

**LAND UTILISATION BY SMALL AND EMERGING COMMERCIAL FARMERS IN  
THE GREATER TZANEEN MUNICIPALITY IN MOPANI DISTRICT OF LIMPOPO  
PROVINCE**

by

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## **DEDICATION**

I dedicate this dissertation to my mother, Engelinah Tshilowa and my sisters, Tshilidzi, Rendani, and Mukovhe Tshilowa. I thank them for their prayers. I also dedicate it to my brother, Thomas Tshilowa and my sister, Maria Selona who were looking forward to seeing me register for my Masters.

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## **ABSTRACT**

Land is a major factor in agricultural production, so agricultural land allocated to smallholder farmers through Land Reform Program or by traditional leader need to be actively utilised for enhancement of agricultural business. The study assessed land utilisation by small and emerging farmers in the Greater Tzaneen Municipality. Data was collected from 86 farms and analysed using SPSS Version 23. The results indicate that 74% of the farmers fully utilised their farm lands. Results of Logit model revealed that, the amount received from leasing, value adding to products, annual farm income and savings had positive significant impact on the area of cultivation, while skills pertaining to farming activities and the proportion of farm inputs purchased with the farmer's own money had negative impact. The significant variables should be considered to influence full farmland utilisation by small and emerging farmers in the study area; farmers need production inputs, affordable loans and other forms of funding to improve farmland utilisation.

Key words: Land utilisation, land lease, logit model, emerging farmers, access to credit, access to market, extension services, farm business planning, Greater Tzaneen, South Africa.

## TABLE OF CONTENTS

DECLARATION-----	i
DEDICATION-----	ii
ACKNOWLEDGEMENTS-----	iii
ABSTRACT -----	v
LIST OF FIGURES-----	ix
LIST OF TABLES -----	x
ABBREVIATIONS-----	xi
CHAPTER 1 INTRODUCTION-----	1
1.1 Background of the study area .....	1
1.2 Problem statement .....	2
1.3 Aim and objectives of the study.....	3
1.4 Research questions .....	4
1.5 Hypothesis .....	5
1.6 The significance of the study.....	5
1.7 Ethical considerations .....	6
1.8 Outline of the dissertation.....	6
CHAPTER 2 LITERATURE REVIEW-----	7
2.1 Introduction .....	7
2.2 Definition of Concepts.....	7
2.2.1 Leasing agricultural land-----	7
2.2.2 Access to finance, agricultural produce markets and public agricultural extension services. -----	7
2.3 The use of land by smallholder and commercial black farmers.....	8
2.4 Generating income through the leasing out and utilisation of farm land.....	11
2.5 Challenges to agricultural sustainability in black commercial farms .....	15
2.6 Access of small farmers to finance for agricultural production .....	16
2.7 Access of small farmers to the agricultural produce market.....	23
2.8 Access of small farmers to agricultural extension services .....	27
2.9 Importance of availability of feasibility reports and business plans for smallholder farmers.....	31

2.10 Chapter Summary.....	32
<b>CHAPTER 3 RESEARCH METHODOLOGY-----</b>	<b>34</b>
3.1 Introduction .....	34
3.2 Area of study.....	34
3.3 Research design .....	34
3.4 Population for the study .....	37
3.5 Sampling methods .....	37
3.6 Data collection methods.....	37
3.7 Data analysis methods.....	38
3.7.1 Descriptive analysis-----	38
3.7.2 The Logit Regression Model-----	38
3.8 Chapter Summary.....	41
<b>CHAPTER 4 RESULTS AND DISCUSSION-----</b>	<b>42</b>
4.1 Introduction .....	42
4.2 Demographic characteristics of farmers in the study .....	42
4.3 Land distribution among farmers in the study .....	43
4.4 Land utilisation by farmers in the study.....	45
4.5 Opportunities for generating income through land utilisation and leasing.....	49
4.6 Access of farmers to public agricultural extension services .....	50
4.7 Membership of farming organisations .....	54
4.8 Availability of feasibility reports and business plans for farmers .....	55
4.9 Access of smallholder farmers to finance and agricultural markets .....	56
4.10 Obstacles to productive land utilisation.....	58
4.11 Labour utilisation on the farms.....	60
4.12 Results of Logit Model analysis.....	61
4.12.1 Income received per hectare from leasing -----	63
4.12.2 Proportion of farm inputs purchased using own money -----	63
4.12.3 Processing of farm products (value adding to farm products) -----	63
4.12.4 Skills pertaining to farming activities -----	64
4.12.5 Annual farm income -----	64
4.12.6 Savings from project -----	64
4.13 Chapter Summary.....	65

CHAPTER 5	CONCLUSIONS AND RECOMMENDATIONS-----	66
5.1	Summary.....	66
5.2	Conclusions .....	67
5.3	Recommendations .....	67
5.3.1	Identification of potential lessees-----	67
5.3.2	Assistance with production inputs-----	68
5.3.3	Establishment of affordable loans and funding-----	68
5.3.4	Money saving awareness-----	69
5.4	Future research.....	70
REFERENCES-----		71
APPENDIX 1-----		85

## LIST OF FIGURES

Figure 2.1	Interorganisational linkages and linkages between individuals are also important.....	31
Figure 3.1	Map of the Greater Tzaneen Municipality.....	36
Figure 4.1	Demographics of the farmers who participated in the study.....	43
Figure 4.2	Types of land ownership among the farmers who participated in the study.....	45
Figure 4.3	Generating income through land lease and the use of land by farmers.....	50
Figure 4.4	Membership of farming organisations.....	55
Figure 4.5	Availability and use of farming business plans.....	56
Figure 4.6	Access of farmers to credit and produce market.....	57
Figure 4.7	Challenges to the utilisation of farm land by participants.....	60
Figure 4.8	Labour utilisation on the farms.....	61

## LIST OF TABLES

Table 2.1	Lending technologies used by lenders in KwaZulu-Natal, 1996/97.....	22
Table 3.1	Variable labels and their expected indicators.....	40
Table 4.1	Land utilisation by participants.....	48
Table 4.2	Access of farmers to public agricultural extension services.....	53
Table 4.3	Results of the analysis of the Logit Model.....	62

## ABBREVIATIONS

AgriBEE	:	Agricultural Black Economic Empowerment
APA	:	Agricultural Property Agency
BEE	:	Black Economic Empowerment
CAP	:	Common Agricultural Policy
CFSP	:	Comprehensive Farmer Support Programme
CRLR	:	Commission on the Restitution of Land Rights
DAFF	:	Department of Agriculture, Forestry and Fisheries
DBSA	:	Development Bank of South Africa
DFIs	:	Development Finance Institutions
DLA	:	Department of Land Affairs
DRDLR	:	Department of Rural Development and Land Reform
EU	:	European Union
FAO	:	Food and Agriculture Organisation
FSP	:	Farmer Support Programme
FSS	:	Farmer Settlement Support
GCIS	:	Government Communication and Information System
GTEDA	:	Greater Tzaneen Economic Development Agency
GTM	:	Greater Tzaneen Municipality
IFAD	:	International Fund for Agricultural Development
IFPRI	:	International Food Policy Research Institute
LRAD	:	Land Redistribution for Agricultural Development
MAFISA	:	Micro-Agricultural Financial Institutions of South Africa
PTO	:	Permission to Occupy
SEDA	:	Small Enterprise Development Agency
SPSS	:	Statistical Package for Social Sciences
TRAC	:	The Rural Action Committee

## CHAPTER 1 INTRODUCTION

### 1.1 Background of the study area

The acquisition of free land for farming purposes makes it possible for farmers to obtain land without having to purchase or lease it (Haines & Davies, 1987). According to Dorner (1972), poor performance in agricultural productivity means that land redistribution alone is only a temporary benefit.

Mopani is one of the districts in Limpopo Province that makes the province “The Garden of South Africa”. According to SAinfo (2012), Limpopo produces the majority of South Africa’s mangoes, papayas, avocados and tomatoes, as well as thousands of tons of potatoes. The province also produces plenty of tea, citrus fruit, bananas and litchis. The Greater Tzaneen Municipality in Mopani District is well known for its agricultural productivity due to the good climatic conditions. According to the Tzaneen Local Municipality (2007), agricultural activities in the Greater Tzaneen Municipality (GTM) contribute close to 48% of the production of the agricultural sector of Mopani District.

South Africa is among the countries with the highest rate of income inequality in the world. When compared to other middle income countries, the country has a huge concentration of poverty, and the South African government promised to take action to eliminate poverty between 2004 to 2014 (Altman *et al.*, 2009). Thanks to access to land and good climatic conditions, the widespread practice of agriculture in the GTM contributes greatly to fighting poverty and encouraging economic development through the creation of jobs for the local community.

The study aimed to investigate whether farmers who access land through the Land Reform Programme or tribal authority are using or at least leasing their land to enhance food security and stimulate participation in Agricultural Black Economic Empowerment (AgriBEE). Though land reforms and water laws are currently discussed as a way of redressing the inequalities brought about by the previous

government, poor farmers still have difficulty accessing resources, particularly agricultural credit. Entry into the agricultural market is particularly difficult for smallholder farmers who have not participated in the mainstream market for a long time (Magingxa & Kamara, 2003). The aim of the study was to determine whether farmers in the Greater Tzaneen Municipality were making efforts to reduce the poverty in their area by fully utilising the land available to them and providing enough food to counter the effects of high levels of poverty and unemployment in many areas of Limpopo Province.

The Department of Agriculture (2009) previously indicated that in light of the AgriBEE entrepreneurial economic systems that provide farmers with capital, land resources, technology, education and other benefits, farmers have a responsibility to generate income. According to Purchase (2013), AgriBEE moved from intent and regulation to transformation.

## **1.2 Problem statement**

Mopani District has 27 804 hectares (ha) of plantation (Tzaneen Local Municipality, 2007). More than 98% of the farms in the GTM are still under claim, whereas few farms were allocated through the Land Reform Programme (Henning, 2010). The Land Reform Programme and land allocation by traditional leaders provide farmers in the district with access to land for farming purposes. Land lease is allowed in the Land Reform Programme as long as the correct procedure is followed. No lease of an agricultural portion of land may be entered into for a period of ten or more years. Such land may also not be sold or advertised for sale without consultation with the Minister of Agriculture and Land Affairs (Van Wyk, 2009). The Department of Trade and Industry (2012) has indicated that Government encourages progress in a land lease and land rental market.

The Rural Survey of 1997, which only took the former homelands into account, estimated that 71% of black households had access to farm land (Altman *et al.*,

2009). Some people have been provided with ample lands which are suitable for farming, but these lands are not being productively utilised for agricultural production. In 2007, for instance, the Department of Land Affairs, now called the Department of Rural Development and Land Reform (DRDLR), allocated 20 hectares of farm land to an emerging black female farmer who indicated that she planned to be a black entrepreneur in the agri-business industry, but a later assessment indicated that there was no agricultural enterprise taking place on the farm (Gabara, 2009).

Jacobs (2003) found that 64% of the 7700 ha of land owned by six groups, including land under lease, was under-cultivated. Jacobs (2003) noted that the extent of under-utilisation was attributable to lack of farming support after land allocation. The above-mentioned is not the only case where allocated land has not been productively utilised; there are many such instances throughout Limpopo Province and many other parts of the country. As there may be specific factors contributing to this trend, the aim of this study was to analyse land utilisation by small scale farmers and land reform beneficiaries. Provision of appropriate extension and research support, access to input and output markets and availability of good quality natural resources can be critical in small scale farming (Altman *et al.*, 2009).

According to Jacobs (2003), the process of assessment subsequent to land allocation is the responsibility of the Monitoring and Evaluation Directorate of the Department of Land Affairs (DLA), since renamed the Department of Rural Development and Land Reform (DRDLR).

### **1.3 Aim and objectives of the study**

The aim of the study was to determine the level of farm land utilisation and investigate the factors which impact on land utilisation by smallholders and emerging commercial farmers in the Greater Tzaneen Municipality.

The specific objectives of the study were to:

- Analyse the demographic and socio-economic characteristics of farmers in the study area.
- Analyse the distribution of land among small and emerging commercial farmers in the study area.
- Analyse the extent of land under cultivation and the factors influencing land utilisation.
- Assess the access of small and emerging commercial farmers to finance, agricultural produce markets and public agricultural extension services.
- Assess the availability of feasibility reports and business plans among smallholder farmers.
- Examine the possibility of generating income through leasing out allocated farm land.
- Determine which factors impact on the annual farm production income of farmers.

#### **1.4 Research questions**

In addressing the problem statement, the study focuses on the following questions:

- Do farmers in the Greater Tzaneen Municipality fully utilise the farm land available to them?
- Do farmers in the Greater Tzaneen Municipality have challenges that prevent them from practising agriculture regularly and productively on land acquired through the Land Reform Programme or tribal authorities?

- Do farmers lease out some area of the farm land when they cannot utilise the whole farm-land?

## **1.5 Hypothesis**

It is hypothesised that demographic and socio-economic factors influence land utilisation by smallholders and land reform beneficiaries in the GTM.

## **1.6 The significance of the study**

The unequal distribution of wealth is still one of the challenges facing South Africa. This study focused on the role of proper land utilisation in promoting AgriBEE and agricultural sustainability. With land being an important factor in agricultural and rural development, the study looked at how farmers performed on the land in their possession in terms of providing nutritious food and participating in AgriBEE.

Government can benefit from the monitoring of the performance of beneficiaries of land reform programmes, and the findings of the study will be shared with government officials. Traditional leaders who have allocated land to farmers will also be informed about the status of agricultural productivity in these lands. According to Fulginiti and Perrin (1998), agricultural productivity is defined as the amount of products obtained from given input resources.

The findings of the study will also be made available to the farmers themselves. Adopting the recommendations could help them optimise their land utilisation, productivity and profitability, and as a result encourage them to see their agricultural practice as a business. Starting small enterprises on small plots or developing into large scale farming can promote job creation and economic empowerment and contribute to food security. Employment opportunities may be increased by increasing the size of cultivation areas. According to Altman *et al.* (2009), issues of poverty and food security are addressed by providing more employment opportunities and consequently also enhancing household incomes.

## **1.7 Ethical considerations**

The research included human elements and therefore diligently followed the guidelines of the Research and Higher Degrees Committee in the College of Agriculture and Environmental Sciences of UNISA. The study did not involve any modification of living beings whatsoever, but the approval of the Ethics Committee (a branch of the College Research and Higher Degrees Committee) was obtained in any event before research was conducted in the specified area. Permission to conduct the research study was also obtained from the relevant Municipal Manager. Before interviews were conducted for data collection, consent forms were given to the participants to sign.

## **1.8 Outline of the dissertation**

Chapter one provides background on the utilisation of farm land allocated to smallholder farmers through the Land Reform Programme and traditional authority. It also indicates how ethical considerations were dealt with during the research study and the significance of the study.

Chapter two reviews past research on farm land utilisation and factors influencing productive land utilisation and the scale of cultivation by smallholder farmers.

Chapter three describes the research methodology used in the study, including the area and population studied, the research design, sampling methods, and methods of data collection and analysis.

Chapter four presents the results obtained through analysis using the SPSS Version 23, (2015) and Logit Model.

Chapter five presents a summary of the findings and conclusions, and gives recommendations based on these findings. Possibilities for future research are also indicated.

## **CHAPTER 2            LITERATURE REVIEW**

### **2.1 Introduction**

This chapter presents both local and international literature regarding utilisation of agricultural land by smallholder and commercial black farmers. It also illustrates income generation through leasing out some area of the farm which the farm owner cannot use due to various challenges. It further indicates the challenges to agricultural sustainability in black commercial farms. It also describes the access of small farmers to finance for agricultural production, to the agricultural produce market, and to agricultural extension services. The importance of availability of feasibility reports and business plans for smallholder farmers is discussed.

### **2.2 Definition of Concepts**

This part of the study provides a clearer understanding of the concepts that are commonly used in the research. The following concepts are discussed within the framework of the study:

#### **2.2.1 Leasing agricultural land**

FAO (2004: 1) described land lease as 'Fair and secure leasing arrangements that balance the interests of the tenant and the land owner can lead to improvements in access to land for farming, better agricultural production and improved access to food'. This concept is used in this study as better way to improve the level of land utilisation.

