



DETERMINANTS OF ACCESS TO FARM CREDIT BY EMERGING

FARMERS OF THULAMELA LOCAL MUNICIPALITY, SOUTH AFRICA

By

WILSON CHIVENGE (11564053)

M.Sc. Agricultural Economics



University of Venda

A Dissertation in the Department of Agricultural Economics and Agribusiness

Submitted to the School of Agriculture in partial fulfilment of the requirements

For the Degree of

MASTER OF SCIENCE IN AGRICULTURAL ECONOMICS (MSc. AEC)

AT

THE UNIVERSITY OF VENDA

Supervisor : Dr P.K Chauke

Co-Supervisor : Mr T.K Pfumayaramba

June 2013

UNIVEN LIBRARY

Library Item : 20141405



## Dedication PAGE

This dissertation is dedicated to the thirtieth (30<sup>th</sup>) matrimonial anniversary of my parents, Violet and Davison Chivenge.

(Supervisor)

P.K. Chivenge Ph.D. (Univen)

Head of Department in the Department of  
Agriculture, Economics and Agribusiness,  
University of Venda

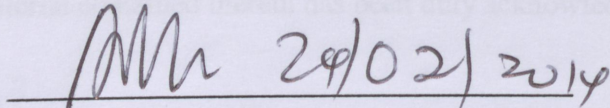
(Co-Supervisor)

Mannyaramba T.K. (M.Sc. Agriculture and  
Applied Economics, UZ)

Lecturer in the Department of Agriculture  
Economics and Agribusiness, University of  
Venda

## CERTIFICATION PAGE

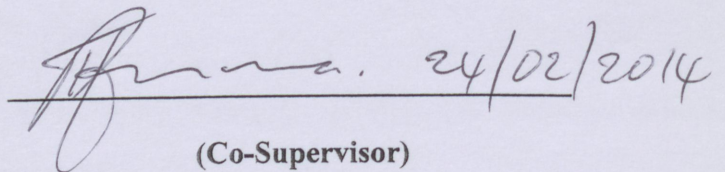
I certify that Mr Wilson Chivenge carried out this work in the Department of Agriculture Economics and Agribusiness at the University of Venda.

  
\_\_\_\_\_

(Supervisor)

**P.K Chauke Ph.D. (Univen)**

**Head of Department in the Department of  
Agriculture Economics and Agribusiness,  
University of Venda**

  
\_\_\_\_\_

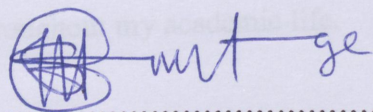
(Co-Supervisor)

**Pfumayaramba T.K (M.Sc. Agriculture and  
Applied Economics, UZ)**

**Lecturer in the Department of Agriculture  
Economics and Agribusiness, University of  
Venda**

## DECLARATION

I, Chivenge Wilson hereby declare that this mini-dissertation for the Master of Science in Agriculture Economics degree at the University of Venda, hereby submitted, has not previously been submitted for a degree at this or any other university, and that it is my own work in design and in execution and that all reference material contained therein has been duly acknowledged.

  
**Signature:** .....

24/02/2014  
**Date:** .....

## Acknowledgements

Firstly and foremost I would like to thank the Almighty God, for the special gift of life and health, loyalty, spirit, dedication and diligence that he has granted me throughout my entire academic life. I am indeed someone who personally never liked school in life. Coming to school was not an option for me or rather it was not my idea in the first place, yet because of inspiration here I am. I therefore intend to specifically thank God and all the people who encouraged and inspired me throughout my academic life.

I hereby wish to acknowledge contributions by several others to whom I must admit that I share with them the ownership of these works. First and foremost I would like to convey my gratitude to my academic supervisors. My heartfelt gratitude is expressed towards Dr P.K. Chauke, for the patience he has shown on me. I already understand how you took me and raised me up in your company, when you nominated me for a grant subsidy, which I incompletely qualified for. I would like to say keep up the good work and I pray that the almighty God should richly bless you. A special thanks to you Mr T.K Pfumayaramba, had it not been for the selfless support and effort you devoted into this project, I would have not been successful. Irrevocable thanks to you my church elders, Mr Adiel Chikobvu and Humbelani Mercy Netshandama for the encouragement, discipline, and guidance during this project.

Thanks to my parents for support and motivation, this work is dedicated to your thirtieth matrimonial anniversary. My family members and friends I have seen the passion you have for me to be successful and I guess I should say I am proud of you, thank you very much. My friends; Livhuwani Nemutalu, Avhashoni Mudzanani, Pfanani Mulamuli, Robert Kajambeu and Thabelo Mathoho, the fundamental development of this project vested on your shoulders. I pray that the Almighty God should bless you all, because you became major role players for my research. I would like to thank all members of the Department of Agriculture in Vhembe District, all agricultural extension Advisors and assistants of all sectors I ever visited, thank you for making me a star in this project. This project was funded by the National Research Foundation (NRF) and Research Publications Committee (RPC), a special thanks to these bodies for financial support. Above all, to the Almighty God should be all the glory.....Amen!!

## ABSTRACT

*This study was conducted in the Thulamela Local Municipality of South Africa to investigate key determinants of access to farm credit. This involved a systematic random sampling of 175 respondents from the study area. Logistic regression model was used to analyse data. Structured questionnaires with both closed and open-ended questions were used to collect data while for the study. Data collected by structured questionnaires were captured into Excel spread sheets and the SPSS Version 19.0 IBM programmes and analysed through descriptive, inferential statistics and Logistic regression techniques. Major findings of the study were linked to lower youth participation and dominance in the agricultural sector by retired elderly people with low literacy levels. Most farmers had large families with unemployed family heads who drew their incomes mainly from pension, remittances and government grants. Most of these emerging farmers in the Thulamela Local Municipality accessed agricultural training, extension, and market for produce however they possessed expansive farming experience. Several other major factors affected these farmers as were new market entrants in the agricultural value chain. Among other negligible factors, location of the farm project, age of the farmer, farm income, expenditure and the credit amount applied were found to be the key determinants of access and supply of farm credit. Farmers located further away from their service centres had better chances for farm credit access. Farm income increased because of more credit access while limited expenditure was associated with no farm credit. The study recommends strategies leading to improved access and supply of farm credit by emerging farmers. On the other hand attracting, training and mentoring youths to participate in agriculture as well as educating and training elderly farmers would help solve problems of limited education and expansive experience. The following were proposed as tasks for further research i.e. investigating access and supply of credit from an agribusiness point of view and examination of limitations in donor activity (NGOs) in the supply of financial resources to South African emerging farmers.*

**Key Words:** *Access to credit, Credit constraints, Farm credit, emerging farmers*

## Table of Contents

ITEM	PAGE
List of tables .....	viii
List of figures .....	viii
ACRONYMS .....	ix
CHAPTER 1: INTRODUCTION.....	1
1.1 Background.....	1
1.2 Research study conceptualisation (Mind Map).....	5
1.3 Statement of the research problem.....	6
1.4 Justification of the study .....	7
1.5 Research objectives .....	8
1.6 Study questions.....	8
1.7 Research hypothesis .....	9
1.8 Limitations of the Study.....	9
1.9 Chapter Summary .....	10
1.10 Definition of key terms .....	11
CHAPTER 2: LITERATURE REVIEW .....	14
2.1. Introduction.....	14
2.2 Access to credit by commercial, emerging and small-scale farmers .....	14
2.3 Supply of farm credit to emerging commercial and small-scale farmers .....	18
2.4 Challenges related to demand and supply of farm credit.....	22
2.5 Summary .....	24
CHAPTER 3: RESEARCH METHODOLOGY.....	26
3.1 Introduction.....	26
3.2 Research Design .....	26
3.3 Description of the study area .....	27
3.4 Population and sampling technique .....	28
3.5. Data collection.....	29

3.6. Data analysis .....	30
3.6.1 Descriptive statistics.....	30
3.6.2 Empirical model .....	30
3.7 Ethical considerations.....	33
3.8. Analytical framework .....	35
3.9 Chapter summary .....	36
CHAPTER 4: RESULTS AND DISCUSSIONS.....	37
4.1 Introduction.....	37
4.2 Demographic characteristics.....	37
4.2.1 Location of the farm project .....	37
4.2.2 Age Distribution among emerging farmers.....	39
4.2.3 Gender of emerging farmers .....	40
4.2.4 Farmers' Level of Education .....	41
4.2.5 Marital status of the farmers .....	43
4.2.5 Household size, income generation, and farming experience .....	44
4.2.6 Occupational background.....	45
4.3 Determinants of access to farm credit .....	46
4.3.1 Formal sources of farm credit for emerging farmers .....	46
4.3.2 Sources of credit information.....	47
4.3.3 Agricultural training received and Training organisations .....	48
4.3.4 Access to produce markets .....	50
4.3.5 Access to extension services versus Access to credit .....	50
4.4 Inferential Statistical Analysis .....	51
4.4.1 Logistic Regression Model.....	51
4.5 Discussion of the results .....	53
4.6. Chapter Summary .....	60
CHAPTER 5: .....	60

SUMMARY, CONCLUSION AND RECOMMENDATIONS .....	60
5.1 Introduction .....	60
5.2 Summary of findings .....	60
5.3 Conclusion .....	61
Recommendations of the study findings .....	62
5.5 Limitations and Further Areas of Research .....	63
REFERENCES.....	64
APPENDIX A: THE QUESTIONNAIRE .....	68
APPENDIX B: RESULTS OF LOGISTIC REGRESSION .....	76

### List of tables

Table 3.1: Description of modeled variables.....	32
Table 4.1: Access to credit by famer's age.....	39
Table 4.2: Access to credit by gender distribution .....	40
Table 4.3: Access to credit by Level of education of emerging farmers .....	42
Table 4.4: Household sizes, income and experience of emerging farmers.....	44
Table 4.5: Information provision regarding farm credit for emerging farmers .....	47
Table 4.6: Access to credit by agricultural training received .....	48
Table 4.7: Access to credit by Farmer training organisations .....	49
Table 4.8: Access to credit by Market access.....	50
Table 4.9: Access to credit and Extension services received.....	51
Table 4.10: Logistic regression estimation of determinants of Credit Access and Supply.....	52

### List of figures

Figure 3.1: Map of Vhembe District showing the Local Municipalities .....	27
Figure 4.1: Access to farm credit by Location of farm projects .....	38
Figure 4.2: Percentage distribution of emerging farmers by Level of education.....	41
Figure 4.3: Distribution by Marital status of emerging farmers .....	43
Figure 4.4: Occupation backgrounds of emerging farmers. ....	45
Figure 4.5: Distribution by Formal Sources of Credit for Emerging Farmers.....	46

## ACRONYMS

AFA	African Farmers Association
AFC	Agricultural Finance Corporation
ASCAs	Accumulating credit Associations
BEE	Black Economic Empowerment
CRS	Catholic Relief Services
DBSA	Development Bank of Southern Africa
DFIs	Development Finance Institutions
ESAPs	Economic Structural Adjustment Policy
GDP	Gross Domestic Product
GFI	Gross Fixed Investment
ILC	Interlinked Credit Schemes/Programmes
LRAD	Land Redistribution for Agricultural Development
MAFISA	Micro-Agricultural Finance South Africa
MDG	Millennium Development Goals
NGO	Non-Governmental Organisation
RDP	Reconstruction and Development Programme
RDG	Restitution Discretionary Grant
ROSCAs	Rotating Savings and Credit Associations
RPA	Recursive Partitioning Algorithm
RSA	Republic of South Africa
SEF	Small Enterprise Foundation
SIDA	Sub-Country Integrated Development Association
SLAG	Settlement/Land Acquisition Grant
UK	United Kingdom
USA	United States of America

## CHAPTER 1: INTRODUCTION

### 1.1 Background

Agriculture continues to be an integral part of the livelihoods of many poor people and, "it is frequently argued that agricultural growth is a prerequisite for alleviating widespread poverty" (Urey *et al.*, 2004:9). In South Africa, agriculture is a primary means of production and subsistence for those who were previously deprived of access to resources by the apartheid government (Kirstern, 2006; Valente, 2009). However, the level of fiscal investment is what particularly transforms agricultural production (Briggerman & Akers, 2010). Modern agricultural practices and techniques have to be backed by the application of human resources and machinery power which all depend on financial-capital (Crane, 2006). According to Crane (2006), most of the developing countries lack access to economic resources to alleviate poverty and increase incomes. Conversely, the developed world understands farm credit as neither income nor capital but as an input-investment leading to income generation if properly utilised (Jayne *et al.*, 2004). Accordingly, developed countries see credit programmes mechanisms to increase the flow of financial capital that provide command over resources by the rural sector. It is inherent to agricultural development however, that even in the developed states credit markets also work imperfectly due to continued economic transitions. Commercialisation, deregulation, liberalisation of markets, and economic structural adjustments are the major imperatives that have been experienced in the economic expansion worldwide (Argent, 2000; Petrick, 2004).

Agricultural market failures in developing countries are also a consequence of a shortage of physical (land, labour, machinery, etc.) and financial resources (cash, credit, etc.), low levels of productivity, and low investments (Karmakar, 2003; Jayne *et al.*, 2004). In the case of South

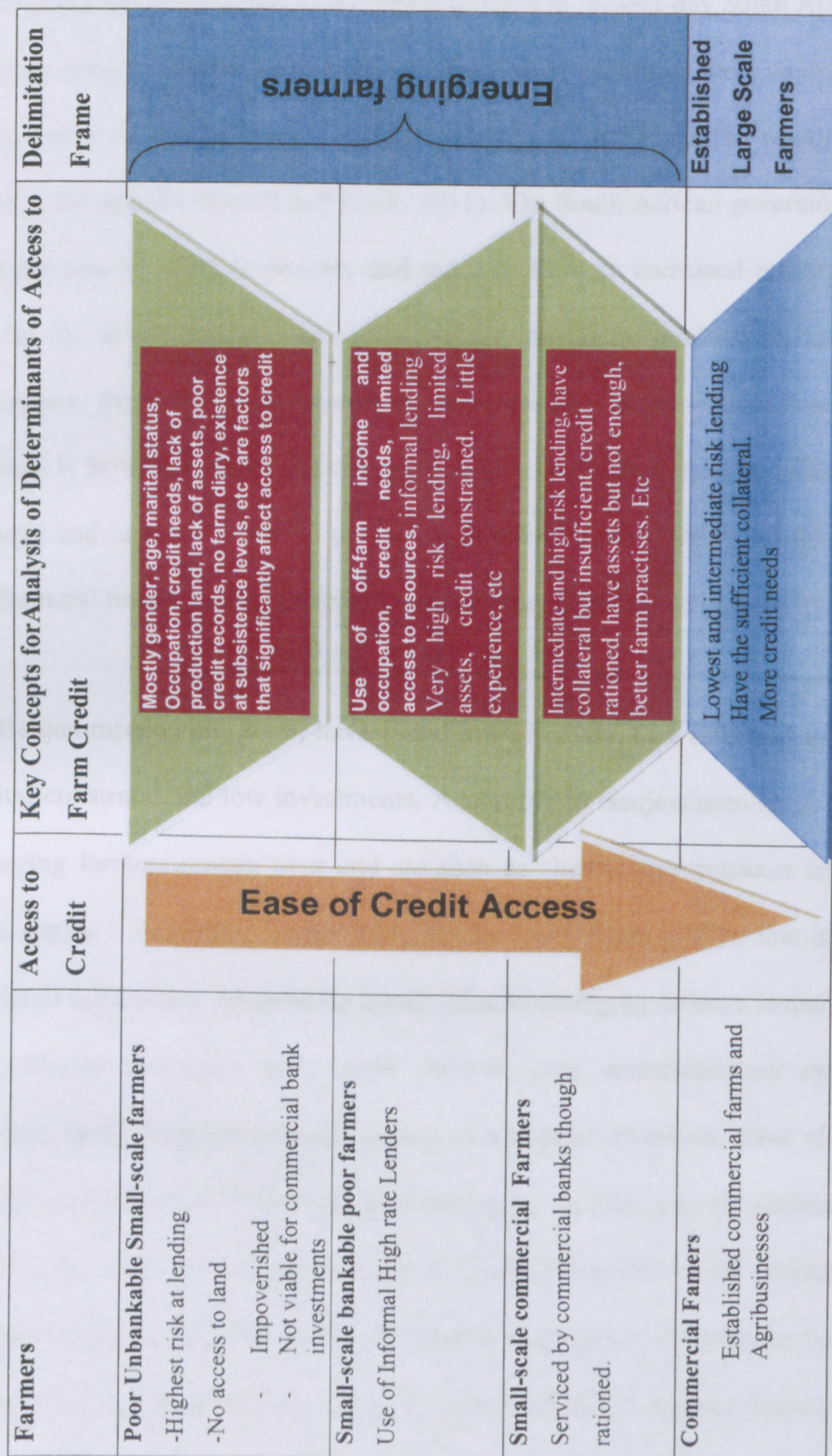
Africa, lack of relevant production skills by black emerging farmers has been ascribed to the apartheid legislation (Zimmerman, 2000). Colonial exploitation of South African blacks has co-existed with credit access constraints that currently persist. South African blacks were deprived of most of their rights, ranging from education, water, land, livestock, accessing markets (for credit and produce, etc.) and other indispensable resources (Land Bank, 2011).

