

**Potential for economic sustainability of land reform projects benefiting from  
the Recapitalisation and Development Programme in South Africa**

**by**

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the degree MInst Agrar (Agricultural Economics)**

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## DECLARATION

I declare that this dissertation submitted by me to the University of Pretoria for the degree MInst Agrar (Agricultural Economics) contains only my work and has not been submitted by me, either in the same or different form, for any other degree at any other university.

Signature.....

Date.....

## DEDICATION

This work is especially dedicated to my loving parents, Ntate Mashee and Mme Mamojaki Ntlou, who have always given me immeasurably moral support to study, and to my siblings, Mamohlake, Mojaki, Lintle, Makhethe, Mahlape and Moelo, who have been my primary motivation to succeed.

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To God, who made it possible.

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## **ABSTRACT**

Economic sustainability of land reform agricultural projects is considered an essential aspect of food security and economic growth in South Africa. With agriculture identified as an engine of economic growth, especially in the rural areas, it is important that projects benefiting from the Recapitalisation and Development Programme indicate a potential for being economically sustainable when government ceases assistance after the agreed period of support and that they are able to achieve economic sustainability in the long run.

The specific purpose of this study is to evaluate the potential for economic sustainability of land reform projects that benefited from the Recapitalisation and Development Programme (RADP, henceforth abbreviated as Recap) from inception in 2010 up to June 2012. This study used survey data from 98 Recap projects. Primary data was collected through face-to-face interviews with the sampled project beneficiaries. Literature on the economic sustainability of farms/projects was reviewed. Recommendations were then drawn on areas of policy intervention to improve economic sustainability of the land reform farms that benefited from Recap.

Discriminant function analysis was used to identify factors discriminating potential economically sustainable projects and non-economically sustainable projects. The division was based on income from agricultural production activities generated by the projects. Of the fourteen discriminant variables that were selected, five explained

group difference with statistical significance. The five important variables in the discriminant function analysis were:

- (i) Type of land reform/acquisition
- (ii) Total amount of Recap grant received
- (iii) Strategic intervention (mentorship)
- (iv) Accessibility of the market by the projects;
- (v) Credit access by the projects.

The results of the study indicate that a majority (72%) of the projects that benefited from the Recapitalisation and Development Programme were still not economically sustainable. Low levels of agricultural income were observed in the non-economically sustainable projects and this factor proved to have an effect on the potential to be economically sustainability. Furthermore, this group had more difficulties in accessing markets, especially established ones, and credit, while some of the projects had not received financial assistance yet from Recap. Lack of basic farm management skills was also observed in both groups.

It is recommended that the South African Government put more effort into capacitating the beneficiaries through effective skills transfer. The State may also look into providing an enabling environment for the private sector to provide financial services, which are affordable to the beneficiaries. There is a need for the government to establish well-developed markets, which will allow primary producers (beneficiaries) to be linked to value chains where they will have a potential of increasing projects' profits. Finally, knowledgeable persons in terms of financing should be involved in the running of the projects, as some of the mentors lack the necessary financial skills, although they do fully understand the production side.

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## ACRONYMS

BATAT	Broadening Access to Agriculture Thrust
CASP	Comprehensive Agricultural Farmer Support
CRDP	Comprehensive Rural Development Programme
EC	Eastern Cape Province
DoA	Department of Agriculture
DFA	Discriminant Function Analysis
DPME	Department of Performance, Monitoring and Evaluation
DRDLR	Department of Rural Development and Land Reform (formerly known as the Department of Land Affairs)
FS	Free State Province
FTLR	Fast Track Land Reform
GP	Gauteng Province
KZN	KwaZulu-Natal Province
LP	Limpopo Province
LRAD	Land Reform for Agricultural Development
MAFISA	Micro Agricultural Financial Institutions of South Africa
MALA	Ministry of Agriculture and Land Affairs
MP	Mpumalanga Province
MTEF	Medium-Term Expenditure Framework
NC	Northern Cape
NW	North West Province
PLAS	Pro-active Land Acquisition Strategy
RADP	Recapitalisation and Development Programme, henceforth abbreviated as Recap
RDP	Reconstruction and Development Programme
SLAG	Settlement / Land Acquisition Grant
SPSS	Statistical Package for Social Scientists
WCDA	Western Cape Department of Agriculture
WC	Western Cape Province

## CHAPTER 1

### INTRODUCTION

This chapter provides background information on the land reform programme in South Africa and outlines the research problem and study objectives.

#### 1.1 Background

The beginning of the post-apartheid period in South Africa gave hope to rural communities for addressing the skewed land ownership situation which can be mainly attributed to the racially informed policies of the apartheid government. The democratically government identified the land reform programme as one of the means for achieving growth and development and for redressing the injustices of the past apartheid system. The apartheid government ensured that more than a third of the population was concentrated in 13% of the land area, and occupied land in insecure ways, while the minority population group held vast tracts of land under secure freehold type regimes (Songelwa, 2009; Cliffe, 2000).

To address the skewedness of the land ownership, the programme aimed to redistribute 30% of white commercial land to previously disadvantaged black South Africans, with the deadline line being the year 2014. The programme, however, faced several constraints, mostly attributed to negotiation difficulties in the willing seller and willing buyer approach, and has thus been deemed to be a failure (Lahiff, 2007; Hall, 2004a). Lahiff (2008:1) indicates that, since the introduction of the land reform programme, it has been criticised for “failing to reach its targets or deliver on its several intentions of historical redress, redistribution of wealth and opportunities and economic growth”.

Land reform in South Africa consists of three components, namely land tenure, land restitution and land redistribution. These components are briefly described below.

**Tenure Reform:** Land tenure was designed to provide legal recognition and to formalise land rights in rural areas; it therefore deals with the means through which land is owned in South Africa. The issues pertaining to insecure, overlapping and disputed land rights resulting from the previous systems of governance, especially in

the former homelands are addressed under tenure reform. Laws or Acts such as the Communal Property Associations Act 28 of 1996, Extension of Security of Tenure Act 62 of 1997 ('ESTA'), Land Reform (labour tenants) Act 3 of 1996 and the Interim Protection of Informal Land Rights Act 31 of 1996 legally govern the implementation of the tenure reform in South Africa (Lahiff, 2009; Ntsebeza, 1999; DRDLR, 2016).

**Restitution:** This is the component that addresses the issues of land that was taken without compensation; it therefore restores the land to those groups of people or individuals who were dispossessed of their rights in land after 1913 through the racially discriminatory laws, and financially compensates the rightful owners. The Restitution of Land Rights Act, 22 of 1994, legally guides the implementation of the restitution component (Hall, 2004b; Cliffe, 2000; DRDLR, 2016).

**Redistribution:** The largest component of land reform, and also the most active one, is redistribution, which is aimed at rectifying the skewed nature of land holding patterns in South Africa (Lubambo, 2011). The redistribution of land in South Africa has received diverse influence from rights-based activism and the World Bank's advice on market-led approach. The government set up mechanisms to help finance and facilitate community initiatives in making land accessible to the poor and previously disadvantaged groups, which can be used for residential or productive purposes. The Provision of Certain Land for Settlement Act, 126 of 1993, and enabling regulations provide the legal basis for redistribution (Cliffe, 2000; Hall, 2009; DRDLR, 2016).

In most cases, land reform is undertaken to achieve political and economic transition. In South Africa, the general consensus is that land reform is necessary to address inequality and rural poverty; it is the implementation process that has been debatable. Bradstock (2005) and MALA (2001) indicate that a majority of the farms acquired through land reform still face production challenges and are therefore deemed to be non-sustainable, as they are out of business. Some of the issues highlighted are that the post-settlement support offered to beneficiaries is still not adequately addressing the main challenges of agricultural production.

## 1.2 Problem Statement

The South African Government has committed itself to reviving the land reform projects through the introduction of sub-programmes, such as Land Reform for Agricultural Development (LRAD), Settlement Land Acquisition Grant (SLAG), and Recapitalisation and Development Programme (Recap). Despite this commitment, Department of Planning, Monitoring and Evaluation (DPME, 2013) indicated that some land reform projects or farms are still not commercially viable. This is depriving the government of the returns expected from the huge expenses that the government is incurring in reviving these projects (DPME, 2012). The introduction of Recap saw huge amounts of money being injected; both at national and at a project level, but these projects are not achieving the Recap objectives. Chief among the objectives are food security and job creation. This raises the question of the relevance and appropriateness of the investment patterns of these projects or farms.

The recent implementation evaluation study of Recap (from its inception to June 2012) by the Department of Performance, Monitoring and Evaluation (2013) on the Recap shows that DRDLR's baseline land redistribution and restitution of land rights budget was R3.3 billion for the 2012/2013 financial year. In the six provinces where the study was carried out, there was a relatively high spending per project, with an average of R2.8 million spent per project. However, only 70% of the Recap projects were reported to be generating income from agricultural production at the time of the evaluation, with a few of these projects being economically sustainable. In provinces like the Free State, more than R3.9 million was spent per project and only 54% of the recapitalised projects were generating agricultural income (DPME, 2013).

The Recap implementation evaluation attempted to determine the relationship between economic sustainability and numerous variables, such as gender of the beneficiary, age of the beneficiaries, type of land reform sub-programme, etc. However, the analysis was not robust as it was based on the number and proportion of projects categorised as sustainable, falling within a specific range or type of variable (e.g. number and proportion of sustainable projects falling within a particular land reform sub-programme, number and proportion of sustainable projects run by males or females, etc.). While the analysis provides some indication of what might account

for the differences in the sustainability of the projects, it does not yield convincing results.

This study seeks to address this weakness by conducting a more robust econometric analysis that will clearly identify the factors accounting for differences in the economic sustainability of the projects. Therefore, this study seeks to expand on the work done on the implementation evaluation of Recap through an econometric analysis, with the objective of identifying the distinguishing characteristics of economically sustainable and economically non-sustainable groups.

### 1.3 Objectives

The general objective of the study is to assess the potential of Recap projects for economic sustainability and to identify the distinguishing features of potentially sustainable and non-sustainable projects.

The specific objectives are to:

- a) Develop a measure for potential economic sustainability;
- b) Establish the nature of the relationship between potential sustainability and factors that may affect a project's economic sustainability; and
- c) Suggest options for enhancing the economic sustainability of Recap projects.

### 1.4 Definition of key terms

**Beneficiary:** Refers to a person or other legal entity receiving assistance or benefiting from DRDLR land reform programmes (DRDLR, 2012a). In this study, a beneficiary refers to any person granted ownership or use of a land reform farm.

