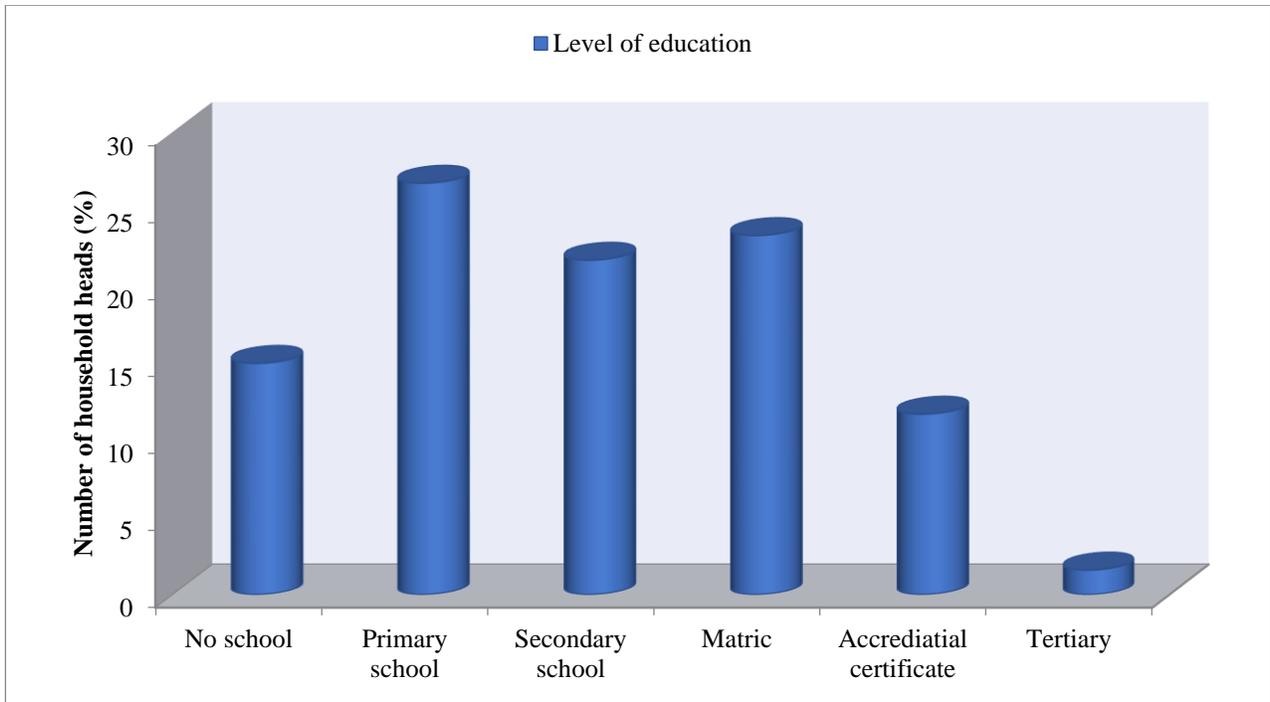


Figure 5.2: Distribution of education among household heads (N = 60)

Source: Own calculation (2016)

5.2.2.3 Employment status of the household head

Figure 5.3 illustrates the employment status of the interviewed household heads. About 44 households heads (73.3%) were reported to be unemployed in the study area. The results show that there is a high level of unemployment among the households.

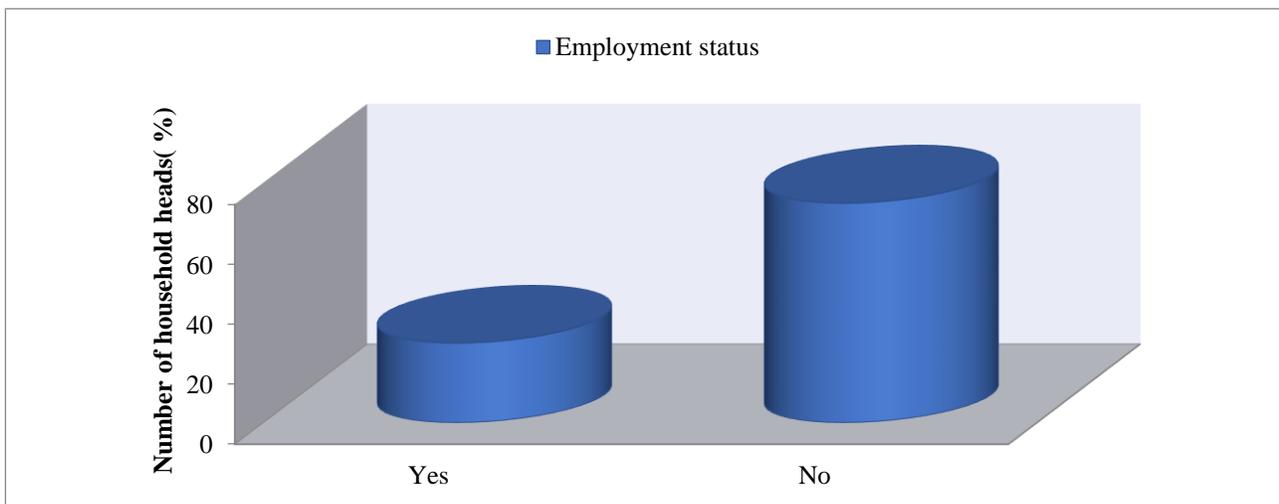


Figure 5.2: Distribution of employment in the study area (N = 60)

Source: Own calculation (2016)

Most of the household heads indicated that common reasons for unemployment in the study area were as follow: too young/old (15 households; 25%), cannot find suitable work (11 households; 18.3%), illness/disability/handicapped (seven households; 11.67%), housewife or home keeper (six households; 10.00%), retrenched (four households; 6.67%) and lack of qualification for available jobs (one household; 1.67%). This was a true reflection of why there was high unemployment in the area.

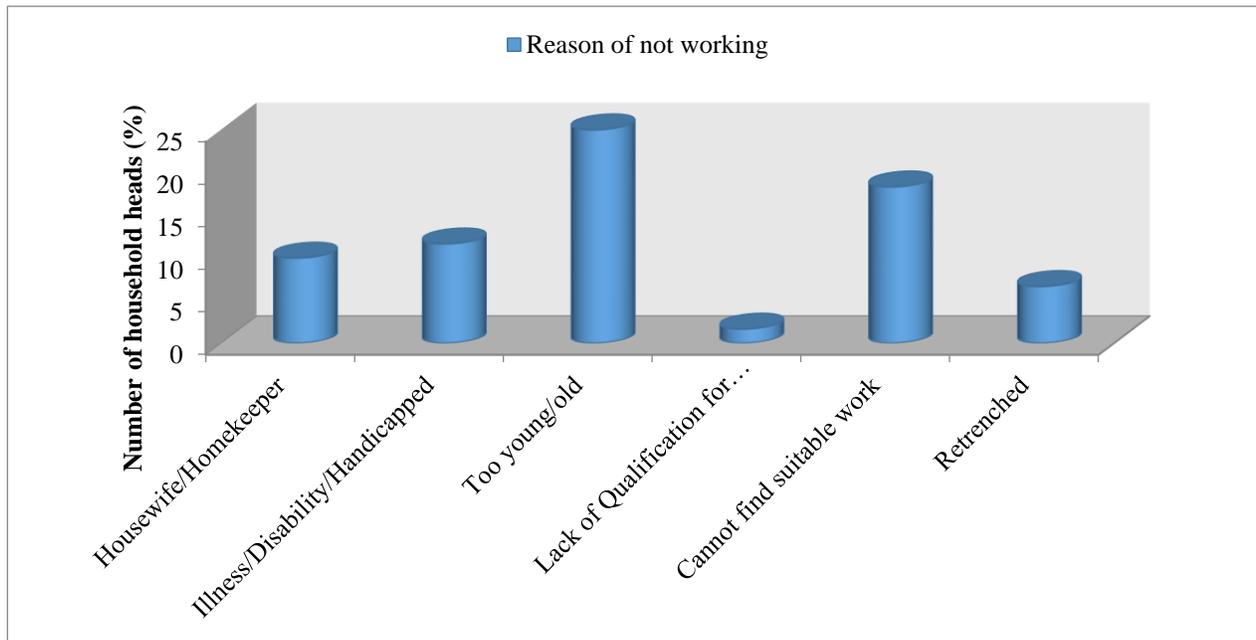


Figure 5.4: Distribution of reasons for not working (N = 43)

Source: Own calculation (2016)

5.2.3 Household income

Table 5.3 demonstrates the income distribution of households per month for all villages, using mean, standard deviation, minimum and maximum values. The average income of a household was R2 501.67 per month (SD: R2 877.38062). The lowest income was R700 and the highest was R15 000 per month.

The research found that 58.3% of household heads, which is more than half of the sample, received an income of less than R2 000 per month. The majority of these households were in Sheshegu; only 11.7% of households in this village received an income above R5 000. Households in Dyamala and Gqumashe reporting an income higher than R3 500 per month amounted to six (40.00%) and five (33.33%) respectively. Roxeni was the only village in which a household head (6.67%) earned R15 000.00.

Table 5.3: Distribution of income in the study area

Household income per month	(N)	Min (Rand)	Max (Rand)	Mean	Std. dev
	60	700	15000	2501.67	2877.38062

Source: Own compilation (2016)

5.2.3.1 Sources of income

Figure 5.5 illustrates common income sources categorised into seven groups: old age grant, child grant, pension, remittances, formal salary/wages, small business and petty cash. The results show that old age grant (25 households; 41.67%), formal salary/wages (15 households; 25%), petty cash (15 households; 25.00%), remittances (12 households; 20.00%), child support grant (five households; 8.33%), pension (three households; 5.00%) and small business (three households; 5.00%) were the most prevalent sources of household income in the study area.

All selected villages indicated that an old age grant was the main source of income for the majority of household heads. Most household heads indicated that they relied on an old age grant as their source of income – seven (46.67%) in Sheshegu and Roxeni, followed by six households (40%) in Dyamala and five (33.3%) in Gqumashe. Household heads who received formal wages amounted to five in Gqumashe and Dyamala (33.33%), three in Roxeni (20.00%) and two in Sheshegu (13.33%). Sheshegu and Roxeni both had four households heads (26.67%) who received remittances as their source of income, followed by two each (13.33%) in Dyamala and Gqumashe.

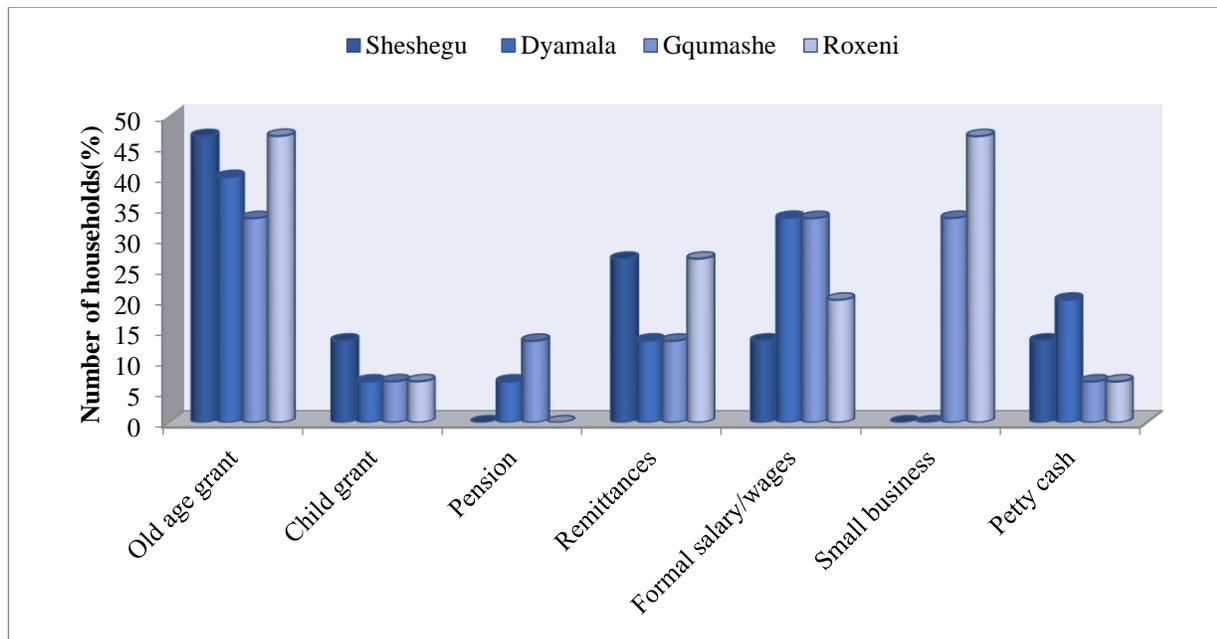


Figure 5.3: Household sources of income per village

Source: Own calculation (2016)

Figure 5.6 illustrates that the old age grant (25 households; 41.67%) was the main source of income in the study area. Both formal salary/wages and petty cash were earned by 25 households (25.00%), followed by remittances and child grant, with 12 households (20.00%) and five households (8.33%) respectively. Only three household heads (5.00%) indicated that their source of income was pension and small business.

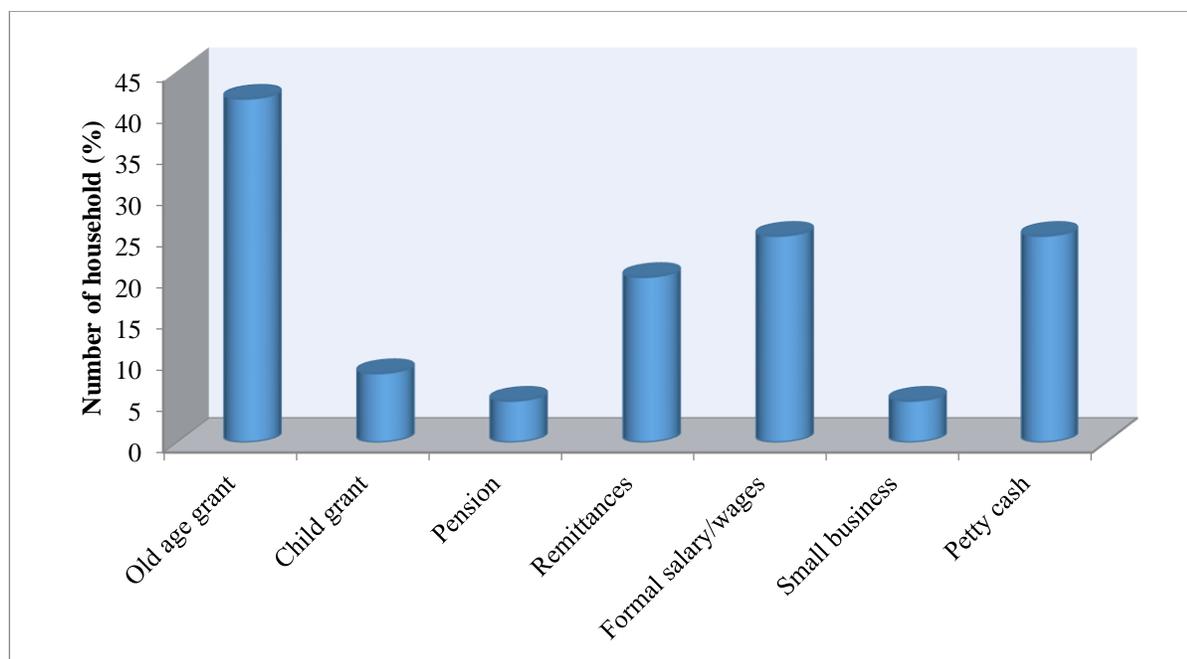


Figure 5.6: Household sources of income in the study area

Source: Own calculation (2016)

5.3 An analysis to what level of food insecurity affects the rural households of the selected villages

5.3.1 Agricultural practices

StatsSA (2017) states that agriculture plays a vital role in economic development and improvement of household food security. This subsection of Step 2 represents ownership and control of the agricultural assets and activities of the sampled household heads. This analysis reports land access, agricultural production and challenges faced by households that are involved in agricultural activities.

5.3.1.1 Land access

Households responded according to how much land had potential for general agricultural purposes. The survey shows that all of the sample's households had access to arable land. All sampled household heads were allocated land by the chief, as the head of the village, and some inherited their land. They indicated that land was allocated through customary land allocation procedures in the villages. Household heads were not allowed to acquire land without consulting headmen, even if a

significant portion of land appeared to be unutilised. This land is communal land that the households were given permission to occupy, rather than acquiring it on lease agreement or through renting.

The size of the land owned by the household heads differed. Arable land is land capable of being ploughed and used to grow crops. Some of the household heads had access to 0.1 ha, whereas others had up to a maximum of 4 ha. Table 5.4 shows that Roxeni and Sheshegu were the villages that occupied the greatest arable land, at an average of 1.9 ha and 1.5 ha respectively. Dyamala and Gqumashe had the least arable – an average of 0.6 ha and 0.4 ha respectively. All sampled households also had access to grazing land.

Table 5.4: Size of arable land in selected villages (N = 60)

	Sheshegu (ha)	Dyamala (ha)	Gqumashe (ha)	Roxeni (ha)
Average	1.5	0.6	0.4	1.9
Min	0.3	0.1	0.1	0.5
Max	3.2	1.5	1	4

Source: Own calculation (2016)

5.3.1.2 Crop production

The majority of household heads complained about the impact of the drought, which resulted in a scarcity of water for crop and livestock production in the area. Although there was a drought in the region, some household heads indicated that they were still producing crops, such as maize, potatoes, peas, beans, pumpkin, cabbages and onions. They reported that they had decreased their production significantly compared with other production years. Table 5.5 illustrates that household heads in Roxeni indicated that they were producing maize (2.2 ha), potatoes (2.1 ha) and beans (0.7 ha), followed by peas (0.6 ha). Sheshegu household heads planted maize (2 ha), potatoes (1.1 ha) and other crops. Dyamala and Gqumashe also indicated their crops planted. They were not sure what the expected yield would be due to the drought. Under normal circumstances, the household growers indicated that they produced an average yield of maize, potatoes, beans, peas, onion, cabbage and pumpkin of 4 ton/ha, 10 ton/ha, 2 ton/ha, 3 ton/ha, 12 ton/ha, 17 to 19 ton/ha and 9 ton/ha respectively.