Colonial rule is believed to have left a legacy of black-white education gap that extended from denial of proper education for blacks, to managerial abilities in economically meaningful ways (Zimmerman, 2000; Barnad, 2005). White commercial farming was supported by the State and institutions such as the South African Land Bank, other financial institutions, marketing boards, the cooperative movement, organised agriculture, research and input supply institutions, as well as a strong political lobby (DBSA, 1994; Zimmerman, 2000). Current credit reform programmes and liberalisation of markets in the agricultural sector have not been significant in catering for the exploitation of black South Africans (Zimmerman, 2000). Although the South African agricultural markets for finance input and output became liberalised, it brought about limited benefits to emerging farmers' access to financial resources (Vink & Kirsten, 2000; Peters, 2009). This kind of support has never been available to black emerging small-scale and medium entrepreneurs and farmers (DBSA, 1994; Zimmerman, 2000; Kelly *et al.*, 2003; Land Bank, 2011). The above emanate from the fact that black South Africans were for a long time deprived of most of their rights including other indispensable resources that extend from denial of proper education for blacks, to managerial abilities in economically meaningful ways (Zimmerman, 2000; Barnad, 2005; Collins, 2005; Land Bank, 2011). Therefore, Zimmerman (2000) noted that, lack of access to financial resources, education, skills and economic opportunities among black emerging entrepreneurs and farmers, is and should be ascribed to apartheid consequences.

South Africa, on the verge and after its political independence of 1994, has undergone economic transformations, i.e., the Economic Structural Adjustment Programs (ESAPs) of the International Monetary Fund (IMF), which include the liberalisation of Agricultural sector that took place in the early 1990s. Most importantly, the Agricultural Marketing Act of 1968 was amended by means of Deregulation of Agricultural Markets in the Act of 1996 (Vink & Kirsten, 2000; Urey *et al.*, 2004; Crane, 2006; Land Bank, 2011). Deregulation and liberalisation of the agricultural sector encouraged larger investments that led to the ease of entrance by emerging farmers into the Agri-value chain (Land Bank, 2011). Contrarily, deregulation and liberalisation posed the withdrawal of direct state support to the agricultural sector. Consequently, the poor emerging farmers were left out, with no opportunity to compete on the market with larger and established agribusinesses or to satisfy bank loan requirements (Vink & Kirsten, 2000). In facing such exogenous challenges, in South Africa, for emerging farmers; it requires an informed course of action for emerging farmers, to ensure social welfare and equity.

In the Limpopo Province of South Africa, several studies on small-scale and emerging farmers have been carried out. However, it can be noted that these hardly addressed the factors affecting emerging farmers' access to credit. Moloï (2008) conducted a research on the socio-economic characteristics and constraints that hindered farm productivity of emerging farmers, with no focus on their access to credit. This study recommended further research of other constraints faced by small-scale farmers in the area. The Land Bank (2011) also studied emerging farmers in the Limpopo Province, yet focused on addressing the challenges encountered in financing emerging farmers.

## 1.2 Research study conceptualisation (Mind Map)



**Figure 1.1: Mind Map** Source: Researcher (Adapted and Modified from Letsoalo (1987))

### 1.3 Statement of the research problem

Redressing the inherited inequalities of apartheid has meant a difficult and challenging context for meeting the credit needs of emerging farmers in present-day South Africa. Emerging farmers are new entrants into the agriculture value chain. By definition these were previously denied both participation in the primary means of production and access to resources and economically meaningful opportunities (Land Bank, 2011). The South African government, as a result, has the ultimate aim to alleviate poverty and inequity through increased access to resources by those previously disadvantaged. This will ensure optimum productivity and increased income-generation. Provision of full access to resources (i.e. skills, training, credit, etc.) for emerging farmers is how the South African government has tasked itself to address the needs, hunger, poverty and inequality for the previously disadvantaged. Despite all government provisions to the farmers' needs, several factors determine emerging farmers' access to credit.

As Benjaminsen et al. (2008) have found in their study, lack of access to credit is paramount to capital-constraint and low investments. According to Benjaminsen *et al.* (2008) small-scale and emerging farmers remain poor and are seen as "heroic entrepreneurs caught in an impasse of dead capital." According to the study by the Land Bank (2011), low investments and limited access to agricultural finances by South African emerging farmers is mainly due to such factors as collateral shortages, poor credit records, poor communication systems and inadequate business skills, together with the legacy of apartheid. However, most of the significant factors that determine access to farm credit by emerging farmers are still unidentified. This results in a severe gap which this research seeks to close. Furthermore, this research intends to provide recommendations to policymakers in establishing increased access to farm credit by emerging farmers. In exploring the study, the relevant question for research remains i.e. what are the key

determinants of access to credit by emerging farmers? This study is not the first of its kind. However, it intends to pave inroads for increasing access to finances by emerging farmers in the Thulamela Local Municipality of South Africa.

#### **1.4 Justification of the study**

The study by Chauke and Oni (2004), clearly showed that small-scale farmers are important in employment-creation, poverty-reduction and income-generation for better community livelihoods. Therefore the main objective of improving the livelihoods of those previously disadvantaged should be put forward through finding strategies for increasing access to resources. Thus, this study mainly sets out to identify key determinants of access to farm credit, comparing farm incomes of emerging farmers with access and with no access to credit and thus provide policy recommendations for improving access to credit by emerging farmers.

Increased access to finances by the farmer increases the bargaining power for asset acquisition, the purchase of inputs and marketing of the output. The first conflict would be based on determining whether farmers have access to farm credit or not and to what extent. Deductions of key factors and conclusions of the problem are made from logistic models and experimental comparisons of average profit for farmers with and without access to credit. A determination of the factors that affects access to credit precedes the deduction of the policy recommendations. This is because the fiscal investment of the farmers and farm diversity directly depend on accessibility to farm credit.

Therefore, in order to establish a foundation grounded on data-based policy recommendations, a research survey of this nature is necessary. According to the review done by the researcher, there is scarcity of scientifically generated information that can be used to provide policy

recommendations for improving access to credit to farmers. This research is thus launched to fill the gap.

### 1.5 Research objectives

The broad objective of the research is to establish the key determinants of access to credit by emerging farmers in the Thulamela Local Municipality. The following specific objectives are the guidelines of this study:

- (a) To determine the association between the biographical characteristics of the farmers (age, gender, education, marital status, income, income sources, family size, occupation, farm experience and location) and access to farm credit
- (b) To determine the effects of access to credit on farmers' average farm incomes.
- (c) To provide policy recommendations for improving access to credit by emerging farmers

### 1.6 Study questions

The questions which are answered by the research study are the following:

- Is there any association between the biographical characteristics of emerging farmers (age, gender, education, marital status, income, income sources, family size, occupation, farm experience and location) and access to farm credit?
- What are the effects of access to credit on farmers' average farm incomes?
- What are the possible solutions for improving access to credit by emerging farmers in the Thulamela Local Municipality?

## 1.7 Research hypothesis



It may be hypothesized that;

- There is no association between the biographical characteristics of emerging farmers (age, gender, education, marital status, income, income sources, family size, occupation, farm experience and location) and access to credit.
- Access to credit increases farmers' average farm incomes.

## 1.8 Limitations of the Study

The researcher made use of statistical records and figures that are annulled pending the results of the 2011 census. The time allocation for the completion of the study was critically short, compared to the range of tasks that were completed. Most of the activities of this study were laborious and time-consuming, exerting much pressure on the research schedule. As a result this research study is a mere cohort survey which has limited the acceptance of the generalisations and recommendations deduced from it.

Much of the data required for the questionnaire were central to record-keeping. It was however difficult to obtain accurate records from farmers. Moreover, the respondents were the breadwinners within farm households, such that when the study was conducted most were at work. It was however relatively easy to arrange appointments with such farmers. The study covered a wider geographical area. Due to difficulties related to mobility and accessibility of visited places, the whole process became costly and calling for special transport arrangements. Also, financial limitations reduced the impact of the study coverage and exposure.

Due to variations in the attributes of respondents, there were variations in the data collected. Such variations in collected data required more attention in terms of specifications than

generalisations. Ethical considerations turned out to be a double-sided pact, which caused withdrawal of other participants from the study. Some respondents withheld information due to fear of the unknown.

## 1.9 Chapter Summary

The chapter covered the background of the study, the mind map, objectives of the study, hypotheses, study questions and limitations of the study. As noted in the chapter, financial capital is the prerequisite for transformation of agricultural production and investment. Developing countries lack financial capital in the form of credit in order to alleviate poverty. Developed countries suffer for the imperfect agricultural markets and the continued economic transitions. Current credit shortages and constraints, low farm investment levels, low literacy levels and limited access to other production resources by emerging farmers in South Africa are ascribed as a consequence emanating from the underprivileged history of the former apartheid regime. Emerging farmers in South Africa are black entrepreneurs who were previously underprivileged by apartheid and therefore are now new entrants into the agribusiness value chain. Investment needs of emerging farmers are concern of the South African state with which their servicing should be prioritised. In finding economic strategies to reach out for these emerging farmers, there is need to investigate the determinants of farm credit access, and the effects of credit access on emerging farmers' profits. A successful contribution in this regard would be aimed at increasing access to financial resources for emerging farmers in South Africa.

## 1.10 Definition of key terms

- Access to credit** An individual has access to credit from a particular source if he/she is able to borrow a helpful amount from that source (Mpuga, 2008).
- Credit** The concept of credit consists of monetary and non-monetary terms lending of goods and services without instant return against the promise of future repayment. Credit is further defined by the Land Bank (2011) any form of deferred payment and is extended by a creditor, also known as a lender, to a debtor, also known as a borrower.
- Credit needs** Refers to the can only do with or the cannot-do without commodities, resources, and services demanded without immediate payment for later payment (Mpuga, 2008).
- Farm credit** Is the medium for exchange that makes it possible to obtain goods, services or money in the first place, on the basic promise to pay for it in the future (Land Bank, 2011).
- Credit worthiness** Is the measure of an individual's or company's ability to meet debt obligations (Mpuga, 2008). Credit worthiness is therefore, a summary of the characteristics of a borrower's promise for the future payment acceptable to lenders.
- Collateral** The assurance or the security to which the borrower offers as promise for the repayment of the credit. Collateral guarantee secures that the borrower offer a promise to repay the debt and that in case of default the asset is taken to console the lender (Land Bank, 2011).

- Emerging farmers** By definition were previously excluded from the country's formal agricultural economy by discrimination yet were aspirant farmers with potential to change the face of the agricultural economy (Land Bank, 2011).
- Globalisation** Is the process by which the economies of the world's countries have become more closely connected and dependent on each other. For South African context the globalisation of agriculture meant two things which are Deregulation and Liberalisation (CLRP, 2003).
- Household** Is the group of people who live and take meals together, including daily commuters, but excluding weekly commuters and migrants (Shinns & Lyne, 2004).
- Homelands** Are confinements that took place in South Africa with the help of the Group Areas Act of 1950 summed up with the Native trust and Land Act of 1936 among other regulations of the penal code (Valente, 2009).
- Interlinked credit** Are programmes or schemes where farmers receive inputs; seeds, fertilizers etc. from traders and merchants and pay back the loan through sale (market) of the crop at harvest, credit, input supply and output sales are intertwined in one transaction (Jayne *et al.*, 2004).
- Land reform** It is a three-pronged process of land distribution as explained below;  
**Land restitution** involves returning and/or provisions of financial compensation to those whose land was dispossessed during apartheid (Agri-SETA, 2010). **Land redistribution** entails transferring more land to the historically disadvantaged South Africans (Agri-SETA, 2010).

**Land tenure** is the right of ownership or title deeds for a resource or asset presented in writing as a document i.e. license, certificate, etc (Wannasai & Shrestha, 2008).

**Management** It is defined by Rougoor *et al.* (1998) as having the appropriate personal characteristics and skills to deal with the right problems and opportunities in the right moment and in the right way (Rougoor *et al.*, 1998).

**Needs** According to Leigh *et al.* (2000) are gaps in results rather than gaps or deficiencies in processes or resources. The discrepancy between what is and what should be in terms of results, is the adopted definition applicable on farm credit needs evaluation, according to Leigh *et al.* (2000:88) “informed decision can be made, as to the prioritisation of the problem resolution...”

**Productivity** Refers to the amount of output obtained from given levels of inputs in an economy or a sector. It is an important topic of study, because productivity is one of the two fundamental sources of larger income streams; the other being savings, which permit more inputs to be employed (Fulginiti & Perin, 1998).

### 2.1. Introduction

This chapter specifically reviews access and supply of credit for both developing and developed countries. Such a review is critical for assessing access and supply factors that impact on credit availability to the study area. In this chapter there is a specific review of access to credit for the three types (commercial, emerging, small scale) of farmers. Emerging farmers in South Africa were deprived access to resources and economic opportunities. The South African government have the objective of increasing such emerging farmers' access to farm credit (DBSA, 1994; Zimmerman, 2000, Kelly *et al.*, 2003; Land Bank, 2011). Increasing access to farm credit by emerging farmers is essential for increasing the productivity and income generation of farmers (Land Bank, 2011).

### 2.2 Access to credit by commercial, emerging and small-scale farmers

Credit provisions are an investment that increases individual productive capacity, induces aggregate levels of employment and personal income, and improve the Gross Domestic Fixed Investment (GFI) of the country (du Toit & Moolman, 2004). The world history of agricultural investment is rooted on two distinct decades of unusual circumstances. These are the great depression (global recession) and the World War II (Okten & Osili, 2004; Petrick, 2004). During these periods of economic instability the investments and resources allocation were negatively and substantially affected. Private investment was limited in the agricultural setting due to unpredictable devaluations in currency and instability of export tariffs. In addition, outright bans and most exchange rates were not liberalised fully to encourage private investment (Guirkingner, 2007; Li *et al.*, 2011). The emergence of the global recession meant borrowing countries could not repay debt because they were unable to earn sufficient foreign exchange and therefore

agricultural investments and borrowings were as well constrained ever since the foundation of agricultural development in the world (Vink & Kirsten, 2000).

Most developed countries have sufficient facilities for farm credit and ancillary farm support services for aspirant and emerging farmers (Argent, 2000). Agriculture in these countries is highly mechanised as evidenced by capital items, resources and other requirements that can only be rendered and sourced through credit or cash investments (Schimmelpfenning *et al.*, 2000). As a result, “credit-constrained farmers” use the resources (inputs, technology, etc) up to the limits of their capital availability (Schimmelpfenning *et al.*, 2000:1).