#### **2.2.2 Access to finance, agricultural produce markets and public agricultural extension services.**

Nwaru (2004) noted that farmers' limited access to credit facilities is one of the factors attributed to the declining productivity of the agricultural sector. According to IFAD (2003), it is essential that market access be looked at in terms of three dimensions, namely physical access (which includes distance and

infrastructure), market structure (which entails market agents, market information and contracts with farmers), and skills, organisation and information (which involve price fluctuations, market negotiations and market information). Agricultural extension services are seen as an important factor in improving agricultural systems worldwide, and have for many years principally been the responsibility of Government (Kidd *et al.*, 2000). This study considers these concepts as factors that can influence the level of land utilisation.

### **2.3 The use of land by smallholder and commercial black farmers**

According to Kay (1986), land is the primary resource required to sustain both plant and animal agricultural production. Land is the most important factor in production since all wealth is derived from it and it adds value to the production process (Goodwin, 1977). This means that the utilisation of agricultural land promotes farming activity and has an impact on the structure of agricultural activity on agricultural holdings (Rumanovska, 2014).

As a factor in agricultural production, farm land is unique by virtue of its inflexibility and immobility as compared to other materials used in the production process (Marks-Bielska, 2014). Farmers who have had the opportunity to obtain land through land reform programmes or from traditional leaders should know that they are not to abandon or make poor use of this important agricultural factor which has value that does not depreciate. However, many people do not regard cultivation on small landholdings as cost-effective, and up to half of these fields lie uncultivated in some years (Deliwe, 1995). Neto (2004) notes that since many new landowners were tenant workers on their farms before the implementation of the Land Reform Programme, it was assumed that they had proven potential to farm the land allocated to them. Ten years after the implementation of the Land Reform Programme, Lahiff and Cousins (2005) reported that poverty and high unemployment rates were still concentrated in the rural areas of South Africa, particularly in the former homelands.

According to Neto (2004), there is more agricultural productivity on small farms in developing countries than on large farms since small farmers normally use family labour rather than hired labour. Aliber and Maluleke (2010) found that while there was relatively extensive land reform through both redistribution and restitution in the eastern part of Molemole Local Municipality in Limpopo Province, a fair number of the land reform project initiatives in the area collapsed. Failure to practice flexible land utilisation and loss of arable land led to more landlessness than would be caused by normal population growth (Deliwe, 1995). Some land reform beneficiaries never actively utilise their allocated land in accordance with the project business plans (Van der Westhuizen, 2005). Land reform beneficiaries, and indeed all farmers, need to understand that business plans are meant to be a tool to guide the farm manager in the running of the farming business. According to Jacobs (2003), three of the Land Reform for Agricultural Development (LRAD) projects reported lack of capital as a production resource and the intention of beneficiaries to apply for loans from the Land Bank. On the other hand, farmers in the other two LRAD projects managed to generate R45 000 and R156 000 respectively after their first year of production.

Neto (2004) notes that the expansion of land use or ownership rights can improve farmers' chances of accessing credit since land can be used as collateral. According to Hall (2009), it is important to understand how land use has impacted on the living standard of land reform beneficiaries. It is also important to ensure that the period in which smallholder farmers have access to land also shows economic growth, for example in the form of job creation and poverty alleviation. Jordaan and Grobler (2011) attribute the failure of agricultural managers in LRAD projects to their lack of farming experience.

South African literature on land reform suggests that successful land reform should result in improved food security and regular income from marketed produce (Hall, 2009). The Department of Rural Development and Land Reform (DRDLR) has started to establish agricultural enterprises, and 2589 individuals from four

communities received training in agricultural enterprise management which covered a variety of technical skills (DRDLR, 2012). It would be extremely valuable if these trained individuals (the majority of whom are young people) could act as mentors on farms in the Land Reform Programme and could themselves be selected as beneficiaries in the redistribution of land for agricultural purposes. The establishment of a mentorship programme has been identified as one of the important factors in enhancing land reform agricultural projects and Black Economic Empowerment (BEE) (Terblanche, 2011). According to Bush (2002), the success of land redistribution, improved productivity and rural and urban growth also depend upon a broader range of macro-economic policies. Throughout Africa, land reform has aimed at reducing inequalities in income and at creating domestic markets in the countryside for locally produced industrial goods (Bush, 2002). Dorner (1972) notes however that not all farmers have entrepreneurial talents. Land reform beneficiaries need to be trained and assisted in all aspects of farm management, including production, marketing, financial planning and organisation. According to Dorner (1972), land reform must go hand in hand with changes in farming support services, agricultural credit, marketing assistance, research and extension, input supply, processing and storage. Agricultural development is usually accompanied by accelerated growth in businesses that provide farm services and supplies, as well as businesses that process and market farm products (Halcrow, 1980).

A nation that aims at development must not overlook land reform (Dorner, 1972). Agricultural land owners or users need to focus on agricultural economic development by progressing from subsistence to commercial farming in order to respond to the challenges of unemployment and inequity. However, the development of emerging farmers cannot only be focused on land allocation and access to water. It must include other resources such as access to markets, credit and extension. (Magingxa *et al.*, 2009). Production output generally tends to be low due to under-investment in infrastructure, such as irrigation systems, and inadequate information about the market (Martey, 2014). The value of agricultural land is considerably higher in areas where there are commercial market opportunities, since these are

accompanied by good land management in terms of environmental degradation and sustainable increases in agricultural production (IFAD, 2003). Agricultural land utilisation and the associated ownership titles are therefore amongst the most important factors impacting on rural development. It has to be a priority to improve not only the employment rate in rural populations but also the effective use of farm land (Rumanovska, 2014).

#### **2.4 Generating income through the leasing out and utilisation of farm land**

Type of agricultural land utilisation, soil valuation class and level of taxation are factors that are considered when determining agricultural land rent. In Poland, agricultural land rent is correlated with the average price of properties in any particular administrative district owned by the Agricultural Property Stock of the State Treasury (Marks-Bielska, 2014).

Literature on the situation in Europe indicates that most European countries do not allow foreigners to own agricultural land but do legally promote farm land lease by locals and foreigners, and leasing to foreigners is therefore quite popular (Butnaru, 2015). Renting is essentially the temporary leasing of immovable rights in return for payment and the use and development of the property. From a legal and financial point of view, rent is the amount paid by a tenant owner for use of and operation on such a property (Butnaru, 2015). Since renting allows for more flexible and more efficient land use, there is more rented land than owned land in most member states of the European Union (Rumanovska, 2014). According to Van Reenen and Davel (1989) and Kay (1986), owners of large areas of land can lease some of it out to ease the burden of the credit needed to maintain a big farm.

Farmers would obviously rather practice agriculture on their own fields than on leased ones, but there are a number of reasons why land lease is the more effective form of land management. Reasons include the high price of buying farmland and the advantages of policies on land management and unresolved property rights.

Farmland lease is seen as a rational form of land economy by European Union member states with a developed market economy, while creating the legal base for ensuring stable land lease contracts (Marks-Bielska, 2014). Rent is viewed not only as a legal process whereby land is transferred to a lessee for utilisation and the development of agricultural goods for a specific period and at a predetermined price, but also as a way for the families of agricultural land owners to generate income. In Romania, the disposal of agricultural land use has continued to grow (Musat, 2015). The proportion of leased land in Belgium, France, Luxembourg and Germany is over 50%, while in Romania, leased land is almost five times less than the proportion of total used area (Butnaru, 2015).

However, Kay (1986) and Van Reenen and Davel (1989) also point out disadvantages of leasing land from land owners, such as uncertainty about the period of the lease and the effect of possible cancellation of the lease on the future of their farming.

It is highly recommended that owners of large tracts of land lease out a few hectares to ease the burden of the credit liability that comes with maintaining a big farm and to contribute to their income generation. Leasing of land also assists small scale farmers who wish to enlarge their farms. It can be useful for lessors to consider approaching small scale farmers when planning to lease since these are found in many areas in the country.

The price of leasing land is dictated by supply and demand. The demand for land is derived from the demand for the products that the land is currently producing (Goodwin, 1977). Farmland is indispensable for plant and animal production which ultimately determines the level of food production (Marks-Bielska, 2014), and it is not possible to produce more land to meet demand.

According to Halcrow (1980), large scale agricultural production can be achieved by increasing land utilisation. Kay (1986) advises emerging farmers to lease rather than

buy land while they are still relatively inexperienced. When the profit from rented land equals the profit that would be earned from owned land, the farmer has reached a critical decision point (Rumanovska, 2014). It is also probably advisable for emerging farmers who have been allocated land by various land distributors to put some of their land up for lease to successful farmers so that they can learn from their knowledge and skills.

The popularity of leasing out land is increasing as the acreage of farms grows. It combines the security of long term investment in owned land with the opportunity to increase the proportion of productive farm land through leasing while investing money in other farming activities (Marks-Bielska, 2014). According to Haines and Davies (1987), by leasing land to or sharing land with younger farmers, older farmers can reduce their own workload.

According to Marks-Bielska (2014), the leasing of farmland is currently the most fundamental form of proprietary and agricultural transformation, while also being the most common form of land acquisition by farmers across Europe, including Poland. Market segmentation in land lease has become more dynamic (Butnaru, 2015). Increasing opportunities to access land among the most land-constrained small holders would appear to be an effective system for poverty alleviation (Jayne *et al.*, 2003). In Poland during the 1990s, following the collapse of the socialist system, farmland lease took on a unique role in the political and economic transformation of the country. Some farmers ceased market production at that time but were unwilling to sell the farm land they owned, so land was often leased out (Marks-Bielska, 2014). In 1994, leased land became Romanians' first settlement. In fact, this was the first action of an early land market. This was due to the fact that new land owners were able to exploit the farm land without dividing the property (Musat, 2015).

Land lease is one way in which poor rural farmers who own land can generate income. However, the Food and Agriculture Organisation (FAO) (2013) reported that in land leases negotiated by chiefs and elders on farms acquired after displacement

of five subsistence farmers, women received no compensation. All compensation went to the chiefs and displaced farmers who were men. A land lease impact analysis indicated a positive impact on land lease payments to farmers from wind energy development by Government (Adelaja & Hailu, 2008).

Jacobs (2003) found that in the case of several farms not acquired through land reform, land rented from the municipality was cultivated primarily for own consumption, with only two projects selling their produce and participating in local commercial farming. Agriculture will remain one of the most important sectors contributing to the economy and to innovation in rural areas (Rumanovska, 2014). According to Marks-Bielska (2014), lease contracts facilitate farmland access without large capital outlay (which could be expected to rise with the selling price of the land). With new owners of agricultural land, the need arose for a land market that included not only buying and selling, but also transactions such as leasing and land consolidation of large farms, resulting in the modernisation of agriculture and maximisation of profits (Musat, 2015). According to Suryanata (2000) there is a shortage of land for freehold ownership in Hawaii. As a result most landowners prefer to lease out large rather than small agricultural portions. The agricultural land market plays an important role as an indicator of investment in the development of rural areas. To minimise structural changes when rural agricultural production declines, land can be used in other ways, such as agri-tourism, to contribute to job creation (Rumanovska, 2014).

Land lease is basically a way of bringing unproductive and under-productive agricultural land into the productivity process. Through promoting large scale agricultural practice, it enhances crop yields and profits (Musat, 2015). In 2012, the average area leased by a farm in the South region of Romania (which includes Calarasi county) was 68.2 hectares. Compared to other regions, land rental in this region can be seen as an important contributor to land consolidation. In the North West and South East of the country, the average size of a farm was 10.2 hectares which is too small for agricultural sustainability (Butnaru, 2015).

It can be assumed that interest in renting agricultural land in Europe will grow owing to the revenue generated from implementing payments under the EU's Common Agricultural Policy (CAP) (Rumanovska, 2014). The limited availability of land for sale and the fact that the land parcels offered for lease by the Agricultural Property Agency (APA) are fewer and less attractive than was previously the case, might also stimulate interest in leasing land on the private market (Marks-Bielska, 2014).

## **2.5 Challenges to agricultural sustainability in black commercial farms**

Poor feasibility studies and business planning are a serious challenge in agricultural development. Unplanned land reforms also have a negative impact on the economy and food security of a country (Nabbie, 2013). Mittendorf (1993) noted that in some cases, appropriate market research studies were not conducted before making decisions about investing in farming. According to Hellin *et al.* (2005), even if trade rules are improved, lack of bargaining power, scale, market access, information and access to credit still tend to disadvantage the poor and the rural in markets. According to Devaux *et al.* (2009), the challenges faced by small farmers in accessing physical and financial resources limit their potential to develop and invest in technologies that add value to their products. In Romania, as in all countries with market economies, the idea that the family farm can be a solution in rural areas is challenged. Along with lack of income, the most sensitive issue in the case of family farms is the capitalising of production (Musat, 2015).

Cousins and Dubb (2013) cite inadequate business planning, lack of capital, credit and markets, poor post-settlement support, training and extension services, insufficient infrastructure and irrigation, and ineffective support for smallholder production systems as common problems.

With regard to farming business plans, Jordaan and Grobler (2011) found that a business plan compiled by consultants from the Department of Land Affairs incorrectly indicated that land reform beneficiaries were knowledgeable about

farming. It is essential that farming business plans be perfectly realistic so that Extension Officers, mentors and advisors understand and can immediately address the challenges and obstacles experienced by farm owners. Jacobs (2003) reported lack of correlation between the development plans of service provision agencies and the support plans of the Commission on the Restitution of Land Rights (CRLR) after land allocation. Hart (2003) notes that extension provides only limited support when farmers ask for assistance.

Extension Officers need to visit farms regularly in order to acquaint themselves with the challenges that farmers face. The economy has to become more aligned with the global need for high-quality products, although Sfakianakis (2002) reported that the current agri-business sector was becoming more aware of this. Farmers do not have sufficient access to extension support to supply products to meet the demand of the international market. Jacobs (2003) noted that there was no comprehensive policy on support for agricultural development after land allocation, and that agencies had not made enough progress in this regard. Lack of information for purposes of monitoring and evaluating the impact of land reform and agricultural support is a serious challenge in South Africa (Jacobs, 2003).

## **2.6 Access of small farmers to finance for agricultural production**

Without financial support no farm can be operated and managed (Terblanche, 2011). Sustainable agricultural production and income generation depend on access to finance for production start-up inputs such as seed and fertilisers as well as for fixed capital developments (Jacobs, 2003). The financial needs of farmers can be met in three ways –through own funds (savings), by borrowing money and through grants from Government and other stakeholders (Coetzee, 1991). “The following are the objectives as for the Land Bank with AgriBEE projects: Institutional mechanisms for managing agriculture, farm partnerships with relevant stakeholders to enhance development in farming enterprises, assist farmers to access funding, mainstream development through business enterprising, target groups are cooperatives.”

(Department of Agriculture, 2009:9). As prescribed by the Land Bank Act, the Land Bank sources its funds from the capital market under the relevant regulations (Coetzee, 1991). Government provides Black Economic Empowerment (BEE) funds through certain government departments (Department of Trade and Industry, 2012). The approach of the Development Bank of South Africa (DBSA) is to keep to the Land Bank lending rate as its point of departure, since this is a convenient norm for the remaining farmers in Southern Africa. This rate must be kept low in order to accommodate and incentivise emerging farmers. The lending rates of implementing agencies need to be reduced to support the recovery of lending transaction costs (Van Rooyen *et al.*, 1987).

In South Africa, farmer support programmes were based on cooperation between the DBSA and the previous independent and self-governing homelands. The intention was to fund agriculture in the homelands through a loan scheme so as to increase agricultural production and promote commercial agriculture (Deliwe, 1995). The DBSA did not finance any agricultural projects outside the homeland areas. The DBSA acquires its funds from the public sector and, even more so, from the capital market (Coetzee, 1991). The funds in commercial banks, on the other hand, come from deposits, share capital, credit arrangements in the capital market, return on investments and arrangements for credit from the Reserve Bank (Coetzee, 1991).