Table 5.5: Size of arable land in selected villages by crop (N = 60)

Common crop	Sheshegu	Dyamala	Gqumashe	Roxeni
Maize	2 ha	0.5 ha	0.6 ha	2.2 ha
Peas	0.1 ha	0 ha	0.1 ha	0.6 ha
Beans	0.1 ha	0.1 ha	0.1 ha	0.7 ha
Pumpkin	0.1 ha	0.1 ha	0.1 ha	0,4 ha
Potatoes	1.1 ha	0.5 ha	0.3 ha	2.1 ha
Onions	0.2 ha	0.2 ha	0.3 ha	0.5 ha
Cabbage	0 ha	0 ha	0 ha	0.3 ha

Source: Own calculation (2016)

5.3.1.3 Livestock production

Livestock ownership was assessed and the results are presented in Figure 5.7. The results show that most households in all villages owned cattle, goats, sheep and pigs. Roxeni and Sheshegu were leading villages in owning livestock. Roxeni and Sheshegu household heads reported owning 13 (86.7%) and 12 (80%) cattle respectively, while those in Dyamala and Gqumashe owned nine (60%) and six (40%) respectively. The ownership of cattle in these communities plays a significant role as a source of food through milk and meat, its dung for plastering walls and floors, bride wealth, and moreover to have dignity in the village. They are also useful for cultural purposes. No single household indicated farming fish at the time of the survey.

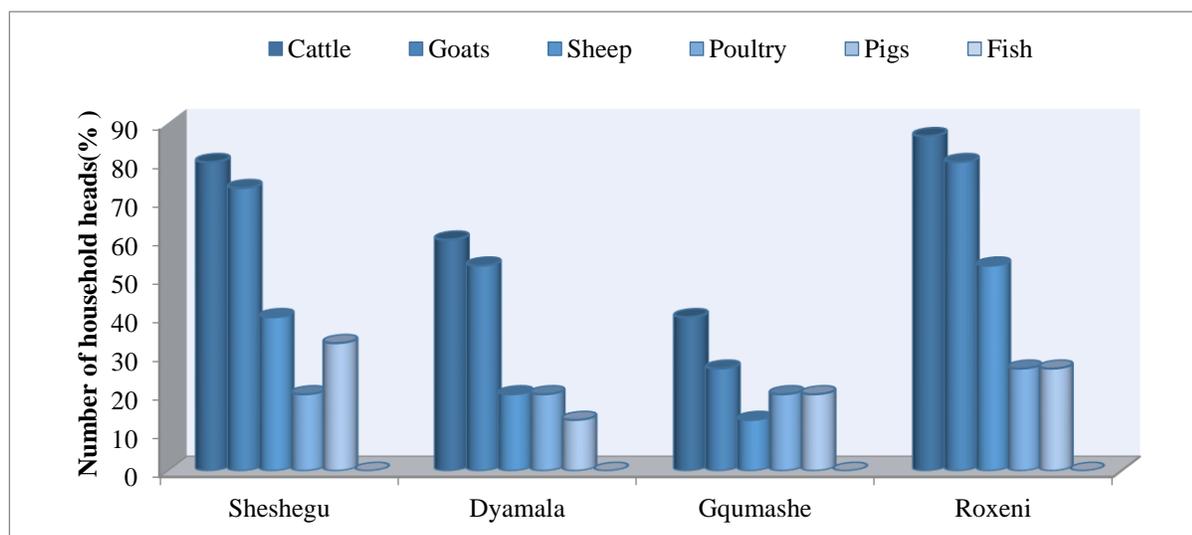


Figure 5.7: Livestock ownership per village

Source: Own calculation (2016)

Figure 5.8 shows that cattle and goats were the leading livestock in terms of ownership, at 40 (66.67%) and 35 (58.33%) respectively. This was followed by sheep, pigs and poultry, at 19 (31.67%), 14 (23.33%) and 13 (21.67%) respectively. There was no indication of the ownership of fish in the study area.

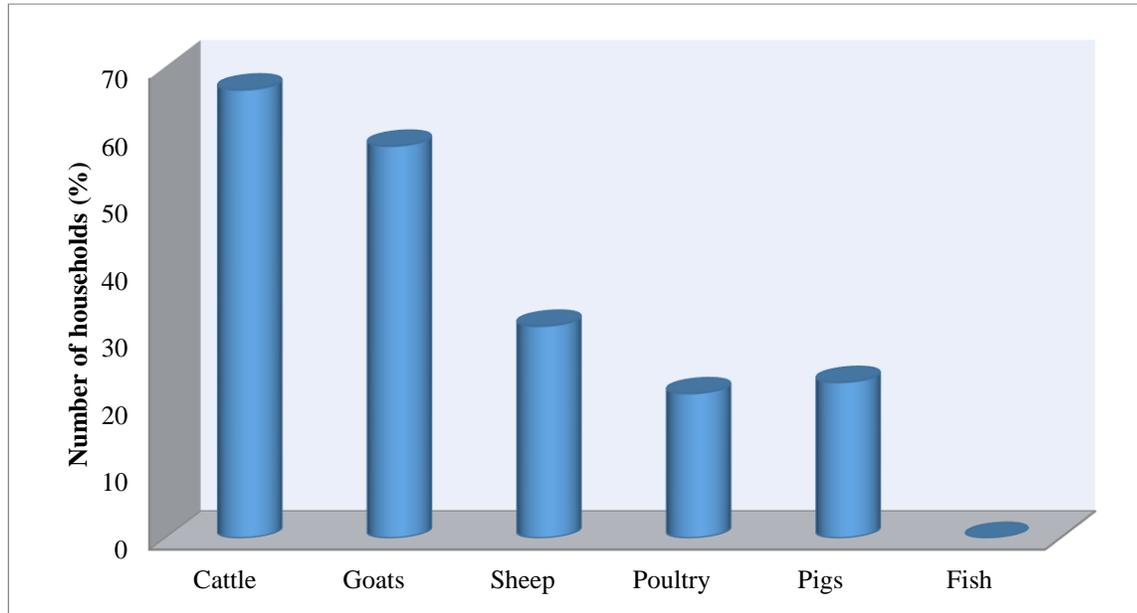


Figure 5.8: Livestock ownership in the study area
Source: Own calculation (2016)

5.3.1.4 Constraints faced by households in terms of livestock and crop production

Household heads indicated above that they had arable land for crop production. Although household heads stated that they used arable land, not all land was utilised for food production. It was found that household heads only used an insignificant portion, as indicated above, because there was a scarcity of water due to the drought (Table 5.4). In terms of farming, livestock were allocated a shelter (kraal) in the yard of the household head. Sheshegu, Dyamala and Gqumashe household heads used camps in communal land for feeding cattle, goats and sheep, at an average of 2 ha to 3 ha, while Gqumashe household heads used 1.5 ha to 2 ha. Household heads also had pigsties and poultry shelters that occupied a small portion of land in the yard.

Household heads highlighted that they were decreasing or stopping crop and livestock production. Figure 5.9 represents reasons why households no longer were using land for crop production. Major challenges at Sheshegu were the scarcity of rainwater (93.3%), money (80%) and seed (53.3%). Roxeni households showed fewer challenges compared with other villages; however, water (66.7%),

pests (60%) and seed (53.3%) were hindering land productivity. They also highlighted the importance of water/irrigation to contribute to the value of crop production and yields in their gardens. Some household heads indicated that they were not interested in agricultural activities – 13.3% in Sheshegu, Dyamala and Gqumashe, and 5.7% in Roxeni.

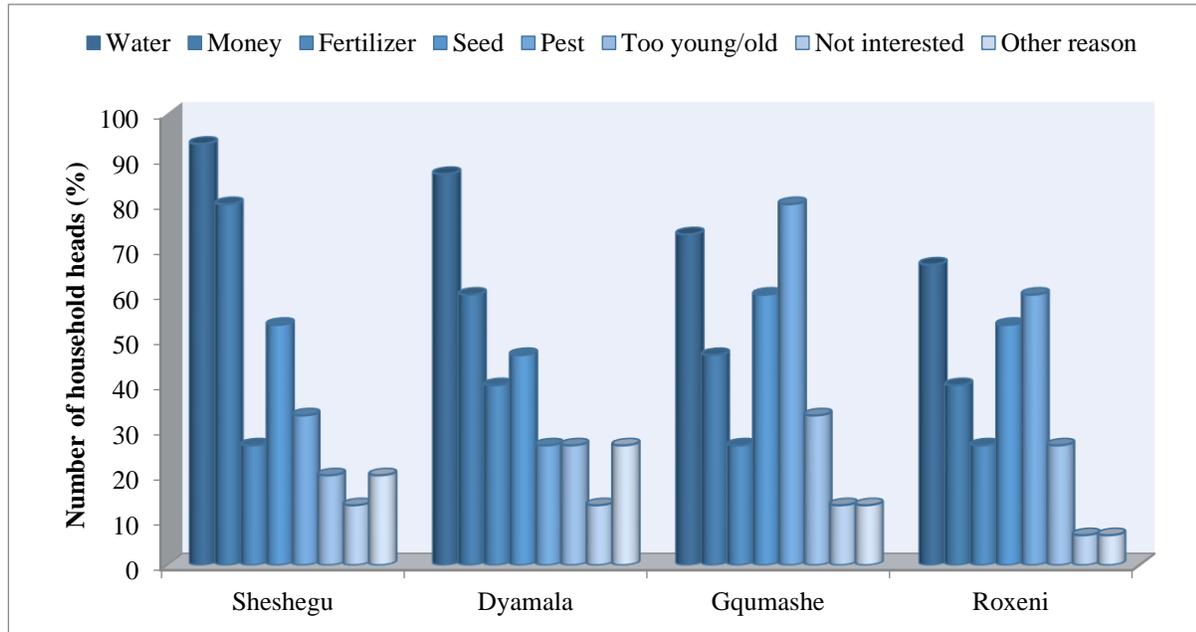


Figure 5.9: Constraints hindering optimal productivity of land per village
Source: Own calculation (2016)

5.4 To determine coping strategies that rural households employ in order to mitigate food insecurity

5.4.1 Spatial factor (infrastructure development)

The spatial factor is one of the critical factors when considering the accessibility of adequate food. According to Wang and Luo (2005), spatial access emphasises the importance of geographic barriers between consumers and providers. Spatial access refers to factors such as the location of a household, accessibility of facilities (distance or time), road structure, electricity and water (Sakyi, 2012; Wang & Luo, 2005).

5.4.1.1 Retailer, bank and post office facilities

The spatial relationship (distance and time) between households and facilities was measured by how far they are from each other. According to D'Haese (2013), about 2 km is an acceptable walking

distance when households travel to reach a point of sales or any necessary institution to obtain their utilities. However, most of the facilities, such as shops, markets and banks, were not situated in these villages but in Alice town. However, the households were using spaza shops (mini-shops). Only household heads from Sheshegu responded that they had access to a Post Office, which was allocated in the centre of the village. The distance from Sheshegu, Dyamala, Gqumashe and Roxeni to town is 28 km, 9.2 km, 7.8 km and 9.2 km respectively, as indicated in Chapter 3.

Table 5.6: Available retailer, bank and post office facilities per village – within 30 minutes' walk

Facilities	Sheshegu	Dyamala	Gqumashe	Roxeni
Shop where basic food can be bought	No	No	No	No
Market to buy goods and food	No	No	No	No
Markets where you can sell goods and food, if different	No	No	No	No
Bank	No	No	No	No
Post office	Yes	No	No	No

Source: Own compilation (2016)

5.4.1.2 Water

Households mentioned different sources of water used for drinking, cooking, bathing or washing clothes, and for other household purposes. An internal piped water facility was not installed in these households. Table 5.7 illustrates different sources used by households. Sheshegu households indicated that the most common sources for water were carrier/tanker (12; 80%), piped public tap/kiosk (free) (9; 60%) and rainwater tank (7; 46.67%). Dyamala households used a water carrier/tanker (8; 53.33%), piped public tap/kiosk (free) (7; 46.67%) and rainwater tank (3; 20%). In Gqumashe, households used a piped yard tap (8; 53.33%), and a water carrier/tanker (7; 46.67%). Roxeni households indicated that they used mostly piped public tap/kiosk (free) (14; 93.33%), followed by a water carrier/tanker, rainwater tank, piped yard tap and dam/stagnant water, at 73.33%, 40%, 26.67% and 13.33% respectively. All sources of water used by households were free of charge in all the selected villages.

Table 5.7: Sources of water used by households per village

Sources	Sheshegu		Dyamala		Gqumashe		Roxeni	
	n	%	n	%	n	%	n	%
Piped – internal	0	0	0	0	0	0	0	0
Piped – yard tap	0	0	6	40	8	53.33	4	26.67
Water carrier/tanker	12	80	8	53.33	7	46.67	11	73.33
Piped – public tap/kiosk (free)	9	60	7	46.67	6	40.00	14	93.33
Piped – public tap/kiosk (paid for)	0	0	0	0	0	0.00	0	0
Borehole	0	0	0	0	0	0.00	0	0
Rainwater tank	7	46.67	3	20	4	26.67	6	40
Flowing river/stream	0	0	0	0	0	0	0	0
Dam/stagnant water	0	0	0	0	0	0	2	13.33
Well (non-borehole)	0	0	0	0	0	0	0	0
Protected spring	0	0	0	0	0	0	0	0
Other (specify)...	0	0	0	0	0	0	0	0

Source: Own calculation (2016)

Table 5.8 illustrates that the majority of households used a water carrier/tanker, piped public tap/kiosk (free), rainwater tank, piped yard tap and dam/stagnant water, at 38 (63.33%), 36 (60.00%), 20 (33.33%), 18 (30.00%) and two (3.33%) respectively. The public cement water carrier was situated at the centre of the village.

Table 5.8: Sources of water in the study area

Sources	n	%
Piped – internal	0	0
Piped – yard tap	18	30
Water carrier/tanker	38	63.33
Piped – public tap/kiosk (free)	36	60
Piped – public tap/kiosk (paid for)	0	0
Borehole	0	0
Rainwater tank	20	33.33
Flowing river/stream	0	0
Dam/stagnant water	2	3.33
Well (non-borehole)	0	0
Protected spring	0	0
Other (specify)...	0	0

Source: Own calculation (2016)

5.4.1.3 Sanitation

Figure 5.10 demonstrates the conditions relating to public health and the provision of adequate sewage disposal. Roxeni, Gqumashe and Dyamala households indicated that they used an improved pit latrine, at 15 (100.00%), 14 (93.33%) and 13 (86.67%) respectively. The majority of Sheshegu households had access to other pit latrine (10; 66.67%). No households indicated access to a flushing toilet, bucket toilet or chemical toilets.

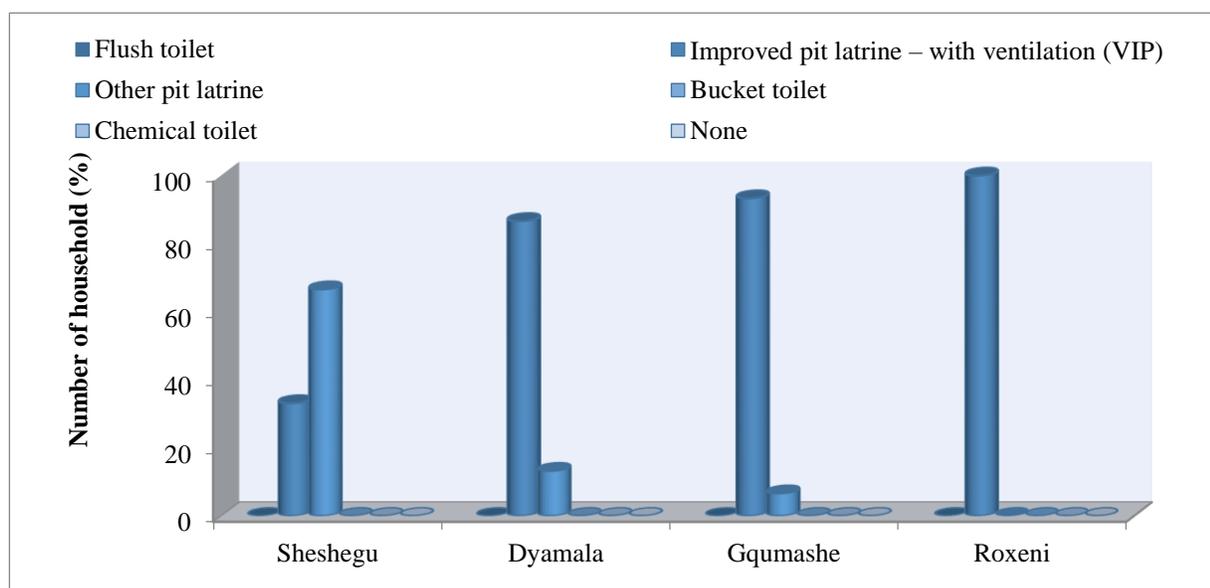


Figure 5.10: Access to sanitation per village

Source: Own calculation (2016)

Figure 5.11 shows that the majority of households indicated that they had access to an improved pit latrine with ventilation (47; 78.33%), followed by other pit latrine (13; 21.67%). There was no indication of flush toilets, bucket toilets or chemical toilets. All households indicated that they had access to toilets.

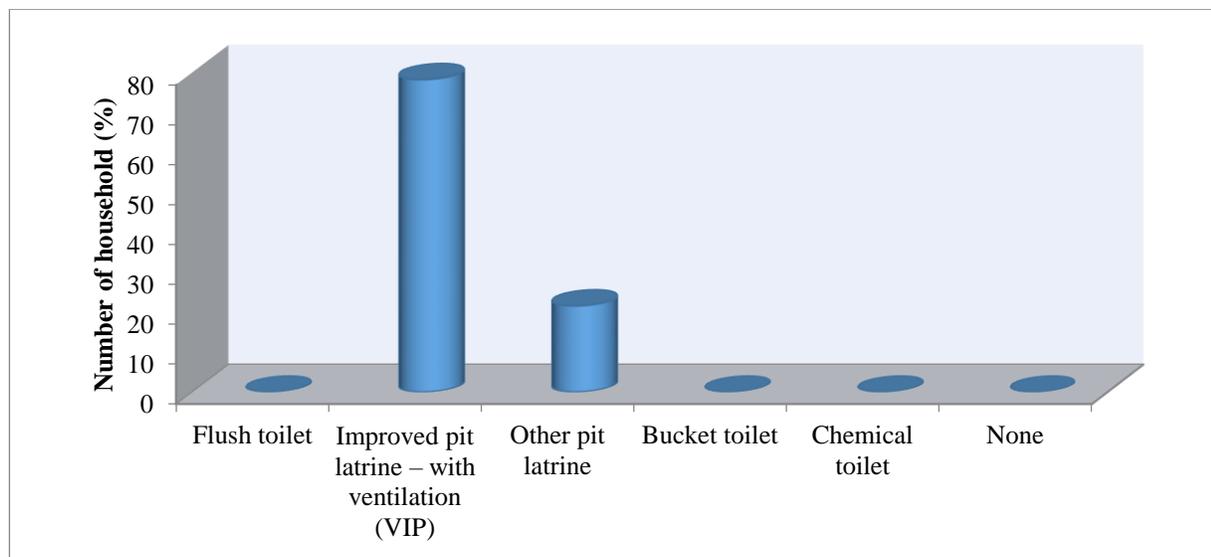


Figure 5.11 Access to sanitation in the study area

Source: Own calculation (2016)

5.4.1.4 Energy

Eskom was the only supply of electricity provided in all the villages. Household heads indicated various supplies of energy used for cooking and lighting. The majority of households in Sheshegu (14; 93.33%), Dyamala (15; 100%), Gqumashe (15; 100%) and Roxeni (15; 100%) used electricity for both cooking and lighting. Some household heads indicated that they used paraffin – 10 (66.67%) in Sheshegu, six (40.00%) in Roxeni, four (26.67%) in Dyamala and one (6.67%) in Gqumashe. One household in Gqumashe indicated the usage of a generator.