In most developing countries farm credit access is essential for emerging, small-scale and commercial agriculture. Farms or households with increased credit access can acquire more resources / equipment /assets for productive use on the farm. As a result households/individuals with credit generate more income for purchasing farm inputs (Mpuga, 2008). As farm credit is usually quantity and risk rationed, defaults are quite common. Seized collateral is usually auctioned to the highest bidder in order to recover the credit and its associated costs (Guirkinger, 2007). Credit is required for various activities, including the buying of consumption goods for household food security and acquisition of essential farmer support services (Mpuga, 2008).

Governments/government agencies of developing countries often lack the capacity to implement effective credit programmes (Schombee, 2000; Machette, 2004; OECD, 2006). Formal financial institutions are unlikely to provide for the credit needs of the bankable and non-bankable poor due to persistent failure of market-based credit programmes in developing countries. State credit

provision or intervention in financial systems through direct loans to farmers has usually been achieved through institutional frameworks or government agencies (Machette, 2004).

Access to credit has always been gender biased (Pasura, 2010). In countries where credit market has not reformed, women suffer due to limited access to dependable collateral resources, which results in difficulties in accessing credit (Pasura, 2010). Challenges facing women include lack of credit information, administrative bureaucracy, low product prices and untimely input supply (Okunade, 2007; Pasura 2010). In some countries limited access to credit to women resulted in more than 11% drop in farm household efficiency (Fletschener, 2008).

The South African agricultural economy plays an important role in the country's GDP (duToit & Moolman, 2004). The objective of the South African State is to fund important public investments, and to channel public financial institutions as supply chain integrators, providing farm credit to support productive investments by farmers (Markelova *et al.*, 2009). Before the advent of democracy in 1994, the South African government tended to facilitate and regulate, rather than provide financial services directly to the emerging agricultural production sector (Kirstern, 2006). Bradstock (2005) asserted that, the apartheid regime failed to allocate resources to the education of black people and in the work places.

According to a study by the Development Bank of Southern Africa (DBSA) (1994) and Crane, (2006), regardless of the highly diversified agricultural economy and political perspective, structural imbalances in land resources distribution co-existed with limitations for access to agricultural credit. In the pre-independence South Africa, farm credit constraints co-existed with land exploitation and inequality (Zimmerman, 2000; Bradstock, 2005; Land Bank, 2011). Land

could not be accessed while disreputable credit market failures significantly constrained the establishment of a black commercial farming group. Moreover there was limited investment in farm infrastructural repairs and capital equipment (Kirstern, 2006; Markelova *et al.*, 2009; Valente, 2009; Briggerman & Akers, 2010).

Zimmerman (2000:1445) stressed that, “white farmers benefited handsomely from the government debt relief after the 1992 drought, yet such assistance will not be available to black smallholder farmers who took over their farms.” The economic sanctioning of the 80s before South African independence caused a decline in the value of the Rand and resulted in high farm input prices (Land Bank, 2011). After Independence, the South African government set out to stimulate investment and economic growth through direct intervention in the financial markets. Examples of such interventions involved the directing of financial markets to allocate funds for specific purposes, by determining the maximum level of certain rates of interest and subsidising others, by fixing exchange rates, and by controlling the in-and out-flow of foreign currency (Schombee, 2000). The land reform programme was also, at the outset, erected as a strategic measure for improving resource access and poverty reduction. The agricultural credit policy of South Africa essentially lays emphasis on boosting credit flow at the ground level through credit planning, adoption of region-specific strategies, rationalisation of lending policies and procedures, and bringing down the cost of borrowing (Schombee, 2000).

The South African agricultural markets for financial input and output became deregulated and liberalised under the Agricultural Marketing Act of 1996. Deregulation of markets in South Africa led to the cancellation of commodity boards and withdrawal of direct state support for agriculture sectors. As a result, many farm households earned much of their income mainly from

off-farm sources. The South African credit access patterns disadvantaged the poor emerging farmers who were left unbankable, with no opportunity to compete on the market with established agribusiness enterprises. Deregulation and liberalisation brought about limited benefits to emerging farmers' accessibility to financial and credit resources. Nothing much was done to grapple fully in catering for all the assets and resources that black South Africans were previously deprived of (Zimmerman, 2000).

### **2.3 Supply of farm credit to emerging commercial and small-scale farmers**

Supply of farm credit in the developed world is competition-oriented due to the existence of deregulated and liberalized financial markets (Park *et al.*, 2003; Glass *et al.*, 2010). Credit unions exist as member owned, voluntary, self-help, democratic, cooperatives, and financial institutions for providing credit (Glass *et al.*, 2010). Formal credit is available in commercial institutions, while the family, friends, neighbours, Rotating Savings and Credit Associations (ROSCAs), Accumulating Savings and Credit Associations (ASCAs) and employers are also major sources of credit in the developed countries. Collateral constrained farmers are said to be involuntarily excluded or rationed and they are resultantly serviced by informal trade credit suppliers (Park *et al.*, 2003; Okten & Osili, 2004).

As noted by Zhang *et al.*, (2008) credit markets in developed countries work imperfectly, because of continued transitions in the agricultural economic development and imperfect markets. Some challenges of as economic transitions experienced in the developed world's agriculture include the abolition of public farm credit, financial deregulation, markets liberalisation, commercialisation, mechanisation and abolition of states' involvement in the market economy (Okten & Osili, 2004; Glass *et al.*, 2010). Specifically economic transitions

lead to reduced profits, accumulated debts, high inflation, risk and uncertainty, and collateral problems (Argent, 2000).

During economic transition there is usually an accumulation of debt by farms and financial suppliers, with increased government budget deficits and loan guarantee failures. A study conducted in New Zealand has shown that access to credit packages is dependent on technical, agronomic and financial advice provided by suppliers and/or the banks. That study also showed that while New Zealand managed to restructure its farm credit markets it failed to address issues of many farm families related to concessional long-term credit needs (Argent, 2000). In contrast Poland applied loans, loan subsidies and loan guarantee schemes to the benefit of female farmers (Petrick, 2004).

The most highlighted socio-economic constraint related to farm credit supply is scarcity of facility. Kosina *et al.* (2007) emphasised that most agricultural economic constraints are related to policy and mechanisation, where in his sample about 74% of developing countries lacked credit availability. The study by Jayne *et al.* (2004) instituted that low input, low productivity and limitations of emerging farmers to self-finance their production and enterprises and semi-subsistence farming are important shortcomings emanating from capital limitations. Limited exploitation of the agricultural potential in South Africa can mainly be attributed to inadequate production especially limited access to finances, credit resources and services. Additional problems to limited farm credit supply include poor infrastructure, small land holdings, and the nature of land tenure systems (Olubude-Awosala *et al.*, 2008). Inadequate production and credit rationing in developing countries reflect the nature of labour and lack of skills and knowledge of farming (Kosina *et al.*, 2007).

Jayne *et al.* (2004) identified farm credit programmes as strategies that can overcome the credit constraints for input intensification. Peters (2009) has shown that, land policy reform should be accompanied by credit reform for farm development to occur. Notably for South Africa, the history of land dispossession, associated with racial discrimination, which also brought about the inequality in land ownership and occupation, created serious challenges in terms of access to credit (Crane, 2006). Baumann (2004) reviewed South Africa's rural poor and noted lack of access to basic means of production, such as land, as major causes of lack of access to credit. Nel and Binns (2000) concluded that the economy remains firmly controlled by large, essentially white commercial business interests. Emerging farmers in South Africa constantly face lack of collateral, high borrowing costs and low returns in available savings, loans, transmissions and lack of insurance for their credit needs (Nel & Binns, 2000).

In a study by Nilson (2010) it is clear that cotton farmers in Uganda were credit-constrained. Guaranteed credit programmes and credit subsidy failed to yield substance as farmers could not afford the necessary inputs, even at lower interest rates (Nilson, 2010). Recently, suppliers who were also the output market provided interlinked credit to the farmers whereby seeds were supplied on credit and payment deducted from the output purchasing price (Nilson, 2010). Both formal and informal credit suppliers are available in South Africa; however the main actors in trade credit supply are Non-Governmental Organisations (NGOs) and Government institutions. The South African State has a number of policy options for channelling credit to specific sectors of the economy. Redirection of credit to farmers through legislation or government-owned specialised institutions and giving incentives to formal financial institutions to serve the identified sectors are major strategies that are used (Schombee, 2000:751). The credit policy instruments of the South African economy have been marked by an increasing tendency to

deemphasise support for new entrants into agribusinesses and to emphasize the importance of small-scale farmer support (Epstein, 2008; du Toit, 2009). The legislative issues of supply for credit to agribusinesses seem to be unattended, perhaps because agribusinesses are credit users who are also suppliers for credit to the farmer.

Despite dependence on moneylenders the South African farming community receives many other kinds of rural financial support (Collins, 2005). Major suppliers include the Development Bank of Southern Africa, Industrial Development Corporation, Khula Enterprises Finance, Land Bank and National Housing Finance Corporation. Other self-financing mechanisms by entrepreneurs in emerging agribusiness enterprises include the Rotating Savings and Credit Associations (ROSCAs).

In the agribusiness value chain enterprises such as supermarkets are major role players as both formal and informal lenders (Louw et al., 2008). Grain-seed merchants and processors are also responsible for credit provisions to emerging farmers and enterprises, though at high interest rates (Department of Agriculture, 1996; Jayne, 2004; Land Bank, 2011). Some state-administered agricultural and Development Finance Institutions (DFIs) include the Small Enterprises Foundation (SEF), Micro-Agricultural Financial Institution of South Africa (MAFISA), and the Khula Enterprises (Kirsten, 2006)

The NGOs provide credit through individual microcredit, group microcredit, and Accumulating Savings and Credit Associations (ASCAs). There are many ASCAs and several initiatives that link farmers to larger networks for agricultural credit. Specifically use is made of seed interest-

free loans to finance emerging entrepreneurs. The NGO loans may sometimes be converted to grants if certain pre-agreed performance targets are met.

#### **2.4 Challenges related to demand and supply of farm credit**

Collins (2005) noted that poverty is not caused by a lack of assets among the poor but lack of formal ownership of the assets and the benefits these bring. Collins (2005) reiterated that the poor majority continue to be excluded from the formal economy and its productive potential by a continued lack of formal rights to the land, buildings and businesses it already possess. The major factors that continue to hamper South Africa's rural credit delivery include knowledge-gap (ignorance), mind set (seeing credit as a colonial initiative) and a lack of adequate processes and use of sophisticated scoring models (Vink & Kirsten, 2000; Zimmerman, 2000; Land Bank, 2011).

Emerging farmers face challenges that are beyond their control in access to farm credit. The major constraint with the supply of farm credit is that the retail prices of resources and commodities are linked to the oil price and to the rand/dollar exchange rate, both of which are beyond the farmer's control (Tomlinson, 2007). Emerging farmers lack credit accessibility for technical resources such as machinery, skills, financial-capital, buying power, farm credit and economically meaningful networking for better opportunities (Kelly *et al.*, 2003; Akram *et al.*, 2008; Land Bank, 2011). According to literature, most of the economic challenges faced by emerging farmers are effects of the limited access to credit. Shortcomings around lack of access to input and output markets are rooted in the issue of fixed sourcing and supply agreements which make it difficult for new and small farmers to penetrate the established markets (Nel & Bins, 2000; Zimmerman, 2000; Bradstock, 2005).

Emerging farmers are so much into traditional practices as part of their judicial system to address civil cases such as the land disputes, informal contractual breaches, and boundary disputes. They therefore lack empowering, formal legal status which denies them the necessary facility, tools and prerequisites to access credit resources (Collins, 2005; Markelova *et al.*, 2009). Small-scale and emerging farmers, furthermore, lack the prerequisites for credit access, such as collateral to acquire mortgages, pledges and contracts (Aliber & Hart, 2009; Mpuga, 2008; Chieochan *et al.*, 2000). Limitations of land ownership principally affect the small-scale emerging farmers as much of their cultivated land is under traditional or customary holding. Land held under tribal tenure cannot be used as collateral for credit resources since it usually has no evidence of title (Zimmerman, 2000; Ramutsindela, 2002; Peters, 2009; Place, 2009).

Lack of education and high illiteracy levels, high incidences of poverty and diseases characterise the socio-economic status of emerging commercial farmers in developing countries (Bradstock, 2005; Li *et al.*, 2011). The high illiteracy levels mean that farmers cannot manage, write, sign or even appreciate the whole concept of commercial credit, hence their vulnerability to the vagaries of weather and other natural disasters. As a result, most agricultural economic activities of emerging farmers are not monetised. Agricultural credit of the rural markets is overrun with ancient trade and barter exchange methods, such that formal credit cannot hold (Wannasai & Shrestha, 2008).

## 2.5 Summary

In a nutshell several factors have been discussed and exposed as determinants to farm credit access both in developed and developing countries globally and locally. Farm Credit is a major investment element essential for sustainable agriculture and the following concepts have reviewed in the literature. Globally, agricultural credit was affected by two major factors namely, the global recession generally known as the great depression and the World War II. Even in developed countries where agriculture tends to be highly mechanised in terms of resources and capital endowments, credit requires higher levels of farm investments and collateral. As a resulted it has been noted that in the developed countries the credit constraints associated are more sophisticated than developing countries.

One of the major problems affecting supply and demand of credit is the competition-oriented nature of all markets. Deregulation and liberalisation in the developed countries brought very high competition to the detriment of the consumer even in investments and credit transaction. The main problem may also be that most of the credit-constrained farmers are being serviced by the informal trade credit suppliers who tend to emphasize unethical business practises disregarding the consumer rights. Continued economic transitions are the major problem in developed countries that cause the agricultural market to work imperfectly. Other developed states fail completely to address the issues of concessional long term credit needs for the farm families. Unlike the developed countries it can be noted that the developing countries face different types of problems. The major problems in developing countries involves lack of facility for credit provisions and land ownership, low mechanization levels, collateral shortages and little or no subsidies only to mention but a few.

On the other hand the fewer farmers who have access to credit tend to misuse credit in buying consumption goods other than acquisition of essential farm support goods and services. Unlike the farmers of developed countries who failed to address long term concessional credit, in developing countries governments fail completely to implement effective credit provision programmes.

It is important to note that governments in developing countries have got the tendency of taking over the credit provision to poorer sectors of the society. These farmers located in such poorer sectors of society still face several credit access constraints which include, lack of credit information and administrative bureaucracy, to mention only a few. Poor farm household efficiency is portrayed as a result of lack of credit supply to women. Therefore downhill state of farm household development is a gender-linked credit constraint given that women are the worst credit constrained farmers. Solution of credit access in developing countries tend to be explicit in strategy as some of these strategies include, land reform, loan subsidies and loan guarantee schemes and most importantly to the benefit of female farmers.

Indirect factors affecting credit access include factors such as lower literacy, lack of land ownership rights and collateral. On the supply side it is mainly the use of sophisticated scoring methods where farmers are relegated by either by age, education, training or other socio-economic attributes. Above all, it is mainly the state that fails to allocate using region specific procedures equally the resources and effectively to the poorest locations of the communities.

## CHAPTER 3: RESEARCH METHODOLOGY

### 3.1 Introduction

This chapter describes the research methodology for data collection and analysis that was used for the study. The chapter describes the background information of the Thulamela Local Municipality, the population and the sampling procedure that was used in the study. Data were collected in two ways. Firstly, general information was collected by use of field notes and by interviewing key informants (i.e. project/community leaders, etc.) in each farming area. Secondly, data collection was collected through a field survey using structured questionnaires. These interviews supplemented information obtained through a literature study. The collected data were utilised for the different levels of analysis. In order to isolate the key elements and components of farm credit access among emerging farmers, this study employed the binary logistic regression model. Detailed descriptions of the study area and the data collection and analytical procedures are elaborated.