**Emerging farmers:** Various definitions of emerging farmers have been used by different authors. However, this study adopts the DRDLR's definition, in which emerging farmers are defined as persons who were excluded from South Africa's formal agricultural economy on the basis of their skin colour,

and who have recently begun to engage in farming on a large scale to sell crops and livestock on the market with the support and assistance from the state (DRDLR, 2012b).

**Economic sustainability:** Economic sustainability is defined as the use of various strategies for employing existing resources optimally to allow the organisation to continue functioning profitably over time (Brouwer, 2011).

**RECAP project/farm:** In terms of the Recapitalisation and Development Programme policy document, all emerging farmers needing and deserving support, and future land beneficiaries qualify for support. The Recap also covers all categories of property acquired and to be acquired for land reform purposes (including state and public land such as commonages) (DRDLR, 2012). The study therefore defines Recap projects as land reform farms and other strategic farming enterprises that had little or no agricultural support and are benefiting from the Recap, either in the form of a recapitalisation function, which is entirely resource driven, or a development function, which focuses on growth and progress of farming enterprises.

**Smallholder/small-scale farmer:** The definition of small-scale farmers is normally based on farm size; however, farm size alone is not always a good criterion for categorising these farmers. Hungwe (1999) defines the term as a wide spectrum of all small-scale, indigenous producers in Africa, while Machethe and Mollel (2000) defined it in the South African context as black farmers who are mostly residing in the former homelands (i.e. those parts of South Africa which were dealt with under apartheid-era legislation as independent or a self-governing territories as defined in Schedule 6 of the Constitution of the Republic of South Africa, 1996). Literature uses various terms to define smallholder farmers. These include, but are not limited to, small-scale farmers, peasant farmers, resource-poor farmers, subsistence farmers, emerging farmers, and household food security farmers. This study adopts the definition of small-scale farmers as those farmers with limited resources (including emerging farmers).

**Strategic partner/mentor:** According to DRDLR (2013), a strategic partner/mentor is a person or juristic person appointed by DRDLR to provide services in accordance to the Recapitalisation and Development Programme (RADP) policy.

## **1.5 Outline of the subsequent chapters**

The remainder of this dissertation is structured as follows: Chapter 2 provides details of development and farmer support programmes in land reform. Chapter 3 is a literature review on economic sustainability. Chapter 4 outlines data sources and sample characteristics and Chapter 5 describes the analytical techniques. Chapter 6 provides the results of the study. Chapter 7 provides the summary, conclusions and policy recommendations and is followed by references and an appendix.

## CHAPTER 2

### LITERATURE REVIEW ON FARMER SUPPORT PROGRAMMES

#### 2.1 Land reform and development

The most important asset in agricultural economies is land. With access to arable land, rural communities can feed themselves. Yet ironically, world hunger is concentrated in the countryside. A United Nations Food and Agriculture Organization (FAO, 2015) report has indicated that progress towards achieving food security in the developing countries has been enabled by factors such as economic growth, agricultural productivity growth, markets (including international trade) and social protection; hence, the majority of the people who were classified as chronically hungry were the land-poor and landless households in rural areas (FAO, 2015).

Some studies done on land reform and development (Shin, 1998; Boyce *et al.*, 2005) have indicated that land reform indeed has a link with development. The land reform process in East Asian countries shows that the countries that emerged in the second half of the 20th century as the world's fastest-growing economies – China, Japan, South Korea and Taiwan – had one thing in common: the implementation of highly egalitarian land reforms after World War II. The process not only assisted with poverty reduction and unleashing agricultural growth, but also helped to lay the social foundation for rapid industrialisation. This study makes reference to two countries, namely Japan and Taiwan:

In Japan, land reform was initiated after World War II. The process reflected two motives: to dismantle the traditional rural power base of Japanese militarism and to ward off the appeal of communism by reducing agrarian discontent Putzel (1992, p69-78, cited in Boyce *et al.*, 2005). Ladejinsky (1964, cited in Boyce *et al.*, 2005) noted this as the drastic redistribution of property, income, political power and social status, at the expense of the landlords. A one-hectare ceiling on ownership of tenanted lands, and a three-hectare ceiling on self-cultivated lands, were implemented and any holdings above these limits were expropriated and redistributed to the tillers of the soil. Former landlords

received partial compensation in government bonds. Dore (1959, p172, cited in Boyce *et al.*, 2005) stated that tenants participated in the local land commissions that implemented the reforms, but most tenants and landlords alike saw it as a top-down transformation.

In Taiwan, the government that led the country post-war imposed a rent ceiling and introduced land-to-the-tiller reform in a bid to win the support of the peasantry and weaken the island's traditional landowning elite. The government required landlords to relinquish excess land, and then sold this land to tenants. Landowners were compensated with government bonds and shares in public enterprises that had been expropriated from the Japanese. This resulted in an increase from 67% to 82% in the share of agricultural income accumulating to farmers, while the government received a share increase from 8% to 12%, with the share of the landlords and moneylenders falling from 25% to 6% (Boyce *et al.*, 2005).

The redistribution of land to the rural people in East Asia World pursuant to post-War II land reform did much to reduce poverty, especially in the countryside. At the same time, the land reforms provided a conducive environment for rapid industrialisation. According to Shin (1998), the links between land reform and industrial growth were important because farmers' improved economic security meant that they could afford to send their children to school, thus ultimately providing a skilled workforce for the industry. The expansion of the land rights of the poor by land reform programmes added to their wealth, thereby reducing asset poverty. This resulted in reducing income poverty by increasing the share of the poor in the agricultural income sector and also by increasing the total size of the sector (Boyce *et al.*, 2005).

In South Africa, land reform has not been only about reversing dispossession of land on racial grounds after 19 June 1913, as the broader framework also includes a programme of reconstruction and development. The World Bank (2004, cited in Anseeuw and Mathebula, 2008) indicates that land reform does have an impact on economic growth. It is seen that the South African government has implemented several development-oriented measures since 1999, e.g. the LRAD programme,

which focused on development of small-scale emergent farmers, and the Integrated Sustainable Rural Development Strategy (ISRDS), which aimed at coordinating public action and service delivery at local level to enable sustainable development by the Ministry of Agriculture and Land Affairs (2000, cited in Anseeuw & Mathebula, 2008).

Perret *et al.* (2005) stated that, given the many dimensions of development (especially if considered as addressing the injustices of the past, among which the exacerbation of low income and low consumption is only one), the development of land reform should address concerns, such as quality of life in general, insecurity, powerlessness and low self-esteem, crowded homes, and alienation from the community, as being important.

## **2.2 Agricultural support programmes**

The provision of farmer support programmes by countries differs from one to the next. Such support is largely based on the importance of the agricultural sector as the source of food. In the developing countries, a majority of farmers have been left without access to essential agricultural support services due to market liberalisation. On the other hand, their counterparts in some developed countries/regions (e.g. the United States and Europe) continue to enjoy government support and this has caused a major outcry from developing countries who complain that the playing field for farmers is not even (DPME, 2015).

In the last three decades, South Africa's agricultural support to farmers has declined and the country's farmers are considered to be among the least supported in the world. For example, a study done by the Organisation for Economic Co-operation and Development (OECD) found that South Africa's Producer Support Estimate (PSE) for 2000–2003 was 5%, as compared with 20% in the United States, 31% in OECD countries, and 58% in Japan (OECD, 2006 cited in DPME, 2015). Considering total transfers to the agricultural sector in South Africa, the OECD study found that producer support constituted 55% of the Total Support Estimate (TSE) and that the rest was in the form of general services, which were increasingly focused on land reform beneficiaries (DPME, 2015).

### 2.2.1 Overview of South Africa's agricultural support programmes

Smallholder farming, especially in Africa, has been largely characterised by simple, out-dated technologies, low returns, and high seasonal labour fluctuations in production systems. Even though smallholder production is important for household food security, the productivity of this sub-sector is quite low (Machethe *et al.*, 2004). It is therefore crucial for smallholder farmers to have access to agricultural support services for increasing agricultural production and productivity, particularly in smallholder agriculture.

The inadequate performance of the South African government to make accessible agricultural support services or post-settlement after-care ultimately affects agricultural production and productivity, and this has been one of the major reasons cited for the poor performance of land reform projects. It therefore becomes reasonable to suggest that the low agricultural productivity and production in the former homelands has been partly as a result of poor access to farmer support services. Therefore, the numerous efforts made by the government and others over the last two decades to improve access to agricultural support services, particularly for land reform beneficiaries, even though the level of support is still low, comes as no surprise. These efforts have, however, been criticised for shifting away from supporting the poor and more vulnerable farmers towards placing a focus on better-resourced and more commercially oriented farmers (Hart & Aliber, 2012).

In 1994, the government launched the Broadening Access to Agriculture Thrust (BATAT) as an implementation strategy of the Reconstruction and Development Programme within the agricultural sector. The trust objective was to move away from white dominance in agriculture and attempted to assess the needs of black agriculture, existing and new black farmers, and identify development priorities and strategies to improve their access to agriculture (Oettle *et al.*, cited in Vink *et al.*, 2013). The influence of the success of BATAT has been noted in terms of prompting future policies in the agricultural sector, but overall, the trust is considered to have failed, mainly because of design-related problems: it was a national strategy, driven by a few people

at the national level, but the provision of farmer support services was largely left as a provincial responsibility.

The failure of BATAT led to the introduction of the Comprehensive Agricultural Support Programme (CASP) in 2003. The CASP design addressed the major shortcomings of BATAT by ensuring that implementation is done at provincial level. Vink *et al.* (2013) noted that CASP also did not incorporate lessons from other agricultural support programmes and other programmes implemented in post-apartheid South Africa. For example, Vink *et al.* (2013) argue that valuable lessons could have been drawn from the implementation of the Farmer Support Programme (FSP) of the Development Bank of Southern Africa (DBSA), implemented in the 1980s.

The basis for the design of the FSP was founded on the philosophy that people who lived in the former homelands faced many constraints and could not farm successfully, without access to farmer support services. The components of the FSP are outlined as supply and funding of inputs and production assets; mechanisation services; marketing services; extension services, demonstration and research; training; and policy formulation, including access to de facto production rights and bulk infrastructure (Vink *et al.*, 2013).

Although it cannot be claimed that the FSP was a successful programme, there are positive lessons that emerged from its implementation and they are as follows: farmer support services should be comprehensive; provision of farmer support services need to be coordinated; and sequencing of provision of farmer support services should be focused on the needs of particular areas and groups of farmers (Vink *et al.*, 2013).

