

**THE SOCIO-ECONOMIC IMPACT OF RECAPITALISATION AND
DEVELOPMENT PROGRAMME ON BENEFICIARIES IN GAUTENG
PROVINCE**

By

VERONICA MAMANYANE RAKOENA

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Supervisor: Prof. M A Antwi

Co-supervisor: Mr M M S Maake

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DECLARATION

I VERONICA MAMANYANE RAKOENA hereby make a declaration that “THE SOCIO-ECONOMIC IMPACT OF RECAPITALISATION AND DEVELOPMENT PROGRAMME ON BENEFICIARIES IN GAUTENG PROVINCE” is my work and is original. All the sources that I have used in this dissertation were cited accordingly. I confirm that this dissertation has not been submitted at another university.

Signed:  _____

VERONICA MAMANYANE RAKOENA

STUDENT NUMBER: 40830896

Date: January 2019

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To GOD be the Glory.

DEDICATION

This work is dedicated to my family: to my parents Mr P Rakoena and Mrs D Rakoena for always loving me, supporting and encouraging my dream to further my studies; to my sisters Nthatane, Nkatsweng, Kenewang, Gontse and Basesana for being the motivation I needed to see this work through; and to my son Oageng and my niece Thatontle for making me want to be the best.

ABSTRACT

Land reform in South Africa is characterised by unsuccessful farming enterprises. As a result, the South African government initiated a series of agricultural support programmes to assist in turning around this status quo. This study investigated the impact of the Recapitalisation and Development Programme (RADP) on the socio-economic status of beneficiaries in the Gauteng Province. The objectives of the study were to determine the socio-demographic characteristics of RADP beneficiaries, the impact of the programme on agricultural production, the factors influencing income increase, to assess the socio-economic impact of the programme, and to identify general constraints faced by RADP beneficiaries. A survey research design was adopted to conduct the study whereby 51 beneficiaries of the RADP across all municipalities of Gauteng were selected to participate in the study. Primary data were collected through face-to-face interviews using a semi-structured questionnaire. To analyse quantitative data, the Statistical Package for Social Sciences (SPSS) version 24 was used. The analysis of quantitative data included descriptive statistics (frequencies, percentages, mean, standard deviation, standard error of mean), the Binary Logistics Regression (BLR) model, t-test and binomial test. The level of significance was determined at a 95% confidence interval. Coding and memoing were used to analyse qualitative data from open-ended questions, which were then converted into frequencies and percentages. The findings about the socio-demographic characteristics of beneficiaries showed that the majority of the respondents (51%) were female and their average age was 55 years. More than one-third (39.2%) had university qualifications. The majority of respondents were married black Africans. IsiZulu was the language spoken by most of the respondents (21.6%). Farming was the main source of income of the majority of the beneficiaries of the RADP (76%); and the majority (78.4%) had acquired their farmland through land reform programmes, mainly Proactive Land Acquisition Strategy (PLAS). The majority of respondents practised mixed farming on an average of 195.4 hectares (ha); and they had an average of 12.5 years of farming experience. An analysis of the socio-economic impact of RADP on beneficiaries showed that RADP had an insignificant impact on agricultural production in respect of area cultivated, crop yields and number of livestock kept by the beneficiaries of the programme (farmers). The overall impact of the RADP on the socio-economic status (social, financial, physical and natural capital) of the respondents

was not statistically significant. Only the human capital of the respondents improved significantly after they had received support from the programme. The study found that the factors influencing increases in the respondents' income from farming were gender, age, farm size, source of income, access to credit, farming skills and access to bigger markets. However, only three factors (age, access to credit and access to bigger markets) were significant at a 5% level. The general constraints indicated by the beneficiaries were a lack of adequate farm equipment; poor communication with officials of the Department of Rural Development and Land Reform (DRDLR); high input costs; a lack of access to markets; poor relationships with mentors; stock theft; and insufficient funding. It is recommended that youth should be recruited to participate in farming to sustain it; government and farmer organisations should assist farmers in accessing bigger (formal) markets that offer lucrative prices; and farmers should be trained in the marketing of agricultural produce. In addition, the RADP should provide support programmes to improve both the socio-economic status of its beneficiaries and agricultural production (crop yields and number of livestock kept).

Keywords: Agricultural support programme, socio-economic status, agricultural production, beneficiaries, impact, Gauteng province

ABBREVIATIONS

Abbreviation	Explanation
BLR	Binary Logistics Regression
CAES	College of Agriculture and Environmental Sciences
CASP	Comprehensive Agricultural Support Programme
CPA	Communal Property Association
DAFF	Department of Agriculture Forestry and Fisheries
DoA	Department of Agriculture
DPME	Department of Performance Monitoring and Evaluation
DRDLR	Department of Rural Development and Land Reform
GDP	Gross Domestic Product
LDA	Limpopo Department of Agriculture
LRAD	Land Redistribution for Agricultural Development
MAFISA	Micro Financial Institution of South Africa
NDA	National Department of Agriculture
NDP	National Development Plan
NAAIAP	National Accelerated Agricultural Inputs Access Programme
PLAS	Proactive Land Acquisition Strategy
RADP	Recapitalisation and Development Programme
SAPA	South African Poultry Association
SLAG	Settlement Land Acquisition Grant
SPSS	Statistical Package for Social Sciences
Stats SA	Statistics South Africa

SPSS

Statistical Package for the Social Sciences

WIL

Work Integrated Learning

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CHAPTER 1

STUDY ORIENTATION

1.1 Background and introduction

The South African farming sector was mainly characterised by a dualistic system that comprised of commercial and subsistence farmers (Binswanger & Deininger, 1993). However, with changes in the land reform policies, the farming sector has a new category added to the system, namely emerging farmers. Emerging farmers are previously disadvantaged people who acquired land through private purchases and land reform programmes and are producing at a medium-scale (Tihanyi & Robinson, 2011). This group of farmers produces for formal and informal markets; however, they have challenges accessing high value markets because of lack of resources due to their disadvantaged background (Baloyi, 2010; Ntlou, 2016). Commercial farmers are large-scale agricultural producers set up with the sole intention of making profit, with the primary objective of widespread distribution of their goods to local and international markets (Makhura *et al.*, 1998). This high profit markets are achieved through specialization, economies of scale, and labour saving technologies among other factors. Subsistence farmers are small-scale producers with the produce intended for household consumption and market sales. They have to compete with highly industrialised commercial farmers for markets. These are generally self-sufficient farmers who focus on farming for family food consumption; most of the produce is consumed by the family and the choice of produce is dependent on what type of foods the family needs. Due to a lack of access to land in developing countries like South Africa (Borras, 2003), complete subsistence farming declined and eventually collapsed. This collapse can also be attributed to previous land policies that dispossessed black farmers of productive land forcing them to become labourers on white commercial farms (Lahiff, 2014). However, the dawn of South African democracy in 1994 developed land policies that enabled disadvantaged people to have better access to agricultural land than in the past. The Department of Land Affairs had targeted to transfer 30%, which equals to 25

million hectares of white-owned agricultural land, to previously disadvantaged people by 2014 (Lyne, 2014). To assist with the process, the Department introduced a number of programmes with the purpose of acquiring land and ensuring agricultural productivity on the transferred land. The programmes include land restitution measures such as, Settlement Land Acquisition Grant (SLAG), Land Redistribution for Agricultural Development (LRAD), and Proactive Land Acquisition Strategy (PLAS) introduced in 1995, 2001 and 2006 respectively. The success and failures of each programme led to the introduction of the other. For example, the failure of LRAD resulted in the Department introducing the Proactive Land Acquisition Strategy (PLAS) and the Recapitalisation and Development Programme (RADP) to assist with land acquisition, redistribution and offering of full production grants to beneficiaries of land reform and previously disadvantaged private farmers. However, land reform programmes did not achieve the targeted land distribution. By the year 2012, only 7.95 million hectares of targeted land had been redistributed (Lyne, 2014).

Even though there are successes from land reform programmes, it has also brought many challenges in the South Africa farming sector. Some of the challenges include the allocation of productive land to people who cannot sustain production and the lack of agricultural development finance for the new farmers (Borras, 2001; Ntlou, 2016). Another factor that contributed to this low success rate is the long period it takes for the Department of Rural Development and Land Reform (DRDLR) to transfer land (Prinsloo, 2008). This resulted in productive agricultural land losing its productive value, poverty rising in the rural areas and inequalities (Groenewald, 2004). According to Antwi and Oladele (2013), other challenges faced by emerging land reform farmers are poor infrastructure quality, poor savings and lack of access to markets. Because of the aforementioned challenges, emerging farmers who benefited from land reform programmes find it difficult to sustain their farms. Xaba and Dlamini (2015) found that these challenges, together with the lack of farming skills, are major contributors to deteriorating status of agricultural enterprises and vandalism of these properties. This concerning status of land reform farms make people in the urban and rural areas more dependent on purchasing foodstuff from big markets (Baiphethi & Jacobs, 2009). This further accelerates challenges for emerging farmers as they cannot compete with

commercial farms; also, without income they cannot continue to produce. As an intervention strategy, government has introduced a number of agricultural support programmes. The Comprehensive Agricultural Support Programme (CASP) was initiated in 2004 by the Department of Agriculture with the aim of assisting struggling farmers with infrastructure and extension support services. The programme's aim was to assist the hungry and vulnerable, food insecure families, subsistence farmers, beneficiaries of land and agrarian reform, and farmers operating within the macro-economic environment (Xaba & Dlamini, 2015). In their research on whether skills training offered by CASP improves the livelihoods of beneficiaries, Xaba and Dlamini (2015) found that although the skills level of assisted farmers did improve, there is minor improvement in the farmers' profit. In conclusion, farmer support programmes can have a positive or no impact on the agricultural production of its beneficiaries. The proposed study seeks to ascertain the socio-economic impact of RADP on its beneficiaries.

1.2 Problem statement

Effective land reform remains a challenge in the country. After over 20 years of addressing the land access issues, success is still relatively low (Binswanger-Mkhize, 2014). Farmers are still struggling to make their farms productive and profitable due to lack of recourses (Antwi & Nkwe, 2013). Emerging farmers, in particular, are suffering more as they have to compete with big established commercial farmers for the market. Various state organisations such as the DRDLR and local municipalities have introduced programmes to assist with realising the goals of land reform and increase agricultural production (Lyne, 2014). These programmes have brought some improvement in some cases (Idsardi *et al.*, 2008). In recent years, the Department of Rural Development and Land Reform has introduced a farmer support programme called the Recapitalization and Development Programme. The programme is aimed at providing financial support to selected distressed land reform beneficiaries and farmers in the former homelands and other communal areas (DRDLR, 2013). DRDLR anticipated that RADP would make rural communities become self-reliant and increase their agricultural production (DRDLR, 2014). Majority of the studies conducted on RADP focused on the overall impact of the programme on agricultural production. However,

little research has been conducted to determine the impact of RADP per commodity with specific references area cultivated, yield, and livestock typology; and whether the objectives of the programme have been fully realised. The focus of this study is therefore to assess the socio-economic impact of RADP on the beneficiaries in the Gauteng province.

1.3 Research questions

This research was aimed at answering the following research questions about the Recapitalisation and Development Programme (RADP) in the Gauteng province:

- What are the socio-demographic characteristics of beneficiaries?
- What is the contribution of the programme to the agricultural production of the beneficiaries?
- Did the socio-economic status of the beneficiaries improve?
- Which factors influence the increase in income for RADP projects?
- What are the constraints encountered by the RADP beneficiaries?

1.4 Research aim and objectives

1.4.1 Research aim

The aim of the study was to determine the socio-economic impact of RADP on the beneficiaries in the Gauteng province of South Africa.

1.4.2 Research objectives

The specific objectives of this research were:

- to determine the socio-demographic characteristics of the RADP beneficiaries;
- to determine the contribution of the RADP on agricultural production of beneficiaries;

- to assess the socio-economic impact of the RADP on beneficiaries;
- to determine factors influencing increase in farm income of the beneficiaries; and
- to identify the general constraints faced by RADP beneficiaries.

1.5 Hypotheses

The null hypothesis is used in this study to formulate conclusions on the impact of RADP on Gauteng province beneficiaries. The null hypotheses of the study are as follows:

- H₀: RADP did not have a significant impact on the agricultural production (crop yields and number of livestock) of the beneficiaries.
- H₀: Access to RADP did not significantly improve the socio-economic status of the beneficiaries.
- H₀: Age, farming experience, access to funding and access to bigger markets do not have positive and significant influence on increase in farm income of the beneficiaries.

1.6 Significance of the study

The study was intended to determine whether the objectives of the Recapitalisation and Development Programme (RADP) have been achieved in Gauteng province, as outlined in the policy of the Department of Rural Development and Land Reform. The findings can assist government departments as key decision makers on agricultural transformation in the country. To achieve this, the study evaluated the demographics and socio-economic characteristics of RADP beneficiaries in Gauteng province. Furthermore, socio-economic impact and factors influencing increase in farm income of RADP beneficiaries were determined. The study also identified the constraints faced by RADP beneficiaries, which can assist policy makers to adjust the programme in accordance with the needs of the farmers.

1.7 Definition of concepts

1.7.1 Access to bigger markets

The concept herein refers to access to commercial agricultural markets both locally and internationally, and therefore high profits market. These bigger markets require high volumes of produce and they are contractually binding; they include the Tshwane fresh produce market, large retailers, and other formal buyers.

1.7.2 Emerging farmers

In this study, emerging farmers refers to previously disadvantaged people who acquired land post 1994 mainly through land reform programmes but also privately and have limited production resources. These farmers are producing at a small to medium scale and have challenges meeting the commercial markets quality and quantity standards.

1.7.3 Farmer support programme

A farmer support programme is, in this dissertation, defined as assistance package provided to farmers with the aim of improving their farm productivity, food security and overall success of the agricultural enterprise. This assistance comes in various forms such as financial grants, infrastructure development, production inputs, skills development, and market access.

1.8 Outline of the dissertation

The dissertation is structured into five (5) distinguished chapters as follows:

- **chapter 1** is an outline of the background and introduction of the study, problem statement, research questions, objectives, hypothesis and significance of the study;

- **chapter 2** explores the literature on studies conducted in land reform, challenges in farming, agricultural support programmes and related literature;
- **chapter 3** is a presentation of materials and methods applied in conducting the study;
- **chapter 4** includes the results and discussion of the study; and
- **chapter 5** forms the conclusion and recommendations of the project.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

2.1 Introduction

This chapter presents a review of the literature on farmer support programmes in developed and developing countries. The concept of farmer support programmes is described and the importance of such initiatives in ensuring agricultural productivity in land reform farms emphasized. Different types of farmer support programmes in South Africa post 1994 are discussed. The chapter also looked at recent studies of the socio-economic impact of farmer support programmes and challenges faced by emerging farmers are outlined.

2.2 Overview of agricultural support programmes

Farming has many challenges because it is highly dependent on natural resources such as soil, water and vegetation. In addition, natural disasters such as hail, fire, hurricanes and floods negatively impact agricultural production (Zhang *et al.*, 2015). Apart from natural conditions, farming also requires resources from other industries such as chemicals (pesticides, herbicides and fungicides), manufacturing (machinery and equipment), and others (Rigby & Caceres, 2001; Eaton *et al.*, 2008). According to Wise (2001), the overly subsidised farms in developed countries also present a competition challenge for emerging farmers in developing countries. As a result, farmers need the support to overcome these challenges. In addition, the challenge of food security in developing countries makes it even more crucial to establish support programmes (Gautam, 2015).