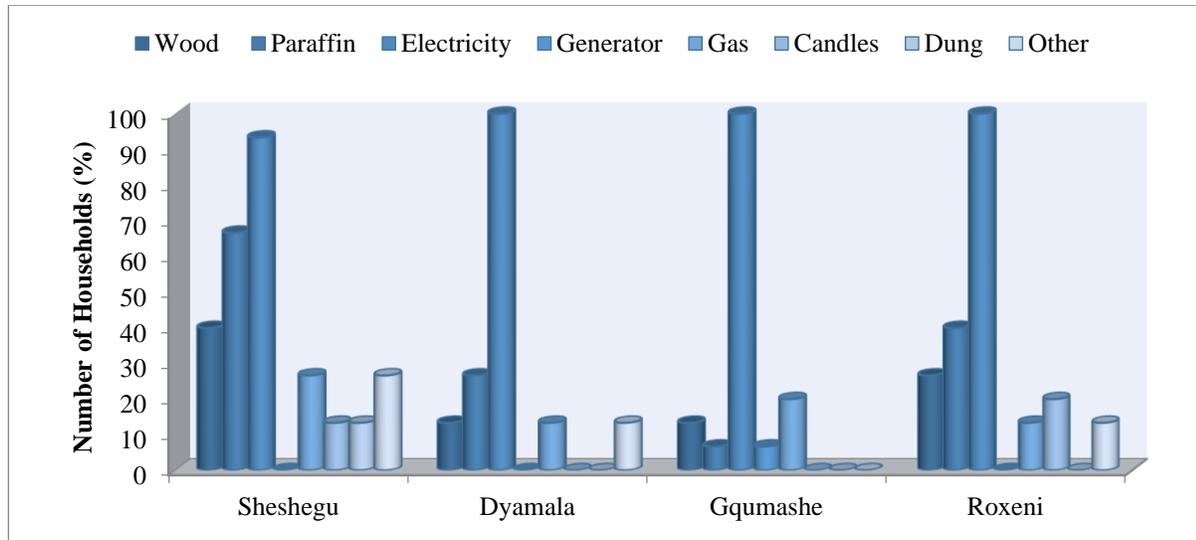


Figure 5.12: Distribution of access to energy per village

Source: Own calculation (2016)

Figure 5.13 illustrates that all villages where connected to electricity, and only one household reported not using electricity for any purpose. A total of 59 (98.33%) household heads used electricity for cooking and lighting. Other source of energy for cooking and lighting were as follows: paraffin, wood, gas, other, candles, dung and generator were used by 21 (35.00%), 14 (23.33%), 11 (18.33%), eight (13.33%), five (8.33%), two (3.33%) and one (1.67%) households respectively.

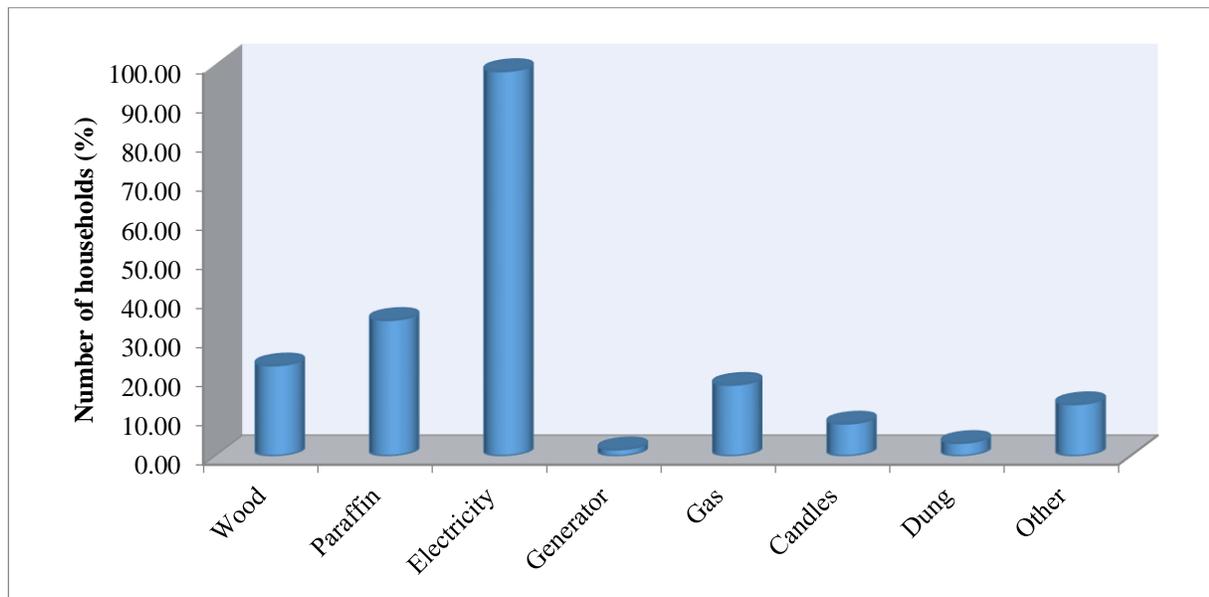


Figure 5.13 Distribution of access to energy in the study area

Source: Own calculation (2016)

5.4.1.5 Financial facilities

Figure 5.13 illustrates the financial assistance programme used by households. The households in each village were asked to indicate if they had any financial assets, such as money in a savings account at a bank/post office, burial insurance, rotating savings bags and insurance. Burial insurance was the leading financial asset, with 14 (93.33%), 13 (86.67%), 12 (80.00%) and 11 (73.33%) households in Roxeni, Gqumashe, Sheshegu and Dyamala respectively making use of this. Rotating savings bags were used by eight households in Roxeni (53.33%), seven in Dyamala (46.67%), and five in each of Sheshegu and Gqumashe (33.33%).

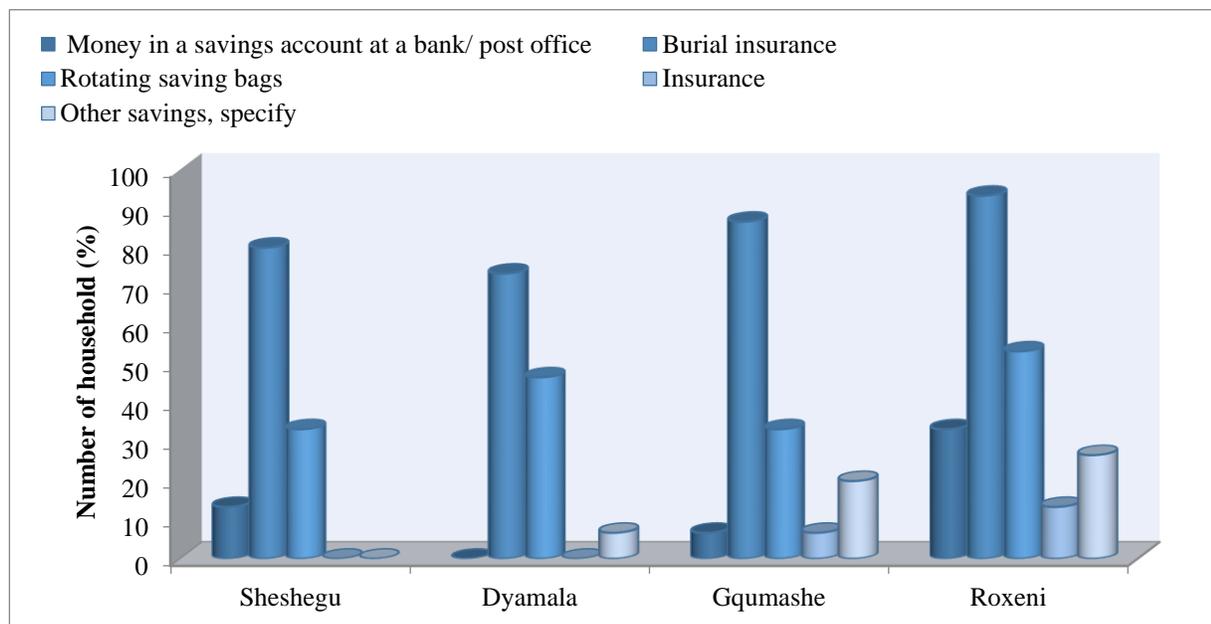


Figure 5.14 Distribution of financial assets per village

Source: Own calculation (2016)

Figure 5.14 shows that burial insurance was the major investment by all households in the study area. Fifty (83.33%) households indicated that they had burial insurance for their household members. This was followed by rotating savings bags (25; 41.67%), money in a savings account at a bank/post office (8; 13.33%) and other savings (8; 13.33%). Three (5.00%) households indicated having insurance.

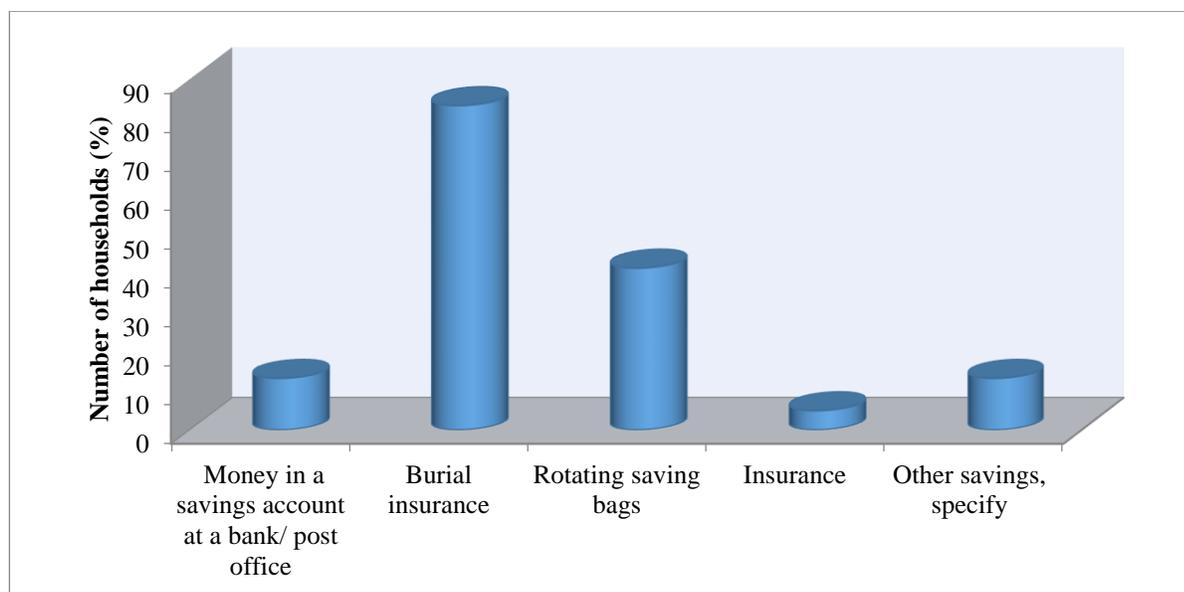


Figure 5.15 Distribution of financial assets in the study area

Source: Own calculation (2016)

5.5 Measuring the food security status in the study area (step 3)

Chapter 3 discussed the analytical techniques, and their relevance and importance when measuring household food security. HFIAS, HDDS, MAHFP and FE were used to achieve the main objective of this study – to analyse and interpret the food security status of poor rural households in the Eastern Cape.

5.5.1 Household Food Insecurity Access Scale

HFIAS interprets the four main categories of household food insecurity, viz. food secure, mildly food insecure, moderately food insecure and severe food insecurity. Sheshegu households were the most food insecure (10; 66.7%), followed by Roxeni (9; 60%). Gqumashe and Roxeni had six (40%) households that were food insecure. Four household heads from Gqumashe were found to be food

secure (26.7%), followed by two (13.3%) in Dyamala. Sheshegu and Roxeni each had one household (6.7%) that was food secure.

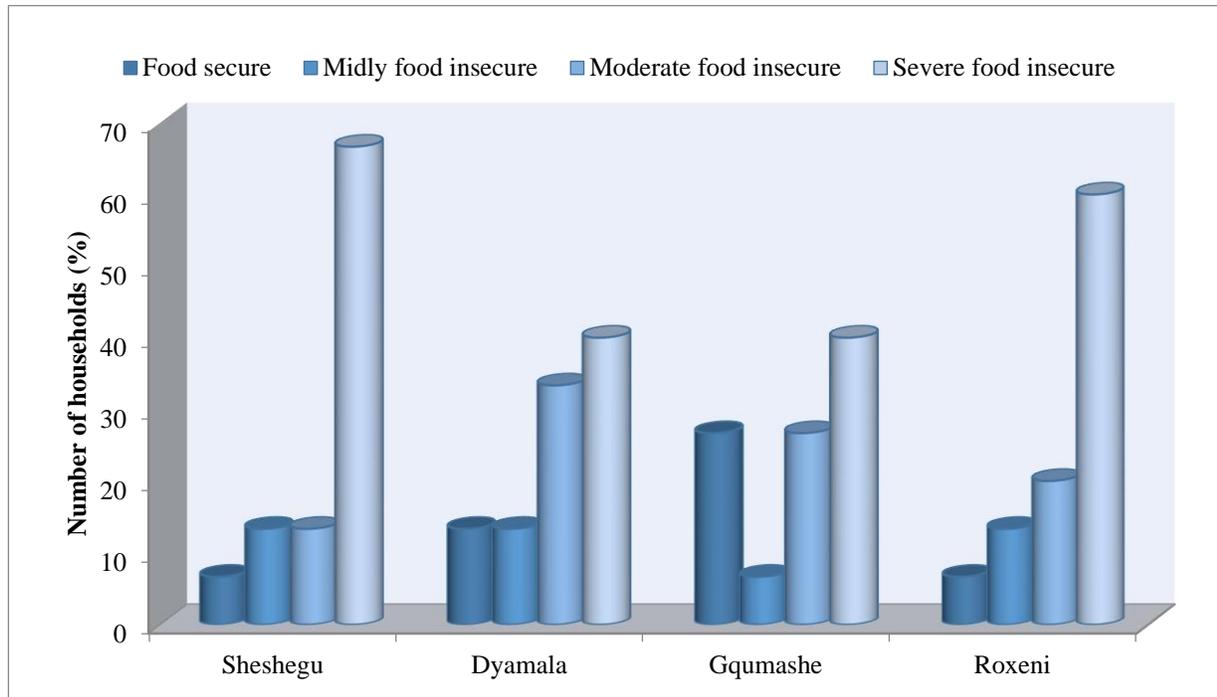


Figure 5:16 Household food security per village

Source: Own calculation (2016)

Figure 5.16 provides an overview of the food security status of the study area (all selected villages) using HFIAS. Thirty-one (51.7%) households were found to be severely food insecure, followed by 14 (23.3%) households with moderate food insecurity. Only a small proportion of the population was food secure and mildly food insecure, at eight (13.3%) and seven (11.7%) respectively.

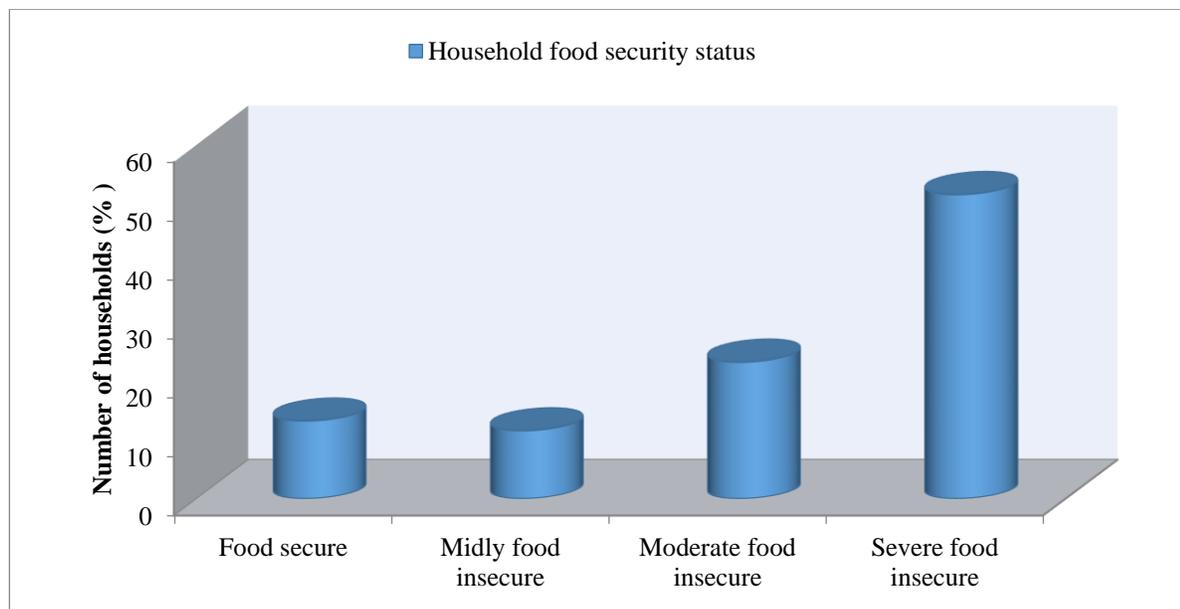


Figure 5:17 Household food security status of the study area

Source: Own calculation (2016)

5.5.2 Household Dietary Diversity Score (HDDS)

HDDS, as explained in Chapter 3, focuses mainly on the availability of multiple facets of food within a household in terms of adequacy of food consumed in the last seven days. Figure 5.17 demonstrates the frequency of food items consumed by rural households in the selected villages. Household heads in Sheshegu, Dyamala, Gqumashe and Roxeni indicated that they consumed maize, beverages and sugar frequently (every day) in a week. Household heads showed that they were eating different kinds of food.