### **2.2.2 Land Reform and post-settlement farmer support programmes**

The design of farmer support services has also been cited as being amongst the reasons for the failure of South Africa's land reform farms/projects (Kirsten & van Zyl, 2006; Binswanger-Mkhize *et al.*, 2009). This view has also been shared by the DPME (2013) in the report on the implementation evaluation study of Recap (from its inception to June 2012), which highlighted areas of concern such as inappropriate

design of farmer support programmes, beneficiary challenges, operational challenges and lack of monitoring and evaluation as significant factors in emerging farmers' performance.

Kinsey and Binswanger (1993) stated that, worldwide, land reform settlement programmes seem to be designed on the assumption that all beneficiaries will succeed and, for this reason, administration of such programmes is centralised and inflexible in design, rather than having decentralised approaches with flexibility in implementation, support for spontaneous settlement, and reliance on beneficiaries' own investment capacity. The programmes must consider family farming on smaller scales, with clearly defined property rights or long-term leases, because these have proven to be more successful than collective farming; however, the size of the family farm must be flexibly adjusted to skills, availability of family labour, and the capital assets of the families (World Bank, 2007, cited in Binswanger-Mkhize *et al*, 2009; Kinsey & Binswanger, 1993).

Furthermore, for countries like South Africa, the redistribution of farms to previously disadvantaged groups has involved placing higher numbers of beneficiaries per farm or project. This is because of their unlikeliness to be sufficiently wealthy or have access to subsidised credit that would enable them to hire the necessary workers or buy the required machines to maintain or increase the productivity of the distributed farms. The grouping of beneficiaries per farm should have taken into consideration that people's interests and needs may differ, even though they all want to farm. Some beneficiaries may need to sell or rent a piece of their land to earn income to supplement the little earnings they make from production in the same farm. The success of poor beneficiaries should not be solely based on credit finance; provision must be made for grant elements.

Another challenge impeding the success of land reform farmers has been the devaluing of the transferred farms from successful commercial farming to poor subsistence farming, which has led to a decrease in production levels of these farms. Zimmerman (2000) attributed some of these challenges to lack of skills, access to financial credit, production inputs and accounting skills, while challenges of some

farms were attributed to the negotiation complexities of land reform itself. A substantial number of land reform farms that have been redistributed and also leased to the previously disadvantaged groups have displayed signs of decreasing production output levels, which in the long run may threaten the food security of the country (Lahiff, 2001).

Prinsloo (2008) found that the dilapidated state of some of the land reform farms has been the result of the long period of time between the proposing of the handover in the gazette and the actual taking over of the farms from the previously advantaged groups. It is during this time that some farmers did not continue to invest in the farms, as they knew that the land was about to be reclaimed. The state of the farms posed a great challenge for the newly established farmers because they had limited resources, such as capital, assets and skills, needed to run the previously commercial farms effectively and productively (Prinsloo, 2008).

According to Anseeuw and Mathebula (2008), agricultural farmer support to land reform projects in rural South Africa must target improving farm incomes and addressing the livelihood of the rural dwellers in general. Should the new programmes offer more or less the same services as those offered under SLAG, LRAD and PLAS, there would be little impact on eradicating the problems that farmers are experiencing.

Between the years 1995–1999, the government attempted to make farm conditions better for the benefit of the new beneficiaries who did not have the necessary capital to do so on their own. The government provided direct financial assistance for infrastructure and fixed and moveable assets, and covered transactional costs, home improvements (residential structures on the farms) and enhancement of tenure rights through Land Settlement (Jacobs *et al.*, 2003).

In 2001, the Land Redistribution for Agricultural Development (LRAD) grant was introduced to establish and promote emerging farmers. However, due to the slow pace of land reform, the Proactive Land Acquisition Strategy (PLAS) was introduced in 2006 to accelerate the pace of land reform. The use of grants for land acquisition was then discontinued after consultations with land reform beneficiaries in 2009. It was during

this period that the focus shifted to the acquisition of strategically located land through PLAS, with the land now being leased rather than being transferred to land reform beneficiaries (Prinsloo, 2008; Jacobs *et al.*, 2003).

In 2009, the DRDLR, through its Comprehensive Rural Development Programme (CRDP), appreciated the shortcomings of its previous programmes, and with the aim of creating vibrant, equitable and sustainable rural communities, launched a farmer support programme, the Recapitalisation and Development Programme (Recap). Recap was implemented in 2010 to provide support to farmers and communities that have received land from the state and did not have the necessary support to sustain production. The programme focuses on these areas: reviving of irrigation schemes, state farms and private farmers who are in debt to financial institutions. To improve the newly established farmers' expertise, Recap introduced the joint relationship of beneficiaries and strategic partners/mentors to assist in farm operations (DRDLR, 2012a; DRDLR, 2012b; Lahiff, 2008).

The strategic objectives of Recap are to increase agricultural production; guarantee food security; graduate small-scale farmers into becoming commercial farmers; create employment opportunities in the agricultural sector; and establish rural development monitors. The Recap programme is based on a five-phase funding model, and financial requests are to be approved subject to a comprehensive business plan. The RADP (Recapitalisation and Development Programme) policy document (DRDLR, 2011), indicates the five-phase cycle of the funding model:

- Phase 1: 100% funding, covers 100% of the developmental needs (i.e. infrastructural & operational inputs) on the primary value chain.
- Phase 2: 80% funding, covers 80% of the costs needs of the developments, whilst the remainder should be derived from the proceeds of the primary chain (Phase 1 proceeds).

- Phase 3: 60% funding, covers 60% of the costs needs of the developments, whilst the remainder should be derived from the proceeds of the previous developments (Phase 1 & Phase 2 proceeds).
- Phase 4: 40% funding, covers 40% of the costs needs of the developments, whilst the remainder should be derived from the proceeds of the previous developments (Phases 1, 2 & 3 proceeds).
- Phase 5: 20% funding, covers 20% of the costs needs of the developments, whilst the remaining should be derived from the proceeds of the previous developments (Phases 1, 2, 3 & 4 proceeds).

The Recapitalisation and Development Programme has a potential to positively influence agricultural production and thereby increase food security at household levels and create employment. Given the importance of the agricultural sector in economic growth, employment and poverty alleviation, especially in rural areas, it is important that Recap projects contribute to sustained economic levels of agricultural production. The county's vision for year 2030, as outlined in the South African National Development Plan, states that as the primary economic activity in rural areas, agriculture has the potential to create close to one million new jobs by 2030, a significant contribution to the overall employment target (The Presidency, 2010).

Sustainability has been defined as economic development that meets the needs of the present generation, without compromising the ability of future generations to meet their own needs, and this has been an area of growing interest and focus in businesses (United Nations, 1987; Brouwer, 2011). Therefore, for economic sustainability, Recap projects must not only focus on profits made from the projects, but should also consider the long-term economic development, which brings in all the dimension of sustainability, i.e. environmental and social.

Many land reform farms still face sustainability challenges and this is negatively impacting on maximum productivity, thereby hindering the income-generating opportunities of these projects. These farms fail to reach the desired levels of

productivity, while others are not operational at all, and this has resulted in critics within and outside government circles. Hall and Aliber (2010) also state that there are still more land reform farms that have not yet benefited from farmer support services, while some of those that have already benefited show little or no potential for self-sustainability.

In an attempt to ensure economic sustainability, the land reform projects that are benefiting from Recap are intended to operate under the close supervision of the Department of Rural Development and Land Reform. Nonetheless, beneficiaries must also use various strategies to optimally employ the resources that they have so that responsible and beneficial balances can be achieved over the longer term. This would mean that Recap's targets, such as job creation and food security, would be achieved and the state's investment towards land reform farms would see valuable returns.

Good implementation of post-settlement assistance is needed so as to achieve land reform objectives in different countries, because the support which beneficiaries receive from these programmes is essential in achieving success. Countries which have shown little or no interest in providing agricultural support to beneficiaries tend to devalue the state of the transferred farms from successful commercial farming to poor subsistence farming (Kinsey & Binswanger, 1993).

### **2.3 Summary**

This chapter has reviewed literature on agricultural support programmes in South Africa, with the purpose of understanding the nature of these programmes, so as to draw lessons for RADP with regard to its design and implementation. Two distinct land reforms from Japan and Taiwan were selected for review to further understand the link between land reform and development.

The lessons drawn from these two countries can be used as a guide for the South African government in the implementation of the land reform in the context of development. The prominent issues in the success of land reform in East Asia have been the allocation of small hectares of land per peasant/household and the capacity

of the beneficiaries to run economically sustainable projects with the support from the government.

## CHAPTER 3

### LITERATURE REVIEW ON ECONOMIC SUSTAINABILITY

#### 3.1 Introduction

Land reform agricultural projects comprise an important tool in uplifting the livelihoods of rural dwellers; hence, the emphasis on the economic sustainability of farms benefiting from programmes implemented by the state, such as the Recapitalisation and Development Programme. Agricultural projects are said to be at the cutting edge of development (Gittinger, 1984; Gittinger, 1982). In line with developing agricultural projects that can improve rural development and maintain economic sustainability, the Ministry of Rural Development and Land Reform launched the Comprehensive Rural Development Plan (CRDP) in 2009. The CRDP is a three-pronged strategy that includes a diverse nature of projects under agrarian transformation, rural development and land reform. Land reform agricultural projects under these strategies must maintain acceptable levels of achievement of their intended benefits throughout their lifespan, as outlined by Sara and Katz (1998), in order to remain economically sustainable.

A complementary programme to the CRDP is the Recapitalisation and Development Programme, which aims at providing both technical and financial support to the struggling land reform farms acquired since 1994 that have received little or no support, but have potential to become successful, if assisted. An implementation evaluation study of Recap (from its inception to June 2012) touched on the economic sustainability of these projects, and the results indicated that some projects have a potential of being economically sustainable (DPME, 2013).

In this chapter, therefore, a review of literature on economic sustainability was undertaken. A definition of economic sustainability of agricultural projects is given. The chapter also focuses on how economic sustainability of farms is measured and identifies factors affecting the economic sustainability of land reform agricultural projects.

### 3.2 Economic sustainability

Sustainability may be examined at programme or project/farm levels. Although this study focuses on examining sustainability at the project level, it is important to note that programme and project sustainability are interdependent. Project sustainability integrates three inter-related dimensions, namely economic, environmental and social aspects. Although this study focuses on economic sustainability, it is worth emphasising that, for any farm to stay in business (a simple meaning of sustainability), it needs to pay attention to all the three components of sustainability (DPME, 2013).

Belli *et al.* (1998) state that economic analysis of projects assists in the design and selection of projects that would contribute to the welfare of the people. To be able to identify unsustainable projects, economic analysis should be undertaken in the early stages of a project. DPME (2013) noted that economic sustainability is most important in determining the impact of public sector investment because it explains the effect and economic efficiency of the projects on development of the total economy, vis-à-vis the allocation of scarce resources. Due to this factor, economic sustainability is then considered from the viewpoint of the society at large.