An agricultural support programme is an assistance package provided to farmers with the aim of improving their farm productivity, food security and overall success of the agricultural enterprise (NDA, 2005; DRDLR, 2013). The assistance offered by support programmes can be in various forms, such as financial grants, infrastructure

development, production inputs, skills development, and market access. Various factors determine the type of assistance offered. According to Ntlou (2016), RADP farmer support programmes in South Africa focus on providing technical and financial support to land reform beneficiaries and established farmers who have had financial setbacks. Other factors that determine the type of assistance offered include a business plan presenting farmer needs, financial availability and the objectives of the programme (NDA, 2005; Xaba & Dlamini, 2015). In addition, the programme's criteria will also determine the type of support offered to the farmers (beneficiaries).

With South Africa currently going through a land reform process, previously disadvantaged groups of people have improved access to farming land (Ntlou, 2016). It is therefore necessary to establish agricultural support programmes in order to ensure food security and agricultural development (Gautam, 2015). Although access to land has improved among previously disadvantaged people in South Africa, according to Mabuza (2016), farmers have limited access to production resources. These challenges are further escalated by inadequate post-settlement support for beneficiaries of land redistribution programmes in the country (Binswanger-Mkhize, 2014). According to Prinsloo (2008), the intended beneficiaries of land reform do not always receive adequate post settlement support; in some instances, there are delays. These delays can disturb land markets and business confidence in agriculture and result in major food insecurity (NDP, 2011).

In developing countries such as South Africa, farmer support programmes are targeted towards land reform beneficiaries, assisting struggling emerging and subsistence farmers. For example, CASP and RADP are targeting emerging and subsistence farmers in the country (NDA, 2005; DRDLR, 2013). The aim is to ensure sustainable agricultural productions, food security, job creation in primary agriculture, graduate farmers to commercial level, and to transform the agricultural sector (Cousins, 2013). In Kenya, the National Accelerated Agricultural Inputs Access Programme (NAAIAP) provide farmers with inorganic fertilisers and seeds with the aim of improving their access to production inputs and reduce production costs (Manson *et al.*, 2015).

The focus in developed countries is to subsidise farmers in order to sustain a commercial standard, minimise costs associated with production, and to give farmers a competitive edge both locally and globally (Benin *et al.*, 2013). Farmers in the developed world are subsidised more compared to those in developing countries; as a result, they export their products to poor countries and create unfair competition (Wise, 2001).

2.3 Challenges faced by emerging farmers

2.3.1 Poor access to the market

Access to the market is a major challenge in smallholder farmers (MacLeod *et al.*, 2008). According to Khapayi and Celliers (2015), some of the factors affecting emerging farmers in the Eastern Cape include insufficient marketing information, insufficient marketing facilities, cheap imports from other countries, and high transactional costs. As a result, emerging farmers are most likely to sell their produce to informal markets (Barrett *et al.*, 2011). Baloyi (2010) also discovered that smallholder farmers in Limpopo province have little access to formal markets. This insufficient exposure to markets result in financial losses for farmers as informal markets consist mainly of low-income consumers (Barett *et al.*, 2011; Khapayi & Celliers, 2015). An alternative to this challenge is contract farming as it can offer farmers more success in marketing products (Ragasa *et al.*, 2017). With contract farming, producers have a guaranteed market with benefits of assistance through production inputs and higher profit margins (Briones, 2015; Mataya *et al.*, 2009). However, the standard of quality and quantity required by contract buyers is not achievable for most emerging farmers, making contract farming inaccessible to this group of producers (Mataya *et al.*, 2009).

2.3.2 Lack of funds

Access to financial support can assist farmers to acquire production inputs, machinery and reaching markets (Baloyi, 2010). However, the availability of financial resources is a limiting factor for most emerging farmers (Trusova & Ternovsky, 2017). A study

conducted in North West by Botlhoko and Oladele (2013) found that 62% of the smallholder farmers had moderate financial challenges while 22% experienced high financial challenges. This is a challenge as South African emerging farmers comprise of previously disadvantaged land reform beneficiaries with limited access to financial resources (MacLeod *et al.*, 2008). According to Chatterjee and Oza (2017), the lack of funds reduces emerging farmer' success rate because it is difficult for them to obtain credit from formal institutions.

2.3.3 Limited access to extension services

Extension services play a crucial role in the development of farmer skills, offering advice, access to information, and creating linkages with other industry stakeholders (Farrington, 1995; Kotey *et al.*, 2016). According to Feder *et al.* (2011), extension officers can be very useful in assisting farmers with activities such as accessing markets, developing their enterprise and developing capacity through training. As a result, extension services that involve technical skills and that offer thorough advices are required (Jacobs *et al.*, 2018). However, MacLeod *et al.* (2008) found that access to extension services in Limpopo is limited due to a lack of capacity within the Limpopo Department of Agriculture (LDA) and inadequate resources required to assist farmers. In support, a study conducted across all the nine provinces of South Africa by Ngaka and Zwane (2018) discovered poor access to extension and advisory services to lack of capacity within the departments. In addition, lack of commitment from extension officers is a challenge that leads to communities having no interest in agriculture (Nxumalo & Oladele, 2013).

2.3.4 Lack of farming skills

It is important for farmers to have basic farming skills such as skills in technical production, marketing and selling, finance, information technology and personnel management (McElwee & Bosworth, 2010). Other competencies identified for successful farming include professional, strategic and networking skills (Morgan *et al.*, 2010). Skills development, especially in the use of new technology, can be a limiting

factor, especially among older farmers as they are less confident with regard to welcoming change (Morris *et al.*, 2017). Botlhoko and Oladele (2013) also highlighted lack of leadership skills as part of the constraints to farm development. According to Baloyi (2010), lack of adequate farming skills among emerging farmers in the Vhembe District Municipality was common and resulted in farmers producing lower quality produce that do not meet set market standards.

2.3.5 Infrastructure and machinery constraints

According to Obi *et al.* (2012), poor infrastructure is one of the major limitations in agricultural enterprises. Smallholder farmers often struggle to graduate from emerging to commercial farming because of poor and dilapidated infrastructure (MacLeod *et al.*, 2008). A major challenge among smallholder farmers is the lack of access to on-farm infrastructure such as storage and processing areas. This affects farmers' flexibility to market their products, which is important because the products are perishable (Baloyi, 2010). For example, Antwi and Oladele (2013) reported that the quality of infrastructure received by 49% of the beneficiaries of LRAD in Ngaka Modiri District Municipality was in good condition out of 83 farmers who benefitted from the programme. This shows that even though the government of South African is supporting previously disadvantaged groups of people with well-equipped farms, not all of them are in a good condition. Access to infrastructure in farming ensures accessibility to the market, transport and information (Antwi & Nkwe, 2013).

In addition, poor farm machinery among land reform beneficiaries was identified. Sikwela (2013) also identified a lack of machinery as a limiting factor for smallholder farmers in KwaZulu-Natal and the Eastern Cape to produce products of acceptable market standards. As a result, farmers cannot generate good income for their goods.

2.3.6 Lack of production inputs and high inputs costs

According to Nxumalo and Oladele (2013), high input costs limit farmers' involvement in agricultural programmes. Lack of production resources also prevent smallholder farmers

from participating in big lucrative markets because they are unable to consistently produce the required quality and quantity of outputs to meet large trading requirements (Baloyi, 2010). In Malawi, farmers struggle to access production inputs due to financial constraints and the option to purchase on credit is also limited by the underdeveloped credit markets in the country (Dorward & Chirwa, 2011). In the case of South African land reform, farms' lack of access to production inputs lowered agricultural productivity. As a result potential emerging commercial farms end up operating at a subsistence level (Ntlou, 2016).

2.4 Types of farmer support programmes in South Africa

2.4.1 Pre-millennium programmes (Before year 2000)

1994: Settlement Land Acquisition Grant (SLAG)

The programme was introduced between 1994 and 1999; beneficiaries were granted R16 000 which could be used for the acquisition of agricultural or residential land (Dawood, 2018). The grant allocation focused on small-scale farmers and poor communities. The recipients were mostly formed into groups, registers as Communal Property Association (CPA), and expected to establish agricultural enterprises (Tjale *et al.*, 2016). The grant conditions were later amended to include agricultural production inputs. Some of the challenges that led to the phasing out of the programme include a lack of support from government, grouping of beneficiaries, and inadequate support grant; this resulted in low returns and conflict among the beneficiaries (Binswanger-Mkhize, 2014).

2.4.2 Post-millennium programmes (After the year 2000)

2004: Comprehensive Agricultural Support Programme (CASP)

CASP was introduced in 2004 with the aim of assisting struggling land reform beneficiaries with post-settlement support. The programme also assisted previously disadvantaged farmers who acquired land privately and struggled to sustain their farms

(NDA, 2005). The six main pillars of CASP are information and knowledge management, technical assistance, financing mechanism, training and capacity building, marketing and business development, on-and-off farm infrastructure (NDA, 2005; Idsardi *et al.*, 2008). The four categories of beneficiaries supported by the programme are the hungry and vulnerable households, food insecure families, subsistence farmers, beneficiaries of the land and agrarian reform, and farmers operating within the macro-economic environment (Xaba & Dlamini, 2015). Since inception, the programme has provided infrastructure, production inputs and skills training to more than 655 626 beneficiaries (DAFF, 2017).

Although the programme offers good support to the farmers, one of its limitations is that it focused more on infrastructure development at the expense of the other key deliverables (Mabuza, 2016). Furthermore, the programme has a reputation for underspending the funds allocated to support farmers (Lahiff, 2014). For example, in the year 2006 about R200 million was allocated and R60 million was rolled over; the same phenomenon occurred in 2007 when R43 million was underspent from an allocation of R250 million. Another challenge identified in the study that contributes to the slow progress of the programme is poor monitoring and evaluation by the department, which results in the unavailability of reliable data to track down progress. Local governments' inability to spend the allocated budget has also been reported as one of the factors that led to the low success rate of the CASP project in the Free State province (Idsardi *et al.*, 2008).

2006: Micro Agricultural Financial Institution of South Africa (MAFISA)

Micro Agricultural Financial Institution of South Africa (MAFISA) is a scheme introduced in 2006 as a financial component of CASP to address financial service needs of smallholder farmers and agribusinesses (DAFF, 2010). The aim of the programme is to assist with short- to medium-term production loans, encourage farmers to start savings, and capacity building. The strategic objective of the programme focuses on acquiring human and social assets, productive assets and technology, and financial assets and markets for beneficiaries with the purpose of increasing access to resources for rural

farmers (NDA, 2005). Oladele and Ward (2017) discovered that the grant has improved the livelihood of beneficiaries significantly in areas such as financial access to banks, networking, and skills development.

2008: Ilima Letsema

According to DAFF (2016) Ilima Letsema is a programme of the Department of Agriculture initiated with the purpose of reducing poverty through increased food production initiatives. The programme aims to assist with revitalising irrigation systems, developing household/school/community gardens, and offering support through production inputs, and providing livestock and machinery. The programme is targeted towards land reform beneficiaries, subsistence farmers, women and youth.

2009: Recapitalisation and Development Programme (RADP)

Recapitalisation and development programme was introduced after the Department of Rural Development and Land Reform undertook an evaluation of the progress of all its programmes since initiation. The assessment discovered that most of the projects were in distress or no longer in production due to inadequate post settlement support (DRDLR, 2013). It was also discovered that some of its farms were abandoned and vandalised (Prinsloo, 2008); while others were on the verge of being auctioned as a result of failure of the enterprise (DRDLR, 2013). Another factor contributing to the poor status of these land reform farms is the amount of time it takes to transfer the farm from the previous owner to the beneficiaries (Prinsloo, 2008). As a result, beneficiaries inherit farms that are in poor condition and this poses a challenge as most of the land reform beneficiaries have limited resources to improve these conditions.

RADP was introduced in 2009 to provide farmer support to beneficiaries of land reform and emerging farmers in financial distress (Binswanger-Mkhize, 2014). The programme's objectives are to increase the productivity of agricultural enterprises, ensure food security, grow smallholder farmers to commercial standard, create job opportunities in the agricultural industry, and ensure that development in the rural areas

is monitored (DRDLR, 2013; Ntlou, 2016). Support is offered through financial grants for the acquisition of production input, equipment, and infrastructure development. Furthermore, farmers are assisted with skills development, market access and integrating them into the value chain (Mabuza, 2016). The programme also offers farmers skills development through mentorship and strategic partnerships. In mentorship, more advanced and experienced commercial farmers are paired with emerging land reform farmers with the purpose of transferring technical and managerial skills (Mabuza, 2016; Dawood, 2018). Strategic partnerships are divided into three categories, namely co-management, share-equity arrangements, and contract farming (DRDLR, 2014). Co-management implies an agreement between two or more parties to share the management responsibilities associated with production and therefore the returns on the investment accordingly. Share-equity agreements take place when entities that are more resourceful purchase shares in a farming enterprise and therefore receive benefits and risks in relation to the amount of shares acquired. Contract farming implies an agreement by farmers to produce a certain quantity and quality of products for a specific buyer (DRDLR, 2014).

The RADP programme intended to provide support to the farmers for a period of five years (Mabuza, 2016; Ntlou, 2016). The beneficiaries were to be supported with 100% of the approved amount in the first year; 80% in the second year, 60% in the third year; 40% in the fourth year, and 20% in the fifth year. According to Dawood (2018), some of the limitations of the programme include beneficiaries not having the freedom to choose their preferred enterprises, strategic partners not transferring the required skills, lack of a clear selection criteria for beneficiaries, duplicating work done by the Department of Agriculture, and funding farmers that are capable of producing without aid. Lahiff (2011) also supports the findings that efforts are duplicated between RADP and CASP as there was no synchronisation of the programmes.

2013: Fetsa Tlala Food Production Initiative (Fetsa Tlala)

The Fetsa Tlala Food Production Initiative was introduced in 2013 as a way to ensure that people have sufficient food to eat, are uplifted from the poverty trap, and have job opportunities in agriculture (DAFF, 2014). This is part of the government's National Development Plan goal to reduce poverty, unemployment and inequality by 2030 (DAFF, 2014; Sonandi, 2018). The programme focuses on crop production and aims to ensure that 1 million hectares (Ha) of land is cultivated by 2019 (DAFF, 2014). Successful implementation of the programme requires an investment of R11.4 billion. As a result, the department has focused 70% of CASP funds towards achieving this goal. The programme started positively in the financial year 2013/2014 by exceeding their target of 104 312 ha by an additional 45148 ha (DAFF, 2014). The crops planted include maize, beans, sunflower, vegetables, grain sorghum, groundnuts fruits and wheat.

2.5 The socio-economic impact of farmer support programmes

2.5.1 Human capital

Human capacity can be characterised by the skills, knowledge and capacity to execute work (Scoones, 1998). According to McLeod *et al* (2018), the department of agriculture provides access to human capital through the provision of extension officers, training courses, and technical brochures relevant to farmers in order to improve their skills. In their research on whether skills training offered by CASP improves the livelihoods of beneficiaries, Xaba and Dlamini (2015) found that the income of the beneficiaries of CASP who received training increased; however, the impact was not statistically significant. A study conducted on RADP across six provinces of South Africa (Limpopo, KwaZulu-Natal, Gauteng, Free State, North West, and Eastern Cape) found that the programme was not effective in transferring the necessary farming skills because only 34% of the beneficiaries received managerial and technical skills from their mentors and strategic partners (Mabuza, 2016). Furthermore, Dawood (2018) discovered that strategic partners appointed through RADP in the whole country (all nine provinces) were not resourceful in the transfer of the necessary skills. However, Antwi and Nkwe (2013) found that CASP improved the skills level among its beneficiaries significantly.