Khula Enterprise Finance assists in the form of the Land Reform Empowerment Fund which supports the cooperatives participating in the agricultural value chain. The minimum loan amount is R600 000 and only black South African groups or communities (not individuals) who have farm land may apply (Department of Agriculture, 2009).

Agriculture cannot be sustainable without access to finance so it is essential that smallholder farmers take advantage of the few funding opportunities that are available to them. Loans are available, but if the farming business is not properly planned insufficient income will be generated to repay the loan. Jordaan and Jooste

(2003) found that almost half the farmers who received loans from the Land Bank failed to pay their debts from their produce. There are huge opportunities for banks to get involved in sustaining South Africa's agricultural sector by providing finance to smallholder farmers and farm workers, and advising established farmers who are looking for BEE partners (Mokgojwa, 2011). According to Jacobs (2003), the Southern Cape National Development Agency contributed R1 483 000 to a land reform project acquired by a beneficiary who had no capital, infrastructure or equipment to work the land. According to Yaron (1994), governments and donors sponsored and supported supply-led rural finance institutions with the common purpose of improving growth and equity and redressing urban-biased macroeconomic policies.

There are two sources for borrowing funds - formal and informal. In developing areas most farmers source funds through informal credit. In small scale agricultural operations where production for the market has not yet developed to its full potential, informal credit assists in expanding farming activities to the scale needed to produce for the market and to qualify for access to a more formal, stable and comprehensive source of credit (Coetzee, 1991). Specialised farming credit institutions also include the formal public sector institutions serving the agricultural sector. Formal and informal sources of funds are supplied by private sector institutions (Coetzee, 1991). The Rural Action Committee (TRAC) secured donor funding to design a pilot economic and organisational training programme together with a management and mentorship programme to address the issue of resource under-utilisation (Jacob, 2003). According to Yaron (1994), stringent collateral requirements are not suited to the circumstances of poor small scale farmers.

Jacobs (2003) found that trust enterprises applying for credit from commercial banks were required to submit business plans and proof of collateral. According to Swinnen and Gow (1999), collateral requirements are problematic because farmers without collateral may need a loan at a specific interest rate, while farmers with collateral maybe put off by the same interest rate. Sebopetji and Belete (2009) reported that

farmers without collateral in the form of land and other assets resorted to accessing credit from informal financiers who normally charge high interest rates which have a negative impact on the farmers' profits.

The relatively low demand for formal financial services from South Africa Development Finance Institutions (DFIs) is probably due to their high transaction costs, stringent collateral requirements and income risks, and this has a negative impact on their outreach (Kuhn *et al.*, 2000). The informal financial market is not regulated by or formally monitored under the Acts that govern the country's financial institutions. Informal financial providers flourish in developing areas where there is no access to formal financial institutions. Even if these were represented in the rural areas, most people would not be able to meet their strict credit application requirements (Coetzee, 1991). Looking at the availability of funds without also considering their cost was the problem addressed by initiating the Bank Rakyat Indonesia Unit Desa (BUD) in Indonesia in 1983 (Yaron, 1994). Providing small farmers with low interest credit is a common way of providing capital for the purchase of new technology (Krause *et al.*, 1990). According to Wenner (1995), providing low cost credit services and granting a high percentage of loans are the primary aims in rural finance.

Increased access to formal credit in rural area reduces the use of informal financiers (Moses, 2014). Credit is one of the most critical inputs in agricultural production (Kumar *et al.*, 2010; Abedullah *et al.*, 2009). The provision of agricultural credit by Government is an indication that the farming sector is regarded as a top priority (Abedullah *et al.*, 2009). Governments normally support the access of farmers to credit by providing bank guarantees, establishing agricultural credit institutions and subsidising credit for agricultural producers (Swinnen & Gow 1999). The South African government established the Land Redistribution for Agricultural Development (LRAD) initiative to subsidise farming requirements such as the purchase of land (Makhura, 2008). The Farmer Support Programme (FSP) was initially introduced as a pilot project in areas selected on the basis of the need for support services for

individuals and groups, technical and infrastructural support accessibility, and potential agriculture in the area (Deliwe, 1995). Jacobs (2003) reported that two grants were recommended under the Comprehensive Farmer Support Programme (CFSP) which is the same as the LRAD programme - one for capacity building and one for agricultural infrastructure. The grant was not to be limited to land reform beneficiaries but to cater for all emerging farmers, including those who wanted to participate in the export industry.

The International Fund for Agricultural Development supplied the Grameen Bank with low cost credit in Bangladesh, most of which was obtainable from private banks (Yoran, 1994). In May 2005, the Department of Agriculture also established the Micro-Agricultural Financial Institutions of South Africa (MAFISA) to improve access to finance for poor rural households, small farmers and agri-business (Department of Agriculture, 2006). MAFISA provided credit of up to R100 000 which was payable over 12 months at a low interest rate (Makhura, 2008). The establishment of easy and affordable credit is a quick strategy for enhancing agricultural productivity (Abedullah *et al.*, 2009), but MAFISA unfortunately collapsed (Sebopetji & Belete, 2009). According to Yaron (1994), the collapse of agricultural credit institutions is the result of poor planning and ineffective processes, or of economic, social and political issues. In South Africa, some of the credit institutions that were established in the former homelands have collapsed due to agricultural changes in the country, leaving smallholder farmers without access to credit (Lefophane *et al.*, 2013). So far, grant funding for agricultural support subsequent to land allocation has not been effective, and it remains difficult for land reform beneficiaries to access credit (Jacobs, 2003).

Access to credit is generally viewed as a prerequisite for economic growth and improving standards of living in rural areas (Petrick, 2005). However, according to Bratton (1986), financial institutions in Africa have realised that agricultural credit is an expensive and unprofitable scheme. Abedullah *et al.* (2009) have also emphasised that without agricultural credit institutions, small scale farming and agricultural development are not sustainable. The accessibility of finance goes hand

in hand with development and the adoption of new technology (Moses, 2014). According to Krause *et al.* (1990), possible reasons for slowness in adopting new technology are the high degree of risk, poor infrastructure for the distribution of modern inputs and insufficient capital. Since credit plays a major role in the adoption of new technology and the start up or expansion of a business, there is clearly a need for improved provision of formal credit (Wenner, 1995).

Short and medium term credit has been extended to farmers by commercial banks. According to the Agricultural Loan Book, approximately 30% of farmers outside the homelands are supported by commercial banks. When making decisions about extending loans, the commercial banks adhere to strict security stipulations. Most farmers who do not have the title deed for the land they are farming or who cannot meet other conventional commercial bank security requirements are often excluded from commercially available credit (Coetzee, 1991). For savings to be effective collateral, they should be located in the same institution or branch of the institution offering the loan facility (Kuhn *et al.*, 2000). In Kwazulu-Natal (as indicated in Table 2.1), agri-business lenders L1 and L3, which charged nominal effective interest rates well below the prevailing commercial key overdraft rates of 18-19% per annum, differed from lender L3 which charged the high interest rate consistent with the lender's objectives of financial self-sustainability (Kuhn *et al.*, 2000).

**Table 2.1: Lending technologies used by lenders in KwaZulu- Natal, 1996/97**

Indicator	Development Finance Institutions		
	L1	L2	L3
<b>General</b>			
Years of operation	1	2	9
Institution objective	Development	Development	Financial viability
<b>Loan Terms and Conditions</b>			
Financial services	Rural loans& savings	Production loans For small sugar farmers	Microenterprise Loans
Lending to groups	Yes	No	Yes
Group size	30-60	n/a	4 - 6
Group formation	Borrower & Lender	n/a	Borrower & Lender
Individual loans	Yes	Yes	No
Loan terms	1 - 20 years	2 & 8 years	4 - 12 months
Loan sizes	Flexible	R4800	R100- R5000
Formal collateral required?	Yes	Yes	No
Place of loan application	Branch	Agencies	Branch
Loan application processing	4 -24 weeks	6 weeks	4 - 5 weeks
Decentralisation of loan	Moderate	Moderate	Good
Repayment frequency	Flexible	Seasonal but fixed	Monthly
Gradual increase in loan size	No	No	Yes
<b>Loan Interest Rates</b>			
Nominal effective interest rate (per annum) <sup>a</sup>	15%- 17%	16,5%	54%- 66%
<b>Savings Terms and Conditions</b>			
Savings	Voluntary	Compulsory	Compulsory
Access to savings for personal	Good	Poor	Poor
<b>Client Information, Screening and Contract Enforcement Technologies</b>			
Management information system(MIS)	Yes (branch)	Yes (branch)	Only at head Office
Use of a formal scoring model	No	No	No
Loan monitoring and tracking	Moderate	Moderate	Good
Client incentives/penalties	No	No	Yes
Future loan if defaulter	No (not strict)	No (not strict)	No
Foreclosure or repossessions	Difficult	Difficult	Yes
Staff incentives for loan	No	No	Yes

Source: (Kuhn *et al.*, 2000)

## **2.7 Access of small farmers to the agricultural produce market**

Smallholder farmers always experience market access as a major challenge preventing them from improving their standard of living (Magingxa & Kamara 2003; IFAD, 2003). A comprehensive understanding is needed of how the market for smallholder products in rural areas operates (Hellin *et al.*, 2005). South Africa has started reviewing its policies in terms of food production and marketing to address global trends in economic reforms (Magingxa & Kamara, 2003). Thorough market research needs to be conducted in order to respond to the marketing challenges that face commercial black farmers. Market research is aimed at identifying a target market and its requirements, as well as market-related challenges (Haines & Davis, 1987).

A recent argument around greater involvement of the private sector in agricultural marketing focused on the inadequacy of provisions made by the previous government and on the challenges related to improving the quality of public sector service delivery (Magingxa & Kamara, 2003). A critical step in applying the market map is to select markets and channels that improve the living standards of poor producers (Hellin *et al.*, 2005). Farmers face with many new market challenges as well as opportunities, such as the strong contribution of women in the labour force in terms of leading the dietary transition from convenience foods to animal protein, fresh dairy products, and higher consumption of fresh fruits and vegetables. Packaged food sales and supermarket retail outlets are now available in many developing countries (Devaux *et al.*, 2009). According to Magingxa and Kamara (2003) there is a huge opportunity for smallholder farmers to improve their livelihoods through marketing their agricultural products, but they still face a number of obstacles in their access to agricultural markets. Chisnall (1991) reported that marketing research focused on the analysis and evaluation of information about marketing problems in order to make effective marketing planning possible.

Markets put pressure on plans and actually influence the economic outcomes of planning (Sicular, 1988). Marketing planners must collaborate with management to ensure that marketing targets are met as soon as a business starts up (Haines & Davies, 1987). Marketing plans address the 4 Ps of product, price, promotion and place, while management focuses on planning, organising, leading and control (POLC). A complete market chain analysis will indicate the movement and management of the chain, since it shows how profit margins are shared through the chain (Hellin *et al.*, 2005).

Emerging farmers need to understand that food security goes hand in hand with food marketing. According to Abbott (1993), even subsistence smallholders must sell some produce if they are to have the cash to pay for inputs and services that will increase their output and improve their standard of living. Marketing empowers farmers with some land to graduate from semi-subsistence to commercial farming (Abbott, 1993). Most farmers who have few market opportunities only practise subsistence farming which has negative impact on their quality of life (Martey, 2014).

Possible factors contributing to market failure are poor private sector investment in important goods and services, the sale of sub-standard seed and agri-chemicals to buyers, and environmental degradation, particularly where there the definition of property rights is unclear. Government could intervene through investing in rural infrastructure, regulating environmental degradation, and funding research into farming systems or resource conservation where private sector organisations find it difficult to realise the return (Magingxa & Kamara, 2003). People who have acquired land for farming activities must take the majority of their products to market. Increasing market access for farmers can promote improved land management and increase agricultural production (Hellin *et al.*, 2005).

According to Magingxa *et al.* (2009), lack of access to profitable markets is a primary reason why even farmers who are able to produce a surplus remain poor. According to Martey (2014), the provision of knowledge about markets and pricing can play a

major role in breaking the cycle of poverty. Empowering people to grow their own food for subsistence or marketing purposes is important to the provision of both food and stable income for many in the country (DAFF, 2012). Agricultural contract farming is regarded as an important standard in market access. Abbott (1993) also noted that international market enterprises have helped small farmers in particular to contribute to intensive production and marketing contract systems. Contract farming can be defined as “agricultural production carried out according to an agreement between farmers and a buyer which places conditions on the production and marketing of the commodity” (Minot, 1993:370). In America, fewer products were produced with production and marketing contracts between the farmer and the first buyer (Halcrow, 1980). Using contract farming to establish market access for black farmers is a strategic plan with the potential to bring small scale farmers to market while also promoting black economic empowerment (Sartorius & Kirsten, 2006).

Sartorius and Kirsten (2006) reported that contracting and contract farming were widely used by agri-business firms and retailers in South Africa to maintain a supply of agricultural products from farmers. Contract agreements are primarily some form of production or marketing contract which specifies the volume and quality of products to be supplied, as well as product prices and delivery dates (Sartorius & Kirsten, 2006). Sartorius and Kirsten (2006) noted that approximately 100% of the tobacco, sugarcane, cotton, timber, meat, poultry and eggs supplied in South Africa was sustained through contract farming, while 78.5% of all fruit and vegetable production was maintained through pre-season marketing and price contracting. Black farmers, particularly those with smaller production values, have however been excluded from these marketing opportunities. Farming cooperatives are the best way to overcome these challenges since marketing associations and farming contracts can promote marketing activity (Magingxa & Kamara, 2003).

Assistance in the establishment of market linkages in a region need not be limited to the agricultural sector, but should also involve non-agricultural microenterprises such as small scale trading and food processing plants (IFAD, 2003). Agri-business can

assist smallholder farmers in overcoming the barriers to entry into commercial farming by providing inputs and a guaranteed market (Sartorius & Kirsten, 2006). The common challenge for agri-business or market agents in contracting with small commercial black farmers is that these farmers normally fail to produce the commercial volumes required (Sartorius & Kirsten, 2006). According to Devaux *et al.* (2009), it is difficult for small farmers to access a reliable market. Large commercial farmers on the other hand can supply larger volumes of quality products, and have bargaining power and access to information, services, technology and capital. In terms of market access obstacles, Martey (2014) named the failure of farmers to meet market standards and produce sufficient volumes, regional scattering of producers, price fluctuations in the formal market and agricultural market middlemen.

Magingxa *et al.* (2009) reported that associations not only facilitated credit access for small scale farmers but also improved their bargaining power when it came to market access. Research on market access must form part of the business feasibility study that should be conducted before starting up a business. Lack of access to market information is a huge challenge for smallholders in the development of the agri-business sector (Martey, 2014). Market information about expected price fluctuations is also useful in planning production (IFAD, 2003; Lee, 1993). According to Goyal (2010), high transport costs, lack of reliable price information and the inability to recognise quality produce resulted in the exploitation of cash crop farmers in developing countries by market agents. Magingxa *et al.* (2009) found that information on the product grades, standards and quality required for various markets was not available to smallholder farmers.

Magingxa *et al.* (2009) reported transport as being the biggest cost for smallholder farmers trying to access markets. Devaux *et al.* (2009) also found that the low market surplus of individual small farmers is predominantly due to marketing, transaction and transport costs. Farmers usually do not have market information about the sales process (Goyal, 2010). The development of small scale farmers in Africa may contribute to growth in the agricultural sectors of many countries, but

competitive value chains, lack of information on market remuneration and possible risks to the farming system limit the market participation of farmers (Martey, 2014). Well-functioning markets and trade systems need to be established by keeping transaction costs low, minimising risk and extending information to all market participants (IFAD, 2003).

Smallholder farmers who are further away from the market have even less access to market information (Magingxa & Kamara, 2003). Distance from the market centre as well as the cost of transporting products are arguably market constraining factors among farmers (Magingxa *et al.*, 2009). Small farmers need market information on all the places where they might get their price, not only on the country's capital which may be far away (Lee, 1993). Farmers obtain information about current prices from broad market research (Goyal, 2010).

