EFFECT OF LAND RESTITUTION PROGRAMME ON HOUSEHOLDS' FOOD SECURITY IN LIMPOPO PROVINCE OF SOUTH AFRICA: A CASE STUDY OF WATERBERG DISTRICT

by

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DECLARATION

I Stephen Mozindo Mantsho declare that the mini-dissertation hereby submitted to the University of Limpopo, for the degree of Master of Science in Agriculture for Agricultural Economics has not previously been submitted by me or any other person for the degree at this university or any other university: This is my own work in design and execution, and that all material contained herein has been duly acknowledged.

…… ……..

Mr. S.M Mantsho Date

DEDICATION

I would like to dedicate this study to my parents and siblings. It is also dedicated to *KOKO* Grace Mantsho and all farmers who participated in this study.

ACKNOWLEDGEMENTS

Firstly I would like to thank God the almighty of heaven and earth for making this research possible during the low and high time of life. I would like to thank Him as quoted from the book of Isaiah 12:4 which read thus “and in that day you will say, give thanks to the Lord, call upon His name and by means of His name (in solemn entreaty); declare and make known His deeds among the peoples of the earth, proclaim that His name is exalted.”

I would like to take this opportunity to thank all the people and organisations which have assisted me throughout the course of this study. If it was not of this type of people and organisations it would not have been easy for the study to continue. The Grace of His mercy shall be with them now and forever.

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I would like to say Thank you, Thank you and Thank you.

ABSTRACT

The Land Restitution Programme was designed to assist farmers through support for infrastructure, marketing, finance and extension services. This initiative was intended to support job creation, food security and support agricultural growth. Nevertheless, poverty and food insecurity have profound implications for health and welfare. However, household dietary diversity score has long been recognized by nutritionists as a key element of high-quality diets.

This study examined the effects of the land restitution on households' food security in Waterberg district. The objectives of this study were to profile households' socioeconomic/ demographic characteristics, assess the food security status of land restitution beneficiaries and non-beneficiaries, examine the effects of Land Restitution Programme on food security and investigate the challenges faced by smallholder farmers in accessing land and other inputs for agricultural purposes in Waterberg district. Primary data was collected from 110 smallholder farmers using purposive and random sampling techniques. Dietary diversity score was used to assess the food security status of land restitution beneficiaries and non-beneficiaries while logistic regression model was used to examine the effect of Land Restitution Programme on their food security status.

The results of dietary diversity score revealed that 70% of the households were food secure while 30% of the households are food insecure. The age of the household head, access to the market and land size were found to be positively significant at 10% level while beneficiary status was found to be positively related to food security status and significant at 5% level. Variables which were found positively significant at 1% level are gender of the household head, off-farm income and access to credit. Problems affecting households differs from lack of access to credit facilities to lack of grazing land.

Based on the findings the study recommends prioritisation of women agricultural projects; diversification of income; provision of smallholder credit facilities in rural areas and provision land to farmers so that they increase their production which give them an advantage to become food secure.

Key words: Dietary diversity, logit model, food security and Land restitution.

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ACRONYMS

HSRC	Human Science Research Council
FAO	Food and Agriculture Organisation
GRSA	Government of Republic of South Africa
RDP	Reconstruction and Development Programme
ANC	African National Congress
DAFF	Department of Agriculture, Forestry and Fishery
IFSS	Integrated Food Security Strategy
LDA	Limpopo Department of Agriculture
HDDS	Household Dietary Diversity Score
WDDS	Women Dietary Diversity Score
Stats SA	Statistics South Africa
PBER	Provincial Budgets and Expenditure Review
MDG	Millennium Development Goals
SDG	Sustainable Development Goals
UNDP	United Nation Development Goals
RSA	Republic of South Africa
SLAG	Settlement/ land Acquisition Grant
DLA	Department of Land Affairs
CLCC	Chief Land Claim Commission
LCC	Land Claim Court
CPA	Agricultural Production Cooperative
HDD	High Dietary Diversity
LDD	Low Dietary Diversity
IAEA	International Atomic Energy Agency
DoA	Department of Agriculture

CHAPTER ONE

INTRODUCTION

1.1. Background

Land dispossession during the colonial era and the decades of apartheid rule produced a highly unequal pattern of land ownership and widespread rural poverty in South Africa (Jacobs *et al*., 2003). Throughout the negotiated transition to democracy in South Africa, many people expected that the liberation would bring the return of land they had been dispossessed of under colonialism and apartheid, but the terms on which the transition was negotiated constrained the parameters of how this could happen. The South African Land Reform Programme rests on the following three legs: Land Restitution, Land Redistribution and Land Tenure Reform. The Restitution of Land Rights Act 22 of 1994 (Restitution Act) creates a right to restitution for people dispossessed of land rights after 19 June 1913, as a result of racially discriminatory laws and practices (Hall, 2003).

According Duncan (2014) the Constitution of South Africa (no. 108 of 1996) mandated Land Restitution and Reform as a central focus within social impact efforts. The Land Claims Court was tasked with giving effect to this mandate through the Restitution of Land Rights Act (No. 2 of 1994).The purpose of the Land Restitution Programme is to restore land and provide other remedies to people dispossessed by racially discriminatory legislation and practice (Martin, 2000). This is to be done in a way that will support the process of reconciliation and development, and with due regard to the over-arching consideration of fairness and justice for individuals, communities and the country as a whole. Land Restitution Programmes are in place to assist farmers through support for infrastructure, marketing, finance and extension services; these initiatives are intended to support job creation.

The theory and international evidence on the impact of land redistribution on its direct beneficiaries is a useful yardstick for the South African case, but the specificity of the South African context is worth emphasizing for at least four reasons. First, the main tool for the transfer of land ownership, namely the land redistribution component, encompasses a disparate set of needs, since it ‘‘aims to provide the disadvantaged and the poor with access to land for residential and productive purposes. Secondly the

South African context of land reform differs from other environment because of the lack of farming capital amongst target group. The third reason is that long distances separate the beneficiaries' current place of residence and the land which they acquire ownership. Lastly, beneficiaries were given only R15 000 per household in 2001, while commercial farmers have evolved to be generally quite large due to the past agricultural policies.

The redistribution component was intended as the main instrument of this ambitious land reform, and consisted of distributing land grants allowing black people to buy land from white willing sellers. The scope was aimed to ''include the urban and rural very poor, labour tenants, farm workers as well as new entrants to agriculture" ''for residential and productive uses, to improve their livelihoods and quality of life" Valente (2009).

The aim of government's Land Restitution Programme, in place since 1994, has been to transfer about 25 million (30% of the total) hectares of farmland to black communities by 2014. Land redistribution, however has moved slowly. Furthermore, by 2010 it was reported that only 7.4 million hectares of farmland had been transferred under this programme, representing 29.6 % of the 2014 target (GRSA, 2015). When the government was introducing Land Restitution Programmes, it was to assist smallholder schemes through support for infrastructure, marketing, finance and extension services; these initiatives are intended to support job creation and fight food insecurity. Despite numerous such programmes and plans, 23.1 % of South Africans, especially in rural areas, remain vulnerable to food inadequacy. The Land Reform Programme is deemed a success if it increases the beneficiaries' income, consumption and wealth (Binswanger and Elgin, 1992).

Securing access to land and its productive resources is widely seen as one of the ways in which the rural poor can improve their livelihood and alleviate poverty in South Africa (Manenzhe, 2007). Inequality in land distribution in South Africa is a direct consequence of a colonial legacy that saw land being appropriated from the black people. Racially based land policies were a cause of insecurity, landlessness and poverty among black people and caused inefficient land administration and land-use.

The past land policies resulted in a disjointed system of land administration and thus restricted resource utilisation and development (Moabelo, 2007).

According to Groenewald and Nieuwoudt (2003), land holdings in the former homelands are generally very small and are mainly used for subsistence purposes. Aliber and Hart (2009), further outline that the majority of rural inhabitants in the former homelands are the aged, women and children who reside on land more for social security purposes than for agricultural production and they estimate that arable land in the former homelands is between 11% and 16% of the total area. They further stress that cultivation of this land fluctuates significantly with between 40% and 80% being cultivated in any given year (Aliber and Hart, 2009).

Land restitution should not automatically be equated with support for small-scale production. Indeed, in the first phase of the South African Land Reform Programme, there was no real conception of a link between land restitution and production aside from a vague idea that land restitution beneficiaries might use the land to produce food for themselves (Greenberg, 2013). As potential black farmers in South Africa had little access to land for production, land reform was a necessary precursor to rebuilding a substantial small-scale black farming class. Land reform was situated as the central and driving force of rural development in the Reconstruction and Development Programme (RDP) (ANC, 1994).

South Africa still faces numerous challenges, many of which relate to dealing with the poverty of the majority of its citizens. Almost 40% of South Africa's 50 million inhabitants live in rural areas, and it is these areas that at least 70 % of the country's poorest people live (Kepe and Tessaro, 2014). Above 30% of South African households are involved in smallholder farming but agriculture does not contribute more than 4% to their total incomes even though farming requires very high time commitments from family members (Hendricks and Maunder, 2006).

The agriculture sector and its related industries contribute about 13% to the country's GDP and provide a source of livelihoods for about 40% of the country's population. An estimated three million smallholder farmers reside in communal areas of the former homelands, and practise subsistence agriculture (Chaminuka *et al.*, 2006). Agriculture has much to contribute in government efforts to bridge the economic divide between

the first and the second economy. Agriculture remains an essential tool to reduce food insecurity in rural South Africa. The problem which still arises is the question of land and access to production inputs. The agricultural potential of the area is intimately associated with topographical, pedological (soil) and climate determinants. Rainfall distribution is also an important factor in determining the agricultural potential.

According to Byamugisha (2014), sound land policies and efficient land administration are critical to economic growth, food security, and poverty alleviation, especially in Africa, where about 80 % of the population still relies on agriculture for their livelihoods. Land reform in South Africa has made slow progress in reducing ownership inequality and has had a minimal impact on productivity and incomes.

The 2008/2009 report by the Statistics South Africa indicated that in South Africa, households spend 19.3 % of their total expenditure on food and non-alcoholic beverage. Because the issues of land in South Africa are more racial, it is important to highlight the statistics (Stat SA, 2012). The report further indicates that on average, households spend R13 914 on food annually. White-headed households had the highest average annual expenditure on food (R23 971) compared to households headed by other population groups. When comparing the average annual household consumption expenditure on food for black African-headed households (R11 549) to that of white-headed households, the results indicate that white-headed households were spending on average 50% more on food (Stat SA, 2012).

In South Africa, 43% of the population suffers from food poverty (Rose and Charlton, 2002), food security was identified as the ‘‘primary determinant of the well-being of people directly affected by land reform” (Valente, 2009). Therefore, an important dimension of the livelihoods improvement expected from land reform is food security, or the ability of all the household members to ‘‘at all times have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 2001). The cause of hunger and malnutrition in the country is not due to a shortage of food but rather an inadequate access to food by certain categories of individuals and households in the population (DAFF, 2006). Some of the determinants of food security which affect smallholder

farmers include poverty, health, food production, political instability, poor infrastructure, access to markets and natural hazards.

In 2002, the South African government committed to halve poverty between 2004 and 2014 through its adopted Integrated Food Security Strategy (IFSS) (De Cock *et al.* 2013). Statistics show that nationally, South Africa is food secure while the household food insecurity remains high. Food security is multidimensional in nature and that makes accurate measurement and policy targeting quite challenging. Stat SA (2012) outline that the definition has four interconnected dimensions or components, namely: availability of food, access to food, utilisation of food and stability of availability and access to food. Food security can be defined at the individual, household, national, regional and global levels, as being achieved when all people, at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO, 1996). Therefore food insecurity occurs when one or more of these dimensions are weakened.

According to Limpopo Department of Agriculture (2002), food insecurity and poverty in South Africa have prevailed for several centuries as a result of apartheid policies that were designed specifically to create conditions that were unfavourable to the well-being of black people. Studies suggest that rural households have historically been able to produce most of their own food, rural and urban households in South Africa have increasingly become net consumers rather than producers of food. Smallholder farmers mostly in rural South Africa have largely been neglected by policy makers and authorities despite the fact that smallholder production in particularly rural areas could greatly mitigate households' vulnerability to food insecurity (Altman *et al*. 2009).

1.2. Problem statement

According to Statistics South Africa (2002), 80% of the population in Limpopo (a province situated in the north east of South Africa) lives in rural areas. Shisana *et al*. (2014) reported that food security is at 45.6% in South African and 26% are highly food insecure while 28.6% of the population is at the risk of being affected by hunger. The living conditions of this people are affected by poorly functioning markets, lack of labour, lack of ownership of productive resources (land inclusive) and low levels of

education. This in turn leads to food insecurity because food accessibility cannot be attained while there is lack of these assets (StatsSA, 2002).

Poverty and food insecurity have profound implications for health and welfare. South Africa experience unemployment of more than 25% and more than 25 million people receive social grants, thus people do not have enough money to buy food. While land restitution is, at present, only marginal, and in the many cases even not, improving livelihoods in rural South Africa (Rugege, 2004). One area of the country in which numerous claims for restitution have been lodged and yet remain largely unsettled is the Limpopo Province (Alistair, 2006). The Land Restitution Programme tries to solve specific problems that include poverty issues, food insecurity, unemployment, lack of infrastructure and service. Fewer than 2% of households grow their own food, and many of the small scale producers in rural areas are unable to feed their families (Yared and Rusare, 2014).

The study of Van Averbeke and Khosa (2007) reported that while income is the most important determinant of household food security in the Waterberg District, Limpopo Province, food obtained from various types of dryland agriculture contributed significantly to household nutrition. They argue that without farming the food security of these households would be reduced, especially for the poor. Furthermore, they note that small-scale irrigated vegetable production has the potential to substantially increase the amount of Vitamins A and C available to such households.

Several studies have been carried out in South Africa to assess the effect of land reform on socio-economic welfare of households, much still remain to be done in terms of quantifying the impacts, and particularly determining the impacts on smallholder agriculture and food security.

The current state of the country shows that a continuous increase in food prices has worsened the threat of hunger for people living in poverty, both directly as household incomes have lagged behind and indirectly as families are forced to allocate more money to essential non-food items such as transport and electricity. Most land-based livelihoods rely on having secure access to land (De Klerk *et al.,* 2004). It is also a precondition for sustainable agriculture, economic growth and poverty reduction. Consequently, the continuous frustration of basic human needs such as shelter,

security, employment, and food supply portends an enormous potential for conflict and can easily threaten the political stability of a country as well as the harmonious social functioning of society (Handley *et al*. 2009). Therefore, an investigation of the effect of the Land Restitution Programme on households' food security in Limpopo Province becomes more important especially in the face of rising other socio-economic challenges in the country. The study answered the following questions: what are the socioeconomic characteristics of land restitution beneficiaries and non-beneficiaries in Limpopo Province? What is the food security status of land restitution beneficiaries and non-beneficiaries in the study area? To what extent does Land Restitution contribute towards food security in Limpopo Province? What are the challenges farmers face in accessing land and other inputs for agricultural purpose in the study area?

1.3. Motivation of the study

Agricultural policies in South Africa have the aim to enhance the sustainable use of resources, increase economic growth, create jobs, increase food production for domestic consumption and export, and promote rural development and transformation (PBER, 2015). Land Restitution Programmes are intended to fasten rural development and empower rural communities. Land Restitution Programmes are in place to assist smallholder farmers through support for infrastructure, marketing, finance and extension services. These initiatives are intended to support job creation and fight food insecurity. Examining the effects of land restitution on smallholder farmers is very important for policy purposes.

The government has been investing in agricultural development since the Land Reform Act 22 of 1994 as amended, but most households remain food insecure. Food security has been a problem in the Southern African region for years and lack of land has restricted most of the communities to increase production. Land restitution has come with a solution to provide food security. However Lack of information has made it extremely difficult for policy makers in South Africa to formulate the most appropriate land and food policies. Therefore, there is a need to examine the effect of this land restitution on food security.

This study is also motivated by the fact that if food security is not attained, the following Sustainable Developmental Goals (SDG) of the United Nation cannot be attained: MDG Goal 1 of eradicating extreme poverty and hunger; MDG Goal 4 of Reducing child mortality (UNDP, 2006); SDG Goal 1 to end poverty in all its forms everywhere; SDG Goal 2 to end hunger, achieve food security and improve nutrition and promote sustainable agriculture; and SDG Goal 3 to ensure healthy lives and promote well-being for all at all ages (UNDP, 2015).

This study provides information to policy makers and other institution and would benefit smallholder household farmers of Waterberg District and other areas. In this way, poverty and food insecurity will be reduced and this will encourage more participation in agricultural activities.

1.4. Aims of the study

The aim of this study is to examine the effects of the land restitution on household's food security, in the study area.

1.5. Objectives of the study

The specific objectives of this study are to:

i. Profile households' socioeconomic/ demographic characteristics of the households
ii. Assess the food security status of land restitution beneficiaries and non-beneficiaries in Waterberg District.
iii. Examine the effects of Land Restitution Programme on food security in the study area
iv. Investigate the challenges faced by smallholder farmers in accessing land and other inputs for agricultural purposes in the study area.

1.6. Outline of study

This study focused on food security status of household who benefited from land restitution and those who are non-beneficiaries of land restitution. Chapter one of the study focuses on background of the study, problem statement, motivation, aim and objectives. Chapter two is a review of local, regional and international literature.

Chapter three focuses on the methodology of the study by including study area, data collection methods, data analysis and the model used. Chapter four is an analysis of the descriptive statistics and chapter five is an analysis of the dietary diversity score and logit model. Chapter six highlights the summary, conclusion and policy recommendation.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

This study is on the effect of Land Restitution Programme on households' food security in Waterberg district, Limpopo Province. The study aims to examine the effects of land restitution on smallholder farmers' on household food security. Findings on the role of land restitution in South Africa, focus mostly on the impact of land restitution on livelihood and food security. Many arguments support the idea that food insecurity may be reduced through broadening land access, especially if increased land ownership rather than just land use is achieved (Valente. 2009). There is limited literature on the impact of land restitution on livelihoods (Hall, 2007). The study aims to use the dietary diversification which checks the nutritious/ dietary part of food security. According to Cintron (2013) about 30% of the world's population currently suffers from one or more forms of malnutrition, including inadequate caloric consumption, protein deficiency, poor dietary quality, and inadequate concentrations of protein and micronutrients.