### 3.2 Research Design

The study adopted a scientific research design and, therefore, made use of scientific methods of sampling, collection and analysis of data. The respondents of the research study were emerging farmers of both sexes actively involved in agriculture in the farming areas of Thulamela Local Municipality. Information was gathered by means of self-administered questionnaires, field notes, and face to face interviews.

### 3.3 Description of the study area

This research study was conducted in Limpopo Province, one of the nine provinces of South Africa, which is located in the northern part of the country. The Limpopo Province covers 125 754 square kilometres of land, which is only 10.3% of the country (STATSSA, 2010). The province consists of five districts; namely, Sekhukhune, Capricorn, Mopani, Waterberg and Vhembe. The latter is the focus of the study. Thulamela Local Municipality is the actual study area and it is located in the administrative region of Vhembe District as shown in Figure 3.1. In the Thulamela Local Municipality emerging farmers can be classified according to their localities, which are demarcated as irrigation schemes. There are 10 farming and irrigation schemes actively involved in full production. It is from these irrigation schemes that the population of the study was drawn.



**Figure 3.1:** Map of Vhembe District showing the Local Municipalities

Source: Courtesy Maps for Limpopo Province Districts from [www.dermacation.org](http://www.dermacation.org)

### 3.4 Population and sampling technique

Systematic random sampling technique was used to select the sample for the study. The population (N) of emerging farmers for this study was drawn from 10 farming areas or schemes. The farming villages of the Thulamela Local Municipality included in the study were namely; Dzindi, Dovheni, Makumeke, Maraxwe, Matangari, Malavuwe, Palmaryville, Thohoyandou, Tshiombo and Xigalo. These farming schemes made up the population of the study, from which the sample of 175 emerging farmers were selected randomly. Thohoyandou, Palmaryville and Dzindi were regarded as semi-urban farming schemes located within 10km radius of the central business district (Thohoyandou CBD) of the nearest town. The rest of all other unspecified villages were considered rural farming schemes as these were located beyond the 10 km radius from the administrative town of Thohoyandou. Though Xigalo, Dovheni, and Makumeke would consider service from the Malamulele town centre, they still were particularly located away from its central business district. The given population (N) was the total of active emerging farmers in the Thulamela Local Municipality which was estimated to be 1130, in the 10 irrigation farming schemes during the study.

A list of all farmers was created randomly numbered from the first to the last. The farmers interviewed in the study were selected using interval size (k), i.e.  $k = N/n = 6$ . The randomly selected farmer to start with was the fourth farmer from on the population list the 4<sup>th</sup> farmer, then the  $(4 + k)$ <sup>th</sup> farmer (in the example would be 4<sup>th</sup> + 6) and so on. Every k<sup>th</sup> respondent was selected for the sample to be interviewed (see Punch, 2009). The study sample (given as n of 175 emerging farmers) was collected using the systematic random sampling. Therefore sampling process specifically employed a systematic random sampling process to select the respondents for the study from different farming schemes.

### 3.5. Data collection

Primary data were collected from the respondents through the use of questionnaires. This was done after the consent for ethical clearances was sought from the participants. The questionnaires were initially pretested in a pilot study which was conducted by the researcher to determine whether the questionnaire was relevant, time spent on completing the questionnaire, ethical standards, such as sensitive questions, validity and reliability of the questionnaire; and whether the questionnaire was understandable. Key informants such as community and project leaders from the farming schemes were interviewed to provide detailed information on the subject of study. Primary data were collected by means of field observations, face to face interviews, and principally, the use of self-administered questionnaires with the aid of trained enumerators. Interviews were held with the leader or selected key members from each farming locality. A sample of 175 emerging farmers, were randomly selected and interviewed from the 10 farming schemes in the Thulamela Local Municipality. Determination of the biographical information of farmers was done for the ease of the survey.

The respondents were provided with questionnaires with questions on biographical information, socio-economic and technical information of their farms. During the study, the enumerators made field notes, and recommendations were deduced from the perceptions of the farmers. Special interviews were also used in the study to draw experience-based inferences from youth, women and elderly farmers and from those in project or community leadership. According to the Literature such key informants are used in the study in order to eliminate bias (Denzin & Lincoln, 2000).

## 3.6. Data analysis

### 3.6.1 Descriptive statistics

Data were firstly collected and captured in Microsoft Excel. This was done simultaneously with the data cleaning process for easier handling and capturing. Data collected was imported from Microsoft Excel and analysed using the Statistical Package for Social Scientists version 19.0 (SPSS ver.19.0). Nonparametric tests were performed using the SPSS ver.19.0 to generate descriptive statistics on the frequencies of occurrence (Sapsford & Jupp, 2006). Spearman's correlations were used to determine the associations between the dependant and the selected independent variables that may appear to be categorical. The researcher used descriptive statistics and results presentation techniques in frequency tables, charts and graphs.

### 3.6.2 Empirical model

#### 3.6.2.1 Logistic regression model

The Logistic regression model was used because the term “logit” refers to the natural logarithm of the odds (“log odds”) which indicates the relative probability of falling into one of the two categories on some variable of interest (Hosmer & Lemeshow, 2000). Binary logistic model has only two categories, namely event A. and non-event A (for example Access to Credit vs. No Access to Credit). Predictor variable  $X$  is related to a dichotomous response variable  $Y$  ( $\ln(\frac{P_i}{1-P_i})$ ). The dichotomous variable is  $Y= 0$  or  $1$ ,  $Y = 1$ , denoting occurrence of an event of interest. The dummy variable, which is also known as the indicator variable, is the bound variable used to characterise binary responses.

The researcher set up a binary logistic model for the evaluation of the probability that emerging farmers in enumerated communities currently have positive credit needs or not. In this case, therefore, the farmer had either of the two conditions “Access to Credit or No Access to Credit”. The error term was expected to be normally distributed, thus the Logit model used the estimation through Ordinary Least Squares (OLS) (Gujarati, 1992). Assuming that  $X$  is a vector of explanatory variables, and  $\beta$  is the coefficient of the variable in the model,  $e$  is the exponential and  $P$  is the probability, then the relationship in the model is explained as follows;

$$p(Y = 1) = \frac{e^{\beta x}}{1 + e^{\beta x}} \dots \dots \dots (1)$$

$$p(Y = 0) = 1 - \frac{e^{\beta x}}{1 + e^{\beta x}} = \frac{1}{1 + e^{\beta x}} \dots \dots \dots (2)$$

$$\text{logit}[\theta(x)] = \log \left[ \frac{\theta(x)}{1 - \theta(x)} \right] = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_i X_i + \varepsilon \dots \dots \dots (3)$$

Equation 3 is the natural logarithm of the modelled variables. The equation allowed the researcher to run a linear estimation of the model where the following definitions apply:

- $\theta$  = the logit transformation of the odds ratio,
- $\alpha$  = intercept of the model,
- $\beta$  = the regression coefficient or slope of individual predictor variable modelled,
- $X_i$  = the predictor variable and
- $\varepsilon$  , is the error term.

Final parameters/variables used in the model were either continuous or discontinuous and some of which were modeled as dummy variables as shown in Table 4.19.

**Table 3.1: Description of modeled variables**

Code	Variable	Description of the Variable	Coding
Y	Access to Credit	Dependent variable (the Odds)	Coded 1, if access to farm credit and 0 if otherwise
X <sub>1</sub>	AGE	Age of the farmer	In years
X <sub>2</sub>	LOC	Location Dummy (derived as the location of Project)	Coded 1 if farmer is located within a 10km radius of nearest town service centre, 0 if otherwise
X <sub>3</sub>	FINC	Estimated total farm income of previous year/ season	In Rands (as currency)
X <sub>4</sub>	FEXP	Estimated total farm expenditure of all directly allocatable farm expenses	In Rands (as currency)
X <sub>5</sub>	CRAMT	Total credit amount received by farmer	In Rands (as currency)

Source: Field Survey, 2012

### 3.6.2.2 Chi-square tests

The goodness of fit test for the model was examined following the Hosmer-Lemeshow method using the Pearson's Chi-square outcomes of the observed and expected frequencies as follows;

$$\chi_{HL}^2 = \sum_{t=1}^g \frac{(O_i - N_i \pi_i)^2}{N_i \pi_i (1 - \pi_i)} \dots \dots \dots (4)$$

Where the following definitions apply:

$O_i$  = Total frequency of the items in the  $i$ th group,

$N_i$  = Total frequency of obtaining particular event outcomes in the  $i^{\text{th}}$  group,

$\pi_i$  = average estimate of the probability that a particular event outcome in the  $i$ th group would be realised (Hosmer & Lemeshow, 2000).

The chi-square test for significance in the model is given by

$$\frac{(n-1)S^2}{\sigma^2} \chi^2(n-1) \dots \dots \dots (5)$$

Where n = sample size, S is the sample variance,  $\sigma^2$  = the population variance

### 3.6.3.3 Cross tabulations

Cross tabulations were used as a method of finding the effects of the demographic information on the determinants of access to credit. The method made use of 2-way contingency tables to determine different relationships between the variable in the model. The 2-way contingency tests in cross tabulations were a test for positive, negative, or no correlation. The  $\chi^2$  test was used to test the significance of the results at the 90% level of confidence (Sapford & Jupp, 2006).

## 3.7 Ethical considerations

A major consideration before carrying out a survey involves the ethical considerations that the researcher has to take into account. The following principles, noted by Denzin and Lincoln (2000) and reviewed by Ryen (2005) were considered in this study:

*Permission to carry out the research:* The researcher considered the importance of seeking the aforementioned consent to conduct the research from both the University of Venda and the relevant subjects from the projects under study (Denzin & Lincoln, 2000). The consent served an additional purpose of ensuring that participants were conscious of the research objectives, and also as evidence that they had given their official permission to participate freely. Permission to undertake the survey was issued by the Ethics Committee of the University of Venda.

*Right to Anonymity:* The researcher assured participants that they had a right to remain anonymous (Ryen, 2005).

*Right of Self-determination* Participants were told that they had the right to voluntarily participate in the study. They were also told that they would not be paid or compensated for participating in the study (Denzin & Lincoln, 1994). The right to self-determination was contained with the consent meaning that one can withhold any information they feel uncomfortable about giving, or that they can withdraw from participation at any stage of the enquiry (Denzin & Lincoln, 2000).

*Informed Consent* Participants were informed about the nature and purpose of the research (Denzin & Lincoln, 2000). The reflection of this consent was included in the letter that accompanied the questionnaires (Ryen, 2005).

### 3.8. Analytical framework

Specific objectives	Research question	Research hypotheses	Data required	Analysis tool
To determine the association between the biographical characteristics of the farmers (age, gender, education, marital status, income, income sources, family size, occupation, farm experience and location) and access to farm credit	Is there any association between the biographical characteristics of emerging farmers (age, gender, education, marital status, income, income sources, family size occupation, farm experience and location) and the determinants of access to farm credit?	There is no association between the biographical characteristics of emerging farmers (age, gender, education, marital status, income, income sources, family size, occupation, farm experience and location) and the determinants of access to farm credit	age, gender, education, marital status, income, income sources, family size, occupation, farm experience and location  Farmers perceptions, access to credit, credit needs, institutional framework	Logistic Regression model -Use of Cross tabulations -Descriptive Statistics
To determine the effects of increased access to credit on the farmers' average farm incomes.	What is the effect of increased access to credit on the farmers' average farm incomes?	Access to credit increases farmers' average farm incomes	Farm Income, Farm Expenditure, Assets Farmers' perceptions, credit needs, access to credit, institutional framework	- Logistic Regression model Descriptive statistics
To provide policy recommendations for improving access to credit by emerging farmers	What are the possible solutions for improving access to credit by emerging farmers in the Thulamela Local Municipality?		Farmer Recommendations, Experiences, gender, location, incomes, expenditure, Field Notes,	Logistic Regression model Descriptive statistics Cross tabulations

**Table 3.2: Alignment of Specific objectives, hypotheses, questions and analytical tools Source: Researcher**

### 3.9 Chapter summary



The chapter covered study area, research design, sampling techniques, data analysis and sampling techniques. As noted earlier, the study was conducted in the Thulamela Local Municipality of South Africa, from the active farming population drawn in 10 irrigation schemes. The research adopted a scientific design, using scientific sampling and analytical methods. The study used the Systematic random sampling method and data was therefore collected by means of a structured questionnaire. The survey involved the selection of 175 emerging farmers, through the trained enumerators to administer and gather questionnaires. The data was analysed by means of the Binary Logistic regression Model to determine whether an individual farmer had access to farm credit. The goodness of fit for the model was done using the Hosmer-Lemeshow method. Ethical considerations were considered for participants' informed consent, anonymity and self-determination.



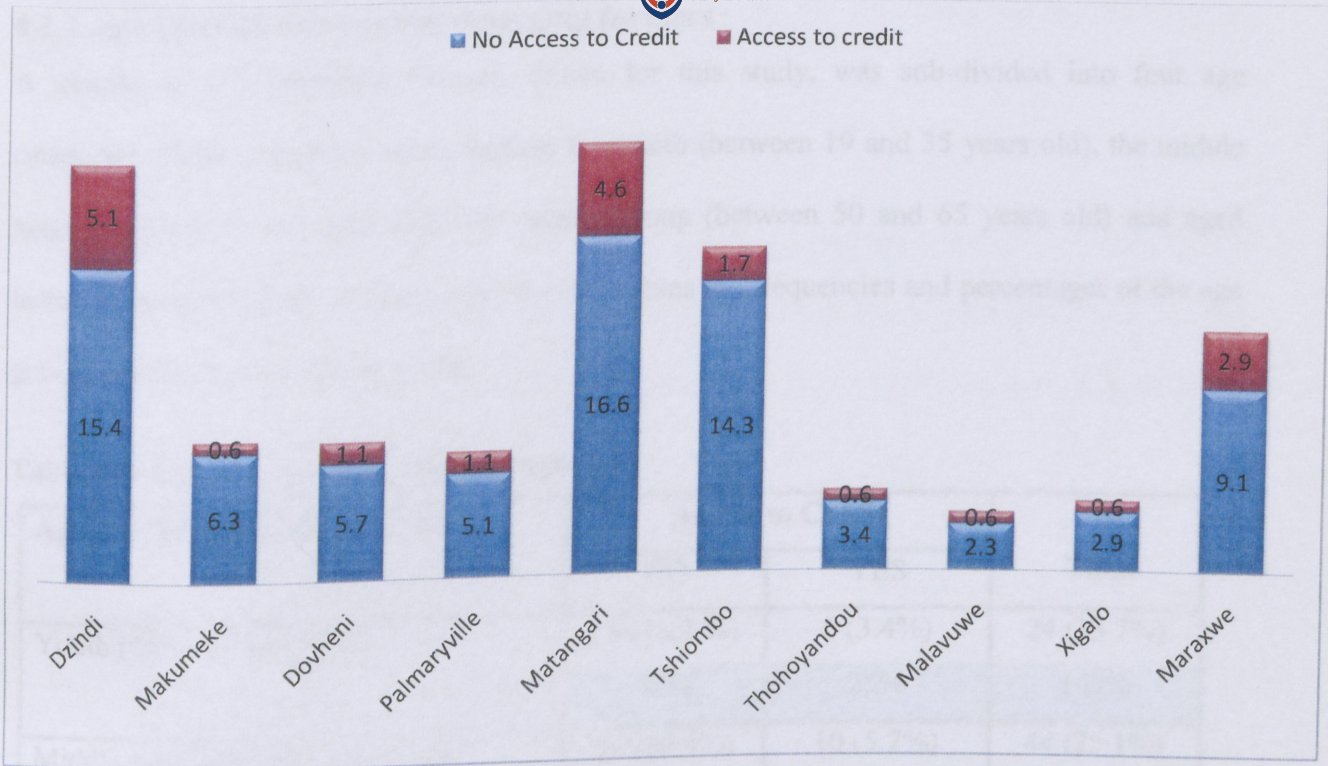
## **4.1 Introduction**

This chapter presents and discusses the results. The chapter also discusses how the data were analysed. Descriptive and correlation analyses, as well as logistic regression modeling were employed. The Statistical Package for Social Scientists (SPSS) and Microsoft office Excel were used as tools for the analyses. The chapter finally discusses the findings and compares them with reviewed literature to support the analytical framework that is presented.