Skills training that was offered as part of the programme include water management, record keeping, financial management, and equipment handling among others.

2.5.2 Social capital

Affiliation to organisations, networking, standard of living, food security, and youth involvement are variables that can be used to measure social capital (Antwi & Nkwe, 2013). Some of the benefits of access to social capital include establishing networks and relationships that can increase access to resources that can improve livelihoods through utilisation of the channels. The relationships established can result in better deals that minimize transactional costs (Scoones, 1998; Bradstock, 2011). According to Mabuza (2016), RADP improved living standards in six provinces of South Africa (Limpopo, KwaZulu-Natal, Gauteng, Free State, North West and Eastern Cape) by creating more jobs (jobs increased by 53%). However, the majority of the jobs created were temporary employment with a 94% increase while permanent employment opportunities increased by 24%. A study conducted by Antwi and Nkwe (2013) showed that support from CASP improved the living standards of farmers, food security, networking, and the participation by youth. However, the study showed low improvement with regard to farmers' association with unions because 74% of the beneficiaries reported that they were not participating in farmer unions.

2.5.3 Natural capital

Natural capital is defined as natural resources such as soil, water and air (Scoones, 1998). Natural resources in agriculture are attached to the land, controlled by the landowners, and if utilised properly can increase profitability of the enterprise. As a result, investment in natural capital is important to optimise the productivity of agricultural enterprises (Ogilvy, 2015). The availability of these resources is to a large extent related to geographic location (Bradstock, 2011). Investment in social, physical, financial and human resources have also been found to improve farmer access and utilisation of natural resources; for example, Asia has been leading in food production as a result of investment in irrigation infrastructure with 40% of cultivated land in

Southern Asia under irrigation (Stirzaker & Pittock, 2014). According Antwi and Nkwe (2013), the size of fertile and pasture land increased in CASP beneficiaries of the Ngaka Modiri-Molema District. The study attributed the increase to improved farming skills due to training received. Furthermore, access to water also improved as a result of improved water infrastructure provided by CASP. Access to farmer support also improved the size of cultivated land, water sources and natural pastures for MAFISA beneficiaries in North West province (Oladele & Ward, 2017).

2.5.4 Physical capital

According to Nxumalo and Antwi (2013) physical capital include assets such as transport, established markets, auction events, road accessibility, electricity, animal handling facilities, irrigation infrastructure, storage facilities, production infrastructure, telephone facilities, dipping facilities, breeding infrastructure, and fencing. Physical capital is created by economic production processes and results in better access to opportunities (Bradstock, 2011). Farmer support beneficiaries receive physical support through various forms, for example, CASP provides infrastructure for its beneficiaries while RADP provides funding for the acquisition of these assets. In their study on the impact of MAFISA on beneficiaries, Oladele and Ward (2017) discovered that the programme increased accessibility of physical assets by at least 90% for its beneficiaries. However, roads infrastructure increased by less than 5% in the study, which influenced the improvement in market accessibility at less than 15%. In another study, Antwi and Nkwe (2013) discovered that the physical capital (fence, equipped borehole, transport, feed and watering facilities, market, road accessibility, electricity, and store room) of CASP beneficiaries in Ngaka Modiri Molema District Municipality, North-West province of South Africa improved significantly. In the Dr Kenneth Kaunda district in the same province, the physical capital of PLAS beneficiaries that improved significantly were storage infrastructure, road accessibility, animal handling facilities, telephone facilities, irrigation and production infrastructure (Nxumalo & Antwi, 2013).

2.5.5 Financial capital

According to Scoones (1998), financial capital refers to resources such as loans, cash, and savings that are necessary for ensuring accessibility of different livelihood opportunities. An evaluation of CASP across South Africa found that the programme improved the income of beneficiaries and project managers (DPME, 2013). Phathudi-Mphahlele (2016) also discovered that 54% of CASP beneficiaries in the Sedibeng district (Gauteng) reported increased income after receiving support. In Ngaka Modiri-Molema district of North West province, it was discovered that support offered to farmers through CASP significantly improved their financial capital. As a result the beneficiaries of the programmes had improved access to government funding and other financial institutions, hired more labour, and their annual income increased (Antwi & Nkwe, 2013). Access to farmer support also significantly improved income of support programme beneficiaries in KwaZulu-Natal and the Eastern Cape (Sikwela, 2013). An evaluation conducted on RADP across South Africa found that access to support improved the economic status of 57% of the beneficiaries (DPME, 2012). The findings show that farmer support programmes have the potential to increase income generated by beneficiaries.

CHAPTER 3

STUDY AREA AND RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents a background of the study area and the methodology applied in the process of conducting the survey. A description of the population in the Gauteng province and the economic status of the agricultural sector are presented. This is followed by the criteria for selecting RADP beneficiaries who participated in the study. The research approach, data collection procedure, and methods for analysing data are also included in the chapter. In the last section, the pilot study, ethical clearance, and limitations of the study are discussed.

3.2 Study area

The study was conducted in the Gauteng province of South Africa involving RADP beneficiaries (farmers who received support from RADP). The province covers 1.5% of the surface area of South Africa, making up 18 176 km² (GCIS, 2018). Gauteng has three metropolitan municipalities (City of Tshwane, City of Johannesburg and Ekurhuleni Metropolitan municipality) and two district municipalities (Sedibeng and West Rand). According to Stats SA (2018), the province has the highest population in South Africa with 14.7 million residents. Although Gauteng is diversified in terms of the spoken languages, the majority of the population speak isiZulu and English at 19.8% and 13.3% respectively (Stats SA, 2011). The province has an average annual rainfall of 601-800 mm and 63% of the land is considered highly suitable for agricultural production (Musakwa, 2018). **Figure 1** below shows a map of the Gauteng province including the district and metropolitan municipalities.



Figure 3.1: Map of the Gauteng province showing district and metropolitan municipalities (Available from: <http://www.localgovernment.co.za/Provinces/view/3/gauteng>, accessed: 21 September 2016).

Gauteng is situated in what is regarded as the economic hub of South Africa (Alexander *et al.*, 2013); and contributes towards a third of the country's Gross Domestic Product (Stats SA, 2018). According to the Gauteng Provincial Government (2018), the agricultural sector was the highest growing in quarter 1 of the 2018/2019 financial year with a GDP of 24.8%. Agricultural production in the province includes grains, livestock, and vegetable production (Kok, 1998; Dlodla, 2014). Major crops produced in Gauteng are maize (6%), dry beans (7%) and soybeans (7%) of the country's total output (DAFF, 2017). In 2016, the province had about 24.2% of the country's layer chickens and 10.1% of broilers (SAPA, 2016).

3.3 Research approach and design

According to Creswell (2014), a research approach refers to plans and processes followed in conducting research; this covers all expectations and detailed methods in

collecting, analysing and interpreting data. Quantitative research approach and survey research design were employed to conduct the study. The survey design has benefits in that geographical dependence is reduced when a survey design is conducted remotely; extensive flexibility in data analysis can be achieved as a result of asking many questions; data to be collected can be of a large range; and the design is easy to administer (Wyse, 2012).

3.4 Study population

A study population refers to the overall quantity of things with similar qualities required for a specific study. In a study with a high population size, a sample of the population is taken in order to draw conclusions for the whole population (Williman, 2011). The study population included all beneficiaries of RADP in the Gauteng province of South Africa, which included crop farmers, livestock farmers, and those practising mixed farming. The population size was small and therefore the decision to include all beneficiaries in the study was taken. The initial population size from the information obtained at the Department of Rural Development and Land Reform was 124 beneficiaries. However, there were duplications on the list and after corrections 70 beneficiaries were identified. It was also discovered that some of the beneficiaries on the list were not yet funded. As a result, the final number of interviewed participants for this study was 51.

3.5 Data collection and survey instrument

3.5.1 Data collection

Data was collected between August and December of 2017 using a semi-structured survey questionnaire. This was done through face-to-face interviews and completion of the questionnaire by the respondents. The research was carried out at the respective beneficiaries' farms. It was the responsibility of the researcher to drive to the farm on specified times and dates. The questionnaire was formulated in English. Considering that the researcher can speak most of the languages in the province, the questions were translated into Sepedi, Setswana, isiZulu and isiXhosa during interviews to

accommodate farmers who could not speak English. Prior to face-to-face interviews, beneficiaries were contacted telephonically to make appointments.

3.5.2 Survey instrument (questionnaire)

The questionnaire or survey instrument (Appendix 1) included questions that collected information on general data, demographics, socio-economic status and agricultural production. The questionnaire was structured as follows:

Section A: General information

This section included general information related to administration such as questionnaire number, date and municipality.

Section B: Socio-demographic information

This section covered questions relating to the respondents' demographic information such as age, gender, home language, marital status, level of education, family size, farm size, type of land acquisition programme, number of years since receiving RADP, sources of funding, main source of income, and number of years in farming. The type of data collected was nominal, ordinal and discrete (continuous).

Section C: Agricultural production

Under this section, data on the impact of RADP on agricultural production (outputs) is collected. The level of production (area cultivated, yield and number of animals) "before" and "after" was captured.

Section D: Socio-economic information

D1- Physical capital

This sections evaluated physical capital (infrastructure, machinery, equipment) acquired through RADP. Respondents gave a list of items in this criterion that were purchased using RADP funds.

D2- Financial capital

Questions in this section evaluated the impact of RADP on access to financial services (loans, savings, and insurance) and income. The responses to the questions were dichotomous, whereby the respondents had to select either “yes” or “no”.

D3- Natural capital

The impact of RADP on the access to land, water resources, quality and quantity of water, and area cultivated was determined in this section. Respondents chose between “yes” or “no”.

D4- Human capital

Skills improvement was used to determine the impact of the programme on human capital. The relevant skills were provided in the questionnaire whereby the respondents indicated whether they acquired kills provided in the list. To make provision for skills that were not provided in the list, the respondents were asked whether they acquired other skills because of RADP.

D5- Social capital

Questions related to better access to networks, farmer association, and better living standards were addressed in this section. The questions were dichotomous, whereby the respondents selected between “yes” or “no”.

Section E: General questions

General questions were asked in an open-ended format to determine the constraints faced by the respondents.

3.6 Pilot study

To test the reliability and validity of the research questionnaire, a pilot study was conducted involving beneficiaries of the Comprehensive Agricultural Support Programme (CASP) in the Gauteng province (Creswell, 2014). CASP beneficiaries were used because the sample size for the study was small; in which case it is recommended to use a population that closely resembles the targeted group (Persaud, 2012). This did not offer challenges, as CASP is also a farmer support programme. The same procedure followed in the main study for data collection was used (setting appointments, face-to-face interviews, and allocated time). The questionnaires were also translated into the language of preference (Sepedi, Setswana, isiZulu and isiXhosa) during interviews. The researcher interviewed 10 participants to conduct the pilot study. This exercise revealed that there were commonalities in the questions that needed to be adjusted. Thereafter, the survey questionnaire was adjusted accordingly.

3.7 Data analysis

3.7.1 Quantitative data

Quantitative data was captured in Microsoft Excel 2016 and transferred into Statistical Package for Social Sciences (SPSS) version 24.0 for analysis. Descriptive and inferential statistics, T-Test and Binomial Test were used to analyse data. **Table 3.1** below shows a summary of the methods applied in analysing the data related to each objective.

Table 3.1: Summary of data analysis methods used in the study

Objective number	Data analysis method
1. to determine the socio-demographic characteristics of RADP beneficiaries	Descriptive statistics
2. to determine the contribution of the RADP on agricultural production of beneficiaries	Two-tailed t-test
3. to assess the socio-economic impact of the RADP on beneficiaries	Binomial test
4. to determine factors influencing an increase in farm income of the beneficiaries	Binary Logistic Regression
5. to identify the general constraints faced by RADP beneficiaries	Coding, memoing and descriptive statistics

Descriptive statistics

In order to achieve objectives 1 and 5, descriptive statistics were used to analyse the data. This implies that frequency distribution was determined, which is an illustration of values for each variable represented as a number and a total percentage (Williman, 2011). In general, descriptive statistics included mean, mode, frequencies, percentage, minimum, maximum, standard deviation and standard error of mean.

Binary logistic regression

In order to achieve objective 4, data was analysed using binary logistic regression model to determine the relationship between categorically dependant variables (Y) and independent variables (X); the advantage of using this method is that it keeps other variables constant while determining the relationship between one independent variable and the dependent variable (Creswell, 2014; Motsoari *et al*, 2015). The dependant variables were binary whereby one and zero were used, whereas the independent variables were categorical and continuous. In the dependant variables, an increase in

income and no increase in income were presented by 1 and 0 respectively. The differences between participants whose income increased as a result of RADP and those whose income did not increase were determined using a non-parametric test. The binary logit model that was used is as follows:

$$\Pr(y=1|x') = \frac{\exp(x'\beta)}{1 + \exp(x'\beta)} = A(x'\beta) \quad (1)$$

Where $\Pr(y=1|x')$ represents that an event is likely to occur, a value of 1 is taken by the dependable variable and x' represents the vectors of all the undependable variables. The probability that the income of the respondents will increase is considered as the dependent variable for each objective. The dependent variable takes two dichotomous variables, which are defined as follow:

$$Y = \begin{cases} 1 = \text{Yes for respondents whose income increased} \\ 0 = \text{No for respondents whose income did not increase} \end{cases}$$

The maximum likelihood that the income of the respondents will increase is predicted by the model. The antilog of the β which is the odds ratio shows the relationship between the dependant and independent variables.

The odd ratio's formula is as follows:

$$\frac{P_i}{1 - P_i} = \frac{1 + e^{x'\beta}}{1 + e^{-x'\beta}} = e^{x'\beta} \quad (2)$$

Where P_i is the probability that the income of the respondents will increase $\Pr(y=1|x')$ in equation 1 and $1 - P_i$ is the probability not negatively perceiving factors that increase income as effective ($\Pr(y=0|x')$).

The empirical analytical model that was used is as follows:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8 - X_{10} \dots \mu) \dots (XX)$$

Table 3.2 Binary logistics regression below shows the independent variables used in the model and their description

Table 3.2: Binary logistics regression of independent variables used in the model and their description (n=51)

Independent variables	Variable description and value
X ₁ = Gender	Female=0; Male=1
X ₂ = Age of participant	Years
X ₃ = Farm size	Hectares
X ₄ = Level of education	1=Never been to school; 2=Primary Education; 3=Secondary Education; 4=College Education; 5=University Education; 6=Other (Specify)
X ₅ = Number of agricultural support programmes received	Number
X ₆ = Main source of income	0 = Non-farming; 1 = Farming
X ₇ = Number of years in farming	Numbers
X ₈ = Access to credit increased	0 = No; 1 = Yes
X ₉ = Farm size increased	0 = No; 1 = Yes
X ₁₀ = Access to bigger markets improved	0 = No; 1 = Yes

Binomial test

Binomial test is a nonparametric test used to determine the probability that an outcome will occur where the population being investigated must have exactly two possible outcomes (Mann, 2013). In this study “yes” and “no” were used where No=0 and Yes=1. To determine whether RADP had made a significant impact on the socio-economic (physical, natural, human, social and financial capital) status of the respondents, the significant difference between “yes” and “no” responses was determined. The significant difference was determined at 5% alpha level ($p \leq 0.05$).