According to Cousin and Scoones (2010), in the interest of the welfare of society, land reform debates in southern Africa and beyond have been on both the projects and programmes of land reform, but there is no clear definition of economic sustainability in relation to the land reform farms, as in most cases focus is placed narrowly on farm productivity and economic returns.

The economic sustainability of a farm is not easily defined, as literature indicates that its factors vary from one farm/project to another. Amongst the many methods of appraising a farm's economic sustainability, some researchers have focused on factors such as the level of economic returns, the instability and uncertainty of returns, the associated financial requirements for the farming system, and the availability of finance and its implications for the financial liquidity of the farm (Tisdell, 1996; Rosengard, 2001; Savickiene & Slavickiene, 2014).

For a project to be financially sustainable, it must be able to deliver products and services to the market at a price that covers its expenses and generates profit. Therefore, for land reform farms, this would require their capacity to operate with growing independence from external subsidies (Rosengard, 2001; Savickiene & Slavickiene, 2012; 2014). Tisdell (1996) states that a farm's economic sustainability may be influenced by different factors, with some projects showing signs of economic sustainability in the short term, yet becoming unsustainable in the longer term.

For land reform agricultural projects, economic sustainability would mean that projects are functioning effectively and are positively influencing the lives of the beneficiaries and societies around them. The resources allocated to these projects must be justified by the intended outcome. These projects must, over time, be able to operate independently without government assistance and be able to sustain themselves.

Literature generally defines economic sustainability as the use of various strategies for employing existing resources optimally to allow the organisation to continue functioning profitably over time (United Nations, 1987; Brouwer, 2011). In the context of a project, this would mean the capacity of the project to continue to deliver its intended benefits over a long time. For land reform agricultural projects, economic sustainability would therefore mean the ability of such projects to efficiently employ their various assets to function profitably over time, depending on the lifespan of a farm or that particular project. It is worth noting that a farm can be economically stable but be in debt; that is, it can use assets economically but not sell at the right price and make losses. Tisdell (1996) suggests that both financial and economic sustainability must be considered together.

### **3.3 Economic sustainability measurement**

Various indicators of economic sustainability exist. These include standard financial measures, often based on profits and dividends (e.g. return on investment, dividend yield, and return on equity) (DPME, 2013). Schenck and Huizenga (2014) grouped these possible measures into two sub-groups: (i) the efficiency measures from the field of productive efficiency measurement; and (ii) the classical profitability indicators commonly used in practice within the field of farm management.

Schenck and Huizenga (2014) assessed economic performance of Swiss dairy farms in the Alpine area using the classical profitability indicators, namely the work income per full-time family work unit, instead of the productive efficiency measures, because these had been shown to be inappropriate tools of assessing overall economic performance of an enterprise by Musshof *et al.* (2009). Their choice of measuring tool assessed farm income available per unpaid full-time family labour force, after equity capital has been allocated to its opportunity cost.

Research analysis in the field of farm economic viability assessments by some scientists (Adelaja, 2005; Popelier, 2005; Scott, 2005; Scott & Colman, 2008) used financial indicators as well as statistical methods to assess the economic viability of agricultural projects. These included measures such as return on equity ratio, expense to income ratio, debt to income ratio and production subsidy to income ratio, while Offermann *et al.* (2009) and Cain *et al.* (2007) focused on the effect of support in assessing economic viability of agricultural farms.

As financial ratios are becoming a major approach in assessing the economic viability of agricultural farms, their use is often combined with non-financial information and macro-economic indicators to form relative sets of indicators which can be used as primary indicators of farm economic sustainability. Scott (2001) and Koleda and Lace (2010) all agreed that financial ratios, such as profitability ratios (to measure the firm's use of its assets and control of its expenses to generate an acceptable rate of return), debt ratios (to quantify the firm's ability to repay long-term debt. Debt ratios measure financial leverage), are the fastest and easiest way to assess farm's economic sustainability. The challenge with financial ratios has been deciding on which combination is the best. In pursuit of better economic sustainability assessment methods, Koleda and Lace (2009) advised on the use of 43 financial ratios which were divided into qualitative and quantitative, and they later isolated five main ratios, namely debt to equity, return on sales, interest coverage, return on assets, and return on investment, as a better combination (Koleda & Lace, 2009).

Furthermore, there are common measures, such as farm profit, that many economists use to assess economic sustainability and the method followed is the discounting

method, which estimates a net present value for any stream of profit or net benefits (Tisdell, 1996). To determine profitability in agricultural projects such as an irrigation scheme, Machethe *et al.* (2004) calculated the gross income (total sales) of each crop and total costs were deducted to obtain net income or profit. While Musshof *et al.* (2009) do not recommend productive efficiency measures, Paracchini *et al.* (2015) suggest otherwise, as they found that indicators like the value of production (productivity of input measured as the product or the value of production per unit input) and farm income are also common acceptable indicators, provided that all inputs and outputs are correctly measured. Income maximisation is one of the main goals of a farmer, as it plays a crucial role in farm profitability, which will determine the economic sustainability of such a business venture.

Savickiene and Slavickiene (2014) analysed the strengths and weaknesses of different farm economic assessment methodologies and found that farm economic viability assessment differs from country to country and is influenced by factors like the country's support policy, return on equity, labour productivity, and land productivity. After a thorough empirical comparative analysis of economic sustainability assessment methodologies, their applicability was tested using Lithuanian farms in Europe as an example. Results were compared with other farms around Europe and it was found that there is no best measure of the economic viability of agricultural holdings. Hence, there is no unanimity about which indicators are the most significant when assessing economic viability, or which methods are the most suitable to measure the economic sustainability of agricultural projects.

Since there is no unanimity about which indicators to use in evaluating economic sustainability of agricultural projects, Savickiene and Slavickiene (2014) concluded that the assessment of agricultural projects will not all use indicators, such as financial ratios or profit, as assessment depends on factors such as the objectives of the research, differences in the natural environment, policy support programmes, land productivity and many more factors.

The most common non-financial data used in assessing a farm's economic sustainability has comprised variables such as the farm size, the type of activities, the

manpower, the education and training of beneficiaries, the age of the farmer, the age of the farm, and knowledge of farming, together with other characteristics which have also been commonly used in assessments of economic sustainability of agricultural farms (Argiles, 2001). Grunert *et al.* (2005) noted that the use of non-financial data in assessing the potential economic sustainability of farms is as significant as financial data, and highlighted those indicators that are considered to be the most important, such as man hours per hectare and per relative stock unit; value added created by one worker; value added of products per unit of land area, the indicator of working hours in agriculture, and the ratio of total production to economic size unit (ha, labour units, assets, equity, etc.).

In South Africa, especially for land reform farms, several studies conducted have used non-financial data in assessing the potential economic sustainability of the agricultural projects. Jordaan and Grobler (2011a; 2011b), in their assessments of land reform farms in the central Karoo of South Africa, used indicators such as participants' ages and genders, farm sizes and project managers' profiles (some are not farm beneficiaries but only work on the farm as managers). Variables that are mostly focused on are level of education, farming experience, gender, part-time or full-time on the farm, and farm owner. Singh *et al.* (2009), in their study to determine the factors influencing economic viability of marginal and small-scale farmers in Punjab State of India, used both financial and non-financial indicators such as education, family size, farm sizes, domestic expenditure, value of productivity from crops, and net income from dairy.

Certain land reform studies in South Africa (Kirsten & Machethe, 2005; Lubambo, 2011; DPME, 2013) have also observed common project features that contribute to slow growth and failure of some of these farms. Some of these factors have been outlined as economic indicators for agricultural projects. These were project leader's characteristics (age, level of education, farming experience, farm size, group projects, and technical skills).

### 3.4 Factors determining farm's economic sustainability

Numerous studies have analysed factors contributing to the economic sustainability of farms using non-financial factors (Singh *et al.*, 2009; Argiles, 2001; Jordaan & Grobler 2011a, 2011b; Grunert *et al.*, 2005; Kirsten & Machethe, 2005; Lubambo, 2011). However, Yeboah *et al.* (2010) noted that the available literature on the analysis of farm success (economically) of especially small farms is quite limited, as compared with analysis that focuses on financial and environmental sustainability. This study provides a basic set of key variables from the literature that are generally suggested as having significant correlations with farm success (economically): farm size, age of farm manager, level of specialisation and off-farm employment, debt-to-asset ratio, number of beneficiaries, gender of the manager, net income, market access and credit access (Argiles, 2001).

According to Crabbé (1998), economic sustainability consists of six common properties, namely, growth versus development, complementarity among factors of production, equity; need to value the environment, value of decentralisation, and the economy and ecosystems. Other factors that come into effect in economic sustainability are issues such as appropriate size of economic units that are still contested. Cousins and Scoones (2010) explained that in most land reform farms, sustainable economic units of production have been narrowly based on financial benefits. Van Zyl *et al.* (1995) found that there is a relationship between farm size and efficiency. In their study, they found that in South Africa, large farms are capital intensive, while small farms are more labour intensive, but managerial capacity seemed to be better on larger farms, as compared with smaller ones. In addition to farm size and efficiency of farms, the Western Cape Department of Agriculture (2012) indicated that economic sustainability of land reform projects includes factors such as availability of production technologies, balance between available resources like capital and choice of farming operation, access to markets, earnings reinvestment, farm operations according to business plan, etc. Studies (Van Zyl *et al.*, 1995; Schenck & Huizenga, 2014) show that there is a strong positive monotonic relationship between farm size and farm efficiency. In the Alpine area of Switzerland, farm size had a positive effect on economically sustainable performance.

In this study, factors influencing economic sustainability of projects are categorised into operational challenges, market and credit challenges, and socio-economic characteristics of project leaders.

- a) Operational challenges:** The dominant redistribution model in most land reform programmes to date is the group-based projects/farms. This practice may set beneficiaries up for failure, as involvement becomes limited due to different priorities or interests in the project, and causes conflicts. The net income made from the project may not be enough to sustain all the beneficiaries, thus rendering the project economically unsustainable (Hall, 2004; Wegerif, 2004; Jordaan & Grobler 2011a; Roesch, 2012). On the other hand, the economies of scale for emerging farmers to transit into becoming commercial farmers may require that they operate on bigger farms (Cain *et al.*, 2007).
- b) Market and credit access:** Marketing is crucial in improving income for poor farmers. Emerging farmers find it difficult to comply with some market standards and to compete with commercial farmers because they do not produce the desired quality and quantity of products (Senyolo *et al.*, 2009). According to the Land Bank (2011), smallholder producers lack the necessary infrastructure to take their produce to the markets; where they are available, it is often costly for them to afford it. Williams and van Zyl (2008) found that market challenges force land reform smallholder farmers to sell their products at lower prices.