2.2. Land reform in South Africa

According to Rossiter (1996) inappropriate land use leads to inefficient exploitation of natural resources, destruction of the land resource, poverty and other social problems. The land is the ultimate source of wealth and the foundation on which many civilisations are constructed. Society must ensure that land is not degraded and that it is used according to its capacity to satisfy human needs for present and future generations while also maintaining the earth's ecosystems. Part of the solution to the land-use problem is land evaluation in support of rational land-use planning and appropriate and sustainable use of natural and human resources. Land evaluation may be defined as "the process of assessment of land performance when used for specified purposes" (FAO, 1985), or as "all methods to explain or predict the use potential of land"). Once this potential is determined, land-use planning can proceed on a rational basis, at least with respect to what the land resource can offer (FAO, 1993). Thus, land evaluation is a tool for strategic land-use planning. It predicts land performance, both in terms of the expected benefits from and constraints to productive land use, as well as the expected environmental degradation due to these uses. The

logic that makes land evaluation possible and useful can be summarized as follows: Land varies in its physical, social, economic, and geographic properties ('land is not created equal'); this variation affects land uses: for each use, there are areas more or less suited to it, in physical and/or economic terms; the variation is at least in part systematic, with definite and knowable causes, so that the variation (physical, political, economic and social) can be mapped by surveys, i.e. the total area can be divided into regions with less variability than the entire area. Before the dismantling of apartheid legislation in the early 1990s, about 87% of South Africa's land resources were owned or reserved for 12.6% of the population (the total population of white people then). The remaining 13% of the land in the former homelands, state-owned land was under customary forms of tenure. The land was very often agriculturally marginal due to the location, over-cultivation and over-stocking which arose from insecure tenure, overcrowding and low investment in land improvement (Adams, 2000).

Prior to the 1994 general elections in South Africa, the African National Congress (ANC) highlighted in its Reconstruction and Development Programme that land reform was to redress social injustice and reconciliation of forced removals and the historical denial of access to land (Sibanda, 2001). Its objectives were therefore to ensure tenure security for rural dwellers, avoid overcrowding, and give residential and productive land to the people particularly the previously disadvantaged rural population. Many people posed the question of development, where many considered that the land reform objectives would never be achieved if no development occurred on the land acquired. According to Anseeuw and Mathebula (2008) if considering to address the injustice of the past, then development entails many dimensions which include the increase of low income and lower consumption. Even when rural development and land reform are separate, they should remain aligned to policy, programmes and institutional levels to ensure coordinated service delivery.

The pace of land reform in South Africa continues to be slow. Aliber and Maluleke (2010) highlighted that some reasons for the slowness is that the South African land reform is daunting in the Latin American sense, wherein people have to determine how to reconfigure "Junker" estate, that is large scale commercial farms that rely on mechanisation and wage labour. Farms are carved and allocated as portions to smallholder farms and white farmers are replaced with black farmers.

South African land reform constitutes of three programmes which are; the land restitution, land redistribution and land tenure reform programme. These three programmes of land reform are all derived from the South African Constitution Section 25(5) which states the following “the state must take reasonable legislative and other measures within its available resources, to foster conditions which enable citizens to gain access to land on an equitable basis” (RSA, 2006)

2.2.1. The elements of land reform

i. Land redistribution programme

Post 1994, land redistribution was aimed at providing the disadvantaged and the poor with the land for residential and productive purposes. This programme was based on a willing buyer willing seller settlement. A single, flexible, grant mechanism of maximum of R16 000 per household was used to purchase land from willing sellers. This programme took different forms like group settlements with some production; commonage schemes; group production; on-farm settlement of farm workers and farm worker equity. According to Jacobs *et al.* (2003) this governmental redistribution policy has undergone a number of shift after 1994. Between 1995 and 1999 it was largely implemented in the form of Settlement/Land Acquisition Grant (SLAG), which provided a modest grant to poor people, usually in groups, purchase land particularly in an open market.

ii. Land tenure reform programme

Under the Constitution of South Africa, land tenure reform is aimed at addressing a range of problems which arise from settler colonisation and dispossession. According to Sibanda (2001) this programme was aimed at providing the people with secure tenure where they live so that arbitration eviction could be prevented and constitutional requirements so that the people of South Africa can get access to land legally. Most of these areas which are known to many as communal, were deliberately created to promote colonial policies. They used to serve as transfers for cheap migratory labour.

iii. Land Restitution Programme

The major purpose of this programme is to correct the injustices to communities or persons dispossessed of property (land) after 19 June 1913 by restoring land and to

provide other remedies to those dispossessed by racially discriminatory legislation and practices under the then Native Land Act. Under Restitution of Land Rights Act, 22 of 1994 those who think that they have been treated unjust under the discriminatory law are entitled to lodge a claim for restitution of that property or comparable redress. By March 1999 (the cut-of date), only 67 531 claims by individuals and communities had been lodged, of which more than 80% were urban (Sibanda, 2001). Urban claimants represented only about 10% of potential land restitution. Forms which the restitution of land can take are; the restoration of the land from which claimants were dispossessed; providing the claimant with alternative land; payment of compensation; alternative relief comprising a combination of any of the above; or priority access to government housing and land development programme beneficiaries. The aim of the state was to compensate certain successful claimants where restoration of land and other remedies was said to be inappropriate. The land restitution was applicable to both urban and rural land for both residential and production purpose. Committees were created under the Restitution Act to investigate land claims and a land court was also implemented to settle claims between the parties (Belinkie, 2015).

The progress of Land Restitution in South Africa

The Land Restitution Programme has generally been slow on its first stages then started to pick up in the early 2000s. Between 1994 and March 1998 the progress was very slow with only 24 516 claims lodged and only 7 claims resolved (Business Day, 1998). During December 1998, 40 000 claims were lodged but only 27 claims were settled. The DLA (2001) showed that from 1999 to 2001 more than 68 878 claims were received and 12 863 claims were settled by November 2001. By March 2002, 30 000 from the 60 000 claims lodged had been settled (Du Toit, 2000). In June 2003 the Department of Land Affairs (DLA) highlighted that only 444 002 beneficiaries and 83 661 beneficiary household benefited from the 590 112 hectares of 36 488 claims settled. By September 2003, the number of claims lodged was sitting at 72 975.

Even though it started off slowly, it was reported that restitution as compared to tenure reform and redistribution has by far been the most successful. In 2006, 89% of the claims were declared settled as reported by the Land Claim Commission (Belinkie, 2015). Even though the programme had its successes and failures, it never accomplished its set goals. Many black people who preferably chose land rather than

monetary compensation were not lucky because many white owners thereof became reluctant to sell the land. Instead of selling their land, these white land owners would choose parcels to sell and then receive market rate for the worst section of the land they owned.

The Processes of Land Restitution

According to Moabelo (2007) the restitution process included the following phases, and are outlined as follows:

First phase: This phase was referred to as lodgement and registration, the phase considered claims lodged by the 31 December 1998 wherein an acknowledgement was issued. Under the act, it is stipulated that any person or representative of the any community that is entitled to claim restitution of rights to land, may lodge such a claim that shall include a description of the land in question, the nature of the right in the land of that the person or such community was disposed and the nature of the right or equitable redress being claimed, on form prescribed for this purpose by the Chief Land Claim Commissioner (CLCC).

Second phase: This phase is focuses on screening and categorising of the claims: Compliance with the act is checked and it establishes the missing information. It is during this phase that field research is conducted.

Third phase: This phase dealt with determination for qualification. In this phase qualifying claims were published in the Government Gazette and relevant newspapers. The claimant and other parties are informed accordingly.

Fourth phase: During this phase negotiations started, a report was produced after the completion of investigation. Various options were presented to help claimants make an informed choice.

Fifth phase: This phase was for settlement, it was during this phase that agreements were signed in terms of the Section 42(D) Ministerial approval or a decision made by the Land Claim Court (LCC) in the form of court order.

Sixth phase: The last phase is implementation of settlement. It includes detailed land planning, transfer of land, development funds, grants, post award support and handover of financial compensation, or other redress.

2.3. Land restitution in Limpopo Province

According to Fraser (2006), one of the areas in the country where the claims of land restitution were lodged is Limpopo Province although it largely remained unsettled. About 5 809 claims of land restitution were lodged by 1998 in Limpopo Province alone (Hall, 2004). Land restitution is an issue of significant importance in Limpopo Province. It raises many questions such as the history of European settlement and African dispossession; who have rights to land ownership, even rights to remain in South Africa; the future of commercial agriculture, which is a major source of employment in the province, and the government's capacity to deliver changes (Fraser, 2006). The Land Restitution Programme deals with claims lodged in terms of Restitution of Land Rights Act, 22 of 1994. This Land Rights Act provides for the restitution of rights in land to persons or communities dispossessed of such rights after 19 June 1913 as a result of past discriminatory laws or practices. Therefore some restitution beneficiaries prefer to embrace for compensation rather than restitution. The claimants choose to get financial compensation which they assume would enables them to survive better. By 1998, only 5 809 restitution claim were lodged in Limpopo Province of which Fraser (2006) shows that from this 5 809, only around two thousand claims remain unsettled. For many, this highlights the resistance of white farmers who are refusing to cooperate by not selling the land in question to the government.

The dispossession of land in the Limpopo Province continued to the Waterberg District, where according to Andrew (2006) the community of Modimolle was amongst the dispossessed communities. In 1965 the Lutheran Berlin Mission Society forcefully removed the Modimolle community to Bophuthatswana under the apartheid government. This community of Modimolle experienced the difficulties and the uncertainties in the restitution processes. Even though they are some who won access to land, they still faced enormous obstacles. Alternatively those who are poor for this land restitution, have not been given other significant option and are convinced that with the 95% of commercial farming still controlled by white people their card will be reduced (Andrew, 2006).

The Zebediela citrus farm claim took a different shape. Hall (2007) outlined that this Zebediela citrus farm which according to many is regarded by many as the largest citrus producer in the Southern hemisphere, took an initiative to establish a so called

strategic partnership which was between the Bjatladi CPA which remained the claimant, the Zebediela Workers' Trust and Henley Farm Property (Pty) Ltd who is their strategic partner. Bjatladi CPA by 2007 it was owning about 5 903 ha property. The three comprised a working company which is shared 30%, 15% and 55% by Bjatladi CPA, Workers' Trust and Hendry Farm Property (Pty) Ltd respectively. The restitution settlement agreement outline that the Hendy Farm Property (Pty) Ltd, will transfer 1% to Bjatladi CPA for the next five years from 2007 until the shares of Bjatladi are 35% and the strategic partner is 50%. The land was transferred in title to the community but the settlement agreement have 15 years lease agreement of R1million rental per annum. The strategic partner will have to transfer all its shares to the Bjatladi CPA by the end of 15 years when the lease agreement (Hall, 2007).

In Moletele of Maruleng District, a claim of 78 791 hectares was lodged where the first phase of 28 farms represents a land area of 3453 hectares was handed over by 2008 August (Cardno Agrisystems Limited, 2008). In their first face of the progress, 381 hectares of the 3453 ha handed over was planted with mangoes, 68.4 ha with citrus, 2318 hectares was left for grazing. With the guidance from the Limpopo Department of Agriculture, the partners decided to consolidate the land by forming three clusters which was going to focus on different agricultural enterprises, thereby ensuring economies of scale and easier management. From those clusters, the first cluster was made up of nine title deeds which farmed a Batau Farming company. The company's main activities were the production of vegetables, seed maize, mangos and citrus. As the region itself is a tourism destination, it has also served as a tourism activity. The second and third clusters were allocated the New Dawn Farming Enterprises, it is consisting of 18 title deeds and estimated 1000 hectares grows mangos, citrus, seed maize and the production of mango achar (Cardno Agrisystems Limited, 2008). On their land they have a drying facility and park house. The other farm in Moletele which is the farm Calais was taken over by the Moletele CPA. The farm is used as new office site and possible re-settlement area. As the side was used as a game farm, the property is now considerable to be tourism potential side. The enterprise itself leased the land from the community. From the profits, 48% is split to the partners while 52% is for the community.

In the Vhembe District, the Nzhelele Valley Initiative is one of the land restitution beneficiaries which is a prime export of the citrus farming area. According to Cardno

Agrisystems Limited (2008) the Nzhelele Valley Initiative claim was lodged by four different communities which are Nedondwe, Nemamilwe, Mamuhoyi and Tsuni. All this villages belong to different traditional leaders. This communities lodged the claim of 17 properties in the area of Tshipise. The aim of nzhelele Valley Initiative was to establish a commercial partnership which its objective was to ensure that the high-value export agricultural activities currently taking place remain at current high levels of production. This high level of production was to act as an income generating stream. The eventual outcome of this initiative was that the total ownership and management of the business would be done by the claimant communities, following a process of skills transfer and capacity development over a number of years. This commercial farming operation was likely to sustain an estimation of 2500 jobs. An additional 500 jobs was to be created from the projected expansions and investment by three years period.

2.4. The international perception of Land Reform

According to Barraclough (1999) the biggest problem for the rural people who are living in poverty in most developing countries is how to maintain and improve their scanty livelihood. The commercialisation of agricultural resources and other associated economic activities in those developing countries resulted the larger proportion of rural residents being victims of livelihood crisis. As that is a case many rural areas remain the vulnerably not secured in their land. Land and labour in developing countries remain commodities to be employed rationally in the ways that maximise profits of privatised resources for both businesses and the government. This thereof results in the larger amount of land, water and other resources which were previously important and used for self-provisioning activities by residents in those rural areas to better their livelihood (Barraclough, 1999). As that a case land reform is tool used to correct this challenges which rural poor faces.

The land reform can be traced as far as early post World War II, it was always aimed at independent property-owning peasants and alleviation of poverty and the landlessness. In this, the major objective to support the land reform was to break the feudal estates and prevent the advancement of communist revolution (Adams, 2000). According to Lerman and Sedik (2008) Tajikistan is one of the countries which had a land reform, their Land Reform Programme was focusing on the 8th record of

agricultural growth. It is acknowledged by the Tajikistanis that their land reform did not stem from the failure of the Soviet agriculture. It was therefore motivated by dissolution of Soviet Agriculture and Political System after 1990. Tajikistan issued its first legal act of land reform and farm restructuring in 1992, just few years before the South African land reform act, but their implementation began in 1995, were the presidency declare the allocation more land to household plots. Between 1995 and 1996 their government moved to recognising the traditional collective and state farms into new corporate forms hoping that this restructuring will improve agricultural productivity and also in other notoriously inefficient sector. The initiative failed to produce efficiency gains.

According to Smith (2000), the other country which followed the land reform route was Philippines which in the 1990s, was privatising the former socialist economy. This move provided a new dimension to land reform. Therefore after the Cold War the attitude of land reform became less polarised, then land reform won the support of donors in Philippines. Africa alone was as well colonised by many countries, but in the post colonised Africa, the role of donors in land reform was not without any controversial issues. The colonial associations continued with the donor, British was involved with countries which include Kenya, Zimbabwe, Uganda and South Africa while Rwanda was under the Belgians umbrella and France was responsible for Mali. As always, because of the past differences and colonial challenges, relations with the former colonial power have not been amicable. (Smith, 2000).

Latin America is amongst the first countries to trial the land reform issues. According to Barraclough (1999) the first recorded major land reform in the twentieth century took place in Mexico. In 1910s several Mexican states already were introduced to land reform, it was therefore culminated nation-wide in the late 1930s (Barraclough, 1999). What led to the land reform in Mexico was that, before revolution the large scale-agriculture was commercialised in larger proportion. During this pre-revolution the production of stable food such as maize and beans which benefited the poor declined which encouraged the imports from the United States of America, while the production of sugar, coffee, cattle and other products which are refed to as normal good (products) grew and opened for domestic and international market. This therefore benefited from the protection of the state and subsidies. Though they were more investments from the United States and Western Europe in agro-industry, railroads, urban and rural infrastructure this failed to benefit most of the rural poor. This equated

to the rural poor suffering to food insecurity and as such it resulted in land reform issue raised.

Many countries in the Latin America started to follow that one of Mexico, with Bolivia in 1952, Guatemala in 1944, Puerto Rico in 1940s, Cuba in 1950, Peru and Venezuela in 1960s, Chile 1973 and Nicaragua and El Salvador in 1980s (Smith, 2000). Barraclough (1999) further state that in this case of land reform the state played a significant role so that the rural poor people can benefit. The Latin American state had always been very involved in making a point that land reform is not introduced early, in that case the medium and rich society were much advantaged by the move. In addition, the world, the state's approach remained differentiated from one country to the other, so at which ever stage and country the state will behave differently to the land reform issue. As the ANC did in South Africa, for the Latin America political parties played a significant role in the land reform. Therefore this political process was as well expected. Because of a political system per country then their role varied.

2.5. Concept of Food Security

The broader definition of food security is households' access at all times to adequate, safe and nutritious food for a healthy and productive life. According to Alusala, (2009) food security can be viewed from two perspectives which are the macro and micro levels. The macro levels are the larger role players such as the governments and regional bodies' while the micro level are the household concern. According to Maxwell and Frankenberger, 1992 as cited by Crowther, (2007) traced back the concept food security to the Universal Declaration of Human Rights in 1948. The congress recognise the right to food as a core element of an adequate standard of living. Cook, (2006) traced back the origin of the term food security in the international development literature in the 1970s increased public interest in the subject following the world food crisis of 1972 to 1974. Definition of food security expand over time with an increase with wider range of food related issues and to more completely reflect the role of food in human society, including its nutritional, social, cultural, symbolic and political role.

Currently FAO of the United Nations proposed a definition food security in 2001, that the food security exist when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food, which meets their dietary needs and food

preferences for active and healthy life. This definition originated from the world food summit of 1996 and it is the most commonly used definition of food security. FAO, (2006) outline four pillars which underpin food security and those dimensions or components are definite as follows:

Availability of food

Food availability is when the effectiveness and continuous availability of food is in sufficient quantities of appropriate quality.

Access to food

This occurs when the country and households are able to obtain food sustainably. The households need to have access to adequate resources and entitlements that enable them to acquire enough food for a nutritious diet. This implies to have ability to grow and/or purchase food, or to receive food. Access to food therefore refers to the ability to access food, as well as the selection and preparation of food.

Utilisation of food

Food safety and quality remain an important aspect of food. Utilisation of food refers to food safety and the quality and holds that individuals and households should be able to select, store, prepare, distribute and eat food in ways that ensure adequate nutritional absorption for all household members. The availability of safe water, sanitation, and refrigeration and health care services influences the achievement of nutritional absorption.

Food stability

The sustained access to nutritious food despite suffering shocks such as conflict, droughts, deaths and unemployment at household level.

2.6. The global state of food security

According to von Braum *et al*. (2004) as cited by Crowther (2007) about 1.1 billion people in the world live on less than the internationally recognised poverty threshold of one U.S. dollar per day. From the 1.1 billion people suffering from poverty 325 million live in sub-Sahara Africa. Food insecurity globally is caused by or a consequences of widespread and severe poverty.

The 1996 World Food Summit found that 9 million of 854 million chronically food insecure people in the world live in industrialised countries, 25 million people live in transition countries while the rest 820 million people live in developing countries. More than 96% of the 854 million people suffering from chronical food insecurity are also suffering from chronic nutritional deficiencies (FAO, 2006).

FAO (2006) reported that the number of undernourished people in the sub-Saharan Africa has increased to 206 million over the past two decade. It was estimated that in addition to chronic food insecurity, 2 billion people globally experience intermitted food insecurity due to varying degree of poverty.

