# The Contribution of Subsistence Farming to Rural Household Food System: A Case Study of Mamokgadi Village

**By**

**Mohale Machete**

**(Student Number: 11640631)**

**A Dissertation for the fulfilment of a Master in Rural Development (MRDV) Degree**

**Institute for Rural Development**

**School of Agriculture**

**University of Venda**

**SOUTH AFRICA**

**University of Venda**

**March 2020**

**Student** **Mr M. Machete**

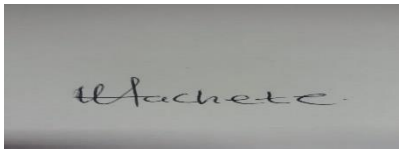
**Supervisor:** **Dr J. Zuwarimwe**

**Co-Supervisor(s):** **Dr M. Manjoro**

**DECLARATION**

I, Mohale Machete, hereby declare that this dissertation for Master in Rural Development (MRDV) submitted to the Institute for Rural Development at the University of Venda has not been submitted previously for any degree at this or another university. It is original in design and in execution, and all reference material contained therein has been duly acknowledged.

**Signature** **Date** 31/01/2020



Mohale Machete

**ABSTRACT**

Subsistence agriculture is regarded as a primary strategy adopted by the rural households for increasing their access to food for their families. Food system options for rural households are mainly through own production and purchase from markets. In some cases people require more than what they produce hence they access food through donations and gifts. The main objective of this study was to determine the contribution of subsistence farming to household food system. The specific objectives were to characterize the rural household food system, analyse the contribution by subsistence farming to rural household food system and to suggest possible strategies that can be used to enhance rural household food system. This study was guided by mixed methods in which quantitative and qualitative approaches were used to collect and analyse data that was collected from the households around various aspects of the household food system. Systematic sampling was applied to select the research respondents. A questionnaire was used to collect both quantitative and qualitative data. To achieve the overall aim and objectives of the study, data was entered into Microsoft Excel and transferred to Statistical Packages for the Social Sciences (SPSS) vision 24.0. Various tools of SPSS were used to interpreted and make sense of the data collected. Furthermore, descriptive statistics were computed to understand variables constituting the data. Furthermore, Chi square test was performed, with the latter applied to achieve objective two and to analyze the association between subsistence farming and variables related to household food system. Discourse analysis was used to sort, categorize, combine and then interpret results for the qualitative data collected. Subsistence farming in the study area is characterised by low level of production. The main sources of food for households are markets, subsistence production and transfers from other households or public programmes. The main findings indicate that subsistence farmers spent most of their money on market food rather than on own production. The Chi square test P-value results indicate that there is relationship significant ($P<0.1$) relationship between subsistence farming and quality of harvest and there is insignificant ($p=0.123$) relationship between subsistence farming income used for household food consumption. Therefore, subsistence farmers' households should be provided with resources required for farming to increase productivity in the study area. Furthermore, the attributes and dynamics of subsistence agriculture need to be understood by all households in the subsistence farming sector to advance the sector as a possible solution to food system and food security in the study area.

**Keywords**: Food system, household, subsistence agriculture

**ACKNOWLEDGEMENTS**

I wish to express my thanks to the following people who helped me with the completion of this research:

- Firstly, I want to thank the Almighty God for giving me power, strength and wisdom for completion of this study. May the glory and honour be unto the Lord. Through his power I have completed this study.
- My supervisors Dr J. Zuwarimwe and Dr M. Manjoro for their time, guidance, moral support and valuable contributions throughout the journey of research. Thank you so much. You're the best.
- My family Maria, Josephina, Sello, Nancy, Reuben, Phetholo and Maureen Machete for giving me support and encouragement because I could not have completed this study without your assistance, tolerance and enthusiasm.
- Mr Wiseman Ndlovu for assisting me throughout the completion of this research despite his tight schedule. Thank you so much, I couldn't have managed to complete this dissertation without your assistance and support.
- I would like to acknowledge my research statistician Mr Martin Canaan Mafunda for constantly guiding, coaching and advising me during the data analysis stage of this research project as his research inputs were invaluable.
- Mr Masipa M.J for his fatherly advice, support and motivation through his advice I have managed to complete this study.
- Mr Mbokane Skumbuzo Christopher who encouraged me to register for this degree, I thank him for his brotherly advice and time he contributed to this study.
- My classmate Muroa Mmatseke Portia, Mathebula Forget and Moagi Letsobana Virginia for supporting, advising and encouraging me, through their support, I have managed to complete this dissertation.
- Mr M Mbatha, for encouraging me and giving advices when I was thinking that it won't be possible for me to complete.
- My special gratitude to Mr Learn Maphaha for always being on my side supporting and advising me throughout the journey of this research.
- I would like to thank my friend Wisani Khoza for believing in me and encouraging me to complete this dissertation.
- Dimakatso Patricia Ngobeni, Muavhi Phalandwa, Tshegofatso Mohale, Innocentia Mohale, Promise Mohale, Mbedzi Tshireledzo, Leshabana Shadrack, Muthubi Mashudu Angel, Sello Ramodisa, Nevari Bethuel for assisting me during the data collection period.

## DEDICATION

This study is dedicated to my late parents Molepo Johannes Machete and Matlala Mafomo. May their souls rest in perfect peace. I also dedicate this dissertation to my friends and family at large.

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## ABBREVIATIONS

| | |
|---|---|
| DAFF | Department of Agriculture, Forestry and Fisheries |
| FAO | Food and Agriculture Organization |
| FFSSA | Forum on Food Security in Southern Africa |
| GDP | Gross Domestic Product |
| GM | Genetically Modified |
| HLPE | High Level Panel of Experts |
| IDP | Integrated Development Planning |
| LARP | Land and Agrarian Reform Programme |
| NDP | National Development Plan |
| OECD | Organisation for Economic Co-operation and Development |
| SADC | Southern African Development Community |
| SDGs | Sustainable Development Goals |
| SSA | Sub-Saharan Africa |
| UNCTAD | United Nations Conference on Trade and Development |
| UNEP | United Nations Environment Programme |
| UN | United Nations |
| WB | World Bank |

# CHAPTER 1 INTRODUCTION

## 1.1 Background

Food is one of the most important and fundamental need critical for human survival. The FAOSTAT (2014) revealed that the latest estimates indicate that 805 million people, about one in nine of the world's population were chronically undernourished between the year 2012 and 2014. These people had insufficient food for an active and healthy life. Despite significant progress in reducing global hunger over the past few decades, food insecurity and malnutrition remain a serious problem in many countries (Global Nutrition Report, 2016). Around 11% of the world's population is chronically undernourished, without enough access to enough calories (Food and Agriculture Organization, 2017). Food and Agriculture Organization (2014) indicates that food insecurity remains an everyday challenge for 795 million worldwide, including 780 million in developing countries particularly in rural communities. As a result, the international community through Sustainable Development Goals committed reducing hunger and poverty to zero by 2030. Since then the United Nations through FAO intends to develop and implement evidence based pro-poor policies, strategies and programmes that promote inclusive growth and sustainable livelihoods, decent employment, access to social protection and empowerment of women and men in agriculture (FAO, 2018). However, the most affected are the developing countries mainly in the sub-Saharan Africa hence more attention has been put there.

Sub-Saharan Africa is regarded the most food insecure region in the world, and for years hunger has been a serious problem in the continent (Bwalya, 2013). The United Nation's Human Development Report (2012) reported that one in four households in sub-Saharan Africa cannot access food. Absolute poverty is the main cause of food insecurity in developing countries and this has affected households' ability to access nutritious and adequate food. Drimie (2013) reported that there is worrying evidence of the high prevalence of hunger which is related to socio- economic factors that are more prevalent in rural than urban areas and have resulted in malnutrition with the children being the most affected. Furthermore, the combined effects of socio-economic, political and environmental factors have negatively impacted the food system mainly in rural areas. According to Vitale (2016), a food system is the path that food travels from conception in the field all the way to digestion in the stomach. This includes growing, harvesting, packaging, processing, transporting, marketing, consuming and disposing of food. Political instability limits the capacity of the government to support people while socio-economic challenges limit the buying power of the people and environmental factors directly affecting the production of food due to climate change effects

such as reduced rainfall (FAO, 2018). It affects food availability by reducing import capacity, and hinders food access, as domestic food prices rise. The poorest rural households bear the brunt of inflation of food and other essential items. Overreliance of the rural communities on purchasing usually expensive food items from grocery shops has had a huge impact on the rural food system. Given the vast land available to rural households and high unemployment levels among the rural dwellers, own food production is the answer. Own food production is the oldest form of survival employed by all societies across the globe (FAO, 2018). Because of its affordability and easiness to practice, own production popularly known as subsistence farming, presents rural households with a tangible alternative that could significantly improve their food system.

Subsistence farming plays a crucial role in solving the problem of food insecurity in most rural communities of Africa in general and South Africa specifically. Through subsistence farming, families could be afforded an opportunity to produce enough food for their households. Surplus produce could be kept to guard against the uncertainties or sold to generate income for the rural households. Evidence is increasing that subsistence and family farms are important in feeding the earth, and that successful policies aimed at poverty alleviation, food security and protection of biodiversity and natural resources depend on the inclusion and participation of small farmers (Commodities & Development Report, 2015).

This shift aligns with increased global focus on the sustainable development goals (SDGs), as agriculture development has been identified as an essential component of the first goal of reducing poverty and hunger(Powell *et al*,. 2015). Statistics South Africa (STATSSA) (2014) states that a significant number of rural households are still vulnerable to food and nutrition insecurity caused by low level of food production technology, unemployment rate in rural areas, climate change, limited access to natural resources (such as water and land) and poverty. Averbeke & Khosa (2007) noted that approximately 30% of the population in South Africa is classified as vulnerable to food and nutrition insecurity and are powerless in meeting their dietary food needs. Mamokgadi village in Limpopo province is not an exception.

Mamokgadi village consists of households engaging in subsistence farming for household food consumption .However, the contribution of subsistence agriculture to rural household food system in Mamokgadi village is not well understood. Therefore, this study seeks to determine how subsistence farming contributes to the household food system providing leads to strengthening subsistence farming and subsequently improving food system.

### 1.2 Statement of the Research Problem

South Africa as a middle-income country is characterised by large income inequalities and absolute poverty (Bwalya, 2013). The country's persistent social and economic inequalities have reduced chances of access to food by the poor. The South African government has tried to eradicate poverty and hunger by giving people land for agricultural purposes. Despite people being given land, many still require assistance with food from the market, since subsistence production is low because people consume more than what they produce. Further, there is high unemployment rate in rural areas, as such, some people cannot purchase food that they need and most of the people are living in poverty (Hendricks, 2014). Food and nutrition insecurity remains a challenge in rural areas because people have little access to resources to produce food to feed their families. This affects young and old people due to insufficient intake of vitamins and minerals to support a healthy life (Tzioumis *et al*., 2016).

Although it is estimated that hunger levels declined from 24 to 12% in 2011, people are still vulnerable to food and nutrition insecurity (Census, 2011). From the above, arises the question, why are most people in rural and urban communities still vulnerable to food and nutrition insecurity and hunger regardless of plentiful acceptance and acknowledgment of subsistence agriculture as an effective approach to achieving household food system . For that reason, this study was undertaken to investigate the contribution of subsistence farming to rural household food system and to suggest possible strategies to strengthen subsistence farming.

### 1.3 Justification of the Study

A well-sustained nation is a healthy nation, and its people can actively contribute to the social and economic development of the country. The study was aimed at determining whether the food that people consume comes from own production, purchases or gifts/donations. This study is needed because some strategies such as land reform, white paper on agriculture of 1995 and racial discrimination in the farmlands ownership failed to achieve tenure security, poverty reduction, gender equity or sustainable land use. The design strategies will benefit by getting relevant information on what need to be done in reducing poverty for poor people through agriculture, increasing the current level of production, empowering rural household to utilise their land, and creation of employment. The results of this study will benefit the community of Mamokgadi village to have different options of accessing food for their household and to have adequate household food system. The results of this study will also benefit the country as it will be closing the gap of unavailability of food access in developing countries, eradicating poverty and hunger. Additionally, this will achieve the Sustainable Development Goal of zero hunger by 2030 through ending hunger and ensuring access by all

people, the poor and people in vulnerable situations, including infants, to safe, nutritious and enough food all year round.

### 1.4 Research Objectives

The main objective of the study was to investigate the contribution of subsistence farming to rural household food system in Mamokgadi village.

Specific were as follows:

1. To characterise the rural household food system;
2. To analyse the contribution by subsistence farming to rural household food system; and
3. To suggest possible strategies that can be used to enhance rural household food system.

### 1.5 Research Questions

The main research question of the study was; what is the contribution of subsistence farming to rural household food system?

The sub questions were as follows:

1. What are the characteristics of rural household food system farming?
2. What are the contributions of subsistence farming to household food system?
3. How can rural household food system be enhanced?

### 1.6 Theoretical Framework of the Study

A food system involves the production, distribution, accessibility and consumption of food. The theory of change aligned to this study is improved own production. It will empower the household to determine what goes in their food basket. A resilient own production will result in a resilient food system hence sustainable food security. The theorist in this tradition defines long term goals and then maps backward to identify necessary predictions (Clark, 2012). Food consumption is influenced by purchasing power, but the way income is used is in turn influenced by the food. These provides the options for people to make decisions about what to eat, circumscribe how income can be spent on food accessibility and contribute to shaping people's food preferences. Figure 1.1 presents a resilient food system.