## **2.8 Access of small farmers to agricultural extension services**

Agricultural advisory (extension) services are an important element in the organisation of market entities, and advisory agents can play a role in improving the livelihood, well-being and welfare of farmers and other rural people (Anderson, 2008; Glendenning & Babu, 2011). Jacobs (2003) emphasised that an Agricultural Extension Officer has the important task of communicating farming information from the Department of Agriculture to smallholder farmers. The expectation is that agricultural extension services will contribute to the development of new technologies for farmers, but due to a disconnect between research and extension services, the adoption of new farming technologies in the developing world is very slow and research is not focusing on what farmers need (Kassa *et al.*, 2014).

Extension services also play an important role in helping researchers to adapt technologies to the agri-ecological and resource circumstances of farmers, and as such they serve as a bridge between scientists and farmers (Anderson, 2008). Agricultural extension services are also necessary for small scale farmers in

developing countries to enable them to handle the challenges and opportunities of 21<sup>st</sup> Century new technologies such as biotechnology and nanotechnology, new types of information and communication technologies transformed value chains and increased food standards, and the health challenges of HIV/Aids and avian and swine flu (Birner *et al.*, 2009). Anderson and Feder (2004), also emphasise that extension services normally have the greatest effect at the start of disseminating a new technology. According to Davis (2008), extension services these days go beyond technology transfer to facilitation and beyond training to learning, and include assisting in the formation of farmer groups and in dealing with marketing issues. Such services are relevant to broad range of service providers and other agencies. Agricultural Extension Officers who attend to the problems encountered in land reform projects normally work for Government in the Department of Agriculture or the Agricultural Research Council (Jacobs, 2003). He further noted that extension support in the commercial sector is of reactive nature while in the emerging farmer and food security sector, it is more proactive.

The purpose of extension services needs to be well-defined if extension is to achieve its goals and be evaluated accordingly (Haug, 1999). Jacobs (2003) noted that in South Africa, post transfer support in farming areas does not match the mandate of the Department of Land Affairs (DLA). Jacobs (2003) further indicated that apart from the advisory role of Provincial Departments of Agriculture, the role of the Farmer Settlement Support (FSS) Directorate in the national department itself is not clear. According to Deliwe (1995), the Farmer Support Programme in Ciskei is clearly defined. "They give extension information, and obtain information from each FSP farmer on the means of ploughing, the size of land ploughed, inputs used and the cost of the inputs. They also record particulars of farmers attending meetings and report on the information given to farmers, problem raised, training courses given and their responses. This information is fed into the FSP management information system in Ciskei" Deliwe (1995, 520).

Extension Officers are a useful linkage between farming projects and the government agencies responsible for providing agricultural development support

after land allocation (Jacobs, 2003). According to Haug (1999), agricultural extension services are supposed to reduce rural poverty, improve the standard of living in rural areas and contribute to economic growth through the export of products. Agricultural advisory services are regarded as organisations to support and assist farmers in responding to their challenges and obtaining information, skills and technologies to improve their standard of living (Anderson, 2008; Birner *et al.*, 2009).

Haug (1999) noted a tendency to overlook policy issues that are important to the development of extension services, such as land tenure, credit distribution, input and market, pricing and gender roles. However, according to Anderson and Feder (2004), extension agents devote more time and energy to other activities where they get compensation, such as stimulating inputs for and facilitating farmer access to credit. According to Birner *et al.* (2009), what is important is to build capacity among policy planners, managers and researchers to find ways to provide and finance extension services that are suited to specific situations. Extension services focus on the development of knowledge and human resources pertaining to agricultural improvement, which means that agricultural development is about much more than just the distribution of agricultural inputs (Haug, 1999).

New methods of providing and financing agricultural advisory services include decentralisation to lower levels of Government, involving farming associations and non-governmental organisations, contracting out extension services, public-private partnerships, privatisation, implementing extension services through contracts, and diversifying the types of extension services used (Anderson, 2008). Decentralisation increases the relevance of extension activities by encouraging contributions from and consultation with other local agricultural stakeholders (Glendenning & Babu, 2011).

Farmer Field Schools (FFS) constitute a participatory method of learning, technology development, and dissemination based on adult learning through practice (Davis, 2008). Farmer Field Schools were originally established to educate irrigation rice

farmers in Asia on pest control (Anderson & Feder, 2004; Davis, 2008). In Africa, Farmer Field Schools have been used for a variety of training activities, including food security, animal husbandry and soil and water conservation (Davis, 2008).

The central concept in agricultural extension services is that farmers are given the opportunity to obtain the advice and information they need from people who are assigned to provide it or are willing to do so (Kidd *et al.*, 2000). According to Davis *et al.* (2012), it is difficult to find an extension approach which adequately addresses the challenges facing farmers in the African context. Poverty is growing and productivity is declining on the continent, and it would appear that the available technology either does not reach the farmers or is not relevant to their particular challenges (Haug, 1999). Martey (2014) suggested that agricultural support for smallholder farmers in terms of business capacity development, dissemination of technology, training by demonstration (Farmer Field Schools), distribution of input credit, provision of market information and infrastructure could contribute to sustainable agricultural growth in Ghana.

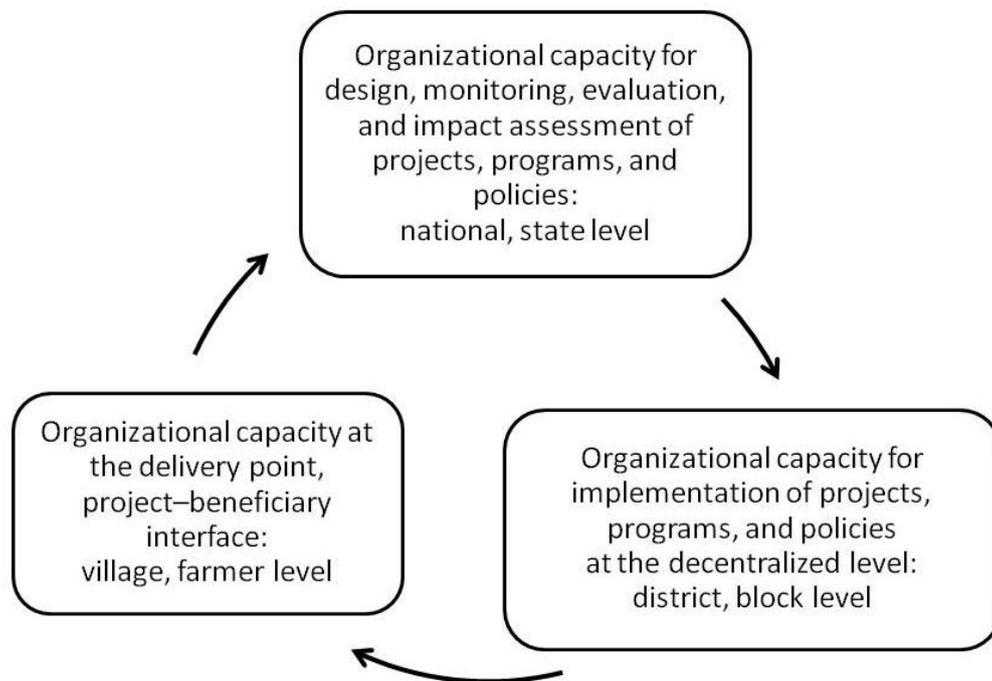


Figure 2.1: Inter-organisational linkages and linkages between individuals

Source: Glendenning and Babu (2011)

## 2.9 Importance of availability of feasibility reports and business plans for smallholder farmers

In entrepreneurship, business planning is an extension of the feasibility analysis process (Wyckham & Wedley, 1990). During the discussion phase of the business development cycle, a feasibility study needs to be conducted as a precursor for a formal business plan (Thompson, 2005). New farmers starting a new farming enterprise without realistic business plan and feasible expectations are doomed to fail (Terblanche, 2011).

The feasibility study is an important tool in planning a farming business when it comes to investment, access to market, climatic conditions and required skills. One of the primary goals of a feasibility study is to determine whether the project is economically viable in terms of its design, construction and operation according to the given specifications (Mackenzie & Cusworth, 2007). Since putting together a business idea involves an essential investment of time and money, the entrepreneur must ensure that there are no major obstacles standing in the way of business success (Thompson, 2005). In the case of farming, feasibility studies help farmers

predict challenges and address them before they can impact on farming activities. The business feasibility study assists in determining such challenges or threats and determine the true viability of the business concept (Thompson, 2005), and is commonly about the delivery of a business plan (Mackenzie & Cusworth, 2007). Demonstrable financial feasibility and a well-prepared business plan mean that the entrepreneur understands and will therefore be able to address the risks involved in launching a new enterprise (Wyckham & Wedley, 1990).

Business planning may be more effective at start up than when a business is already established (Delmar & Shane, 2003). Terblanche (2011) noted that without a viable and sustainable business plan (in this case, a farm plan) no land reform project or mentorship programme can be successful. Planning includes how the land will be utilised and is inextricably connected to every functional area of land utilisation (Van Wyk, 2009).

## **2.10 Chapter Summary**

The literature study found that inadequate business planning, lack of capital, credit and markets, poor post-settlement support, training and extension services, insufficient infrastructure and irrigation, and ineffective support for smallholder production systems are common challenges in the process of utilising the land by smallholder farmers. From the literature reviewed, most of agricultural funds established in South Africa collapsed. The literature also highlighted that owners of large areas of farm land can lease some of the land out to ease the burden of the credit needed to maintain a big farm.

The literature emphasised that smallholder farmers usually experience market access as a major challenge preventing them from improving their income due to lack of market information and failure of producing quality and quantity required by the targeted market. Through active utilisation of farm land and accessibility of agricultural market, agricultural funds and public agricultural extension services by

smallholder farmers, the challenge of unequal distribution of wealth in South Africa may be addressed.

## **CHAPTER 3 RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter presents the research methods used in the study. It covers all the sections, namely the area of study, research design, population of the study, sampling method, data collection method, data analysis method, and the specification and estimation of the Logit Regression Model used in the analyses.

### **3.2 Area of study**

The area of the study was the Greater Tzaneen Municipality (GTM) in Mopani District of Limpopo Province. There are five towns and 131 villages in the area. The towns are Tzaneen, Letsitele, Lenyenye, Nkowankowa and Haenertsburg with a total of approximately 16433 households and a population size of 65734. The 131 villages in the area consist of 63468 households and account for a population size of 317344 (GTM, 2012). According to the Greater Tzaneen Economic Development Agency (GTEDA) (2011), the area had an unemployment rate of 42% and approximately 70% of the households earned less than R1 600 per month. According to the Mopani District Municipality (2010), in the Greater Tzaneen Municipality 72 land claims were still in the process while 16 land claims with approximately 806 399160 hectares were operating in 2010.

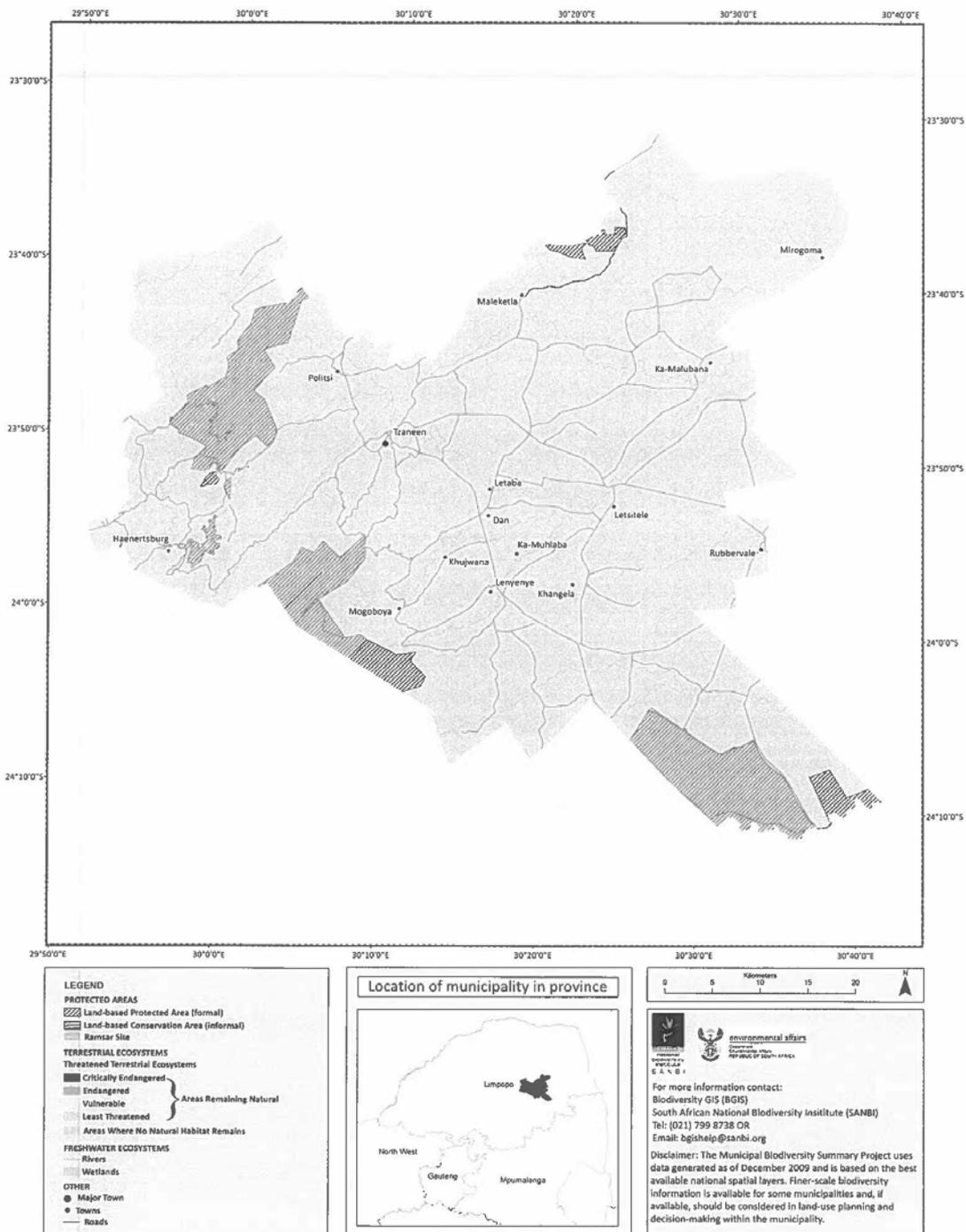
### **3.3 Research design**

The research design of the study was a mixed methods approach. According to Boeije (2010), in mixed methods research both quantitative and qualitative data are generated so that a phenomenon can be examined from more than one perspective. This is called concurrent triangulation design. A mixed methods approach was selected for this study in order to take advantage of the benefits of both quantitative and qualitative research methods. During data collection, the farms were visited for the purpose of observing all the agricultural activities that were taking place.

Anderson (2006) notes that qualitative research is the collection, analysis and interpretation of data by observing people's activities and listening to what they say.

Municipality:  
**GREATER TZANEEN,**  
Limpopo

**Terrestrial  
Biodiversity  
Summary Map**



Open Rubric

**Figure 3.1: Map of the Greater Tzaneen Municipality**

Source: <http://bgis.sanbi.org/municipalities/munimaps/LIM333.pdf>

### **3.4 Population for the study**

At the time of the study, there were 294 farms in the Greater Tzaneen Municipality belonging to emerging farmers. The population selected for the study was smallholder farmers that had been allocated land for agricultural production, either through land reform or by traditional leaders.