2.7. The state of food security in South Africa

It is outlined in the study of Pereira (2014) that over the past 15 years there was an increase in the number of peer-reviewed studies relating to food security and the food system in South Africa. The reason for this increase in the interest in food security is following the 2008 food price crisis that which called for increase in food prices followed by food-related riots in countries around the world. According to Du Toit *et al* (2011) this issue of food (in)security has always been critical in the world with South Africa included. After 1994, South Africa started receiving more attention on the food security, because of the country reconstructing into a democracy. In the world the right to food is enshrined in international and law. According to the Section 26 and 27 of the South Africa Constitution of 1996, the right to access to sufficient food is embedded. South Africa is characterised by a situation of food security at the national level but experiencing an increasing household food insecurity. An estimation of 14 million people in South Africa are estimated to be vulnerable to food insecurity (Alexandra, 2010) and that 43% of households suffer from food poverty (De Klerk *et al.,* 2004). As stated by Crowther, 2007 from Lemke 2005. Food insecurity and poverty are therefore among the most urgent social issues in the sub-Saharan Africa, with South Africa included.

Alexandra (2010) further stated that food security has two components which the first is the availability food and the ability to food production through one's own production and the second is having accessibility to markets and the ability to have funds of purchasing food item. As it is highlighted that South Africa is food secure at the national level, this is because it produces staple food and exports surplus food. It has always

been importing what is required to meet its food needs. National food security indicators reveal that South Africa has been meeting the food needs of the population from domestic sources for the past 25 years.

Achieving food security is a major concern for many households and the government in South Africa. The South African government has committed itself to the halving poverty between 2004 and 2014, in order for the country to achieve this objective it was crucial to achieve household food security. To reach that objective of food security the government adopted the Integrated Food Security Strategy (IFSS) in 2002 (De Cock *et al.,* 2013). The food security of the urban and rural poor is under threat. The Integrated Food Security strategy (IFSS, 2002) has adopted as its guiding vision the attainment of universal physical, social and economic access to sufficient, safe and nutritious food for all South Africans to meet their dietary requirements. The South African poverty is contextualised by the high inequality in income and ownership of assets. Henceforth the effect of policy measures towards reducing poverty and food insecurity, and establishing the link between poverty, income and food security is still unclear in areas that were disadvantaged during the apartheid era.

In 2008, the report by Food and Agriculture Organisation (FAO) estimated that the number of undernourished people increased from 848 million to 923 million people from the years 2003/05 to 2007 this is impacting largely from food price crisis (Oni *et al.,* 2010). This being the case, in South Africa alone the issue of food insecurity and poverty have prevailed for several centuries as a result of the oppression and apartheid policies that were designed specifically to create condition that were unfavourable to the well-being of black South Africans (LDA, 2002). This created a need for policy reform, therefore the food security policies were introduced. These food security policies organised by government departments dealing solely with agriculture do not have did not have clear guidelines on how food security projects based on smallholder agriculture should align with land and agrarian reform projects in rural agriculture (Kepe and Tessaro , 2014).

2.8. The food security status in Limpopo

According to Food Security Information Brief 1, released by DAFF in (2006) Limpopo Province had a high level of food insecurity as measured by malnutrition. According to this report 81 % of the population suffer from food insecurity as a result of malnutrition.

The study conducted by Masekoameng and Maliwichi (2014) at Sekhukhune District of Limpopo province revealed that majority of people in the province rely on purchasing of food using cash. Limpopo Province is food secured at the Provincial level but the challenges are faced at the household level.

De Cock *et al.* (2013) conducted a study in Limpopo Province and concluded that the household food production through agricultural means does not seem to contribute to a higher food security status. This basically entails that households who might have lesser access to external income are not able to compensate by producing food for subsistence purposes. Ndhleve *et al.* (2012) conducted the study in Limpopo Province as well and concluded that agriculture is not contributing much to household and is failing to sustain households' food requirements.

The poverty rate varies from district with Mopani district having the highest poverty rate of 50% and Vhembe district with lowest poverty rate of 19% (D'Haese *et al., 2011;* De Cock *et al.,* 2013). In Limpopo Province the average monthly household income was found to be R3055.00 which was contributed to grants, formal income and farm income (De Cock *et al*., 2013). Half of the households are involved in agriculture, with poultry, maize, mango and cattle being the most important activities. The findings of De Cock *et al.* (2013) revealed that promoting rural education can contribute to improving food security levels to a large extent, the education was significantly correlated with food security. According to the study conducted by Nesamvuni (2014) in the Vhembe district almost all households in that area owned land for food production. From those who own land, 98.9% use their land for home vegetable garden, while 41.8% use it as cultivated field, 30.2% use it for keeping livestock and 1.2% use it for orchards.

Nesamvuni (2014) further outlined that all indicators used in the study showed an occurrence of households' food insecurity. The hunger scale reported a 67% food insecurity of the households in Vhembe district. There was food availability in the households and food consumption which suggested that the diet followed by households was of a high starch, low fats that lacked variety. The intake of proteins was probably adequate with the consumptions of fruits and vegetables as well as milk and milk products being lower than recommended.

Mashamaite (2014) reported that at Maroteng Village in Limpopo Province 68% households depends of food from the formal markets while only 17% purchase their household food from street vendors or hawkers, 13% produce their own food specifically for household consumption while only 2% get their food from both the market and own production. The reason behind most households accessing food through markets is because household farmers take larger proportion of their own production to milling corporation either for cash or household consumption.

Regardless of some subsistence household farmers having had significantly contributed to household food security at Maroteng Village of Limpopo Province, some households failed to meet their household food needs due to low productivity and poor resources as well as lack of proper farm inputs. The sector itself showed a greater potential in enhancing food security at household level (Mashamaite, 2014).

D'Haese *et al*. (2011) reported that in Limpopo Province's five district 52% of the households were found to be severely food insecure with Waterberg District being the most food insecure district while Sekhukhune District was found to be the most food secure district. Above 32% people are living on less than one dollar per day. In Limpopo Province alone 46% of the households experience a hunger period during the year with most difficult period in terms of income and hunger being between December to February and June to July. The important food groups for diet are maize, food containing sugar and poultry while the average household income being R1600 (D'Haese *et al.,* 2011*).* Due to many people depending on food from the formal market as cited by Mashamaite (2014), it remains important to highlight that the average income in Limpopo Province is highest in Vhembe district and lowest in Mopani. They are three most important sources of income in Limpopo Province which are grants, formal salary and farming income.

It was also reported that 57% of the households consider their grants as largest contribution to their livelihood while 57% of the farming households are involved in crop production and 50% of the households are involved in livestock production (D'Haese *et al*., 2011). About 25% of the households irrigate the cropping land. Most farming households produce fruits for subsistence purpose and 87% of the production for own production. Producers of staple food and vegetable sell 50% of their products and 50% of the production is for own consumption, livestock production is quite

intensive and on average each farmer owns atleast 10 units of animals (D'Haese *et al.,* 2011). Limpopo Province is affected by increasing food prices and it's a most important stress, and the main determinants of food security is education level, household income, type of income sources and dependency on grants and gifts. In most cases the coping strategies are based on social capital and reduction of consumption.

2.9. The effect of agriculture on food security in South Africa

Globally people are sharing a common need for safe, nutritious and reliable supply of food (IAEA, 2011). In developing countries agriculture is of fundamental importance, because in ensuring food security it is essential to have a well-functioning agricultural sector and agricultural products remains a major source of national income. According to Van der Merwe (2011) as cited from Department of Agriculture (2002) the state of food security in South Africa depends much on the amount of food produced domestically. Therefore if the amount of food produced domestically remains not sufficient, the country need to import more food from other countries. As imports remain a solution, this in turn increases the prices of food and results in higher levels of food insecurity. Van der Merwe (2011) highlighted that South Africa is a main producer of staple foods and it remains a net exporter of this staple food. Any surplus amounts of staple food is exported which is mainly sourced from large-scale commercial agriculture.

According to Pretty *et al.* (1996) agricultural development faces some unprecedented challenges. Above 8.4 billion people in the world will require support by the year 2020. Although the food produced by agriculture globally remains enough to feed everyone, about 800 million people still do not have sufficient food. In this recent years the approaches to agricultural development which also include food production and food security, failed to reduce number of the people who remains food insecure. Van Averbeke and Khoza (2007) and De Klerk *et al.* (2004) cited that 35% of the South Africans are still vulnerable to food insecurity. Majority of this vulnerable population are black people who live on commercial farms and rural parts of the former homelands. According to Nyange *et al*. (2011) as cited in Mashamaite (2014) agricultural sector is by no doubt the largest contributor of the economy in most African

countries and accounts to more than 35% in GDP contribution with atleast 70% of employment.

According to Manyamba, *et al.* (2007) and Crush *et al.* (2006) the increasing population growth in South Africa has a negative impact on human development and poverty eradication and this becomes more urgent in the context of food security. Evidence proofs that agricultural growth is an essential tool to be used for poverty reduction. More literature that has occurred indicates that domestic and international investment in agriculture and rural development together with supportive rural and agricultural policies stimulates agricultural growth (Manyamba *et al.* 2007).

Altman *et al*. (2009) and Stat SA (2012) reported that both the smallholder and subsistence farmers were previously neglected by policy maker regardless of the fact that smallholder and subsistence farmers can mitigate households' vulnerability to food insecurity in rural areas. Studies suggested that South African rural households are able to produce most of their food, it has emerged that both rural and urban households are increasingly becoming net consumers rather than producers of their own food (Stat SA, 2012). Comparing with the sub-Saharan African peers, South African rural households are more likely to purchase food in the market rather than exploiting their environment to generate income and produce food. Baiphethi and Jacob (2009) observed that although South African households are continually looking for opportunities to diversify their livelihoods and lessening their reliance on cash markets, households rather engage in the non-agricultural activities sources of income.

There occurs an evidence that smallholder agriculture has always had the ability to provide for food security through its efforts of jobs creation, increasing food supply and farm income as well as proving household own consumption (Machethe, 2004). Further argument reports that prove that smallholder agriculture has the ability to suitable growth with a significant effects on food security and domestic market expansion. Expanded cash crop production has always contributed to the growth of rural areas. This growth contribution by smallholder farmers includes labour demand, consumption and to household food security through generating income to buy household food items. The argument by Baiphethi and Jacob (2009) stated that majority of urban farmers practice agriculture for food production to increase their

income and consumption, to supplement existing diets through subsistence farming or as only source of food.

Households who engage in subsistence agriculture are mostly practicing it as an additional livelihood strategy. Altman *et al*. (2009) stresses that households that engage in subsistence farming are not necessarily more food secure. There are seven drivers that lead to food insecurity of these rural smallholder households. Many studies found that climate changes lead this drivers followed by poverty, human capital, property rights, unemployment and access to markets. Baiphethi and Jacobs. (2009) concludes that as the rural household are faced by those challenges, it holds no surprise to observe a decline in the agricultural production in rural areas. Aliber and Hart (2009) presently agricultural support only benefits a small number of rural farm households with access to water. The support programmes will have to be expanded to include activities conducted in diverse contexts such as: the promotion of appropriate crops and livestock; productivity while maintaining existing production capacity; and to assist rural farmers to move into commercial and market oriented production.

2.10. The linkages of agriculture and land reform in South Africa

Land is regarded a source of income, livelihood, food security, cultural identity and shelter for all citizens (Mafora, 2014). Agriculture and land reform are very critical in South Africa to respond to challenges of poverty and food security. South Africa has recognised the role played by agriculture in providing food for its citizens (HSRC, 2004). According to Hall (2009) land reform remains a political project that needs to clarify its economic foundation. Therefore it remains that land reform aims to have its contribution to economic growth by giving the households the opportunity to engage in both productive land use and increasing employment opportunities by promoting investment. Weideman (2004) argues that Land Reform Programmes are two sided with the potential to increase or decrease agricultural production. Further Weideman (2004) highlight that having realised the importance of agricultural sector in contributing to economic growth, employment creation and poverty reduction in rural South Africa, it remains crucial that land reform contributes to increase levels of agricultural production.

At places where land is redistributed through land reform, the majority of land is dominated by agriculture, but not only agricultural land use. Thiesenhusen (1989) in Weideman (2004) highlighted that majority of criticism on land reform are based on the arguments of the need to sustain agricultural production. There is a debate around land reform in South Africa which is largely defined by two major opposing positions, the other group in support of large-scale farmers and the other supporting small-scale farmers (Weideman, 2004). The report by Macroeconomic Research Group (1993) argues in support of large-scale farming that over 50% of the South Africa rural population are dependent on agricultural wage employment for survival and that investment in land intensive and international competitive farming will generate more employment in the rural areas than land reform based on small-scale production.

According to Weideman (2004) an argument by a number of South African academics and findings from researchs is that land reform based on small-scale farming uniquely able to achieve equity and efficiency in the rural areas of South Africa. The supporters of the Land Reform Programme based on the small-scale agriculture argues that large-scale agriculture is not sustainable, undermines economic development, is ecologically destructive and utilises resources inefficiently. The argument by Lahiff and Cousins (2005) stated that the small-scale agriculture is found in a wide range of locations such as the cities, townships, deep rural areas of former homelands and on commercial farms and the mainly produces staple food for household consumption. Due to agricultural history in South Africa few products find their way into formal markets either local or other types of markets. They still exist potential of land reform to underpin a revitalised system of smallholder production to move along with a transformation of the agricultural sector for the realisation of economic development and poverty reduction in South African rural areas (Lahiff and Cousins, 2005).

To conclude on this section the question by Lahiff and Cousins (2005) is how land reform can contribute to a revitalisation of smallholder agriculture in Southern Africa. The response as cited from Lerman and Sedik (2008) is that a well-managed land reform will implement the recovery of agricultural sector; land reform in its nature concern increase in the source of growth productivity as well as increase in land and livestock; land reform involves important structural changes in agriculture, in cropping patterns and in the sectoral structure of agriculture; and that land reform has been an improvement of rural family income and increased land for production in South Africa.

2.11. Definition of dietary diversity

Dietary diversity has long been recognised by nutritionists as a key element of high-quality diets (Ruel, 2002). According WHO (1996) dietary diversity has an increase in the variety of foods across and within food groups. FAO (2011) defines the dietary diversity score as a simple counts of food groups consumed at individual and household level. FAO recommended two dietary diversity scores which are the Household Dietary Diversity Score based on twelve food groups and nine food groups for Women's Dietary Diversity Score. Dietary diversity is considered a measure to access to food at household level while for individual it reflects dietary quality. FAO (2011) referred to the access of food for Dietary Diversity counts as households, capacity to access costly food groups dietary quality refers to micronutrients adequacy of the diet. Ruel (2002) agrees that dietary diversity is a clear promising measurement tool but further argues that for developing countries more research is needed for validation and to further test alternative indicators for different purposes. The two arguments constructed by Ruel (2002) are that research is needed to continue developing the valid and reliable indicators of dietary diversity and that the potential of household level of dietary diversity indicators to accurately reflect household food security and the overall socioeconomic status needs to be confirmed. The validity and reliability indicators of dietary diversity must accurately predict individual nutrient adequacy in a variety of population groups and setting.

2.12. Dietary diversity as food security indicator

Household food security is an important dimension of an individual's well-being (Hoddinott and Yohannes, 2002). There are proofs internationally that micronutrient malnutrition affects one third of the population globally (Mason *et al.* 2001 in Kennedy *et al.* 2010). Dietary diversification is an important tool to measure food security in terms of nutritional side. Dietary diversity is related to nutrient adequacy and to diet variety which are main two components of diet quality. Nutrient adequacy cover the basic needs in terms of micro and macro nutrients. According to Ajani (2010) information containing either individuals or households dietary diversity in the population can serve as a simple and effective indicator of various parameter that affect the nutrition people in any group.

Lopez *et al.* (2004); Styen *et al*. (2006); Ajani (2010) cite that in the poor populations nutritional problems become common since much of their diet focus mainly on starchy staple food and the starchy food diets are very low in micronutrient contents. Kirkland *et al.* (2011) further noted that in Africa nutrition security has continue to be one of the most fundamental challenges. But this does not occur in Africa, in developing countries household food insecurity is associated with diets that lack diversity, such diet also contribute to poor nutrition and healthy. Labadarios *et al.* (2011) said that no single food can contain all nutrients, the more food groups an individual or household included in their daily diet the more possibility of meeting nutrients requirements. Kennedy *et al*. (2009) support the view and argues that nutrient adequacy is reflected by a sufficiently diverse diet. Hoddinott, (2002) concluded that to measure food nutrition dietary diversity can be viewed as a proxy to measure food security.

2.13. Household Dietary Diversity Score

The study by Hoddinott and Yohannes (2002) studied the link of household dietary diversity score and the energy availability of diet. The study concluded that an increase in household dietary diversity have improved the energy availability from the food groups. In Swindale and Bilinsky (2005) it is cited that the Household Dietary Diversity Score was developed by Food and Nutrition Technical Assistance Project (FANTA) which is the number of food groups out of 12 groups. According to Thornton (2016) and FAO (2011) for Household Dietary Diversity Score respondents were asked 12 food groups consumed by the household in the past period of between 24 hours and 14 days depending of the nature of the study. The food groups are summed with equal weight.

Food and Agriculture Organisation (FAO) (2008) highlighted that in the current state globally there is no agreement on the type of food groups which should be included in constructing the Household Dietary Diversity Score and the Individual Dietary Diversity Score. The work is ongoing to further determine the best set of food groups for Individual Dietary Diversity Score. Hatloy *et al.* (2000) proved that household dietary diversity score is a valid proxy indicator of the economic ability of a household to access a variety of foods. FANTA (2006) further stated that this score has also been shown to be a valid proxy indicator of the micronutrient density of complementary food for children.

According to Headey and Ecker (2012) there exist a theoretical and empirical evidence which is suggesting that dietary diversity as an indicator is predicted to be an effective food and nutrition security in the future. Headey and Ecker (2012); FAO (1996) suggested that both the definitions of food and nutrition security must stress the importance of micronutrients and macronutrients. Ruel (2003) highlight that dietary diversity should focus on capturing consumption both types of nutrients and more balance diet. As the income of poor people increases they shift from staple foods which are regarded tasteless to micronutrient rich foods that are regarded tasty increases. Micronutrient which causes malnutrition is a public health problem globally contributing to morbidity and mortality of billions of persons worldwide. This contribution of morbidity and mortality are either direct or indirect.

Micronutrient malnutrition affects one third of the population worldwide (Mason *et al*. 2001). Monotonous diets are based on starchy staples which lack essential micronutrients and contribute to the burden of malnutrition and micronutrient deficiencies. Food-based strategies have been recommended as the first priorities to meet micronutrient needs (Allen, 2008). An essential element of food-based approaches involved the dietary diversification - consumption of a wide variety of foods across nutritionally distinct food groups - as a way to meet recommended intakes of nutrients. For a household to be food secured, some dietary needs must be met. Therefore the Household Dietary Diversification score (HDDS) will serve as a proxy to measure food security.