According to Machethe *et al.* (2004), the challenge of gaining access to agricultural lending from formal financial institutions is a longstanding matter. While efforts have been made to improve access to finance for small-scale farmers or emerging farmers, the majority of them are yet to be reached. Coetzee and Machethe (2011) state that inadequate finance is ranked among the top three challenges that are faced by emerging farmers, after lack of access to land and markets. Lack of collateral has been cited as the top reason for emerging farmers' lack of access to formal finance or credit.

**c) Socio-economic characteristics of project leaders:** Inadequate farming skills have been found to be a serious constraint for emerging farmers. They are often illiterate and this makes it challenging for them to access useful formal institutions that disseminate knowledge. In terms of experience and level of specialisation for farming managers, there is a need to broaden the scope of extension supplied. The lack of experience of the managers leads to bad business decisions, be it in terms of production and financial decisions, or rendering the project unsustainable (DAFF, 2012; DPME, 2013).

Farms with beneficiaries that had off-farm income in the Punjab State of India were found to be more economically sustainable than those were that had no other source of income except the project (Singh *et al.*, 2009). The level of education of the manager was also associated with a high collective efficiency. A high level of agricultural education implied both high efficiency and high work income per family work unit (Jan *et al.*, 2014; Roesch, 2012).

### 3.5 Summary

This chapter has given a review of literature on economic sustainability of agricultural projects. The definition of economic sustainability in the content of this study was set out in this chapter. Other aspects discussed are: how economic sustainability is measured and the factors determining farms' economic sustainability. Financial and non-financial methods of assessing the economic performance of a farm were discussed. The common variables used in non-financial methods were highlighted, as several studies conducted in South Africa have used non-financial data in their analysis of the economic sustainability of agricultural projects.

The fact that the economic performance of land reform farms may be enhanced by addressing operational challenges, such as increasing farm size or allocating fewer beneficiaries per farm, and facilitating capacity building, as in raising the level of agricultural education among farm managers, has been discussed. This chapter has stressed that improving market, as well as finance, availability and accessibility to the emerging farmers is also important in bringing about necessary changes for the economic sustainability of farms. Farms should be able to generate sufficient income

to break-even. The highlight seen in the literature is that, regardless of the indicators used, profit (from the income made) seems to be the key for the projects to be economically and financially sustainable.

## CHAPTER 4

### DATA SOURCES AND SAMPLE CHARACTERISTICS

#### 4.1 Introduction

The data sources, description of the data collected, data collection instruments, and details of the sample are discussed in this chapter. The chapter also presents the results of the descriptive analysis of the 98 land reform projects that benefited from Recap that were visited.

#### 4.2 Data sources and scope of the evaluation

The study uses both secondary and primary data obtained from the implementation evaluation of the Recapitalisation and Development Programme (from its inception in 2010 to June 2012). The evaluation study was conducted by the Postgraduate School of Agriculture and Rural Development of the University of Pretoria. Data collection involved gathering both quantitative and qualitative data in six provinces, namely, the Eastern Cape, Gauteng, KwaZulu-Natal, Free State and North West.

##### 4.2.1 Sampling and data collection instruments

In the implementation evaluation study, stratified and purposive sampling methods were used to select the projects and respondents ensuring that a variety of enterprises were included in the sample. The research was specifically targeted at land reform projects that had benefited from Recap between 2010 and 2012. Primary data were collected from Recap beneficiaries engaged in various types of enterprises and at different scales of production.

Respondents were divided into various categories, depending on their roles and responsibilities, and different data collection methods were used for each category, as follows:

- a) Project management: A structured questionnaire was administered to the project managers.

- b) Focus groups (beneficiaries other than project managers): A checklist was used in cases where, in addition to the project manager, a project had other beneficiaries.
- c) Strategic partners and mentors: Interviews with strategic partners and mentors were conducted using a checklist.
- d) Project officers: DRDLR officials responsible for Recap project facilitation and coordination with strategic partners and mentors were interviewed using a checklist.
- e) Provincial leadership (provincial government officials): A checklist was used for interviews with DRDLR provincial managers (i.e. Directors and Deputy Directors) responsible for land reform and Recap.
- f) National leadership (national government officials): One Director responsible for Recap at the national level was interviewed using a checklist.

Secondary data was obtained from DRDLR's database. The data sources included the business plans submitted by beneficiaries to the department when applying for a grant.

#### **4.2.2 Sample size**

The sample in the implementation evaluation study comprised 98 projects in the six provinces. The number of projects that were initially selected for the study had to be adjusted from an initial sample of 100 projects to 98. The reason was that the sampling frame for the Free State Province, according to the DRDLR's list, had duplications in project names. The actual number of recapitalised projects was 70 instead of 115, resulting in selection of 22 projects instead of 25. Details of the sample are depicted in Table 4.1 and Table 4.2.

**Table 4.1: Recap projects per province (n=98)**

<b>Province</b>	<b>Recap projects</b>	<b>Number of projects selected initially</b>	<b>Number of projects visited</b>
Gauteng	119	10	10
Eastern Cape	14	9	9
Limpopo	69	13	13
Free State	115	25	22
KwaZulu-Natal	108	23	24
North West	105	20	20
<b>Total</b>	<b>530</b>	<b>100</b>	<b>98</b>

*Source: Survey Data (2013)*

In KwaZulu-Natal, it was realised that the list from the national office had not been updated, and left out some districts with Recap projects. Adjustments were made to include projects in districts that were excluded from the initial sample. This resulted in one additional project being included in the revised sample.

**Table 4.2: Size of projects visited by province (ha) (n=98)**

Project size (ha)	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	North West	Total
<b>Number of projects</b>							
1-20		1	3		3	1	8
21-50	1			1	2	4	8
51-100	4		2			1	7
101-500	1	4	4	18	5	5	37
501-1000		9	1	3	3	3	19
1001-5000	1	7		2		6	16
5001+	1						1
No answer	1	1					2
<b>Total</b>	8	21	10	24	13	20	98
Average size (ha)	1742,25	901,79	200,36	394,17	249,25	823,94	672,19
Maximum size (ha)	12215,00	2310,00	623,00	2296,00	937,00	3900,00	12215,00
Minimum size (ha)	24,00	19,00	2,70	40,00	5,10	12,40	2,70

Source: DPME (2013)

### 4.2.3 Project selection

Both stratified and purposive sampling methods were used to select the projects. These methods ensured that projects from each sub-group were included in the final sample. The criteria for project selection were as follows:

Geographic distribution to ensure that regional climatic variations are taken into consideration and both urban and rural areas were included; type of enterprise to ensure that both livestock and crop projects were included; size of project to ensure that small and large projects were included in the sample; stage of project to ensure that projects in all stages (planning, implementation and production) were included; project performance to include both successful and failed projects; strategic initiative to include projects with and without a strategic partner/mentor; number of Recap projects per province to ensure that provinces with large and reasonably small numbers of projects were included; type of land reform programme (SLAG, LRAD,

SPLAG, PLAS, Commonage, and Restitution), and type of strategic partner/mentor to include the various types of strategic partners/mentors.

#### **4.2.4 Project categories**

The implementation evaluation of the Recapitalization and Development Programme from its inception in 2010 to June 2012 by DPME (2013) identified and classified projects into three categories on the basis of the level of income they make from their agricultural production activities. This study's analysis will maintain the same classification to determine if there were any significant features distinguishing these groups. The identified categories are as follows:

- Category 1 (not sustainable): projects without any agricultural income (i.e. gross and net incomes equal to zero). These accounted for 37% of the projects and were not making any agricultural income at the time of the study and reasons could be that these projects were still in the development phase.
- Category 2 (sustainable but not assured): Farms/projects with a certain level of agricultural income (i.e. gross and net incomes are positive, although low; net income is close to zero or negative). The number of projects in this category accounted for 36% of the whole population and most projects were in this category.
- Category 3 (sustainable and almost assured): Farms/projects with significant agricultural income (i.e. gross and net incomes are positive and significant). These projects can be considered as potential successes, although it is still too early to know whether Recap projects have been successful or not Projects in this category accounted for 27% of the 98 evaluated projects.

**Table 4.3: Income of farms/projects that benefited from Recap by sustainability category (Rand)**

Income	Sustainability Category			Total
	1	2	3	
Average income	0	20582 (169195)	3467555 (7580683)	1069363 (4444692)
Max. income	0	245800	3024000	30240000
Min. income	0	-768750	200000	-768750

Figures in parenthesis are standard deviations

Source: DPME (2013)

The agricultural income by the three sustainability groups is illustrated in Table 4.3. The project generating the minimal income is at R-768750, meaning the project is operating at a loss and this project is in category 2. The Recap policy outlines that farms / projects that are assisted through the grant should independently cover their costs in the subsequent years. This means projects which are not generating income will not be able to do that and thus collapse. The maximum agricultural income can be found amongst the category 3 projects, with the agricultural income of R3 024 000 per annum. This indicates that projects that were in category 3 were performing better than any other category and had a potential to be sustainable as a business.