### **3.5 Sampling methods**

According to Bless *et al.* (2013), sample size should be at least 5% of the population chosen by rule of thumb. Although this is a very inaccurate guideline, it can certainly be used in the absence of any clear formulae. The sample size in the case of this study was 29% of the population. The study employed a snowball sampling technique to find the farm land users or farmers. "Snowball sampling is defined as a technique for finding research subjects. One subject gives the researcher the name of another subject, who in turn provides the name of a third and, so on" (Vogt,1999). A total of 86 farm land owners were selected through referral by other farm owners. Snowball sampling is primarily employed when conducting qualitative research by means of interviews (Atkinson & Flint, 2001). According to Suri (2011) the assumption that the most cited primary research reports are the most information-rich cases influence another way in which snowball sampling may be utilised in a research synthesis.

### **3.6 Data collection methods**

The data in this study were collected from the primary source. Primary data are collected for a particular research problem or purpose according to Hox and Boeije (2005). A total of 86 farms, ranging in size from 1 to 110 hectares, were visited for the purpose of conducting interviews with the owners. A structured interview schedule was used to collect data from participants face to face. The interviews included open-ended and closed questions; not only multiple choice. The

questionnaire (see Appendix 1) was structured to include personal information as well as information about the land, farming activity (scale of production and marketing) and economic viability.

### **3.7 Data analysis methods**

#### **3.7.1 Descriptive analysis**

The collected data were cleaned, coded, captured and statistically analysed using the Statistical Package for the Social Sciences (SPSS) Version 23, (2015). Descriptive statistics summarised the socio-economic information about the participants. The Logit Regression Model was used to analyse factors which influence total farm land utilisation by the owners interviewed. According to Escabias *et al.* (2007), functional logistic regression was devised as a way of predicting a second response variable from a functional predictor.

#### **3.7.2 The Logit Regression Model**

Logistic regression, also called a Logit Model, was used to model dichotomous outcome variables. The dependent variable was dichotomous - farmers either cultivated all their farm land or they did not. In the Logit Model, the log-odds of the outcome are modelled as a linear combination of the predictor variables.

The logit function is specified as the inverse of the sigmoidal "logistic" function or logistic transform used in mathematics, and more particularly in statistics. When the function's parameter represents a probability  $p$ , the logit function gives the log-odds, or the logarithm of the odds  $p/(1 - p)$ .

The logit of a number  $p$  between 0 and 1 is given by the formula:

$$\text{logit}(p) = \log\left(\frac{p}{1-p}\right) = \log(p) - \log(1-p) = -\log\left(\frac{1}{p} - 1\right).$$

(1)

The "logistic" function of any number  $\alpha$  is given by the inverse-logit:

$$\text{logit}^{-1}(\alpha) = \frac{1}{1 + \exp(-\alpha)} = \frac{\exp(\alpha)}{\exp(\alpha) + 1} \quad (2)$$

If  $p$  is a probability, then  $p/(1 - p)$  is the corresponding odds; the logit of the probability is the logarithm of the odds. Similarly, the difference between the logit of two probabilities is the logarithm of the odds ratio ( $R$ ), thus providing shorthand for the correct combination of odds ratios simply by adding and subtracting:

$$\log(R) = \log\left(\frac{p_1/(1 - p_1)}{p_2/(1 - p_2)}\right) = \log\left(\frac{p_1}{1 - p_1}\right) - \log\left(\frac{p_2}{1 - p_2}\right) = \text{logit}(p_1) - \text{logit}(p_2). \quad (3)$$

So putting all this together, the key equation (usually termed the "multivariate logistic regression equation" or "multivariate logistic regression model") to which one fits the data is:

$$\log\left(\frac{p_i}{1 - p_i}\right) = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_p X_{ip} \quad (4)$$

where  $P_i$  is the probability that  $Y_i$  is 1.

$P_i / (1 - P_i)$  is called the "odds". In the analysis, the function is estimated with the minimum likelihood method and  $Y=1$  when the farmer cultivates all his or her farm land; and  $Y=0$ , when a farmer does not.

The independent variables considered in the study are presented in Table 3.1.

**Table 3.1: Variable labels and their expected indicators**

ID	Independent variables	Variable label	Expected indicator
1	X <sub>1</sub>	Gender	Positive
2	X <sub>2</sub>	Age of farmer	Negative
3	X <sub>3</sub>	Household size	Negative
4	X <sub>4</sub>	Period of land utilisation	Positive
5	X <sub>5</sub>	Current farm size	Positive
6	X <sub>6</sub>	Stay on the farm (Yes=1, No=0)	Positive
7	X <sub>7</sub>	Distance from house of residence to farm	Positive
8	X <sub>8</sub>	Amount receive per hectare from leasing	Positive
9	X <sub>9</sub>	Proportion of farm inputs purchased	Positive
10	X <sub>10</sub>	Process farm products (Yes=1, No=0)	Positive
11	X <sub>11</sub>	Project adopted a new technology (Yes=1, No=0)	Positive
12	X <sub>12</sub>	Have skills pertaining to farming activities (Yes=1, No=0)	Positive
13	X <sub>13</sub>	Have a farming business plan (Yes=1, No=0)	Positive
14	X <sub>14</sub>	Participated in developing business plan	Positive
15	X <sub>15</sub>	Have market linkage(s) (Yes=1, No=0)	Positive
16	X <sub>16</sub>	Extension Officers visited the farm (Yes=1, No=0)	Positive
17	X <sub>17</sub>	Have permanent workers on the farm (Yes=1, No=0)	Positive
18	X <sub>18</sub>	No. of seasonal workers used last season	Positive
19	X <sub>19</sub>	Hire seasonal workers every season (Yes=1, No=0)	Positive
20	X <sub>20</sub>	Have access to credit (Yes=1, No=0)	Positive
21	X <sub>21</sub>	Member of a farmers cooperative (Yes=1, No=0)	Positive
22	X <sub>22</sub>	Keep production, marketing and cash flow records (Yes=1, No=0)	Positive
23	X <sub>23</sub>	Annual farm income	Positive
24	X <sub>24</sub>	Savings (Yes=1, No=0)	Positive
25	Y	Proportion of land cultivated	

### **3.8 Chapter Summary**

This chapter covered the area of the study as GTM indicating 131 villages with approximately 16433 households and a population size of 65734. The chapter also explained the research design as both qualitative and quantitative (mixed methods). The data collection approach by use of questionnaire was explained. Furthermore, the logistic regression model adopted for the study including the variable labels and their expected effects were presented.

## **CHAPTER 4 RESULTS AND DISCUSSION**

### **4.1 Introduction**

This chapter presents the results and discussion of the analyses of the data from the study. The results and discussion of both descriptive statistics and inferential analysis (Logit Regression Model) used to determine factors influencing full-utilisation of farm land by the small and emerging commercial farmers are presented. And the results are indicated by using graphs and tables.

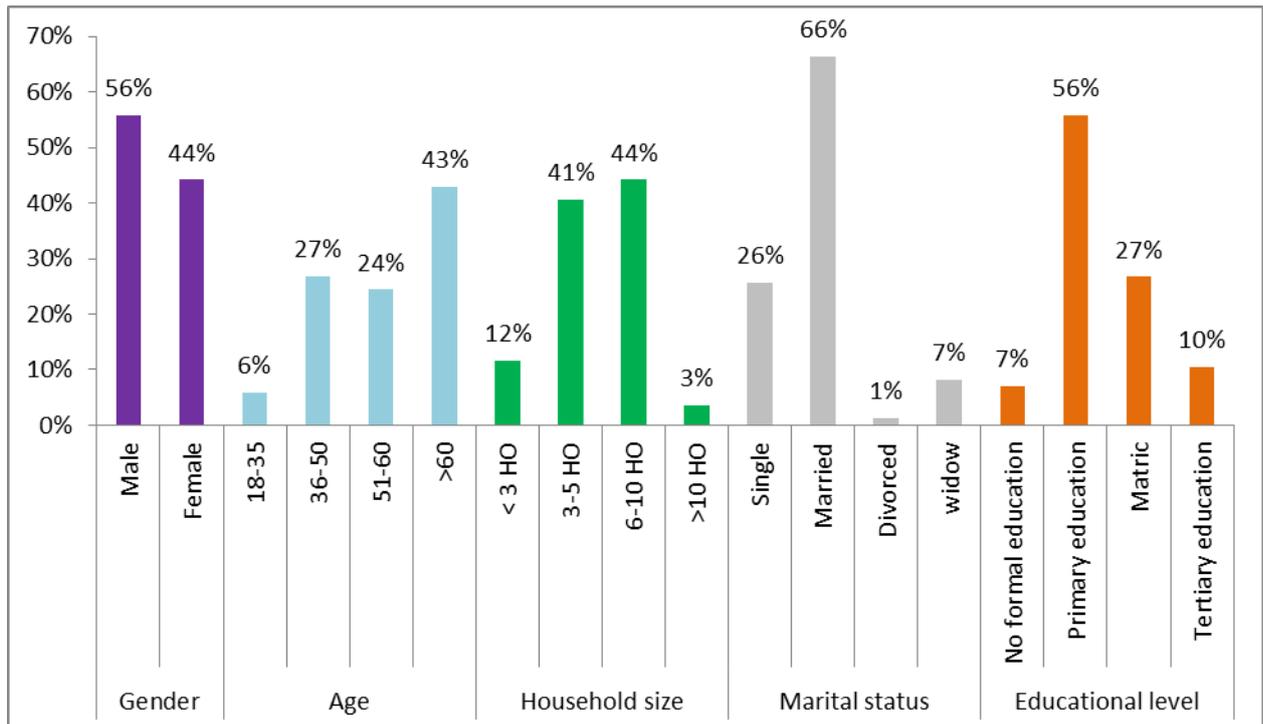
### **4.2 Demographic characteristics of farmers in the study**

Demographic characteristics, such as gender, age group, household size and marital status of the farmers in the study are presented in Figure 4.1. The results indicate that 56% of the participants in the study were male and 44% female. Neto (2004) previously noted that there were institutions in many African countries which were opposed to land ownership by women. Neto (2004) further noted a correlation between poverty and racism as well as gender in South Africa.

In terms of age groups, 6% of the participants were 18-35 years old, 27% were 36-50 years old, 24% were 51-60 years old and 43% were older than 60 years. This indicates that more pensioners than younger people were participating in farming activities in the study area. According to Binswanger-Mkhize (2014), the declining interest in farming among the youth is one of the factors contributing to poor performance in agricultural practices.

It was found that 12% of the participants had a household size of less than 3 persons, 41% had a household of 3-5 persons, 44% had a household of 6-10 persons and 3% had a household of more than 10 persons. In terms of marital status, 26% of the participants were single, 66% were married, 1% were divorced and 7% were widows.

Figure 4.1 also indicates that 7% of participants had no formal education, 56% had primary education, 27% had matriculated and 10% had completed tertiary education. In this regard, Jayne *et al.* (2010) noted that investments in rural education will have a positive impact on agricultural development, particularly in terms of the adoption of new technology.



**Figure 4.1: Demographics of the farmers who participated in the study (n=86)**

Source: Data from the study

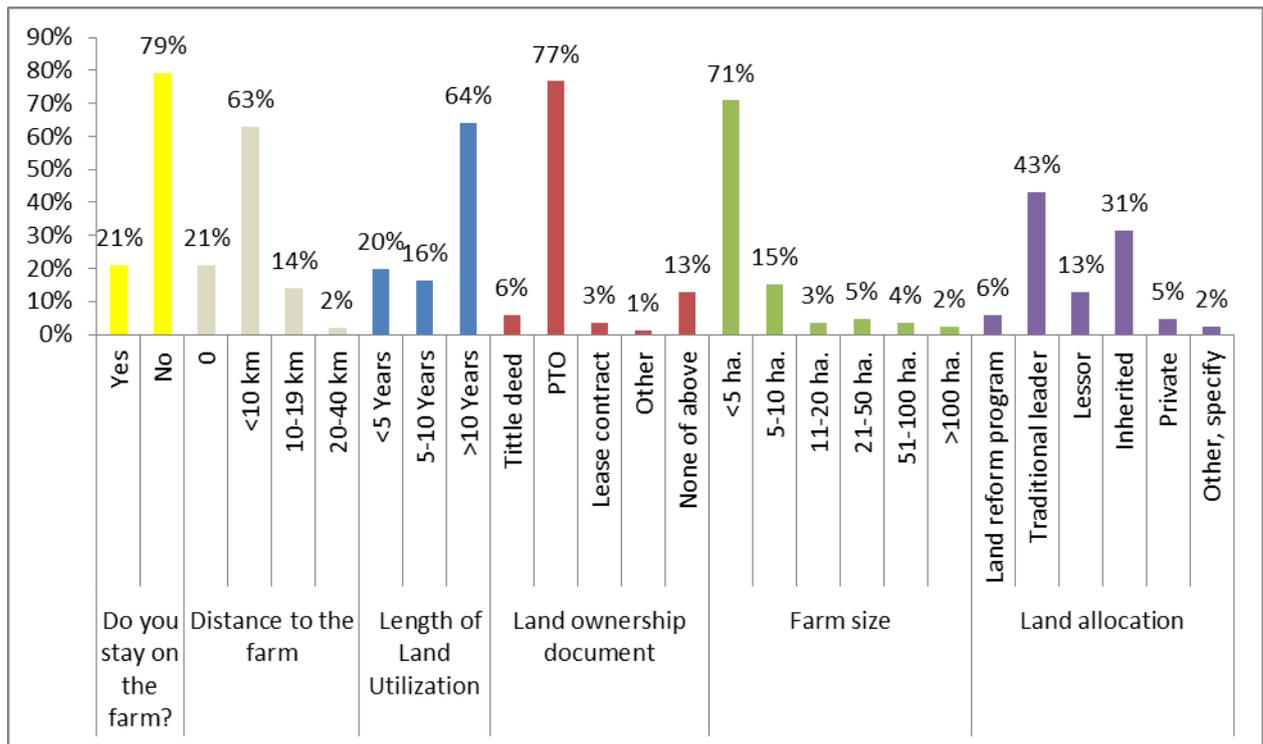
### 4.3 Land distribution among farmers in the study

The results in Figure 4.2 show that 21% of the participants stayed on their farms, 63% stayed less than 10 km away and were able to walk to their farms, 14% stayed 10-19 km away and used transport to get to the farm, while 2% stayed 20-40 km away and also made use of transport. Anseeuw and Mathebula (2008) found that projects were on average 48 km from the residences of land allocation beneficiaries.

In terms of the period of land utilisation, the results indicate that 20% of the participants had been using their farm land for less than 5 years, 16% for 5-10 years and 64% for more than 10 years.

The findings with regard to land ownership documents show that 6% of the participants had title deeds for their farms, 77% had Permission to Occupy (PTO) the land, 3% had a lease contract, 1% had PTO which still included trust members who had left the farm, and 13% had no document of any kind. Of the latter, some had been given their farm by the owner without any documentation and others were using the land free of charge and without any signed document.

In terms of farm size, 71% of the participants held less than 5 ha of farm land, 15% held 5-10 ha, 3% held 11-20 ha, 5% held 21-50 ha, 4% held 51-100 ha, and 2% had more than 100 ha. Figure 4.2 further shows that 6% of the participants had acquired land through land reform leasing and LRAD, 43% had received their land from traditional leaders, 13% had been allocated land by the lessor without any contract, 31% had inherited the land from their parents, 5% had acquired the land privately, and 2% of participants had occupied abandoned trust farms and were in the process of obtaining ownership from the tribal authority. According to Jayne *et al.* (2003), land access refers to land (including rented land) to which a household has usage rights, the main criterion being whether the land is utilised on a regular basis.



**Figure 4.2: Types of land ownership among the farmers who participated in the study (n=86)**

Source: Data from the study

#### 4.4 Land utilisation by farmers in the study

The degree of land utilisation by farmers who participated in the study is presented in Table 4.1. It can be seen that 74% of participants utilised all the farm land available to them. Some of those who did not farm all the land were leasing out the unused portions. Due to various challenges, 1% of the participants used only 20% of the available farm land, 13% were using 20-50% of the farm land, and the remaining 12% utilised 51-99% of their land. It can thus be seen that 26% of the farmers were using less than 50% of the land available to them. According to Binswanger-Mkhize (2014), the 2006 National Quality of Life Survey in South Africa reported that individually used plots were on average only 0.2 ha of 92.5 ha per farm. According to Jacobs (2003), lack of farming support after land allocation was responsible for under utilisation of farm land.