According to Swindale and Bilinsky (2005) Household Dietary diversity Score has long been recognized by nutritionists as a key element of high-quality diets. Household dietary diversity is the number of different food groups consumed over a given reference period. It is therefore an attractive proxy indicator for the following reasons: A more diversified diet is an important outcome in and of itself; a more diversified diet is associated with a number of improved outcomes in areas such as birth weight, child anthropometric status, and improved haemoglobin concentrations; a more diversified diet is highly correlated with such factors as caloric and protein adequacy, %age of protein from animal sources (high quality protein), and household income. The emerging interest in dietary diversity according to Ruel (2002) stems from the issues of nutrient deficiency and the potential importance of increasing food and food group

variety to address nutrient adequacy. Even in very poor households, increased food expenditure resulting from additional income is associated with increased quantity and quality of diet.

Lack of dietary diversity is a particularly severe problem among the poor populations in developing countries, because their diets are predominantly based on starchy staples and often include little or no animal products and few fresh fruits and vegetables (Marie, 2002). There are guidelines recommended by FAO for reporting the information collected on dietary diversity, and those guidelines according to Kennedy *et al.* (2010) are the following: Dietary diversity scores are simple counts of the number of food groups consumed at individual or household level.

The two dietary diversity scores recommended by FAO (2007) are the Household Dietary Diversity Score (HDDS) based on the twelve food groups and the Women's Dietary Diversity Score (WDDS) based on the nine food groups. Mean scores can be compared across the population's sub-groups and over time; Dietary profiles based on food groups consumed by a majority of individuals/households can be compared to provide insights on consumption patterns across population sub-groups, and the age of individuals or households consuming food groups or combinations of nutrient dense food groups (such as food groups rich in Vitamin A) can be analysed.

2.14. Summary

The land restitution beneficiaries of households in South Africa face numerous challenges. A common challenge to the majority of non-commercial farmers is failure to produce food so that their households remain food secured at all times. It is however noticed that food security is four dimensioned. The dimensions include: availability, accessibility, affordability and diet dimension. It is again noticed that nations suffer from malnutrition which does not hold the motion of dietary dimension. Dietary diversity is one of the things which do not hold on people's minds. This study seeks to examine those effects of land restitution on the households' ability to be food secured through on-farm production and the ability to create income.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

The aim of this study was to examine the effects of land restitution on households' food security in Waterberg District Municipality of Limpopo Province. Therefore this chapter reviews the methods used in the study for collection and analysis of variables that were considered to determine if household who either benefited or did not benefit from the Land Restitution Programme are food secure or insecure. The chapter explain how the study was conducted through the research tools. In this chapter the study area, data collection and data analysis are explained and the data collection methods are described. The outline of descriptive statistics and model used for data processing and the reasons for the model choice are outlined.

3.2. Description of the study area

The study was conducted at Waterberg District Municipality it is one of five district municipalities in Limpopo Province of South Africa. The municipality cover the area of 44 913 km^2 of the Limpopo Province's 125 754 km^2. It is located in the western part of the Limpopo Province. It is sharing its boarders in the northern part with Capricorn District Municipality and its eastern bordered with Sekhukhune District Municipality. It enjoys its south-western and south-eastern boundaries with North West and Gauteng Provinces. It shares 5 borders with Botswana which are Groblersburg, Stockpoort, Derdepoort, Zanzibar and Platjan (Municipalities, 2012). It is constituted by five local municipalities which are Bela-Bela, Mokgalakwena, Lephalale, Thabazimbi and Mookgopong.

The Waterberg Region is more than three million years and has a variety of wildlife, birds and scenic splendour and it is amongst the South African prime ecotourism destinations. It has economic benefits on mining, agriculture and tourism and it is the home of Medupi PowerStation and form part of the platinum belt. Towns which are found there are Bela-Bela, Lephalale, Modimolle, Mokopane, Mookgopong, Thabazimbi, Vaalwater and Amandelbult Mine Town.

3.3. Climate and landscape

Waterberg District Municipality has a unique landscape in South Africa and has features that are distinguished from other places in the country. The main landscapes features are four which include Waterberg Plateau, The Pietersburg Plain, The Limpopo Depression and the Transvaal Plateau Basin. The north and west parts of the region experiences hot and semi-arid climate, while the south and east parts of the region experience more humid and slightly cooler (DEA, 2016).

Figure 3.1: Map of Waterberg District Municipality

Sources: Municipalities (2012)

3.4. Sampling and data collection

The study used primary data which was collected using face-to-face interview through structured questionnaire. Both the smallholder farmers who are the beneficiaries and non-beneficiaries of Land Restitution were interviewed using the structured

questionnaires. The questionnaire was structured to understand two factors from the farmers which are the social characteristics (the age, gender, Household size, occupation, income, access to extension services etc.) and food security status.

The purposive sampling was used to identify households which are beneficiaries and non-beneficiaries of Land Restitution Programme. The information was collected from the Limpopo Department of Agriculture and Rural Development in Waterberg District, after collecting the list of beneficiaries and non-beneficiaries then the study will use random selection of respondents from the list of beneficiaries and non-beneficiaries. A sample size of 110 household's was used in this study representing the non-beneficiaries and the beneficiaries of land restitutions.

3.5. Methods of data analysis

The data was analysed using SPSS Statistics 23 (Statistical Package for Social Science). SPSS Statistics is a software package used for logical batched and non-batched statistical analysis. SPSS is a basic statistical and econometric computer package.

3.5.1. Descriptive statistics

The descriptive statistics was used, such as tables, frequencies, mean and to provide simple summaries of the variables and measures to profile households' socioeconomic/ demographic characteristics.

3.5.2. Dietary diversity score

To assess the food security status of land restitution beneficiaries and non-beneficiaries in Waterberg District of Limpopo Province, the study used a food security index and determined the food security status of each household based on the Household Dietary Diversity score. This was done through targeting the respondents' dietary intake history. A 7-days dietary recall was conducted to obtain food groups information from respondents' food intake (FAO, 2007). Household heads were asked to recall all food items taken in the previous seven days prior to the interview. Table 3.1 has a scale of twelve food groups which were used in assessing the dietary diversity of the respondents. A single point was awarded to each of the food groups

consumed over the 7 days period giving a maximum sum total dietary diversity score of 12 points for each household (Taruvinga, 2013).

Table 3.1: Dietary Diversification Table

Food group	Points
1. Cereals Maize, Floor, Millet , Wheat, Bread, Burley, Sorghum, Rice	1
2. Roots tubers Beetroots, Potatoes, Radish, Carrot, Sweet potatoes, Turnip green	1
3. Vegetables Cabbage, Tomatoes, Beans, Lettuce, Spinach, Okra , Butter nut	1
4. Fruits Apple, Orange, Banana, Strawberry, Lemon, Peach, Apricot , Plum	1
5. Meat, Poultry and Offal Beef, Pork, Chicken, Mutton, Offal, Lamb	1
6. Eggs Duck egg, Chicken , Ostrich, Goose, Blackbird, Cassowary	1
7. Fish and seafood Mullet, White fish, Tuna, Red snapper, Swordfish , Chilean sea bass	1
8. Pulse/legume/nuts Cowpea, Chick pea, Pea, Peanut, Pigeon pea, Soybean, Common bean	1
9. Milk and milk products Milk, Yogurt, Cheese, Milk-based desserts, Soymilk, Cream	1
10. Oils/ fats Almond Oil, Butter, Olive Oil, Sunflower Oil, Sesame Oil, Fish Oil	1
11. Sugar/honey Raw Honey, White sugar, Brown sugar, Sweetener, Filtered honey , Nectar	1

12. Miscellaneous	1
Total	12

This will create mutually exclusive dietary diversity categories which was derived from the 12 food groups into low and high dietary diversity groups. Based on the above categories which reflect the household dietary diversity, two homogeneous mutually exclusive levels were created as (LDD) Low Dietary Diversity and (HDD) High Dietary Diversity for independent analysis. According to FAO (2008), the Household Dietary Diversity Score (HDDS) ranges between 0-12. This range was used to measure household's dietary diversity and those with (0-5) food groups was ranked as LDD and (6-12) food groups as HDD

3.5.3. Logistic regression model

Based on the Dietary Diversity Score as food security index, two homogeneous mutually exclusive levels were created (LDD and HDD). The Logit regression model was used to examine the effect of Land Restitution Programme on the food security two created dietary diversity categories (LDD and HDD) were taken as the dependent variables. The logit regression model was chosen because its dependent variable is binary and can only take two values. Also, it allows one to estimate the probability of a certain event occurring. The model assume that food security is a two way sided. Therefore, the binary form of the dependent variable is '0' if the household is food insecure (Low dietary diversity) and '1' if the household is food secure (High dietary diversity).

$$Ln\left(\frac{p_i}{1-p_i}\right) = \alpha + \beta_1 x_1 + \beta_2 x_2 + \ldots \beta_n x_n + u\_i$$

p_i = the probability that a household has low dietary diversity given x_i (food insecure)

$1-p_i$ = the probability that a household has high dietary diversity (food secured)

x_i = a vector of independent variable

$\alpha \& \beta$ = regression parameters to be estimated

u_i = disturbance term

Table 3.2: The dependent and independent variables to be used in this model include:

Variables		Description of variables	Units	Expected sign
Dependent variable				
Food Security (FS)	FS	1, if household is food secure, 0, if household is food insecure	Dummy	
Independent variables				
Gender (GENDER)		1, if the farmer is a male, 0, if otherwise	Dummy	+
Age (AGE)		Age of the household head	Years	+
Household size (HHSIZE)		Number of household members	Number	-
Membership of farmer's association (MEMORG)		1, if the farmer has a membership, 0, if the farmer has no membership	Dummy	+
Off-farm income activities (OFFFARM)		1, has off-farm income, 0, has no off-farm income	Dummy	+
Total farm revenue (TOTREV)		Total amount of revenue from farm activities	Rand	+
Access of credit (CREDIT)		1, if farmer have access to credit, 0, if farmer don't have access to credit	Dummy	+
Access to market (MARKET)		1, if farmer has access to market, 0, if farmer has access to market	Dummy	+
Transporting the Products (TRANSP)		1, if transporting the products, 0, if not transporting the products	Dummy	-

Access to production inputs (ACINPUT)	1, if farmer has access to production input, 0, if farmer has access to production inputs	Dummy	+
Land size (HECTAR)	Total size of the farm	Hectors	+
Beneficiary status of land restitution (BENEFI)	1, benefited from land restitution, 0, did not benefit from land restitution	Dummy	+
Land ownership (LANDOWN)	1, if farmer own land, 0, if farmer do not own land	Dummy	+

The following is the estimated model

$$Ln\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 GENDER + \beta_2 AGE + \beta_3 HHSIZE + \beta_4 MEMORG + \beta_5 OFFFARM + \beta_6 TOTREV + \beta_7 CREDIT + \beta_8 MARKET + \beta_9 TRANSP + \beta_{10} ACINPUT + \beta_{11} HECTAR + \beta_{12} BENEFI + \beta_{13} LANDOWN + u_i$$

The logit model is based on the cumulative distribution function and yields results that are not sensitive to the distributive of simple attributes when estimated by maximum likelihood. If the aim is to examine which variables are significant in explaining a dependent variable using the logit model, disproportionate sampling is not a problem as it only affects the constant term and not the estimated slope coefficients (Maddala, 1992). The signs of estimated parameter are in line with the estimation made by Taruvinga *et.al*, (2013).

3.6. Limitation to the study

The problem of the smallholder farmers failing to recall the food groups they consumed in the past week (7 days) and the problem that some farmers are unable to recall whether the food consumed were bought or harvested from the farms posed a challenge to this study. The other challenge is that farmers who bought food were unable to recall prices.

3.7. Summary

The aim of this chapter was to give an overview of the study site, methods of data collection and methods of analysing the data. In this chapter models and variables that are used in the study are outlined. The study uses the dietary diversity score to measure food security while logit model is used to measure the factors that contribute to food security. The study intend to examine the effects of the land restitution on household's food security in Waterberg District Municipality of Limpopo Province and the factors which affect food security. Conclusions of the study was made based on both dietary diversity score model and logit model.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Introduction

The aim of this chapter is to provide the insight into the socio-economic characteristics of both beneficiaries and non-beneficiaries of land restitution in Waterberg District Municipality; examine the effect of Land Restitution Programme on food security and investigate the challenges faced by smallholder farmers in accessing land and inputs for production purposes. The information given in this chapter is derived from the descriptive analyses of the data collected as descript in the previous chapter. The basic demographic characteristics of beneficiaries and non-beneficiaries, the production, marketing and access to inputs are discussed in the context of food security. The chapter also empirically tests the significance that land restitution has an effect on food security. Furthermore it sought to present the empirical results of the model that was formulated.

The Dietary Diversity Score was used to assess the food security status of land restitution beneficiaries and non-beneficiaries in Waterberg District using food groups. Logit model is used to examine the effect of Land Restitution Programme on food security. The results of food security status are presented in graphical and tabular form and interpretation is done on individual variables with the summary of the results. The results were analysed using SPSS version 24.

4.2. Socio-economic characteristics of land restitution beneficiaries and non-beneficiaries

4.2.1. Beneficiary status

After the year 1994, most household claimed back their land through Land Reform Programmes. Some succeeded while others failed whereas some did not even try to claim back their land due to economic and political factors. Waterberg District Municipality is amongst the municipalities which that experienced higher claims of land restitutions.

The study used a sample size of 110 household farmers in Waterberg District Municipality. Figure 4.1 presents the age of farmers' household who are beneficiaries

and non-beneficiaries of land restitution. The study revealed that 58% of the farmers' households who were interviewed were beneficiaries of land restitution as compared to 42% of non-beneficiaries.

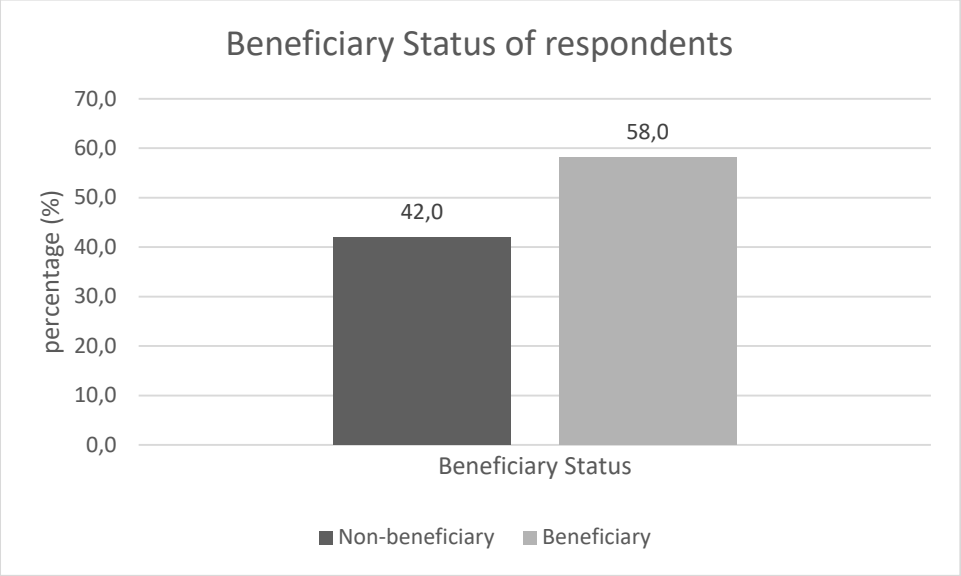

Figure 4.1: Beneficiary Status of respondents

4.2.2. Gender of respondents

Figure 4.2: shows that 57.3% of the households are female headed while 42.7% are male headed. In this study if the household head was a man who was working in another province, town or city, the household was considered to be headed by a female or an alternative person who is responsible for the household most of the time, is the one who makes decisions. Also the households with female who were divorced, never married or whose husband were deceased, were considered to be female headed households.

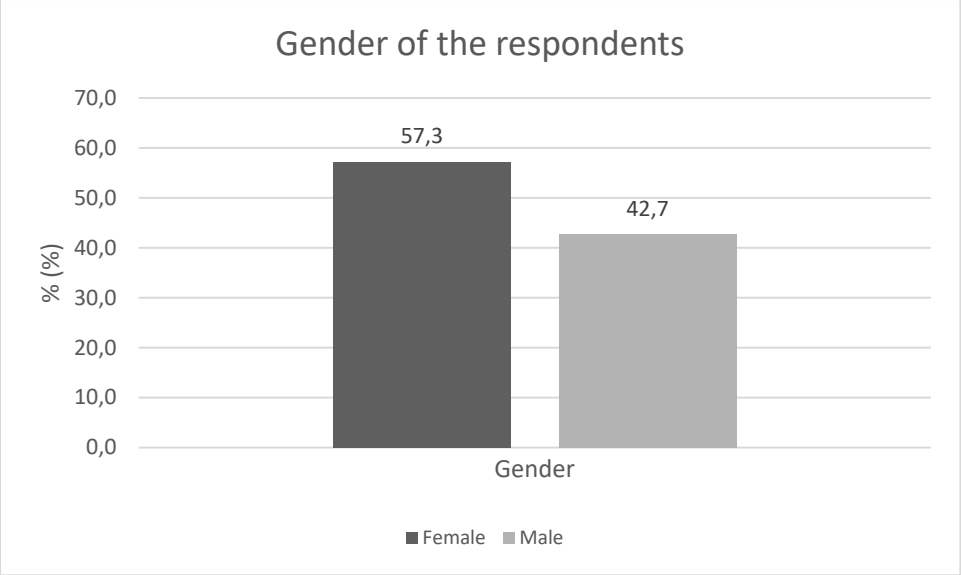

Figure 4.2: Gender of the respondents

Table 4.1: Age of the respondents

Variable	**Mean**	**Std Deviation**	**Min**	**Max**
Age of the respondents	49.85	14.297	25	80

A majority of these smallholder farmers are above the age of youth group which means the older the household head become the more chances that the household head participate in farming and acquire more experience with regard to farming. The age of the farmer is an important aspect of production in agriculture as older people turn to practise the old methods of production. The average age of the farming household head is 49.85 years. This implies that older people are participating in agriculture and the assumption is that the older the farmer becomes the more chances they had to acquire experience in farming activities. This indicates that younger people do not participate in agricultural production in larger numbers.

4.2.3. Marital status of respondents

Marital status was divided into four categories: married, single, widowed and divorced. Figure 4.3 shows that 57.3% smallholder farmers in Waterberg District Municipality are married. Only 28.2% of the farmers are single while 13.6% are widowed. Very few farmers are divorced at 0.9%.