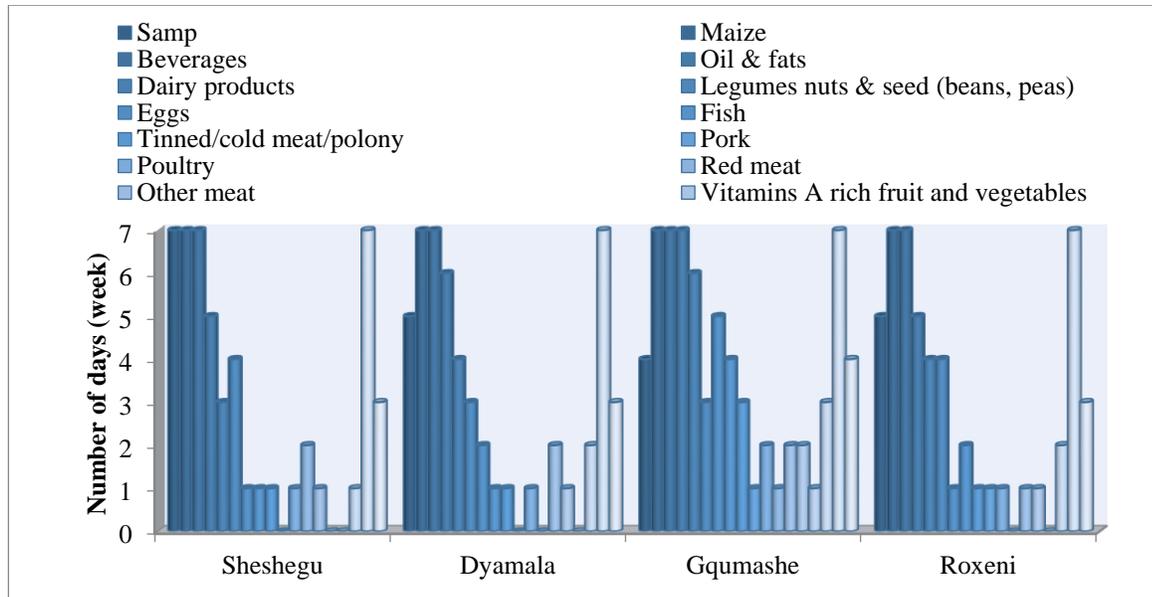


Figure 5:18 Frequency of food consumption within the household (week)

Source: Own calculation (2016)

Figure 5.18 depicts the average consumption of food items in a week (seven days). Maize, beverages and sugar were consumed every single day of the week, followed by fats, oils and samp, which were consumed six days a week. Other fruit, red meat, pork, vitamin A-rich fruits, vegetables, and poultry were consumed only one day a week and tinned/cold meat/polony were consumed two days a week.

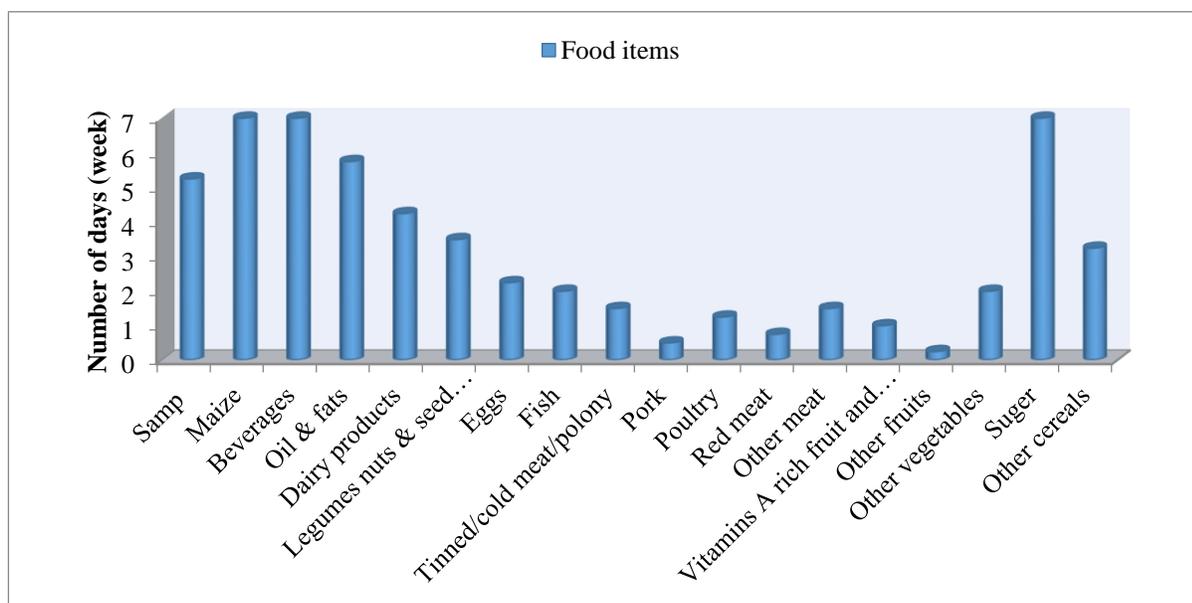


Figure 5:19 Distribution of food items in the study area

Source: Own calculation (2016)

5.5.3 Food expenditure

Households purchased the bulk of their food items (groceries) once per month from retail outlets in the nearby town (Alice). The average monthly expenditure of households depends on what is required by the households. The majority of households spent about 95% of their budget on buying food at retailers.

Figure 5.19 depicts the budget households spend on food per month. The food budget was divided into four income categories, viz. R250 to R500, R550 to R1 000, R1 050 to R1 500 and R1 550 to R2 000. The majority of households in all the villages purchased food to the value of R550 and R1 000. Nine Sheshegu households (33.3%) indicated that they purchased food valued between R250 and R500, followed by three households (20%) in Dyamala. Gqumashe and Roxeni each had two households (13.3%) that spent this amount (R250 to R500) on food.

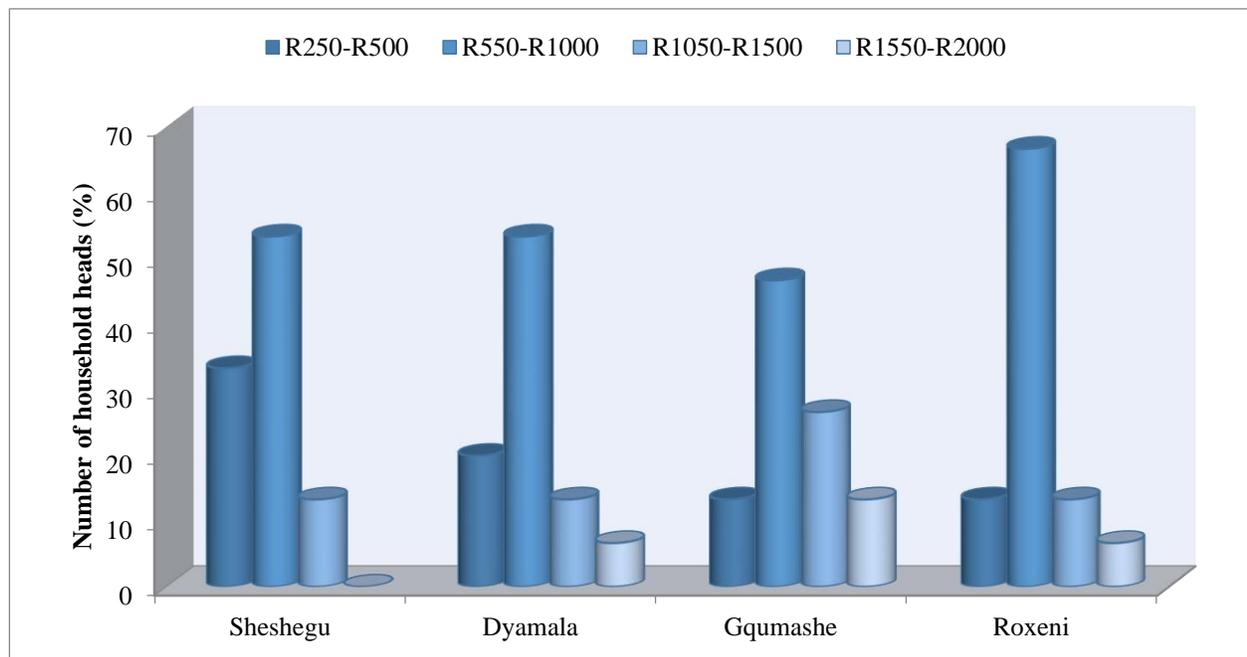


Figure 5.20: Food expenditure per village

Source: Own calculation (2016)

Figure 5.20 depicts expenditure on food consumed by households. More than 55% (33 households) of sampled households indicated they purchased food valued between R550 and R1 000 per month. Twelve households (20%) and 10 households (16.7%) spent R250 to R500 and R1 050 to R1 500

respectively per month for food. Only 6.7% of households (4) from the total sample indicated that their food expenditure ranged from R1 550 to R2 000 per month.

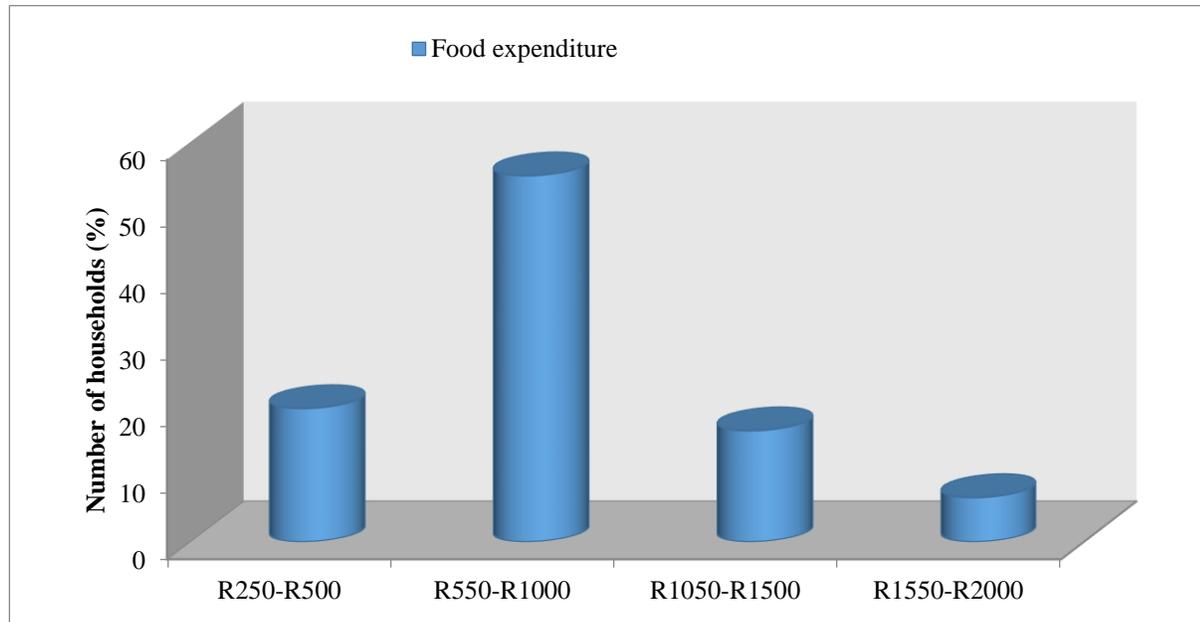


Figure 5.21: Expenditure on food in the study area

Source: Own calculation (2016)

5.5.4 Months of Adequate Household Food Provisioning (MAHFP)

MAHFP reveals which months households in the selected study areas faced starvation and malnutrition. The plight of the hungry was highlighted throughout the year. Figure 5.21 depicts the months that the households mostly experienced hunger. The study found that three distinctly heightened hunger periods were around the month of January (21%), during winter that is May (17%) and June (20%). The household heads explained the main cause of hunger during such months were the following: high spending patterns over the festive season affect household budgets in January and February, opening of academic institutions (schools), and household heads are responsible to pay expenses of scholars (January), and they also highlighted that, during the winter, most of households required more food, and more was possibly spent on firewood and energy.

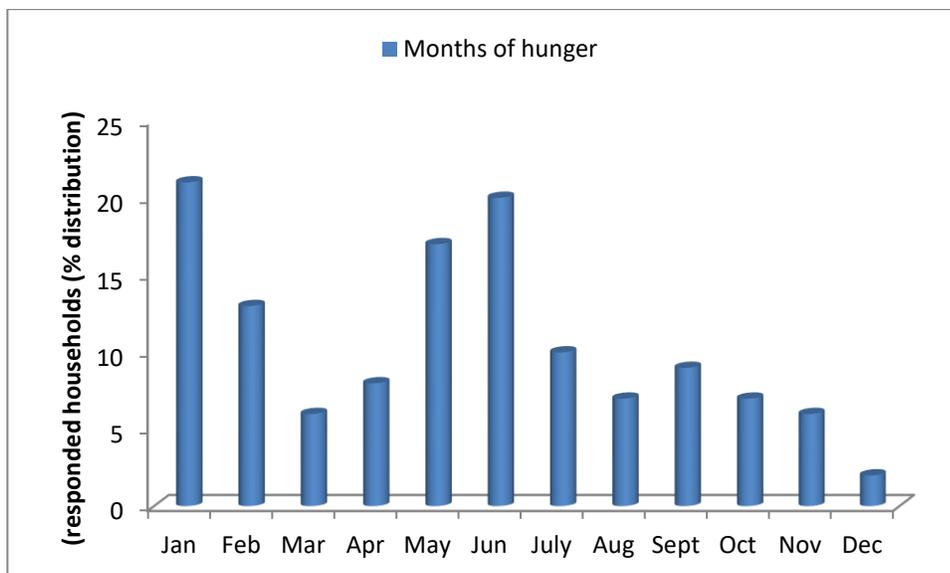


Figure 5.22: Months of Adequate Household Food Provisioning

Source: Own calculation (2016)

5.6 Coping with food insecurity: Stresses, shocks, coping and intervention strategies affecting the household

The finding regarding coping with food insecurity showed that all households in Sheshegu (15 households; 100%) complained about higher food prices, followed by Dyamala and Gqumashe, with 14 households (93.33%) each, and Roxeni with 13 households (86.66%). Another factor stressing the households was the drought, where Sheshegu, Roxeni, Dyamala and Gqumashe were {(14) (93.33%)}, {(12) (80.00%)}, {(11) (73.33%)}, and {(10) (66.67%)} respectively. The issue of floods was not a major stress in the selected villages, since there had been no rain.

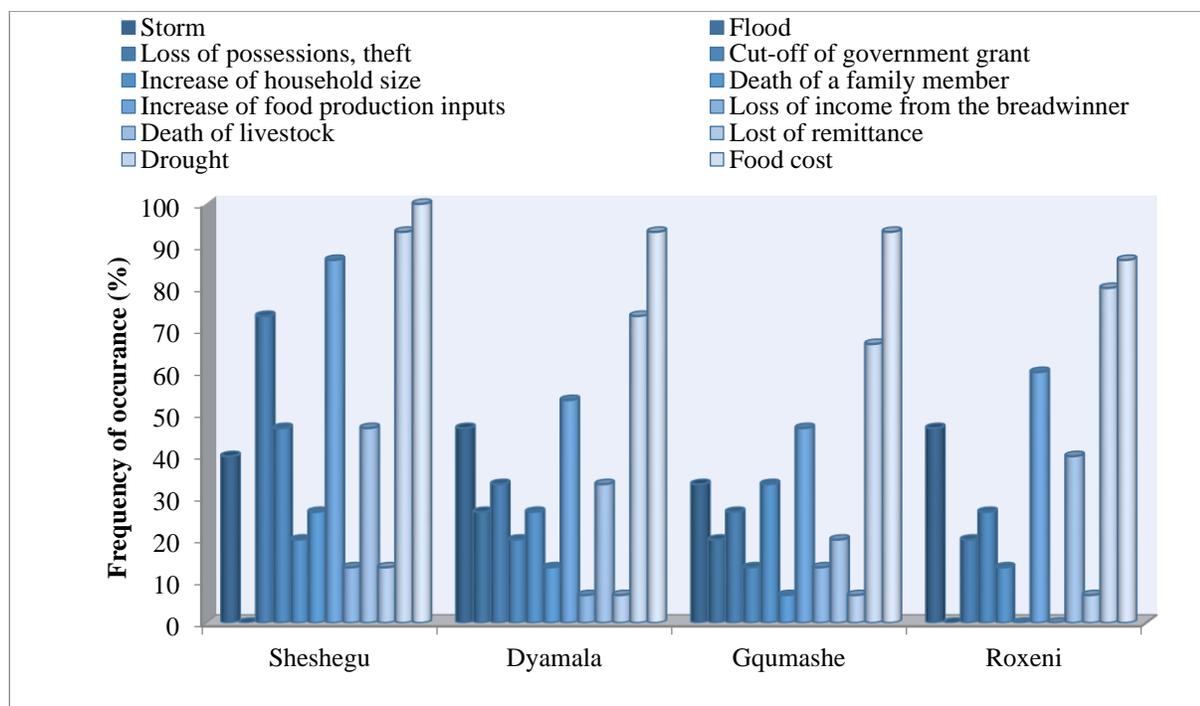


Figure 5.23: Common shocks and stress experienced in the households

Source: Own calculation (2016)

Figure 5.23 illustrates the common shocks experienced by households in all villages. An average of 93.33% (13) of household heads from the study area reported that increasing food costs (higher food prices) were the most common shock that affected them during the time of the survey. Drought and high production inputs also had an impact on the households, at 78.33% (12) and 61.67% (9) respectively. High food prices and drought adversely affected these households, as some households indicated that they were active in agricultural practices. The majority of households indicated a preference to purchase food rather than produce it. This is because of struggling to produce food due to factors such as the drought and high production inputs.