T-test

According to Jackson (2009) and Berenson *et al.* (2012), a t-test is a type of inferential statistic that is used to determine if there is a significant difference between the means of two groups. To determine whether RADP had a significant impact on agricultural production, a two-tailed t-test was used to analyse output “before” and “after”. This included area cultivated in hectares, yield in tons, and the number of animals kept. For example, the average mean of area cultivated with spinach before and after receiving funds were used to determine whether the impact was significant. Significant differences were determined at 5% alpha level ($p \leq 0.05$).

3.7.2 Qualitative data

Qualitative data or data from open-ended questions was analysed using coding and memoing (Babbie, 2010). Eight steps adopted from Marshall, Rossman (2011) were used to analyse qualitative data; which included: data organisation, data immersion, generating categories and themes, data coding, offering interpretations through analytical memos, searching for alternative understanding, and report writing.

3.8 Ethics

Data collection commenced after acquiring ethical clearance from the College of Agriculture and Environmental Sciences (CAES) Ethics Committee (Reference number: **2016/CAES/119**). Approval was also obtained from the Department of Rural Development and Land Reform permitting the researcher to use RADP beneficiaries in the study. The respondents who participated in this survey were required to sign a consent form before partaking in the study; this was done to indicate that their participation was voluntary and therefore they could withdraw at any time without penalty. Participants who were not able to sign the consent form gave permission verbally for the researcher to sign the consent form. Participants were informed

thoroughly that there were no incentives for participating in the study and therefore the researcher was not liable to any compensation for the time invested.

The purpose of the study was explained to the respondents and sufficient opportunity was given to ask questions and prepare for the interview. The beneficiaries were assured that their names would not appear in the questionnaire and publications emanating from the study. The names of the participants were only recorded on the ethics consent form attached in Appendix 2 as required.

3.9 Limitations of the study

Study population: Gauteng is a relative small province and highly urbanized, therefore there is limited agricultural land. This meant that the researcher had to work with a small population and hence all the beneficiaries were included.

Income of the respondents: Income information was not included as the researcher discovered in the pilot study that the participants were not comfortable answering questions related to income. It was, however, noted whether income increased or not as a result of receiving support. This limited the study in terms of discovering precisely where the financial standing of the beneficiaries was.

Recall bias: The data collection approach in this study involved respondents recalling output information purely from memory. Although some respondents verified the information by using their record books during interviews, others responded to the questionnaire from memory. Although all parties involved tried to their level best to be accurate, it is worth noting that this information might influence the results specifically in the impact of RADP on agricultural production “before” and “after”.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results and discussion of the study. The socio-demographic characteristics of the beneficiaries are discussed as well as their socio-economic status. The chapter also looks at the impact of RADP on agricultural production and socio-economic status. Lastly, factors influencing the increase in farm income and the constraints faced by RADP beneficiaries are discussed.

4.2 Results

The following sections deal with the results of the study. Farmer characteristics and socio-economic statuses of the beneficiaries are presented. Furthermore, the contribution of RADP towards farm development and its impact on socio-economic status of the enterprises is presented. Lastly, the constraints hindering growth of farms after receiving funding are also provided.

4.2.1 Farmers' characteristics

In this section, the respondents' demographic information and socio-economic characteristics are presented.

4.2.1.1 Respondents' demographic information

Demographic information of the respondents such as gender, race, marital status, home language and level of education were included in the study; this information assists in determining the type of farmers that were funded through RADP. Farmer demographic information was determined because it influences decision making about production method (s), choice of enterprise, adoption technologies and other farming activities. **Table 4.1** below presents respondents' demographic information.

Table 4.1: Respondents' demographic information (n=51)

Variable	Frequency	Percent
Age		
<35	0	0.0
36-45	7	13.7
46-55	21	41.2
55-65	14	27.5
>65	9	17.6
Total	51	100.0
Gender		
Female	26	51.0
Male	25	49.0
Total	51	100.0
Race		
Black Africans	50	98.0
Coloured	1	2.0
Total	51	100.0
Home Language		
IsiZulu	11	21.6
Sepedi	10	19.6
IsiNdebele	9	17.6
Sesotho	6	11.8
Setswana	6	11.8
IsiXhosa	4	7.8
SiSwati	3	5.9
Tshivenda	2	3.9
Total	51	100.0
Marital Status		
Married	40	78.4
Single	5	9.8
Widowed	4	7.9
Divorced	2	3.9

Total	51	100.0
Level of education		
University education	20	39.2
Secondary education	19	37.3
Primary education	9	17.6
College education	3	5.9
Total	51	100.0

Source: field data (2017)

The results presented in **Table 4.1** show that the majority (41.2%) of the beneficiaries were adults aged between 46 and 55 years old, followed by respondents who are between 56 and 65 years old at 27.5%; the age group with no representation is youth at 0%. With regard to gender, females were 1% more than males in the study, meaning that the majority (51%) of the respondents who received RADP (Recapitalisation and Development programme) were women. From race perspective, the larger proportions (98.0%) of the respondents were black Africans followed by coloureds with 2.0%. This indicates that only two race groups benefitted from the programme. The findings of the marital status of the respondents' show that majority (78.0%) were married followed by those who were single (9.8%), with divorced respondents being the least (3.9%). This implies that more beneficiaries were family men and women. Concerning home language, isiZulu was the language most spoken by the recipients of RADP (21.6%) in the Gauteng province where the study was conducted, Sepedi (19.6%) followed this and the lowest was Tshivenda (3.9%). Finally, the highest educational level of most respondents was university education with more than one third (39.2%); secondary education was the second (37.3%); college was the least at 5.9%. This means that the majority of the farmers could read and write because they have all acquired good levels of education.

4.2.1.2 Respondents' socio-economic characteristics

Socio-economic characteristics such as sources of income, type of land acquisition method, type of farming enterprise, family size, farm size, years in farming, and number

of years since receiving RADP are discussed below. Socio-economic characteristics were measured because they influence the impact of the programme in the livelihoods of the beneficiaries. **Table 4.2** below shows the income sources of the beneficiaries of RADP in the Gauteng province.

Table 4.2: Income sources of the beneficiaries of RADP in the Gauteng province (n=51)

Variable	Frequency	Percent
Main source of income		
Farming	39	76.0
Employment	6	12.0
Business ventures	6	12.0
Total	51	100.0

Source: field data (2017)

The results in **Table 4.2** show that the majority (76%) of the respondents relied on farming as their main source of income followed by employment and business ventures both at 12%. This implies that the livelihoods of most beneficiaries of RADP were highly dependent on farming.

Figure 4.1 below shows the land acquisition methods of the respondents or beneficiaries of RADP (n=51).

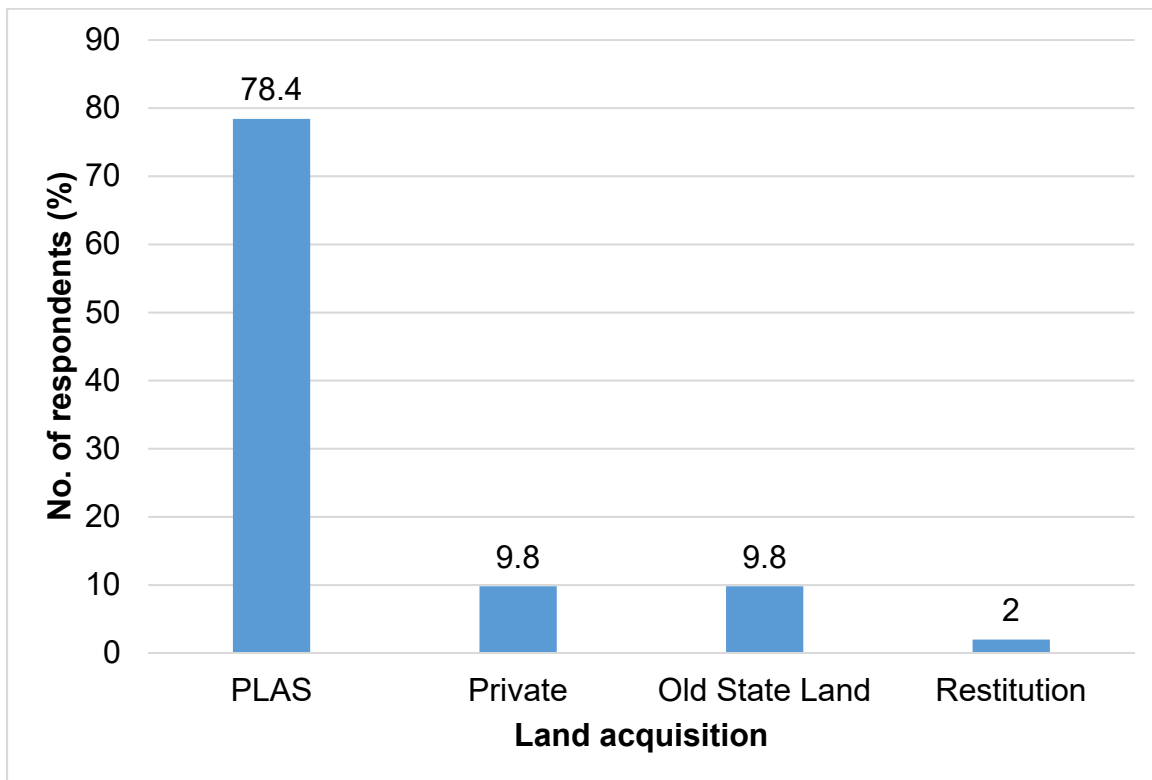


Figure 4.1: Land acquisition methods of the respondents or beneficiaries of RADP (n=51), Source: field data (2017)

Figure 4.1 shows that the majority (78.4%) of the respondents acquired land through the Proactive Land Acquisition Strategy (PLAS), followed by those who occupied old state land and private land at 9.8% each. Only 2% of the respondents' land was acquired through the restitution programme. Proactive Land acquisition Strategy (PLAS) and old state land programmes do not give farmers title deed; as a result, these participants are occupying the farms as lessees. This implies that most beneficiaries of the RADP programme may find it difficult to access credit from financial institutions where collateral is required because they do not have title deeds for their land.

Figure 4.2 below shows the type of farming enterprises of RADP beneficiaries in the Gauteng province.

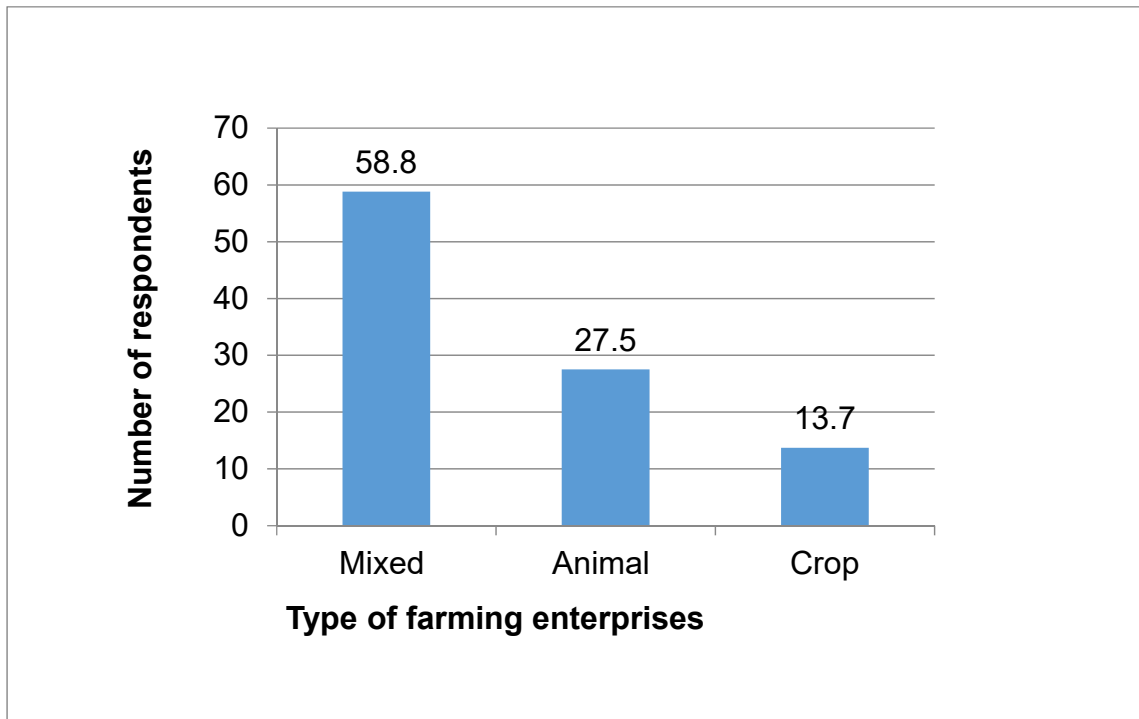


Figure 4.2: Type of farming enterprises of RADP beneficiaries in the Gauteng province (n=51), Source: field survey (2017)

The majority (58.8%) of the beneficiaries who participated in the study were practising mixed farming, as shown by the results presented in **Figure 4.2** above. This was followed by animal (livestock) farmers with 27.5%, and crop farmers being the least with 13.7% of the respondents. This implies that most beneficiaries of the programme were farming in a variety of enterprises rather than one. This trend is more evident for grain farmers as they have only one income-generating season per year. In addition, the cost of maintaining the animals is low as they produce most of the feed from the by-products of grain farming. As a result, mixed farming assists in improving the farm's cash flow challenges.

Table 4.3 below shows more socio-economic characteristics of RADP farmers in the Gauteng province.

Table 4.3: Year received RADP, number of years farming, farm and family size of RADP beneficiaries in the Gauteng province (n=51)

Item	Farm size (in hectares)	Family size (Including participants)	Year received RADP	Number of years in farming
Mean	195.44	6.18	3.35	12.53
Std. error of mean	28.21	.56	.253	1.01
Mode	8.50	5	2	10
Std. deviation	201.48	3.96	1.81	7.21
Minimum	2.20	2	0	4
Maximum	891.0	26	7	32

Source: field data

The results in **Table 4.3** show that on average, the farm size for the participants is 195.44 hectares. However, the standard deviation (201.48) shows a high variation when it comes to the size of land occupied by the participants. The minimum farm size is 2.2 ha with the maximum being 891.0 ha. The average family consists of six members, and the results show a low variation, with a standard deviation at 3.96. The participants have had RADP funds for an average of 3.35 years, with a minimum of zero years and a maximum of 7 years. The results also show that the participants have been farming for an average of 15.53 years, and there is very little variation in the data with the standard deviation being 7.21.

4.2.2 Impact of RADP on agricultural production of beneficiaries

The impact of RADP on agricultural production included a “before” and “after” evaluation of the area cultivated, crop yield, and the number of livestock to determine whether there was a change after the respondents (farmers) received support from the programme. **Table 4.4** below shows the impact of RADP on the area cultivated by the respondents.

Table 4.4: The impact of RADP on area cultivated by the respondents (n=51)

Type of crop	Average area cultivated (ha)		T-test	Significance (2-tailed)
	Before	After		
Spinach	0.12	0.35	-1.439	0.156
Potatoes	0.59	0.00	1.000	0.322
Maize	25.22	64.52	-2.917	0.005
Soya beans	0.29	2.43	-1.429	0.159
Cabbage	0.02	0.00	1.000	0.322
Tomatoes	0.04	0.09	-0.988	0.328
Green peas	0.00	0.20	-1.030	0.308
Average	3.75	9.66	-0.829	0.229

Source: field data (2017)

According to the results above in **Table 4.4**, the number of hectares (area) in which five of the above listed crops (spinach, maize, soya beans, tomatoes, green peas) were cultivated increased as a result of the support received from RADP with the exception of potatoes and cabbage. The decrease in the cultivation area of potatoes and cabbage occurred because farmers preferred highly profitable crops, such as spinach. Although there was an increase in the number of hectares cultivated, the only significant difference was for maize (sig. = 0.005). The total average area cultivated increased from 3.75 to 9.55 ha. However, the overall impact was not statistically significant (sig. = 0.229). Therefore, RADP did not significantly contribute to the increase in the crop production area.