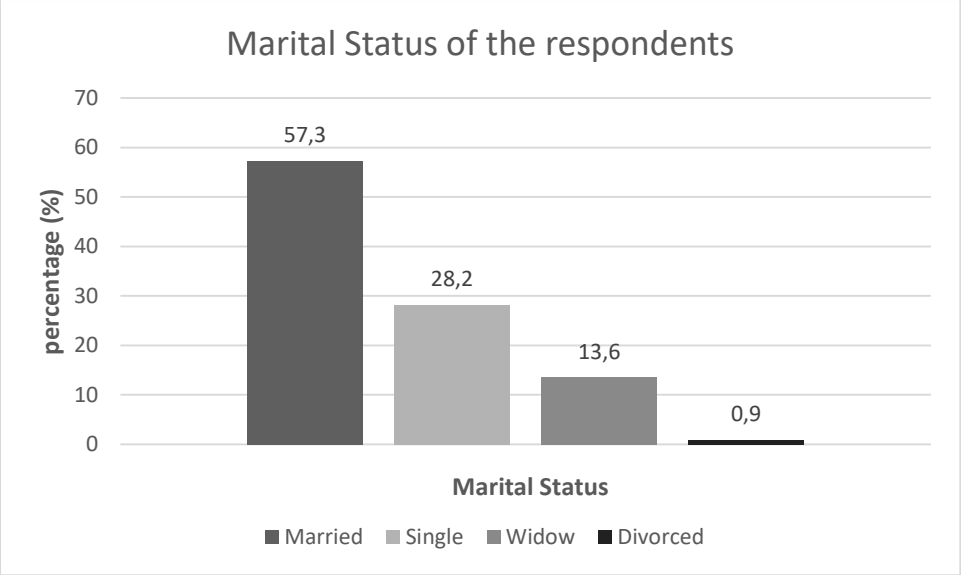

Figure 4.3: Marital status of respondents

4.2.4. Education level respondents

Table 4.2: Schooling

Variable	**Mean**	**Std Deviation**	**Min**	**Max**
Schooling	9.66	4.509	0	20

Education is important for the development of farmers and to improve farm knowledge with regard to agricultural production. Most educated farmers are able to apply better farming methods and put into practice newer forms of farming. Education is not a major constrain to the farmers as the average number of schooling was found to be 9.66 years while the maximum schooling was 20 years and the minimum schooling is 0 years. Furthermore education is also crucial for the farmers to improve their standard of living and dietary diversity.

4.2.5. Household size of respondents

Household size can play an important role as a provision of farm labour because most farmers depend on family labour. Household size is influences the household expenditure per month. In this study, the average household size is 6.14 members as shown in table 4.3, while the minimum members per household are 2 and the maximum members are 15. Household size refer to the total number of household

members including those who are non-family members. Therefore, the average number of household members below indicates that extra labour to work in the farm can be accessed from the household.

Table 4.3: Household size of respondents

Variable	Mean	Std Deviation	Min	Max
Household size	6.14	2.379	2	15

4.2.6. Membership to farmers' organisation

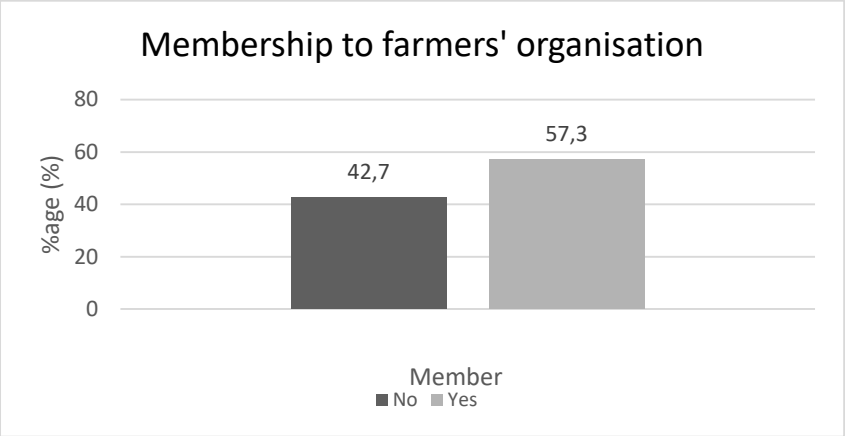

Table 4.4: Membership to farmers' organisation

Farmer organisations play an important role in linking farmer to farmer and farmer to input provider or markets. According to Randela (2005) an individual producer cannot individually enjoy economies of scale. For smallholder farmers, it is important to be a member of farmers' organisation in order to have bargaining powers and get access to credit since inputs are expensive. Organisations give them power to buy in bulk as it becomes cheaper. In this study, 42.7% of the farmers are not members of any farmers' organisation while 57.3% are members of farmers' organisation. These organisations enable farmers to have access to agricultural production, marketing information and increase their bargaining power.

4.2.7. Farming experience of respondents

Table 4.5: Respondents' experience

Variable	Mean	Std Deviation	Min	Max
Farming experience	12.58	9.032	1	40

The experience of the farmer plays a crucial role in determining the future of the farm. Most experienced people understand the agricultural production and are able to change methods of production without increasing inputs. Average farmer experience is 12 years while the lowest hold experience of 1 years and the most experienced farmer has an experience of 40 years.

4.2.8. Income of the respondents

4.2.8.1. Main occupation of the respondents

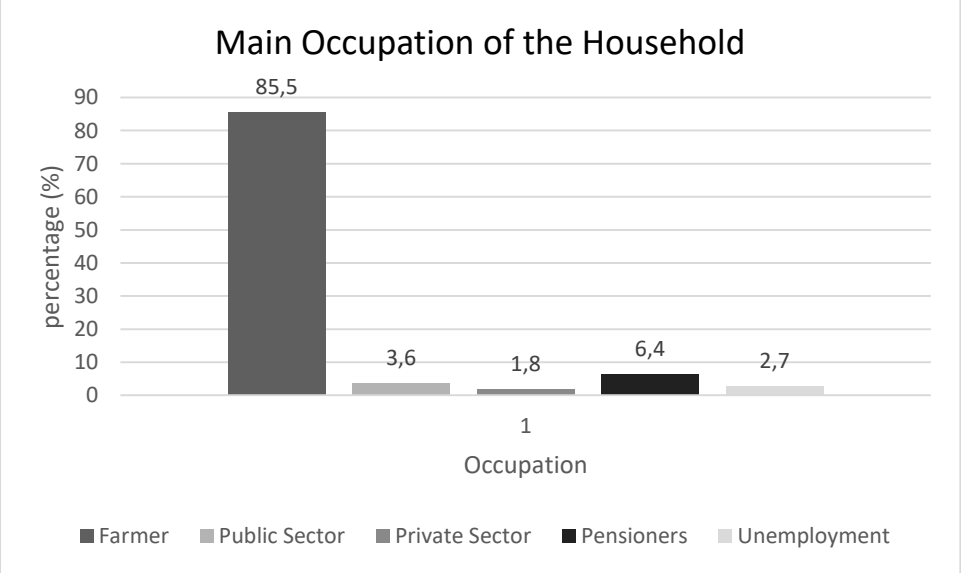

Figure 4.4: Main occupation of the respondents

The highest occupation of the beneficiaries and non-beneficiaries of land restitution in Waterberg District Municipality is farming was farming which constituted 85.5% of household being full-time farmers. Furthermore, this research reveals that 3,6% of the respondents were in public sector, 13% private sector in other sectors were found to be 3.6% public sector, 1.8% private sector, 6.4% being pensioners and only 2.7% being unemployed. Farmers who are employed in non-farming sectors full-time tend

to invest much of their time in those sectors and that affect negatively and the way of making decisions on participating in the market.

4.2.8.2. Main source of income of respondents

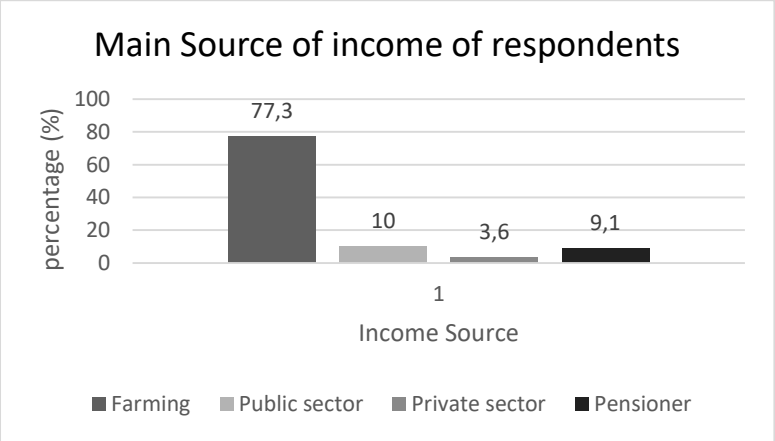

Figure 4.5: Main source of income of respondents

The main source of income for farming households was found to be generated from farming business at 77.3%. This implies that a majority of farming household depend on the income generated through agricultural activities for their livelihood. Only 10% receive their main income from the public sector which includes government employees and those in the public entities. Private sector contributes 3.6% of the main income and it is the lowest while 9.1% of the farming household depend on pension as their main income.

4.2.8.3. Off-farm income of respondents

Off-farm income assists in both the household and farm needs. In farm needs it assists in provision for inputs and participation in the market while in the household it serve as a provision for food security. Many household depend solely on farm income while less have access to off-farm income. As shown in figure 4.6 only 41.8% of the farmers receive off-farm income while 58.2% do not receive the off-farm income.

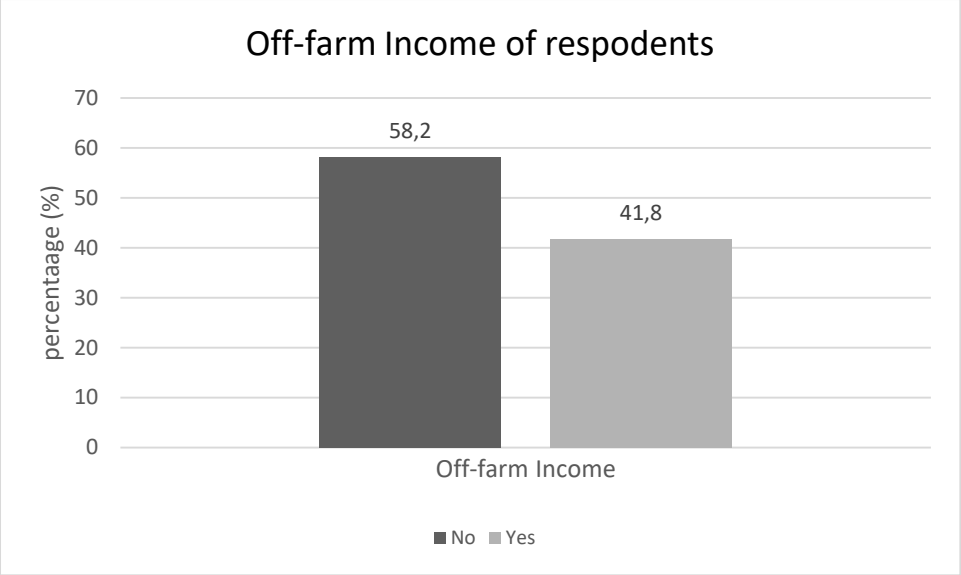

Figure 4.6: Off-farm income of respondents

4.2.8.4. Monthly income of respondents

Many farmers in area depend on income from farming, figure 4.6 shows that more farmers depend solely on farm income. Table 4.6 shows that the average income is R7 035.45. The minimum income is R1 000.00 and the maximum is R150 000.00. This indicates that farmers with less or no off-farm income depend on farming for sustainability.

Table 4.6: Monthly income

Variable	**Mean**	**Std Deviation**	**Min**	**Max**
Monthly income in Rand (R)	7035.45	14942	1000	150000

4.2.9. Extension Services contact

4.2.9.1. Extension services contact

Extension services plays an important role of empowering rural people and farmers with skills, knowledge and techniques (Machete, 2004). Even though figure 4.7 shows that 100% of the farmers receives extension services, Jari (2009) shows that the extension workers become biased towards farmers' cooperatives because those farmers mentioned that they received excellent extension services. In South Africa

there is no single extension model or approach which is suitable for all situation. Approaches and methods used are adapted to local situations. Their role is to provide information on new technology and methods of production to the farmers for farm inputs.

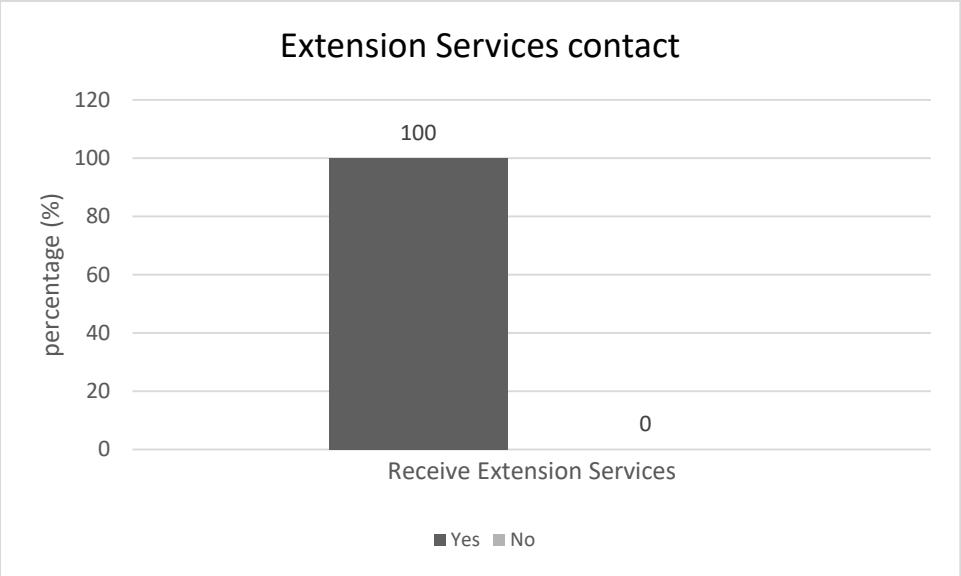

Figure 4.7: Extension services contact

4.2.9.2. Number of extension service visit per month

Table 4.7: Number of extension service visit per month

Variable	**Mean**	**Std Deviation**	**Min**	**Max**
Extension service visits	5.31	3.082	1	20

Table 4.7 shows that the mean of extension service visit is 5.31 which implies that the average number of extension service provider is 6 times per month. This shows that farmers have the possibility of having 6 visits from the extension officer per month. The minimum visit is 1 per month while the maximum is 20 visits per month.

4.2.9.3. Extension service providers

Government plays a major role in providing extension services to farmers even though the impact of extension services provided might not relate best to the needs of farmers.

According to figure 4.8, government provide 92.7% of the farmers with extension services while developmental agencies provide the services to 7.3% of the farmers.

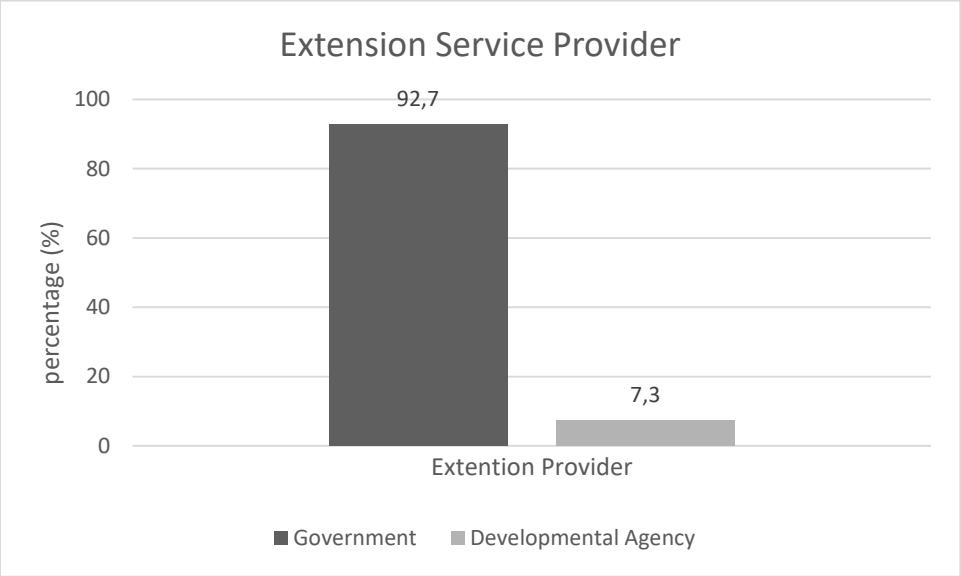

Figure 4.8: Extension service providers

4.2.10. Agricultural financing

4.2.10.1. Financing for agricultural activities

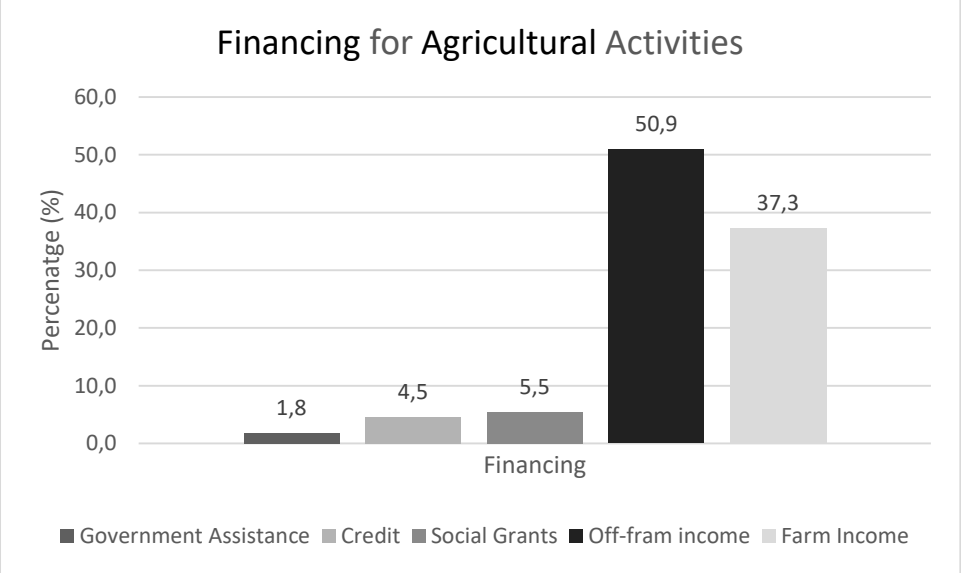

Figure 4.9: Agricultural activities financing

The extreme increase of the cost of agricultural inputs has resulted in an increase in the demand for alternatives production finance. This led to farmers considering to finance their agricultural activities with other means. Figure 4.9 highlights that 37.3%

of the farmers depend on farm income to finance their agricultural related cost while off-farm income constitute 50.9% of the financing. In Waterberg District Municipality, 1.8% of farmers depend on government assistance, 5.5% of farmers uses their social grants and 4.5% of farmers uses credits to finance their production.

4.2.10.2. Access to credit

Collateral remains the important factor of accessing credit. The value of collateral will become critical when a farmer defaults on credit repayments and the credit provider has to recover the loan. Moreover 5.5% of farming households have access to credit as shown in figure 4.10 and 4.5% use the credit for financing their agricultural related issues as shown in figure 4.9. Almost 94.5% of the farmers do not have access to agricultural credit. The sources of credit providers available to farmers includes agricultural companies, commercial banks, the Land Bank and other privately-owned institutions offering either agricultural finance or corporate farming initiatives.