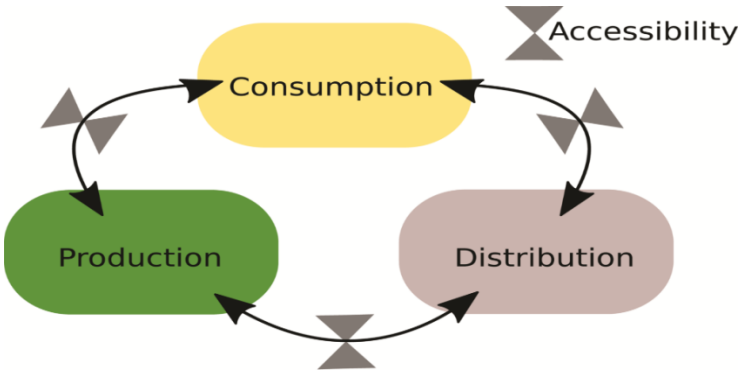


**Figure 1.1** Resilient food system

**Source: https://doi.org/10.3390/land9040101**

## 1.7 Operational Definition of Key Terms and Concepts

*Food insecurity*

The Food and Agriculture Organisation (FAO, 2014) defines food insecurity as a situation where people have limited availability of safe and nutritious food they need to live a healthy and active life. This condition also includes being worried about having enough food to eat. Food insecurity is also defined as a condition that contains characteristics such as inadequate access to food intake, hunger, and vulnerability (Hart, 2009). In the context ofthis study, the terms were used to explain the current state of food and hunger rate.

*Food security*

The United Nations food and agriculture organisation defines food security as having access to enough food for an active and healthy life (FAO, 2010). These always include all members of the household having access to safe and nutritious food. MacMillan & Dowler (2011) indicate that food security exists when all people, always have physical and economic access to enough, safe and nutritious food to meet their dietary needs. This term in this study was used to understand the food needs needed for healthy and active life and what needs to be done for people to have access to healthy food.

*Food system*

The food system has been defined as “an interconnected web of activities, resources and people that extends across all domains involved in providing human nourishment and sustaining health, including production, processing, packaging, distribution, marketing, consumption and disposal of food (Grubinger, 2010). A food system is also defined as the path that food travels from conception in the field all the way to digestion in the stomach (Vitale, 2016). This term on this study was used in discussions regarding, nutrition, food, health, community economic development and agriculture.

*Subsistence farming*

Wendhold (2007) defines Subsistence farming as the production which involves mainly households producing on relatively small plots of land whose sizes are each less than one hectare with limited resources only for the household to alleviate poverty and hunger. Aliber (2009) defines subsistence farming, as farming in which famers are engaged in agriculture mainly for own consumption purposes. This term in this study was used to discuss how people can produce more food for their families and also generate income to buy dietary food needs

that they cannot produce. The term was also used to address how poverty and hunger could be alleviated in rural areas through practising subsistence farming.

### 1.8 Outline of the Dissertation

Chapter 1 provides the Background part of the study which gives the overview to the research topic and identifies the statement of the Research Problem, Justification of the study, research objectives, research questions and theoretical framework of the study. Finally, the chapter briefly discusses the operational definitions of key terms and concepts and outline of the dissertation. Chapter 2 presents a review of the literature from existing sources which debates the contribution of subsistence farming to rural household food system. The chapter also provides the types and characteristics of subsistence farming practiced in rural communities and subsistence farmer's participation in farming. Chapter 3 presents a broad description of the study area, research design adopted in this study and the population and sampling procedures used. The chapter also provides the data collection and data analysis tools used and ethical considerations adhered to during data collection. Chapter 4 presents and discusses the results on the contribution of subsistence farming to rural household food system. Chapter 5 presents and discusses the second objective of the study. Finally chapter 6 presents the main findings, conclusions and recommendations for the study. Literature that was used to support ideas used in this document was listed on the List of References and the appendix provided the tool that was used to collect data as well as the ethical clearance certificate.

# CHAPTER 2 LITERATURE REVIEW

## 2.1 Introduction

The chapter presents the literature review from both national and international sources on the contributions of subsistence farming to household food system. This chapter provides the types and characteristics of rural household food systems. The contributions of subsistence farming towards achieving household food systems are also discussed. The last section provides the conclusion of the chapter.

## 2.2 Food production system

In South-East Asia, food has long travelled from farms to city residents along diverse and sometimes complex routes (Shields, 2013). Production often still starts with small farms, typically family run, and rural fisher folk. Subsistence still dominates south-East Asia's agricultural landscape, with about 100 million smallholders operating in the region. In Indonesia, small farms account for around 90% of the nation's rice production. These small farms also produce soya beans, rice, maize, and sugar (UNEP, 2016). They sell to rural intermediaries, who sell to wholesale markets that cater to sellers at small urban market shops. The motivation behind the selling of these products is to make extra income for them and their families to buy the dietary food needs that they cannot produce themselves.

Food production in sub-Saharan African (SSA) countries has been increasing for most parts as more and more forest lands are cleared for agriculture. . In general, the total food production (primary crops and meat) in SSA has been growing but at a very slow rate of less than 1% per year). For instance, there is an increase of main food crops in one of the SSA countries Benin. These main food crops  are cassava, yams, corn, sorghum, beans, rice, sweet potatoes, guavas, bananas, and coconuts (Morrison & Sarris, 2016This is not appealing because food production growth rate does not correspond with the population growth rate in this region which raises concerns about SSA' ability to self-insure against food and nutrition insecurity. Without both food imports and serious effort to boost food production, SSA would not be able to ensure adequate food supply for the population (Christiaensen, 2010). Since food in sub-Saharan Africa is mostly produced by subsistence farmers, inputs such as fertilizers are mostly not available (Herforth *et al*., 2015). Fortunately, government and development partners around the continent have put in place various rural development programs that seek to subsidise inputs such as fertilizer costs to make them widely available.

Due to dryness of the land in South Africa, only 1.3% of land can be used for crop production and only 3% is considered high potential land STATSSA (2014). According to Food and Agriculture organisation statistics (2010), South Africa is one of the world's largest producer of chicory roots, grapefruits, cereal and grain maize. The food production is mainly coming

from both subsistence and large scale farmers. Subsistence farming is characterised by a low level of production technology which leads them to fail to produce enough food for themselves and their families. Also, crop production among the subsistence farmers is slightly to be affected due to climatic change such as lack of rainfall and natural hazard. This result in poor grazing for goats, sheep and cattle. Many households in South Africa are simply not able to address their food needs through the household level of food production, as production levels are not enough. Therefore, there is need for subsistence farming to be strengthened to achieve household food system.

### 2.3 The types and characteristics of subsistence farming

In most developing countries, agriculture is mainly dominated by subsistence farming of crop and livestock, and these account for a large amount of agricultural production primarily for subsistence purposes (Salami, 2010). According to Grace (2015), subsistence farmers who are mainly trapped in circle of poverty are regarded as the main producers of the total agricultural products in the world.

Subsistence farming can be described in different viewpoints and differs from country to country. According to FAO (2015), subsistence farming is farming activity mainly run and managed by poor households which helps them eradicate poverty through growing and harvesting their own food. Deininger (2012) reported that subsistence farming remains one of the global industries that rely largely on family-scale labour and production. Also, subsistence agriculture supports many of the planet's most vulnerable populations. The World Bank (2016) report indicates that in countries such as Asia and Africa, millions of small-scale and subsistence farmers, pastoralists, fishermen and indigenous peoples produce most of the food consumed worldwide, in most cases on very small plots of land. The subsistence agriculture is characterized by low levels of productivity, lack of reliable markets and lack of support services from government.

Subsistence agriculture remains a primary strategy for alleviating poverty and hunger in the world. According to Carrol (2012), developing countries have over 450 existing subsistence agriculture which belongs to more than two billion people and which include half of the world undernourished people, most of which are living in poverty. These farmers account for the largest agricultural output in most African countries and South Asia. Lowder (2016) notes that Asia has most farms, which 82% of the farms are for subsistence agriculture, followed by Africa while Latin America has (4%) fewer number of farms operating on less than two hectares of land. In South Africa, subsistence farms constitute over 2.9 million of the total land holdings and about 55% of the cultivated land is owned by subsistence farmers (Census,

2011). Majority of the subsistence farmers focus mostly on the production of staple food such as maize, rice, vegetables, and fruits as well as livestock (cattle, goats, poultry, and sheep among others). The production of this food helps the family to determine what type of food goes to their family food basket and the amount of food to be purchased from the food that they cannot produce on their own.

### 2.3.1 Crop Production

In South Africa, most households grow their own crops, such as maize, potatoes, and vegetables. According to Brooks (2016), maize is the staple crop for many smallholders in Africa and promotion of new maize hybrids and genetically modified (GM) varieties is then viewed by many as the solution to low yields subsistence farming. The Trend in the agricultural sector report (2013), indicates that maize production worldwide decreased by 5.2% from the year 2011 and 2013. Maize production remains the largest contributor followed by sugar cane, wheat, hay and soya beans. Crop production increases the number of staple foods, which gives the families a wider option to choose from so as to meet their household food needs. These crops are grown for the purposes of feeding their families and their livestock. However, Hendricks (2014), indicate that most of the areas are not suitable for crop production and the farmers lack money and access to seed, fertilisers and water. This shows that indeed not all areas are suitable for crop production and farmers are still lacking farming equipment to produce enough food for themselves and their families. This means that subsistence farmers should be supported by accessing resources so that they are able to maintain their family farming.

### 2.3.2 Livestock Production

Livestock production in South Africa is a significant contributor to household food system and clothing, and it provides many social and economic attributes to the country (Meissner, 2013). According to Thornton (2010), livestock production accounts for 33 to 40% of the world Gross Domestic Product (GDP). Livestock is critical for many of the poor in developing countries, often contributing to multiple livelihoods objectives and offering ways out of poverty (FAO, 2017). Livestock production consists of cattle, goats, sheep, and poultry. Livestock is used for many purposes by rural households. Cattle are used to pay lobola in some countries such as Lesotho, South Africa, Swaziland, and Malawi. Goats are also used during ritual ceremonies. Cattle provide the household with milk and meat that could be used for breakfast, lunch and dinner. The families which practice livestock production tend to sell meat and milk to other families/market so that they are able to purchase food that they are unable to produce. This boosts their household food system as they have various choices of accessing food.

Livestock production remains an important aspect of life for families in rural areas. However, FAO (2016) notes that most of the areas are not good for livestock grazing especially in rural areas because of climatic change that has caused drought and widespread veld-fires. This means that it is important for governments to intervene particularly with stable feed for livestock.

## 2.4 Characteristics of subsistence households and subsistence farming

### 2.4.1 Family Size

The size of the family determines the level of food needed for consumption. According to Tawodzera (2011), the bigger the family size, the more people to be fed from the available food. The average household size in South Africa is 3.3 per household and the average size of the household in the study area is 10+ people per household. Large families tend to be vulnerable to food insecurity due to the fact that the food they produce is not enough. This was supported by Food and Agriculture report (2014) that accepted that many large families still lack food in South Africa, Ethiopia, and other African rural communities.

According to DAFF (2017) report, the older primary female head of the household tend to be food secure because female above 65 years in South Africa are entitled to government transfer in the form of pensions. They tend to have more control over the resources unlike the younger females. The resources include land and equipment which are important for farm and off-farm investments. They use this land for agricultural purposes specifically to produce food for their families and increase their way of getting food including food that they cannot produce on their own. However, not all families are food secured because the amount of food produced does not constitute the majority of what the household consumes.

### 2.4.2 Land Use

The South African government has tried to eradicate poverty and hunger by giving people land. The land reform Stats SA (2014) indicates that 90% of the claims for land restitution have been solved by the government with most in urban areas whilst claims for the rural areas remain unsolved. The National Department of Agriculture's Land and Agrarian Reform Programme report (LARP) (2010) states that 90% beneficiaries relocated land by the government did not manage to farm productively. This is the major problem with the current policies as they do not fully ascertain how land reform and redistribution can have on employment opportunities for rural farmers and address the inequality that exists.

Hendricks (2014) argues that most of the land redistribution has been unproductive and non-functional and that subsistence farmers still produce a quarter of what commercial farmers produce. Therefore, the South African government has a long way to go in encouraging

farmers in terms of land reform and investment in agriculture to enable subsistence farmers to increase their way of accessing food.

### 2.4.3 Input Usage

Subsistence farmers use manure, fertiliser to improve their agricultural production. The use of fertilisers is noted to be a great input assisting subsistence farmers to increase food production. This would help the subsistence farmers to produce enough food to feed their families and other needy families. The argument was supported by Baiphethi (2009) that the use of improved input is needed to increase production. Hence, some of the unemployed subsistence farmers use their social welfare funds to buy fertilisers for enhancing crop productivity. Nevertheless, the income from social welfare is not enough for both fertilisers and other household needs. Heggins (2013) further supports the statement that some households could not buy inputs due to lack of funds because they are not receiving any form of income including social grants and pension.

### 2.4.4 Gender Participation

It is generally noted that most of the people involved in agricultural activities are men. According to Rahman (2014), men and women are assigned roles differently, men produce food for the families. Women provide substantial labour in subsistence farms in countries such as Ethiopia, Asia and South Africa (FAO, 2015) Married women produce more food for the family than unmarried women because married women gain access to land through their husbands. However, Pienaar (2014) argues that women are a key part of the mainstream in agriculture. The maximum participation of both gender in agriculture is encouraged to achieve food system in rural areas, through producing enough food for consumption and cash sale. Bridging of the gender gap is needed not only to boost the yields and, food and nutrition security globally, but to free women up to participate in other activities that contribute to the economy. This shows that women play a crucial role in subsistence agriculture, and then the root cause which is socialization should be dealt with to increase agricultural productions which will enable families to have many ways of accessing food.

### 2.4.5 Labour

In developing countries, labour used per hectare tends to be high in traditional farming. Mostly family labour is used in subsistence farming (FAO, 2015). However, the traditional farms may hire some labour during the busy time of the year, to assist them with planting, harvesting, and processing of food at their households. However, the contribution of hired labour is small. According to Weggins (2013), family farm members may supplement their income by working off the farm part-time during their free time. This shows that subsistence farmers still need assistance on their farms to produce enough food for future use and to eradicate food and

nutrition insecurity for their families. Therefore, there is a need for subsistence farming to be strengthened.

### 2.4.6 Income and standard of Living

The income and level of living for subsistence farmers are mostly below the poverty datum line (Posel, 2014). The level of income in the household determines the amount of staple food that they can afford. According to Heggins, (2013) subsistence farmers' income is low and their standard of living is compromised. Subsistence farmers have many ways of generating income such as donations, social welfare, pension and income through selling their agricultural produce. Their income does not provide enough household nutrition. Hence, FAO (2015) indicates that subsistence farmers typically exploit low capital to labour-relations, they use more labour than capital to produce food. This means that subsistence farming should be improved to boost the household income as their families would be having food produced on their own.