Table 4.5 below shows the impact of RADP on yield of the crops cultivated by the respondents.

Table 4.5: The impact of RADP on yield of the crops cultivated by the respondents (n=51)

Type of crop	Average yield (in Tons)		T-test	Significance (2-tailed)
	Before	After		
Spinach	0.07	0.16	-2.469	0.017
Potatoes	0.07	0.10	0.930	0.357
Maize	93.27	253.77	-2.877	0.006
Soya beans	0.88	5.51	-1.361	0.180
Cabbage	0.07	0.00	1.000	0.322
Tomatoes	0.01	0.02	-0.586	0.561
Green peas	0.01	0.07	-1.099	0.277
Average	13.48	37.09	-0.923	0.246

Source: field data (2017)

As shown in **Table 4.5**, there were some increases in crop yield since receiving RADP. The yield of maize and spinach increased significantly at 5% level, while soya, tomatoes, potatoes, and green peas did not increase significantly. The result also shows a decrease in the yield of cabbage as farmers reduced and seized cultivation. Overall, the results shows that crop yield did not increase significantly (Sig. = 0.246).

Results on **Table 4.6** below show livestock production of farmers in numbers (before and after RADP).

Table 4.6: Average number of animals of the respondents before and after receiving RADP (n=51)

Type of animals	Average number of animals		T-test	Significance (2-tailed)
	Before	After		
Broiler	1 921.57	2 550.75	-0.738	0.464
Layers	245.10	607.84	-01.603	0.115
Cattle	20.63	20.69	-0.028	0.978
Sheep	3.67	3.96	-0.345	0.731
Pigs	9.24	17.20	-1.180	0.244
Goats	2.35	2.45	-0.504	0.617
Average	325.77	814.21	-0.733	0.524

Source: field survey

The results in **Table 4.6** depict that on average, the number of livestock kept by the respondents did not increase significantly (sig. = 0.52). This implies that receiving RADP did not improve the number of livestock kept by farmers. The insignificant increase in poultry production is a result of some enterprises failing due to natural disasters as others are established. The low growth in small stock and large stock is largely as a result of the size of the farms not increasing and farmers keeping livestock as a secondary enterprise.

4.2.3 Socio-economic impact of RADP on beneficiaries

Table 4.7 below presents the impact of RADP on human capital of beneficiaries.

Table 4.7: Impact of RADP on the human capital of the beneficiaries (n=51)

Human capital variable	Proportion of responses (%)		Mean	Level of significance (Binomial test)
	No	Yes		
Farming skills improved	5.9	94.1	0.94	0.000
Production skills improved	7.8	92.2	0.92	0.000
Tractor driving skills improved	31.4	68.6	0.69	0.010
Financial management skills improved	11.8	88.2	0.88	0.000
Administration skills improved	11.8	88.2	0.88	0.000
Computer skills improved	19.6	80.4	0.80	0.000
Marketing skills improved	37.3	62.7	0.63	0.090
Number of employees increased	47.1	52.9	0.53	0.780
Farm engage in training of students	74.5	25.5	0.25	0.000
Average	27.5	72.5	0.72	0.010

Source: field data (2017)

The results in **Table 4.7** indicate that the overall impact of RADP on human capital was positively significant at 5% level (Sig. = 0.010). This is because on average 72.5% of the beneficiaries of the programme agreed that their human capital improved significantly after receiving support from the programme (RADP). The human capital variables that improved significantly at 1% were farming skills (94.1%), production (92.1%), financial management (88%), administration (88%) and computer (80%). Tractor driving skills was significant at 5% level because 68.4% acquired such skills compared to 31.4% who did not. However, an increase in the number of employees and acquisition of marketing skills was not statistically significant at 5% (Sig. = 0.090).

The results of the impact of RADP on the social capital are presented in the results shown in **Table 4.8** below.

Table 4.8: Impact of RADP on the social capital of beneficiaries (n=51)

Social capital variable	Proportion of responses (%)		Mean	Level of significance (Binomial test)
	No	Yes		
Living standard has improved	29.4	70.6	0.71	0.000
Better networks established	23.5	76.5	0.76	0.000
Access to farmer unions improved	43.1	56.1	0.57	0.400
Access to food improved	29.4	70.6	0.71	0.000
Beneficiaries consume farm produce	33.3	66.7	0.67	0.020
Farm depends on own income	33.3	66.7	0.67	0.020
Market offers good price	56.9	43.1	0.43	0.400
Access to bigger markets improved	52.9	47.1	0.47	0.780
Farmers are satisfied with RADP	51.0	49.0	0.49	1.000
Average	39.9	60.7	0.61	0.290

Source: field data (2017)

Table 4.8 shows that on average, RADP improved the social capital of 60.7% of the beneficiaries in the study area. The programme had a significant impact on living standard (Sig. = 0.000), establishing better networks (Sig. = 0.000), access to food (Sig. = 0.000), ensuring that beneficiaries consumed farm produce (Sig. = 0.020) and dependence on farm income (Sig. = 0.020). However, the overall impact of the programme on the social capital status of the beneficiaries was not statistically significant (Sig. = 0.290). This is mainly because the impact of RADP on access to bigger markets, farmer unions, and prices offered at the market were not statistically significant ($p > 0.05$).

The results of the impact of RADP on natural capital of beneficiaries are presented in **Table 4.9** below.

Table 4.9: Impact of RADP on the natural capital of the respondents (n=51)

Natural capital variable	Proportion of responses (%)		Mean	Level of significance (Binomial test)
	No	Yes		
Farm size increased	86.3	13.7	0.14	0.000
The quality of water improved	45.1	54.9	0.55	0.575
The quantity of water increased	45.1	54.9	0.55	0.575
Access to pastures improved	54.1	45.9	0.45	0.576
Average	45.7	54.3	0.42	0.432

Source: field data (2017)

The results above show that, overall, the natural capital of 54.3% of the respondents improved after receiving RADP support, but the impact was not statistically significant (Sig. = 0.432). Only 54.9% of the respondents reported an improvement in the quality and quantity of water as a result of RADP, followed by improved access to pastures at 45.9%. About 86.3% of the beneficiaries indicated that the size of their farmland did not increase; the results were significant (Sig. = 0.000). This implies that RADP had an insignificant impact in ensuring the farm size of the respondents increased because the majority disagreed with the question.

The tables below present the results of the contribution of RADP towards physical capital (infrastructure development, farming machinery, equipment, and production inputs) of the beneficiaries.

Table 4.10 below presents the impact of RADP on infrastructure development of the respondents.

Table 4.10: Impact of RADP on infrastructure development of respondents in the Gauteng province (n=51)

Physical capital variable (infrastructure)	Proportion of responses (%)		Mean	Level of significance (Binomial test)
	No	Yes		
Boreholes	45.1	54.9	0.55	0.576
Fencing	72.5	27.5	0.27	0.002
Chicken housing	74.5	25.5	0.25	0.001
Storage sheds	80.4	19.6	0.20	0.000
Tunnels and shade nets	90.2	9.8	0.10	0.000
Piggery housing	90.2	9.8	0.10	0.000
Electricity	96.1	3.9	0.04	0.000
Water dam	96.1	3.9	0.04	0.000
Pack house and storage rooms	96.1	3.9	0.04	0.000
Farmhouse	98.0	2.0	0.02	0.000
Dairy infrastructure	98.0	2.0	0.02	0.000
Silos	98.0	2.0	0.02	0.000
Feeding pans	98.0	2.0	0.02	0.000
Average	87.2	12.8	0.13	0.047

Source: field data (2017)

The results in **Table 4.10** show that overall the impact of RADP on the type of infrastructure development was negatively significant (Sig. = 0.047); on the average 87.2% of the respondents reported to have not had any infrastructure through the programme. The types of infrastructure acquired by the majority of the respondents were equipped boreholes (54.9%), followed by fencing and chicken housing with 27.5% and 25.5% respectively. This implies that the majority of RADP beneficiaries did not have reliable water source (s) because they requested boreholes to be drilled at their farms/plots, mainly because water is vital for agricultural production. Piggery housing, tunnels and shade nets were received by 9.8% of the respondents, whereas a few (2%) received silos, farmhouses, dairy infrastructure, pack houses, storage rooms and

feeding pens. Fencing was required mostly for security purposes because farm killings and theft are prevalent in Gauteng. Other types of infrastructure, such as farmhouses were not highly prioritised because they are mostly available on the farms. It is clear that RADP beneficiaries preferred support that will improve their production and growth.

Table 4.11 presents the impact of RADP on machinery acquired by the respondents in the Gauteng province.

Table 4.11: The impact of RADP on machinery acquired by the respondents in the Gauteng province (n=51)

Physical capital variable (machinery or equipment)	Proportion of responses (%)		Mean	Level of significance (Binomial test)
	No	Yes		
Tractor	35.3	64.7	0.65	0.049
Bakkie (Pick-up truck)	47.1	52.9	0.53	0.780
Planter	52.9	47.1	0.47	0.780
Plough	54.9	45.1	0.45	0.576
Boom sprayer	56.9	43.1	0.43	0.401
Disk harrow	56.9	43.1	0.43	0.401
Rotary tiller	56.9	43.1	0.43	0.401
Slasher	60.8	39.2	0.39	0.161
Ripper	72.5	27.5	0.27	0.002
Seed drill	80.4	19.6	0.20	0.000
Water tank	80.4	19.6	0.20	0.000
Trailer	84.3	15.7	0.16	0.000
Fire-fighting equipment	90.2	9.8	0.10	0.000
Egg grading machinery	92.2	7.8	0.08	0.000
Feed mixer	92.2	7.8	0.08	0.000
Irrigation and water pumping	92.2	7.8	0.08	0.000
Drinking troughs	96.1	3.9	0.04	0.000
Average	70.7	29.3	0.29	0.209

Source: field data (2017)

According to the results on **Table 4.11** above, the impact of RADP on machinery and equipment acquired by beneficiaries in Gauteng was generally statistically insignificant (Sig. = 0.209); only tractors showed a statistically significant impact. Although statistically insignificant, the second most purchased machinery were bakkies at 52.9%, followed by planters at 47.1% and ploughs at 45.1%. Boom sprayer, disk harrow and rotary were the fifth most purchased machinery by 43.1% of the respondents. The least purchased machinery and equipment were fire-fighting equipment (9.8%) feed mixer (7.8%), irrigation and water pumping equipment (7.8%) and drinking troughs (3.9%). The results show that the most purchased machinery and equipment were for cultivation, with tractor implements dominating the list. This shows that crop farmers are more dependent on machinery and equipment to carry out production.

Table 4.12 below presents production inputs acquired by the respondents through RADP.

Table 4.12: Production inputs acquired by the respondents through RADP (n=51)

Production Inputs	Number of respondents who benefited	
	Frequency	Percentage (%)
Animal medication	37	72.5
Crop chemicals	35	68.6
Fertilisers	32	62.7
Seeds	32	62.7
Animal feeds	23	45.1

Source: field data (2017)

Table 4.12 shows that a large proportion (72.5%) of the respondents used funding acquired from RADP to purchase animal medication, followed by crop chemicals (68.6%), and fertilisers and seeds both at 62.7%. The least production inputs purchased by the respondents were animal feeds at 45.1%; the low purchase of animal feeds can be attributed to mixed farmers who kept livestock as an additional means of generating

income and use surplus produce from their crop production to supplement feeding for livestock.

Table 4.13 below shows infrastructure renovations done through RADP funding.

Table 4.13: Farm infrastructure renovations done by the respondents using RADP funding (n=51)

Renovations by RADP	Number of respondents benefited	
	Frequency	Percentage
Farm house	6	11.8
Piggery structure	3	5.9
Chicken houses	1	2.0
Storage sheds	1	2.0
Vegetable tunnels	1	2.0

Source: field data (2017)

The results in **Table 4.13** indicate that farmhouses were the most renovated infrastructure; as reported by 11.8% of the respondents. This is followed by piggery structures at 5.9%; chicken houses, storage sheds, and vegetable tunnels all equal at 2.0% each. Based on the results, it can be concluded that renovations were not prioritised because small proportion of the respondents applied for RADP to repair and maintain their infrastructure.

Table 4.14 below presents the impact of RADP on the financial capital of beneficiaries.

Table 4.14: The impact of RADP on the financial capital of the beneficiaries (n=51)

Financial capital variable	Proportion of responses (%)		Mean	Level of significance
	No	Yes		
Income improved	33.3	66.7	0.67	0.025
Access to credit improved	49.0	51.0	0.51	1.000
Able to make savings	49.0	51.0	0.51	1.000
Able to access financial support from other institutions	47.1	52.9	0.53	0.779
Able to pay insurance	62.7	37.3	0.37	0.093
Able to pay farm workers basic salary	33.3	66.7	0.67	0.025
Average	45.7	54.3	0.54	0.487

Source: field data (2017)

The results in **Table 4.14** show that overall RADP did not have significant positive impact on the financial capital of the respondents; this is supported by the average significance level value of 0.487 for the variables of financial capital measured in the study. However, the positive impact of the programme was on income and the ability of farmers to pay their workers a basic salary. Income of more than two thirds (66.7%) of the beneficiaries improved significantly (sig. = 0.025) at 5% level. As a result, a large proportion (66.7%) of the respondents was able to pay their farm workers' salary, this change was statistically significant (0.025). The fact that the overall impact of RADP on financial capital was negative could be a result of the time required for a farming enterprise to reach break-even point after receiving funding.

4.2.4 Factors influencing the increase in farm income of RADP beneficiaries

Factors influencing an increase in farm income of RADP beneficiaries in the Gauteng province were determined using the binary logistics regression model. The section presents the results of the factors influencing the increase in respondents' income. The results in **Table 4.15** present the Hosmer and Lemeshow Test, which shows goodness-of-fit.

Table 4.15: Hosmer and Lemeshow test showing goodness-of-fit (n=51)

Hosmer and Lemeshow Test			
Step	Chi-square	Df	Sig.
1	15.407	8	0.052

The results in **Table 4.15** above indicate that the p-value is 0.052 for chi-square statistic from level of significant column, as a result it is not statistically significant ($p \geq 0.05$). It means the model used is pertinent for the data analysed.

Table 4.16 below presents pseudo R-square.

Table 4.16 The pseudo R-square (n=51)

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	18.777 ^a	0.595	0.827

The results in **Table 4.16** show two (2) pseudo R-squared values. The analysis of pseudo R-squared values in Binary Logistic Regression (BLR) is not important because they do not have the same mean as the one in Ordinary Least Square (OLS) regression. The pseudo R-squared does not have equivalent in like in OLD, hence they are not important.

The findings in **Table 4.14** show that the income of 66.7% of the respondents increased whereas 33.3% did not experience an increase. This may be influenced by various factors such as socio-demographic characteristics of the respondents, access to markets, sources of income, farming skills and others. The Binary Logistic Regression (BLR) model was therefore used to determine factors influencing the increase in farm income of the respondents (beneficiaries of RADP). **Table 4.17** below presents the parameter estimates of binary logistic regression of the factors influencing the increase in the income of the respondents.