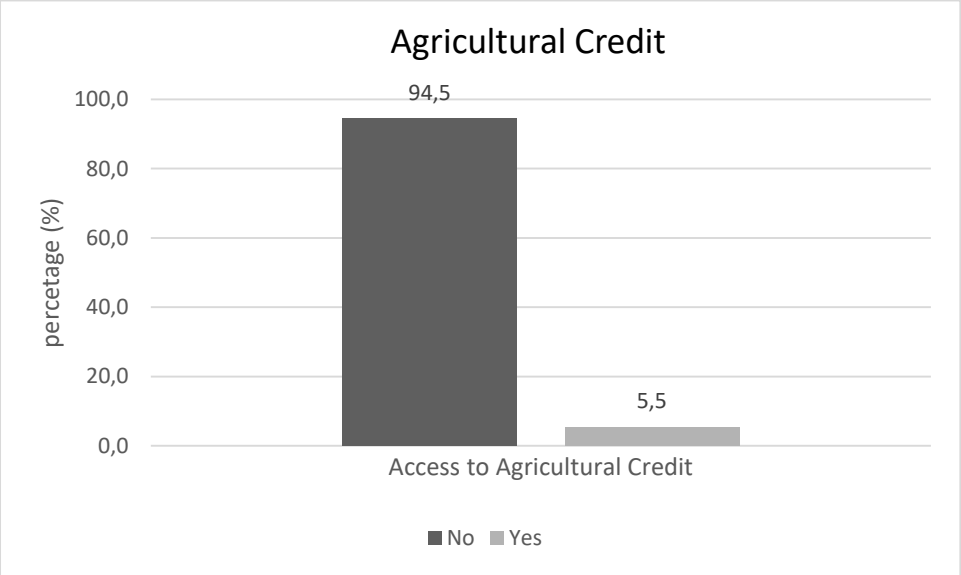

Figure 4.10: Agricultural credit

4.2.11. Water

4.2.11.1. Access to water

According to Appelgren (2004) irrigation constitute 70% of total abstracted water volumes in the world while agriculture represent about 92% of total uses of flowing and rainwater. Water access remains very important for farmers. As highlighted in figure 4.11, all farms in the study cited have access to water.

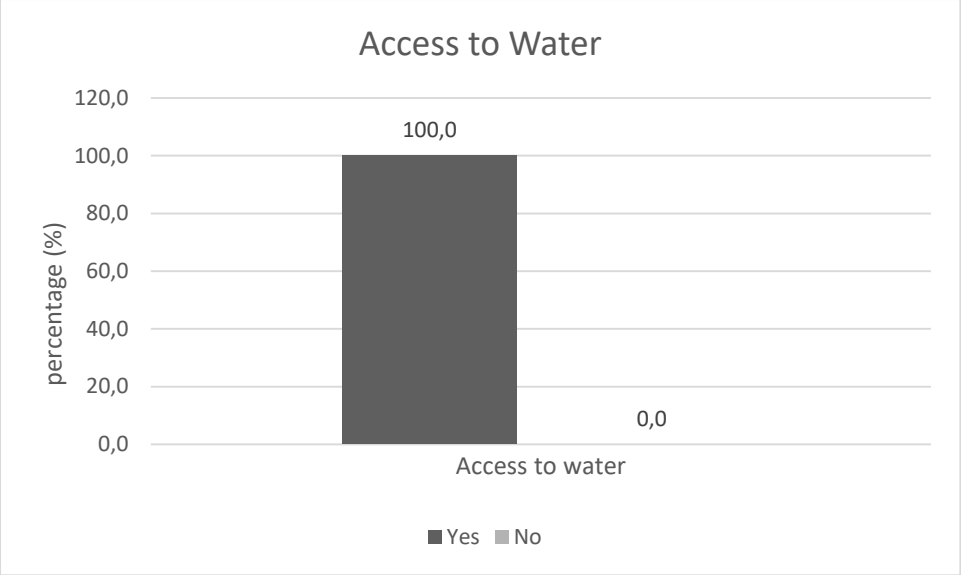

Figure 4.11: Access to water

4.2.11.2. Source of water

Water is important for agricultural production; it links to food security; and population issues are often reflected in water scarcity and per capita water availability with finite water resources distributed over growing population. Therefore 5.5% of the farmers are using water from running taps, 47.3% depending on the dams, and 46.5% from boreholes while 0.9% use other sources of water.

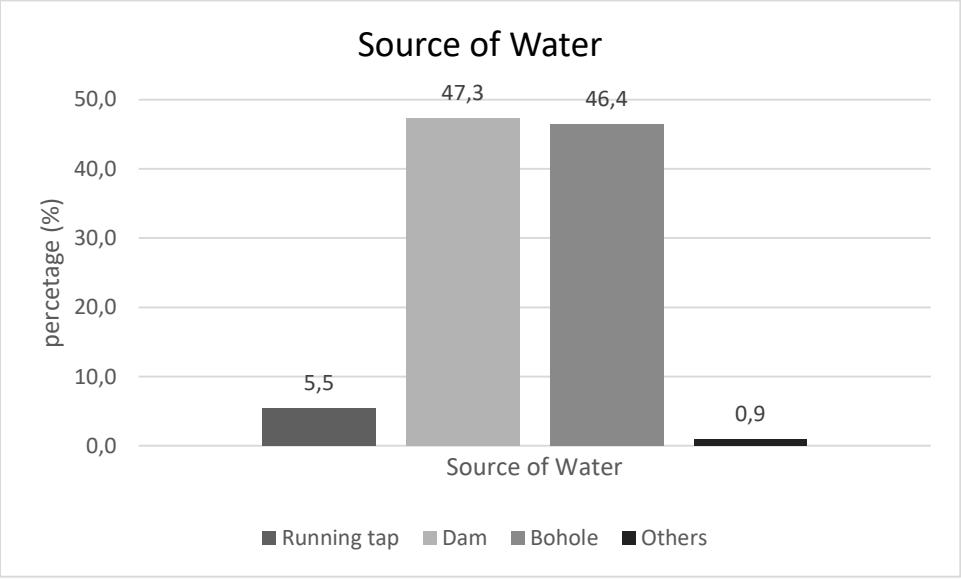

Figure 4.12: Sources of water

4.2.11.3. Distance to water source

Table 4. 8: Distance to the source of water

Variable	Mean	Std Deviation	Min	Max
Distance to water source	1.58	1.139	0	5

As shown in figure 4.11 that all the farmers has access to water and uses running tap, dams, boreholes and others as shown in figure 4.12. The average distance to get the source of water for farmers is 1.58 kilometres. The minimum distance is 0 km and the maximum distance is 5 km.

4.2.12. Production and marketing

4.2.12.1. Production

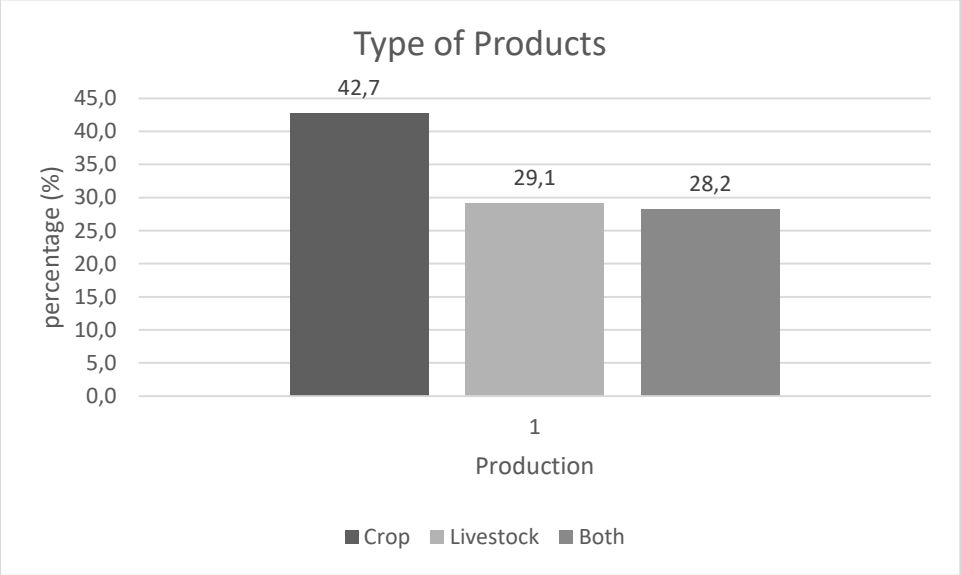

Figure 4.13: Type of products produced

The main aim of agriculture is for production. In figure 4.13, farmers were found to be producing 42.7% of crops, 29.1% of livestock and 28.2% of both crops and livestock.

4.2.12.2. Purpose of production

Only 16.4% of the farmers produce on the purpose to supply the market solely while none of them produce only for consumption. Majority of farmers (83.6%) produce for

both consumption and market for two purpose. The other for food security and others for income provision as indicated in Figure 4.14.

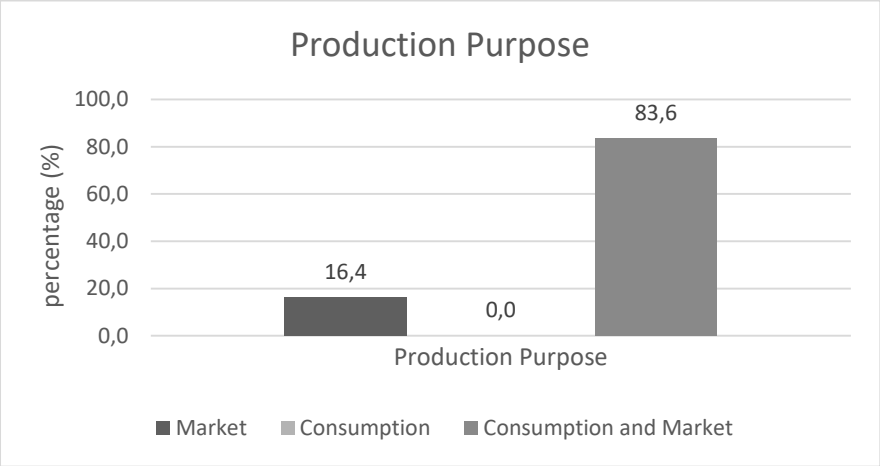

Figure 4.14: Purpose of production

4.2.12.3. Market place

Figure 4.15: Place of selling the products

In economics, a market place is where sellers of a product meet to compete to sell a specific product to buyers. In figure 4.15, 39.1% of the farmers compete in the formal market which includes supermarkets, national markets and restaurants. Other farmers compete in informal markets (32.7%) and community (28.2%).

4.1.1.1. Distance to the market

Farmers travel different distances for their products to compete in the market. In Waterberg District Municipality farmers travel an average of 56.22 km to the market. Other farmers travel a maximum of 400 km to find the market while other uses farm gate to sell (0 km). According to Makhura *et al*., (2001) the distance to market influences both the decision to participate in markets and the proportion of output sold negatively.

Table 4.9: Distance to the market

Variable	**Mean**	**Std Deviation**	**Min**	**Max**
Distance to the market	56.22	88.287	0	400

4.2.12.4. Transportation

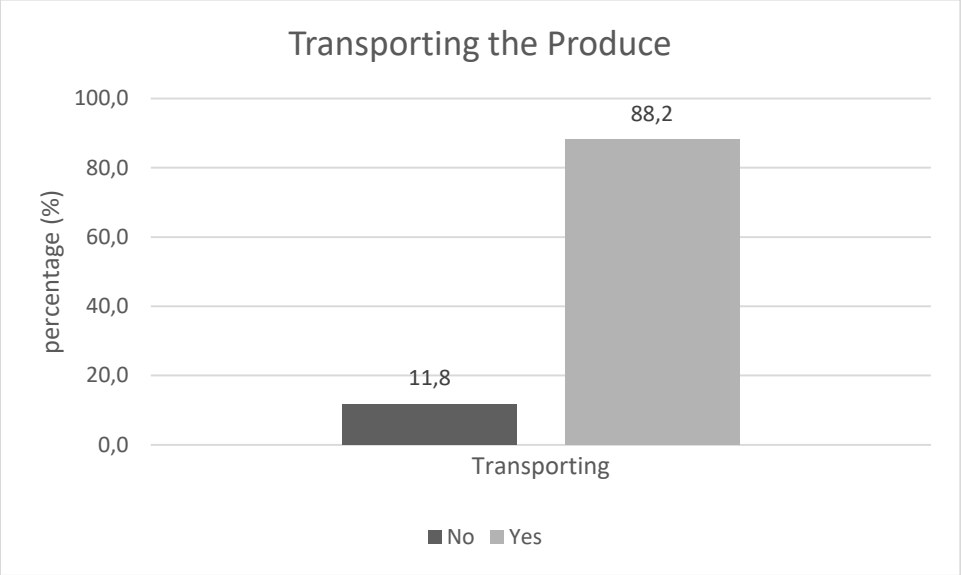

Figure 4.16: Transportation

The issues of transportation from farm gate to consumer are complex. Above 88.2% of farmers are able to transport their products to the market while 11.8% of the farmers are unable to transport their production to the market.

4.2.12.5. Source of transportation

Agricultural products move from farms to market through various methods of transportation. Commonly known methods are trucks, bakkies, traditional animal transport and others such as train, flights and water shipping which are commonly used by large-scale farmers. As shown in figure 4.17 below, farmers use different type of transportation to the market. The majority uses bakkie as their means of transportation. Atleast 66.4% of the farmers use bakkies, 13.6% use truck while 5.5% use both of means of transport. The remaining farmers either use none (10%) or other means of transport (4.5%).

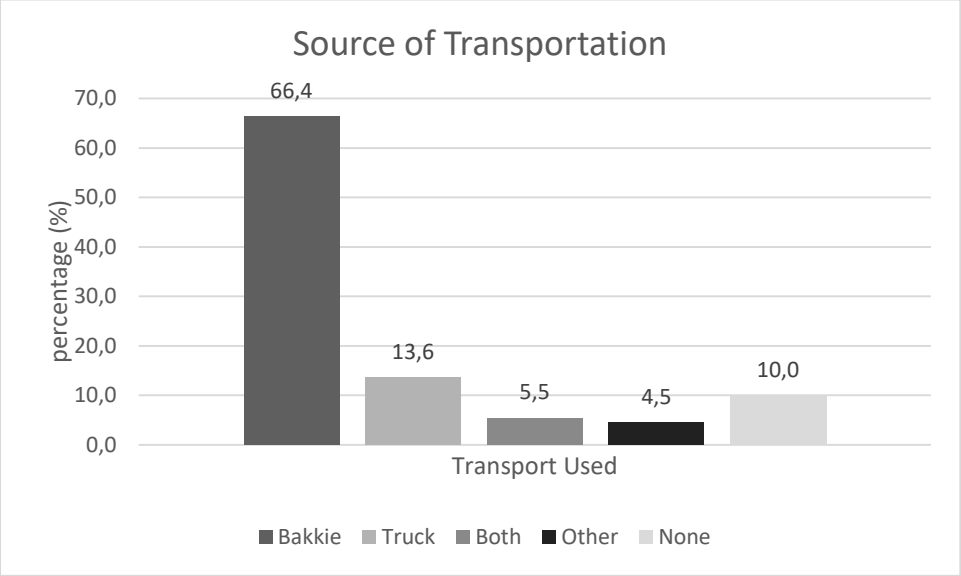

Figure 4.17: Source of transportation to the market

4.2.12.6. Transport hiring

Agriculture is increasingly dependent on transportation to deliver agricultural and food products to markets, most of which are far from the production areas. Therefore in that case, majority of the farmers who transport their products hire transport to the market (51.8%) while only 48.2% use their own transport to the market. Adequate and efficient transportation system is critical to successful marketing of agricultural products, which depends on transportation to deliver goods.

Figure 4.18: Transport hiring

4.2.13. Land

4.2.13.1. Land ownership

Land is an important asset to farmers and it plays an important role in farming with its impact on productivity and efficiency. Majority of farmers in the study area are owning the land at 97.3% while only 2.7% do not own the land.

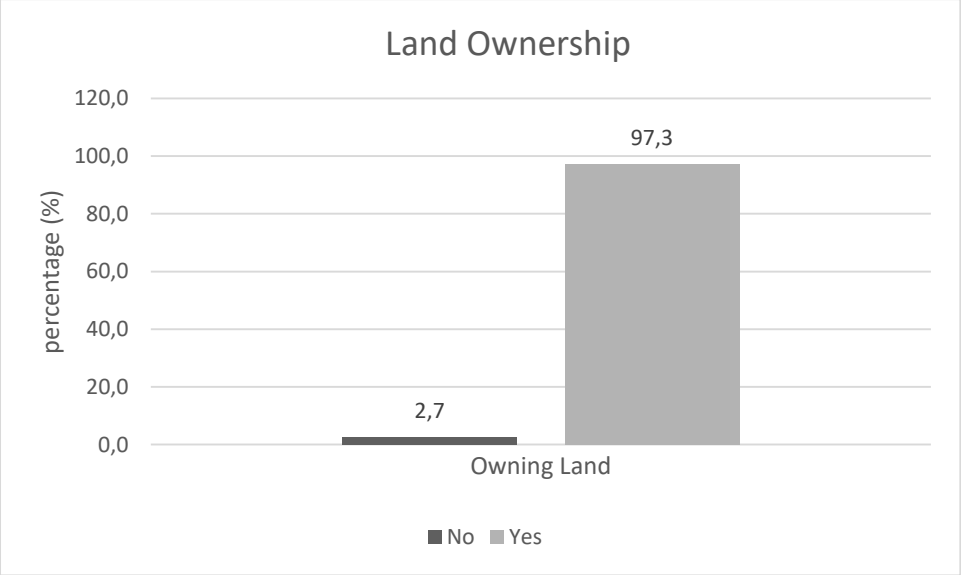

Figure 4.19: Land ownership

4.2.13.2. Land acquisition

Land acquisition is important because almost every household needs a land for production of food and agricultural productivity. From people owning land 58.2% acquired the land from land restitution, 14.5% inherited the land from family, 10.9% acquired land through government and 16.4% land is acquired though PTO by chiefs.