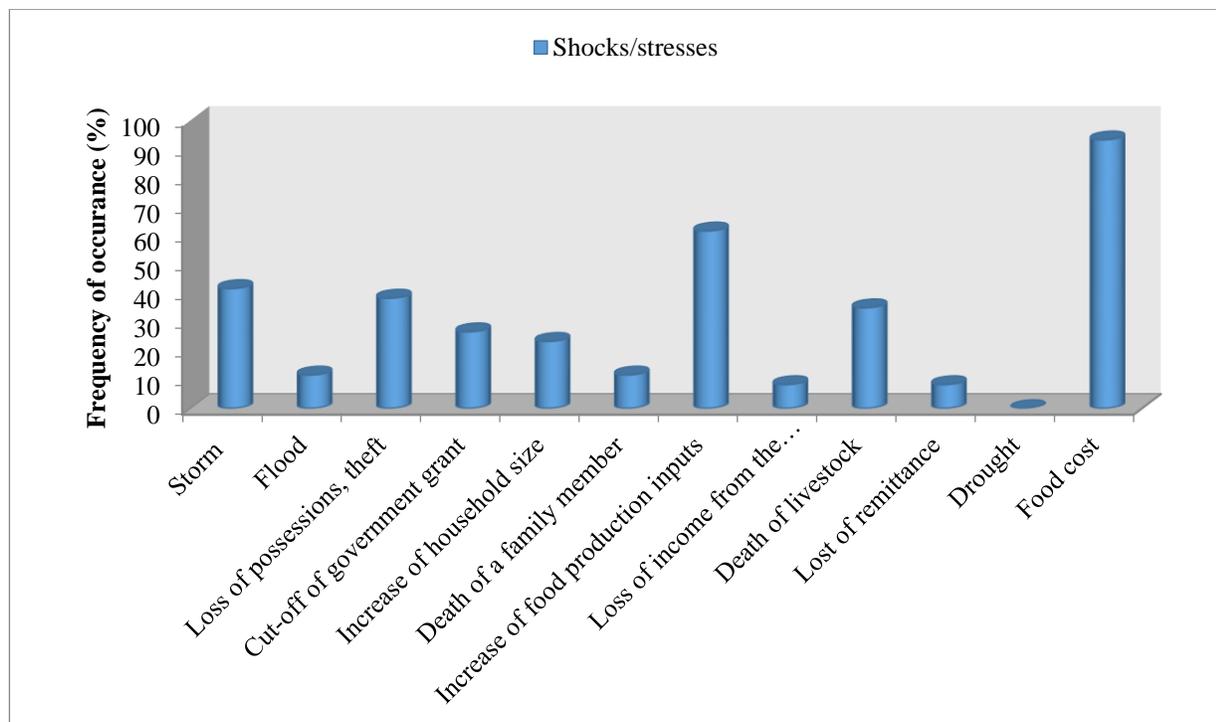


Figure 5.24: Coping and intervention strategies affecting the household
Source: Own calculation (2016)

5.6.2 Coping and intervention strategies for sudden and severe decreases in monthly income

According to Maxwell (1996), most households in villages maintain or have diversification coping strategies when shocks and stresses strike their livelihoods. According to Ellis (1998), coping strategies are defined as activities or methods that households use to improve or maintain their livelihoods for their survival.

Figure 5.24 demonstrates whether the sampled households had been confronted with a sudden and severe decrease in monthly income in the past. Households in these villages adopted different coping strategies to overcome the decrease in monthly income. Sheshegu household heads responded that their coping strategies in the case of a decrease in monthly income were to borrow food from relatives or friends (12; 80.00%), reduce food consumption (9; 60.00%), and take a loan and/or borrow money from relatives or friends (7; 46.67%). Dyamala household heads indicated that coping strategies were to migrate to find work (8; 53.33%), borrow food from relatives or friends (6; 40.00%) and take out loans (5; 33.33%). Migrate to find work and receive remittances were the common coping strategies in Gqumashe, while Roxeni household heads indicated borrowing food from relatives or friends.

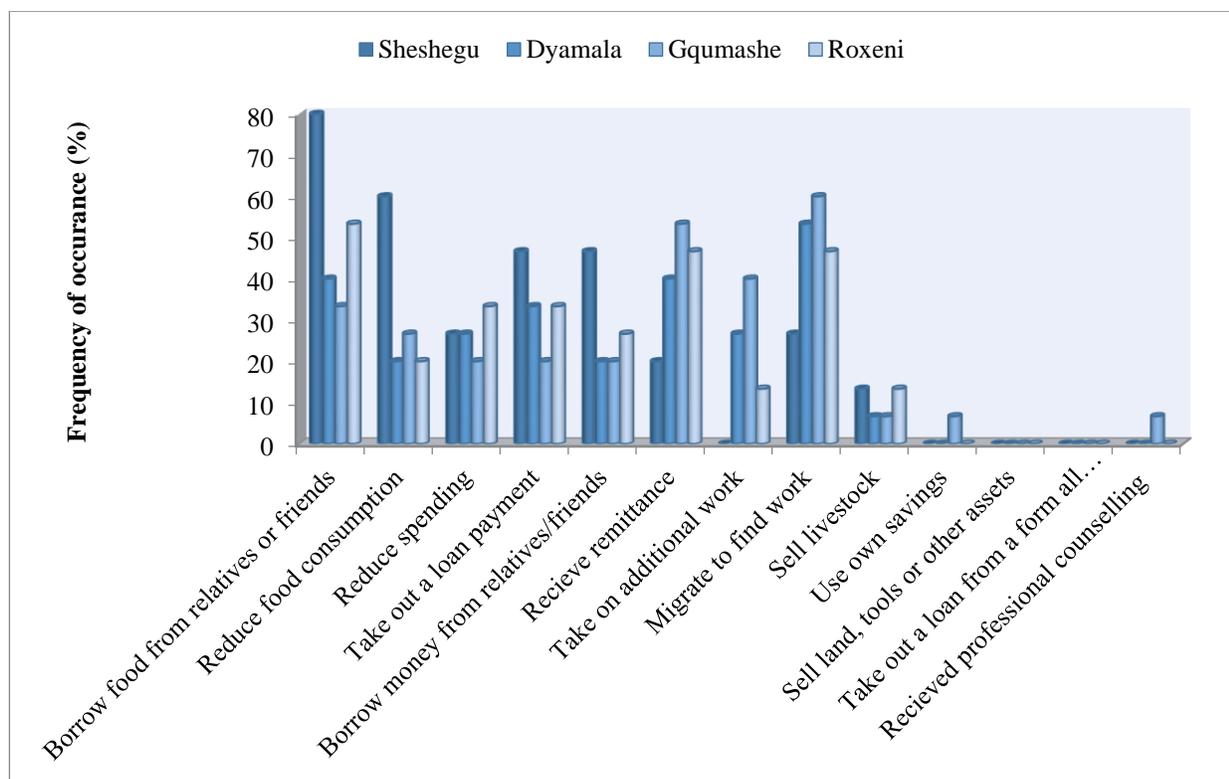


Figure 5.25: Coping strategies for sudden and severe decrease in monthly income per village

Source: Own calculation (2016)

Figure 5.25 illustrates the most common coping strategies used for sudden and severe decreases in monthly income. The most common coping strategies employed by the households were to borrow food from relatives or friends, migrate to find work, and to receive remittances, at 51.7%, 46.7% and 40% respectively. A few households indicated selling livestock, using own savings, receiving professional counselling, selling land, farm tools or other assets, and taking out loans. Only one household indicated receiving professional counselling. No household indicated having a right to sell land (only having a right to occupy) or taking a loan from a formal financial institution, due to the lack of security (collateral).

A few households sold livestock when there was not enough food and unexpected expenditures, such as school fees and the fulfilment of rituals (funerals, ritual slaughter and bride price). Despite the above positive contributions, some households stated that livestock were not sold during times of food security stress, but were kept for dignity purposes within the village.

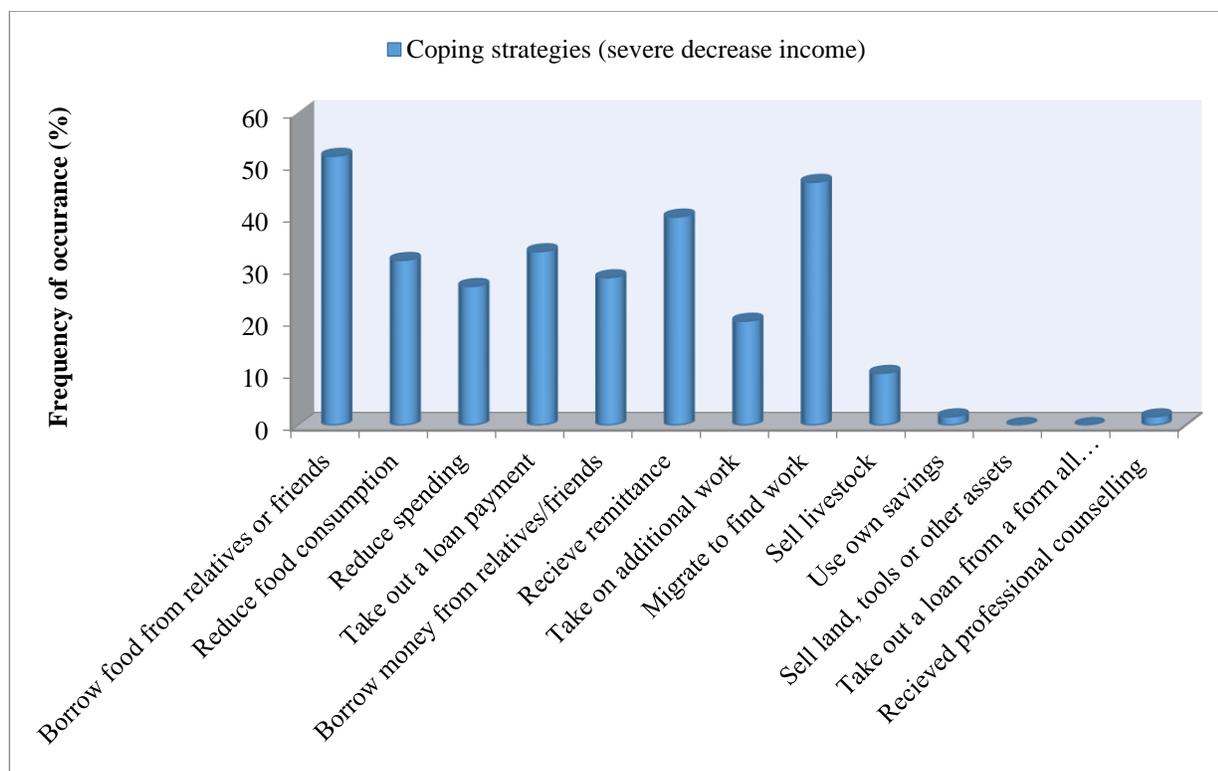


Figure 5.26: Distribution of coping strategies when there is a severe decrease in income

Source: Own calculation (2016)

5.6.3 Coping strategies for food shortages

This subsection analyses common coping strategies adopted in response to food shortages. Figure 5.26 illustrates coping strategies that the selected villages employed for a better livelihood when there was not enough food. Sheshegu village reduced food intake, borrowed money for food, bought food on credit, limited or reduced food portion size and exchanged one type of food for another. Dyamala was the only village that was assisted by aid from the Department of Social Development.

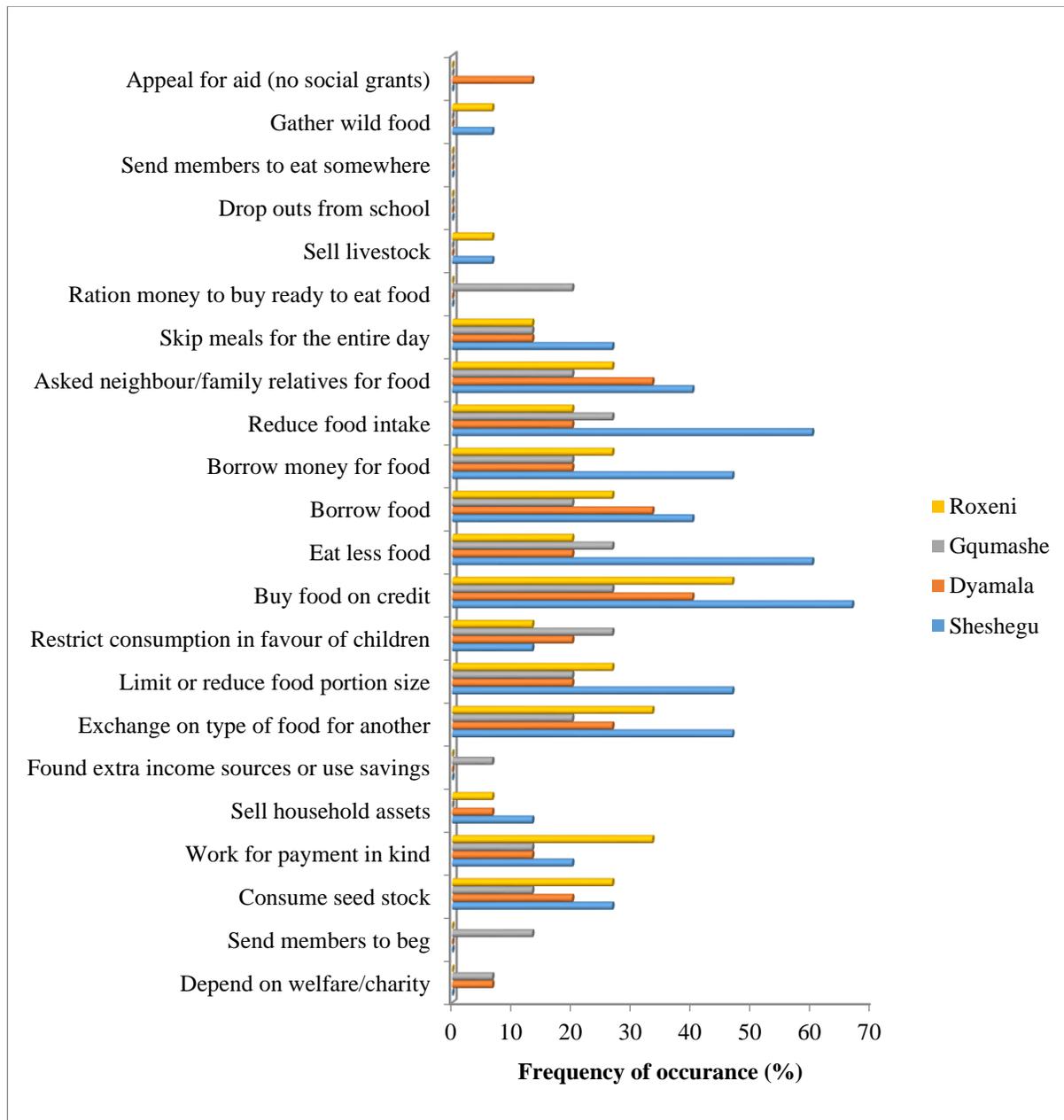


Figure 5.27: Coping strategies for food shortages in the household per village

Source: Own calculation (2016)

Figure 5.27 depicts the common coping strategies for food shortages in the households. The majority of households indicated that they overcame this by borrowing food on credit (45%), followed by reducing food intake and exchanging one type of food for another, both at 31.7%. Sending members to eat somewhere else and dropping out from school were not employed in the study area.

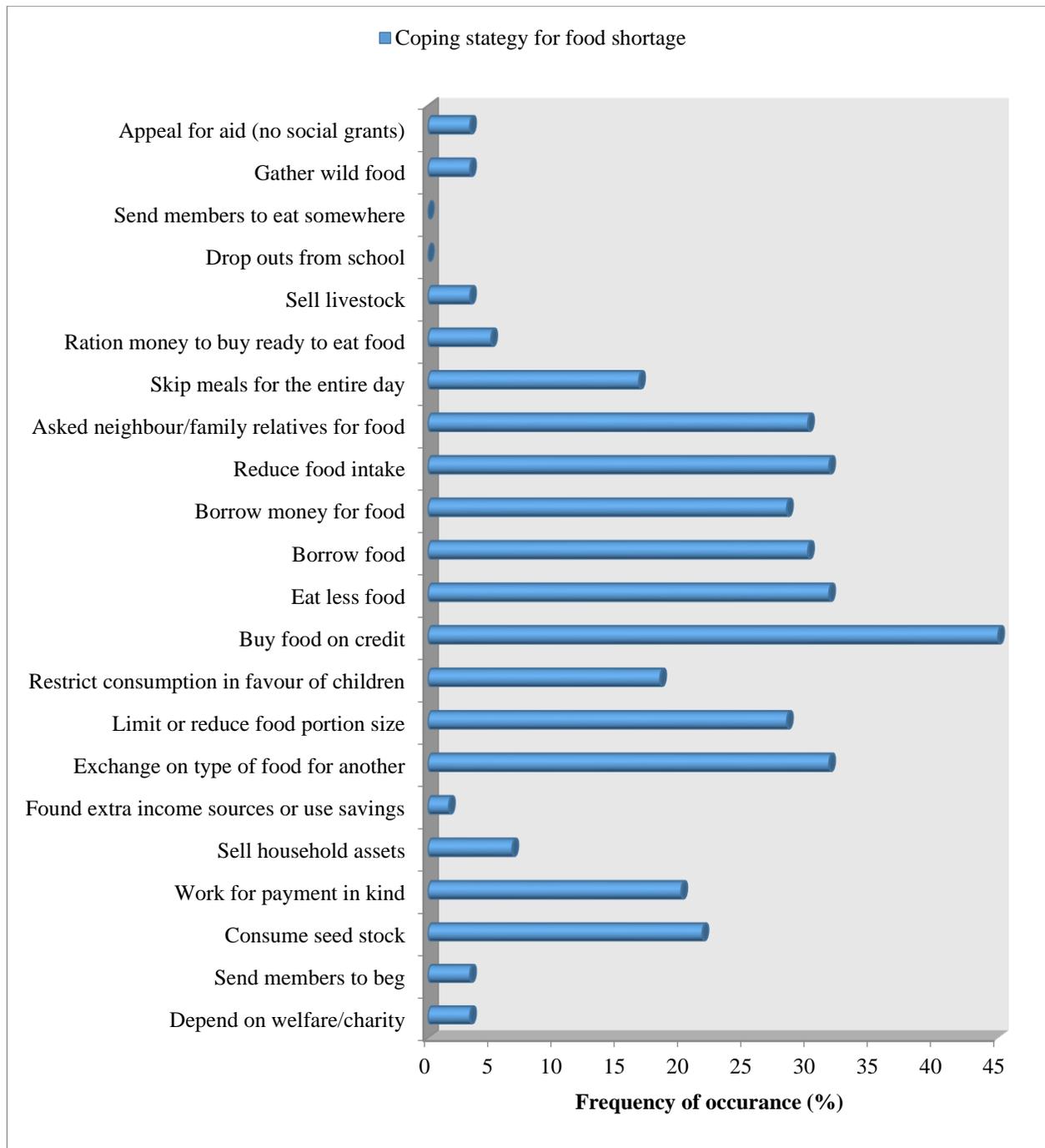


Figure 5.28: Coping strategies for food shortages at the household level in the study area

Source: Own calculation (2016)

5.7 Comparison between Limpopo findings and this study

This section refers to the delimitations of the study with Limpopo as an effort to expand the scope in a bigger South African context. This study relates to studies on rural household food security that were conducted in KwaZulu-Natal (D'Haese *et al.*, 2013) and Limpopo (De Cock *et al.* 2013). The subsection below provides a comparison between the Limpopo Province study and this study in Sheshegu, Dyamala, Gqumashe and Roxeni in the Eastern Cape province.