#### **4.3 Characteristics of the sample**

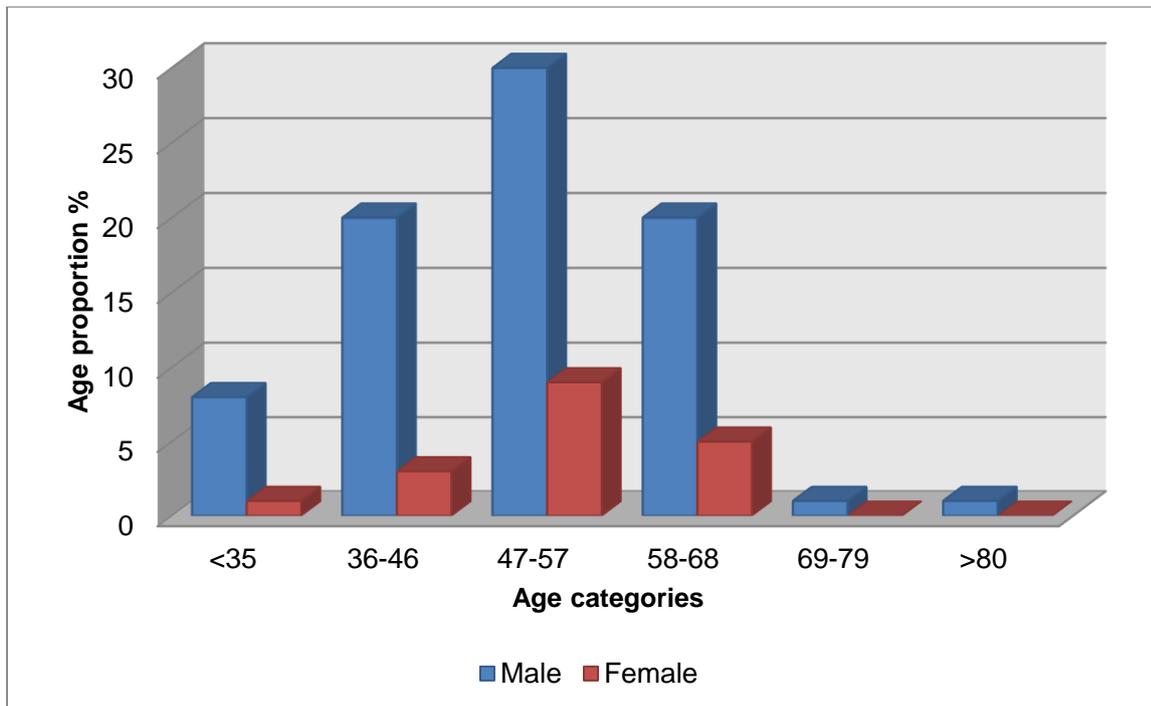
The questionnaire asked for information about demographic characteristics of the beneficiaries' as well as that of the respondents. The respondents were the leaders and decision makers from each project. Project characteristics are important determinants of economic activities, livelihoods strategies and decisions undertaken by the beneficiaries. They are also important in assessing the economic sustainability of the different projects. For this study and understanding of the project characteristics will be useful in crafting recommendations for projects' economic sustainability for the land reform beneficiaries.

### 4.3.1 Socio-economic characteristics of the sampled projects

#### a) Age

The age of the project leaders were considered to be an important factor to the success and sustainability of a farming business. This variable may give an indication of the level of decision making and interest in farming. Project under the age of 35 years were classified as youth, those between 36 to 65 middle-aged and those above 65 old. The age distribution of the project leaders are shown on Figure 4.1. This study found that only 9.2% of the youth was involved as project leaders in Recap projects, the representation is considerable low. Kirsten and Machethe (2005) suggest that the limited representation of the youth in agriculture could mean an ageing beneficiary population within the next five to ten years.

The age aspect has also been highlighted by Lubambo (2011) as an important factor in the success of agricultural projects, who argues that even though the youth is encouraged to participate in farming, middle-aged land reform beneficiaries seem to have stable projects with increased production, and this is said to be the result of better levels of decision making and commitment to farming. Tchale (2009) also shares the same view of older farmers being more capable because of their experience and therefore this puts them in a better position to be able to assess the risks involved in farming than younger farmers are, and thus age has an effect on economic sustainability of agricultural projects. However, Tchale (2009) goes on to say the opposite may be true, that older farmers who had not received a better education may be more inefficient than the younger ones are, resulting in non-sustainability of projects.



**Figure 4.1: Age representation of the project leaders (n=98)**

Source: Survey Data (2013)

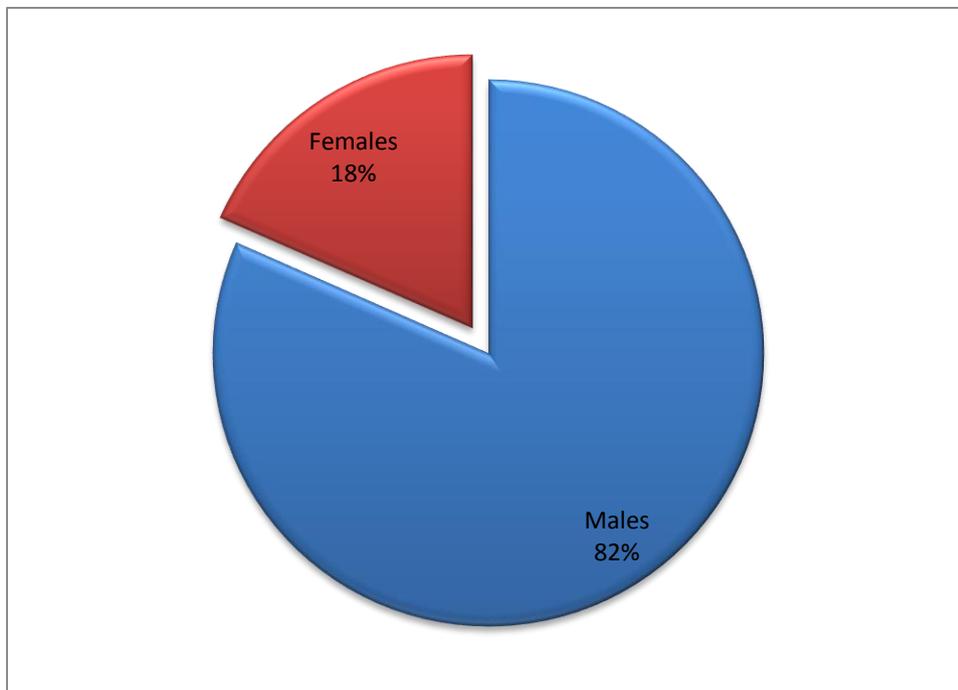
The study findings also indicated that the majority of the Recap beneficiaries were in the category between 47 – 57 years of age, representing 37.5 % of the population (Figure 4.1). This age group can be considered as an acceptable age in terms of decision making and adoption of new technology, which are some of the factors that lead to agricultural project success, as noted by Jagwe (2011) while analysing participation of smallholder farmers in the markets of Burundi. In terms of group membership, 62 % of these beneficiaries were in category 1 of agricultural income.

Age is also important in adoption of the latest technology, as technology plays an important role in the economic sustainability of productive farms. Studies on adoption of agricultural technology (Akudugu *et al.*, 2012; Sunding & Zilberman, 2000) show that adoptions depend on a range of factors and among those are social factors such as age and gender. Low adoption of modern agricultural production technologies amongst small-scale farmers has been identified as one of main reasons for the low agricultural productivity and subsequently the failure of these farms. To fully utilise agricultural production, land reform beneficiaries must be innovative although their capacity along the agricultural value chain to innovate their production activities is

dependent on the availability of technology. Akudugu *et al.* (2012) assessed factors influencing decision making when it comes to the adoption of modern agricultural production technologies and found that age of participants significantly influenced technology adoption decisions, which in turn impacts on sustainability of a project.

### b) Gender

Limited participation of women as project leaders in Recap was also observed. There is a skewed gender representation, where 80 of the 98 interviewed project leaders were male, accounting for 82 % of the project leaders, while female project leaders numbered 18, representing 18 % of the 98 projects visited for the study (Figure 4.2). Category wise, male representation was still dominating in both agricultural income groups. Men seem to dominate when it comes to agricultural land holdings and leadership, although female representation numbers are still significant. FAO (2011) stated that woman plays more diverse roles in households than man, reducing their participation in farming, this therefore can explain why the projects that had potential for economic sustainability were those that are led by men, rather than by women.



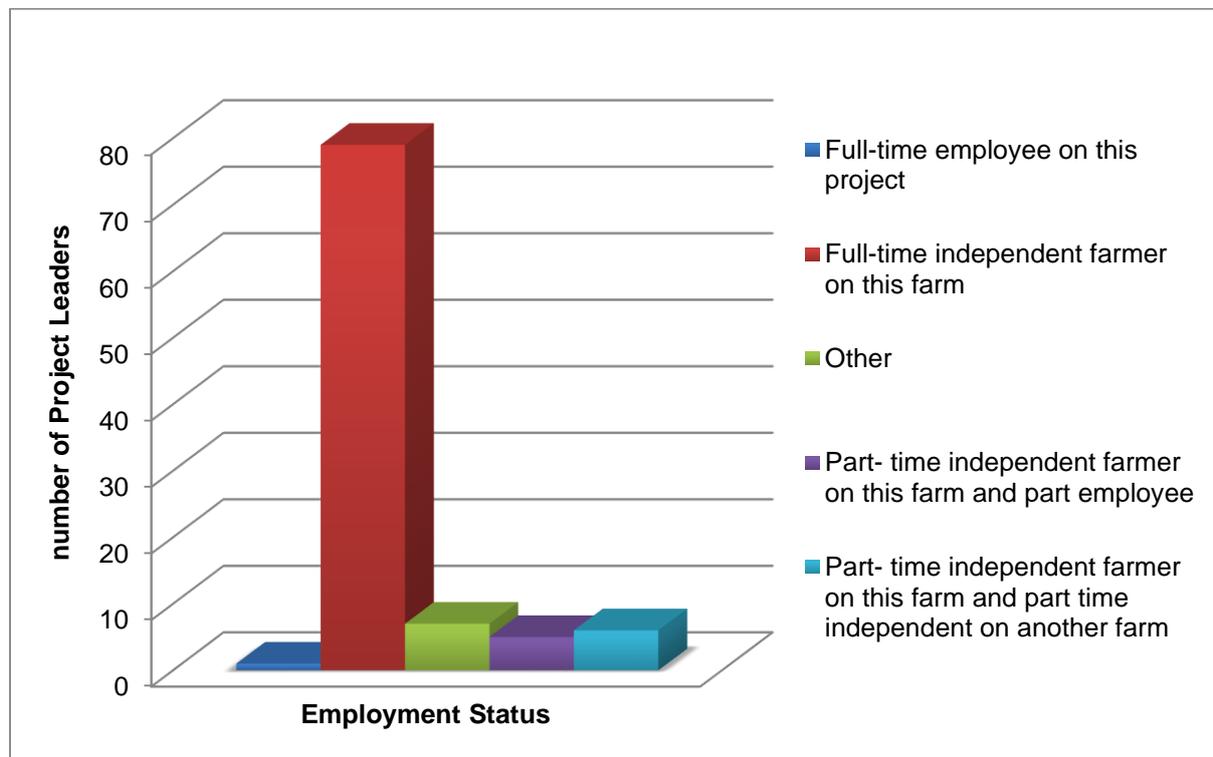
**Figure 4.2: Gender representation of the project leaders (n=98)**

Source: Survey Data (2013)

### c) Employment status of the project leaders

The amount of time needed to run an economically viable farm requires full-time managers on the farms and projects. However, this is normally challenged by the low, unreliable income derivable from farming. The inadequacy of farm wages to lift wage-dependent rural households permanently above a socially acceptable deprivation threshold forces people, especially the youth, to look for jobs in other sectors. According to the Department of Labour (2001), farm workers earn the lowest wages among those formally employed in the country.