## **4.2 Demographic characteristics**

### **4.2.1 Location of the farm project**

The study drew its sample of 175 emerging farmers from 10 farming schemes (both dry land and irrigated farms) in the Thulamela Local Municipality. The location of projects for respondents who participated in the study in contrast with their access to credit is presented in Figure 4.1. The highest proportions of respondents were from Matangari (21.1%) and Dzindi irrigation schemes (20.6%). Tshiombo and Maraxwe irrigation schemes had substantial proportions of 16% and 12% of emerging farmers respectively. Both Makumeke and Dovheni had 6.9% followed by Palmaryville irrigation Scheme (6.3%). Fewer respondents were drawn from Thohoyandou, Xigalo and Malavuwe (4%, 3.4% and 2.9% respectively).



**Figure 4.1: Access to farm credit by Location of farm projects**

Source: Field Survey, 2012

As shown in the Figure 4.1, Matangari project had the highest proportion of farmers with no access to farm credit (16.6%) followed by Dzindi (15.4%). A comparison of the Matangari (4.6%) and the Dzindi (5.1%) projects which had more or less equally sized samples showed significant evidence that those located nearest to town are more successful in accessing financial resources. However a different case was with Thohoyandou (0.6%). As the central business area it had fewer farmers, limited agricultural activity and even the credit access was minimal due to urbanisation and industrialization. As noted by Collins (2005) fewer urban residents are committed to agriculture. The least number of farmers accessing credit were in Makumeke, Thohoyandou, Malavuwe and Xigalo. Poor access to credit in Tshiombo (1.7%) and Maraxwe (2.9%) could have been considerably affected by their projects' location.

#### 4.2.2 Age Distribution among emerging farmers



A sample of 175 emerging farmers, drawn for this study, was sub-divided into four age categories. These categories were, namely the youth (between 19 and 35 years old), the middle aged group (36 to 49 years old), the elderly group (between 50 and 65 years old) and aged farmers (above 65 years of age). Table 4.1, illustrates the frequencies and percentages of the age groups in relation to access to credit.

**Table 4.1: Access to credit by farmer's age**

Age groups of emerging farmers	Access to Credit		Total
	NO	YES	
Youth (19 to 35 years Old)	18 (10.3 %)	6 (3.4%)	24 (13.7%)
Row %	75%	25%	100%
Middle aged (36 to 49 years Old)	34 (19.4%)	10 (5.7%)	44 (25.1%)
Row %	77%	33%	100%
Elderly Group (50 to 65 years Old)	62 (35.4%)	15 (8.6%)	77 (44 %)
Row %	81%	19%	100%
Aged (above 65 years Old)	218 (16%)	2 (1.1%)	30 (17.1%)
Row %	93%	7%	100%
<b>Total</b>	<b>142 (81.1%)</b>	<b>33 (18.9%)</b>	<b>175 (100%)</b>

Source: Field Survey, 2012

The results show that fewer young farmers (13.7%) were engaged in farming. Aged farmers were very few (17.1%) in the sample of this study. As observed in Table 4.1, only a quarter of the youths within the age group (25%) had access to credit compared to the elderly and the aged which contributed only 19% and 7% respectively within their age groupings. Moreover the results of this study have shown that credit access is affected by age of the individual farmer, given that as age advances, credit access increase. However the results show a marked decrease in credit access at an advanced age. This finding is similar to that of Mpuga (2008) i.e. credit

access tends to be better accessible to the elderly people, though at an advanced age the situation reversed.

### 4.2.3 Gender of emerging farmers

According to the study conducted by Fletschener (2008), gender has a critical influence on the economic efficiency of a household. In the sample used for this study, both males and females participated in farming activities. Table 4.2, contrasts the level of involvement by both males and females in credit access.

**Table 4.2: Access to credit by gender distribution**

Gender of emerging farmers	Access to Credit		Total
	NO	YES	
Male	72 (41.1%)	15 (8.6%)	87 (49.7%)
Row %	83%	17%	100%
Female	70 (40%)	18 (10.3%)	88 (50.3%)
Row %	80%	20%	100%
<b>Total</b>	<b>142 (81.1%)</b>	<b>33 (18.9)</b>	<b>175 (100%)</b>

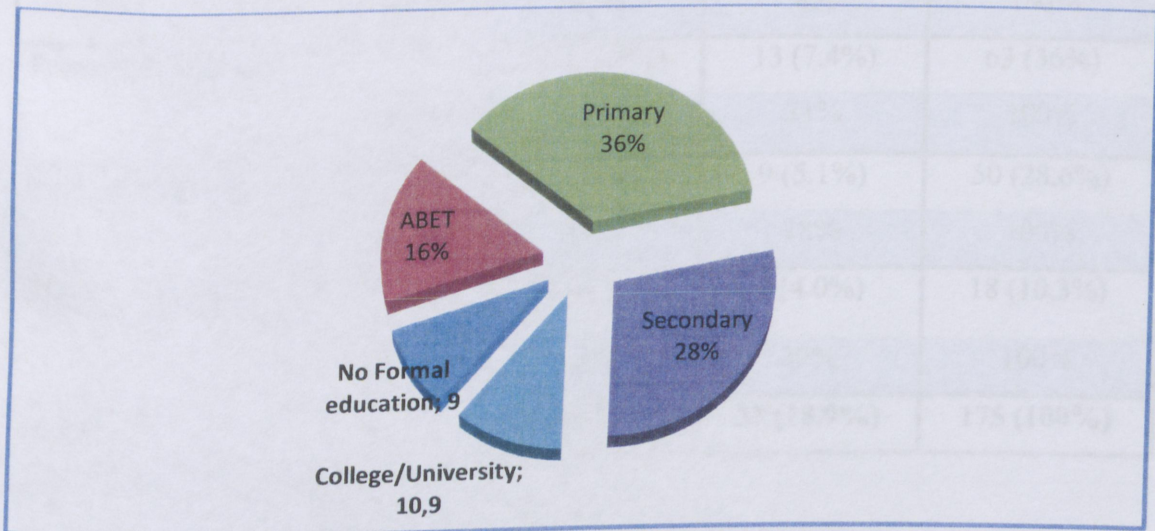
Source: Field Survey, 2012

According to Table 4.2 there were slightly more females (50.3%) who participated in the study than the males. As shown in the table, a substantial proportion of the respondents (81.1%) had no access to production credit of which 41.1% and 40% was representing males and females respectively. Despite being the most previously marginalised group, females had more advantage in terms of access to credit (10.3%) as compared to the males (8.6%). Thus, access to credit could have been influenced by the policies of affirmative action that tend to put women first. These are findings closely linked to the view held by Kirsten (2006) about the policy initiatives used in South Africa to expand financial outreach. Despite the variation in the sample sizes used

for the study, one can conclude that both males and females participated in farming more or less equally, however, access to financial resources differed by gender in favour of women.

#### 4.2.4 Farmers' Level of Education

Blancard *et al.* (2006) revealed that education could constrain the establishment of cost-efficient and productive access to financial resources by black South Africans. In this study education was divided into five categories (no formal education, ABET, primary education, secondary, and the college/university levels). It is assumed that educational attainment has considerable influence on the socio-economic behaviour of farmers. The relative distribution of emerging farmers in line with their educational status is illustrated in Figure 4.2.



**Figure 4.2: Percentage distribution of emerging farmers by Level of education**

Source: Field Survey, 2012

As shown in Figure 4.2, the majority of farmers (36%) had gone up to the primary level of education and fewer respondents fell in the category of no formal education (9%). A substantial proportion (28.6 %) of the farmers had only acquired up to the secondary level of education. It can therefore be noted that there is a gradual improvement in education attainment by

respondents. Ramutsindela (2002) argued that as many black South Africans were previously deprived of their educational rights, any redress initiative should start off with provision of educational opportunities. The contrasts between the level of education and access to farm credit are presented in Table 4.3:

**Table 4.3: Access to credit by Level of education of emerging farmers**

Level of Education	Access to Credit		Total
	NO	YES	
No formal Education	14 (8%)	2 (1.1%)	16 (9.1%)
Row %	88%	12%	100%
ABET for Adults	26 (14.9%)	2 (1.1%)	28 (16%)
Row %	92%	8%	100%
Primary Education	50 (28.6%)	13 (7.4%)	63 (36%)
Row %	79%	21%	100%
Secondary/Matric	41 (23.4%)	9 (5.1%)	50 (28.6%)
Row %	82%	18%	100%
College/University	11 (6.3%)	7 (4.0%)	18 (10.3%)
Row %	61%	39%	100%
<b>Total</b>	<b>142 (81.1%)</b>	<b>33 (18.9%)</b>	<b>175 (100%)</b>

Source: Field Survey, 2012

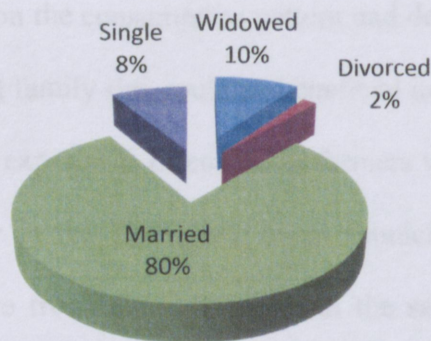
Table 4.3 shows the distribution of respondents in terms of educational attainment. It specifically shows that most of the farmers (28.6%) without access to credit had acquired education up to primary, followed by those who had acquired secondary qualifications (23.4%). The results in the Table 4.3 showed that amongst the farmers who had access to credit, 7.4% had acquired primary education, whilst 5.1% and 4.0% of farmers had secondary and college education respectively. The majority (28.6%) of farmers who had no access to credit had acquired primary education whilst 23.4% had acquired secondary education. Table 4.3 shows that credit access

### 4.2.3 Household size, income generation, and farming experience

decrease with increasing educational achievement. While this could be an unexpected observation, it could be that the most educated could be generating sufficient income for investing into farming ventures from external sources. However these findings are in contrast with the general observation from other studies (Mpuga, 2004; Akram *et al.*, 2008; Land Bank, 2011, to mention but a few).

### 4.2.5 Marital status of the farmers

The sampled farmers in this study were also assessed according to their marital status. The marital status was subdivided into four categories, namely single, married, widowed and divorced. In order to present how emerging farmers in the Thulamela Local Municipality were distributed according to their marital status, a pie chart has been used in Figure 4.3 that follows.



**Figure 4.3: Distribution by Marital status of emerging farmers**

Source: Field Survey, 2012

As shown in Figure 4.3, married people constituted the majority (80%) of the farmers in the sample while the least category (2%) was the divorced. A considerable proportion of farmers were either widowed (10%) or single (8%). Previous studies have also shown that farming was more of a family enterprise (Aliber & Hart, 2009). According to Kirsten (2006) farming should be supported by the state as it helps many low income families to ensure their own food security.

#### 4.2.5 Household size, income generation and farming experience

Table 4.4 presents the household size, income generation and farming experience among the respondents.

**Table 4.4: Household sizes, income and experience of emerging farmers**

	Minimum	Maximum	Mean	Std. Deviation
Household sizes	2	12	5.52	2.084
Household income per month or year	R 120.00	R 200 000.00	R2608.23	15198.573
Farming experience	0	22	11.89	10.421

Source: Field Survey, 2012

Accordingly a typical farm household of an emerging farmer in the Thulamela Local Municipality had an average of almost 6 family members with a minimum of 2 and a maximum of 12 members. According to Pasura (2010) and Kirstern (2006), the household size (farm size) has significant influence on the consumption pattern and demand structure for resources. Pasura (2010) however noted that family size could be beneficial in terms of provision of farm.

In Table 4.4, the farming experience of emerging farmers varied between 0 and 22 years of. An average emerging farmer in the Thulamela Local Municipality had almost 12 years farming experience. The collective frequencies drawn from the sample used in this study proved that despite those who had no experience at all, farmers' experience was mainly between 1 and 21 years. It should be acknowledged that the number of years does not imply know-how in enterprise management. Kelly *et al.* (2003) noted that experience is the skill or understanding gained through practice rather than the number of the years one has been farming.

As reflected in Table 4.4, a typical farm household of emerging farmers in the Thulamela Local Municipality received an average of R 2608.23. The household incomes of emerging farmers were mainly received from government grants, remittances, wages and salaries. The sources of

income for emerging farmers in South Africa could also be linked to the Ugandan household survey of Mpuga (2008) which revealed that other than dependence on government grants, supplementary non-farm activities were also sourced by families.

#### 4.2.6 Occupational background

Information such as occupational background helps in making further inferences and in determining the impact of unemployment and poverty on farmers' credit access. The occupational background of emerging farmers who participated in the study is presented in

Figure 4.4.

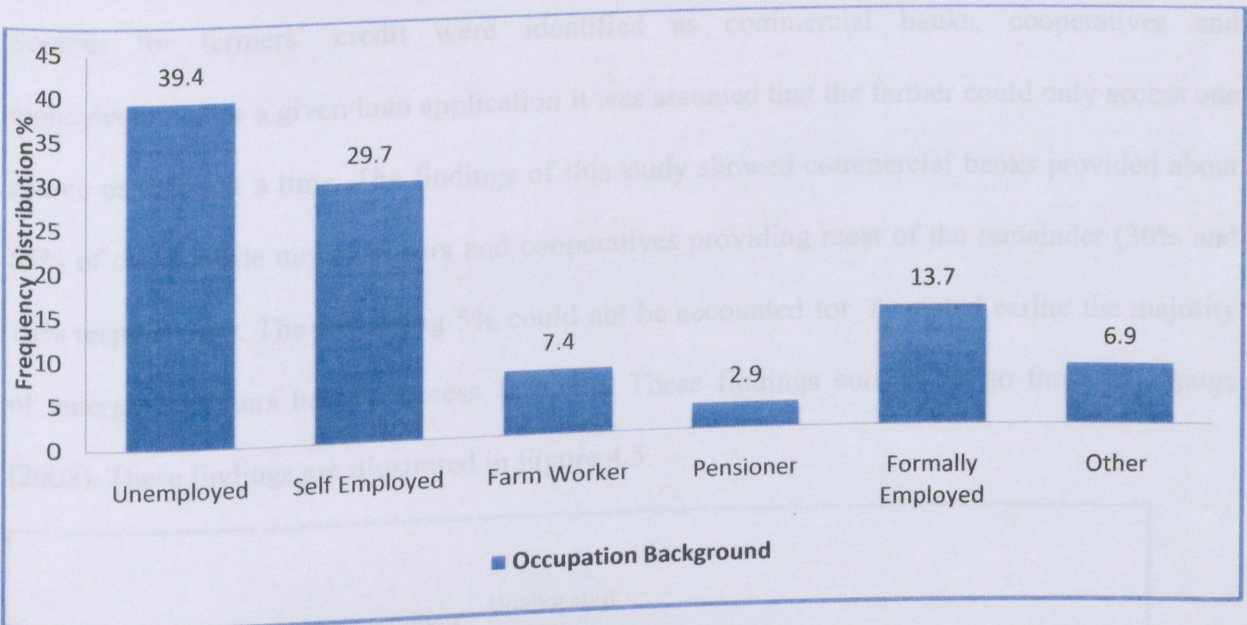


Figure 4.4: Occupation backgrounds of emerging farmers.