Table 4.17: Parameter estimates of binary logistic regression of the factors influencing an increase in the respondents' income (n=51)

	Variables in the equation							
	B (Co-efficient)	S.E	Wald	Df	Sig.	Exp(B)	95% CI for EXP(B)	
							Lower	Upper
Gender	2.165	2.400	0.814	1	0.367	8.711	0.079	960.722
Age	0.296	0.139	4.563	1	0.033	1.344	1.025	1.764
Farm/plot size	0.007	0.005	2.034	1	0.154	1.007	0.997	1.017
Education level	-0.457	0.863	0.0281	1	0.596	0.633	0.117	3.436
Number of support programmes	-0.119	1.462	0.007	1	0.935	0.888	0.051	15.592
Main source of income	1.716	1.720	0.995	1	0.318	5.561	0.191	161.784
Better access to credit	7.363	3.122	5.561	1	0.018	1576.179	3.467	716555.983
Has the size of farm increased	-5.927	2.826	4.399	1	0.036	0.003	0.000	0.678
Farming skills improved	24.483	18050.20	0.000	1	0.999	4293441 3083.711	0.000	.
Access to bigger markets improved	5.780	2.545	5.158	1	0.023	323.656	2.207	47457.295

Source: field data (2017)

The results in **Table 4.17** show that out of 10 independent variables chosen, seven (7) have positive influence, namely gender, age, farm size, main source of income, access to credit, improve farming skills and access to bigger markets. However, only three (3) (age, access to credit, and bigger markets) were statistically significant at 5%. The logit coefficient estimate associated with age of the respondents is positive and significant (Sig. = 0.033). This means that income of the respondents increases as they grow older, with all other factors held constant. Therefore, the income of older farmers who benefitted from RADP increased more than that of younger ones. With regard to improvement in access to credit, the results indicate that the logit coefficient estimate is positive and statistically significant at 5% level of significance (Sig. = 0.018). This illustrates that there is a correlation between an increase in farm income and access to credit. Farmers, therefore, generated more income because of access to credit with other factors being constant. This may be attributed to the fact that farmers who have access to credit are able to increase their scale of operation, adopt new technologies, market their products; as a result, their income is likely to increase.

The result also shows a positive and statistically significant logit coefficient estimate of access to bigger markets. This implies that access to bigger markets results in an increased income of the respondents; other factors held constant. This may be because the respondents are able to get higher prices for their produce in bigger markets compared so small or informal markets.

As depicted in **Table 4.17** the logit coefficient regarding an increase in farm size of the respondents is negative and statistically significant at 5% level of significance ($p = 0.036$). The results imply that there is a negative correlation between the increase in farm size and increase in farm income of the beneficiaries, other factors held constant. Therefore, beneficiaries who indicated that their farm size increased did not necessarily experience an increase in their farm income. This implies that there is no guarantee that farmers with access to bigger land will generate more income than those producing at a smaller scale.

4.2.5 Constraints encountered by the beneficiaries of RADP

This section presents various constraints encountered by the respondents who benefitted from RADP in the study area. **Table 4.18** below presents constraints encountered by the beneficiaries RADP in the study area.

Table 4.18: Constraints encountered by the beneficiaries RADP in the study area (n=51)

Constraints after RADP	Number of respondents	
	Frequency	Percentage
Insufficient funding	43	84.3
Lack of adequate equipment	13	25.5
Poor communication with DRDLR officers	8	15.7
High input costs	6	11.8
Lack of market access	4	7.8
Poor farmer/mentor relationship	4	7.8
No challenges	4	7.8
Stock theft	4	7.8

Source: field data (2017)

The results in **Table 4.18** show that the majority (84.3%) of the respondents indicated insufficient funding as their major challenge even after receiving financial support from RADP. Insufficient funding is recurring because the beneficiaries reported that they did not receive full funding that covers a period of five years as stipulated in the funding model. Lack of adequate equipment was the second challenge experienced by over a quarter (25.5%) of the respondents. Poor communication with DRDLR officials was the third constraint experienced by 15.7% of the beneficiaries of RADP. The respondents indicated that the budget in the application was sometimes reduced by DRDLR (government) without consultation. High input costs was the third challenge encountered 11.8% of the respondents. The minor challenges encountered by less than 10% of the respondents were lack of access to market, poor relationship with mentors, and stock theft.

4.3 Discussion

4.3.1 Socio-demographic characteristics

The results showed that the majority (41.2%) of the respondents were in the 46 to 55 age group; the second largest age group was between 55 and 65 years old. It was also discovered that there was no youth participants in the study group with respondents that are younger than 35 at 0%. In support, Mabuza (2016) discovered that the majority (34.7%) of participants in a study of RADP across six (6) provinces of South Africa (Free State, Eastern Cape, Gauteng, KwaZulu-Natal, Limpopo, and North West) were between 51 and 60 years old. Although minimum, results of the same study also showed youth participation. Antwi and Nkwe (2013) also reported in support of the finding that the majority (36.8%) of CASP beneficiaries in Ngaka Modiri Molema district of North West were above 51 years while youth participation was lowest. This is concerning as youth involvement is necessary for future sustainability of food security. Concerning gender, the results showed that the majority (51%) of the respondents who received RADP support in the study area were females. This is consistent with what Nesamvuni *et al.* (2016) discovered in the study of CASP beneficiaries in the Gauteng province. In support, Maoba (2016) also discovered that the majority of CASP beneficiaries in Ekurhuleni Metropolitan Municipality and Sedibeng District Municipality were females constituting 61.5%. However, Ntlou (2016) discovered that the majority of the farmers in the study of RADP across six provinces of South Africa (Free State, Eastern Cape, Gauteng, KwaZulu-Natal, Limpopo, and North West) were males. This is in support of what Nxumalo and Antwi (2014), who discovered that majority of PLAS beneficiaries in Dr Kenneth Kaunda district of North West were males. This implies that different genders have benefitted from government farmer support programmes in South Africa.

With regard to race, the results showed that RADP beneficiaries in Gauteng were a combination of black and coloured people, with black people being the dominant race. A study done by Nxumalo and Antwi (2014) also discovered that PLAS beneficiaries in Dr Kenneth Kaunda district of North West were blacks and coloureds, with black people also dominating in the area, which validates the results of the study. The results show

that land reform is advancing in its mission to support previously disadvantaged groups in South Africa, which are predominantly black people (Hendriks, 2016). The most spoken language in the province was isiZulu followed by Sepedi and isiNdebele while the least spoken language was Tshivenda. This was anticipated as the findings of Stats SA (2011) reported that the most spoken language in the Gauteng province is isiZulu.

From a marital status perspective, the study discovered that the majority of the beneficiaries were married people while single, widowed and divorced people were the lowest at less than 10% each. Maoba (2016) discovered a similar pattern with CASP beneficiaries in the Ekurhuleni Metropolitan Municipality and Sedibeng District Municipality area where the majority of the respondents were married and only 7.7% were single. Results of a study conducted by Phatudi-Mphahlele (2016) on CASP beneficiaries in Sedibeng district also showed that the majority of the respondents were married; the second and third largest groups were divorced and widowed people respectively while the smallest group was single people. This implies that the majority of emerging farmers are married people with families to support.

The findings regarding the education level of the respondents showed that less than half (39.2%) of the respondents in the study area had university qualifications. Those who completed matric had the second largest number of beneficiaries while the smallest group had primary school education. This means that among the beneficiaries of RADP there are many with quite good level of education. This is supported by results of a study conducted by Maoba (2016) where the majority of the CASP respondents in Ekurhuleni Metropolitan Municipality and Sedibeng District Municipality obtained tertiary education. In contrast, a study done by Nxumalo and Antwi (2014) showed that majority of the beneficiaries only obtained secondary education, followed by primary education while a minority (15%) obtained tertiary education. The level of education obtained by the respondents implies that the beneficiaries can be easily trained, adopt new technologies, access information on better farming methods, and improve their farming practices.

According to the results, the majority (76%) of the respondents were dependent on farming as their main source of income; the number of respondents that depended on

formal employment and other business ventures was relatively low at 12% each. The findings are consistent with what Mabuza (2016) and Ntlou (2016) discovered, namely that the majority of the RADP beneficiaries in six provinces of South Africa (Free State, Eastern Cape, Gauteng, KwaZulu-Natal, Limpopo, and North West) were full-time farmers generating their income primarily from agricultural activities. This implies that most emerging farmers sorely depend on farming to make a living; therefore, government should consider increasing funding offered to these type of farmers through support programmes such as RADP and others because it plays a significant role in improving their livelihoods.

Land occupation methods in the study area found that the majority (90.2%) of the respondents acquired land through various land reform programmes. Beneficiaries that acquired land through the Proactive Land Acquisition Strategy (PLAS) were the highest at 78.4%. The least number of beneficiaries were those who acquired land through restitution. Private acquisitions and old state land had an equal number of respondents at less than 10% for all. In support, Mabuza (2016) also found that the majority of RADP beneficiaries in the concerned study area acquired land through land reform programmes (PLAS and LRAD), while the least was privately owned land and land earmarked for restitution with 3.1% and 1.0% respectively. In contrast, the results of CASP beneficiaries in Ekurhuleni Metropolitan Municipality and Sedibeng District Municipality showed that the majority of the respondents acquired their land privately. This shows that although farmer support programmes target different types of landowners, RADP prioritises land reform projects. This is encouraging as studies showed that the majority of these projects are in need of support as they cannot access funding due to lack of title deeds (Prinsloo, 2008; Ntlou, 2016).

As shown in the results, more than half (58.8%) of the respondents were practising mixed farming, followed by livestock farming at 27.4% while the least number of participants practised crop farming (13.7%). In contrast, Nesamvuni *et al.* (2016) discovered that the majority (67.2%) of the CASP respondents in Gauteng were practising livestock farming, followed by crop farmers (30.8%). In the same study, it was discovered that mixed farmers were the least among CASP beneficiaries (2%). However, Mabuza (2016) discovered that the majority of the farmers in the six provinces

of South Africa (Free State, Eastern Cape, Gauteng, KwaZulu-Natal, Limpopo and North West) were crop farmers. The variation in the results could be attributed to climatic conditions in the country as some commodities thrive better in certain environments than others.

The results showed that on average the farm (plot) size of RADP beneficiaries in Gauteng was 195.44 ha. The standard deviation of 201.48 showed that the variation was very high. A study by Mabuza (2016) discovered that the average farm (plot) size in the Free State, Eastern Cape, Gauteng, KwaZulu-Natal, Limpopo and North West was 666.71 ha amongst RADP beneficiaries. In support, results of the same study also show that there was high variance in the sizes of land occupied by RADP beneficiaries. The size of a farming enterprise can be directly linked to the commodity being produced; as a result, the high difference between the minimum and maximum farm size is acceptable. From family size perspective, the study found that the average family size was five members. As shown in the results, there was little variance in the standard deviation at 3.96 recorded. In support, Phatudi-Mphahlele (2016) discovered that the households of the beneficiaries of CASP in Sedibeng District Municipality had an average family size of five (5) members.

The findings regarding farming experience indicated that, on average, the respondents have been farming for 12 years; which is more than 10 years (a decade). In contrast, Phatudi-Mphahlele (2016) found that the average farming experience of CASP beneficiaries in Sedibeng was nine (9) years, which is fewer than 10 years. This shows that support programmes recipients in South Africa have varying experiences in farming, which can affect their potential to produce successfully.

4.3.2 Impact of RADP on agricultural production

The results showed that, overall, RADP did not significantly improve the area cultivated by respondents in the Gauteng province ($p = 0.229$). However, the maize area under cultivation had a significant increase after the beneficiaries received support from the programme. Whereas the area in which other crops such as spinach, potatoes, cabbage, tomatoes, and green peas were cultivated did not increase significantly.

Although this was a different support programme, results from a study conducted by DPME (2015) on CASP beneficiaries also supports the fact that maize was the crop mostly cultivated in the Gauteng province by the respondents. The same study also reported a low increase in the area in which crops such as beans and vegetables were cultivated. Concerning yield, the study discovered that generally RADP did not significantly improve the crop yield of the beneficiaries in the study area; beneficiaries also reported opting out of producing cabbage for economic reasons. However, the crop yield of spinach and maize improved significantly ($p \leq 0.05$). This is consistent with results by DPME (2015) where maize yield increased significantly compared to other crops cultivated by CASP beneficiaries. Concerning animal production, the findings showed that RADP had an insignificant impact on the number of animals kept by the respondents. In contrast, Mabuza (2016) and Ntlou (2016) discovered that RADP significantly increased the number of livestock and area cultivated by respondents in six (6) provinces of South Africa.

4.3.3 Socio-economic impact of RADP

Human capital

The study discovered that access to RADP improved the human capital of the respondents significantly. Farmers experienced an improvement in their farming skills after receiving funding. Skills that improved significantly were farming, production, tractor driving, financial management, administration, and computer operation. The findings are in support with what Antwi and Nkwe (2013) discovered in the Ngaka Modiri-Molema district that access to farmer support (CASP) significantly improved skills (record keeping, marketing management, equipment/tools handling for animals, financial management, animal health management, land preparation and planting, harvesting and grading, insects and weed control, water management, picking and packing of products) of the beneficiaries. However, Mabuza (2016) discovered contradicting results as access to RADP was not effective in developing skills of beneficiaries in six provinces (Gauteng, Limpopo, KwaZulu-Natal, Free State, North West, and Eastern Cape) of South Africa. The fact that RADP improved the human capital of the respondents in the study area is likely to yield positive outputs. This

assumption is based on Xaba and Dlamini (2015) who found that by improving their skills farmers' ability to generate more profit is increased. Improvements in necessary farming skills assist farmers to find new ways to optimise production, access markets, and therefore improve income. As a result, a lack of farming skills is considered a limiting factor among smallholder farmers (Baloyi, 2010).

Social capital

With regard to social capital, the results showed that in general access to RADP did not improve the livelihoods of the beneficiaries (respondents) in the study area significantly (Sig. = 0.290). Even though there was significant improvement in living standards, network establishment, access to food, and dependency in farm income, farmers did not have better access to farmer unions, bigger markets, and were not offered a good price for their produce. As a result, the majority of the beneficiaries (51%) were not satisfied with RADP. The findings are in contrast with what Oladele and Ward (2017) discovered, namely that access to farmer support increased social capital by over 90%. Beneficiaries of MAFISA in the study experienced improvement in access to farmer groups, government networks, and private sector networks among others. Furthermore, a study by Oladele and Antwi (2013) supports the findings that access to farmer support project improves access to social capital. In their study, it was found that beneficiaries of LRAD were able to establish at least five linkages with other networks. Improvements in social capital can lead to the sharing of information and reducing transaction costs. With improved social capital, farmers may be able to access bigger markets through the network. It is therefore a concern that access to RADP did not significantly improve the respondents' social capital.

Natural capital

The study discovered that, overall, RADP did not significantly (Sig. = 0.432) improve the natural capital of the beneficiaries. The results showed that there were very low improvements in the respondents' capacity to increase the size of land and access to better pastures. Even though the quality and quantity of the water improved, it was not statistically significant (sig = 0.432). This shows that access to farmer support (RADP)

did not necessarily have an impact on the ability to develop and optimise the use of natural resources. This is, however, in contrast to the findings of a study conducted by Oladele and Ward (2017) who reported an overall significant improvement in natural capital of MAFISA beneficiaries in North West province of South Africa. In their study, access to MAFISA significantly improved the size of land, quality of water, natural pasture and sources of natural water for beneficiaries. Antwi and Nkwe (2013) also supported the findings that farmer support can significantly improve access to natural resources. In their study of CASP beneficiaries at Ngaka Modiri-Molema, it was discovered that the highest increase in natural capital occurred in the accessibility to water, while access to pastures had the lowest increase at 3.7%. However, the results of the same study show that the number of beneficiaries with high access to natural resources decreased. With the majority of emerging farmers being previously disadvantaged, lack of access to better natural resource can be a limiting factor as they are financially constrained. This results in over utilisation of available resources. According to Mapholi *et al.*, (2014), emerging farmers are more likely to overstock because they lack adequate pastures and this result in the depletion of these limited resources.