## 2.5 The contribution of subsistence farming towards household food system

Subsistence farming is the most prevalent form of agriculture in the world and supports many of the world's most vulnerable populations (HLPE, 2015). This type of farming coexists with some of its most diverse and threatened landscapes. According to UNCTAD commodities and Development Report (2015), subsistence and family farms are crucial in feeding the planet, and that successful policies aimed at poverty alleviation, food security, and protection of biodiversity and natural resources depend on the inclusion and participation of small farmers. The agricultural sector is regarded as the largest contributor to the economies of the most African countries and this account for every 35% of the Gross Domestic Products (GDP) as well as approximately 70% of employment (Nyange *et al*., 2011). Despite these contributions, agricultural production has declined by 2.3 % over the past two decades in the continent (Nyange *et al*., 2011). The role of agriculture in the world is acknowledged however, there are some arguments on whether subsistence agriculture plays an effective role in achieving household food system.

The role of subsistence farming in agricultural development remains highly debated. Weld (2015) argued that subsistence farmers in Africa are ill-suited to the lacking scale, knowhow, and access to the supply chain. Weggins (2013) argues that smallholders are appropriate for growing drivers with important effects on the food system and market expansion. Additionally, expanded cash crops production by subsistence farmers could contribute to growth of rural household through labour demand and consumption. This may contribute to household food system by making extra income to buy food that household cannot produce by themselves or other external farm inputs to maximize production.

### 2.5.1 Food Availability

Subsistence agriculture contributes significantly to household food availability. It should be noted that food availability is influenced by several factors which include subsistence farming to ensure productivity, increased production, storage, trade, and transport. Weggins *et al*. (2013) demonstrate that food availability should balance in terms of quantity and quality and with the capacity to provide variety. The capacity of subsistence agriculture to ensure food availability must be investigated worldwide, and especially in the developing world. Grace (2015) also indicated that the production of food has increased ahead of population growth for most of the last fifty years. Most of the increase is mainly from family farms, particularly in Asia. This means that subsistence farming plays a crucial role in developing and developed countries through producing food. Food availability will increase opportunities for the household to access food. These will close the gap of unavailability of food in rural areas.

### 2.5.2 Food system stability (A balanced mix of options)

Subsistence agriculture contributes to food systems as stability is concerned. This can be achieved through decreasing market prices and other shocks (Herforth 2015). This is also done through producing enough food for consumption for future generation to eradicate poverty and achieve zero hunger at the household level. According to High-Level Expert (2013), subsistence agriculture keeps a share of their production to be secure and provides a means of being protected from market instability. This contributes to the stability dimension of the food system and to the flexibility of the economy (HLPE, 2013). Therefore, this provide many ways to acquire food as people will have many options of getting food such as own production and market purchases based on income generated.

### 2.5.3 Main sources of food supply

Subsistence agriculture has been regarded as a primary contributor to increase in food supply to the household. According to Weggins *et al*. (2013) subsistence agriculture increases food supply by producing food for consumption. Whereas the state of FAO (2014) indicate that food insecurity remains a challenge to most of the households as subsistence farming does not provide for every household but only the household that practices it and unemployment is still a challenge in rural areas. These is caused by low production and poor facilities for farming that subsistence farmers use due to lack of finance to boost their yields. However, the agricultural sector is regarded as having all the capacity to reduce the prevalence of food shortage in the world through the increased overall supply of food. Therefore this can be done through creating economic opportunities for the poor and improving dietary diversity and quality of food produced by the households (Lyne *et al*., 2009; Oni *et al*., 2011). Thus, farmers increase food supply to the household by producing enough food for consumption and market to generate income to boost the family budget. This position was supported by Posel (2015)

that food system can be achieved through vibrant and increased productivity of subsistence farming. This entails that subsistence agriculture should be more vibrant and productive in rural areas to achieve household food system.

### 2.5.4 Food Access

Subsistence agriculture plays an important role in ensuring the food system by ensuring food access. Food access is determined in different ways which include, own production, donations and income, and cash crop to participate in food markets (Weld, 2015). Some famers produce enough food and share with other families which are unable to produce food. The contribution of subsistence farming to the household food system is clearly reflected in its capacity to ensuring food for households (Nyange *et al.*, 2011). Food access plays a crucial role in addressing the demand for food. Food access is influenced by many factors such as economic factors, physical infrastructure, and the consumer's preferences. According to Weggins *et al. (*2013), food access is related largely to incomes including implicit income from small farmer's own production. The subsistence farmer's entitlements determine who suffers from famine in the household. According to STATSSA (2016) South Africa has 59.8% of employed members of the household, which means that the remaining percentage of unemployed people could be receiving grants or other form of income to purchase food.

Vella (2012) noted that limited affordability because of price increases is said to be one of the main contributors to households' food insecurity rather than a shortage of food supply and distribution. According to the Department of Agriculture report (2012), limited food access has been identified as the biggest problem of the food system in the world.

For the smallholder farmer's household to be food secure, food access must be adequate not only in quantity but also in quality. Food should be accessible to ensure an adequate and consistent supply of energy and nutrients through sources that are affordable and socio-culturally acceptable to the smallholder farmers. Adequate health care must be provided to achieve adequate food. This means that smallholder subsistence farmers need still requires assistance from government and other stakeholders to produce enough food. Food system will be achieved as subsistence farming will give people more choices to access food. This shows that subsistence farming plays a crucial role and through the support from the government can reduce household food insecurity.

### 2.5.5 Food poverty situation

Food poverty can be defined as the inability to obtain healthy affordable food (Morrison, 2016). This also means worse diet, worse access, worse health, a higher percentage of income on food and less choice from a restricted range of food. There is no doubt about the important role of subsistence agriculture in alleviating poverty in both developing and developed

countries. Subsistence farmers produce food that does not meet their dietary need. Subsistence farmers used to produce enough food and save some for future use (Weggins *et al*., 2013). They store their food such as dried maize on the traditional kraal and use them in the future but those foods that they produce are not nutritious and healthy for their life. Hence, Averbeke & Khosa (2007), indicate that subsistence farming is not effective because most of the households are still vulnerable to food and nutrition insecurity. However, Herforth (2015) states that the composition of growth in terms of intensive use of unskilled labour, which is the kind of input that the poor can offer to the production process, matters significantly for poverty reduction.

De Janvry & Sadoulet (2010) also states that growth in agriculture is nearly three times more effective in reducing poverty rather than its growth in manufacturing, because own production is more sustainable to contribute to household food system, nonetheless unemployment remains a challenge in rural areas. This means that subsistence farming should be well practiced in all parts of the world to reduce poverty and to meet the sustainable development goal of zero hunger by 2025 and Malabo declaration of zero hunger and the root cause of unemployment should be dealt with.

### 2.5.6 Smallholder's capacity influences prices

Subsistence agriculture production leads to a decline in market food prices, especially for staple food. It is important to note that since the demand for staple foods is inflexible, small increases in demand can lead to substantial falls of food prices. OECD-FAO Agricultural Outlook (2016), indicate that international prices of crop and livestock products have fallen back from an exceptionally high level: crop prices started to fall in the second half of 2012 and the prices of livestock product have fallen in 2013. Given the strong contribution of subsistence agriculture to increased production, subsistence farming has contributed strongly to market prices decrease.

The contribution of subsistence farmers to household food system has led to a decrease in market food prices. Furthermore, it should be known that subsistence farmers are the main food producers in developing countries (Posel, 2015). Increased subsistence agricultural production means more food enters the marketplace, which leads to low food prices at the marketplace (OECD-FAO, 2016). Subsistence agriculture also contributes to the food system in rural and urban areas where high marketing and transport costs can drive food prices. This shows that subsistence farming plays a significant role in lowering market food prices. This means that subsistence agriculture should be effectively practiced for decreasing high prices of food at the market and to fight against food and nutrition insecurity in rural and urban areas.

### 2.5.7 Improving food purchasing power

There is no doubt that subsistence agriculture increases food purchasing power in both rural and urban communities. This is critical toward achieving household food system through increased income for most of the poor household which enables the household to purchase food from the market to supplement or meet their dietary needs. According to Averberke & Khosa (2007), subsistence farming is regarded as the utmost contributor towards household income by up to 40% in developing countries, giving the poor some means to access food from the market for household consumption which therefore improves household food security. Small farmers can generate little money from the food produced mainly for household and use that cash to purchase food that they cannot produce at their own from the market. This shows that subsistence farming households are better as they can produce food for their family and earn little income to purchase surplus from the market. This means that it is vital to practice subsistence agriculture to meet household food system.

### 2.5.8 Subsistence production

According to Kalibwani (2015), most of the subsistence farmers in developing countries produce food mainly for subsistence purposes while small proportions of farm produce are reserved for sale. Due to the fact that most subsistence farmers produce mainly for their own consumption, subsistence farmers have the potential to produce marketable food surpluses, which can enable households to feed and meet their required food needs. In parallel line with Ercsey (2012) who argue that, households tend to generate income by selling small portion of their produced products to assist their families to purchase food that they cannot produce on their own. However, De Janvry &Sadoulet (2010) state that growth in agriculture is nearly three times more effective in reducing poverty than its growth in manufacturing, because own production is a more sustainable contributor to household food system, nonetheless unemployment is still a challenge in rural areas. This means that the growth in agriculture could assist most of the farmers to sustain their households.

### 2.5.9 Increased employment opportunities

The subsistence agriculture has been recognized as one of the most important sectors in employment creation in most developing countries (Baiphethi & Jacobs, 2009). Baiphethi & Jacobs (2009) further show that accelerated subsistence agricultural production through increased productivity could create jobs for most household members in rural areas both on and off farm. Increasing agricultural productivity on-farm increases the demand for labour in preparation, planting, weeding and harvesting in most smallholder farms. Christiaensen *et al*. (2010) indicate that the creation of jobs by subsistence farmer's increase the chances of household to be food secured. He further argues that household could household people who

are employed to assist in the farm contribute to the production in terms of processing the food to the household. Therefore, this means that food system in rural area might also be increased through the effective practice of subsistence farming.

### 2.6 Summary of the chapter

The literature review highlighted the types and characteristics of subsistence farming which include crop and livestock production. The characteristics of subsistence farmer's household include, income level of living, labour, inputs usage and gender participation. The contribution of subsistence farming towards achieving food system in a rural area were discussed in this chapter. This includes food availability, food system stability, and main source of food supply, food access, and improving market purchasing power. These contributions try to close the gap of unavailability of food, but some households are still vulnerable. However, there is clear consensus on whether subsistence farming could be the most appropriate to fight against food and nutrition insecurity. Nevertheless, the role of subsistence farming in the rural economies is acknowledged. The contributions also help the families to determine what goes in their food basket and have many choices to access and consume food.

# CHAPTER 3: RESEARCH METHODOLOGY

## 3.1 Introduction

The research methodology is a system to solve problems and the aim of research methodology is to devise a plan on how to carry out the research (Smith, 2015). This chapter discusses the research methodology applied in the study. Moreover, a description of a study area is outlined. Figures and tables are used to better explain some important findings of the study. Ethical considerations to be adhered to are discussed.

## 3.2 Description of the Study Area

The study was conducted at Mamokgadi village. Mamokgadi village is located in Ward 24 of Mopani District under Greater Letaba Municipality in Limpopo Province, South Africa (Figure 3.1). The area is under the leadership of Chief Nancy Tseana Mamaila and the Headman Mpolayeng Steven Mohale. The village is a rural area with approximately 500 households (Greater Letaba Municipality IDP, 2017) and approximately 200 households were involved in subsistence farming. The subsistence farmers were involved in crop production (maize, vegetable and fruit production) and livestock production (cattle, goat, sheep and poultry) for household consumption. The households practice subsistence agriculture in their backyards on the small plots of land they have for the purpose of sustaining their lives and their families. The food system are determined by the size of the farm because many households have small plots of land to do subsistence agriculture. These also depend on the availability of the inputs such as fertilizers and pesticides among others to sustain their farms. The subsistence farmers' production within this area is characterized by low levels of productivity, lack of reliable markets and lack of support service from the government, which cause food and nutrition insecurity among themselves (Bwalya, 2013). The data regarding the contribution of subsistence farming to household food system was collected at this selected area where the food and nutrition insecurity problem is experienced.