Recap beneficiaries who were employed part-time on their farms indicated that uncertainties in farming are one of the reasons they have off-farm jobs. This was a result of the low income from their farms, as compared with off-farm income, making it difficult to merely survive on farm income only. This, however, has a negative impact on the success of their farms. Lubambo (2011) also found that project failure is a result of beneficiaries being part-time farmers.



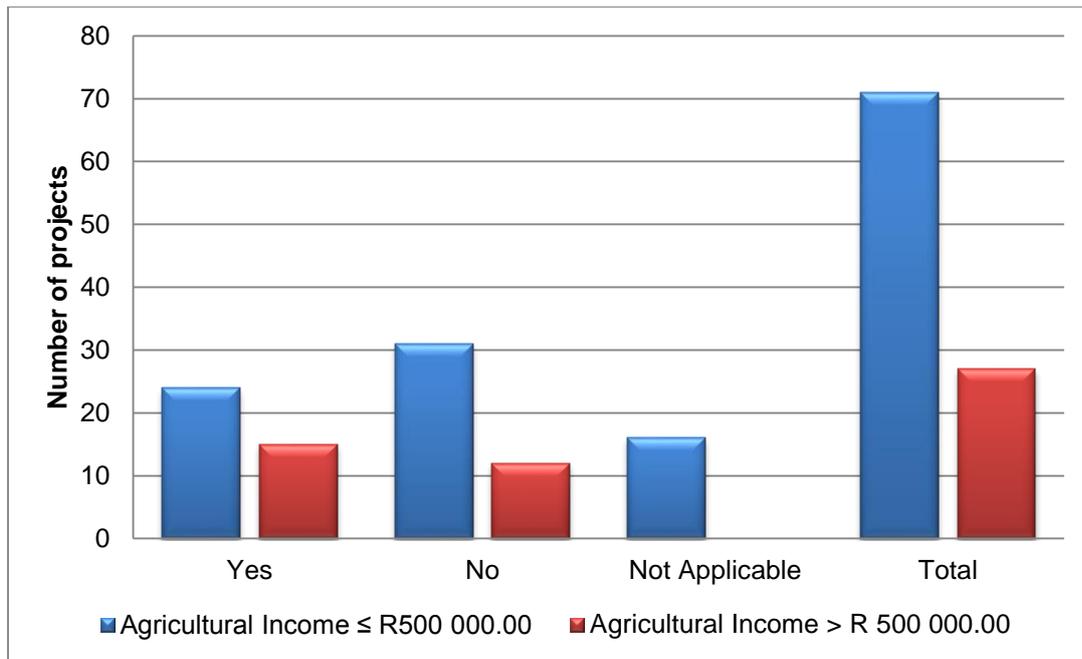
**Figure 4.3: Employment status of the project leaders (n=98)**

Source: Survey Data (2013)

In this study, the full-time employment of project leaders, who in most projects were the actual beneficiaries, indicates a positive impact on the success of the farms. Projects with full-time leaders were performing better than those with part-time leaders were. Overall, the majority of the project leaders are full-time, independent farmers on their farms, with only 1.3 % being employees on the farm, and these are in category 1. However, not all project leaders were receiving a salary from the projects because the income made could not cover such farm expenses, but they kept on working on the projects because they are the actual owners, not just employees. As illustrated in Figure 4.3, 94.4% of the farms are full-time. The full-time employment of project leaders, who in most projects were the actual beneficiaries, indicates a positive impact on employment, although overall the numbers of full-time employees, other than project leaders, is low, considering that job creation is one of the objectives of Recap.

#### **d) Market access**

Access to markets is important for subsistence farmers to help them transit to becoming commercial farmers. In achieving this, the initial step would be, among other things, gaining access to input and output markets to enable them to produce and sell their output (to the market) to generate income. However, selling to formal markets is still challenging for Recap beneficiaries, because some are still producing below market standards (they do not meet quality and safety standards required by big retail shops). The other challenge for those who have good quality produce is to meet the market demand on time. Established markets are not willing to sign contracts with them, since they cannot guarantee honouring contracts to deliver the same quality of products at the required time, in the quantity needed.



**Figure 4.4: Project’s market access after Recap**

*Source: Survey Data (2013)*

Beneficiaries related their dissatisfaction with the facilitation rate of market access for both inputs and outputs that they are receiving from Recap. The results indicate that market access has not been easy for the majority of Recap beneficiaries, although there have been projects that were able to access markets with the help of Recap. The majority of those that were assisted by Recap were in category 1, although the majority of under-performing projects in terms of market access were also in category 1. Roughly 16% of the projects were not productive. Some were still in the development phase, while others had already collapsed during the period of evaluation.

Access to markets as an important aspect of commercialisation is still inadequate for Recap projects, while the other challenge has been the small size of units in these projects which are unable to meet the minimum requirements for commercial-scale production, which in turn negatively affects their ability to access well-developed markets. Figure 4.4 illustrates that out of the 92 projects that had already received funding at the time of the study, 42% had access to markets and from the 39 projects that had access to markets 38% were able to access markets.

One challenge that was mentioned often by beneficiaries in terms of accessing formal markets was the transactional costs involved. Jagwe (2011) also found that the transactional costs involved in marketing hinder small-scale producers from fully utilising market opportunities that are available. In the case of the RECAP projects, these included transporting costs and other infrastructural costs necessary for taking their produce to the available markets. This in turn influenced the approaches they would take to production and marketing, which included selling their products at lower prices, selling to family, friends and local markets. This is a practice noted by Williams and van Zyl (2008), Senyolo *et al.* (2009), and Land Bank (2011), regarding challenges faced by small-scale farmers in relation to output markets.

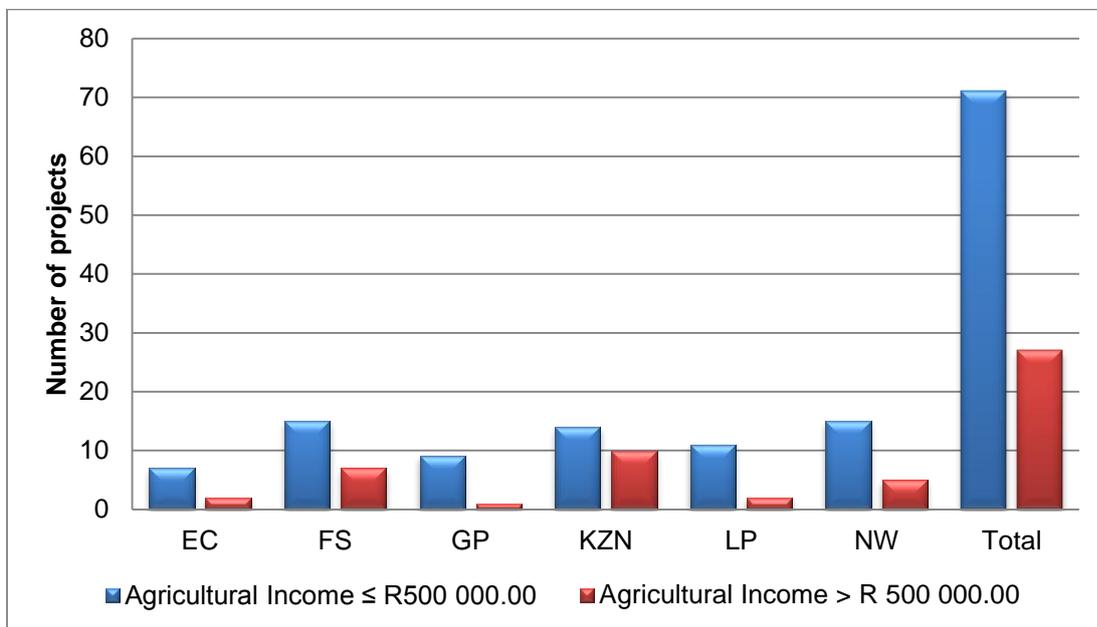
Although the South African market has improved since 1996 so as to ease access to agricultural commodity markets by smallholder producers under the Marketing of Agricultural Products Act of 1996 (Vink & Kirsten, 2000), Recap projects still find it difficult to meet some market standards and to compete with commercial farmers because they do not produce the desired quality and quantity of products. According to Louw *et al.* (2008), there are different channels of accessing markets by producers, nonetheless for emerging farmers like Recap beneficiaries, it is not easy to penetrate the structured market channels and they have therefore had to develop and explore other market strategies, such as those identified by Kirsten and Machethe (2005), wherein emerging farmers opting to sell their produce to the informal markets due to market complexity.

Overall, the marketing challenge faced by land reform beneficiaries renders RECAP projects unsustainable for these smallholder farmers and consequently leading to the closing of the farming business.

#### **e) Project's location**

South Africa is known to have diverse agricultural production practices, owing to the influence of the different agro-climatic zones, from the dry north-western region to the wet eastern region. This results in different provinces excelling in particular farming production types, whether in livestock farming, field crop farming, horticultural farming,

or a combination of these. The six provinces where this study was conducted in contribute to key agricultural sectors as follows – Eastern Cape: livestock and crop farming, especially tobacco; Gauteng farms, being closer to the metropolitan areas, are more intense in poultry and pig farms; Free State does well in both field crop and livestock farming; KwaZulu-Natal is known for crops such as sugar cane and horticultural farming such as citrus fruit production; Limpopo is known for citrus, subtropical fruit production and tomatoes; while the North West does well in field crop and livestock farming (AgriSETA, 2010). Figure 4.5 indicates potentially sustainable projects by province while Figure 4.6 shows the Recap projects by province according to their choice of enterprise.