Physical capital

The findings of the study showed that with regard to infrastructure, the majority of the beneficiaries used their RADP funds for the acquisition of water infrastructure. Beneficiaries purchased newly equipped boreholes and refurbished old ones. This shows that the beneficiaries of the programme applied for infrastructure that improves water availability because agricultural production is highly dependent on water. Fencing and chicken housing were also acquired by a larger number, followed by storage sheds. The items least acquired were farmhouses, dairy infrastructure, silos and feeding pans. A minor proportion of beneficiaries opted for renovations to old structures with the highest number of renovations being farm houses at 11.8% and the lowest being vegetable tunnels, storage sheds and chicken houses. Regarding equipment and machinery, the majority of the beneficiaries purchased tractors and bakkies; followed by farming equipment such as planters, boom sprayers, ploughs and tillers. The result also show that machinery and equipment purchased the least were drinking troughs, feed

mixers and grading machines. In support, Antwi and Nkwe (2013) reported high purchasing of boreholes and fencing amongst beneficiaries of CASP in Ngaka Modiri-Molema district of North West. Other factors that improved in the study include transport, storerooms and feeding facilities. Oladele and Ward (2017) also reported an improvement of over 90% in the physical capital of beneficiaries of MAFISA after receiving support. These findings are also validated by results of a study by DPME (2015) on CASP beneficiaries in South Africa where 76%-92% of the respondents reported a positive impact with regard to infrastructure development. The types of infrastructure developed in the study include sheds and stores, workshops, piggery and chicken housing, tunnels, shade nets, dairy structures and pack houses. Access to physical capital improves the productivity of farms. It is therefore important for beneficiaries to receive support in acquiring these resources.

With regard to production inputs, the results showed that RADP had a positive impact. Respondents had better access after receiving support. The majority (72.5%) of the respondents reported an increase in access to animal medications. The programme also assisted the respondents with better access to crop chemicals for disease and pest control, fertilisers, seeds and animal feeds. In support of the findings, DPME (2015) reported a positive increase with regard to production inputs access for CASP beneficiaries. The study depicted a positive improvement in fertilisers, seeds and animal feeds.

Financial capital

Concerning financial capital, the results showed that overall RADP had an insignificant impact (Sig. = 0.487) on beneficiaries in the Gauteng province. Although the majority (66.7%) of the farmers experienced a significant (Sig. = 0.025) increase in annual income and were able to pay employees a basic salary, they reported that they were still unable to access credit from other institutions, make savings, and pay insurance for their enterprises. This is in contrast with findings by Antwi and Nkwe (2013) who found a significant overall increase in the financial capital of CASP beneficiaries in the Ngaka Modiri-Molema district of North West. However, results of the same study also showed that the beneficiaries found it difficult to access funding from banks and other private

institutions. This phenomenon is common in the country as reported by Ntlou (2016). Access to adequate finances has been one of the major challenges among emerging farmers in the six provinces (Gauteng, Limpopo, KwaZulu-Natal, Free State, North West and Eastern Cape) of South Africa that were surveyed in the said study. This is common among the majority of emerging farmers because they are not in possession of title deeds of their land that can be used as collateral to acquire credit from financial institutions such as banks (Sikwela, 2013). RADP farmers, in particular, have challenges accessing funds as they mostly occupy their land on a lease basis (Dawood, 2018). Another factor raised by beneficiaries was that RADP did not provide funding for a period of five years as outlined in their funding model. Farmers are only supported with the first 100% of the funds. This creates a challenge as there are expectations from farmers to receive further funding for a period of five years and therefore they make plans around this promise.

4.3.4 Factors influencing the increase in farm income of RADP beneficiaries

The findings of the study showed that age, better access to credit, and access to bigger markets positively and significantly improved the income of the respondents. In support, Saidhar *et al.* (2017) discovered that age had a positive influence on the income of smallholder farmers in Guntur district of Andhra Pradesh. However, this is in contrast with what Mokone (2016) discovered in the Bojanala District Municipality, namely that age had a negative and insignificant impact on the income of the farmers. This implies that age does not consistently influence the income of the farmers.

With regard to better access to credit, the findings support what Mokone (2016) reported in Bojanala District Municipality where access to credit had a positive correlation with the farmers' income increasing. However, the results of the aforementioned study were not statistically significant. Access to various forms of credit increases productivity as it assists in acquisition of resources. The results therefore highlight the importance of this factor in the development of emerging farmers.

Access to bigger markets was also found to be one of the factors that significantly influenced an increase in farm income of the respondents This is encouraging as

access to bigger markets for emerging farmers results in better prices for their produce (Khapayi & Celliers, 2015). In contrast, Mokone (2016) found that access to market did not have a positive and significant influence on the income of smallholder farmers in Bojanala District Municipality, North West province. In addition, Mwambi *et al.* (2016) also found that access to markets did not have a positive and significant influence on income of smallholder avocado farmers in Kenya.

With regard to the increase in farm size as a result of receiving support from RADP, results showed a negative and significant influence. This implies that an increase in farm size did not result in an increase in income generated by the respondents. Although the study was not on farmer support programmes, contradicting results were found in a study by Saidhar *et al.* (2017) where an increase in farm size positively influenced the income of smallholder vegetable farmers in Indonesia. In support, Mwambi *et al.* (2016) also found that an increase in farm size positively influenced the income of smallholder avocado farmers in Kenya.

4.3.5 Constraints encountered by beneficiaries of RADP

As shown in the results, the majority (84.3%) of the respondents alluded to insufficient funding as a major limiting factor in developing their enterprises. This is a concerning factor as access to funds assists farmers to acquire production inputs and machinery (Baloyi, 2010). With farming enterprises requiring an average of five years to achieve financial sustainability, this can be a determining factor in the success of RADP farms (Ntlou, 2016). In support, a study conducted by Botlhoko and Oladele (2013) in North West province reported inadequate funds as a challenge for 62% of the respondents. Dorward and Chirwa (2011) also found that in Malawi, financial challenges limited access to production inputs for farmers in the study area. Nxumalo and Oladele (2013) also found that high input costs limit farmers from participating in agricultural programmes. Other constraints faced by the farmers were lack of adequate equipment, poor communication with DRDLR officials, and high input costs. Concerning communication, respondents highlighted the importance of being informed on changes made to funding as it affects future decision-making.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary, conclusion and recommendations of the study. Results and conclusions are discussed relative to specific objectives and the null hypothesis identified. The aim of the study was to determine the socio-economic impact of RADP on the livelihoods of beneficiaries in the Gauteng province. The specific objectives of this research on the beneficiaries of RADP in the Gauteng province of South Africa were:

- to determine the socio-demographic characteristics of the RADP beneficiaries;
- to determine the contribution of the RADP on agricultural production of beneficiaries;
- to assess the socio-economic impact of the RADP on beneficiaries;
- to determine factors influencing increase in farm income of the beneficiaries; and
- to identify the general constraints faced by RADP beneficiaries.

Null hypothesis

It was hypothesised that:

- H_0 : RADP does not have significant impact on agricultural production (crop yield and number of livestock) of the beneficiaries.
- H_0 : Access to RADP does not significantly improve the socio-economic (natural, social, physical, financial and human capital) status of beneficiaries.
- H_0 : Age, farming experience, access to funding, access to bigger markets, do not have positive and significant influence on farm income of the beneficiaries.

5.2 Summary of the findings and conclusions

5.2.1 Socio-demographic characteristics of the participants

The results of the study showed that the majority (41.2%) of RADP beneficiaries in the study area are elderly people aged between 45 and 55 years. However, the absence of youth (<35 years) in this programme is a concerning factor as youth empowerment in agriculture is an important element in sustaining food security for the future. Moreover, it is particularly crucial to involve youth in agricultural support programmes because South Africa has a high unemployment rate in this age group. The study found that the majority (55%) of RADP farmers in the Gauteng province are females, which is a milestone in the pursuit of gender equality in the country. The results also showed that the study area comprised of black people and coloureds, with black people being the majority at 98%. The dominating languages among the participants were isiZulu and Sepedi at 21.6% and 19.6% respectively. However, the majority of the official languages were also presented in the study area, which was anticipated since Gauteng is a multilingual province because of the high migration from other areas. Another finding from the study is that more than three quarters (78.4%) of the participants are married people with families. This is encouraging as it implies that there is a possibility of succession planning and spousal support. It was also discovered that RADP beneficiaries in the Gauteng province are largely educated people with tertiary education (39.2%). Being in possession of a tertiary qualification puts respondents at an advantage as it implies that they have the capacity to read, write, understand and explore new way of improving their production.

It was found that more than three quarters (76%) of the beneficiaries of RADP in the study area were dependent on farming activities as their main source of income. Therefore, farming was their source of livelihood and food security means. Successful farming requires much presence on the farm, and it is encouraging to observe that the farmers rely on income from their production as it implies that more time is spent on the farm and therefore the investment that RADP made has the potential to create successful farming enterprises and sustainable livelihoods. From the findings of the study, it can be concluded that RADP in Gauteng prioritised land reform beneficiaries

because the majority (78.4%) of the beneficiaries acquired their farming land through PLAS. With the majority of land reform beneficiaries being previously disadvantaged people, it is therefore essential for DRDLR to support these particular farmers in order to ensure a sustainable land reform programme in South Africa. Mixed farming was the dominant (58.8%) farming types in the study area as shown by the results.. Mixed farming assists with providing multiple income streams. It is therefore understandable that the majority of the respondents preferred this type of farming. The results showed that, on average, the respondents had a family size of six (6) people, which was expected as the majority of the respondents were above 55 years and therefore grew up in an era of large families. The average farm size in the study area is 195.4 ha, but an observation of the standard deviation (201.548) reflects a high variance in the result. With the minimum farm size at 2.2 ha and maximum farm size at 891 ha. It can be concluded that the programme funded projects of varying sizes. The results also showed that the average farming experience was 12.5 years; this implies that the participants have good levels farming experience with all things being equal.

5.2.2 Impact of RADP on agricultural production

Area cultivated: The findings of the study showed that the size of land in which the majority of the crops (spinach, maize, soya beans, tomatoes and green peas) were cultivated increased after receiving the RADP funding. However, the increase was only significant in the area in which maize was cultivated (Sig. = 0.005). The majority of the crops in the study were vegetables, which explains the insignificance of the impact. While maize farmers used RADP funds to increase the size of land cultivated, vegetable farmers opted for building various production structures with mechanised irrigation. This in return improves the quality of their products.

Yield: The current study discovered that only the yield of maize (Sig. = 0.006) and spinach (Sig. = 0.017) improved significantly. This correlates with results of the area cultivated, which showed that the maize area under cultivation increased significantly. Other crops that increased in yield were soya beans, tomatoes and green peas; however, this increase was not statistically significant. Vegetable farmers select crops to be cultivated based on season and demand, which explains the decrease in cultivation

and yield of certain crops such as cabbage and potatoes. The beneficiaries also have limited access to reliable high value markets, hence their inability to expand the size of the land cultivated for quite a number of enterprises. The study therefore accepts the null hypothesis that RADP does not have a significant impact on the crop yields of the beneficiaries.

Livestock: It can be concluded that RADP did not have significant impact on livestock production because overall the number of livestock kept by the farmers did not increase significantly. Although poultry and piggery production had the highest increase compared to other livestock types, the increase was not statistically significant (Sig. = 0.524). Other livestock enterprises (sheep, cattle and goats) barely increased. The study therefore accepts the null hypothesis that RADP does not have a significant impact on livestock production of the beneficiaries. In general, it is concluded that RADP did not have a significant impact on agricultural production (crop yield and numbers of livestock) of the beneficiaries in the Gauteng province.

5.2.3 Socio-economic impact of RADP

Human capital: In general, receiving support from RADP significantly (Sig. = 0.010) improved the skills of the respondents in the study area. It was identified that farmers had better farming, production, tractor driving, financial management, administration, and computer skills after receiving support from the programme. However, it was established that marketing skills did not improve significantly. This is of much concern because emerging farmers struggle to access reliable high value markets. As an alternative, farmers sell their products to informal markets with lower returns as it comprises primarily of low-income consumers and there is no guarantee of selling. It was hypothesised that RADP does not significantly improve the socio-economic status of the respondents with specific reference to human capital; the null hypothesis is therefore rejected.

Social capital: With regard to social capital, it is concluded that RADP did not have a significant impact (Sig. = 0.290) on the livelihoods of the respondents. Farmers did not have better access to farmers' unions and larger high value markets, were not offered

good prices for their produce, and were not satisfied with the support offered by RADP. Participation in farmer unions leads to establishing contacts that assist in accessing different sources of marketing information. It can therefore be pointed out that this non-participation resulted in marketing challenges to the farmers. However, variables such as living standards, networks, access to food, and dependency on farm income improved significantly. This is encouraging as it implies that the programme is making an impact in other areas. The study therefore accepts the null hypothesis that RADP does not significantly improve the social capital of the respondents.

Natural capital: In conclusion, the programme (RADP) had an insignificant impact (Sig. = 0.432) generally on the natural capital of the respondents (beneficiaries) in the study area. This is applicable to all natural capital variables that were measured in the study. Even though, the programme improved water quality and access, farm size and pasture land, it was not significant statistically. The null hypothesis that RADP does significantly improve the socio-economic status of the respondents, precisely natural capital is therefore accepted.

Physical capital: It was discovered that RADP increased access to physical capital for beneficiaries. However, the increase was not statistically significant; impact on infrastructure was low and significant (Sig. = 0.047), while machinery and equipment was low and insignificant (Sig. = 0.209). Improvements in infrastructure included boreholes, fencing, chicken houses and storage sheds; while access to tractors, bakkies, planters, ploughs, boom sprayers, disk harrows, and rotary tillers improved with regard to machinery and equipment. The current study therefore accepts the null hypothesis that RADP does not significantly improve the socio-economic status of the respondents with specific reference to physical capital.

Financial capital: The conclusion drawn from the results is that RADP did not improve the financial capital of the respondents (farmers) significantly (Sig. = 0.487). Although income and the ability of the farmers to pay a basic salary improved significantly, there were challenges with regard to accessing credit, making savings and paying insurances. The null hypothesis that RADP does not significantly improve the socio-

economic status of the respondents with specific reference to financial capital is therefore accepted.

In conclusion, the overall impact of RADP on the socio-economic status of beneficiaries in Gauteng was statistically insignificant. Therefore, the null hypothesis that the programme did not have a significant impact is true.

5.2.4 Factors influencing the increase in the respondents' income

It was discovered that gender, farm size, main source of income and farming skills had a positive and insignificant influence on an increase in farm income of RADP beneficiaries. Only age, access to bigger markets and credit were positive and statistically significant. The null hypothesis that gender, farm size, main source of income, and farming skills does not positively and significantly influence an increase in the income of the beneficiaries of RADP is accepted. However, it is rejected that age, access to credit and access to bigger markets do not positively and significantly influence an increase in farm income of the beneficiaries of RADP.

5.2.5 Constraints faced by beneficiaries

The main constraint affecting the beneficiaries in the study area was insufficient funding as reported by more than three quarters (84.3%) of the respondents. This is mainly because most of the respondents did not have title deeds for their farmland, meaning they lacked sufficient collateral required to access loans/credit from financial institutions. Other constraints that were positively distinguished in the study include lack of equipment, poor communication with DRDLR officials, access to reliable high value markets, poor relationship with mentors, stock theft, and high input costs.