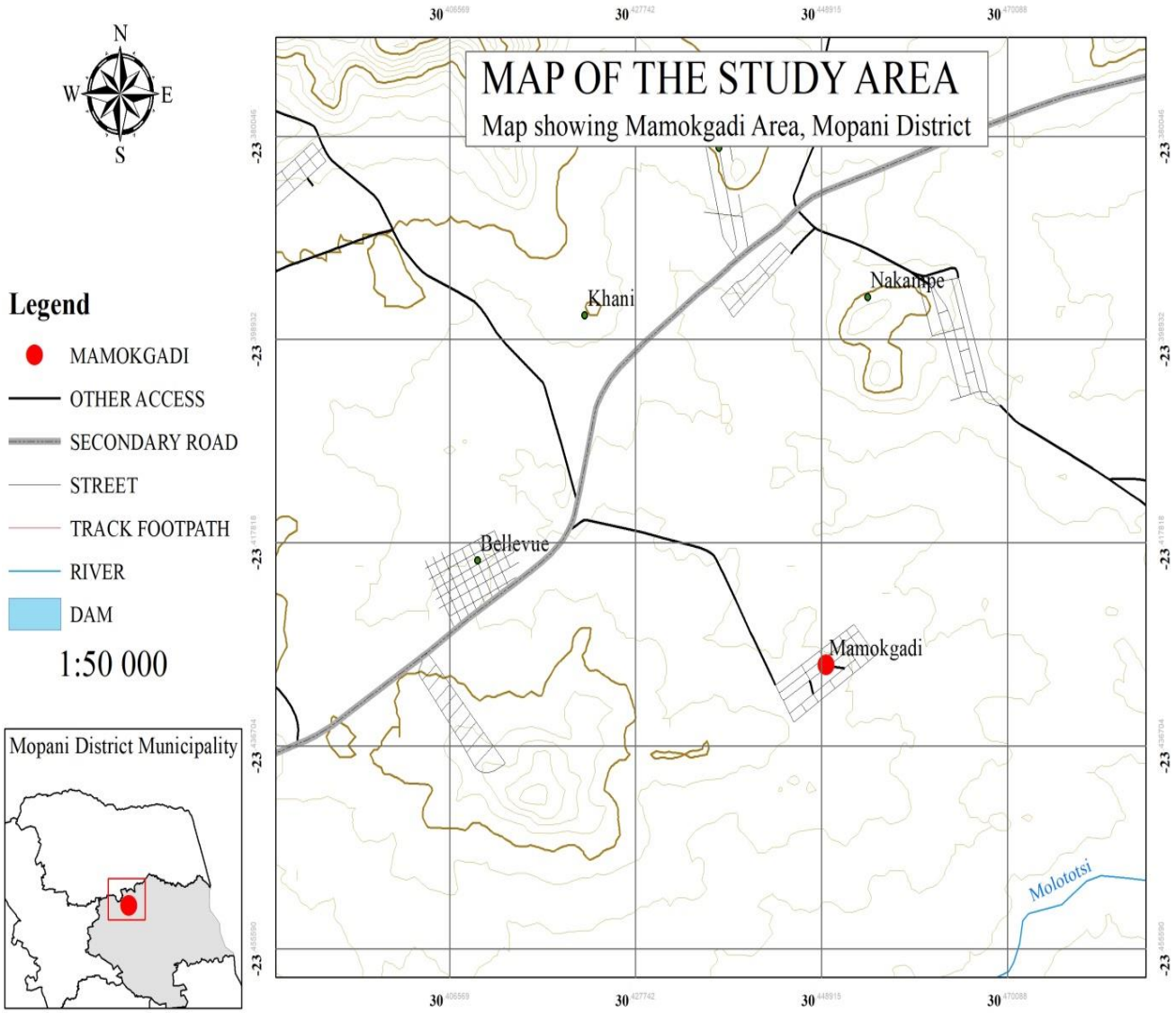


**Figure 3.1** Location of the study

**Source: Google Maps (2018) AfriGIS (Pty) Ltd. Google**

### 3.3 Research Design

This study was guided by mixed methods research design, in which a survey was used to collect quantitative and qualitative data which helped to establish the correlation between household size, number of employed household members and the various components of the food system. The qualitative and quantitative data was collected using questionnaire. When both the quantitative and qualitative method is combined it helps to provide a better understanding of the problem under investigation (Creswell, 2006). Applying both methods provides a better opportunity to generate more understanding and evidence need for reliability (Subedi, 2016). Table 3.1 summarizes the research methodology that was followed.

**3.1 Summary of Research Methodology**

| **Objectives** | **Research questions** | **Sampling** | **Data collection methods:** | **Types of data** | **Data analysis: techniques and tools** |
|---|---|---|---|---|---|
| To characterize the rural household food system | What are the characteristics of rural household food system farming? | Systematic sampling | Questionnaire, checklist, and data | Continuos data Discrète data | Microsoft excel SPPS version Descriptive statistics |
| To categorise contribution of subsistence farming to rural household food system | What are the categories contributions of subsistence farming to household food system? | Systematic sampling | Check-list, Questionnaire | Continuos data Discrète data | Descriptive statistics, Chi Square test |
| To suggest possible strategies that can be used to enhance household food system | How can rural household food system be enhanced? | Systematic sampling | Check-list; Survey | Nominal and numerical data | Discourse analysis |

### 3.4 Population and sampling method

As the study was conducted at Mamokgadi village, the research had targeted rural households which practice subsistence farming. The area has approximately 500 households (IDP, 2017). Systematic sampling method was used to select the sample size from the population. The systematic sampling formula below was used to select the sample from the target population.

$$\text{Sampling fraction} = \frac{\text{Size of the population}}{\text{Size of the sample}}$$

$$\frac{N}{n} = \frac{500}{100}$$

K= 5

N= Size of the population, n= Size of the sample, K=Interval

The first sample was randomly chosen to ensure the probability sampling aspect of systematic sampling. There after the K5 interval, the participant was selected until the targeted households are reached. Then the total sample for this study consisted of 100 subsistence farmers and non-farming households. The identified respondents were chosen to participate in this study.

### 3.5 Data collection

The process of data collection entailed a survey that was used for the collection of quantitative and qualitative data. A questionnaire (Appendix B) was designed to collect data. It was pre-tested in the study area through small number of audiences to check if the audiences understand the call for action and whether it would allow collection of the intended data. Ethical clearance certificate was awarded by the University of Venda Research Ethics Committee. The first entry point was the tribal office, to seek permission to collect data. Then after permission to conduct the study was granted, the data collection commenced. The questionnaires were distributed to the participant to answer on the written questions to elicit reactions, beliefs, opinions and the experiences about the contribution of subsistence farming towards achieving household's food system. The questionnaires were designed from the opinion statement (questions and objectives) to explore participants' understanding of the contribution of subsistence farming to household food system. The questionnaire included both open-ended and closed-ended questions which were scaled, ranked and checked. Open-ended questions allowed the participants to give more in-depth detailed data on the experiences, opinions, beliefs, facts, and attitudes about how subsistence agriculture contributes in providing food and nutrition security for their households. The checklist form was designed to make sure that the participants have answered all the question and they have

signed their questionnaires at the back after completing them (Table 3.1). Closed-ended questions, on the other hand, allowed the participants to choose the answers from the options provided to the questions.

### 3.6 Data Analysis

According to Whittaker (2012), data analysis is a process of making sense of the data that the investigator collected and searching for what lies below the surface content. To achieve the overall aim and objectives of the study data was entered into a computer software using Microsoft Excel and transferred into Statistical Packages for the Social Sciences (SPSS) vision 24.0. Various tools of SPSS were used to interpreted and make sense of the data collected. Furthermore, descriptive statistics were computed to understand variables constituting the data. Furthermore, Chi square test was performed, with the latter applied to achieve objective two and to analyze the association between subsistence farming and variables related to household food system. Discourse analysis was used to sort, categorize, combine and then interpret results for the qualitative data collected.

### 3.7 Ethical Consideration

Neuman (2011) states that ethical considerations or issues are concerns, dilemmas, and conflicts that arise over the proper way to conduct research. As the research is about people, an ethical clearance from the University Research Ethics Committee (Appendix A) was obtained before carrying out the study. No monetary value that were given to participants as a form of appreciation for their participation. However, participants were informed that the participation is free. Participants, students, in this case, were be asked to sign a consent form confirming that participation is free. Furthermore, participants were clarify that they can freely pull out at any stage if they feel that they are no longer feeling like continuing with the study or when feel, like they are rights, are being violated. The anonymity of participation was assured. The data obtained in the process of this study were only used for this study only. Where names of participants are available were kept secret and coding descriptive was applied

# CHAPTER 4: THE CHARACTERISTICS AND CONTRIBUTION OF SUBSISTENCE FARMING TO RURAL HOUSEHOLD FOOD SYSTEM

**Abstract**

Food system options for rural households are mainly through own production and purchase from markets. In some cases, people require more than what they produce hence access food through donations and gifts. Subsistence farming in rural areas is characterised by low level of production and it is affected by climatic conditions such as drought. The subsistence farmers still require food assistance from the market to achieve their household food need due to low level of food production. The specific objectives for this chapter was to characterize the rural household food system. Systematic sampling was used to select the participants to participate in this study. Data collection entailed a survey in which a questionnaire was used to collect both qualitative and quantitative data. The data was analysed using descriptive statistics. The key findings show that subsistence farming was found to be dominated by young people in the study area, particularly males and dominated by employed people. Subsistence farmers spend their money on buying food from the market rather than on own production. Crops such as maize are found to be significantly contributing to household food system because the study area is conducive for those types of crops. Grain maize is also found to be dominant in the study areas practised for household food consumption. Most of the subsistence prefer to give away their produced food to other family and community members rather than selling, while others prefer selling to generate money to boost their household market purchasing power. Therefore, the attributes and dynamics of subsistence agriculture need to be understood by all households in subsistence farming sector to advance the sector as a possible solution to food system and food security in the study area.

**Keywords:** Food system, household, subsistence agriculture

## 4.1 Introduction

This chapter presents and discusses the results of the contribution of subsistence farming to rural household food system. Subsistence farming is characterized by many aspects, including family size, income standard of living, and size of the farm among others. According to UNCTAD (2015) commodities and Development Report (2015), subsistence and family farms are crucial in feeding the planet, and that successful policies aimed at poverty alleviation, food security, and protection of biodiversity and natural resources depend on the inclusion and participation of small farmers. The agricultural sector is regarded as the largest contributor to the economies of the most African countries and this account for every 35% of the Gross

Domestic Products (GDP) as well as approximately 70% of employment (Nyange et al., 2011). Despite these contributions, agricultural production has declined by 2.3 % over the past two decades in the continent (Nyange et al., 2011). The role of agriculture in the world is acknowledged however, there are some arguments on whether subsistence agriculture plays an effective role in achieving household food system. This chapter starts by presenting the results on characterizing the rural household food system. The biographic information of the participants together with the characteristics of rural household food system is interrogated before results of the indicators and determinants of household's food system are presented. The biographic information of the participants include age of the respondents, gender, and employment status among others. The specific objective addressed in this chapter is to characterize the rural household food system. The research methodology adopted for this chapter is discussed.

### 4.1.1 Research methodology

This study was guided by mixed methods research design, in which a questionnaires was used to collect quantitative and qualitative data which helped to establish the correlation between household size, number of employed household members and the various components of the food system. Ethical clearance certificate was awarded by the University of Venda Research Ethics Committee. The first entry point was the tribal office, to seek permission to collect data from the local people. Then after permission to conduct the study was granted, the data collection commenced. The systematic sampling method was used to select the participants to participate in this study. The process of data collection entailed a survey that was used for the collection of both the quantitative and qualitative data. The questionnaires was pre-tested to check whether it would allow collection of the intended data. The data was entered into a computer software using Microsoft Excel and transferred into Statistical Packages for the Social Sciences (SPSS) vision 24.0. Various tools of SPSS were used to interpreted and make sense of the data collected. Furthermore, descriptive statistics were used to understand variables constituting the data.

## 4.2 Respondent's profile

### 4.2.1 Age group of the respondents

The majority of the participants (61%) were between 18 and 35 years old(household head) followed by 31% of the participants who were between 36 and 50 years old (farmers) while 7% of total participants were above 51 years of age and only 1% were child headed households below the age of 18 years. What can be deduced is that subsistence farming is mainly practiced by young people in Mamokgadi village. However a significant number of the

participants are headed by adult household heads. What can as well be deduced from the age dynamics is that other things being equal these participants can be productive in the farming business.That the majority of the respondents were between 18 and 35 years old could have positive effects on the productivity level of their farming as they are likely to have acquired the necessary skills and experience to engage in such labour intensive work that is characteristic of subsistence farming. On the other hand, the young respondents though few are likely to have lack farming experience which affect their level of production**.** This study was dominated by youth in terms of age group. Similarly, White (2012) said that in South Africa the rural youth are trapped in a vicious cycle of poverty and unemployment, and agriculture (particularly farming and husbandry) is painted as the saviour of young people. This was supported by Pienaar (2014) who also argues that young people in agriculture can carry heavy loads compared to older people. Nevertheless, more young people in the household means that more labour is available for carrying out smallholder subsistence farming thus improving productivity especially if they are unemployed and economically inactive.

### 4.2.2 Gender of the Respondents

Of the 100 participants who participated in the survey, 58% were male while 42% were female. The dominance of male respondents in farming could also speak to the land ownership dynamics in the communal areas where more male household heads own land compared to female members of the communal areas. However women are also increasingly engaging in subsistence agriculture to supplement household food needs. In parallel line of argument Kandiwa (2013), emphasised that women are a key part of the mainstream agriculture. Smallholder subsistence agriculture then becomes an attractive alternative opportunity for obtaining food and income for most women. This may be true since women have been traditionally associated with taking care of the household duties such as farming. The results support the argument by Rahman (2014), that men and women play an important role in agriculture as they are assigned to different roles.

### 4.2.3 Level of Education

In terms of participants' level of education the results show that the majority of participants(60%) had attained tertiary education 18% were educated up to college level while 11% of the participants were educated up to matriculate level and the remaining 11% of the participants had no formal education. The level of education is often associated with the ability of the farmers to be productive at the farm as the higher the education a farmer has the better they can make better informed decisions to adopt productivity improving technologies Rahman (2014). The majority of the respondents had good educational background even if it is not

related to agriculture and chances are that they can still deploy that education to improve their subsistence farming activities. Subsistence agriculture is a sector that can contribute to individuals who lack opportunities to get formal employment because of low level of education. They may have serious implication on productivity and food system of the most farmers. Therefore, farmers should be encouraged to take courses in agriculture this might assist them to sustain their farms. This supports the argument by Pienaar (2014) who argues that educational skills in subsistence agriculture are needed to increase household productivity.

### 4.2.4 Employment status

The employment status plays a crucial role in determining what type of food has to be consumed in the family. The results show that the study area consisted of formally employed respondents and unemployed respondents. This means that the participation of smallholder subsistence agriculture in Mamokgadi village consisted of employed, unemployed and self-employed people. Results showed that the majority of participants were unemployed (52%), followed by 27% who were in formal employment while 18% of the total participants was self-employed and the remaining 3% of the total participants was shared by those who were either getting casual/piece jobs or receiving social grants. Similarly, Nyage (2011) has expressed a similar opinion, stating that subsistence farmers who are unemployed could not buy farming equipment's and fertilisers to supplement their farm. Hence, unemployed people should be encouraged to engage in subsistence farming for extra cash to buy the dietary food needs that they cannot produce.