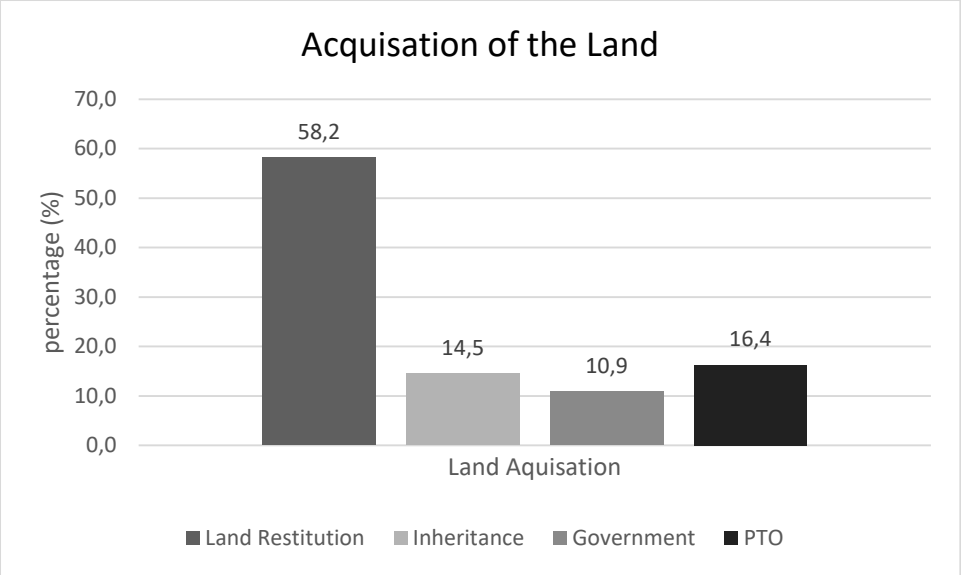

Figure 4.20: Land acquisition

4.2.13.3. Land type

Farmers who are beneficiaries of land restitution, they either use communal land or individual ownership. Communal land is common in livestock production where animal graze together. Many of farmers use communal ownership, for instance (63.1%) and minority who comprised of 36.9%uses individual ownership.

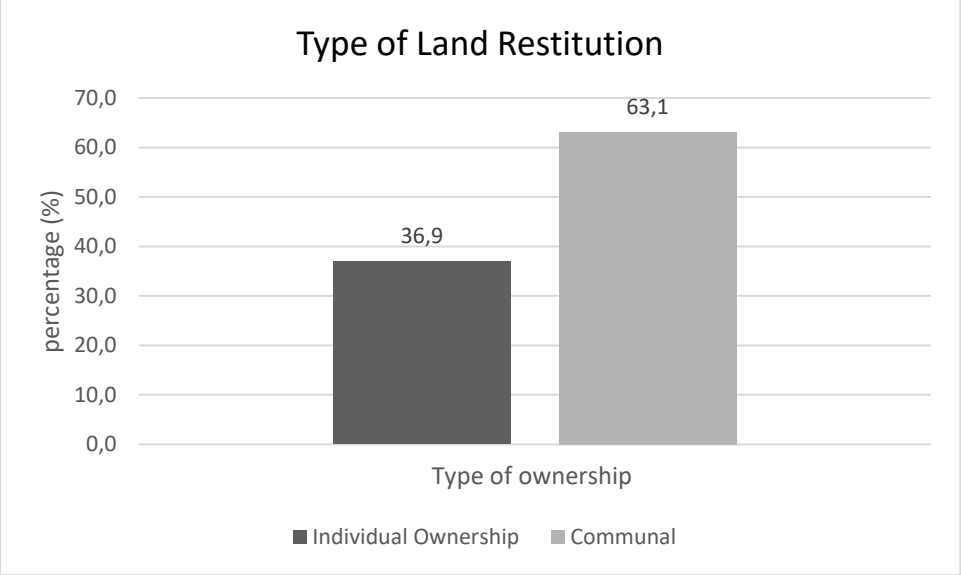

Figure 4.21: Type of ownership

4.2.14. Access to production inputs

4.2.14.1. Access to inputs

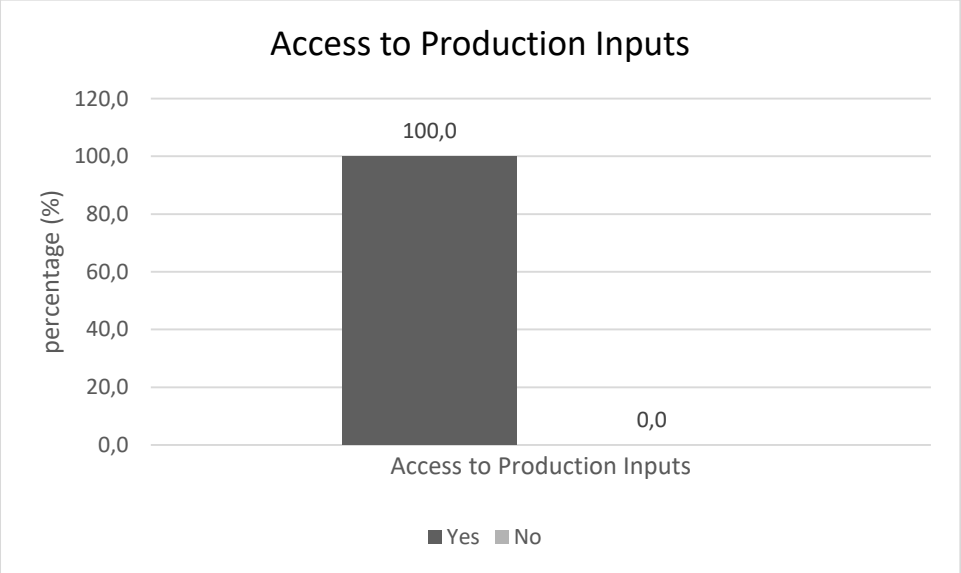

Figure 4.22: Access production inputs

Inputs in agriculture plays a fundamental role in production of food and fibre and the agricultural productivity as a whole. The importance of this inputs is based on the fact that for any output there must be an input. All farmers 100% have access to production inputs. Because all farmers have access to inputs, if they can properly use them under good weather condition and management, high production will be attained.

4.2.15.2. Types of inputs available for farmers

In the study, eight types of inputs which are mostly used by smallholder farmers in rural areas were selected. Many farmers had access to seeds at 66.36% and those who had no access to seeds were 33.64%, those with access to seedlings were 50.91% while those without access were 49.09%, farmers with access to fertiliser were 68.18% while those without access were 31.82%, farmers with access to medications are 55.45% and farmers with no access to medication were 44.55%, those with access to irrigation are 53.64% and those without access are 46.36%, access to pesticides constituted 69.09% and those without access constituted 51.82%, farmers with access to tractors were 51.82% while 48.18%, and those with access to processing machinery constituted the lowest with 22.02% and 77.98% did not have access to processing machinery.

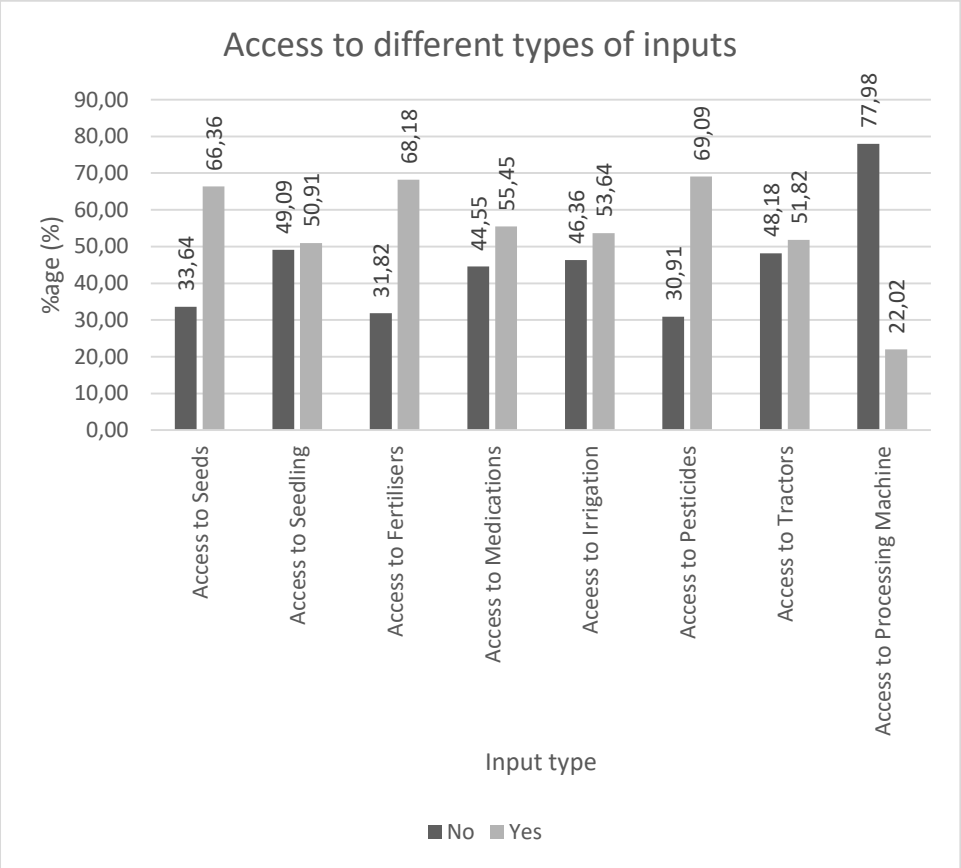

Figure 4.23: Access to different types of inputs

4.3. The effect of land restitution on food security in Waterberg District Municipality

4.3.1. Dietary Diversity Score results

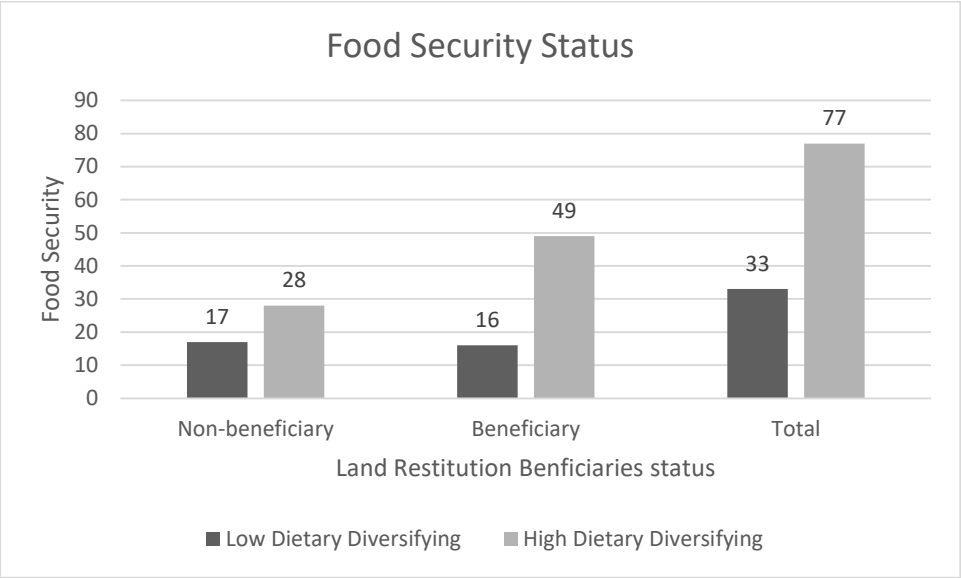

Figure 4.24: Food Security Status

Based on the results on figure 5.1 above, two categories were used to determine food security status of land restitution beneficiaries and non-beneficiaries. The dietary diversity score results are presented in figure 5.1 above. The results reported that 49 beneficiaries of land restitution were found to be High Dietary Diversifying while only 16 farmers were Low Dietary Diversifying which means the farmers are food insure. In contrast, 28 non-beneficiaries of land restitution were found to be High Dietary Diversifying while 17 farmers were found to be Low Dietary Diversifying. Farmers who are High Dietary Diversifying are 70% while 30% of the farmers are Low Dietary Diversifying.

4.3.2. Food group consumed

Majority of farmers were found to be diversifying their diet, with many farmers consuming more cereal, roots tubers, vegetables, oil or fats and meat, poultry and offal. From figure 5.2 farmers who consumed cereal in the past 7 days were found to be at 92% which means that cereal major as a main stable food. The other main food groups which farmers consumed are roots tuber (83%), vegetable (87%), fruits (73%), meat, poultry and offal (80%), eggs (75%), oils or fats (84%), sugar or honey (75%) and milk and milk products (51). There are two food groups which more farmers are not consuming which are fish and seafood (80%) and miscellaneous (61%). The

observed distribution suggests that on average, farmers households' diets are mainly cereal, roots tuber, vegetable, fruits, meat, poultry and offal, eggs, oils or fats, sugar or honey, milk and milk products.

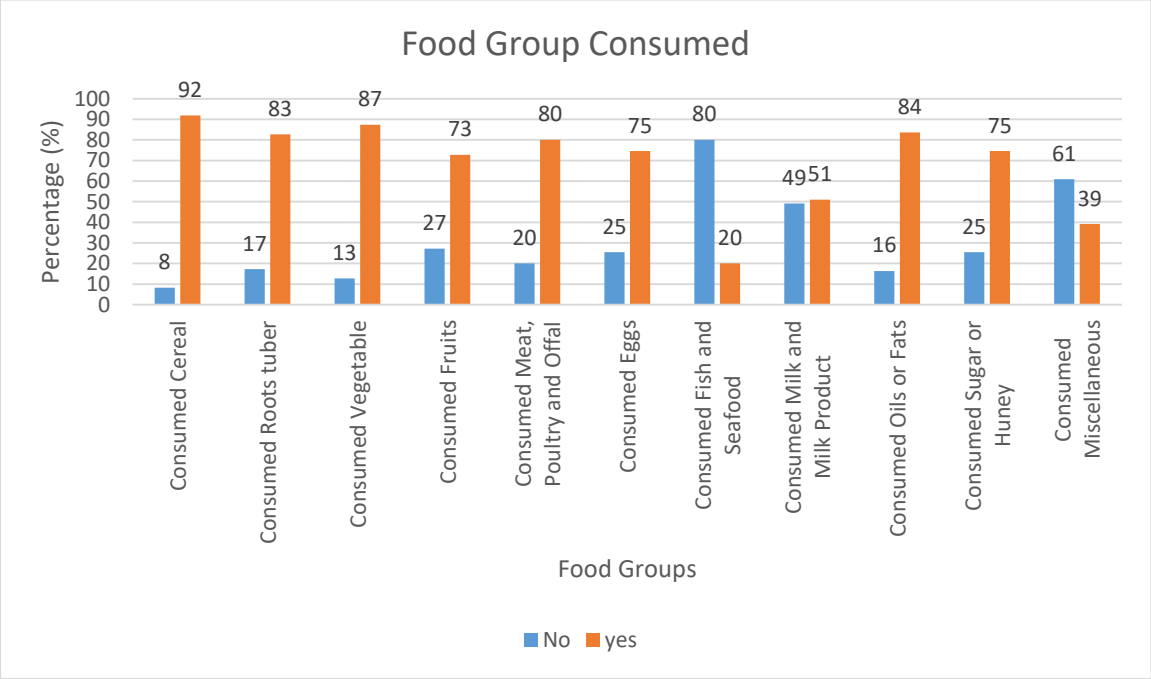

Figure 4.25: Food Group Consumed

4.3.3. Logistic regression results

The effect of land restitution on household food security is presented in table 4.9. It summarises that 7 of 13 variables included in the model were found to be significant in explaining the variation in food security status of household in the study area. Age of the household head, place of market and land size were found to be significant at 10% level of significance. Beneficiary status of land restitution was found to be significant at 5% level while Gender of the household head, off-farm income and access to credit were found to be significant at 1% level. The Cox and Snell R^2 is 0.598. All variables explain the relationship between the dependent and independent variables. The chi-squared is 69.997at p-value of 0.000 which indicates that a significant relationship between the independent variables and food security status of the household.

Table 4.10: Results of logistic regression estimates

Variable	Coefficient	Standard error	t-value
GENDER	0.575***	0.151	3.808
AGE	0.034*	0.018	1.889
HHSIZE	-0.056	0.126	0.444
MEMORG	0.105	0.575	0.183
OFFFARM	2.068***	0.738	2.802
TOTREV	0.060	0.051	1.176
CREDIT	5.775***	2.403	2.403
MARKET	0.663*	0.361	1.837
TRANSP	-0.562	0.902	0.623
ACINPUT	0.945	0.794	1.190
HECTAR	0.077*	0.040	1.925
BENEFI	0.760**	0.377	2.016
LANDOWN	0.074	0.816	0.008
Constant	-2.057	5.089	0.404
No of observations	110		
-2 Log likelihood	64.394		
Cox & Snell R Square	59.8%		
Chi-square	69.997		

*, **, *** indicates significance at 10%, 5% and 1% significant level respectively

4.3.3.1. Significant variables

Gender of the household heads

The coefficient of gender was found significant at 1% level and shows a positive relationship with food security status of the household. The sign responded as expected. This suggest that male headed households have higher probability of being food secure as compared to female headed households. The more households which are headed by males the more likelihood of improving their food security status. This could be that many female are exposed to other household activities such as housekeeping and raising children which limit their time of engaging in other income

generating activities. These findings support those previous study by who noted that male household heads are not limited to job opportunities in their immediate environment whereas, child bearing and home-keeping may limit food security among female household heads. Therefore, households headed by females may likely have high probability of being food insecure. The findings contradict the results of Taruvinga (2013) who indicated a negative relationship between food security and the coefficient of gender. Furthermore the results suggest that female headed households have a higher probability of attaining a food security than their male counterparts. The findings of this study agree with the results of (Ahmed *et al*., 2015) which highlight a positive relationship between food security and the coefficient of gender.

Age of the household head

The coefficient of age was found to be positive at 10% significance level. The sign was significance as expected. This implies that as the age of respondents' increases there is the likelihood of food security status increasing. It also suggests that the income of the households is likely to be higher as a result of longer knowledge in farming and experience of staying in public or private sector. Therefore, an old farmer is likely to have accumulated wealth and use better planning. Similar findings by Ahmed *et al.* (2015) and Djangmah (2017) suggested that the variable of age has a positive relationship with food security status of households. Furthermore, old age comes with some experiences and acquisition of knowledge.

Off-farm income activities

As expected *a priori*, a significant positive relationship existed at 1% significant level between food security intensity experienced by the households and their off-farm income. The coefficient is highly positive which implies that the household with off-farm income are more likely to become food secure than those with no off-farm income. Furthermore, households with off-farm income are able to diversify their diet because they have more buying power. Off-farm income is one of the most important source of income for rural farmers. Many smallholder farmers cannot produce food and earn satisfying income for their household, therefore they consider off-farm income as a substitution. This findings are similar to the finding of (Mohammed *et al.* 2016; Djangmah 2016; Babatunde *et al*. 2007; Beyene and Muche, 2010; Osei *et al*. 2013) who explained that households who did not participate in off-farm income

activities and regards farming as their main occupations have inadequate sources of income to enable them to afford inputs. Studies also concluded that off-farm income activities tend to increase the farming households' portfolio as they do not only source their income from the farm.

Access to credit

As expected the coefficient of access to credit was positive and also significant at 1% level this suggesting that access to credit tended to positively influence the food security status of the household. This might be the fact that households with opportunity to access credit would build their capacity to produce more through purchasing agricultural inputs which give them advantage of diversifying their diet. Credit is also an important means of investment and households who have access to credit can invest in inputs and earn more income resulting in increased financial capacity and purchasing power of households thus reducing the risk of food insecurity. The result is supported by the findings of (Pappeo, 2011 and Kuwornu *et al.,* 2013) who found that access to credit improves the food security status of farming households.