The results given in Table 4.1 indicate that 15% of the participants engaged in commercial farming, 13% were subsistence farmers and 72% practiced both commercial and subsistence farming (also referred to as food security projects).

In terms of type of farming activity, Table 4.1 shows that 88% of the farmers focused on plant production while 12% practised mixed farming. None of the farmers focused only on animal production. While 6% specialised in fruit production, 3% on vegetables and tubers, and 8% on maize or grains, the vast majority (83%) had more than one product, including legumes, fruits, vegetables and tubers, and maize. It was also found that 88% of participants included no animal production in their farming activities. Only 1% included egg production in their mixed farming, 6% included cattle production, 2% included pigs in their mixed farming, 3% included more than one animal or animal product, amongst them, sheep, pigs, cattle, broiler chickens and eggs.

Table 4.1 also shows the proportion of farm inputs purchased by the farmers with their own money. The results indicate that 11% of the participants purchased 20-50% of their farm inputs using their own money, 12% purchased 51-79%, and 10% purchased 80-99%. This was made possible by the support received from Government and other agricultural stakeholders, such as the Small Enterprise Development Agency (SEDA). Government assisted these farmers by providing fertiliser and seed, and by hiring tractors for the cultivation of a certain portion of the land. In addition, Government buys tractors for the farmers in land reform projects and provides netting for use as sun protection for plants.

Of the farmers in the study, 67% purchased all their farm inputs themselves, with no assistance from Government or any other agricultural stakeholder. Sekoto and Oladele (2012) reported LRAD farmers as being in dire need of input support.

In terms of product processing, 52% of the participants processed some of their products, in particular maize and dry beans, while 48% of participants did not process any of their products. The results also show that only 1% of the participants adopted new technology on their farms (in the form of a maize processing machine),

while 99% had not yet adopted any new technology. This finding confirms that of Jayne *et al.* (2010) who reported that it was very difficult for low income smallholder farmers to access new technology that would meet their farming needs.

**Table 4.1: Land utilisation by participants (n=86)**

<b>Proportion of farm land cultivated</b>	<b>Frequency</b>	<b>Percentage</b>
<20%	1	1
20-50%	11	13
51-99%	10	12
100%	64	74
TOTAL	86	100
<b>Type of farming</b>	<b>Frequency</b>	<b>Percentage</b>
Commercial farming	13	15
Subsistence farming	11	13
Both	62	72
TOTAL	86	100
<b>Type of Production</b>	<b>Frequency</b>	<b>Percentage</b>
Plant production	76	88
Animal production	0	0
Mixed farming	10	12
TOTAL	86	100
<b>Type of plant products</b>	<b>Frequency</b>	<b>Percentage</b>
Fruits	5	6
Vegetables and tubers	3	3
Grains	7	8
More than one product	71	83
TOTAL	86	100
<b>Type of animal products</b>	<b>Frequency</b>	<b>Percentage</b>
N/A	76	88
Eggs	1	1
Cattle	4	6
Pigs	2	2
More than one products	3	3
TOTAL	86	100
<b>Proportion of inputs bought with own money</b>	<b>Frequency</b>	<b>Percentage</b>
20-50%	9	11
51-79%	10	12
80-99%	9	10
100%	58	67
TOTAL	86	100
<b>Agri-processing</b>	<b>Frequency</b>	<b>Percentage</b>
Yes	45	52
No	41	48
TOTAL	86	100
<b>Adoption of new technology</b>	<b>Frequency</b>	<b>Percentage</b>
Yes	1	1
No	85	99
TOTAL	86	100

Source: Data from the study

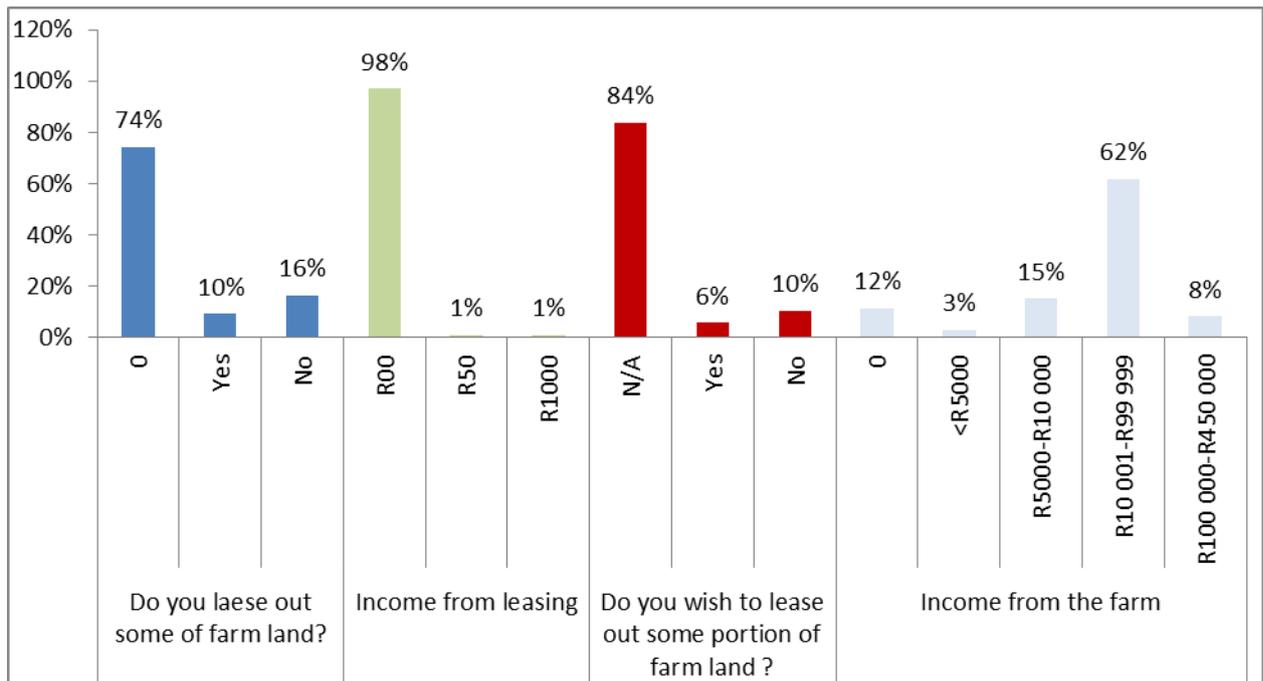
#### **4.5 Opportunities for generating income through land utilisation and leasing**

In order to optimise land utilisation, it is important that farmers who cannot cultivate all their land themselves lease out a portion of the farm to generate income. The results given in Figure 4.3 indicate that 74% of the participants were utilising all their farm land. Of those who were not, 10% leased out a portion of their land and 16% did not lease out any land, which meant that there was land that did not generate any income for the farmers.

The results indicate that 98% of the participants were not generating income through leasing out land. Of these, some managed to utilise the entire farm themselves, but there were also farmers who allowed other farmers to use a portion of their farm lands at no charge, and others who left some portion of their farms unutilised. Only 2% of participants generated income from leasing, but at varying rates. One percent of the participants leased out land at R50 per hectare per season, and another 1% leased out at R1 000 per hectare per season.

The results indicate that 12% of the participants were not generating any income from their farming. Among the remaining farmers, 3% generated less than R5000 per year, 15% generated R5000-R10000 per year, 62% generated R10 001-R99999 per year, and 8% generated R100000-R450000 per year. Anseeuw and Mathebula (2008) found that 15 projects generated income of between R1 and R100 000 per year, with 45% of the income coming from farm land lease.

While 6% of the participants reported that they wanted to lease out some of their unused land, they said that they did not know how to find potential lessees. Another 10% of the farmers did not wish to lease out any of their land because they were afraid of losing it to thieves. Others indicated that they would have utilised all their land if they had had sufficient capital, implying that as soon as they were able to access finances, their entire farms would be utilised to generate much more income.



**Figure 4.3: Generating income through land lease and the use of the land by farmers (n=86)**

Source: Data from the study

#### 4.6 Access of farmers to public agricultural extension services

The availability of public extension services for smallholder farmers is a fundamental factor in increasing the utilisation of farm land. Extension workers need to transfer skills to farmers and visit farms to understand and address the problems experienced there.

The access of the participating farmers to public agricultural extension services is shown in Table 4.2. The results indicate that 93% of participants had the skills needed for their farming activities, while 7% were totally unskilled. In terms of training and workshops, 22% of the participants had attended production training or workshops presented by the Citrus Growers Association, the Tomato Growers Association, NTK Landbou and Du Roi. Marketing workshops had been attended by 5% of the farmers, and 1% had attended a financial management workshop offered by the Department of Agriculture. Seven percent attended other training or

workshops held by SEDA, for example on seedbed or compost preparation, while 1% attended all the workshops offered by the Department of Agriculture and 12% had received training from Agri Pack, TechnoServe, SEDA, DTI, DRDLR and the Department of Agriculture. Of the participating farmers, 52% received no training because they were reportedly unaware of it.

Table 4.2 also indicates that 3% of participants required training in production methods, 1% needed marketing training, 1% needed financial management training, and 4% required training in other areas such as irrigation and pricing as a specific aspect of marketing. Older farmers (26% of the participants) did not attend any training, either because they were illiterate or because they felt they might have a problem with the language. However, 63% of participants needed training in all the above-mentioned areas, and 2% needed training in more than one area. Jacobs (2003) emphasised the importance of training in the development and sustainability of farming businesses.

As seen in Table 4.2, 69% of the participants received assistance from Extension Officers, 3% from other agricultural stakeholders, and 6% from both Extension Officers and other agricultural stakeholders. No assistance was reported by 22% of the participating farmers. Of the farmers who did receive assistance, 52% said that their problems had been solved, 40% that they had not been solved and 8% that they had been partially solved. These results are consistent with those of Jacob (2003) who recommended that extension services be expanded and improved in order to assist farmers with the information they needed about various farming activities. Haug (1999) also found that extension services did not address the most serious problems faced by farmers.

Table 4.2 indicates that 76% of the participants were visited by Extension Officers while 24% were never visited. One to five visits per season were received by 23% of the farmers, six to ten visits by 6% of the participants, and 47% received more than 11 visits per season. It was noted that most of the Extension Officers in the GTM have transport challenges as their car subsidy has expired. Jacobs (2003) found that

Extension Officers did not visit farms as expected in most of the provinces. This study shows that in the GTM, Extension Officers visited the same farms repeatedly, while other farms were not visited at all.

**Table 4.2: Access of farmers to public agricultural extension services (n=86)**

<b>Adequate farming skills</b>	<b>Frequency</b>	<b>Percentage</b>
Yes	80	93
No	6	7
TOTAL	86	100
<b>Training attended</b>	<b>Frequency</b>	<b>Percentage</b>
Production	19	22
Marketing	4	5
Financial management	1	1
Farm business management	0	0
Other	6	7
None of the above	45	52
All of above	1	1
More than one of the above	10	12
TOTAL	86	100
<b>Training needed</b>	<b>Frequency</b>	<b>Percentage</b>
Production	3	3
Marketing	1	1
Financial management	1	1
Farm business management	0	0
Other	3	4
None of the above	22	26
All of the above	54	63
More than one of the above	2	2
TOTAL	86	100
<b>Problems addressed by:</b>	<b>Frequency</b>	<b>Percentage</b>
Extension Officer	59	69
Other agricultural stakeholder	3	3
Both	5	6
None of the above	19	22
TOTAL	86	100
<b>Problem resolution</b>	<b>Frequency</b>	<b>Percentage</b>
Solution provided	45	52
No solution provided	34	40
Partial solution	7	8
TOTAL	86	100
<b>Extension Officer visits</b>	<b>Frequency</b>	<b>Percentage</b>
Yes	65	76
No	21	24
TOTAL	86	100
<b>Visits per season</b>	<b>Frequency</b>	<b>Percentage</b>
0	21	24
1-5 visits	20	23
6-10 visits	5	6
>11 visits	40	47
TOTAL	86	100

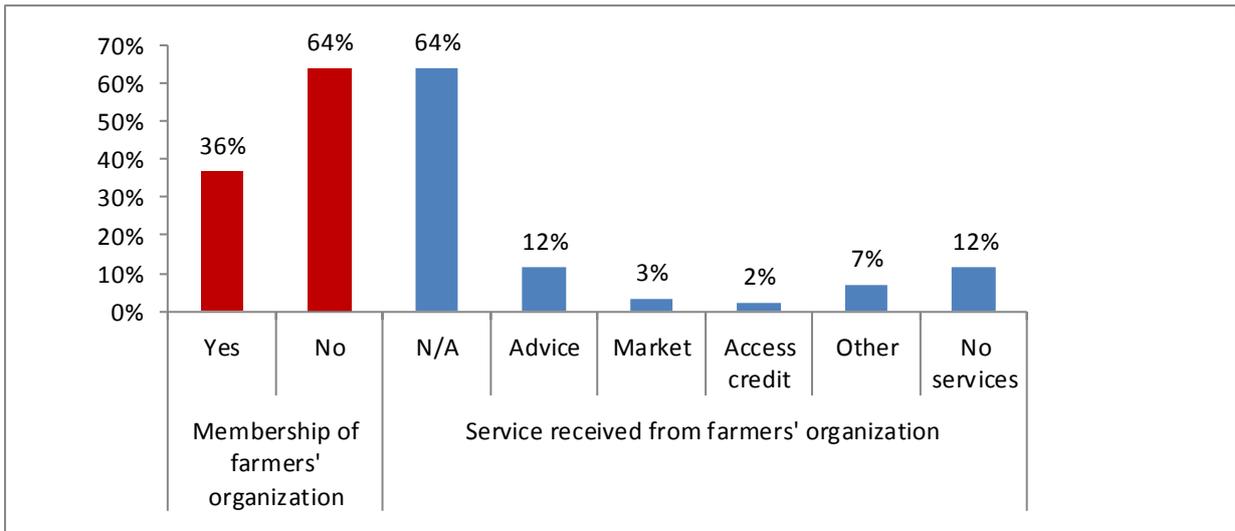
Source: Data from the study

#### **4.7 Membership of farming organisations**

Membership of farming organisations can have positive impact on farm land utilisation by enhancing the acquisition of skills, inputs and information.

Figure 4.4 shows that 36% of the participants were members of farming cooperatives while 64% did not belong to any organisation. Of the farmers who belonged to cooperatives, 12% received advice from their cooperatives, 3% also gained market access through the cooperatives, and 2% accessed credit. Seven percent reported benefitting from other services such as workshops, discounts on the purchase of production inputs and group access to assets, while 12% received no such benefits. According to one of the participants, poor management resulted in no benefits from the cooperative of which he was a member. The R5 million funding received by the cooperative had been used to pay a mentor who was not even helping on the farms.

In a study conducted by Anseeuw and Mathebula (2008), only 21 of the 164 projects were part of an associative institution. In addition to mentorship programmes, Jacobs (2003) noted that a mentorship system promoted by the Land Bank proposed paying R1 000 per month to each project. Jacobs further emphasised that mentors should be farmers from neighbouring farms, have previously farmed on the farm being mentored or have been an Agricultural Extension Officer for the Provincial Department of Agriculture.