Source: Field Survey, 2012

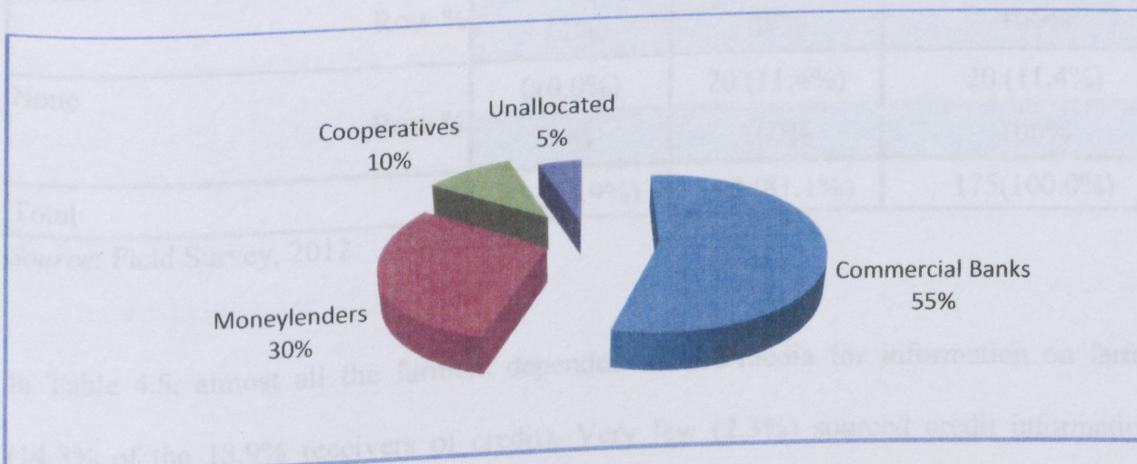
As illustrated in Figure 4.4 above, the majority of emerging farmers were either unemployed (39.4%) or self-employed (29.7%) as compared to the formally employed (13.7%). Most of the formally employed included the civil servants, religious leaders and those from the private sector. The proportion of emerging farmers that generated their income from farm work (7.4%), pension grant (2.9%) and other sources (6.9%) was relatively low.

### 4.3 Determinants of access to farm credit

In the study, “Access to credit” implies that the farmer is able to borrow from given formal sources of income. In the logistic odds transformation function the farmer has “Access to Credit” or “No access to Credit”. Access to credit is assumed to be affected by many factors that are associated with the farmer and the farm including formal sources of farm credit, sources of credit information, agricultural training and training organisations, agricultural extension and market access. These factors are further discussed in the next section.

#### 4.3.1 Formal sources of farm credit for emerging farmers

Sources for farmers’ credit were identified as commercial banks, cooperatives and moneylenders. For a given loan application it was assumed that the farmer could only access one source of credit at a time. The findings of this study showed commercial banks provided about 55% of credit while moneylenders and cooperatives providing most of the remainder (30% and 10% respectively). The remaining 5% could not be accounted for. As noted earlier the majority of emerging farmers had no access to credit. These findings correspond to those of Mpuga (2008). These findings are illustrated in Figure 4.5.



**Figure 4.5: Distribution by Formal Sources of Credit for Emerging Farmers**

Source: Field Survey, 2012

### 4.3.2 Sources of credit information

In the study, the sources of credit information used by emerging farmers were investigated to determine the effects of awareness on credit access. Sources of information were divided into the following categories: Media; Extension; Friends; All Media, Extension and Friends and the 'None' category. A farmer who used all the sources had more awareness compared to those depending on a single source. The results are shown in Table 4.5.

**Table 4.5: Information provision regarding farm credit for emerging farmers**

Sources of Credit Information for Emerging Farmers	Access to Credit		Total
	Access	No Access	
Media	25 (14.3%)	82 (46.9%)	107 (61.1%)
Row %	23%	77%	100%
Extension	3 (1.7%)	18 (10.3%)	21 (12.0%)
Row %	14%	86%	100%
Media, Extension officers and friends	4 (2.3%)	14 (8.0%)	18 (10.3%)
Row %	22%	78%	100%
Friends	1 (0.6%)	8 (4.6%)	9 (5.1%)
Row %	11%	89%	100%
None	0(0.0%)	20 (11.4%)	20 (11.4%)
Row %	0%	100%	100%
Total	33 (18.9%)	142 (81.1%)	175(100.0%)

Source: Field Survey, 2012

In Table 4.5, almost all the farmers depended on the media for information on farm credit (14.3% of the 18.9% receivers of credit). Very few (2.3%) sourced credit information from friends, media and extension officers. A study by Land Bank (2011), have shown that a lack of credit information had critical effects on credit-constrained farmers in the Limpopo province.

### 4.3.3 Agricultural training received and Training organisations

Assessments on the sample farmers were done to determine whether they received agricultural training or not. The aim was to determine the effects of agricultural training on credit access (Table 4.6).

**Table 4.6: Access to credit by agricultural training received**

Agricultural training	Access to Credit		Total
	Access	No Access	
No	8(4.6%)	41(23.4%)	49(28.0%)
Row %	16%	84%	100%
Yes	25(14.3%)	101(57.7%)	126(72.0%)
Row %	20%	80%	100%
Total	33(18.9%)	142(81.1%)	175(100.0%)

Source: Field Survey, 2012

Table 4.6 shows that the majority (72%) of emerging farmers had received agricultural training but minimal credit access (14.3% with agricultural credit). Some of the trained farmers perceived that the training offered was too inadequate to lead to recognised qualification or certification. This finding was contrary to findings of Kelly *et al.* (2003), that agricultural training positively changed the credit access status of the farmers.

Farmer training organisations were divided into five categories, namely: Department of Agriculture, Department of Agriculture and a combination of, Universities/Colleges, NGOs and other farmers training organisations. Table 4.7 illustrates the contrasts of training organisations versus access to credit.

**Table 4.7: Access to credit by Farmer training organisations**

Organisations training emerging farmers	Access to Credit		Total
	Access	No Access	
Department of Agriculture	4 (2.3%)	40 (22.9%)	44 (25.1%)
Row %	9%	91%	100%
Department Of Agriculture and Other parastatals	3 (1.7%)	16 (9.1%)	19 (10.9%)
Row %	16%	84%	100%
University/College	12 (6.9%)	45 (25.7%)	57 (32.6%)
Row %	21%	79%	100%
Non-Governmental Organisations	5 (2.9%)	3 (1.7%)	8 (4.6%)
Row %	63%	37%	100%
Other agricultural training Organisations	9 (5.1%)	38 (21.7%)	47 (26.9%)
Row %	19%	89%	100%
Total	33 (18.9%)	142 (81.1%)	175 (100.0%)

Source: Field Survey, 2012

Table 4.7 shows that the majority of farmers who had access to credit were trained through the 'University/College' outreach programmes (32.6% of the total or 6.9% credit access and 25.7% non-access). The next best providers of agricultural training were the other training organisations and Department of Agriculture with other parastatals which had trained 25.1% and 26.9% respectively. An important finding emanating from Table 4.7 is that most of the emerging farmers trained by donor funded NGOs (4.6%) reflected a higher proportion of access to credit (63% of those that received training). Therefore this finding could be important in advocating for increased NGO activity in emerging agriculture sector. Similar recommendations were made indirectly by Jayne *et al.* (2004), supporting the in-kind credit delivery by donor funded non-governmental organizations.

#### 4.3.4 Access to produce markets

According to Louw *et al.* (2008), farmers with no access to produce markets tend to be economically constrained. Income is always a function of the total sales of produce. Thus, a farmer has to have access to the market to succeed. It was necessary in this study to explore the influence of market access on access to credit, Table 4.8 sums up the findings.

**Table 4.8: Access to credit by Market access**

Access to produce markets	Access to Credit		Total
	Access	No Access	
No	5(2.9%)	34(19.4%)	39(22.3%)
Row %	13%	87%	100%
Yes	28(16.0%)	108(61.7%)	136(77.7%)
Row %	21%	79%	100%
Total	33(18.9%)	142(81.1%)	175(100.0%)

Source: Field Survey, 2012

The table shows that, more than three quarters (77.7%) of the sample farmers had access to produce markets with a substantial proportion (61.7%) did not have access to credit. A large proportion of farmers that had no access to markets also could not access credit (87%). According to the Land Bank (2011) farmers without access to formal produce markets would most probably experience limited access to sources of financial assistance.

#### 4.3.5 Access to extension services versus Access to credit

Extension serves as an advisory service that orients the farmer towards the importance of participating in associations that offer farm credit and participation in training. In the study by the Land Bank (2011), extension was seen as the centre piece of information transfer to emerging farmers. A farmer that receives adequate extension services is more exposed to training

opportunities and participation in high quality produce. The contrast between access to credit and extension service is illustrated in Table 4.9.

**Table 4.9: Access to credit and Extension services received**

Access to extension services	Access to Credit		Total
	Access	No Access	
No	11 (6.3%)	40 (22.9%)	51 (29.1%)
Row %	22%	78%	100%
Yes	22 (12.6%)	102 (58.3%)	124 (70.9%)
Row %	18%	82%	100%
Total	33 (18.9%)	142 (81.1%)	175 (100.0%)

Source: Field Survey, 2012

Table 4.9 illustrates that a significant proportion (70.9%) of farmers had access to extension services despite most of them failing to access credit (58.3%). Interestingly the proportion of those that had exposure to extension services in terms of credit access (12.6%) was significantly higher than those that did not receive that exposure (6.3%). Thus extension services were positively correlated with access to credit. The Land Bank (2011) study also reiterated increased demand for extension services to accelerate delivery of credit resources to rural farm households.

## 4.4 Inferential Statistical Analysis

### 4.4.1 Logistic Regression Model

In chapter 3 on methodology, it was explained that the binary response variable for the logistic regression refers to “Access to credit “or “No access to credit”. The main assumption for this study is that an emerging farmer has access to farm credit, if he or she is able to borrow a significant amount from a recognized financial institution. Several variables were modeled to define access to credit. However, some variables were eliminated during the stepwise multiple iterations in the data fitting process i.e. Information on Credit Access and the Farmers’

perception on credit access, were both significant ( $p > 0.05$ ) for the model at the initial fitting of the model. The Hosmer and Lemeshow  $X^2$  test (HL test) was performed for the goodness of fit of the model, considering the principle that it is computed based on a grouping of ordered predicted probabilities into ten groups (Sapford and Jupp, 2006). The  $p$ -value in the HL test should be greater than the cut off value of 0.05 to indicate a good fit (Hosmer & Lemeshow, 2000). The HL test outcomes was;  $X^2(8) = 2.031$ ,  $p = 0.980$  thus, the model was a good fit for the data. The final results of the regression model are presented in the Table 4.10;

**Table 4.10: Logistic regression estimation of determinants of Credit Access and Supply**

Variable	Description	Coefficient ( $\beta$ )	S.E.	Exponent ( $e^{\beta}$ )	Wald	Sig
AGE	Age of Farmers	-0.122**	0.061	0.885	3.966	0.046
LOC	Location of Project	4.373**	0.015	79.303	4.243	0.039
FEXP	Farm Expenditure	-0.056**	0.023	0.946	5.952	0.015
FINC	Farm Income	0.041***	0.166	1.042	7.331	0.007
CRAMT	Credit Amount Applied	-0.510***	2.123	0.601	9.429	0.002
Constant		12.603***	4.912	297573.009	6.585	0.010

Source: Study results;  $n=175$ ; \*\* = 5% level of significance; \*\*\* = 1% level of significance; Hosmer & Lemeshow Test:  $\chi^2 = 2.031$ ,  $df = 8$ ,  $p = 0.980$ ; Cox & Snell  $R_2 = 0.560$ ; Nagelkerke  $R_2 = 0.910$ .

The results show that as age increased there will be likelihoods for credit access to decrease (5% level of significance). There was a positive relationship between credit access and distance from the project, implying that the distance increase as, access to credit will also increase. This finding is unexpected as it would be more appropriate for farming operations to be closer to credit sources. However as shown in the descriptive analyses for this study, most emerging farmers could not access credit, perhaps due to long distances between providers and those requiring it, meaning that those that can travel long distances were able to access credit.

The negative relationship between farm credit access and farm expenditure (5% level of significance) affirmed that decreased expenditure relates to less access to credit as would be

expected. The results also show that access to credit was positively associated with an increase in income. This result was expected as an increase in income would create increased demand for expansion of farming operations. The negative relationship between credit access and the credit amount applied for reflects that emerging farmers are borrowing more than can be provided to them. This could explain the reason for less success in obtaining the requested credit, and thus the lower number of farmers accessing this resource.

#### **4.5 Discussion of the results**

This study uncovered that the highest proportions of projects were located far away from the main semi-urban area, Thohoyandou town. Interestingly the same projects accessed a bigger proportion of the credit provided to farmers. The urban locations for farm projects were characterised by limited farm activity as well as less access to farm credit. Regarding the location of farming projects literature indicated credit is more accessible to those located nearer to the supplier. However people in urban areas are not committed to agricultural production despite their having enough money to finance agricultural operations. The implication of these results is therefore that while agricultural production increased as farm projects moved away from the urban areas, farm credit as well tended to be more accessible in locations further away from the credit supplier. Therefore, if production is concentrated in the rural areas, financial suppliers should establish a credit expansion outreach programme for farmers in the remote rural villages.

Regarding the age distribution of farmers this study has revealed the dominance of the elderly and the middle aged with very minimal youth participation. The lower participation of the latter is a matter for serious concern as it has serious implications for sustainability of farming. It is therefore imperative that recommendations as reflected for this study are taken into consideration

by policy makers and implementers. Instead of the anticipated, greater access to credit by the youth as compared to older generations, the situation is reversed, with more of the latter accessing the resource. Perhaps this could be a factor leading to lower youth participation.

A significant proportion of the aged also participated in farming. Access to farm credit increased with age but decreased at an advanced stage as would be expected. At the same time younger farmers faced the same problem of lack of financial access as could be considered naïve and careless, with no responsibility to invest for the future. Mpuga (2008) and the Land Bank (2011) suggested that aged farmers were considered to be unbankable by financiers, thus, there are needs to provide credit to young energetic farmers to enhance their productive potential.

The study also showed that there were more females participating in farm operations than males. Females also dominated with regards to farm credit access. Females were also more educated than males up to primary level although the latter were holders of higher educational qualifications. Implications are that if women could participate in farming ventures more effectively, the fight against hunger and poverty can be won as these tend to be the most vulnerable group. Pasura (2010) has noted that as most farm households are female-headed, developing countries would do well to focus their financial resources to them. Policy implementers should consider integrating gender-specific policies during credit resource delivery in favour of women.

Access to farm credit was dependant mainly on access to educational achievement of the farmers. There have been remarkable improvements seen in the results in educational attainment of the previously disadvantaged, as most farmers had at least reached primary or secondary level.

Credit access increased remarkably within the proportion of those with primary and secondary education with a marked decrease in as educational achievement increased for tertiary level. According to Li et al. (2011) and the Land Bank (2011) education had significant effects on resource access and borrowing decisions. The implications around that would be that perhaps those with higher education achievements were having enough to finance their own farming operations, with no dependence on credit. Despite those who had no dependence on farm credit, a greater proportion among those with tertiary education had accessed credit. This could be a far-fetched or indirect intervention strategy however, could be useful for expanding credit access and improving financial statuses of emerging farmers. Ideally, a major imperative to all sections of education and further trainings is that they become engaged and adhered to policy and programmes for improving educational level of the farmers i.e. ABET, training workshops, etc.

The most important reason for most farmers involving themselves in agriculture was to raise incomes, in order to fend for their families. This idea explains why more than 80% of the farmers in the study area were married. Widows constituted 10% of the study sample which is important, because participation of widows in agriculture is vital for their food security needs. It is a matter of concern that some farming projects exclude widows, particularly due to their critical role in raising household income as sole breadwinners.

The majority of the farmers in the study were obligated with large and extended families of up to twelve members. In many studies large household sizes impacted negatively in terms of demand for resource and food security needs while they suffered credit rationing (Mpuga, 2008; Land Bank, 2011; Li et al., 2011). A major unanticipated implication could be that; perhaps a larger household is beneficial in terms of labour supplies. However, labour as a resource has to be

supported in terms of financial capital which should be accessed as farm credit. The financial institutions are imperiously obligated to reconsider lending more than one person from the same household and thus, mostly in cases where credit rationing is a matter fact.