### 4.2.5 Household size

Table 4.1 presents the household size of the respondents. This means that families with bigger size of the family require more food to feed their households. The above statement is supported by Tawodzera (2011) who argued that the bigger the family size, the more people to be fed from the available food. Large families tend to be vulnerable to food insecurity due to the fact the food produced is not enough for their family. The number of individuals living in a household influences the amount of food needed by the household and also has impact on the type and amount of labour available for income generating activities such as subsistence farming. Similarly FAO (2014) argued that most of the large families in South Africa still lack access to food.

**Table 4.1:** Respondent's household size

| Household size | Frequency | Valid Percentage |
|---|---|---|
| 2-4 | 1 | 1.0 |
| 5-6 | 20 | 20.0 |
| 7-8 | 30 | 27.0 |
| 9-10 | 24 | 27.0 |
| 10+ | 25 | 25.0 |
| **Total** | **100** | **100.0** |

### 4.2.6 Household income options

The participants were also asked of what constituted their household income types. The distribution of their responses shows that the majority (51%) were salaried followed by 27% of the participants who relied on social welfare while the remaining 22% were equally shared by those who relied on “pension” and “other” sources of income. Thus, social welfare and salary constituted the major income types for the majority of the survey participants. The income in most cases is not enough to meet the food expenditure required by the household. Heggins, (2013), indicate that subsistence farmers’ income is low and their standard of living is compromised. The respondents who were unemployed indicated that their income is not sufficient to meet their household food needs that is why they engaged themselves in subsistence farming to generate income to supplement their household food need. Therefore, this shows that household income plays a significant role in feeding the family. The findings support the argument by Bwalya (2013) who indicated that South Africa as a middle-income country is characterised by large income inequalities and absolute poverty.

### 4.2.7 Respondent’s monthly income

The household income determines what goes in the family basket. Accurate household monthly incomes are extremely difficult to obtain. The study divided the income earned in three categories: those who earn less than R1000 per month, those who earn between R1001 and R5000 per month and those who earn above R5000 per month. The participants’ responses pertaining to their household income shows that majority of them had a household income of over R5000 (60%), followed by 31% of those who had a household income ranging between R1001 and R5000 while only 4% of them had an income less than R1000.00 and remaining 5% of the total participants had no income at all. The results contradict with Posel (2014), who reported that income and level of living for subsistence farmers are mostly below the poverty line. However, results show that this study was dominated by people with high income because they were employed and received salaries. Therefore, households with incomes have more purchasing power than those without income or low income. As a result, households engaged in subsistence farming seem to be sustainable and they had easy option for income generation and food access for the poor households. This support the argument by Ercsey (2012) that households with high income have more food purchasing power in the market.

### 4.2.8 Monthly Food Expenditure

The participants were also asked about how much they spent on food per month and the results show that 52% of the participants spent an amount ranging between R501 and R2000 on food every month, followed by 24% of the participants whose monthly food expenditure was in excess of R2000 then by 20% of the participants who said their monthly food expenditure amounted to less than R500 while the remaining 4% of the participants said they did not spent any amounts of money on food on monthly basis, they get food from donations and gifts on the monthly basis. This means that most of the households spend more money on food. This is supported by Bjwala (2013) who asserted that "most of the household access food from the market than own production, which makes them to spend more money on food purchases". The above statement contradicts with FAO (2015) which contended that subsistence farmers typically exploit very low capital to labour-relations, they use more labour than capital to produce food. The respondents who said they did not spent any amount of money on food indicated that they got food from either donations or family members engaged in subsistence farming. However, as a result, households engaging in smallholder subsistence agriculture seem to be successful and have easy option for income generating and food access for poor households.

## 4.3 Characteristics of existence household and subsistence farming

This section presents the findings and analysis of characteristics of existence household and subsistence farming. In summary, tables of respective variables are presented while detailed analysis and interpretation is made on variables requiring any further analysis. The tables are illustrated below.

### 4.3.1 Forms of subsistence Farming

The distribution of frequencies of participants' responses pertaining the type of subsistence farming that they practiced shows that the majority of survey participants were practicing crop production (63%) only while 16% of the participants were into livestock production and the remaining 21% of the participants are reported to practice mixed forms of subsistence farming. The findings revealed that crop production is the biggest category of farming in the study area. This is attributed to the suitability of the study area for crops that include maize and vegetables. Parallel to the line of argument Brooks (2016) indicate that maize is the staple crop for many smallholders in Africa and promotion of new maize hybrids and genetically modified (GM) varieties being viewed by many as the solution to low production by subsistence farming. Our findings also show that most of the subsistence farmers in the study area prefer a wide range of crops such as maize and vegetables as a stable food for their household. The consumption

of local seasonal crops is one of the influences that encourage subsistence farming in the study area. The choice of crop production is supported by FAO (2016) that most of the areas are suitable for crops and not good for livestock grazing especially in rural areas because of climatic change that has caused drought and widespread veld-fires.

### 4.3.2 Types of Crops Produced

The types of crops produced contribute to the household food need. The results show that vegetables constituted the mostly grown crop as reported by 40% of the total participants; maize was grown by 19% of the participants while fruits were grown by 32% and other crops were grown by 9% and 32% of the total survey participants respectively. The participants indicated that the choice of vegetables by most of the respondents appears to be based on the familiarity with crop, farm size, climate conditions and availability of resources to sustain the farm. Similarly Brooks (2016) indicate that maize is the staple crop for many smallholders in Africa and promotion of new maize hybrids and genetically modified (GM) varieties being viewed by many as the solution to low production by subsistence farming. This support the argument by White (2012) that maize is suitable for most of the areas in South Africa.

### 4.3.3 Types of livestock production

The farmers were also asked about kinds of livestock subsistence farming that they were practicing in their farms, of which a sizable number said they were practicing livestock production. Consequently, majority of the participants (44%) kept a combination of livestock species 24% were into cattle rearing, 19% were raising sheep while17% of surveyed subsistence farmers were into goat farming. The respondents indicated that livestock production is affected by climate change effects such as drought and lack of rainfall. The above statement is supported by Ben Adler (2016) who argued that most of the areas are not good for livestock grazing especially in rural areas because of climatic change that has caused drought and widespread veld-fires. This means that good climate change could lead to successful production of livestock in rural areas as the current one is affected by harsh climatic and temperature conditions. This support the argument by FAO (2017) that livestock is critical for many of the poor in developing countries, often contributing to multiple livelihoods objectives and offering ways out of poverty.

### 4.3.4 Household farm Size

The availability of land for farming is an important factor determining the success of subsistence farming and the study is interested in the size of the household farm size where farms are located. The table 4.2 presents the frequencies for the distribution of participants'

responses on total farm size variable. Majority of the participants had farms of less than 100m2 in size, followed by participants who had farms of sizes ranging between 100m and 500m while minority of the participants had farms of sizes exceeding 500m2. The respondents indicated that farming takes place inside the stand that they lived in. Subsistence farmers in the study area are presently constrained by the size of the farms. The size of the farm could have negative or positive impact on the level of productivity. This support the argument by Hendricks (2014) that most of the land redistribution has been unproductive and non-functional and that subsistence farmers still produce a quarter of what commercial farmers produce. This confirms the arguments that subsistence agriculture's production involves mainly households producing on relatively small plots of land less than one hectare with limited resources for household subsistence. Furthermore, White (2013) notes that subsistence agriculture is a strategy for low income or vulnerable households that have access to land and can find a way to leak market expenditures, especially in times of food crisis.

### 4.3.4 Reason for practicing subsistence farming

The respondents gave combinations of reasons for engaging in subsistence farming. The findings show that 40% of the participants engaged in subsistence farming to earn extra cash, 36% of the participants engaged in subsistence farming for subsistence/household consumption reasons. Therefore 16% and 8% of the participants were into subsistence farming for sale and other reasons respectively which may improve their purchasing power and supplement their household needs. The small proportion of participants who reported they were into subsistence farming for business reasons also agree with a large number of participants who classified themselves as unemployed despite the fact that they were fully engaged in subsistence farming. The production of food in the study area by the subsistence farmers is still relatively thin, concentrating mostly on production for the household consumption. This was supported by FAO (2014) that food insecurity remains a challenge to most of the households as subsistence farming does not provide for every household but only the household that practices it and unemployment is still a challenge in rural areas.

## 4.3 Household food system

This section presents the findings and analysis of indicators and determinants of household food system. In this section, the respondents were asked to indicate how their household got food and the further analysis of each variables were done.

**Table 4.2:** The respondent's household farm size

| Total farm size | Frequency | Valid Percentage |
|---|---|---|
| More than 500M2 | 14 | 14.0 |
| Between 100M and 500M2 | 37 | 37.0 |
| Less than 100M2 | 49 | 49.0 |
| **Total** | **100** | **100.0** |

### 4.4.1 Method of acquiring food

The surveyed farmers were also asked of how they acquired their food. The majority of participants obtained their foods from the market, followed by those who produced their own food specifically for household consumption while the minority of the participants said they acquired food from donations (Table 4.3). This means that most of the households depended on market food rather than their own production. This was supported by Baiphethi (2009) that most of the household still require food assistance from the market despite the acknowledgement of subsistence farming as remedy to household food system problem. Bjwala (2013) indicated that most of the households access food from the market than own production. Most of the famers indicated that their own production is either taken to the milling corporation for household consumption or cash. This confirms the argument that people still require assistance with food from the market despite acknowledgement of subsistence farming to sustain household food needs. This could also be the reason why most of the farmers indicated that they accessed food through the market. This is the evidence that most of the household rely on food purchased from the market rather than their own production. .

### 4.4.2 Number of meals taken per day

Table 4.4 shows that majority of participants had 3 meals (breakfast, lunch and supper) a day and minority of the participants had 2 meals a day (lunch and supper only). Thus, 6 in every 10 participants said they were having 3 meals per day while nearly 3 in every 10 participants reported having 2 meals a day (lunch and supper only). This might be true since the respondents' method of incomes falls under salary, meaning that they are able to afford most of the food. Parallel to the argument by Ercsey (2012) households with high income have more food purchasing power. The respondents indicated that their meals consisted of their own produced food and food purchased from the market. This supports the literature by Bjwala (2013), that most of the household access food from the market than own production, which makes them to spend more money on food purchases. This finding also confirms that most of the participants have adequate access to food.

**Table 4.3:** Respondents methods of getting food

| **Method for acquiring food** | **Frequency** | **Valid Percentage** |
|---|---|---|
| Donations | 16 | 16.0 |
| Own Produce | 20 | 20.0 |
| Markets | 64 | 64.0 |
| **Total** | **100** | **100.0** |

**Table 4.4:** The number of meals taken per day

| Number of meals per day | Frequency | Valid Percentage |
|---|---|---|
| Breakfast only per day | 1 | 1.0 |
| Nothing to eat per day | 4 | 4.0 |
| Breakfast and lunch only | 5 | 5.0 |
| Lunch and Supper only | 26 | 26.0 |
| Breakfast, Lunch and Supper | 64 | 64.0 |
| **Total** | **100.0** | **100.0** |

### 4.4.3 Types of food taken during breakfast

Breakfast is an important meal of the day. Our findings shows that the majority of the participants had bread, eggs, cereal and milk for breakfast, whereas minority of the participants said they had pap, meat and pumpkin for breakfast (Table 4.5). However some of the participants indicated that they had meat and eggs, while few of the participants had fruits only for breakfast. The findings revealed that most of the families in the study area had breakfast even though the food taken for breakfast does not meet the dietary needs of the households. Similarly, Bwalya (2013) argued that there is high unemployment rate in South Africa as people are living in poverty. This means that lack of money limits the households to have a balanced diet during meals like breakfast. This is due to unemployment rate in rural areas because most of the family members are unemployed and are unable to produce dietary food needs. Therefore, subsistence households should be encouraged to engage in farming to generate money that they will use to buy food that they cannot produce on their own.

### 4.4.4 Type of food taken during lunch

The survey participants were asked of the type of food that they took for their lunch. Table 4.6 below shows the frequencies of responses gathered from the participants. The majority of the participants said they had taken pap and meat for their lunch. Additionally, some of the participants said they had taken pap and vegetables and some of the participants said they had taken pumpkin and beans for lunch while minority of the participants said they had taken rice and salads at lunch. The respondents indicated that they had taken pap and vegetables because they are the products which they produced more. White (2012) indicated that the choice of vegetables by most of the respondents appears to be based on the familiarity with crop, farm size, climate conditions and availability of resources to sustain the farm. The research findings show that subsistence farmer's households still face problems in balancing their diets because food produced subsistence farmers in the study area does not meet household food need and subsistence farmers cannot afford to purchase food that they cannot produce and there is high unemployment in the study area. This means that subsistence farming as a way for earning extra cash could be playing a vital role in balancing the diet of the household. This supported the argument by Vella (2012) that food at their access must be adequate not only in quantity but also in quality.

**Table 4.5*:*** The types of food taken during breakfast

| Type of food taken during breakfast | Frequency | Valid Percentage |
|---|---|---|
| Fruits | 5 | 5.0 |
| Meat and eggs | 18 | 18.0 |
| meat, pap and pumpkin | 26 | 26.0 |
| Bread, eggs, cereal and milk | 51 | 51.0 |
| **Total** | **100** | **100.0** |

**Table 4.6:** The types of food taken during lunch

| Type of food taken for lunch | Frequency | Valid Percentage |
|---|---|---|
| Rice and salads | 11 | 11.0 |
| Pumpkin and beans | 22 | 22.0 |
| Pap and vegetables | 28 | 28.0 |
| Pap and meat | 39 | 39.0 |
| **Total** | **100** | **100.0** |

### 4.4.4 Type of food taken during supper

The types of food that survey participants were taking for supper were also gathered. Table 4.7 presents the frequencies of the responses obtained from the participants. The majority of participants said they taken pap and meat for supper, followed by participants who said they taken pap and vegetables and some indicated that they had taken rice and vegetables for super then minority of the participants said they taken pumpkin for supper. Thus, nearly 7 in every 10 participants had taken pap for supper while approximately 2 in every 10 participants have taken salads for super. The research findings show that most of the respondents took the same food that they had taken for lunch during supper. This means that the subsistence farming in the study area is dominated by crops than other types of subsistence farming because of some reasons including type of soil among others. White (2012) support the argument that, the choice of vegetables by most of the respondents appears to be based on the familiarity with crop, farm size, climate conditions and availability of resources to sustain the farm.