Access to the market

As *expected a priori*, a significant positive relationship existed at 10% significant level between food security intensity experienced by the households and the access to the market. The coefficient of the results suggests that as more farmers participate in the market their more likely to become food secure than those who participate in the informal market. This implies that farmers who have access to the markets are able to make profit and that increases their income possibilities and increase their food security status than those in the informal market. In the finding of Bhatta (2004), it was suggested that households that are near to tarred roads have higher chances of obtaining positive household food security.

Land size

The coefficient of land size in hectares was found to be positive and significant at 10% level as expected. Farmland is a basic asset for the livelihood of people in rural areas. The coefficient indicates that households which are holding the larger farm size are likely to produce more food and possibly increasing production. Land is an important

means of production. Land holding is a basic asset in agriculture. This suggests that households who are beneficiaries of land restitution are likely to use their land to produce more food and possibility of increased production which will bring more income and improve food security status of farmers. Previous studies by (Osei *et al*. 2013 and Muche *et al*. 2014) indicated that land size of the farming household had a positive relationship with an improvement in household food security status. However, the study by Ahmed *et al*. (2015) highlights that it is expected that efficient use of land resources and application of modern agriculture practices will ensure food security of the household.

Beneficiary status of land restitution

As expected a priori, the coefficient of beneficiary status is significant and positive at 5% level which suggest that there is a positive relationship between benefiting from land restitution and food security status. This highlights that more farmers who are the beneficiaries of land restitution have more advantage of becoming food secure as compared to those farmers who are non-beneficiaries of land restitution. Households who benefited from land restitution are likely to have larger land which better their chance to produce more, to diversify production and also to have a larger volume of crop residues. According to the findings by Hall (2007), from those households who benefited from land restitution, the conclusion is that there are different priorities which was evidenced. This priorities are motivated by the households' interest to generate profit for reinvestment in order to generate a commercial enterprise, while others are motivated by a need to have a secure place to live, to build up a stock of wealth in the form of livestock, to improve household food security, or to rebuild communities. Therefore the findings further indicated that households who benefited from land restitution were able to improve their food security status (from self-provisioning and increased disposable cash income) resulting in improved nutrition status.

4.3.3.2. Insignificant variables

Household size

The coefficient of household size was found to be insignificant and negative which implies that as the household size increases the food security intensity decreases. The sign responded as expected. The increases in household size brings increase in household food expenditure and on that case some household members are non-

contributors to any income and therefore increase the dependency ration of the household, the probability that food security would reduce as household size increased was high. The result is in agreement with several studies such as (Mohammed *et al.,* 2016; Djangmah 2016; Osei *et al*. 2013) who found that there is a negative relationship between a bigger household size and the food security status. It was concluded that this is because having many dependents in the household render the household food insecure particularly in the case where more dependents in the household are consists of kids or unemployed people.

Membership of farmers associations

The coefficient of membership to the farmers associations was found insignificant and has a positive relationship with food security status of the household. The sign responded as expected. This indicates that food security of the household increases with a farmer being a member of the association. Active participation in associations tends to attract benefits for farmers in terms of helping members in mobilising resources within society for agricultural operations and marketing, access to inputs at cheaper rates, enables members take advantage of economies of scale in production, processing and marketing of agricultural produce but this study argues with the statement. The findings by (Ahmed et al., 2015a and Amaza *et al*., 2008) agree that membership of farmer's organisation can be closely linked to the beneficial effects of their membership in terms of production and other welfare enhancing services.

Total production revenue

The coefficient of the households' total production revenue was found to be insignificant but shows a positive relationship on household food security status. This suggest that the higher the household total production revenue, the higher the probability that the household would be food secure. The result agrees with the prior expectations and conclude that the revenue of the household determines the profitability of that household's production. The previous De Cock *et al*., (2013) a higher revenue leads to higher food security levels and when a household has remittances as its most important income source, its probability of being food secure is high.

Transportation of products

The coefficient of transportation of products is negatively insignificant which shows a negative relationship with the food security status of the household. The sign responded as expected. Transport is a special factor for agriculture and rural development. The study assumed that it has negative effect towards food security. This implies that as more farmers transport their products the more they are likely to lose money which would results in food insecurity status. Tembo and Simtowe (2009) and Minten (1999) highlights that the presence of infrastructure often determines if a village receives higher or lower prices as transport costs are different due to distance and quality of infrastructure to the nearest market or other facilities. Furthermore, they highlight that high transportation cost make inputs and food expensive for households making some households unable to purchase the basic needs, thus prolonging food insecurity.

Access to production input

As expected a *priori*, the coefficient of access to production inputs was positively correlating to food security status of the households but it was found to be insignificant. This suggest that households that have access to production inputs are likely to improve their productivity which results in more food produced and better the food security status. The study by Kuwornu *et al*., (2013) agree with this results and suggests that provision of inputs such as fertilizer, improved seeds and others will motivate farming households and also increase farmer's productivity. This will increase the volume of food production.

Land ownership

The coefficient of type of land ownership was found to be negative and insignificant to food security. The sign responded as expected. This highlights that those farmers who use communal land are not able to maximise their production and profit which results in low dietary diversity. More than 63% of the households in the study area use communal land and it disadvantages them. Jayne *at el*., (2005) noted that land ownership is a key strategy to reduce rural poverty and ensure food security. It is

evidenced that available information showed that incident of food insecurity and poverty tends to be more severe in landless rural poor.

4.3.4. Problems faced by farmers

Farmers are faced with many challenging factors and in the study areas farmers are having access to land as one of the inputs but are challenged by the following:

Table 4.11: Challenges face by farmers

Challenges	**Frequency**	**Percentage**
Lack of access to credit facilities	107	97.27%
High cost of inputs	102	92.73%
Limitation of markets and marketing infrastructure	90	81.82%
Limited access to improved technology and inputs	84	76.36%
Decline in production	76	69.09%
Access to adequate water supply and electricity costs	45	40.91%
Livestock and agricultural theft	26	23.64%
Lack of grazing land for those with livestock	20	18.18%

These challenges are hindering agricultural development in Waterberg and it is important to note that in order to maintain high productivity levels with quality of the produce, it remains important for the farmers to receive required inputs. The challenges are ranked from those which are experienced by many farmers to those affecting less farmers. Lack of access to credit facilities was affecting 97.27% of the farmers, then follow the high inputs cost (92.73%), limitation of markets and marketing (81.82%), limited access to improved technology and input (76.36%), decline in production (69.09%), access to adequate water supply and electricity costs (40.91), livestock and agricultural theft (23.63%) and lack of grazing land for those with livestock (18.18%).

4.4. Summary

The chapter detailed the descriptive statistics of socio-economic of the farmers in Waterberg District Municipality. The beneficiary and non-beneficiary status of land restitution from 110 farmers was described and only 58% benefited from land restitution as compared to 42% who never benefited. The other factors which were

studied are the socio-demographic, income of the household, extension Services, agricultural financing, water, production and marketing, land and access to production inputs. From the descriptive statistics 57.3% of the households are female headed while only 42.7% are male headed. Married household heads are 57.3%, 28.2% are single, 13.6% are widow while only 0.9% are unemployed. Farmers who receive their main source of income from farming are 77.3%, those who receives it from public sector are 10%, from private sector are 3.6% and those who depends on pensions are 9.1%. All the farmers have access to water and extension services

Furthermore the results of this chapter was analysed using Binary Logistic Regression and Dietary Diversity Score suggest that land restitution beneficiaries are likely to be food secure as compared to non-beneficiaries. The findings further suggest that an adjustment on the variables can significantly influence the probability of a household being food secure. Farmers who are able to collect more income from farming and off-farm are able to contain several food groups that may provide micro and macro nutrients.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Introductions

This chapter summarises the main findings of the study and concludes on the basis of the findings derived from the empirical results. However, the chapter discusses the extent to which questions and objectives posed at the beginning of the study have been addressed by the analysis. Those objectives were to; (i) Profile households' socioeconomic/ demographic characteristics; (ii) Assess the food security status of land restitution beneficiaries and non-beneficiaries in Waterberg District; (iii) Examine the effects of Land Restitution Programme on food security in the study area; and (iv) Investigate the challenges faced by smallholder farmers in accessing land and other inputs for agricultural purposes in the study area. Finally the chapter produces the recommendations on the basis of the results.

5.2. Summary

The aim of this study was to examine the effects of the land restitution on household's food security, in Waterberg District Municipality of Limpopo Province, South Africa. The first chapter introduced the background of the study, problem statement, research questions, aim and objectives and outline of the study. The problem is that the living conditions of farmers in South Africa is affected by poorly functioning markets, lack of labour, lack of ownership of productive implements and low level of education attainments which might affect food security status.

The second chapter provided the literature of this study. The literature provides the information from Adams (2000) that before the dismantling of apartheid legislation in the early 1990s, about 87% of South Africa's land resources were owned or reserved for 12.6% of the population (the total population for white people then). Post 1994, land redistribution was aimed at providing the disadvantaged and the poor with the land for residential and productive purposes. According to literature 57% of the households consider their grants as largest contribution to livelihood while 57% of the farming households are involved in crop production and 50% of the households are involved in livestock production (D'Haese *et al*. 2011).

The study was conducted in Waterberg District Municipality which is constituted by five local municipalities which are Bela-Bela, Mokgalakwena, Lephalale, Thabazimbi and Mookgopong. Both primary and secondary data were used to analyse the results of this study. The study used 110 questionnaires to interview land restitution beneficiaries and non-beneficiaries. The questionnaire covered farmer's characteristics food security card. Dietary Diversity Score and Binary Logistic Regression was used to analyse the results.

To analyse the food security status of farmer dietary diversity score model was used. The binary logistic regression was used to estimate the determinants of household dietary diversity, where the two created dietary diversity categories (LDD and HDD) were taken as the dependent variables. The logit regression model was chosen because its dependent variable is binary and can only take two values.

Data was analysed using descriptive statistics, dietary diversity score and binary logistic regression model. About 57.3% of households were female headed and 42.7% male headed. Farmers went to school for an average of 9.66 years and the average size of the household is 6.14. Farmers have an experience of 12.58 years. From the dietary diversity results, 70% of farmers were found to be food secure while 30% were food insecure.

The model found that 7 of 13 variables included in the model were found to be significant at 1%, 5% and 10% level. The logistic regression model revealed that age of the household head, access to market and land size were found to be significant at 10% level of significance. Beneficiary status of land restitution was found to be significant at 5% level while gender of the household head, off-farm income and access to credit were found to be significant at 1% level. They were variables which were found to be insignificant household size, membership of farmers associations, total production revenue, transportation of products, access to production input and type of land ownership.

5.3. Conclusion

This research was proposed to answer the following questions; (i) what are the socioeconomic characteristics of land restitution beneficiaries and non-beneficiaries in Limpopo Province?; (ii) What is the food security status of land restitution beneficiaries

and non-beneficiaries in the study area?; (iii) To what extent does Land Restitution contribute towards food security, in Limpopo Province? and (iv) what are the challenges which farmers find in accessing land and other inputs for agricultural purpose in the study area?

The findings were that 57.3% of households were female headed and 42.7% were male headed. The average age of farmers is 49.85 years old. Married household heads are 57.3% and 28.2% of the farmers are single while 13.6% are widow. Farmers went to school for an average of 9.66 years and the average size of the household is 6.14 which means that atleast 6 people are found in a household. Members who did not members of any farmers' organisation are 42.7% while 57.3% were members of organisations. The average farmer has an experience of 12.58 years.

Dietary diversity is divided into two part in this study which is Low dietary diversity (food secure) and High dietary diversity (food insecure). The findings in this study found that 70% of farmers are food secure while 30% are food insecure. From the beneficiaries of land restitution 49 farmers were found to be food secure while only 16 farmers were food insecure. Non-beneficiaries of land restitution 28 farmers were found to be food secure while 17 farmers were found to be food insecure.

Land restitution was found to be contributing towards food security in Waterberg District Municipality. The study used logit model to predict the odds of smallholder farmers towards food security. Variables which can influence the food security status of the household are age of the household head, access to the market and land size beneficiary status of land restitution, gender of the household head, off-farm income, and access to credit. The study concludes that land restitution is contributing to food security of the household, even to those households who are non-beneficiaries of land restitution. Therefore, more work is still needed to reach full food security status. Problems which were affecting are ranked from lack of access to credit facilities which affected more farmers and lack of grazing land for those with livestock which affected less farmers.

5.4. Recommendations

As highlighted in the results there are critical roles which can be played by several factors to unlock food insecurity amongst households. The following variables were

found influential to attain food security amongst smallholder farmers: age of the household head, total farm revenue per month, marital status of the household head, total household income per month, and distance to the market, off-farm income activities and source of transportation. Therefore the following policy options are suggested to be considered:

i. Gender was found to be significant which implies that more emphasis should be given to the development of female farmers. More government support on women in agriculture should be focused. The result of this study call for policy transformation to focus on developing women who are practicing agriculture. The development of such policy will also lead to employment creation opportunities which will provide a path for empowerment of women in the sector.
ii. Off-farm income was found to also be significant to food security status of the households. Therefore it is important to improve the diversification opportunities in order to enhance food security status of farming households. This will involve the combination of farm and off-farm activities that could generate more income for the household and improve their advantages. Households should be encouraged to intensify combination of farm and off-farm activities that could generate more income for the households and also help to improve their asset base.
iii. Farmers regard credit as an important means of investment and those farmers with access to credit can invest in improving their businesses which results in more income and resulting in increased financial capacity. Access to credit means access to more purchasing power and reduced risk of food insecurity. Therefore there is a need to introduce and improve credit facilities that will accommodate smallholder in the study area.
iv. Market access plays an important role of motivating farmers in continuing with agricultural production, if farmers are not motivated by the forces of market they tend to neglect farming and focus on other non-agricultural activities which are scares by nature. Therefore the study recommend that government and non-governmental policies be focused much on promoting rural agricultural markets and open access for rural farmers to compete in established market.

v. Land size was also found to be significant to food security which shows that those farmers with larger land can be food secure as compare to those with smaller land. Therefore, this study recommends that more land be provided to farmers so that they can increase their production which give them an advantage to become food secure.
vi. The government should accelerate their process of land restitution since those farmers who benefited from the restitution are more food secure than those who never benefited. The study recommend that more attention be provided to land restitution beneficiary.
vii. The study further recommend that policies and focus of both the government and other organisations be given to youth and younger farmers since the coefficient of age was found to be significant to food security.

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APPENDICES

Appendix 1: Questionnaire

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EFFECT OF LAND RERSTITUTION PROGRAMME ON HOUSEHOLDS' FOOD SECURITY IN LIMPOPO PROVINCE OF SOUTH AFRICA: A CASE STUDY OF WATERBERG DISTRICT

The aim of this study is to determine the effect of Land Restitution Programme on household's food security in Limpopo Province.

ENUMERATOR	

QUESTIONNAIRE NUMBER	

DATE	
NAME OF RESPONDENT	

CONTACT DETAIL	
NAME OF THE VILLAGE	

SECTION 01: SOCIOECONOMIC CHARACTERISTICS

1. Household head/ farmer's name and surname

2. Gender

Male		Female	

Age of the household head

3. Marital status of the household head

Married		Single		Widow		Divorced	

4. Number of years schooling

5. Household size

6. Source of income

Salary		Farming		Self-employed		Pension		Child grants	

7. What is the income of the household per month

8. Main occupation of the household

Farmer		Public sector		Private sector		Pensioner		Unemployment	

9. Do you have off-farm income

Yes		no	

10.**If yes in 9**, how much is the income

11.How many years of farming experience do you have?

12.What is your farm income per month

SECTION 02: ACCESS TO SUPPORT SERVICES

13. Do you have access to extension services

Yes		No	

14.**If yes in 13,** how many times per month?

15.Who provide the extension services?

Government		NGO		Developmental Agency		Others	
If other, specify:							

16.Do you have access to agricultural credit?

Yes		No	

17.**If yes in 16**, who provide the agricultural credit

Government		NGO		Commercial Bank		Development Agency		others	

18.How do you finance your agricultural activities?

Government assistance	Credit	Social grants	Off-farm income	Farm income	Others
If other, specify:					

19.Do you have access to water

Yes		No	

20.If yes, what is the source of your water

Running tap		Dam		Borehole		Others	

21.**If others,** specify

22.Distance to water source

SECTION 03: MARKET FACTORS

23.What is the purpose of your production?

Consumption		Market		Animal feed		Consumption and Market	

24.How much did you sell your products last season?

25.How do you sell your products

Formal Market		Informal Market		Community	

26.Do you transport your production?

Yes		No	

27.**If yes in 26**, what mode of transport do you use?

28.Do you hire the transport

Yes		No	

29.**If yes in 28,** how much do you pay per trip to the market?

30.What is the distance to the market in Kms

SECTION 04: LAND ACQUISITION AND INPUTS AVAILABILITY

31.Do you own land?

Yes		No	

32.**If yes**, how did you acquire the land?

Land restitution		Inheritance		Government		PTO		Purchase	

33.If land restitution, what type of ownership?

Communal		Individual ownership	

34.How difficult is your access to inputs

Simple		Better		Worse	

35.How many hectares do you own?

36.What do you produce?

Crops		Livestock	

37. Do you have access to production inputs?

Yes		No	

38.**If yes**, tick the following

Seeds	
Seedling	
Fertilisers	
Medication (for animals)	
Irrigation	
Pesticides	
Tractors	

Processing machine	

SECTION 05: ACCESS TO FOOD

In the past 7 days which of the following did you consume?									
Food group	**Type**	**Day 1**	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**	**Amount spend weekly (R)**
13. Cereals	Maize								
	Floor								
	Millet								
	Wheat								
	Bread								
	Burley								
	Sorghum								
	Rice								
14. Roots tubers	Beetroots								
	Potatoes								
	Radish								
	Carrot								
	Sweet potatoes								
	Turnip green								
15. Vegetables	Cabbage								
	Tomatoes								

	Beans								
	Lettuce								
	Spinach								
	Okra								
	Butter nut								
16. Fruits	Apple								
	Orange								
	Banana								
	Strawberry								
	Lemon								
	Peach								
	Apricot								
	Plum								
17. Meat, Poultry and Offal	Beef								
	Pork								
	Chicken								
	Mutton								
	Offal								
	Lamb								
18. Eggs	Duck egg								
	Chicken								
	Ostrich								

	Goose								
	Blackbird								
	Cassowary								
19. Fish and seafood	Mullet								
	White fish								
	Tuna								
	Red snapper								
	Swordfish								
	Chilean sea bass								
20. Pulse/legume/nuts	Cowpea								
	Chick pea								
	Pea								
	Peanut								
	Pigeon pea								
	Soybean								
	Common bean								
21. Milk and milk products	Milk								
	Yogurt								
	Cheese								

	Milk-based desserts								
	Soymilk								
	Cream								
22. Oils/ fats	Almond Oil								
	Butter								
	Olive Oil								
	Sunflower Oil								
	Sesame Oil								
	Fish Oil								
23. Sugar/honey	Raw Honey								
	White sugar								
	Brown sugar								
	Sweetener								
	Filtered honey								
	Nectar								
24. Miscellaneous									

39.What are the constraints which you encounter in farming?