Household attributes of the farmers in this study showed that, the majority of them were moderately experienced in terms of farming knowledge. Aged farmers were expected to have more hands-on experience in farming compared to their younger counterparts. However hands-on experience needs to be backed by literacy, lest it become baseless, calling for elderly people to be exposed to adult education through ABET.

Most farmers were either unemployed or self-employed while a significant proportion was either formally employed or retired pensioners. Considering that these farmers are obliged to cater for their family needs, it becomes important for public and private sector agencies to devise efforts that could lead to targeted credit provision, including prioritization of government subsidisation to credit providers that target this sector.

The most eminent sources of farm credit used by the farmers in the study were; commercial banks, cooperatives and moneylenders. In the literature it is certainly the use of a given formal credit source depended on its availability and affordability (Karmakar, 2003; Collins, 2005). The majority of farmers in the study had no access to farm credit and chances are that they could not afford the collateral requirements of lenders. On the other hand the suppliers have to depend on the borrower as guarantee that they will not default. Establishment of corporate relationships between financiers and the farmers would improve credibility between both parties, as they

would all understand their potentials and limits. Lending and borrowing should therefore be based on credibility on either sides hence the supply and demand sides.

The study revealed that the most utilised sources of information included the media and extension services. According to Chieochan et al. (2000) traditional sources of information such as the newspapers, radio and TV are the most eminent sources of information for farmers in developing countries. The major observation here was that, farmers were not all that ignorant as they used of sources of information available to them for credit awareness. There is an implication that agricultural extension and information dissemination on credit access in developing countries as is in the developed countries becomes advanced sooner or later i.e. use of internet, and social networks etc. While agricultural extension, suppliers and stakeholders for farm credit continue to support and engage themselves through media, advanced sources could be introduced gradually for farmers to adapt if they can afford.

The finding that most famers depended on extension officers and the media points out to the need for extension services to focus their efforts in providing essential information regarding input sources, actual production skills and market information to this disadvantaged group. These should be accompanied by training intervention in general and financial management that could graduate them to real commercial farming. The fact that most of those who were trained still could not access credit is a serious anomaly as it could be pointing out to the quality of training provided. It could be critical for implementing agencies such as the Department of agriculture in Limpopo Province to outsource training to competent institutions such as universities and colleges of agriculture. As attested by Kelly et al. (2003) training that is

delivered by competent organisations could be an important tool for expanding credit access and supply to farmers.

In the study access to agricultural extension was positively associated with credit access. In terms of farm credit access, the proportion of farmers who had agricultural extension exposure was more enhanced than those without access to extension. The study by Land Bank (2011) in the Limpopo province, affirmed the significance of extension in enhancing farmers access to production credit. Since provision of extension services is primarily state-handled there are needs to optimize its reliability for the farmers. Extension officers should as well be continually trained so that they keep abreast and well-informed of new innovations not only in farm credit but in other resources and technologies as well.

The logistic regression results depicted that;

- Age increased with relative likelihoods of decreased access to farm credit by an emerging farmer. This could be associated with the dominance of elderly farmers who are considered unbankable by financial suppliers. An appropriate makeover should see policymakers and implementer redirecting access to such farm resources as credit redirected to younger farmers.
- Access to credit increase with the increase in distance between the farm borrower and the supplier of farm credit. The major implication could be that agricultural farming tends to be concentrated in locations further away from the urban. It is wiser that the financiers should inject money right where there is production or where there is genuine need for it.
- It is less likely for a farmer to access farm credit when they borrowed much more amounts than can be provided to them. Seemingly farmers are not well-versed with credit

worthiness borrowing terms that govern issuing of farm credit. Farmer training organisations are hereby indebted with delivering to farmers the suitable training that incorporates financial literacy.

- Access to farm credit increase with the likelihoods of increased of farm incomes of the emerging farmers. According to Jayne et al. (2004) literature increased access to credit improved the acquisition of inputs, area under production and market access resulting in high farm income, hence high profits. A strategic policy to improve farm incomes and profits should have to expand access to farm credit. Thus, increment of amounts received according to potential increasing the number that has access to finances though at the lowest possible amounts the can afford.
- Decreased farm expenditure is more or less associated with less access to farm credit by an emerging farmer. Literature affirms farmers with access to farm credit would be expected to spend much more than those without farm credit access (Li et al., 2011). Access to finances would result in growing demands to expand the production and the output. While these farmers with credit spend more they are also obligated with the repayment expenditures. It is ideal for the lenders to consider the potential of an individual farmer in order to enhance lending adequately for the expenditure incurred. Besides this in cases where expenditures exceed the credit amount issuable to the farmer, stakeholders should also take stand in supplying in-kind credit for input and market in one interlinked transaction.

The listed findings could closely be linked, dominance of elderly farmers in poor rural farming projects and associated with consequences of lower literacy levels, etc. The most important strategy would be in devising policy instrument that emphasize maximum youth participation,

upgraded markets, a more enhanced extension services, and effective learning and training for the emerging farmers.

#### **4.6. Chapter Summary**

The chapter covered the descriptive statistics results, inferential statistics results and Logistic regression modelling results and a discussion of the findings. A detailed summary and conclusion of the research findings are explained in detail in chapter 5.

## **CHAPTER 5: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter provides a summary and conclusions of the study findings, including recommendations and issues for future research,

### **5.2 Summary of findings**

The study uncovered the following:

- The highest proportions of farm projects as well as proportion of those who accessed farm credit in the Thulamela Local Municipality were located further away from credit suppliers in the main semi-urban area, Thohoyandou town. The urban farms and farmers had limited farm activity and less farm credit access respectively.
- The study revealed the dominance of the elderly and middle aged farmers with very minimal youth participation, where lower participation by the latter was ascribed as a consequence of limited access to farm credit.
- Credit access initially increased with age, but declined markedly at advanced stages.
- More females than males participated in farm operations, with better access to farm credit and more educational attainment than their male counterparts.

- Farmers with lower and tertiary educational qualifications accessed less credit than those that had acquired primary and secondary education levels.
- The proportion of married framers was much higher than the other marital statuses, with the widowed contributing the least. Most households had larger family sizes that largely depended on remittances, and government grants as household income sources. A typical emerging farmer was moderately experienced in farming knowledge and as noted aged farmers had more hands-on experience on farming compared to their young energetic counterparts.
- The majority of farmers were either unemployed or self-employed Farmers depended mostly on commercial banks, cooperatives and moneylender as farm credit sources while they sourced credit information mainly from the media and extension officers.
- Most farmers that had access to agricultural training and extension services did not access credit - a serious anomaly that pointed out to the poor quality of training provided.

Consistent with the results of the descriptive findings, the inferential results showed a decrease in credit access with an increase in age, contrary to descriptive findings of the study. It was also speculated through inferential statistical results that credit access would increase as distance between supplier and borrower increased. These results also reflected on the unlikelihood of success to those farmers that attempted to borrow more than they could be loaned.

### 5.3 Conclusion

In line with the objectives and findings of this study the following conclusions can be advanced:

- The first specific objective of this study was to determine the association between the biographical characteristics of the farmers and access to farm credit. On the basis of the above the study findings were that, some s relationships existed, for instance, the age of the

farmer and location of the farm project attested significant relationships with access to farm credit. The study had hypothesized that **there would be no association between the biographical characteristics of emerging farmers and access to farm credit**. The study found however that credit access increased with advances in the age of the farmer. While access to farm credit increased as distance between the financier and borrower increased.

- The second specific objective of this study was to determine the effects of increased access to credit on the farmers' average farm incomes. It was found in the study that access to farm credit was significantly associated with increases in farm income..
- The final specific objective of this study was **to provide policy recommendations for improving access to credit by emerging farmers** based on the study findings. These are provided in the recommendations below

### **Recommendations of the study findings**

- The consequences linked dominance of elderly farmers with limited education and credit access should be mitigated through exposure in workshops and other training strategies for need for elderly people to progressively move away from active farming in preparation for increased youth participation to achieve sustainability. Their participation could be largely that of providing the necessary advice to their younger counterparts. Participating youth will require external support not only in the provision of effective training but also incentives that would render farming an attractive venture, such as subsidization of income earned in line with that pertaining in other sectors of the economy..
- The major imperative in this study remains the need for expanding supplies of farm credit to distant farm borrowers. Expanding access to credit would mean that more farmers are

also considered in agricultural investments as well as increasing amounts received by farmers to mitigate low investment and limited capital expenditure levels however, lending and borrowing should be based on credibility.

- Policy implementers should consider integrating gender-specific policies during credit resource delivery in favour of women particularly widows, due to their critical role in provisions for households as sole breadwinners.
- Extension officers should keep abreast and well-informed of new innovations so that they will not compromise the quality of service offered to emerging farmers and also to ensure that information be disseminated effectively through extension workshops and media

## 5.5 Limitations and Further Areas of Research

The following issues could not be covered by this study:

- Investigation of affordability, access and supply of production credit from an agribusiness point of view;
- Evaluation of limitations to donor-funded NGOs activity in financial resources supply to emerging farmers;

## REFERENCES

- AgriSETA, 2010. *Agriculture: facts and trends*. Census of commercial Agriculture. Statistics South Africa.
- Akram, W., Hussain, Z., Sial, M.H. and Hussain, I., 2008. Agricultural Credit Constraints and Borrowing Behaviour of Farmers in Rural Punjab. *European Journal of Scientific Research*, 23(2), pp.294-304.
- Aliber, M. and Hart, T.B.G., 2009. Should subsistence agriculture be supported as a strategy to address rural food insecurity? *Agrekon*, 48(4), pp.434-58.
- Argent, N., 2000. Whither the Lender of last resort? The rise and fall of public farm credit in Australia and New Zealand. *Journal of Rural Studies*, 16, pp.61-77.
- Barham, B.L., Boucher, S. and Carter, M.R., 1996. Credit constraints, Credit Unions and small scale Producers in Guatemala. *World Development*, 24(5), pp.793-806.
- Barnad, T., 2005. *SOUTH AFRICA 1994-2004: A popular History*. Pretoria, Halfway House, South Africa: Southern Book Publishers(Pty.Ltd).
- Baumann, T., 2004. Pro-poor microcredit in South Africa: cost efficiency and productivity of South African pro-poor microfinance institutions. *Development Southern Africa*, 21(5), pp.777-98.
- Benjaminsen, T.A., Holden, S., Lund, C. and Sjaastad, E., 2008. Formalisation of land rights: Some empirical evidence from Mali, Niger and South Africa. *Land use Policy*, pp.28-35.
- Blancard, S., Bousemart, J.-P., Briec, W. and Kersterns, K., 2006. Short and Long-run credit constraints in French Agriculture: A directional Distance function framework using Expenditure-constrained profit functions. *American Journal of Economics*, 88(2), pp.351-64.
- Bradstock, A., 2005. Changing Livelihoods and Land Reform: Evidence from Northern Cape Province of South Africa. *World Development*, 33(11), pp.1979-92.
- Briggerman, B.C. and Akers, M.M., 2010. The credit advantage of farm and rural small business ownership. *Agricultural Finance Review*, 70(3), pp.353-64.
- Chauke, P.K. and Oni, S.A., 2004. *The productivity and income generating ability of the land redistribution for agricultural development (LRAD) projects in Limpopo Province of South Africa*. Paper presented at AEASA conference on the 21st to 23rd September at Somerset West in Western Cape.
- Chieochan, O., Lindley, D. and Dunn, T., 2000. Factors affecting the use of information technology in Thai Agricultural Cooperatives: A work in progress. *The Electric Journal of Information Technology in Developing Countries*, pp.1-15.
- CLRP, 2003. *Agricultural trade, globalisation and farm workers*. Briefing paper. South Africa: Centre for Legal Rural Practice.
- Cocciarelle, S., 2009. *Financing Michigan's Sustainable agriculture; The availability and accessibility of Capital for Beginner Farmers*. Research Paper. Michigan: C S Mott Group for Sustainable food systems at Michigan State University Michigan State University.
- Collins, D., 2005. Financial instruments of the poor: initial findings from the South African Financial Diaries study. *Development Southern Africa*, 22(5), pp.717-28.
- Crane, W., 2006. Biodiversity Conservation and land rights in South Africa: Whither the farm dwellers. *Geoforum*, 37, pp.1035-45.
- DBSA, 1994. *South Africa's Nine Provinces: A human Development Profile*. Development Bank of Southern Africa.

- Denzin, N.K. and Lincoln, Y.S., 1994. *Handbook of Quantitative research*. London: Sage Publications.
- Denzin, N.K. and Lincoln, Y.S., 2000. *The discipline and practise of qualitative research*. 5th ed. Thousand Oaks: Sage.
- Department of Agriculture, 1996. *Institutional Arrangements and Financial Instruments for Broadening Access to Financial Services*. BATAT series: Finance 6 Second Van Empel Report. Republic of South Africa: Department of Agriculture; Land Affairs.
- Dutoit, A., 2009. *Adverse Incorporation and Agrarian Policy in South Africa*. Draft. South Africa: PLAAS.
- duToit, C. and Moolman, E., 2004. A neoclassical investment function of the South African Economy. *Economic Modelling*, 21, pp.647-60.
- Epstein, G., 2008. An employment targeting framework for central bank policy in South Africa. *International Review of Applied Economics*, 22(2), pp.243-58.
- Fletschener, D., 2008. Woman's access to credit. Does it matter for household efficiency? *American Journal of Economics*, 90(3), pp.669-83.
- Foltz, J.D., 2004. Credit Market Access and profitability in Taiwan Agriculture. *Agriculture Economics*, 30, pp.229-40.
- Fulginiti, L.E. & Perin, R.K., 1998. Agricultural Productivity in developing countries. *Agricultural Economics*, 19, pp.45-51.
- Glass, J.C., Mckillop, D.G. and Rasaratnam, S., 2010. Supervisory, Infrastructure, Efficiency and Motivation. *Journal of banking and Finance*, 34, pp.67-71.
- Gujarat, E, 1992. *Essentials of Econometrics*. 2nd ed. New York: John Wiley & sons Inc
- Guiringer, C., 2007. Understanding the Coexistence of formal and informal Credit Markets in Piura, Peru. *World Development*, 36(8), pp.1436-52.
- Hosmer, D.W. and Lemeshow, S.L., 2000. *Applied Logistic Regression*. 2nd ed. New York: John Wiley & sons Inc.
- Hurwitz, I. and Luiz, J., 2007. Urban Working Class Credit Usage and Over-Indebtedness in South Africa. *Journal of Southern African Studies*, 33(1), pp.107-32.
- Jayne, T.S., Yamano, T. and Nyoro, J., 2004. Interlinked Credit and farm intensification: Evidence from Kenya. *Agricultural Economics*, 31(1), pp.209-18.
- Karmakar, K.G., 2003. *Rural credit and self-help: Microfinance Needs and Concepts in India*. London: Sage Publications.
- Kelly, V., Adesina, A.A. and Gordon, A., 2003. Expanding access to agriculture inputs in Africa: a review of recent market development experience. *Food Policy*, 404, p.379.
- Kirstern, M., 2006. Policy Initiatives to expand financial outreach in South Africa. In *World Bank/ Brookings Institute Conference*. Johannesburg, 2006. World Bank Washington DC.
- Kosina, P., Reynolds, M., Dixon, J. and Joshi, A., 2007. Stakeholder perception of wheat production constraints, capacity building needs, and research partnerships in developing countries. *Euphytica*, 157, pp.475-83.
- Land Bank, 2003. *Land Bank, Annual Report*. Annual Report. Pretoria: Land Bank and Agricultural Development Bank.
- Land Bank, 2011. *Addressing Challenges for Financing Emerging Farmers*. 1<sup>st</sup> 2011<sup>th</sup> ed. South Africa:

Land Bank Public Information Centre.