## 4.4 Contribution of subsistence farming to household food system

This section presents the analysis and interpretation of the research findings on how subsistence farming contributed towards household food system in the study area. This section focuses on the variables such as food production, accessibility, expenditure, utilization and consumption, employment creation and income generated from subsistence farming in Mamokgadi Village.

### 4.5.1 The proportion of food produce distributed

Most of the subsistence farmers engage in farming activities mainly to make extra cash. The majority of the farmers (48%) said they sold their products (20-40% of their total produce), followed by 32% of the participants who donated their little proportion of their farm produces (0-20%) while 20% of the participants said they saved half of their produces (40-60% of their total produces) for future use.. The findings suggest that some of the households sell part of their products produced to generate income which can be used on other household food expenditures such as buying dietary food needs that they cannot produce. It is indeed that subsistence farming contributes by creating employment in the study area. Parallel to this line of argument Ercsey (2012) emphasized that households that generate income through subsistence farming increase their household food purchasing power to buying food that they cannot produce.

**Table 4.7:** The types of meals taken during supper

| Type of food taken for supper | Frequency | Valid Percentage |
|---|---|---|
| Pumpkin | 5 | 5.0 |
| Rice and salads | 11 | 11.0 |
| Pap and vegetables | 17 | 17.0 |
| Pap and meat | 67 | 67.0 |
| **Total** | **100** | **100.0** |

### 4.5.2 Food produced given away

The community members were dominant receivers of the food products given-away by subsistence farmers (37%), followed by family members (19% of the participants), then 16% of the farmer's produce were sold out to the supermarkets. Therefore 13% of the participants sold out their farm produces to street vendors and 15% of the participants said they gave-away their food products to other players which include donations other than supermarkets, street vendors, and family and community members. The research findings show that most of the household gave away some of the food they produced food to other community members to sustain their families. This means that subsistence farming contributes to poverty alleviation of other households in the area because subsistence farmers prefer giving away food to poor households. Those who indicated that they sold their products to the market, showed that they generated money which helped them to supplement their dietary food needs. The above statement is supported by Weggins (2013) who argued that households engaging in subsistence farming tend to generate money by selling their products to other households to buy food that they cannot produced. This also supports the argument by Baephethi (2009) that households practising subsistence agriculture have options of accessing food.

### 4.4.3 Family members employed on the farm

Labour intensity is one of the important factors in subsistence farming in most rural areas. The study also established the role of subsistence farming in terms of creating alternative sources of employment for family members. The majority of farmers employed less than 2 family members in their farms, followed by farmers who employed 3 family members, then a minority of the farmers employed four people in their farms (Table 4.8). Nearly half of the farmers who took part in this study employed less than 2 members of their families to assist on the farm. The findings reveal that members who were employed to assist in the farm were from within the community. These members were temporary hired to assist in the farm and they were considered based on their willingness and because they showed interest in farming. Subsistence farming is characterised mainly by the usage of the household labour and it creates employment to some members of the community which are paid through the products they produce. This supports the argument that subsistence farming contributes towards the creation of farm employment in the study area. Similarly, Sumberg (2012) emphasized that subsistence agriculture is seen as the saviour for young people in terms of employment creation.

**Table 4.8:** The number of family members employed in the farm

| Number of family members employed | Frequency | Valid Percentage |
|---|---|---|
| Four | 12 | 12.0 |
| More than five | 14 | 14.0 |
| Three | 19 | 19.0 |
| Less than two | 55 | 55.0 |
| **Total** | **100** | **100.0** |

### 4.4.4 Income generated from farming

It is evident that subsistence farming contributes is important to the household income. Farmers who generated an income between R101 and R400 and income in excess of R400 were both tied at 33% of the total participants for each income category. Only 5% of the total farmer generated an income of less than R100 while 29% of total farmers did not generate any income because they did not sell any of their total output but consumed by the household instead. The respondents emphasized that the income generated gives their household means to access food from the market to boost their household food needs, consequently enhancing their household food system. These incomes increase the household food purchasing power from the market. This is supported by Averberke & Khosa (2007) who argued that subsistence farmers generate little money from the food produced which was mainly for household and use that cash to purchase food that they cannot produce on their own from the market. However, subsistence farming remains as an option for generating income to supplement household food needs. This supports the argument by Ercsey (2012) who argued that households that generate income through subsistence farming increase their household food purchasing power in the market through buying food that they cannot produce.

## 4.5 Summary of the chapter

The chapter provided the findings and analysis of the results on the contribution of subsistence farming to rural household in Mamokgadi village. The main sources of food for households are market, subsistence production and transfers from other households or public programmes. Subsistence farmers spent most of their money on market food rather than on own production. Crops such as maize are found to be significantly contributing to household food system because the study area is conducive for those types of crops. Grain maize is also found to be dominant in the study areas practised for household food consumption. Livestock production in the study area was affected by climatic conditions which caused widespread and veld fires and most of the area in the study area are not suitable for livestock grazing. The low level of production limits the scope of subsistence farming, preventing access to nutritious food that can be accessed reasonably. Subsistence farming provides a significant amount of food consumed by the household as well as incomes. Although subsistence farmers in the study area are still depending on the markets food to supplement most of their household food needs. The outcome is that the income generated from the farm increase the household food purchasing power for household and other household use.

# CHAPTER 5: ASSOCIATION BETWEEN SUBSISTENCE FARMING AND EXISTING HOUSEHOLD FOOD SYSTEM

## Abstract

Subsistence farming plays a significant role towards rural household food system in Mamokgadi village. Poverty and unemployment are still the challenge in rural areas. Subsistence farming in rural areas is affected by climatic conditions such as drought and veld-fire. Subsistence farmers household are characterised by low level of food production and there is high unemployment in rural area. Therefore, people consume more than what they produce in their farms. The specific objective to be addressed in this chapter was to measure the contributions of subsistence farming to rural household food system. The systematic sampling method was used to select the participants to participate in this study. Data collection entailed a survey in which both qualitative and quantitative data was collected using questionnaire. The data was entered into a computer software using Microsoft Excel and transferred into Statistical Packages for the Social Sciences (SPSS) vision 24.0. Various tools of SPSS were used to interpreted and make sense of the data collected. The Chi square test were performed, with the latter applied to achieve objective two and to analyze the association between subsistence farming and variables related to household food system. Discourse analysis was used to sort, categorize, combine and then interpret results for the qualitative data collected. The key findings show that size of the farm determines the frequency of getting food, quality of harvest and members of the family to be employed on the farm. The larger the size of the farm the more the chances of accessing food. Subsistence production is important to improve household food system. This reduce the dependence on market purchases, especially among the rural poor, as they can exploit natural resources for food or to generate income. The strategies to enhance subsistence farming were also discussed in this chapter. The findings indicate that agricultural equipment's such as farming machines and tractors should be provide to help to produce more food. Main findings include that technical, financial support and skills development skills should be accessible to all the farmers. Community members should buy local food to support subsistence farmers to generate income to supplement their household food needs. Furthermore, rural households continue to value the engaging on farming activities for home consumption. However, subsistence farming sector's productivity is known to be very low, there is a need to significantly improve the productivity of the subsistence farming if it is to achieve a significant impact on food system.

Keywords: Association, contribute, food system, household, subsistence farming

## 5.1 Introduction

The role of subsistence farming in agricultural development remains highly debated. Weld (2015) argued that subsistence farmers in Africa were ill-suited to the lacking scale, knowhow, and access to the supply chain. In this chapter, tests for association are performed to establish the level of association between subsistence farming and the livelihood food system. Efforts to establishing whether associations could be established between these variables drive towards achieving objective one of this study which is stated as to measure the contributions of subsistence farming to rural household food system. Identifying subsistence farming variables and ascertaining their levels of association with indicators of household livelihoods food system can provide a good basis for categorising the contributions of subsistence farming as well as the extent of these contributions to rural household food system. The specific objective to be addressed in this chapter was to measure the contributions of subsistence farming to rural household food system.

### 5.1.1 Research methodology

This study was guided by mixed methods research design, in which a survey was used to collect quantitative and qualitative data which helped to establish the correlation between household size, number of employed household members and the various components of the food system. Ethical clearance certificate was awarded by the University of Venda Research Ethics Committee. The first entry point was the tribal office, to seek permission to collect data from the local people. Then after permission to conduct the study was granted, the data collection commenced. Systematic sampling method was used to select the participants to participate in this study. The process of data collection entailed a survey that was used for the collection of quantitative and qualitative data. A questionnaire survey was designed to collect data. It was pre-tested to check whether it will allows collection of the right data. The data was entered into Microsoft Excel and transferred into Statistical Packages for the Social Sciences (SPSS) vision 24.0. Various tools of SPSS were used to interpreted and make sense of the data collected. Furthermore, descriptive statistics were used to understand variables constituting the data. Furthermore, Chi square test were performed, with the latter applied to achieve objective two and to analyze the association between subsistence farming and variables related to household food system. Discourse analysis was used to sort, categorize, combine and then interpret results for the qualitative data collected.

### 5.2 Association between type of subsistence farming and several variables related to household rural food system

The relationship between subsistence farming and total quantity harvests recently realized was statistically significant (Likelihood Ratio = 14.291, df = 8, $p < 0.1$). Similarly, subsistence farming was significantly associated with types of food taken for supper (Likelihood Ratio = 17.108, df = 6, $p < 0.05$) and types of food taken for lunch (Likelihood Ratio = 28.120, df = 6, $p < 0.05$). Moreover, subsistence farming was significantly associated with frequency of food consumption (Likelihood Ratio = 11.582, df = 6, $p < 0.1$). This means that subsistence farming contributes significantly to household access to food as well as type of food taken for breakfast, lunch and supper. Parallel to this line of argument Posel (2015) emphasized that increased subsistence agricultural production means more food enters the marketplace, which leads to low food prices at the marketplace and better diets. However, no relationship was found to exist between subsistence farming and income generated used for household food consumption, income generated from practising subsistence agriculture, number of family members employed by farm among other variables. This means that the type of subsistence farming does not determine income generated for practising subsistence farming. Thus, support the argument by White (2012), that subsistence farmers can generate little money from the food produced which was mainly for household and use that cash to purchase food that they cannot produce from the market Table 5.1 presents a summary of the Chi-Square test results.

### 5.3 Association between type of crop produced and household food system

Harvest, food taken for supper and lunch, and frequency of getting food are significantly related to type of food crop produced and household food system (Table 5.2). The implication of these Chi-Square test results relates to the suggestion that type of crop production plays a role in determining the amount of harvest attained at household level, type of food taken at supper and lunch, the frequency within which households access their food as well as the means of getting food. Suffice to say, harvest, food taken for, breakfast, lunch and supper were significantly associated to type of crop production at 5% level of significance while frequency of getting food and means of getting food was found to be significantly associated with type of crop production at 10% level of significance. This means that crop produced significantly contributes to household food system. The above statement is supported by Brooks (2016), who argued that grain maize is the staple crop for many smallholders in Africa and promotion of new maize hybrids and genetically modified (GM) varieties being viewed by many as the solution to low yields subsistence farming.

**Table 5.1:** The association between subsistence farming and several variables related to household food system

| SFV | RHFSV | Statistic | Df | *p*-value | Conclusion |
|---|---|---|---|---|---|
| Subsistence farming | Quantity of harvest | 14.291 | 8 | p < 0.1 | Significant |
| | Food taken for breakfast | 17.108 | 6 | p < 0.05 | Significant |
| | Food taken for supper | 28.120 | 6 | p < 0.05 | Significant |
| | Food taken for lunch | 28.120 | 6 | p < 0.05 | Significant |
| | Frequency of getting food | 11.582 | 6 | p < 0.1 | Significant |
| | Income used for HFC | 4.845 | 6 | p=0.564 | Insignificant |
| | Income generated from PSA | 5.501 | 6 | p=0.481 | Insignificant |
| | Number of the family members employed on the farm | 12.435 | 8 | p=0.133 | Insignificant |
| | Harvest or produce | 9.695 | 8 | p=0.287 | Insignificant |
| | Money spent on buying food | 12.678 | 8 | p=0.123 | Insignificant |

SFV- Subsistence Farming, RHFSV-Rural Household Food System Variable, HFC-Household Food Consumption, PSA-Practising Subsistence Agriculture

**Table 5.2:** The association between type of crop produced and household food system

| SFV | RHFSV | Statistic | Df | *p*-value | Conclusion |
|---|---|---|---|---|---|
| Type of crop production (grain maize, vegetables and fruits) | Quantity of harvest | 14.291 | 8 | p < 0.1 | Significant |
| | Food taken for breakfast | 17.108 | 6 | p < 0.05 | Significant |
| | Food taken for supper | 17.108 | 6 | p < 0.05 | Significant |
| | Food taken for lunch | 28.120 | 6 | p < 0.05 | Significant |
| | Frequency of getting food | 11.582 | 6 | p < 0.1 | Significant |
| | Income generated from PSA used for HFC | 4.845 | 6 | p=0.564 | Insignificant |
| | Number of the family members employed or help on your farm | 12.435 | 8 | p=0.133 | Insignificant |
| | Proportion of crops produced sold or given away | 8.743 | 8 | p=0.364 | Insignificant |
| | Amount spent on household food | 12.678 | 8 | p=0.123 | Insignificant |

**SFV**- Subsistence Farming Variable, **RHFSV**-Rural Household Food System Variable, HFC-Household Food Consumption, PSA-Practising Subsistence Agriculture

However, no significant relationship was found between type of crop production and other variables like income generation from the sale of subsistence farmed produces, number of family members employed at the farm, proportion of products sold or given away etc as depicted by the table below. This means that the types of crops produced does not determine the quantity of food to be consumed for breakfast, lunch and supper in the study area. Therefore Vella (2012) suggest that that food at their access must be adequate not only in quantity but also in quality.