The Limpopo study was undertaken to investigate the food security situation at the rural household level. This concurs with this study, the objective of which was to measure and interpret the food security status of particular rural settings at the household level in the Eastern Cape province. This study adopted the same indicators as employed in the Limpopo study, as described in Chapter 3. The comparison will examine demographics, food security categories, coping mechanisms and sources of food insecurity.

5.7.1 Demographics

Briefly, the average household size in the Eastern Cape was 6.1 (SD 1.9), while in Limpopo it was 6.5 (SD 3.0). The mean age of household heads was 59.8 years and 56.1 years in the Eastern Cape and Limpopo respectively. The majority of household heads interviewed in the Eastern Cape were female (55% to 45% males), while in Limpopo males dominated, by 60.5% to 39.5% of females. Both provinces showed a lack of education in their households.

Table 5:9 Comparison of demographics between Eastern Cape and Limpopo studies

Variable	Eastern Cape	Limpopo
Household size	Average 6.1, SD 1.9	Average 6.5, SD 3.0
Age	Average 59.8 years old	Average 56.1 years old
Gender	Female = 55 % Male = 45%	Female = 39.5% Male = 60.5%
Education level	Low education	Low education

Source: Own calculation and De Cock *et al.* (2013)

5.7.2 Food security categories

Table 5.10 below provides an overview of the results from both Limpopo and the Eastern Cape in terms of food security. Both studies show that food insecurity is a serious problem for the rural population in these provinces, with more than half of households reporting to be severely food insecure – 52.4% and 51.7% of households in Limpopo and the Eastern Cape respectively. Household heads that are moderate food insecure in Limpopo were at 25.9%, with the figure for the Eastern Cape being 23.3%. Food-secure households amounted to 14.5% in Limpopo and 13.3% in the Eastern Cape.

Table 5:10 Comparison of key findings between the Limpopo and Eastern Cape studies

Category	Limpopo	Eastern Cape
Food secure	14.5%	13.3%
Mildly food insecure	5.8%	11.7%
Moderately food insecure	25.9%	23.3%
Severely food insecure	52.4%	51.7%

Source: Own calculation (2016) and De Cock *et al.* (2013)

5.7.3 General key findings

In Limpopo, the largest number of households (25.9%) experienced a period of lack of food or money during January, while in June, February, July and December this amounted to 17.2%, 16.2%, 15.5% and 15.2% of households respectively. The Eastern Cape study found that two distinct heightened

periods of hunger were in the month of January (21%), and during winter, that is May (17%) and June (20%). Similarities in both studies were that the important income sources in both studies were grants, and half of the households were involved in agricultural activities, where cattle and goats were the leading form of livestock.

In the Eastern Cape study, the most common coping strategies used for sudden and severe decreases in monthly income were borrowing food from relatives or friends, migrating to find work, and receiving remittances. The common coping strategies for food shortages at the household level were borrowing food on credit, followed by reducing food intake and exchanging one type of food for another. High food production costs and incidences of drought were also mentioned as common stresses, particularly among small-scale producers, who depend on rainfall for production.

From this comparison, it is clear that both studies showed lack of or low education, the high rate of food-insecure households (more than 50%). These studies also illustrated that more than half of the household heads owned livestock, although this was not for food security purposes.

In the Limpopo study, households were not able to compensate by in food production for subsistence purposes due to the weaker access to external income. This was also a similar case in the Eastern Cape study, where major challenges were scarcity of rainwater (drought), followed by inaccessibility of money to utilize farm potential to improve food security.

5.8 Concluding remarks

This chapter presented a descriptive analysis of the food security dynamics in the four villages, Sheshegu, Dyamala, Gqumashe and Roxeni, in the Nkonkobe local municipality of the Eastern Cape. The study used a comprehensive questionnaire to gather qualitative and quantitative data in four villages. The study sample interviewed 60 households in the rural areas.

The results have shown that the sample households were headed by elders, as indicated by their average age of 59.8 years, with an average of six individuals per household. The majority of the household heads had a low level of education. The study results clearly show that the households in the villages were vulnerable to food insecurity. The study further shows that the majority of Sheshegu households were more vulnerable to food insecurity, while Gqumashe households were the least affected. Food-insecure households amounted to 51.7%, followed by moderately food insecure

households at 23.3%, and mildly food-insecure households at 11.7%. Only 13.3% of households were food secure.

The next chapter, Chapter 6, provides step 4 of the analysis, which concludes the overall study and makes recommendations.

Chapter 6

Summary, Conclusion and Recommendations

6.1 Introduction

This chapter provides the conclusions and recommendations drawn from the data analysed in the assessment and comparison of poor rural household in four villages – Sheshegu, Dyamala, Gqumashe and Roxeni – in the Nkonkobe local municipality in the Eastern Cape. The main research objective of this study was to measure and interpret the food security status of poor rural households. The study interpreted the complexity and wide array of factors associated with the food security phenomenon in selected poor rural households in the Eastern Cape.

6.2 Summary of chapters

This section provides a briefly summary of each previous chapter of the study.

6.2.1 Introduction (Chapter 1)

The introductory chapter covered the background to the study that enlightens the contextual concerns pertinent to the research. The study attempted to explore the dynamics and complexities of poor rural households in the Eastern Cape province, with specific interest in measuring food security status. The study draws a clear picture by determining the perspectives and aspirations of rural households in relation to food security, particularly in four villages, Sheshegu, Dyamala, Gqumashe and Roxeni, in the Eastern Cape province. Any generalisation of the study findings should thus be done with circumspection in the rural context. Different questions were asked to achieve study objective: What can be used in evaluating rural household food security status? Which food security indicators are being used in South Africa? What is the food security status of rural households in the Nkonkobe region, Eastern Cape? What are the coping strategies that rural households employ in order to mitigate food insecurity? Which shortcomings within the food security literature require further research?

This was followed by the main hypothesis of this study, which dealt with describing the problem of inaccessibility of sufficient food at the households level, especially in rural settings. The hypothesis was as follows:

- The inaccessibility of sufficient food at the household level, especially in rural settings, causes households to be vulnerable to food insecurity.

From these four villages, Sheshegu, Dyamala, Gqumashe and Roxeni, in Nkonkobe local municipality under the Amathole Municipality of the Eastern Cape, household heads were used as the subjects for the elicitation of information. The study adopted a cross-sectional research design. Therefore, due to the nature of the study, the sample covered the population of the entire municipality (viz. Nkonkobe local municipality) in the Eastern Cape in South Africa.

As such, the study focused on four villages to provide an in-depth analysis of food security. This information may, however, contribute to improve the understanding of the problem of food insecurity in rural households, and thus could assist with policies and strategies to alleviate such food insecurity.

6.2.2 Literature review (Chapter 2)

Many studies have revealed that food insecurity strategy needs comprehensive short- and long-term goals to address its fundamental roots and what should be done in managing to reduce it. The FAO (2015) reports that, out of 129 countries, only 72 had achieved the MDG target of halving the prevalence of undernourishment by 2015, with developing regions as a whole missing the target by a small margin. Nevertheless, it remains a big concern in the world, as one billion people are living in extreme poverty; more than 800 million hungry and malnourished children and women around the world are still battling inequality on all fronts. In addition, the sufficient aggregate availability of food in the world is enough, and this includes in South Africa, but this does not translate into adequate accessibility for all citizens. South Africa has a mandate to identify a way forward to address the food security situation (Drimie & McLachlan, 2013). The findings of De Cock *et al.* (2013) show that the country is currently food secure at a national level and has enough food for its population, while at the household level the situation is far from positive. Dube (2013) illustrates that there is no single comprehensive food security indicator in the country. Different methods and techniques (OHS, NFCS FIVIMS, GHS and IFSS) were used in conducting the surveys that measure food security status at the household level in South Africa.

This chapter also stated the definition of food security that covers the overall interest and concerns of this research, which 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.”

At the household level, the important dimension is the accessibility of food in relation to how food markets and the distribution systems function, rather than on total agrofood or the availability of food.

6.2.3 Methodology (Chapter 3)

This chapter aligned the methods of measurement used with the stated problems and selected definition of food security; and the method of data collection employed viz. A cross-sectional approach using a structured questionnaire, which covered a range of issues, including demographic information, agricultural practices, spatial and non-spatial factors. The following indicators were constructed in the questionnaire to analyse household food security status: Household Food Insecurity Access Scale (HFIAS), Household Dietary Diversity Score (HDDS) and Months of Adequate Household Food Provisioning (MAHFP). The resulting data was analysed by means of descriptive procedures using statistical instruments. Microsoft Excel and SPSS were employed to analyse the data collected.

6.2.4 Description of area and research site (Chapter 4)

Briefly, Chapter 4 provided an overview of the study area – Sheshegu, Dyamala, Gqumashe and Roxeni in the Eastern Cape Province. This is where the study was interesting in measuring and interpreting food security status at the household level. StatsSA (2015) reported that the Eastern Cape province was one the provinces that was inadequate or severely inadequate in food access, at 28.4%. This study shows that measuring food security status at the household level will be essential for policy makers to improve the livelihood of the study area.

6.2.5 Chapter 5 (Key findings)

From the statistical results of the study, one can infer that poverty is prevalent in the study area of Sheshegu, Dyamala, Gqumashe and Roxeni in the Eastern Cape. This study finds the following:

- The study area is comprised of black African households and they have lived in these villages since they were born. The household size ranged from three to 11 members, with an average

of 6.1 per household. The average age of the household head was 59.8 years old. The youngest household head was 34 years old and the oldest was 80. Most households interviewed were headed by women (33; 55.00%), with the remainder being headed by men (27; 45.00%).

- Regarding schooling, 16 (26.67%) household heads had some primary schooling, 14 (23.33%) had matric, 13 (21.67%) had finished secondary school, nine (15.00%) had no schooling, seven (11.67%) had an accredited certificate and one (1.67%) had a tertiary education. A total of 44 (73.33%) were unemployed. Household heads highlighted that the common reasons for unemployment were as follows: too young/old (15; 25%), cannot find suitable work (11; 18.3%), illness/disability/handicapped (7; 11.67%), housewife or home keeper (6; 10.00%), retrenched (4; 6.67%) and lack of qualification for available jobs (1; 1.67%).
- The average income of a household was R2 501.67 per month (SD: R2 877.38062). The lowest income received by a household head was R700, while the highest was R15 000 per month. More than half of household heads (35; 58.33%) received an income of less than R2 000 per month. The majority of the household heads (25; 41.67%) stated that the old age grant was the major source of income, followed by both formal salary/wages and petty cash, at 15 (25.00%) each, remittances, with 12 (20.00%), child support grant, with five (8.33%), three (5.00%) received a pension and three (5.00%) owned a small business.
- In terms of access to arable land, all household heads had such access. The minimum ownership was 0.1 ha and the maximum was 4 ha. The land was used to plant production crops such as maize, potatoes, peas, beans, pumpkin, cabbages and onions. The production at the time of the survey had decreased significantly compared with other production years because of the scarcity of water (drought), lack of money and seeds, and pests. Forty (66.67%) household heads owned cattle and 35 (58.33%) owned goats. This was followed by sheep, pigs and poultry, owned by 19 (31.67%), 14 (23.33%) and 13 (21.67%) respectively. No household indicated farming fish at the time of the survey.
- The distance between the study area, viz. Sheshegu, Dyamala, Gqumashe and Roxeni, to Alice town is 28 km, 9.2 km, 7.8 km and 9.2 km respectively. Most facilities, such as shops, markets and banks, were not situated in these villages but in Alice town. However, there were some *spaza* shops (mini-shops) in the villages. Only household heads from Sheshegu had access to a post office, which was situated in the centre of the village.
- A water carrier/tanker, piped public tap/kiosk (free), rainwater tank, piped yard tap and dam/stagnant water was used by 38 (63.33%), 36 (60.00%), 20 (33.33%), 18 (30.00%) and

two (3.33%) households respectively. The public cement water carrier was situated at the centre of the village. In terms of access to sanitation, 47 (78.33%) households indicated that they had access to an improved pit latrine with ventilation, while 13 (21.67%) households indicated other pit latrine. There was no indication of using flush toilets, bucket toilets or chemical toilets. All households indicated that they had access to toilets.

- All villages were connected to electricity, and only one household reported not using electricity for any purpose. The remainder (59; 98.33%) of the household heads used electricity for cooking and lighting. Other sources of energy supply for cooking and lighting were paraffin, wood, gas, other, candles, dung and generators, used by 21 (35.00%), 14 (23.33%), 11 (18.33%), eight (13.33%), five (8.33%), two (3.33%) and one (1.67%) households respectively.
- Burial insurance was the major investment by all households in the study area, with 50 (83.33%) households indicating that they had burial insurance for their household members. This was followed by rotating savings bags (25; 41.67%), and money in a savings account at a bank/post office (8; 13.33%) and other savings (8; 13.33%) Three (5.00%) households indicated having insurance.
- More than half of the households were found to be food insecure. A total of 31 (51.7%) households were severely food insecure and 14 (23.3%) were moderately food insecure. Eight (13.3%) households were food secure, and seven (11.7%) were mildly food insecure.
- Food items consumed a week (seven days) were maize, beverages and sugar, followed by fats, oils and samp, which were eaten six days a week. Food items such as other fruit, red meat, pork, vitamin A-rich fruit and vegetables, poultry and tinned/cold meat/polony were consumed at least once or twice a week. Thirty-three (55%) households indicated that they budgeted for or purchased food for R550 to R1 000 per month. Twelve (20%) and 10 (16.7%) households spent R250 to R500 and R1 050 to R1 500 per month on food respectively. Food expenditure of R1 550 to R2 000 per month was indicated by only four (6.7%) household heads. Households highlighted that they experienced hunger mostly in the month of January (21%), and in winter, i.e. May (17%) and June (20%).
- Household heads from the study area reported that food cost (high food prices) was the most common shock that affected them during the time of survey. Drought and high cost of production inputs were also indicated to have an impact on the households. The most common coping strategies used for sudden and severe decreases in monthly income were to borrow

food from relatives or friends (51.7%), migrate to find work (46.7%) and receive remittances (40%). Only low numbers of households sold livestock, used own savings, received professional counselling, sold land, tools or other assets and took out a formal loan. Only one household indicated receiving professional counselling. No household had a right to sell land or take out a formal loan due to lack of security from ownership.

- About 45% of households indicated that they overcame their stresses by borrowing food on credit, followed by 31.7% who reduced food intake and exchanged one type of food for another. No households sent members to eat somewhere else or made them drop out of school.

6.3 Validating the hypothesis

The study formulated hypothesis:

- The inaccessibility of sufficient food at the household level, especially in rural settings, causes households to be vulnerable to food insecurity.

The aim of this study was to measure and interpret the food security status of rural households. As mentioned by De Cock *et al.* (2013), food insecurity is a multidimensional concept, which means it has a multiple determinants. The study captured four components of food security – availability, accessibility, utilisation and stability of food supply at the global and regional level up to the household level. At the global level, factors that affect food insecurity, such as population pressure, climate change, political stability and health services, were examined. The set of appropriate non-spatial factors determined at the household level to measure food security, namely human, natural, financial, physical, social and cultural and location indicators were analysed and interpreted. Furthermore, the spatial factors (time and distance) to service facilities also were analysed.

Overall, it is concluded that the problem of food insecurity is caused by numerous factors at all levels, from the macro- to the micro level; this finding supports the hypothesis as stated.

06.4 Recommendations

This study investigated the state of food security among the poor and previously economically marginalised in four selected villages, namely Sheshegu, Dyamala, Gqumashe and Roxeni in the Nkonkobe local municipality in the Eastern Cape province. It found that rural households in the selected villages are vulnerable to food insecurity. Effective response to address vulnerability to

household food insecurity among the rural poor should focus on both the underlying vulnerabilities of households due to chronic poverty and the impacts of acute crises on these households. The study recommends that the vulnerability of rural households to food insecurity should be measured by the government province or humanitarian agencies for policy interventions. The following must be put in place to adverse the impact of food insecurity to the rural households:

- **Gender equity** - there must be increased support of gender equity in policy and strategy programmes, particularly in rural areas. The resources should furthermore be distributed among everyone fairly. Whether the household is headed by a man or a woman, there must be access to the available resources in order to equalise the participation of men and women in efforts to improve rural development and the economy so as to reduce poverty and increase food security for all. The empowerment of women to contribute to the productivity of whole communities should be intensified. With less emphasis and effort to support gender equity, women will remain vulnerable to food insecurity. For instance, arable land should be granted not only to men but also to women for food production. In addition, family planning should be extended to young persons and children.
- **Education system support** – the promotion of education in the rural areas is equally important, and it should targeted population for particular support – feeding and family planning g programmes. Education helps to prevent poverty and social exclusion, and maintains human and civic values. Improved primary education plays a key role in combating poverty and promoting the peace process, especially in rural areas. School feeding programme should be extended to all school aiming to target nutritionally vulnerable children (such feeding schemes could be supported by adjacent farming projects).
- **Labour market policy** - assistance through grants for elders and disabled people remain essential. As suggested by De Cock et al (2013), government should also implement policies that focuses on creating an open, viable and dynamic job opportunities that are sustainable in rural areas, particularly focussed on unemployed youth. For instance, government Departments (such as Agriculture, Trade and Industry, Public enterprises, and Tourism) should be actively involve and target poor rural households to create opportunities that will contribute in the economic activities to upliftment rural household livelihoods. This could be done, for example, by government programs such as Micro Agricultural Financial Institutions of South Africa (MAFISA) and Comprehensive Agricultural Support Programme (CASP) to

be accessible/available to the rural households involved by participating on both farm and non-farm activities such as sewing projects.