5.3 Recommendations

In this segment of the study, recommendations are presented relative to key findings. The recommendations are as follows:

- It is recommended that the current generation of farmers in the study area should recruit youth to participate in farming as a succession plan and to ensure sustainability. This is important to ensure sustainable food security and to minimize the unemployment rate and migration to the cities.
- Marketing was identified as one of the skills that did not significantly improve in human capital; as a result, farmers have poor access to bigger (formal) markets. It is therefore recommended that government and farmer organisations should assist farmers to access reliable high value markets (formal). Farmers should also be trained in the marketing of agricultural produce. In addition, farmers should join farmer unions in order to access information on agricultural practices and marketing for informed production and market decisions. Farmer unions can also assist in establishing joined markets for this group of farmers, provided they present a united front. Furthermore, farmers should form cooperatives to assist them in marketing their products in groups; this will give them an advantage, as they will be able to meet the quantity of produce required in high value markets.
- RADP should provide support programmes that will improve the socio-economic status of the beneficiaries with specific reference to social, physical, financial and natural capital of the respondents.
- Regarding human capital, it was found that the majority of the farmers did not offer training opportunities to students. It is recommended that farmers should consider cooperating with tertiary institutions to assist students with in-service training or Work Integrated Learning (WIL) opportunities. This will be beneficial to farmers because they will have more support and provide practical experience to the students.
- Considering that RADP did not significantly improve agricultural production (crop yields and number of livestock kept) of the respondents, it is therefore worth recommending that the programme should provide the type of support (infrastructure, experienced mentors, machinery, inputs, and others) that can significantly improve production. It is recommended that DRDLR should establish effective communication with the beneficiaries especially in matters related to the allocation (budgeting) of funds.

- The issue of insufficient funding is challenging. However, successful land reform is possible. An important factor to consider is that it takes approximately five years for agricultural enterprise to make stable profits. It is therefore recommended that the government consider models of countries that successfully implemented these change to improve on their model. For example, a look into the top four (China, United States of America, Brazil, and India) agricultural producing countries highlights the importance of prioritising agricultural support. Farmers are assisted with direct subsidies, tax reduction, price support and production inputs such as fertilisers and seeds are subsidised on a continuous basis.

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APPENDICES

APPENDIX 1: SURVEY QUESTIONNAIRE

A. GENERAL INFORMATION

Questionnaire Number	
Date	
Municipality	1= City of Tshwane; 2=Sedibeng; 3= West Rand; 4= Ekurhuleni; 5= City of Johannesburg

B. FARMER CHARACTERISTICS

No	Participant Demography	Code	Answer
1.	Gender	0= Male 1= Female	
2.	Age	Years	
3.	Home Language	1= Setswana; 2= Sepedi; 3= IsiZulu; 4= IsiNdebele; 5=Xitsonga; 6= IsiXhosa; 7= Tshivenda; 8=Sesotho; 9= Afrikaans 10=SiSwati; 11=other(specify)	
4.	Marital Status	1= Single; 2= Married; 3= Divorced; 4= Widowed; 5=Other (specify)	
5.	Family Size	Number	
6.	Farm or plot size	Ha	
7.	Level of Education	1=Never been to school; 2=Primary	

		Education; 3=Secondary Education; 4=College Education; 5=University Education; 6=Other (Specify)	
8.	Type of Land Acquisition Programme	1= PLAS 2= Private 3= Old State Land 4= Restitution	
9.	Agricultural Support Programme Received		
9a	CASP	0= No; 1=Yes	
9b	MAFISA	0= No; 1=Yes	
9c	RADP	0= No; 1=Yes	
9d	Ilima/letsema	0= No; 1=Yes	
9e	Fetsa Tlala Food Production Initiative	0= No; 1=Yes	
9f	Other (Specify)	0= No; 1=Yes	
10.	Type of Agricultural Enterprise	1= Crop Production; 2=Animal Production; 3= Mixed Farming 4=Other (Specify)	
11.	Year Received RADP	Year	
12.	Other Sources of Funding	0= No; 1=Yes	
13.	If Yes in 12, describe funding	1. None 2. Private Institutions 3. Friends	
14	If yes in 12, describe the amount received	Amount (Rand)	
15.	Main Source of Income	1=Farming 2=Employment 3=Business ventures 4=Other (Specify)	

16.	Number of years in farming	Years	
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C. AGRICULTURAL PRODUCTION

No	Item	Before RADP	
		Crop type	Area (Ha)
17.	Area cultivated per crop before RADP.	a. Spinach	
		b. Potatoes	
		c. Maize	
		d. Soya	
		e. Cabbage	
		f. Tomatoes	
		g. Green peas	
		18.	Area cultivated per crop after RADP.
b. Potatoes			
c. Maize			
d. Soya			
e. Cabbage			
f. Tomatoes			
g. Green peas			
h. Other (Specify)			
19.	Yield for each crop before RADP.		
		b. Potatoes	
		c. Maize	
		d. Soya	
		e. Cabbage	
		f. Tomatoes	

		g. Green peas	
20.	Yield for each crop After RADP.	Crop type	Yield
		a. Spinach	
		b. Potatoes	
		c. Maize	
		d. Soya	
		e. Cabbage	
		f. Tomatoes	
		g. Green peas	
21.	Livestock production before RADP	Animal type	Number
		a. Broiler	
		b. Layers	
		c. Cattle	
		d. Sheep	
		e. Pigs	
		f. Goats	
22.	Livestock production after RADP	Animal type	Number
		a. Broiler	
		b. Layers	
		c. Cattle	
		d. Sheep	
		e. Pigs	
		f. Goats	
	Production inputs	Code	Answer
23.	Better access to animal medication	0= No;1= Yes	
24.	Better access to crop chemicals	0= No;1= Yes	
25.	Better access to seeds	0= No;1= Yes	
26.	Better access to fertilisers	0=No;1= Yes	

D. SOCIO-ECONOMIC INFORMATION

D1. Physical capital

No	Physical Capital	Description	Code
27.	Infrastructure acquired through RADP	a. Boreholes	0=No; 1= Yes
		b. Fencing	0=No; 1= Yes
		c. Chicken houses	0=No; 1= Yes
		d. Storage sheds	0=No; 1= Yes
		e. Tunnels and shade nets	0=No; 1= Yes
		f. Piggery housing	0=No; 1= Yes
		g. Electricity	0=No; 1= Yes
		h. Water dam	0=No; 1= Yes
		i. Pack house and storage rooms	0=No; 1= Yes
		j. Farm house	0=No; 1= Yes
		k. Dairy structures	0=No; 1= Yes
		l. Silos	0=No; 1= Yes
		m. Feed pans	0=No; 1= Yes
28.	Machinery and equipment acquired through RADP	a. Tractor	0=No; 1= Yes
		b. Bakkie	0=No; 1= Yes
		c. Planter	0=No; 1= Yes
		e. Plough	0=No; 1= Yes
		f. Boom Sprayer	0=No; 1= Yes
		g. Disk harrow	0=No; 1= Yes
		h. Rotary tiller	0=No; 1= Yes
		i. Slasher	0=No; 1= Yes
		j. Ripper	0=No; 1= Yes

		k. Seed drill	0=No; 1= Yes
		l. Water tank	0=No; 1= Yes
		m. Trailer	0=No; 1= Yes
		n. Fire-fighting equipment	0=No; 1= Yes
		o. Egg grading machinery	0=No; 1= Yes
		p. Feed mixer	0=No; 1= Yes
		q. Irrigation and water pumping equipment	0=No; 1= Yes
		r. Drinking troughs	0=No; 1= Yes
29.	Renovations done through RADP	a. Farm house	0=No; 1= Yes
		b. Piggery structures	0=No; 1= Yes
		c. Chicken houses	0=No; 1= Yes
		d. Storage sheds	0=No; 1= Yes
		e. Vegetable tunnels	0=No; 1= Yes

D2. Financial Capital

30. Has your income per cycle improved because of RADP?

0= NO	1= Yes
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31. Has receiving RADP improved your access to credit?

0= No	1= Yes
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32. Are you able to make savings from profit earned since receiving RADP?

0= No	1= Yes
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33. Are you able to access financial support from other institutions since receiving RADP?

0= No	1= Yes
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34. Are you able to pay for insurance since receiving RADP?

0= No	1= Yes
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35. Are you able to pay farm workers basic salary since receiving RADP?

0= No	1= Yes
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D3. Natural Capital

36. Has the size of your farm increased after receiving RADP?

0= No	1= Yes
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37. Has the quantity of water increased since receiving RADP?

0= No	1= Yes
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38. Has the quality of water improved since receiving RADP?

0= No	1= Yes
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39. Do you have better access to pastures for livestock since receiving RADP?

0= No	1= Yes	3= N/A
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D4. Human capital

40. Has your farming skills improved because of RADP?

0= No	1= Yes
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41. What skills have you acquired since receiving RADP?

No	Skill acquired	Results (0= No; 1= Yes)
A	Productions skills	
B	Tractor driving skills	
C	Financial Management skills	
D	Administration Skills	
E	Computer Skills	
F	Marketing skills	
G	Other	

42. Has your number of your employees increased because of RADP?

0= No	1= Yes
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43. Farm engage in raining of students because of RADP?

0= No	1= Yes
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D5. Social capital (Livelihoods)

No	Category	Code	Answer
44.	Has your living standard improved as a result of RADP?	0= No; 1= Yes	
45.	Have you established better networks	0= No; 1= Yes	

	as a result of RADP?		
45.	Do you have better access to Farmer Unions as a result of RADP?	0= No; 1= Yes	
47.	Do you have better access to food as a result of RADP?	0= No; 1= Yes	
48.	Do you consume food produced on the farm in your household as a result of RADP?	0= No; 1= Yes	
49.	Does your farm now depend on income from the farm to buy other food needs as a result of RADP?	0= No; 1= Yes	
50.	Does the market offer good price for your produce?	0= No; 1= Yes	

51. Are you able to access bigger markets because of RADP?

0= No	1= Yes
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E. GENERAL QUESTIONS

52. What are your constraints because of RADP?

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.....

53. Are you satisfied with the RADP funding received?

0= No	1= Yes
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THAK YOU FOR YOUR PARTICIPATION

APPENDIX2: CONSENT FORM TO PARTICIPATE IN THE STUDY

Ethics clearance reference number: **2016/CAES/119**

03 November 2016

Title: **The socio-economic impact of the Recapitalisation and Development Programme on beneficiaries in the Gauteng province**

Dear Prospective Participant

My name is Veronica Mamanyane Rakoena and I am doing research with Prof A.M. Antwi a professor, in the Department of Agriculture and Animal Health towards MSc Agriculture degree at the University of South Africa. We are inviting you to participate in a study entitled: **The socio-economic impact of the recapitalisation and development programme on beneficiaries in the Gauteng province.**

WHAT IS THE PURPOSE OF THE STUDY?

I am conducting this research to find out what is the socio-economic impact of the Recapitalisation and Development Programme on the agricultural productivity of beneficiaries in the Gauteng province of South Africa. This study will evaluate if there has been any positive impact on farming production as a result of the RADP. This will in turn assist in determining how much progress has been made, in which areas has progress been made, what are the factors limiting progress within the projects and what solutions are required to address the constraints.

WHY AM I BEING INVITED TO PARTICIPATE?

The study focuses on Recapitalisation and Development beneficiaries in Gauteng. All beneficiaries that benefitted from the Programme will be invited to voluntarily take part in the research study. The beneficiary list was obtained from the RADP of the Department of Rural Development and Land Reform (DRDLR) office where I am

currently employed. There is a total number of 49 beneficiaries involved in the study whom will all take part in the research study.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves questionnaires through semi-structured interviews. Questions will be asked on the demographics of the beneficiaries and the five pillars of socio- economic development (Physical, financial, natural, human and social capital impact). The interview will last around 30- 60 minutes and will take place over a period of 4 months.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Participation is voluntary. Beneficiaries have the right not to participate, or stop taking part at any time during the interview without providing reasons for doing so. Their withdrawal will in no way affect them as beneficiaries of Recapitalisation and Development Programme. The beneficiaries have the right not to disclose any information they feel is not supposed to be shared, and are free not to answer any sensitive questions.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

The study will assist the Department of Rural Development and Land Reform, the Department of Agriculture, Forestry and Fisheries, and key decision makers on what is the impact of Recapitalisation and Development Programme on beneficiaries and land transformation in the country. The study will also look at factors affecting the sustainability of these enterprises which will inform people wanting to go into farming about the challenges of the industry and how to better manage their farms.

ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

The researcher would like to declare that there will be no high risk to either herself or to the beneficiaries. The foreseeable minimal risks might be the following:

The applicant and research assistants getting injured by stray animals or equipment while visiting the farmer for the interview on his farm.

Applicant and research assistants getting stuck in muddy roads when visiting the villages to collect data

In mitigation to the minimal risks, the researcher would like to assure the beneficiary that she is supervised by experts in the field of agricultural economics and sociology; and she has experience in conducting data through face-to-face interviews. The applicant is also familiar with the terrain of the Gauteng province; there should not be any challenge. In addition, the applicant is a dedicated student who is committed to her studies.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

All documents and information obtained during the course of this study will be kept confidential. In addition, all data and personal information will be kept and stored in a confidential format which will only be accessible to the researcher. You have the right to insist that your name will not be recorded anywhere and that no one, apart from the researcher and identified members of the research team, will know about your involvement in this research. Your answers will be given a code number or a pseudonym and you will be referred to in this way in the data, any publications, or other research reporting methods such as conference proceedings.

Your answers may be reviewed by people responsible for making sure that research is done properly, including the transcriber, external coder, and members of the Research Ethics Review Committee. Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

The data may also be used to compose presentations and posters for workshops related to the study. However, the identities of the participants will remain confidential and accessible only to the investigator. Only the analysed findings will be shared in these platforms.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

Hard copies of your answers will be stored by the researcher for a period of five years in a locked cupboard/filing cabinet at the researcher's home for future research or academic purposes; electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. When the researcher is done with the information, to ensure that confidentiality continues hard copies of the findings will be shredded and electronic copies permanently deleted using the latest permanent file/folder deleting software to ensure that the information is not recovered.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

The research will not include any payment or incentives. The researcher will drive to the farms and there will be no costs incurred on the beneficiaries' time. The study will also be done at a time most suitable to the beneficiaries to avoid interfering with the work schedule.

HAS THE STUDY RECEIVED ETHICS APPROVAL

This study has received written approval from the College of Agriculture and Animal Health Research Ethics Review Committee of the, UNISA. A copy of the approval letter can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact t Mr. M.S. Maake on 011 471 3103/maakems@unisa.ac.za. The findings are accessible from January 2018- January 2023.

Should you require any further information or want to contact the researcher about any aspect of this study, please contact Veronica Rakoena on 076 118 9639 or email address vmrakoena@gmail.com

Should you have concerns about the way in which the research has been conducted, you may contact Prof M.A. Antwi 011 471 9391/ antwima@unisa.ac.za. Contact the research ethics chairperson of the Prof F. N Mudau on 011 471 2949/ mudaufn@unisa.ac.za if you have any ethical concerns.

Thank you for taking time to read this information sheet and for participating in this study.

Thank you.

Signature

Ms. V.M. Rakoena

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to have pictures of the farm taken.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname..... (please print)

Participant Signature.....Date.....

Researcher's Name & Surname.....(please print)

Researcher's signature.....Date.....