### 5.4 Association between size of the farm and variables related to household rural food system

In this section, the association between size of farm and other independent variables related to household rural food system was investigated through the use of Chi-Square tests for association. The results as presented in Table 5.3 show a significant association between the size of the farm and variables like frequency of getting food, quantity of food harvest, production harvest from practising subsistence agriculture, proportion of produces sold or given away, number of family members employed at the farm and amount of income generated from PSA). Conversely, farm size was found to be insignificantly associated with rural household food system variables such as, the number of meals that households had per each day, the type of food taken for breakfast, supper and lunch, frequency of eating food etc. The associations between the size of the farm and frequency of getting emphasize that households could access food in many ways through their farm size for farming. This implies that one of the characteristics of subsistence farming which is farm size could lead to successful subsistence farming in rural area. Similarly, Heggins (2013), emphasized that subsistence farmer's households with large farm size could produce more food for consumption or sale. The statement contradicts with Grace (2015) who argued that households could not buy inputs to supplement their farms due to lack of funds because they are not receiving any form of income including social grants and pension. However, size of the farm contributes significantly to the household food need. The table 5.3 gives a summary of the Chi-Square test results showing variables that are significantly or insignificantly associated with farm size.

**Table 5.3:** The association between size of the farm and household food system

| SFV | RHFSV | Statistic | Df | p-value | Conclusion |
|---|---|---|---|---|---|
| Farm size | Frequency of getting food | 27.707 | 8 | p < 0.05 | Significant |
| | Quantity of Harvest | 19.240 | 8 | p < 0.05 | Significant |
| | Proportion of food sold or given away | 31.216 | 8 | p < 0.05 | Significant |
| | Members of the family employed on your farm | 18.367 | 8 | p<0.05 | Significant |
| | Access point for food | 7.990 | 6 | p=0.239 | Insignificant |
| | Number of meals each day | 10.092 | 8 | p=0.259 | Insignificant |
| | Food taken for breakfast | 17.108 | 6 | p = 0.258 | Insignificant |
| | Food taken for lunch | 3.909 | 6 | p=0.689 | Insignificant |
| | Food taken for supper | 7.341 | 6 | p=0.290 | Insignificant |
| | Frequency of getting meals | 6.348 | 6 | p=0.385 | Insignificant |
| | Means of getting food | 6.990 | 6 | p=0.322 | Insignificant |
| | Frequency of getting meals | 6.348 | 6 | p=0.385 | Insignificant |

**SFV**- Subsistence Farming Variable, **RHFSV**-Rural Household Food System Variable, HFC-Household Food Consumption, PSA-Practising Subsistence Agriculture

### 5.5 Association between subsistence farming and household rural food system

In this section, the association between the reasons for practising subsistence farming and other independent variables related to rural household food system was investigated through the use of Chi-Square test for association. The results, as presented in Table 5.4 shows an association between the reasons for practising subsistence farming and variables like food source, types of food taken for lunch, frequency of getting food, proportion of food sold or given away, members of the family employed in the farm, income generated from the farm production harvest and quality of food produced. Consequently, level of satisfaction, means of getting food, types of food taken for lunch and income generated by PSA are significantly associated with the reason for practising subsistence farming. The implications of these Chi-Square tests are that to the reasons that subsistence farming plays an important role in determining what should be consumed by the household, means of getting food and income generated for household consumption. Therefore, association between reasons for practising subsistence farming and means of getting food shows that rural households involved in subsistence farming are at ease to access food for their household (FAO, 2017). However, reason for subsistence farming was found to be insignificantly associated with livelihoods food system variables such as amount spent on food, the quality of food produced, the number of meals households have per each day, the type of food taken for supper and lunch, frequency of eating food etc. This means that practising subsistence farming does not mean one will be food secured. This support the argument by Hendricks (2014) who argued that most of the areas are not suitable for crop production and the farmers lack money and access to seed, fertilisers, and water to produce the quality of food for healthy diet.

### 5.6 Strategies to enhance food system

Subsistence farming can be improved through many strategies. This section presents the analysis of the research findings on how the respondents indicated what needs to be done to increase productivity and many choices to access food. The variables in this section include kinds of support needed and types of stakeholder support. This section also presents the analysis of qualitative responses from the respondents.

#### 5.6.1 The kind of support needed by subsistence farmers

Table 5.5 shows the responses on the distribution frequencies by farmers on different possible kinds of support targeted at enhancing and ensuring sustainability of subsistence agriculture. The majority of farmers said they needed financial support (56%), followed by 29% of farmers who needed skills and development support, then 10% of the farmers said they needed technical support.

**Table 5.4:** The association between subsistence farming and household food system

| SFV | RHLFSV | Statistic | df | p-value | Conclusion |
|---|---|---|---|---|---|
| Subsistence farming | Food source | 23.230 | 12 | p < 0.05 | Significant |
| | Type of food taken for lunch | 26.364 | 12 | p < 0.05 | Significant |
| | Frequency of getting meals | 22.790 | 12 | p < 0.05 | Significant |
| | To whom do you sell or give away your products? | 30.449 | 16 | p < 0.05 | Significant |
| | Members of the family are employed or help on your farm | 35.703 | 16 | p<0.05 | Significant |
| | Income generated from PSA | 18.810 | 12 | p<0.1 | Significant |
| | Amount of income generated used HFC | 26.198 | 12 | p<0.05 | Significant |
| | Amount spent on food | 26.198 | 12 | p<0.05 | Significant |
| | Amount spent on food | 15.031 | 16 | p=0.522 | Insignificant |
| | Quality of food you produce | 21.834 | 16 | p=0.149 | Insignificant |
| | Quality of food you produce | 13.446 | 16 | p=0.640 | Insignificant |
| | Number of meals taken per day | 18.845 | 16 | p=0.277 | Insignificant |
| | Food taken for supper | 9.017 | 12 | p=0.701 | Insignificant |

**SFV**- Subsistence Farming Variable, **RHFSV**-Rural Household Food System Variable, HFC-Household Food Consumption, PSA-Practising Subsistence Agriculture

**Table 5.5:** The kind of support needed by subsistence farmers

| Support Kinds | Percent | Valid Percentage |
|---|---|---|
| Technical | 15.0 | 15.0 |
| Financial | 56.0 | 56.0 |
| Skills and Development | 29.0 | 29.0 |
| **Total** | **100.0** | **100.0** |

The respondents indicated that financial support could lead to successful farming. They also indicated that skills development in terms of been provided with agricultural courses will assist them to improve their farms. They also reported that they should be equipped with technical skills such skills include operation of machines, the use of pesticides and methods of irrigation. This means that if subsistence farmers could be granted support, they might have a positive impact on household food system. Posel (2014) suggested that subsistence farmers should be granted support to take care and maintain their farm especially in rural areas. This confirms the argument by Pingali (2015) that funding is needed by both subsistence farmers and commercial farmers to produce more food and maintain their farms.

### 5.6.2 Stakeholder's support

Table 5.6 shows the distribution of responses given by farmers on who they thought should provide the kinds of support needed by them to enhance and ensure sustainability of subsistence agriculture. The majority of the participants believed the government was in a better position to provide the kinds of support needed by the farmers, followed by farmers who believed the support they needed should come from the private sector. Then few farmers believed that the support they needed should come from other players such as community and friends while minority of the farmers who believed the support should come from Non-Governmental Organisations and 9% of the farmers believed local farmers had the support they need to enhance and ensure sustainability of subsistence agriculture. They indicated that government should supply them with inputs such as manure and farming equipment to boost their production. Hendricks (2014) suggest that the government should provide support to poor subsistence farmers with farming equipment including farm manure to increase productivity for their household and awards of awarding subsistence farmers who farms better should be introduced. They also indicated that society should support them through buying their products so that they can buy household food need that they cannot produce. This means that stakeholder's involvement in subsistence farming could lead to successful farming with high productivity. This confirms the argument by Vetter (2013) that for subsistence farming to be successful in rural areas there should be stakeholders involved supporting the subsistence farmers.

**Table 5.6:** Who should provide types of support?

| Support Source | Frequency | Valid Percentage |
|---|---|---|
| Local farmers | 9 | 9.0 |
| Non-Governmental Organization | 11 | 11.0 |
| Community members and friends | 12 | 12.0 |
| Private | 20 | 20.0 |
| Government | 48 | 48.0 |
| **Total** | **100** | **100.0** |

### 5.6.3 Societies assistance to increase subsistence farming

Majority of the participants (65%) showed that the society should help them by buying their products and minority (35%) of the participants indicated that society should support them through assisting them to sustain their farms. They indicated that these will boost their farming because they will generate money to buy inputs such as manure, while minority of the participants showed that the society should provide them with resources such as water and manure to increase their production. This support the argument by Akker (2011) that societies support is always important to subsistence farmers especially in rural areas. They indicated that the society needs to support them through purchasing locally produced food and they should also assist with farming for free and also purchase the products. The finding shows that subsistence farmers need support from their society. These could improve subsistence farming because when members of the society buy food from the local famers then the farmers will generate income which help them to have many ways of acquiring food. This means that societies support plays a crucial role in proving subsistence farmers with ways to access food. Bwalya (2013) suggest that societies should often buy food from the local producers instead of market to help subsistence generate income that will boost them to have purchasing power of the food that they cannot produce on their own.

## 5.7 Summary of the chapter

The chapter provided the findings and analysis of the results on the associations between subsistence farming and rural household food system in Mamokgadi village. This chapter was aimed at answering the question of the contribution of subsistence farming to household food security. The findings show that the type of crop production by subsistence farmers does not determine the members of the family to be employed on the farm and proportion of food sold or given away. However the size of the farm determines the frequency of getting food, quality of harvest and members of the family to be employed on the farm. This means that the larger the size of the farm the more the chances of accessing food and quantity of harvest. Subsistence production is important in improving household food system. The strategies to enhance subsistence farming were also discussed in this chapter. The findings indicate that agricultural equipment's such as farming machines and tractors should be provide to help to produce more food. Technical, financial support and skills development skills should be accessible to all the farmers. Community members should buy local food to support subsistence farmers to generate income to supplement their household food needs. By providing the associations between subsistence farming and variables related to household food system. This answered the research question of the study by providing the contributions that subsistence farming contributes to household food system.

# CHAPTER 6: CONCLUSION, RECOMMENDATIONS AND AREAS FOR FURTHER INVESTIGATION

## 6.1 Introduction

The main objective of this study was to investigate the contribution of subsistence farming to rural household food system in Mamokgadi village. The attributes and dynamics of subsistence agriculture need to be understood by all households in the subsistence farming sector to advance the sector as a possible solution to food system and low income as well as unemployment prevalent in the study area. Understanding the nature of the subsistence farming sector can help to popularise the sector to the household that are not engaging in the sector which can be significant to the growth and development of the sector. The study was based in Mamokgadi village, Limpopo province which is an informal settlement with poor living conditions. The study also employed stratified sampling to choose to participant to participate in this study from the sample. The study employed mixed methods in which the survey technique was used for data collection. The quantitative data were analysed using descriptive statistics and chi squared test were also performed in which for qualitative data discourse analysis was done. Stratified sampling method was adopted to select the participant to participate in this study. The study was based in Mamokgadi village, Limpopo province which is an informal settlement with poor living conditions.

## 6.2 Main findings and conclusions on characterizing the rural household food system

### 6.2.1 Main findings

The main findings were that the study area is characterised by low level of production and poverty which makes it difficult for most household to succeed from such conditions. The study is occupied by households with poverty and low income while employment and other opportunities are at a minimal. These households experience difficulties to access food for their respective households with such conditions. The rural household have to depend on incomes for other sources to meet their daily household food needs. This food sometimes is neither adequate nor nutritious enough to meet the household needs. The low level of production limits the scope of subsistence farming, preventing access to nutritious food that can be accessed reasonably. Crops such as maize and vegetables were found to be the dominant crops in the study area due favorable environment conditions for such crops. The study area constituted many households with level of education as it is often associated with the ability of the farmers to be productive at the farm as the higher the education a farmer has the better they can make better informed decisions to adopt productivity improving

technologies. Livestock production in the study are is affected by climate conditions such as drought and veld-fire.

### 6.2.2 Main conclusion

The main conclusion is subsistence farming's production in rural areas remain to be relatively thin because of high unemployment rate and poverty in rural areas and food that they produce does not meet the household food needs, because subsistence farming is affected by climatic conditions such as drought. The subsistence farmers cannot purchase supplements to boost their farming due to low level of income, poverty and unemployment in rural area. Food system remains a challenge to most of the household because of lack of access to food. Food produced sometimes tends to be not adequate and nutritious to meet the household food need. However, some of the crops such as maize and vegetables are dominant in the study area contributing significantly to household food system.

## 6.3 Main findings and conclusion on the contributions of subsistence farming to rural household food system;

### 6.3.1 Main findings

The main sources of food for households were markets, subsistence production and transfers from other households or public programmes. Most of the subsistence household accessed most of their food from the market rather than own production. The findings indicates that most of the farmers in the study area had taken their own production to the milling for household food consumption or cash, but people still require assistance with food from the market despite acknowledgement of subsistence farming to sustain household food needs. The production of food in the study area by the subsistence farmers is still relatively thin, concentrating mostly on production for the household consumption.

### 6.3.2 Main conclusion

Subsistence farming helps to eradicate food poverty for many households through farm produce directed to markets which could be affordable to most of the households in Mamokgadi Village. Subsistence farming also provides employment to some of the persons in rural areas which would provide income for their households, consequently increasing their food purchasing power to access food from the external sources including the markets. Regardless of some important contribution by subsistence farming to household food system in Mamokgadi village, some of the household did not meet their household food needs because of low productivity, poor climate conditions and lack of proper farming inputs. However, subsistence farming has great potential in enhancing food system at household level.

## 6.4 Main findings on possible strategies that can be used to enhance rural household food system

### 6.4.1 The main findings

The agricultural equipment such as farming machines and tractors should be provided to help in the production of more food. Technical, financial support and skills development skills should be accessible to all the farmers. Community members should buy local food to support subsistence farmers to generate income to supplement their household food needs.