- **Natural resource management** - the prolonged period of natural disasters such as drought has affected agriculturally active households. It is therefore imperative to take into consideration an appropriate and necessary local approach to managing the sustainability of and increasing agricultural production among the households. For instance, extension officers or other advanced farmers should provide the information on climatic conditions to households, and incentives should be given to those households that adopt sound practices for drought management. In addition, households should be advised on the trends in land use that would be advantageous in the event of climate change, such as diversification of the range of crops and change in planting dates. Strategic plans such Agricultural Drought Management Plan should be revised and implemented in affected areas.
- **Infrastructural development** - the inadequacy of rural infrastructure development has led to the inaccessibility of public services. The inaccessibility or distribution of spatial factors, such as shops, markets, banks and post offices, and access to clean water and sanitation, are problems and challenges for the households. Therefore, there is a need to invest in such development such as capital for infrastructure (particularly, the irrigation and road infrastructure), extension services, access to formal markets, and easy access to credit facilities in order to support rural households' subsistence agricultural production to improve food security.
- **Health awareness** - households should receive education of a good diet. A variety of nutritious food is part of food security, and the Department of Health and other relevant departments should increase awareness in rural areas. The number of clinics should increase and regular demonstrations about health.
- **Lack of purchasing power/increase in household incomes** - household heads in the study area reported that food cost (high food prices) was the most common shock that affected them in the time of the survey. This means that the households could only purchase a few items of food. They lacked cash to purchase food and therefore borrowed money from loan sharks. An underlying reason for the lack of purchasing power is the low income. Job creation in rural infrastructure development and construction, agricultural projects (to support school

feeding schemes), small business development, etc. in the rural areas should be a matter of priority in development programmes (refer to the chapter 6, NDP, 2011).

- **Community support** - A gradual and effective defined approach to reform rural household food security should be implemented. Additionally, for examples community entities such as cooperatives, rural clubs together with extension officers should be all deal with food security issues such as diet and nutrition, together with farming, market development, water conservation etc. This will require technical advices, proper leadership from tribal officers and commitment from the community. Changes can be implemented to develop the effectiveness of agricultural activities in rural areas.
- **Further research** – from the preceding analysis, several topics can be constructed:
 - Extend the measuring food security status of rural households at all districts of the Eastern Cape.-this study measures the food security status of rural households only in selected villages of Nkonkobe local municipality. However, the study could be extended to do such and a more detailed analysis of the food security status of rural households of the Eastern Cape Province; and other provinces in South Africa.
 - The comparison of food security status at rural and urban households of South Africa- this study was focus on measuring the food security status of rural households of selected villages of the Eastern Cape. The study of comparison of rural and urban households in food security can be developed. This will play an important role in enhancing economic growth in both rural and urban areas and also in the improving of framework used in this study.
 - The impact of climate change in food security- the impact of climate change requires continuous assessment. Clearly, the studied rural households are vulnerable to climate change due to a combination of a number of indicators. However, the level of exposure to and the ability to cope with climate change varies, and this study has confirmed that poor rural households will be particularly vulnerable. It has also shown that agricultural production, even though it is for subsistence purposes rather than commercial, forms a basis of resilience for poor rural households. Therefore, such studies are important, and information gathering and evaluation should be done in accordance with how they affect and shape vulnerable households in food security.

- The study can be replicated in other provinces as well. This study, together with the Limpopo study conducted by De Cock *et al.* (2013), can be used as foundation to analyse the food security status in other study areas.

6.5 Major conclusion

This study measured and interpreted food security status at the rural household level in Sheshegu, Dyamala, Gqumashe and Roxeni in the Eastern Cape province. Since South Africa is mostly a net exporter of agricultural commodities and the fact that it has a high per capita income for an emerging economy, the international viewpoint is that food is available and accessible to all South Africans. The general view on food security as i.e. proposed by Du Pont food security index (EIU, 2017) shows that South Africa is food secure. Although the country is food secure, this is not the same at the household level, as households are food insecure. The study hypothesised that the inaccessibility of sufficient food at the household level, especially in rural settings, causes households to be vulnerable to food insecurity. This is based on particular aspects such as to socio-economic, financial, income, environmental and institutional factors.

The findings regarding food security status of rural households of selected villages validate the study hypotheses that the lack access to nutritious diet for rural households cause vulnerability to food security. This was showed by more than half of the households were found to be food insecure. A total of 31 (51.7%) households were severely food insecure, and 14 (23.3%) were moderately food insecure. Eight (13.3%) households were food secure, and seven (11.7%) were mildly food insecure.

Based on the study's findings, food security at the rural household level is a comprehensive issue that needs a comprehensive support system. The recommendation (as mentioned in 6.4) should be taken into consideration to reduce the vulnerability of households to food insecurity.

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Annexure 1

A.1 Questionnaire

FOOD SECURITY VULNERABILITY IN THE EASTERN CAPE OF SOUTH AFRICA

Good day, I'm I am part of a team from the department of Agriculture of We are currently questioning households to obtain detailed information about the food security status of households in Your participation is voluntary. You may choose not to answer any question and you may choose to stop the discussion at any time. Refusing to participate will not affect you or your family in any way. We would like you to answer as honestly as possible. We want to emphasize that your responses will be kept confidential. Are you willing to participate in this study? YES 1 / NO 2: STOP QUESTIONNAIRE

SECTION A: SURVEY IDENTIFICATION

A1. SURVEY RECORD NUMBER		
A2. HH_ID NUMBER		
A3. PROVINCE	Eastern Cape	
A4. DISTRICT (code)	Amathole	
A5. MUNICIPALITY (code)	Nkonkobe	
A6. ENUMERATOR_CODE		

District	Municipality	Villages
1. Amathole	1. Nkonkobe	

A7. DATE:/...../.....

A8. LOCATION: GPS CODE

A9. RESPONDENT'S POSITION:

1. Head 2. Spouse 3. Other

A10. SURVEY CHECKED BY:

1. Johann 2. Luc

SUPERVISOR:.....

SECTION B: HOUSEHOLD DEMOGRAPHICS

1. Code	2. List names of all individuals in the household (List household head first, use first names only)	3. What is’s relationship to household head?	4. Gender Male: 1 Female: 2	5. Age in YEARS (at last birthday)	6. What is the highest education or qualification attained by??	7. Is currently working for cash or in-kind income? Yes: 1 No: 0	8. If is not working, why did not work during the past seven days?	9. How many months did spent away from the household in the last 12 months?	10. What is the reason for his/her absence (use code box)
	NAME	CODE	1 - 2	YEARS	CODE	0-1	CODE	MONTHS	CODE
01.									
02.									
03.									
04.									
05.									
06.									
07.									
08.									
09.									
10.									
11.									
12.									
13.									
14.									
15.									

<p>01 = resident head 02 = absent head 03 = wife or husband or partner 04 = son or daughter 05 = father or mother 06 = grandchild 07 = grandparent 08 = mother- or father-in-law 09 = son- or daughter-in-law 11 = aunt or uncle 12= sister or brother 13= niece or nephew 14= cousin 15= great-grandparent 16= household help (or relative of) 17= lodger or relative of lodgers 18= other family 19= other non-family</p>	<p>01= no schooling 02 = Junior primary (Gr 0 through to Gr4/ Std 2) 03= Senior primary (Gr 5/ Std 3 to Gr 7/ Std 5) 04= Some Secondary (Gr8/ Std 6 to Gr 11/ Std 9/ Form 4) 05 = Completed high school (Gr 12/Std 10/Form 5/ Matric) 06= courses or certificates for formal training 07 = Diploma or degree</p>	<p>01 = Has found a job, but not started yet 02 = scholar or student and prefers not to work 03 = housewife/ homemaker prefers not to work 04 = retired and prefers not to seek formal work 05 = illness, invalid, disabled, or handicapped 06 = too young or too old to work 07 = seasonal worker, e.g. fruit picker, shearer 08 = lack of skills or qualifications for available jobs 09 = cannot find any work 10 = cannot find good work 11 = contract worker, e.g. mine worker 12 = retrenched 13 = other reason</p>	<p>01 = employment 02 = looking for employment 03 = schooling 04 = student 05 = personal reasons 06 = escape violence or political problems 07 = visiting spouse or family 08 = visiting friends 09 = living with other partner 10 = prison 11 = vacation 12 = in hospital or clinic 13 = away on business 14 = national service 15 = other (specify)</p>
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SECTION C: FOOD AVAILABILITY, CONSUMPTION AND DIETARY DIVERSITY

For each of the following questions, consider what has happened in the past **30 days**

C1. Please answer whether this happened never, **rarely (once or twice)**, **sometimes (3 to 10 times)** or **often (more than 10 times)** in the past 30 days.

	Household Food Insecurity Access Scale (HFIAS)	Never	Rarely	Sometimes	Often
1	Did you worry that your household would not have enough food?	1	2	3	4
2	Were you or any household member not able to eat the kinds of food you preferred because of a lack of money?	1	2	3	4
3	Did you or any household member eat just a few kinds of food day-after-day owing to a lack of money?	1	2	3	4
4	Did you or any other household member eat food that you preferred not to eat because of a lack of money to obtain other types of food?	1	2	3	4
5	Did you or any household member eat a smaller meal than you felt you needed because there was not enough food?	1	2	3	4
6	Did you or any other household member eat fewer meals in a day because there was not enough food?	1	2	3	4
7	Was there ever no food at all in your household because there was not money to get more?	1	2	3	4
8	Did you or any household member go to sleep at night hungry because there was not enough food?	1	2	3	4
9	Did you or any household member go a whole day without eating anything because there was no food?	1	2	3	4

C2. In which months did you experience a lack of food or money such that one or more members of your household **had to go hungry?** of the last 12

	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
Yes	1	1	1	1	1	1	1	1	1	1	1	1
No	0	0	0	0	0	0	0	0	0	0	0	0

C3. Did you or anyone else in the household **eat** **yesterday and in the past 7 days**? [Fieldworker: read out each food group below] **During the past seven days**, how many days did you or anyone in your household eat.....? (If the food item was eaten more than one time in one day, it should be counted as one).

What is the main **source** of.....? (See code below)

	Food group	Examples	1. Ate it yesterday		2. Number of days food was consumed in past 7 days	3. Main source of food consumed	4. Average expenditure per month (Rand/month)
			YES	NO			
A	Maize or maize products	mielie-meal porridge (stiff, crumbly or soft), samp, whole maize (corn-on-the cob)	1	0			R
B	Other cereals	wheat, bread, breakfast cereals, sorghum, rice, pasta, oats, morvite fermented/sour porridge, mahewu	1	0			R
C	Roots and tubers	potatoes, sweet potatoes, potato salad, amadumbe	1	0			R
D	Vitamin A-rich fruit & vegetables	<u>yellow/orange</u> coloured fruit and vegetables: mango, peach, butternut, carrot, pumpkin, paw paw, yellow; <u>Dark-green leafy</u> vegetables: spinach, mifino, amaranth, pumpkin leaves, beetroot leaves, dried green cowpea leaves	1	0			R
E	Other vegetables	beetroot, broccoli, cabbage, cauliflower, chickpeas, cucumber, green beans, green peas, green pepper, lettuce, mushrooms, onions, tomato,	1	0			R
F	Other fruit	apple, apricot, banana, grapes, grapefruit, guava, lemon, lime, morula fruit, naartjie, orange, peach, pear, plum, pineapple, prickly pear, raspberries, strawberries, watermelon, wild fruit, dried fruit, canned fruit	1	0			R
G	Red meat	Beef & offal alone or as part of a stew:	1	0			R
		Mutton, lamb, goat & offal alone or as part of a stew	1	0			R
		Venison, wild game including rabbits and birds	1	0			R
		Pork & offal alone or as part of a stew:	1	0			R
H	Consumption	How often do you eat red meat (beef, venison, mutton, lamb, goat, pork) NOT as part of a stew?	1	0			R

I	Poultry	Chicken & offal (giblets, feet)	1	0			R
J	Other meat	Ham, poloni, cold meat, tinned meat	1	0			R
		Mopani worms, insects	1	0			R
K	Fish	Fresh, canned, frozen, fish	1	0			R
L	Eggs	eggs	1	0			R
M	Legumes, nuts & seeds	baked beans, dried peas, cowpeas, peanuts, nuts, sunflower seeds, pumpkin seeds, dried beans, sugar beans,	1	0			R
N	Dairy	milk, amasi/maas, yoghurt, condensed milk, powdered milk, cheese	1	0			R
O	Oils and fat	any food made with oil, margarine, butter or Holsun	1	0			R
P	Sugars	sugar, syrup, sweets, honey, chocolate, sugarcane	1	0			R
Q	Beverages	tea, coffee, cool drink, fruit juice, beer, homemade beer	1	0			R

Sources		4.	Gathering
1.	Purchase	5.	Gift
2.	Own production	6.	Exchange
3.	Hunting	7.	Food aid

C4. If there is not enough food for every member of your household, which members will get less to eat than necessary to fulfil their needs?

	Yes	No
A	Children younger than 5 years old	1 0
B	Children aged between 5 and 18 years	1 0
C	Female adults between 18 and 65 years	1 0
D	Female adults older than 65 years	1 0
E	Male adults between 18 and 65 years	1 0
F	Male adults older than 65 years	1 0

C5. Yesterday, how many times (meals) did the adults in this household eat? / _____ /

C6. Yesterday, how many times (meals) did the children (3-6y) in this household eat? / _____ /

SECTION D: AGRICULTURAL PRODUCTION

CROP PRODUCTION

D1. Arable crop production including home consumption

Interviewer ask: What crops, if any, did the household harvest in the past year?

Ask for local unit of measure and express everything in this unit

a. Arable crop name	b. Units of measure	c. How much of (crop) were harvested in the past 12 months?	d. How much of were sold in the past 12 months?		e. After harvest, how much KG was lost to insects, rotting...	f. How much KG of (crop) were consumed by the household?	g. How much KG of.....(crop) were given to pay for labour or land?
NAME	CODE	unit	unit	AVERAGE PRICE PER unit	unit	unit	unit
Maize							
Potatoes							
Sweet potatoes							
Wheat							
Sorghum							
Millet							
Beans							
Peanuts							

Units of measurement					
1: kilos	3: 25 kilo bags	5: 80 kilo bags	7: boxes	9: piece/'ear'	11: bunches
2: 10 kilo bags	4: 50 kilo bags	6: tons	8: 25 liter drums	10: basin	12: other

D2. Vegetable production including home consumption

Interviewer ask: What vegetables if any, did the household harvest in the past year?

Ask for local unit of measure and express everything in this unit

a. Vegetable name	b. unit of measure	c. How many m ² were dedicated to	d. How much of were sold in the past 12 months?		e. After harvest, how much was lost to insects, rotting...	f. How much of (crop) were consumed by the household?	g. How much of.....(crop) were given to pay for labour or land?
NAME	CODE	M ²	unit	AVERAGE PRICE PER unit	unit	unit	unit
Tomatoes							
Cabbage							
Pumpkins/squash							
Onions							
Spinach							
Other leafy vegetables							
Carrots							

D3. Fruit production including home consumption

Interviewer ask: What crops, if any, did the household harvest in the past year?

Ask for local unit of measure and express everything in this unit

a. Type of fruit		b. Fruit code	c. How many trees do you have on your fields?	d. How much did you sell in the last year?		e. How much did you consume yourself?	f. How much of.....(crop) were given to pay for labour or land?
FRUIT GROUP	NAME	CODE	unit	unit	AVERAGE PRICE PER unit	unit	unit
Citrus	Naartjes						
	Oranges						
Stone	Peaches						
	Grapes						
	Pears						
Subtropical	Pineapples						
	Bananas						
	Pawpaws						
	Litchis						
	Avocados						
	Guavas						
	Mangos						
Other							

LIVESTOCK

D4. Does the household own or farm with any animals or poultry of any kind?

YES 1

0 -> go to following part 3.3. other farming income

		Cattle	Sheep	Goats	Pigs	Poultry
A.	How many (name of animal) does the household own at the moment?					
B.	In the past year, how many, if any were born?					
C.	In the past year, how many, if any did the household sell?					
D.	(Ask for each kind of animal sold): in the past year, how much money did the household get from the sale of? (Rand)					
E.	In the past year, how many....., if any, did the household buy?					
F.	In the past year, how many....., if any, did the household slaughter?					
G.	In the past year, how many, if any, did the household lose because they were stolen or died OR: Were run over, or something like that (e.g. fined, impounded)?					
H.	At present, how many, if any, has the household loaned to someone else?					
I.	At present, how many....., if any, has the household borrowed from someone else?					
J.	And at present, how many....., if any, has the household received as gifts from someone else?					

D5. Ask all who have **cattle or goats**:

a. About how many liters of milk were obtained from year herd during the past week (last 7 days)?..... litres

b. And, how much of this was for this household's own use (last 7 days)? litres

c. And, how much of it was for sale or exchange (last 7 days)? litres

d. What was the value of milk sold or exchanged (last 7 days)? Rand

D6. Ask all who have hens or ducks or other **poultry**:

About how many eggs were obtained from your poultry during the past week (last 7 days)?

And, how many of these did the household use?

And, how many did the household sell or exchange?

What was the value of eggs sold or exchanged (last 7 days)? Rand

D7. Ask all who have **sheep**: In the past 12 months, how much did the household make, if anything, from the sale of wool and mohair?

Rand

D8. **Ask all who own animals**: in the past 12 months, how much, if anything, did the household make from the sale of animal skins and hides?

Rand

3.3. OTHER FARMING INCOME

D9. Did the household receive anything in the form of subsidies or drought relief in the past 12 months?

Yes

	1	No	0
--	---	----	---

D10. IF YES: how much was it worth in Rand? Rand

D11. In the past 12 months, did the household receive anything by providing a service to other farmers, for example, ploughing or planting?

Yes	1	No	0
-----	---	----	---

D12. IF YES: How much was it worth in Rand? Rand

D13. In the past 12 months, did the household receive anything in any other way not already mentioned from farming?

Yes	1	No	0
-----	---	----	---

IF YES: DESCRIBE

.....

.....

D14. Does this household own any tractors or other farming vehicles?