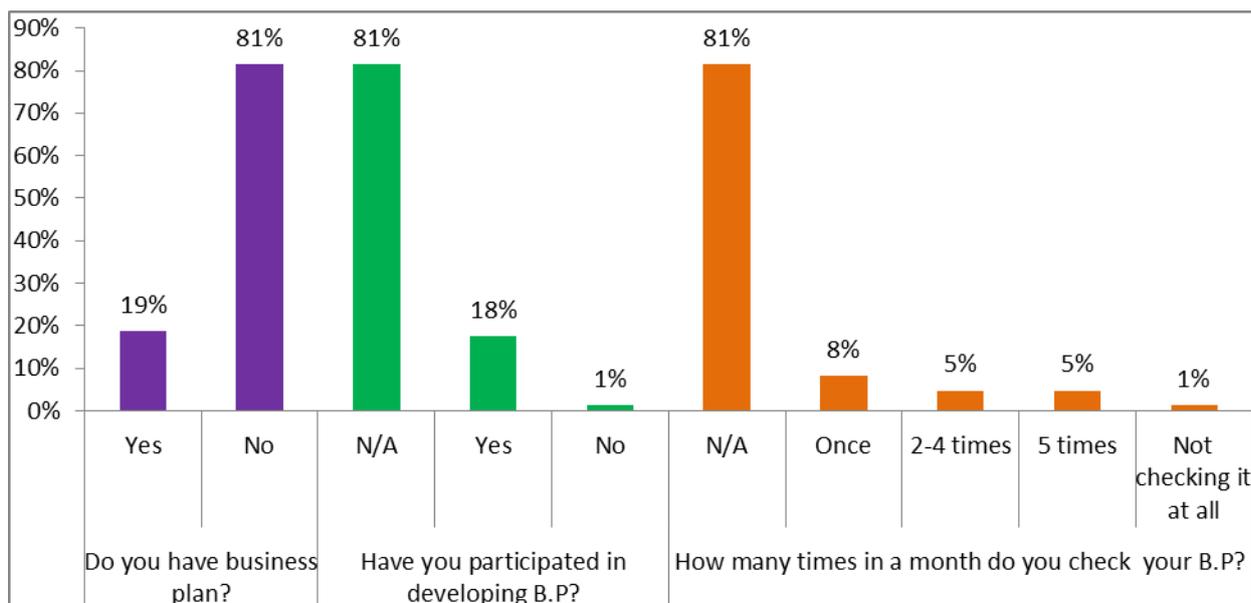
**Figure 4.4: Membership of farming organisations (n=86)**

Source: Data from the study

#### **4.8 Availability of feasibility reports and business plans for farmers**

According to Brinckmann *et al.* (2010), entrepreneurs must not underestimate the importance of business planning. Binswanger-Mkhize (2014) found that poor preparation and implementation of farming business plans resulted in poor farming performance.

As shown in Figure 4.5, 19% of the participants had business plans while a substantial 81% did not. Of those who had a business plan, 1% of the farmers did not participate in its preparation and 18% did. The results also show that 8% of the participants checked their business plans once a month, 5% checked two to three times a month, 5% checked five times a month, and 1% did not check them at all. It has been reported by Kariuki (2004) that lack of production investment weakens the implementation of farming business plans.



**Figure 4.5: Availability and use of farming business plans (n=86)**

Source: Data from the study

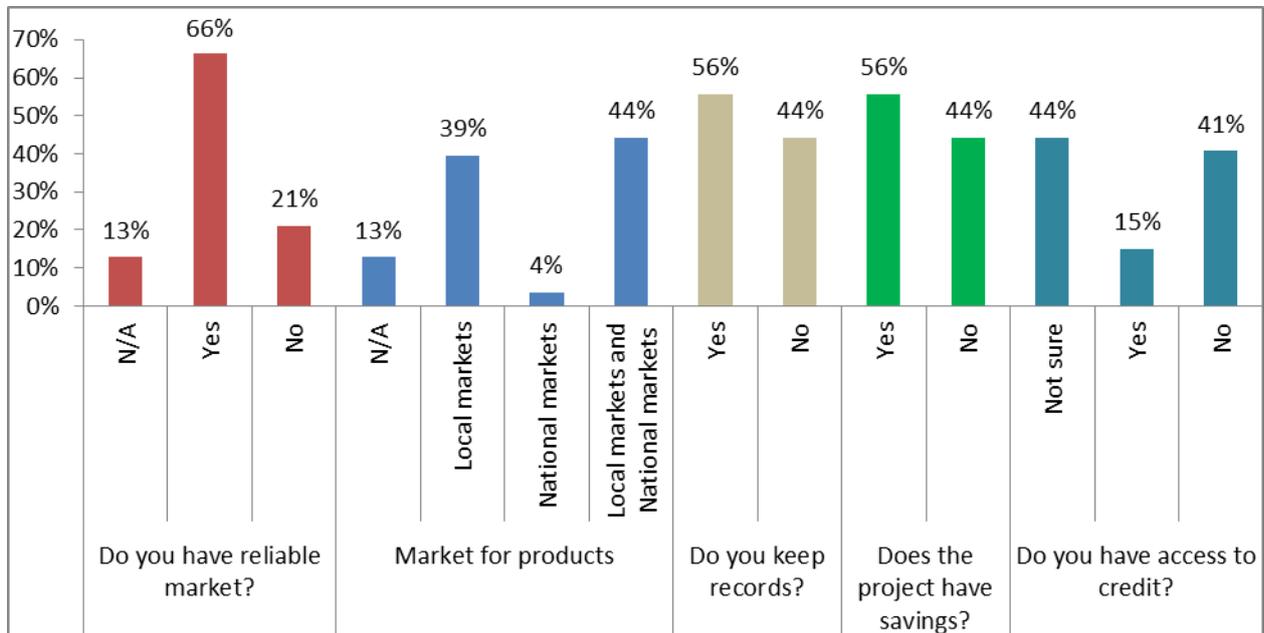
#### 4.9 Access of smallholder farmers to finance and agricultural markets

Magingxa and Kamara (2003) and IFAD (2003) reported that smallholder farmers see the market access system as a major obstacle to their improving their living standards. The results in Figure 4.6 show that 66% of the participants have a reliable market for their products, 21% of participants do not have reliable market access, and 13% have no market connections. In addition, it can be seen that 13% of the farmers did not market their products, 39% sold their products to the local market, 4% sold to the national market, and 44% relied on both local and national markets. Twelve percent of the farmers have strong market connections with various entities such as mango processors, Montana Achar, TechnoServe, MacDonalds, and with Indian businessmen in Durban.

The results indicate that only 56% of the participants keep a record of their farming activities. It is further indicated that 56% of participants are able to accumulate savings from their farm businesses. According to MacDonald *et al.* (2000), the pressure to maintain a steady stream of income from farming may result in an increase in the use of abandoned plots.

It can also be seen that 44% of the participants were not sure whether they would qualify for credit or not. They had never tried to access credit because they were afraid of high interest rates and getting into debt. Fifteen percent of the participants had access to credit, while 41% had been told that they did not qualify. Creditors require collateral which some of the poorer farmers do not have. Age was also a factor in getting credit from commercial banks, as some of the farmers were pensioners, and lack of business plans was a further challenge in this regard. Jacobs (2003) reported that trusts applying for credit from commercial banks had to furnish a business plan and guaranteed collateral or cash in hand.

Most of the participating farmers who managed to access credit were relying on TechnoServe and Lima Rural Development Foundation, organisations which facilitate access to credit as a production input for farmers as well as market access. The cost of production inputs that would have been given to the farmers is deducted from the farming income by the organisations. According to Jacobs (2003), agricultural sustainability depends on access to finance for production start-up and improvements in the farming business.



**Figure 4.6: Access of farmers to credit and produce market (n=86)**

Source: Data from the study

#### **4.10 Obstacles to productive land utilisation**

Jacobs (2003) reported that a community agricultural development project needed funding for land clearing, fencing and production in order to farm 0.5 hectares.

The results in Figure 4.7 indicate that for 1% of the participants, lack of assistance from an Extension Officer is a challenge, while 12% of participants see lack of finance as their major challenge. Water scarcity is a problem for 14% of the farmers.

Twenty eight percent of the farmers faced a number of other challenges, listed below.

- The high cost of electricity, production inputs, tractor rental and labour.
- Poor irrigation systems (lack of drip irrigation, water tanks and boreholes, continued use of furrow irrigation).
- Loss of plants due to lack of shade net covering.
- Lack of a tractor for thorough soil preparation.
- Delays in receiving funding from Government. (Some reported that they had been waiting a long time for promised funding from DRDLR).
- Veld fires and theft.
- Damage to plants by monkeys.
- Destruction of plants by weeds. A plant called “bore” was reported as being very dangerous to plants, particularly maize.
- Drought and diseases in terms of animal production.
- Lack of fencing.
- Market fluctuations.
- The cost of marketing, including market agent and transportation costs.

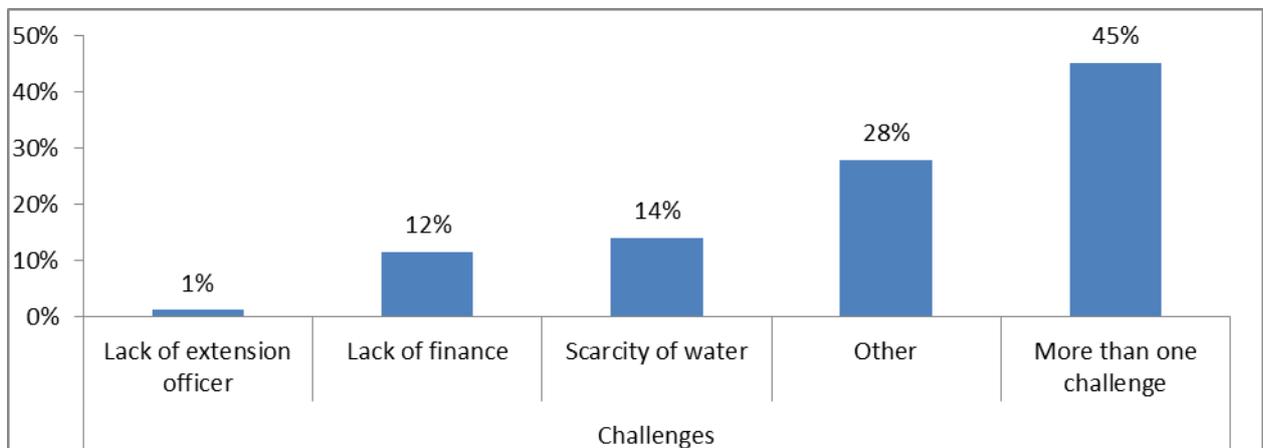
- Conflicts with market agents.
- Market risk. When products were returned because the quality was found wanting, farmers had to carry the cost of production, packaging and transport to market with no return on their investment. Only strong farmer support can help in this regard.
- Lack of access to a packing house resulted in some organic farmers losing a market contract with Pick n Pay.
- Poor roads.
- Poor poultry production infrastructure.
- Exclusion from Government policies on labour payments.

It was found that 45% of the participants had faced more than one challenge, with the primary ones being water scarcity and lack of credit or funding.

A major challenge reported by participants was related to the purchase by DRDLR of two 21 hectare farms for tenants who were previously farm workers. The land was initially a single 42 hectare farm owned by one white farming business man, and had been divided into two by the time the owner wanted to sell to Government. However, the division of the land was done in such a way that one farm had no water source at all while the other had two boreholes and a dam.

Lack of water obviously has a negative impact on productive land utilisation. This may be one of the reasons why the period in which the Land Reform Programme has been implemented has not been matched by productivity on the farms involved. Anseeuw and Mathebula (2008) and Lahiff and Cousins (2005) have noted that years after the establishment of the Land Reform Programme, farm lands have not shown development. This also illustrates how land reform beneficiaries are disadvantaged by the failure of Government to conduct proper feasibility studies before granting land to farmers. According to Anseeuw and Mathebula (2008), lack

of feasibility studies for land reform projects is one of the factors that contributes to the failure of these projects.



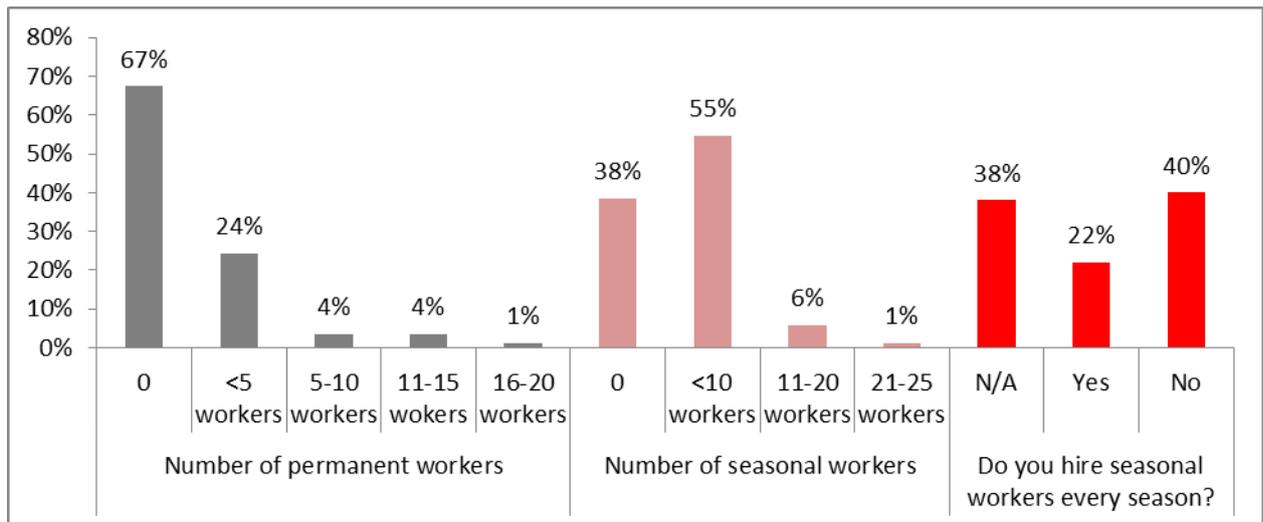
**Figure 4.7: Challenges to the utilisation of farm land by participants (n=86)**

Source: Data from the study

#### 4.11 Labour utilisation on the farms

The availability of labour has an impact on land utilisation since more workers are able to cultivate more land. What is more, there is a correlation between farm land utilisation and employment rates in the farming business. The greater the utilisation of land, the higher the employment rate. In this way, agri-business contributes to the mainstream economy in the country.

Figure 4.8 indicates that 67% of the farmers in the study have no permanent workers on their farms, 24% have fewer than five, 4% have 5-10 permanent employees, 4% have 11-15, and 1% have 16-20 permanent workers. Figure 4.8 also indicates that 38% of the participants never hired seasonal workers, 55% of participants had fewer than 10 seasonal workers, 6% had 10-20 seasonal workers, and 1% of participants had 21-50 seasonal employees. These results indicate that 22% of the participants have managed to provide seasonal workers with a job opportunity every season, whereas 40% of participants have not. It has been noted by Binswanger-Mkhize (2014) that 1 244 833 jobs were lost in agricultural employment and self-employment between 2000 and 2011.



**Figure 4.8: Labour utilisation on the farms (n=86)**

Source: Data from the study

#### 4.12 Results of Logit Model analysis

The Logit estimates for the effects of socio-economic factors on the probability of the farmers cultivating all their farm land are presented in Table 4.3. The convergence information of the iterations indicated that optimal solution was found. The Chi-square tests/Pearson Goodness-of-Fit Test was 393.419 and significant ( $p < 0.000$ ). In all, the results of the analysis of the Logit model had six coefficients which were statistically significant at the 5% level. The statistically significant coefficient estimates of the respective variables of the Logit model are thus discussed below.