### 6.4.2 Main conclusion

The main conclusion for this objective is that subsistence farming remains an option for generating income for some of the households in the study area. Therefore, subsistence farmer's households should be provided with resources required for farming to increase the productivity in the study area. Employment should be created as most of the household depend on food from the market.

## 6.5 Recommendations

Recommendations on how to enhance the contributions of subsistence farming towards achieving household food system are discussed below. Some of the advantages aimed at encouraging subsistence farming and food system could be put in place. Recommendations are discussed as follows.

- There is a need to rump up agricultural technical support to subsistence farmers. The support should include finances and farm inputs and necessary support to enhance productivity. High productivity would provide these farmers with extra income which could ultimately improve their food purchasing power.
- There is a need to encourage most of the households to engage themselves in farming so that own production complements food accessed from the market given that there is high unemployment levels in rural areas. This will reduce dependence on market purchases, especially among the rural poor, as they can exploit natural resources for food or to generate income.
- Employment should be created in agricultural sector as people rely on market, which need money to access food. This could contribute to food access by most of the households in rural areas.
- There is a need for dietary and nutrition education for household in order to get better results from subsistence farming because most of the households still do not manage

to meet their dietary food needs. Nutrition and dietary education is necessary in order to translate own food production into dietary intakes, this could have an impact in the areas of improved production and increased consumption of micronutrients food , increased food income from the food and capacity building at household level.

- Subsistence farming might not be improved by most of the household without basic agricultural skills. The government should promote basic training to subsistence farmers to have knowledge about the product planted.
- There is a need for support from the farmers with resources such as manure and water for those who do not have so as to improve their productivity in rural areas.

### 6.6 Areas for further investigation

The relationship between household productivity and climate change impacts need further investigation. It could be that the low levels of household farm productivity could be a consequences of the negative implications of climate change.

More robust research should be carried out on the minimum farm size and the appropriate technology that can be harnessed to secure household food and nutrition requirements for the people in the study area.

There is need for further investigation on the dynamics of own food production and nutritional security of the households as well as the broader dietary intakes.

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## APPENDIX A: Ethical Clearance Certificate

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
**Mr M Machete**

**Student No:**
**11640631**

PROJECT TITLE: **The contribution of subsistence farming to rural household food system: A case study of Mamokgadi Village.**

PROJECT NO: **SARDF/19/IRD/08/0410**

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

| NAME | INSTITUTION & DEPARTMENT | ROLE |
|---|---|---|
| Dr J Zuwarimwe | University of Venda | Supervisor |
| Dr M Manjoro | University of Venda | Co - Supervisor |
| Mr M Machete | University of Venda | Investigator – Student |

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: October 2019
Decision by Ethical Clearance Committee Granted
Signature of Chairperson of the Committee: .....
Name of the Chairperson of the Committee: Senior Prof. G.E. Ekosse

UNIVERSITY OF VENDA
DIRECTOR
RESEARCH AND INNOVATION
2019 -10- 07
Private Bag X5050
Thohoyandou 0950

University of Venda
PRIVATE BAG X5050, THOHOYANDOU, 0950 LIMPOPO PROVINCE, SOUTH AFRICA
TELEPHONE (015) 962 8504/8313 FAX (015) 962 9060
*"A quality driven financially sustainable, rural-based Comprehensive University"*

**APPENDIX B: Survey Questionnaires**

**RESEARCH ETHICS COMMITTEE**
**Informed Consent**

**LETTER OF INFORMATION**

**Title of the Research Study** : The Contribution of Subsistence Farming to Rural Household Food System: A Case Study of Mamokgadi Village.

**Principal Investigator/s/ researcher** : Machete Mohale Honours Degree in Gender studies)

**Co-Investigator/s/supervisor/s** : Dr J Zuwarimwe (Supervisor).
: Dr M Manjoro (Co-supervisor).

**Brief Introduction and Purpose of the Study**: My name is Machete Mohale; I am a postgraduate student doing Master Degree in Rural Development, in the school of Agriculture at the University of Venda. I am conducting a research project on the following topic: The Contribution of Subsistence Farming to Rural Household Food System. A Case Study of Mamokgadi Village of Mopani District, Limpopo province. **The purpose of the study is**: To determine the contributions of subsistence farming to rural household food system of Mamokgadi village in Mopani district, Limpopo Province, South Africa.

**Outline of the Procedures** : (*Responsibilities of the participant, consultation/interview/survey details, venue details, inclusion/exclusion criteria, explanation of tools and measurement outcomes, any follow-ups, any placebo or no treatment, how much time required of participant, what is expected of participants, randomization/ group allocation*).

Take note of the following:

- Providing information on this survey is voluntary.
- There is no penalty if you choose not to respond.
- However, maximum participation is encouraged so that the data will be complete and representative.
- Your survey instrument will be treated as confidential.
- The study involves a questionnaire that will require 20 minutes of your time
- This information will be used only by persons engaged in, and for the purposes of the research.

**Risks or Discomforts to the Participant**: (*Description of foreseeable risks or discomforts to for participants if applicable e.g. Transient muscle pain, VBAI, post-needle soreness, other adverse reactions, etc.)* The study will have no risk or discomfort to the participant.

**Benefits** : (*To the participant and to the researcher/s e.g. Publications*)
The participants will gain more knowledge on how to enhance food system and this will benefit the country as the results of this will be closing the gap of unavailability of food access in developing countries, eradicating poverty and hunger. The researcher will gain more

knowledge and new ideas about subsistence farming. The publications will have new information which will be an update of old publications.

**Reason/s why the Participant May Be Withdrawn from the Study**: (*Non-compliance, illness, adverse reactions, etc. Need to state that there will be no adverse consequences for the participant should they choose to withdraw)* if the participant no longer wants to participate in the study.

**Remuneration** : (*Will the participant receive any monetary or other types of remuneration?)* No

**Costs of the Study** : (*Will the participant be expected to cover any costs towards the study?)* No

**Confidentiality** : (*Description of the extent to which confidentiality will be maintained and how will this be maintained*) Yes, the importance of privacy, anonymity, and confidentially in interviews will be highly considered by making use of codes and conducting interviews in a place where there is privacy. Data collected sheets will be stored in a locked locker and will be stored until the dissertation is examined.

**Research-related Injury** : (*What will happen should there be a research- related injury or adverse reaction? Will there be any compensation*?) No the research does not have any research-related injury.

Persons to Contact in the Event of Any Problems or Queries:
(Dr J Zuwarimwe (Supervisor), Dr M Manjoro (Core-supervisor) Please contact the researcher (tel no. 0782147473/ 0764532752), my supervisor (tel no 0159628812.) or the University Research Ethics Committee Secretariat on 015 962 9058. Complaints can be reported to the Director: Research and Innovation, Prof GE Ekosse on 015 962 8313 or Georges Ivo.Ekosse@univen.ac.za

General:
Potential participants must be assured that participation is voluntary and the approximate number of participants to be included should be disclosed. A copy of the information letter should be issued to participants. The information letter and consent form must be translated and provided in the primary spoken language of the research population

**CONSENT**
Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, (*name of researcher*) , Machete Mohale, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: *SARDF/19/IRD/08/0410*
- I have also received, read and understood the above written information (*Participant Letter of information*) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.

- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant Date Time Signature

**I, …….. …… …… ……..**

(*Name of researcher*) herewith confirm that the above participant has been fully

Informed about the nature, conduct and risks of the above study.

Full Name of Researcher
**……..** Date**……..**

Signature**……**

Full Name of Witness (If applicable)
**……..** Date **…….** Signature**……..**

Full Name of Legal Guardian (If applicable)

**……** Date**……** Signature**……..**

**Section A**

**Biographic information**

1. Age group

| | |
|---|---|
| Under 18 years | |
| 19-35 years | |
| 36-50 years | |
| Over 51 years | |

2. Gender

| | |
|---|---|
| Male | |
| Female | |
| Other | |

3. Level of education

| | |
|---|---|
| Matric | |
| College | |
| Tertiary | |
| Other | |

4. Employment status

| | |
|---|---|
| Employed | |
| Unemployed | |
| Self Employed | |
| Other | |

5. Marital status

| | |
|---|---|
| Single | |
| Married | |
| Divorce | |
| Other | |

6. Are you the head or the main provider of the household?

| | |
|---|---|
| Yes | |
| No | |

7. What is the size of your household?.....

8. What is your household income type?

| | |
|---|---|
| Social welfare | |
| Salary | |
| Pension | |
| Other | |

9. What is your household income?

| | |
|---|---|
| Less than R1000 | |
| Between R1001 and R5000 | |
| Over R5000 | |
| No income | |

10. How much do you spend on food per month?

| | |
|---|---|
| Less than R500 | |
| Between R501 and R2000 | |

| | |
|---|---|
| Over R2000 | |
| Other | |

**Section B Characteristics of subsistence households and subsistence farming**

Please tick next to the appropriate answer

11. What kind of subsistence farming do you practice?

| | |
|---|---|
| Crop production | |
| Livestock production | |

12. Which type of crop production do you practice?

| | |
|---|---|
| Maize | |
| Vegetable | |
| Fruits | |

13. What is the total size of farm?

| | |
|---|---|
| Less than 100m | |
| Between 100m and 500m | |
| More than 500m | |

14. Why do you engage in subsistence farming?

| | |
|---|---|
| For subsistence/household consumption | |
| Extra source of income | |
| Business/ for sale | |

15. How long have you been practising subsistence agriculture?

| | |
|---|---|
| 5 years | |
| 5-10 years | |

| | |
|---|---|
| 10-15 years | |
| 15-20 years | |
| Over 20 years | |

16. How is the farm operating?

| | |
|---|---|
| Seasonal | |
| Full time | |
| Part time | |

17. Which type of livestock production do you practise?

| | |
|---|---|
| Cattle | |
| Goats | |
| Sheep | |

18. If engaging in crop farming, what do you plough?

| | |
|---|---|
| Maize | |
| Rice | |
| Sorghum | |
| Vegetables | |

19. How many days a week do you engage in farming?

| | |
|---|---|
| One day | |
| Two-four days | |
| More than five days | |
| Not applicable | |

## Section C: Determinants of household food system

20. How do you get food?

| | |
|---|---|
| Markets | |
| Street vendor | |
| Own producer | |
| Other | |

21. How often do you get food from the above?

| | |
|---|---|
| More often | |
| Less often | |
| Regularly | |
| Other | |

22. If you buy food, how much do you spend?

| | |
|---|---|
| Less than R100 | |
| Between R101 and R500 | |
| More than R500 | |
| Not applicable | |

23. If you produce food, how much do you harvest or produce?

| | |
|---|---|
| Too little | |
| Little | |
| Enough | |
| Too much | |
| Not applicable | |

24. What is the quality of food you produce?

| | |
|---|---|
| Very poor | |
| Poor | |
| Good | |
| Very good | |
| Not sure | |

25. What is your level of satisfaction with production?

| | |
|---|---|
| Less satisfied | |
| Satisfied | |
| Highly satisfied | |
| Not sure | |
| Other | |

**Section D: Indicators of household food system**

26. How many meals do you usually have each day?

| | |
|---|---|
| Breakfast only | |
| Breakfast and lunch only | |
| Lunch only | |
| Lunch and supper only | |
| Breakfast and supper only | |
| Breakfast, lunch and supper | |
| Nothing to eat | |

27. How many members of the family depend on your daily meal?

| | |
|---|---|
| 3-5 | |
| 5-8 | |
| 8-12 | |
| More than 12 | |
| Not applicable | |

28. What type of food do you take for breakfast?

| | |
|---|---|
| Fruits | |
| Meat and eggs | |
| Meat, pap and pumpkin | |
| Bread, eggs, cereal and milk | |

29. What type of food do you take for lunch?

| | |
|---|---|
| Rice and salads | |
| Pumpkin and beans | |
| Pap and vegetables | |
| Pap and meat | |

30. What type of food do you take for supper?

| | |
|---|---|
| Pumpkin | |
| Rice and salads | |
| Pap and vegetables | |
| Pap and meat | |

31. How often do you eat the kind of meals mentioned?

| | |
|---|---|
| Every day | |
| Once a week | |
| Twice a week | |
| Other | |

32. How do you get those foods?

| | |
|---|---|
| Home cooked | |
| Neighbours | |
| Family member | |
| Other | |

**Section E: Contribution of subsistence farming to household food system**

33. How much do you produce or harvest recently from practising subsistence agricultures?

| | |
|---|---|
| Too little | |
| Little | |
| Enough | |
| Too much | |
| Not applicable | |

34. If you sell or give away any of the products that you grow, what is the proportion you sell or give away?

| | |
|---|---|
| Little (0-20%) | |
| Some (20-40%) | |
| Half (40-60%) | |

| | |
|---|---|
| Much (60-80%) | |
| Other | |

35. To whom do you sell or give away your products?

| | |
|---|---|
| Supermarkets | |
| Street vendor | |
| Family members | |
| Community members | |
| Other | |

36. How many members of the family are employed or help on your farm?

| | |
|---|---|
| Less than two | |
| Three | |
| Four | |
| More than five | |
| Other | |

37. How much income (in rand) do you generate for practising subsistence agriculture?

| | |
|---|---|
| Less than R100 | |
| Between R101-R400 | |
| More than R400 | |
| Other | |

38. How much of the income generated do you use for household food consumption?

| | |
|---|---|
| Less than R100 | |
| Between R101-R400 | |
| More than R400 | |

| | |
|---|---|
| Other | |

**Section F: Recommendations**

39. What kind of support do you need to enhance and ensure sustainability of subsistence agriculture?

| | |
|---|---|
| Technical | |
| Financial | |
| Skills development | |

40. Who or where do you think should provide the support mentioned above?

| | |
|---|---|
| NGO's | |
| Government | |
| Private sector | |
| Local farmers | |
| Other | |

41. What would you say about the current nature of subsistence agriculture?

    .....

    .....

42. What do you think can be done to increase maximum participation on subsistence farming?

    .....

    .....

43. What do you think that society can do to assist subsistence farmers?

    .....

    .....

**THANK YOU FOR YOUR PARTICIPATION!!!!!!!!**