- Leigh, D., Watkins, R., Platt, W.A. and Kaufman, R., 2000. Alternate Models of Needs Assessment: the Right One for Your Organization. *Human Resource Development Quarterly*, 11(1), pp.87-93.
- Letsoalo, E. M., 1987. *Land Reform in South Africa: A black perspective*. Johannesburg : Skotaville Publishers.
- Li, X., Gan, C. and Hu, B., 2011. Microcredit by Chinese rural households. *Journal of Asian Economics*, pp.1-18.
- Louw, A., Jordan, L.N., D and Kirsten, J., 2008. Alternative marketing options for small-scale in the wake of changing agri-food supply chains in South Africa. *Agrekon*, 47(3), pp.287-308.
- Machette, C.L., 2004. Agriculture and Poverty: Can Agriculture reduce Poverty. Paper presented at the *Overcoming Underdevelopment Conference*. Pretoria, 2004. University of Pretoria.
- Macnaghten, P. and Myers, G., 2005. Focus groups. In Seale, Gobo, Gubrium and Silverman, eds. *Qualitative Research Practice* London: Sage. pp.64-79.
- Markelova, H., Meinzen-Dick, R., Hellin, J. and Dohran, S., 2009. Collective action for smallholder market access. *Food Policy*, 34, pp.1-7.
- Mead, R. and Curnow, R.N., 1992. *Statistical methods in agriculture and experimental Biology*. London: Chapman and Hall.
- Moloi, M.J., 2008. A comparison of socio-economic characteristics that determine the farm income of emerging livestock and horticultural farmers in South Africa. Master's Thesis. Polokwane: University of Limpopo.
- Mpuga, P., 2008. *Constraints in acces to and demand for rural credit: Evidence from Uganda*. A paper presented for presentation during the African Economic Conference (AEC). Tunis: African Development Bank Tunisia.
- Nel, E. and Binns, T., 2000. Rural self-reliance strategies in South Africa:Community initiatives and external support in the former black homelands. *Journal of rural studies*, 16(1), pp.367-77.
- Nilson, H., 2010. *Structure, Reforms and Perfomance of the Ugandan sector*. Bachelor Thesis. Uganda: Minor Field Study Series University of lund.
- OECD, 2006. *Policy Brief*. Policy review Document. South Africa: Organisation for Economic cooperation and Development.
- Okten, C. and Osili, U.O., 2004. Social Networks and Credit Access in Indonesia. *World Development*, 32(7), pp.1225-46.
- Okunade, O.E., 2007. Accessibility of Agricultural Credit and Inputs to Women Farmers of Isoya Rural Development Project. *Research Journal of Agriculture and Biological Sciences*, 3(3), pp.138-42.
- Olubude-Awosala, O.O., VanSchalkwyk, H.D. and Jooste, A., 2008. Mathematical modeling of the South African Land redistribution for development policy. *Journal of policy modelling*, 30(1), pp.841-55.
- Park, A., Brandt, L. and Giles, J., 2003. Competition under credit rationing:theory and evidence from China. *Journal of Development Studies*, 71, pp.463-95.
- Pasura, D., 2010. A gendered analysis of land reform in Zimbabwe. *Women Studies International Forum*, 33, pp.443-53.
- Peters, P., 2009. Challenges in Land Terure and Land Reform in Africa: Anthropological contributions. *World Development*, 37(8), pp.1317-25.
- Petrick, M., 2004. Farm Investments credit rationing and governmentally promoted credit access in Poland: a

- cross sectional survey. *Food Policy*, 29, pp.275-94.
- Place, F., 2009. Land tenure and agricultural productivity in Africa: A comparative analysis of the Economics literature and recent policy strategies and reforms. *World Development*, 37(8), pp.1326-36.
- Punch, K.F., 2009. *Developing Effective Research Proposals*. London: Sage Publications Ltd.
- Ramutsindela, M.F., 2002. The perfect way of ending a painful past? Makuleleke land deal in South Africa. *Geoforum*, 33, pp.15-24.
- Rougoor, C.W., Trip, G., Huirne, R.B.M. and Renkema, J.A., 1998. How to define and study farmers' management capacity: theory and use in Agricultural economics. *Agricultural Economics*, 18, pp.261-72.
- Ryen, A., 2005. Ethical issues. In C. Seale, G. Gobo, J.F. Gubrium and D. Silverman, eds. *Qualitative Research Practise*. 2nd ed. Dar es Salaam: Sage. pp.231-311.
- Sapsford, R. and Jupp, V., 2006. *Data Collection an Analysis*. London: Sage Publications Ltd.
- Schimmelpfenning, D. et al, 2000. Short and long term returns to agricultural R&D or will the real rate of return please stand up?. *Agricultural Economics*, 23, pp.1-15.
- Schombe, A., 2000. Getting South African banks to serve micro-entrepreneurs: an analysis of policy options. *Development Southern Africa*, 17(5), pp.751-67.
- Shinns, L.H. and Lyne, M., 2004. Titling, Symptoms of poverty within a group of land reform beneficiaries in the mid lands of Kwa-Zulu Natal: Analysis and policy recommendations . *Agrekon*, 43(1), pp.74-88.
- StatsSA, 2010. *Gross Domestic Product*. Pretoria: Statistics South Africa: Statistical Release P0441.
- Tomlinson, M., 2007. The development of a low income housing finance sector in South Africa: Have we finally found a way forward? *Habitat International*, 31, pp.77-86.
- Urey, I., Dorward, A., Kydd, J. and Morrison, J., 2004. A policy agenda for Pro-poor Agricultural Growth. *World development*, 32(1), pp.73-89.
- Valente, C., 2009. The Food (In) Security Impact of Land Redistribution in South Africa: Microeconomic Evidence from National Data. *World Development*, 37(9), pp.1540-53.
- Vink and Kirsten, 2000. *Deregulation and Liberalisation of the Market*. Johannesburg: Free Market Foundation (FMF).
- Wannasai, N. and Shrestha, R.P., 2008. Role of Land tenure security and farm household characteristics on the land use change in the Prasae Watershed, Thailand. *Land use Policy*, 25, pp.214-24.
- Zhang, B., Xu, G.-y., Cao, Y. and Yuan, S., 2008. Empirical study of rural households' debit and credit and the effects on their welfare in less developed regions- Take Suquian city of Jiangsu province as an example. *Journal of Modern Accounting and Auditing*, 4(12), pp.27-34.
- Zimmerman, F.J., 2000. Barriers to Participation of the poor in South Africa's Land Redistribution. *World Development*, 28(8), pp.1439-60.

UNIVEN LIBRARY

Library Item : 20141405



---

**APPENDIX A: THE QUESTIONNAIRE**  
**DETERMINANTS OF ACCESS TO FARM CREDIT BY EMERGING FARMERS**  
**OF THULAMELA LOCAL MUNICIPALITY, SOUTH AFRICA**

---

**For Official use**

Enumerator	
Date of Interview	
Name of Village	
Name of Project	
Name of Municipality	
Questionnaire No.	

---

## ETHICAL CONSIDERATIONS

---

Good Morning/ Afternoon/ Evening!

My name is **Chivenge Wilson** I am a student at the University of Venda. The questionnaire intends to collect information that will be used to identify the factors that affects the access to Credit (finances) by the black farmers in the Thulamela Local Municipality. Determining factors that affects access to credit by the farmers will assist the researcher to deduce policy recommendations for increasing black farmers' access to finance.

You are in no way forced to participate in the interview process and you are at liberty to stop me at any time. Your input will however be extremely valuable. Participation is voluntary and anonymity will be maintained.

Thank you,

Signature of Respondent.....

Signature of Researcher.....

Date...../...../.....

**SECTION A: DEMOGRAPHIC INFORMATION AND DETERMINANTS OF ACCESS TO FARM CREDIT**

**Instruction:** 1. Tick with (X) where applicable and provide the relevant responses of your option in spaces provided

2. You are kindly requested to complete all the questions

<b>A1. Age</b>		Years
----------------	--	-------

<b>A2. Gender</b>	Male	1	Female	2
-------------------	------	---	--------	---

<b>A3. Level of education</b>											
No formal Education	1	ABET for Adults	2	Primary Education	3	Secondary Matric	4	College/ University	5	Other( <i>Specify</i> )	6

<b>A4. Marital status?</b>							
Single/never married	1	Married/Living together	2	Divorced	3	Widowed	4

<b>A5. Number of people residing in your household</b>		Members
--	--	---------

<b>A6. Indicate the amount received by your household (all people living with you only) under the following</b>									
Remittances e.g. by town relatives	1	Pension/Old age grants	2	ASCA/ROSCA <i>Stokvel</i> Clubs	3	Government Subsidy	4	Other specify .....	5
R		R		R		R		R	

A7. What was your occupation before engaging in farming activities?		
Unemployed		1
Self-employed		2
Farm Worker		3
Pensioner		4
Formally Employed		5
Other ( <i>Specify</i> )		6
A8.1. For how many years have you been into Farming?		Years

A8.2. how did you get the land that you presently own?											
Bought	1	Leased	2	Inherited	3	Government Land reform	4	Communal	5	Other	6

**A9. In your own opinion, what are the challenges that farmers face regarding access to Credit.**

.....

.....

.....

.....

.....

.....

.....

A10. Do you have access to any production loans (credit)?	Yes	1	No	2
A11. Have you ever been denied credit before?	Yes	1	No	2

<b>A12. If your answer to A11 is “Yes” what were the reasons</b>	Lack of invoice records of the produce that was sold in previous seasons	1
	Non residency in the community	2
	Lack of a performing bank account	3
	Lack of collateral security	4
	Poor Debt repayment Record	5
<b>Other (Specify)</b>		6
.....		
.....		

<b>A13. Indicate all your credit sources and amounts received</b>									
Commercial bank	1	Cooperatives	2	Money lender	3	Friends	4	Other (specify)	5
R		R		R		R		R	

<b>A14. How do you normally receive information regarding Credit?</b>													
Radio	1	TV	2	Newspaper	3	Internet	4	Friends	5	Extension	6	Other	7

<b>A15. Are you a member of any agricultural Association</b>	Yes	1	No	2
<b>A16. If your answer to A15is ‘Yes’ then, identify the type of agricultural association?</b>				
Producer Organisation				1
Primary Cooperative				2
Secondary Cooperative				3
Tertiary Cooperative				4
Apex				5
National Farmers’ Union (NAFU)				6
Other (Specify)				7

<b>A17. Do you receive adequate extension services?</b>	Yes	1	No	2
---	-----	---	----	---

<b>A18. How many times do the extension worker visits you in a year</b>		times
---	--	-------

<b>A19. Do you receive any agricultural training?</b>	Yes	1	No	2
---	-----	---	----	---

**A20. If your Answer is "Yes" in A19, From which of the following have you received agricultural training?**

Department of Agriculture	1	Parastatals e.g. LIBSA,SEDA	2	University outreach	3	NGOs (donors)	4	Other/None (specify)	5
---------------------------	---	-----------------------------	---	---------------------	---	---------------	---	----------------------	---

**A21. Do you have access to produce market?**

Yes	1	No	2
-----	---	----	---

If your answer above is "No" specify Why

.....

.....

**A22. What kind of labour is used on your farm? (indicate number of labours)**

Hired Labour	1	Family labour	2	Neighbours (Friends)	3	Other (Specify)	4
No.		No.		No.		No.	

**SECTION B: EFFECTS OF ACCESS TO FARM CREDIT**

**B1. Indicate the estimated total income from the sale of your farm produce in the previous 12 months?**

Total Farm Income	R
-------------------	---

**B2. Indicate your estimated total Farm Expenditure in the previous year**

	R
--	---

Which age group would you associate with the farming	Youth (14yrs-35yrs)	1 Adults (36yrs-65yrs)	2 Aged (>65yrs)	3
.....	Youth	Adults	Aged	
.....	Youth	Adults	Aged	
.....	Youth	Adults	Aged	

**B3. Farm Assets (Equipment and landed Assets)**

Type of Asset	Estimated Cost (Rands)	Estimated value To date ( Rands)
1		R
2		R
3		R
4		R
Other.....		R
<b>TOTAL</b>		

**SECTION C: POLICY RECOMMENDATIONS**

**C1. In your own opinion what can be done to improve the farmer's access to finances and resources?**

.....

.....

.....

.....

.....

.....

.....

.....

<b>C2. Which Age group would you associate with the following</b>	<b>Youth (14yrs-35yrs)</b>	<b>1</b>	<b>Adults 36yrs-65yrs</b>	<b>2</b>	<b>Aged &gt;65yrs</b>	<b>3</b>
C2.1 Cope up well with agricultural training	Youth		Adults		Aged	
C2.2 Participate in high risk investments	Youth		Adults		Aged	
C2.3 More involved in Agriculture	Youth		Adults		Aged	

<b>C3. In your own experiences, which gender could be associated with the following;</b>	<b>Male</b>	<b>1</b>	<b>Female</b>	<b>2</b>	<b>Both</b>	<b>3</b>
C3.1 tenure security and property rights	Male		Female		Both	
C3.2 Failure to repay debts	Male		Female		Both	
C3.3 Experiences challenges with regard to access to credit	Male		Female		Both	

<b>C4. Which of the following organisations provide credit? (Identify the top three)</b>	Ranking 1=Best, 2=better, 3= worst	code
LIBSA		1
LIMDEV		2
SEDA		3
VDM		4
Department of Agriculture		5
Donor funded NGOs		6
Other (Specify).....		7

<b>C.5 Tick the top three factors that you would consider as critical for improving access to credit</b>		
C5.1 Credit guarantee schemes		1
C5.2 Credit subsidies		2
C5.3 In-kind Credit (provided with inputs)		3
C5.4 Dependable input and output markets		4
C5.5 Other (specify)		5

\*\*\*\*\*Thank you for your time\*\*\*\*\*

## APPENDIX B: RESULTS OF LOGISTIC REGRESSION

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	23.417 <sup>a</sup>	.560	.910

a. Estimation terminated at iteration number 12 because parameter estimates changed by less than .001.

**Hosmer and Lemeshow Test**

Step	Chi-square	df	Sig.
1	2.031	8	.980

**Contingency Table for Hosmer and Lemeshow Test**

		Access to Credit = Access		Access to Credit = No Access		Total
		Observed	Expected	Observed	Expected	
Step 1	1	17	17.000	0	.000	17
	2	13	13.264	4	3.736	17
	3	2	1.603	15	15.397	17
	4	0	.104	17	16.896	17
	5	0	.021	17	16.979	17
	6	0	.006	17	16.994	17
	7	0	.001	17	16.999	17
	8	0	.000	17	17.000	17
	9	0	.000	17	17.000	17
	10	0	.000	21	21.000	21

Classification Table<sup>a</sup>

Observed			Predicted		
			Acces to Credit		Percentage Correct
			Access	No Access	
Step 1	Acces to Credit	Access	30	2	93.8
		No Access	1	141	99.3
Overall Percentage					98.3

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>	AGE	-.122	.061	3.966	1	.046	.885
	ETTINC100	.041	.015	7.331	1	.007	1.042
	ETTEXP100	-.056	.023	5.952	1	.015	.946
	CREDAMT	-.510	.166	9.429	1	.002	.601
	LOCADU	4.373	2.123	4.243	1	.039	79.303
	Constant	12.603	4.912	6.585	1	.010	297573.009

a. Variable(s) entered on step 1: AGE, ETTINC100, ETTEXP100, CREDAMT, LOCADU.

Correlation Matrix

		Constant	AGE	ETTINC100	ETTEXP100	CREDAMT	LOCADU
Step 1	Constant	1.000					
	AGE	-.968	1.000				
	ETTINC100	.728	-.643	1.000			
	ETTEXP100	-.813	.727	-.920	1.000		
	CREDAMT	-.767	.661	-.899	.797	1.000	
	LOCADU	.420	-.340	.647	-.526	-.809	1.000