Yes	1	No	0
-----	---	----	---

OTHER FARMING COSTS

D15. In the last 12 months, how much, if anything, did the household pay in cash and credit for:

	Code	Rand/month
Seeds/planting material	01	R
Fertilizer	02	R
Pesticides	03	R
Herbicides	04	R
Other farming materials	05	R
Wages for workers who helped with farming	06	R
Petrol, diesel and oil for machines	07	R
Food for the poultry or farm animals	08	R
Farm land that was rented from someone else	09	R
Other payments made in the last 12 months	10	R
Land taxes	11	R
Various services, for example for tractors, oxen which were used for ploughing	12	R
Interest on loans	13	R
Any other costs (describe)	14	R

SECTION E: INCOME AND EXPENDITURE OF THE HOUSEHOLD

E1. Now I would like to talk about your household's sources of income and how the household spends money

a. What are your household's sources of income throughout the year?		b. Who generates this income?	c. Who makes decisions on how the resources from this activity are used?	d. Please estimate the percentage of total income that comes from this source
CODE		CODE	CODE	USE PROPORTIONAL PILING
Main				%
2				%
3				%
4				%
5				%
6				%
Total				%

Codes Question

1 = Formal salary or wages	7 = Food crop production/ sales	13= Skilled labour
2 = Remittances (money from migrants)	8 = Cash crop production/ sales	14= Brewing
3 = Pension	9 = Livestock production/ sales (non-poultry)	15= Vegetable and fruit production/ sales
4 = Child Support Grant	10 = Poultry production/ sales	16= Food assistance/ gift
5 = Other social grant (Foster Care, Disability, etc.)	11 = Fishing	17= Other assistance/ begging/ gifts
6 = Small business	12 = Petty trade (firewood sales, etc.)	18= No other source

Codes Question

1 = Head of the Household only	5= Women only	8 = Women and children
2 = Spouse of the head of the Household only	6= Adults only	9 = Men and children
3 =Household head and Spouse of household head	7= Children only	10 = Men and women and children
4= Men only		

E2.What are the main sources in each month? (indicate with a cross that income)

Sources	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPTEMBER	OCT	NOV	DEC
1												
2												
3												
4												
5												
6												

E3. What is the average total household income per month? Rand

E4. What is the average total household income per year? Rand

MIGRATION/ REMITTANCES

E6. (a migrant worker is someone who is absent from home for more than a month each year to work or to seek work. Working includes self-employment as well as working for someone else.)

A	Do you have any household or extended family members who live away from the household?	1 = YES	if no (0), go to following part 5.2. Consumption
B	If yes, where? <u>CIRCLE ALL THAT APPLY</u>	1	Nearby town – Specify
		2	Elsewhere in this municipality – Specify
		3	Another municipality or province – Specify
		4	Johannesburg, Cape Town or Durban – Specify
		5	Other country in the region – Specify
		6	International (UK, etc.) – Specify
		7	I don't know
C	How many household/ family members are working away from home?	A. Regular migrants (returns every month)	B. Seasonal migrants (for a limited period each year)
		C. Prolonged period away (more than 6 months at a time)	
D	How many are	a. Men	b. Women
E	What job do they do or which sector	1. Business 2. government 3. education (teaching) 4. contract worker (mining etc.) 5. house aid (cleaning lady etc.) 6. agricultural worker 7. Other	
F	Does the household receive money (or other contributions) from the migrants?	1 = Yes	0 = No (-> 2.15)
	If YES, how often do you receive money	1	Once a year

	(or other contributions)?	2	Every few months
		3	Monthly
H	How does the household receive the money	1	Bank
		2	Mpesa
		3	Post
		4	PostNet
		5	Neighbor/family/friend

I. How much did this household receive from remittances (money or contribution expressed in monetary value) per year?

R.....

J. For each month can you indicate how much is received by the household (money or contribution expressed in monetary value)

Month	Rand	Month	Rand	Month	Rand	Month	Rand
Aug		Nov		Feb		May	
Sept		Dec		Mar		June	
Oct		Jan		Apr		July	

CONSUMPTION

E7. In the last 30 days did you spend any money on the following items for household consumption? If none, write '0', if don't know, leave blank and go to next item.

Expenditure item		Estimated expenditure in RAND during last month	Expenditure item		Estimated expenditure in RAND during last month
A	Cereals (mielie, mielie meal, rice, etc.)		M	Medical care	
B	Roots and tubers (potatoes, sweet potatoes, etc.)		N	Education (school expenses)	
C	Bread		O	Rent	
D	Legumes (beans, peas, groundnuts)		P	Loan repayments	
E	Fruit & vegetables		Q	Communications (cell phone, telephone, internet)	
F	Red meat		R	Transport	
G	Other meat		S	Fuel (wood, paraffin, etc.)	
H	Fish		T	Water & electricity	
I	Eggs		U	Personal items (clothes, shoes)	
J	Oil, fat, butter		V	Soap	
K	Milk & milk products (ice cream, cheese, yoghurt)		W	Other...	
L	Milling				

SECTION F: CHARACTERISTICS OF THE HOUSEHOLD

F0A. To what ethnical group does your household belong to?

1	African	3	Indian	5	Other
2	Colored	4	White		

F0B. How long has the household been living in this area? years

F0C. Are any of the following facilities within a 30 minutes (2 km) walk of your house?

Facility	Distance in km	Distance in walking time (min.)
A. Shop where basic food can be bought		
B. Market to buy goods and food		
C. Markets where you can sell goods and food, if different		
D. Bank		
E. Post office		

F1. WATER

In this section we are going to talk about the water used by this household for drinking, cooking, bathing, or washing clothes, and other household purposes like these.

F1A. What is the source of water used most often in this household for things like drinking or bathing and washing clothes?
(SINGLE MENTION ONLY)

- 1 piped – internal.....1 -> go to following part 5.2. Sanitation
- 2 piped – yard tap.....2 -> go to following part 5.2. Sanitation
- 3 water carrier/ tanker.....3 -> go to following part 5.2. Sanitation
- 4 piped – public tap/ kiosk (free)..... 4 piped – public tap/ kiosk (paid for)..... 5
- 6 borehole..... 6
- 7 rainwater tank..... 7 flowing
- 8 river/ stream..... 8 dam/ stagnant
- 9 water..... 9 well (non-borehole).....10
- 11 protected spring.....11 other (specify)..... 12

F1B. Does the household have to fetch and carry water to the house each day?

Yes	1	No	0
-----	---	----	---

IF NO -> go to following part 5.2. Sanitation

F1C. About how far away is the water that has to be fetched?
.....m

F1D. Who in the household usually fetches water?

	53a. person fetching water	53b. average number of trips per day	53c. How long does each round trip take on average? (include time spent waiting in queue)	53d. How much is carried to the house each day?
	NAME	NUMBER	MINUTES	LITRES
First mention				
Second mention				
Third mention				

F2. SANITATION

F2A. What kind of toilet does the household use?

- Flush toilet..... 1
- Improved pit latrine – with ventilation (VIP)..... 2
- Other pit latrine..... 3
- Bucket toilet..... 4
- Chemical toilet..... 5
- None..... 6 -> Go to following part 5.3. Energy

F2B. Where is the toilet?

- Inside dwelling..... 1
- outside dwelling – on stand..... 2
- outside dwelling – off stand..... 3

F3. ENERGY

In this section, we are going to talk about the different kinds of energy that this household uses for different purposes.

F3A. Is the house connected to an electricity supply?

Yes	1	No	0
-----	---	----	---

F3B. I'm going to read a list of different household activities. For each one, I'd like you to tell me what the main source of energy is.

	1.. Cooking and boiling water	2. Cooking meat	3. Cooking other food	4.. Lighting
	Main source	Main source	Main source	Main source
Wood	1	1	1	1
Paraffin	2	2	2	2
Charcoal/ coal	3	3	3	3
Electricity from grid	4	4	4	4
Electricity from generator	5	5	5	5
Candles	6	6	6	6
Gas from bottle (LPG)	7	7	7	7
Town gas (piped)	8	8	8	8
Car battery	9	9	9	9
Dry battery (eg. Torch)	10	10	10	10
Dung	11	11	11	11
Other (describe)	12	12	12	12
.....				

F3C. If wood is mentioned as a source of energy for any of the above activities: ASK: Who in the household usually collects the wood?

	a. person collection wood	b. average number of trips per week.	c. how long does each round trip take on average? (include time spent collection wood)
	NAME	NUMBER	MINUTES
1. First mention			
2. Second mention			
3. Third mention			

F4. FINANCIAL ASSETS

Does this household, or a household member, have any of the following financial assets? (Tick the right box)

Financial asset	YES (1)	NO (0)	DON'T KNOW (3)
A. Money in a savings account at a bank/ post office			
B. Burial insurance			
C. Rotating saving bags			
D. Insurance			
E. other savings, specify			
.....			

F. Does any person in this household have at this moment taken out a loan/credit?

- Yes, at a bank or formal institution..... 1
- Yes, from a microfinance institution or NGO..... 2
- Yes, from someone who buys my crops/animals..... 3
- Yes, from the grocery store..... 4
- Yes, from a shop in town, e.g. furniture shop..... 5
- Yes, from a friend or neighbour..... 6
- No..... 7

F5. LAND ACCESS & USE

A. How much of the land does the household use for growing crops and how much does the household use for grazing of animals?

	Crops		Grazing	
	yes (1) /no (0)	Estimated size (ha)	yes (1) /no (0)	Estimated size (ha)
A. Communal		ha		n/a
B. Private (own farm)		ha		ha
C. Private (rented)		ha		ha
D. Others (specify)		Ha		ha
.....				

B. What is the total size of all land that is available to household members for growing crops? Record in hectares for those who can give this informationhectares

if information cannot be given in hectares, think of a soccer field –is the total area smaller, about the same or bigger than a soccer field?
 if bigger: determine about how many soccer fields would cover the land the household could use for growing crops?
 Interviewer: Remember
 (I) A soccer field is about ½ hectare.
 (II) One hectare equals approximately 2 acres.

C. Thinking about last year: of the land that the household could have used for growing crops, about how much did it actually use?
 % of total land area

D. If all land or part of your land is not used for production, why not? (multiple responses possible, tick the right box)

a) lack of seeds	<input type="checkbox"/>	e) pest	<input type="checkbox"/>	j) not interested	<input type="checkbox"/>
b) lack of fertilizer	<input type="checkbox"/>	f) rented out	<input type="checkbox"/>	i) other purposes for the land	<input type="checkbox"/>
c) lack of water	<input type="checkbox"/>	g) too old/ young/ weak	<input type="checkbox"/>	k) other specific reason	<input type="checkbox"/>
d) lack of labor	<input type="checkbox"/>	h) too little money	<input type="checkbox"/>	Specify:	<input type="checkbox"/>
				
				

E. How much of the land is irrigated?ha

F. What are the sources of irrigation water, if any, used on the land used for growing crops?
(allow for multiple responses, up to three)

	Sources of water used
a) River/ stream	1
b) Dam	2
c) Borehole	3
d) Tank	4
e) Municipality	5
f) Rain	6
g) Neighbour	7
h) Other (Specify):	8

G. What irrigation system do you use?

Hose	1
Buckets	2
Drip irrigation	3
Pipes	4
Others	5
.....	6

H. How much did you pay for irrigation water last year?Rand

I. Does the household have the right to sell any part of the land it uses for growing crops?

Yes	1	No	0
-----	---	----	---

b. IF YES: about how much of it can be sold?hectares

c. How much do you think the household would be able to get for the land if it sold this land?
Rand

J. Of the land that is available to the household for growing crops, was any of it rented out to other people in the past 12 months?

Yes	1	No	0
-----	---	----	---

b. IF YES: what is the share of the total land held by the household?
.....%

c. IF YES: how much was paid to the household as rental for land used for crops?

Rand/year OR Rand/season

.....

K. Did the household have to pay rent for any of the land used for growing crops in the past 12 months?

Yes	1	No	0
-----	---	----	---

b. IF YES: how much was paid in rent? Rand/year.....

L. Does the household have the right to sell any part of the land it uses for grazing of animals?

Yes

	1	No	0
--	---	----	---

b. IF YES: about how much of it can be sold?hectares

c. IF YES: how much do you think the household would be able to get if it sold this land?
Rand/ha

M. Of the land that is available to the household for grazing of animals, was any of it rented out to other people in the past 12 months?

Yes	1	No	0
-----	---	----	---

b. IF YES: what is the share of the total land held by the households?
.....%

c. IF YES: how much was paid to the household as rental for land used for grazing?

Rand/ha OR
.....Rand/season

N. Did the household have to pay rent for any of the land used for the grazing of animals in the past 12 months?

Yes	1	No	0
-----	---	----	---

b. IF YES: how much was paid in rent? Rand/year.....

**SECTION G: STRESSES, SHOCKS, COPING AND INTERVENTION STRATEGIES
AFFECTING THE HOUSEHOLD**

G1. We would like to know whether specific events or situations occurred in this household over the last 12 months and how many times they have occurred.

	In the last 12 months has your household suffered from			How many times did this happen in the last 12 months?
		Yes	No	
A	Increase in the number of people in the family / household	1	0	
B	Increase in food production costs (water, rent, equipment, seeds, fertiliser)	1	0	
C	Cut-off or decrease of government grant which is not a result of the death of beneficiary	1	0	
D	Flood	1	0	
E	Storm	1	0	
F	Drought	1	0	
G	Serious injury or chronic illness keeping household member from doing normal activities	1	0	
H	Loss of a job of a breadwinner in the household	1	0	
I	Loss of remittances (money received from migrants)	1	0	
J	Loss of possessions, theft	1	0	
K	Death of many livestock	1	0	
L	Food cost or food price increases	1	0	
M	Death of a family member	1	0	

G2. Has your household been confronted with a sudden and severe decrease in monthly income in the past?

Yes	1	No	0
-----	---	----	---

	If Yes, what was your response?	Yes	No	How many times did this happen in the last 12 months?
A	Sell livestock	1	0	
B	Sell land, tools, or other assets	1	0	
C	Use own savings	1	0	
D	Borrow money from relatives or friends	1	0	
E	Take out a loan from mashonisa	1	0	
F	Take out a loan from a formal institution	1	0	
G	Borrow food from relatives or friends	1	0	
H	Take on additional work (e.g. farm labour,)	1	0	
I	Migrate to find work	1	0	
J	Reduce spending	1	0	
K	Reduce food consumption	1	0	
L	Reduce or stop debt/loan repayments	1	0	
M	Received gifts or money	1	0	
N	Received professional counselling (government services, organisations, projects....)	1	0	
O	Other, specify:	1	0	

G3. If your household **did not have enough food available**, how **did** your household **cope** with this? (Don't suggest) (If no problem with FOOD shortage, leave blank)?

	A. Eat less preferred food	B. Reduce food intake	C. Buy food on credit	D. Borrow food	E. Exchange one type of food for another	F. Consume seed stock
YES	1	1	1	1	1	1
NO	0	0	0	0	0	0
	G. Send members to eat elsewhere	H. Send members to beg	I. Limit or reduce portion size	J. Restrict consumption in favour of children	K. Feed working members at the expense of nonworking members	L. Ration money to buy ready-to-eat food
YES	1	1	1	1	1	1
NO	0	0	0	0	0	0
	M. Skip meals for an entire day	N. Gather wild food	O. Asked neighbours/ family relatives for help	P. Found extra income sources or use savings	Q. Household members moved elsewhere	R. Sold household assets
YES	1	1	1	1	1	1
NO	0	0	0	0	0	0
	S. Sold livestock	T. Worked for payment in kind	U. Appeal for food aid	V. Depended on charity/welfare (no social grants)	W. Borrowed money for food	X. Took children out of school
YES	1	1	1	1	1	1
NO	0	0	0	0	0	0
	Y. Could not do anything					
YES	1					
NO	0					

G4. On whom do your household members rely mostly in difficult times? [CIRCLE CODE]

	Neighbours	Relatives/ family in area	Relatives/ family elsewhere	Church	
Yes	1	1	1	1	How do they provide mainly help?
No	0	0	0	0	

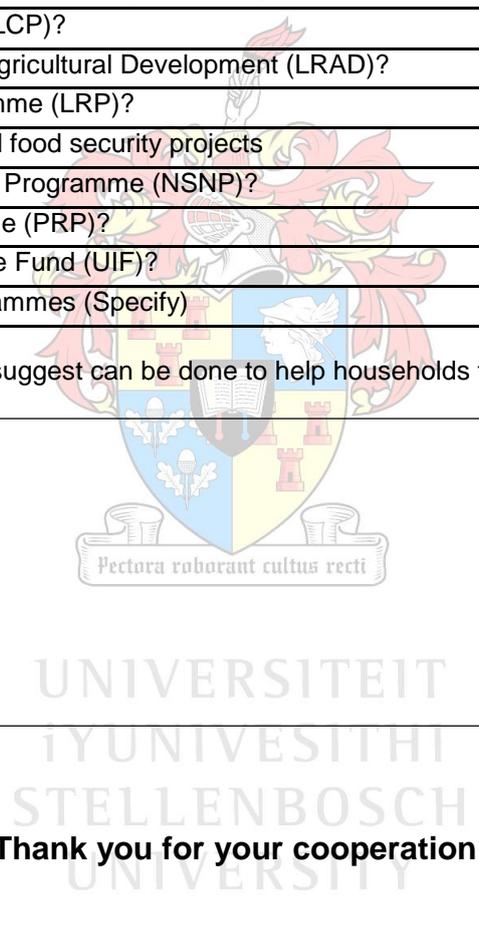
[CIRCLE CODE]

	Food	Money	Counselling	Childcare	Other (Specify).....
Yes	1	1	1	1	1
No	0	0	0	0	0

G6. Has your household or has a member of your household been a **beneficiary of any one of the following government programmes** over the **last 12 months**? Adapt to local interventions in Eastern Cape province

		Yes	No
A	Agricultural Starter Pack Programme (ASPP)?	1	0
B	Comprehensive Agricultural Support Programme (CASP)	1	0
C	Expanded Public Works Programme (EPWP)?	1	0
D	Food Parcel Scheme (FPS)?	1	0
E	Integrated Sustainable Rural Development Programme (ISRDP)?	1	0
F	Land Care Programme (LCP)?	1	0
G	Land Redistribution for Agricultural Development (LRAD)?	1	0
H	Land Restitution Programme (LRP)?	1	0
I	Municipality implemented food security projects	1	0
J	National School Nutrition Programme (NSNP)?	1	0
K	Poverty Relief Programme (PRP)?	1	0
L	Unemployment Insurance Fund (UIF)?	1	0
M	Other government programmes (Specify)	1	0

G7. What do you personally suggest can be done to help households that are experiencing **hunger or a lack of food**?



Thank you for your cooperation!