**Table 4.3: Results of the analysis of the Logit Model**

Parameter	Coefficient Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Gender	-.184	.223	-.823	.411	-.621	.254
Age	-.015	.008	-1.807	.071	-.031	.001
Household size	-.025	.032	-.780	.435	-.088	.038
Period of using the land	.018	.010	1.767	.077	-.002	.037
Current farm size	-.003	.004	-.629	.529	-.010	.005
Stay on the farm	-.149	.390	-.381	.703	-.914	.616
Distance from house of residence to farm	.030	.215	.138	.890	-.391	.450
Income received per hectare from leasing	.001	.001	2.688	.007	.000	.003
Proportion of farm inputs purchased	-.011	.004	-2.817	.005	-.019	-.003
Process farm products (Yes=1, No=0)	.522	.210	2.487	.013	.111	.933
Adopted new technology (Yes=1, No=0)	.836	1.184	.706	.480	-1.484	3.156
Have skills pertaining to farming activities (Yes=1, No=0)	-1.328	.330	-4.028	.000	-1.974	-.682
Possess a farm business plan (Yes=1, No=0)	.033	.842	.039	.969	-1.618	1.683
Participated in developing business plan	.086	.845	.101	.919	-1.570	1.742
Have market linkage(s) (Yes=1, No=0)	.940	.807	1.164	.244	-.643	2.522
Extension Officer visits (Yes=1, No=0)	-.052	.282	-.185	.854	-.604	.500
Permanent workers on the farm (Yes=1, No=0)	.020	.051	.394	.693	-.079	.119
No. of Seasonal workers used last season	.044	.036	1.232	.218	-.026	.115
Hire seasonal workers every season (Yes=1, No=0)	.079	.245	.324	.746	-.401	.560
Have access to credit (Yes=1, No=0)	.228	.247	.924	.355	-.256	.712
Membership of farming cooperatives (Yes=1, No=0)	.178	.191	.928	.353	-.198	.553
Keep production, marketing and cash flow records (Yes=1, No=0)	-.127	.231	-.552	.581	-.579	.325
Annual farm income	.001	.000	4.223	.000	.000	.000
Savings (Yes=1, No=0)	1.787	.288	6.213	.000	1.223	2.351
Intercept	-2.207	1.207	-1.828	.068	-3.415	-1.000

a. Logit Model:  $\text{LOG} (p/(1-p)) = \text{Intercept} + \text{BX}$

Chi-square tests/Pearson Goodness-of-Fit Test = 393.419 ( $p < 0.000$ ).

#### **4.12.1 Income received per hectare from leasing**

The Logit coefficient estimate associated with the income received per hectare from leasing a portion of farm land is positive (0.001) and statistically significant ( $p < 0.05$ ), indicating that farmers increase their area of cultivation when there is an increase in the money received per hectare from leasing out. This may be due to the income realised from leasing being invested in expanding the cultivated area of the farm land. This result is consistent with that of Jacobs (2003) who found that livestock owners in Delindlela leased out 569 hectares of farm land in order to generate start-up capital. In the current study, 2% of the farmers in the study area leased out part of their farm land for income.

#### **4.12.2 Proportion of farm inputs purchased using own money**

The results of the analysis show that the estimate for proportion of farm inputs purchased with own money is negative (-0.011) and statistically significant ( $p < 0.05$ ), indicating that the area of farm land under cultivation decreases when an excessive amount of farm inputs are purchased by the farmers themselves. This may be attributed to the fact that the money used for to purchase farm inputs is not available for expanding cultivation activities. The implication is that assistance from Government to purchase production inputs may enable farmers to cultivate larger areas of their farm land because they have more income available for expansion. These results are consistent with those of Zeller *et al.* (1999) who found that the distribution of free maize seed by the government in Malawi had a significantly positive outcome on the share planted to hybrid maize.

#### **4.12.3 Processing of farm products (value adding to farm products)**

The estimates associated with the number of farmers who process their products is positive (0.522) and statistically significant ( $p < 0.10$ ), indicating that the income generated from processed products is high and is used to expand the area of cultivation on the farms. This may be due to the fact that processed products fetch higher prices than unprocessed products. This result is similar to that of Suryanata

(2000) who found that processed pineapple and macadamia nuts fetched the best prices in Hawaii.

#### **4.12.4 Skills pertaining to farming activities**

The coefficient associated with possession of farming skills is negative (-1.328) and statistically significant ( $p < 0.01$ ), indicating a correlation between increased skills and area of farm land cultivation. This may be due to the fact that the farmers lack access to credit or their own capital to expand farming activities, meaning that farming skills alone do not lead to increased cultivation area. The study revealed that the majority of the farmers (93%) had farming skills. This result is unlike that of Morgan *et al.* (2010) who found that each skill possessed by farmers had a direct positive effect of the development of the farming business.

#### **4.12.5 Annual farm income**

The estimate associated with the amount of annual income generated by farmers is positive (0.001) and statistically significant ( $p < 0.01$ ), indicating that an increase in annual farm income results in an increase in the area of cultivation on the farm. Jayne *et al.* (2003) found that 70-80% of the rural population source much of their income from agricultural practices. In the current study, 88% of the farmers reported an annual income of between R180 000 and R450 000.

#### **4.12.6 Savings from project**

The coefficient associated with the number of projects that generate savings is positive (1.787) and statistically significant ( $p < 0.01$ ), indicating that the area of cultivation increases with the amount of farming income saved. This result is similar to that of Lee *et al.* (1977) who found that increased private savings deposits in South Korean agricultural cooperatives provided large loanable funds. It was found in this study that 56% of farmers saved money from their farming projects.

#### **4.13 Chapter Summary**

The chapter presented the results of the study using descriptive and inferential analyses (Logit Regression Model). Results of the descriptive statistics used in this study indicate that the highest number (43%) of participants were pensioners, while the smallest number (6%) of participants were youth. The results indicate that 74% of the farmers fully utilised their farm lands, while 26% did not utilise the whole area of their farm land.

The constraints facing the farmers as identified by the study include water scarcity, lack of credit or funding, delays in receiving funding from Government, market fluctuations, and conflicts with market agents.

The results of the Logit Regression Model analyses indicate that, the amount received from leasing, value adding to products, annual farm income and savings have positive significant impact on the area of cultivation, while skills pertaining to farming activities and the proportion of farm inputs purchased with the farmer's own money have negative impact.

## **CHAPTER 5                    CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Summary**

The aim of the study was to investigate land utilisation and the challenges that affect the productive use of farm land allocated to smallholder farmers through the Land Reform Programme and by traditional leaders in the Greater Tzaneen Municipality.

As noted in chapter one, the specific objectives of the study were to:

- Analyse the demographic and socio-economic characteristics of farmers in the study area.
- Analyse the distribution of land among small and emerging commercial farmers in the study area.
- Analyse the extent of land under cultivation and the factors influencing land utilisation.
- Assess the access of small and emerging commercial farmers to finance, agricultural produce markets and public agricultural extension services.
- Assess the availability of feasibility reports and business plans among smallholder farmers.
- Examine the possibility of generating income through leasing out allocated farm land.
- Determine which factors impact on the annual farm production income of farmers.

Questionnaires were used as a basis for collecting data from 86 farmers through a structured interview schedule. The collected data was captured and statistically analysed using the Statistical Package for the Social Sciences (SPSS) Version 23, (2015). Descriptive statistics were used to summarise socio-economic information

about the participants. The Logit Model was used and six independent variables were found to have a significant impact on the proportion of farm land utilised by farmers.

## **5.2 Conclusions**

The results of the study revealed that the highest number (43%) of participants were pensioners, while the smallest number (6%) of participants were youth. The results indicate that 74% of the farmers fully utilised their farm lands, while 26% did not utilise the whole area of their farm land.

The data revealed that the main challenges faced by farmers were water scarcity and lack of funds. A plant called “bore” was also reported as being very dangerous to plants, particularly maize.

The results of the Logit Regression Model analyses indicate that, the amount received from leasing, value adding to products, annual farm income and savings have positive significant impact on the area of cultivation, while skills pertaining to farming activities and the proportion of farm inputs purchased with the farmer’s own money have negative impact.

## **5.3 Recommendations**

### **5.3.1 Identification of potential lessees**

The study shows that leasing out unused land has a positive impact on the proportion of land utilised and cultivated. Since farmers report having difficulty locating potential lessees, it is recommended that Extension Officers keep lists of potential lessees and potential lessors and that they facilitate communication between these parties.

It is also recommended that farmers who are not cultivating all their land consider leasing out a portion thereof in order to generate additional income. Furthermore,

Government should promote awareness among farmers of the advantages of leasing out unused land and provide training in leasing procedures in order to allay the fears that prevent farmers from generating additional income in this way.

### **5.3.2 Assistance with production inputs**

It is recommended that Government help smallholder farmers to obtain the production inputs they need to cultivate all the land they possess. The provision of incentives in terms of farm inputs and other production factors is also recommended. For example, Strijker (2005) found that lowering the price of fertilisers stimulated land utilisation in Western Europe.

Since processed goods fetch higher prices, it is also recommended that farmers invest in processing their farm products. Farmers were found to still be processing maize and beans in the traditional manner (simply removing the husk or shell) which does not require a great deal of investment. The fact that processing decreases the perishability of products may also be a factor in the positive impact of product processing on land utilisation found in the study.

### **5.3.3 Establishment of affordable loans and funding**

On the basis of the results of this study, it is recommended that Government address the main challenge facing smallholder farmers by making more affordable loans and funding available. Greater credit accessibility must also be accompanied by interest rates that are affordable for emerging farmers.

Wenner (1995) reported that in many countries, small rural landholders often do not have the title deeds for their land and are therefore unable to meet the strict collateral requirements when applying for credit. Sebopetji and Belete (2009) found that all the farmers who participated in a study in the Greater Letaba Local Municipality were cultivating on communal land, which meant that they had no land title deed. The current study also revealed that only 6% of the participating farmers in the Greater Tzaneen Municipality are in possession of a land title deed.

It was found by Binswanger-Mkhize (2014) that skilled farmers were not doing well due to poor post-settlement support. Matin *et al.* (2002) reported that in most parts of the world subsidised agricultural credit is seen as a key strategy in enhancing economic growth and alleviating poverty. The current study also recommends that farmers overcome their fears about taking out agricultural loans when they need capital to improve their farming businesses. Agricultural credit was shown to play a major role in support for farmers in India (Mohan, 2006).

According to Hellin *et al.* (2005) many market chains are characterised by inequitable relationships between partners, so market mapping methods that are clearly aimed at helping stakeholders can improve the chain system in a way that is beneficial for all parties. It is recommended that Government intervene to resolve disagreements between farmers and product market agents and to help farmers understand what the market requires of them. Good relationships between farmers and market agents will encourage farmers to sell to the national market and further enhance their income generation.

It is also recommended that farmers be helped to obtain the infrastructure they need, such as packing houses which would help organic farmers regain lost market contracts and improve their income.

#### **5.3.4 Money saving awareness**

While available savings have a positive impact on the area of cultivation, it remains difficult for low income farmers to save money. According to Matin *et al.* (2002), it is important for even the poorest to put aside some savings from their source of income. Small scale and subsistence farmers need to contribute to income generation or savings as well as to the promotion of food security (Altman *et al.*, 2009), and it is recommended that agricultural officials launch money saving awareness campaigns in the farming communities of the country.

#### **5.4 Future research**

One of the findings in this study was that “bore” plants are damaging crops, particularly maize crops. A possible area for future research would be the identification of plants that are poisonous to cultivated crops.

In light of the finding that some farmers have been granted land without water sources (not even drinking water), the feasibility studies conducted before land allocation through the Land Reform Programme should be investigated for completeness and accuracy.

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## APPENDIX 1

### LAND UTILISATION BY SMALL AND EMERGING COMMERCIAL FARMERS IN THE GREATER TZANEEN MUNICIPALITY IN MOPANI DISTRICT OF LIMPOPO PROVINCE

Questionnaires to be completed by Agricultural land utilizers (farmers) in Tzaneen municipality.

Farmers' free will and consent for their participation in the study will be respected. The study will carefully handle the interaction with farmers on the matter. Each farm's information will be managed privately.

#### QUESTIONNAIRE FOR SOLE FARM BUSINESS

##### 1. PERSONAL INFORMATION OF THE FARMERS

1.1 Farm No. / Questionnaire No. ....

1.2 Gender. ....

1.3 Age.....

1.4 Household size.....

1.5 What is your marital status? .....

1.6 Level of Education

No formal education	
Primary education	
Secondary education	
Tertiary education	

1.7 Do you stay on the farm? Yes No

1.8 If no from question 1.7, how long is the distance of farm from house of residence?

Less than 20 km	
20-40 km	
More than 40 km	

**2. LAND/FARM INFORMATION**

2.1 When was land acquired? .....

2.2 What kind of land ownership document do you have?

Title deed	
Permission to occupy the land (PTO)	
Lease or other specify	

2.3 What is your farm size?

Less than 5 hectares	
5-10 hectares	
11-20 hectares	
21-50 hectares	
51-100 hectares	
More than 100 hectares	

2.4 Who allocated the land to you?

Land Reform Program	
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Traditional Leader	
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2.5 What type of farming are you practising on the land?

(a) Commercial farming	
(b) Subsistence farming	
Both (a) and (b)	

2.6 Do you manage to farm the whole hectares of the land? Yes or No

2.7 If no from question 2.6, what proportion of the land do you cultivate?

.....

2.8 If no from question 2.6, do you take some hectares of your land to lease?

Yes or No

2.9 If yes from question 2.8, how much do you receive per hectare from leasing?

.....

2.10 If no from question 2.8, do you wish to take some hectares of your land to lease? Yes or No

### 3. FARMING INFORMATION

3.1. Type of production per hectare

Type of Production	Hectare
Plant production	
Animal production	
Mixed production	

3.2 If you farm with plant production, what are those products and how many tons or bags do you produce per season? Please state.

Products	Ton per season or Bag/kg per season	Quality (grade of the products)	Income per Bag/Kg	Proportion sold

3.3 If you are farming with animal production, what are those and how many do you produce per circle or per year?

Products	Volume/circle	Weight	Grade	Animal Income	Proportion sold
Broiler chicken					
Indigenous chicken (Layers)- eggs					
Sheep					
Goats					
Cattle					
pigs					

<b>Other, specify</b>					
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3.4 What proportion of the farm inputs do you purchase? .....

3.5 In addition to livestock, do you produce the following from your livestock production? If yes, please indicate volume per litre or kg per year.

<b>Products</b>	<b>Income</b>
Wool	
Leather	
Milk	

3.6 Do you process your products? If yes, what do you process and how? Please specify

<b>Primary products</b>	<b>Processed products</b>

3.7 Has the project adopted a new technology? If yes, what is it? Please specify

.....

3.8 Do you have skills pertaining to your farming activities such as the following? Please indicate with X in the relevant blocks.

<b>Skills</b>	<b>Yes</b>	<b>No</b>
Vegetable production skill		
Fruits production skill		

Grain production skill		
Broiler production skill		
Layers production skill		
Livestock production skill		
Agro-processing skill		
Other, specify		

3.9 What trainings have you attended? Please specify

.....

3.10 What training do you need to improve your farming skills? Please mark with X the applicable blocks.

Production training	
Marketing training	
Farm business management training	
Financial management training	
Other, specify	

3.11 Do you have a farm business plan? Yes or No

3.12 Have you participated in developing business plan? Yes or No

3.13 How many times in a month do you compare your farm business plan with your farming process to check if you stick on it? Please put X in the relevant bock.

Less than 2	
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2-3	
5	

3.14 Do you have reliable markets for the products? Yes or No

3.15 Where do you market your products? Please indicate with X in the relevant blocks.

Local market	
National market	
Global market (export)	
Other, specify	

3.16 Do you have a market linkage?

.....

3.17 What challenges do you face in your farming activities? Please mark with X the applicable blocks.

Lack of extension officers	
Inappropriate business planning	
Lack of finance	
Unavailability of market	
Lack of infrastructure	
Other,specify	

3.18 Who attend to your problems? .....

3.19 Do the problems get solution? .....

3.20 Do extension officers visit the farm? How many times do they visit per season?

.....

#### 4. JOB CREATION/ LABOUR INFORMATION

4.1 How many permanent workers do you have in your farm?

Less than 5	
5-10	
11-15	
16-20	
More than 20	

4.2 How many seasonal workers do you hire per season?

Less than 10	
10-20	
21-50	
More than 50	

4.3 Do you hire seasonal workers every season? Yes or No

#### 5. ECONOMIC VIABILITY INFORMATION

5.1 Do you have access to credit? Yes or No

5.2 Are you a member of a farmer's cooperatives or union? Yes or No

5.3 If yes from question 5.2, what services do you receive from the organisation?

5.4 Do you keep production, marketing and cash flow records? Yes or No

5.5 How much income do you generate from your products per year?

.....

5.6 Does the project have savings? Yes or No

**Thank you for your participation.**