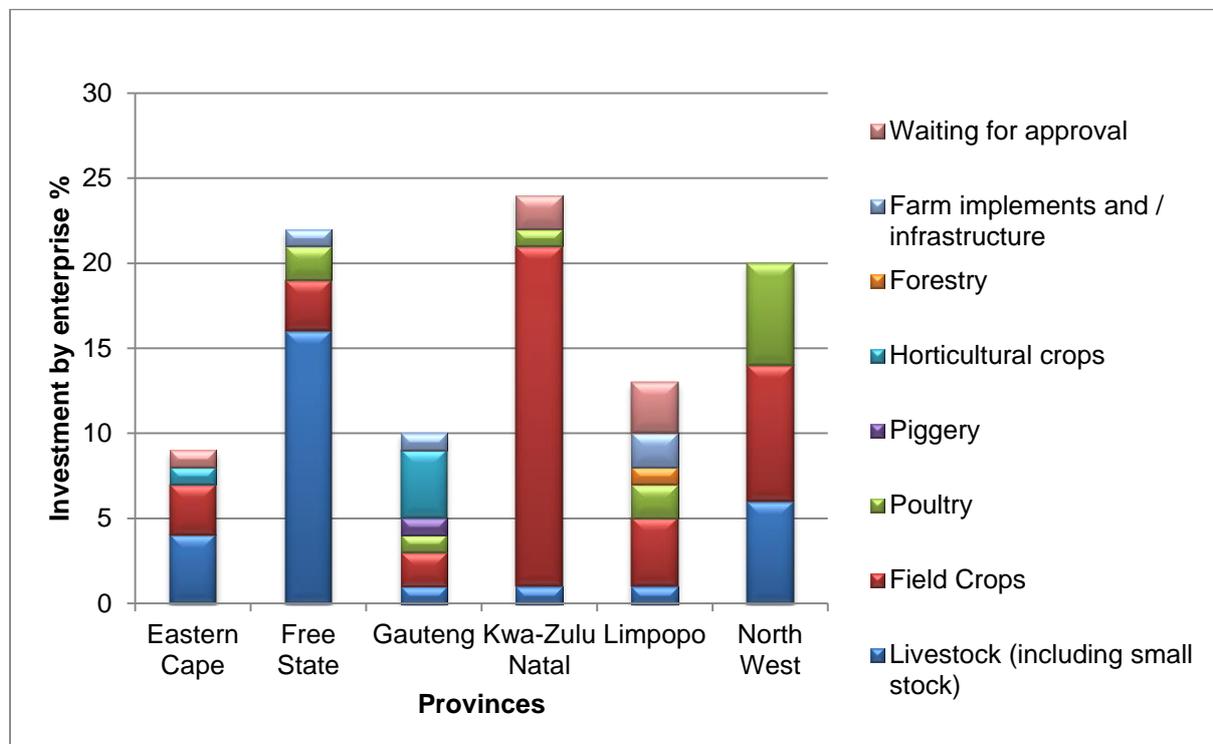
**Figure 4.5: Project’s location**

*Source: Survey Data (2013)*

In all the six provinces where the study was conducted, there seemed to be more projects under category 1, as illustrated in Figure 4.5. This is the group with an agricultural income of R500 000 or less. The province of KwaZulu-Natal and Free State had the highest numbers of potentially sustainable projects with 41.7% and 31% of the potentially sustainable projects respectively. For the remaining four provinces, potentially sustainable projects representations were as follows: North West (25 %), Eastern Cape (22.2 %), Limpopo (15.4 %) and Gauteng (10 %). Gauteng Province

ranked number one, with more projects that were generating an income of R500 000 and less per annum.

This, however, came as no surprise as the province has a smaller scale of production per project, as compared with other provinces. Gauteng is mostly urban, and therefore there is not enough land for farming, and those that are farming have relatively small pieces of land. The total number of projects that were under category 1 (non-sustainable projects) is 71 of the 98 projects that were evaluated, while category 2 (sustainable projects) had 27 projects. Provinces invested in different enterprises, as illustrated in Figure 4.7.



**Figure 4.6: Proportion of Recap investments by enterprise and province**

Source: Survey Data (2013)

Field crop production appears to be the dominant investment enterprise across all the provinces (Figure 4.6), with the exception of Gauteng and the Free State. Provinces, such as KwaZulu-Natal, invested 91 % of its Recap funds in sugar cane production, while the Free State invested more on livestock production (73 %) than on any other enterprise. The province with the most diverse investment is Gauteng, with

horticultural crops accounting for 40 % of the investment, while piggery accounts for 20 %. Poultry enterprises also appeared to be an important enterprise category within RECAP (13 % of total expenses), particularly in the North West province and, to a lesser extent, in Limpopo. Of the 98 projects evaluated, about 6 % are still waiting for approval of the RECAP funds at the time of the evaluation.

It is important that provinces align their investment pattern with competitive enterprises in a specific region. Feasibility studies should be undertaken and land reform beneficiaries must be advised in line with the findings. The study's findings illustrates that, on overall, the provinces invested Recap funds on competitive enterprises, although there were some few misalignment in some provinces. As expected, KwaZulu-Natal is where most of the country's sugar cane production is, and much RECAP investment was made in that commodity, while provinces such as the Free State, North West and Eastern Cape do well in livestock production and their choice of that category of investment can be considered to be in the right direction.

#### **4.4 Measurement of potential economic sustainability for RECAP projects**

A measure for economic sustainability was developed for this study. The three categories used in the DPME (2013) implementation evaluation study of Recap (from its inception to June 2012) were kept in the initial analysis and a descriptive statistics of agricultural income groups was run in SPSS. Sampled projects were categorised into the three groups on the basis of production income. Projects having no agricultural income were grouped as category 1. Projects with a certain level of agricultural income (i.e. gross and net incomes are positive, although low; net income is close to zero or negative) were grouped as category 2. Lastly, projects with a significant agricultural income (i.e. gross and net incomes are positive and significant) were grouped as category 3.

Fourteen independent variables were selected, namely, age, gender, employment status, farm ownership, legal entity, type of land reform/land acquisition, farm size in hectares, number of beneficiaries at present, project partnership (strategic partner or mentor), project's location by province, farming experience in years, markets access after Recap, access to loans or finance, and total amount of the Recap grant received.

The analysis of variance (ANOVA) for the sustainable (category 2 and 3) and non-sustainable (category 1) groups was run to test the significance of these fourteen independent variables and the results are illustrated in Table 4.4. Non-financial indicators have been used previously to measure the economic viability of farms (Grunert *et al.*, 2005; Singh *et al.*, 2009; Argiles, 2001; Jordaan & Grobler, 2011a, 2011b; Gwary *et al.*, 2012).

**Table 4.4: Analysis of variance for the sustainable and non-sustainable groups**

	Mean Square	F	Sig.
Between sustainable and non-sustainable Groups	1.06592E+14	6.706	0.002

*Source: Survey Data (2013)*

The ANOVA results indicate a  $p$ -value = 0.002, which means there were significant differences between sustainable and non-sustainable groups at 1% level of significance. However, the significance value does not tell which group means were different, as there were three groups. It could be that only category 1 is significantly different to category 2, or all categories could be significantly different from each other. Therefore, a post-hoc test was conducted. The Tukey HSD test was run and results are shown in Table 4.5.

**Table 4.5: Multiple comparison on significant difference among the sustainability groups**

Multiple Comparisons			
	Sustainability Groups	Income category	Significance
Tukey HSD	Category 1	Category 2	0.980
		Category 3	0.003
	Category 2	Category 1	0.980
		Category 3	0.006
	Category 3	Category 1	0.003
		Category 2	0.006

Source: Survey Data (2013)

Results of the Tukey HSD test indicate that there is no significant difference between category 1 (No Agricultural Income) and category 2 (Agricultural Income R 0.1 – R500 000) because the  $p$ -value is 0.98. However, both category 1 and 2 are significantly different from category 3 (Agricultural Income > R500 000) as shown by the  $p$ -values of 0.003 and 0.006, respectively, indicating significant differences at 5 % level of significance. Accordingly, in the discriminant analysis test, categories 1 and 2 were combined, resulting in two agricultural income groups. After the agricultural income groups were combined, the project with the highest agricultural income was R500 000. For the purpose of this study, the agricultural income of R500 000 was then used as a benchmark, separating projects that had a potential of being economically sustainable from those that are non-economically sustainable. This is consistent with DPME (2013) which considered a project that had an agricultural income of R500 000 or less to be non-sustainable, while those with an agricultural income of more than R500 000 were regarded as potentially sustainable. The two agricultural income groups are as follows:

- Category 1 projects: Agricultural Income  $\leq$  R500 000 per annum
- Category 2 projects: Agricultural Income  $>$  R500 000 per annum

Guided by the results of the Tukey HSD test on multiple comparisons, the study based its measure of economic sustainability on production income from data that had been captured at one point in time. The most appropriate indicator used in economic evaluations is profit (DPME, 2013). However, for this study, the nature of data gathered did not permit a reliable measure of profitability, hence the use of gross farm income as a proxy for economic sustainability.

#### **4.5 Summary**

The chapter outlined the data sources and the scope of the evaluation study of the implementation of Recap (from inception in 2010 to June 2012). The study included both qualitative and quantitative methods for the land reform projects benefiting from Recap in the selected six provinces. Characteristics of the sampled projects are outlined. Furthermore, the chapter discussed the measurement and estimation procedures for the potentially sustainable Recap projects.

## CHAPTER 5

### ANALYTICAL TECHNIQUES

#### 5.1 Introduction

This chapter provides a detailed explanation of how the study objectives were addressed by the methods used. The core of the study is the economic sustainability and, therefore, an analysis of the factors affecting the potential viability of the projects is crucial in determining which indicators are key to the potential economic sustainability of Recap projects. Variables that could be influencing potential viability are identified and a statistical test is performed to identify the ones that are significantly related to the assessed indicator of potential economic sustainability. The section also highlights the analytical technique used to address the objectives of the study. Similar studies that used the same approach are highlighted and the definition of the variables used in regression models is outlined. A discriminant function analysis technique was preferred over other techniques because the study aimed at determining the discriminating variables accounting for differences in the economic sustainability of the Recap projects. The three sustainability groups that were used in the DPME 2013 study will first form the basis for categorising potential economic projects

#### 5.2 The multiple regression model

Gujarati and Porter (2009) describe regression analysis as a statistical tool for the investigation of relationships between variables. The researcher seeks to ascertain the effect of one variable upon another. In this study, the investigation is of several independent regressors on one dependent regressand and, therefore, a multiple regression model is needed. In particular, a linear regression multiple model was adopted.

The model's advantage is that it allows additional factors to enter the analysis separately so that the effect of each can be estimated (Gelman & Hill, 2008; Gujarati & Porter, 2009). The link between the multiple regression model and the discriminant

function analysis is that the former allows more than one predictor variable that is then used to predict group membership by the later.

### **5.2.1 Description of the variables used in the multiple regression model**

In this study, a multiple regression model was estimated to identify economic indicators that may best describe the potential economic sustainability of land reform projects. The multiple regression technique allowed the researcher to determine the question of which factors best predict agricultural income. Table 5.1 indicates the variables that are expected to influence agricultural income of the sampled projects. The description of the variable and the unit of measurement are clearly outlined.



**Table 5.1: Variables used in the multiple regression model**

Variable	Description of variable	Measure	Unit
Agricultural income	Revenue made from selling agricultural produce	Amount	ZAR
AGERES	Age of the respondent	1= Youth group 2= Middle aged group 3= Elderly group	Years
GENDER	Gender of the respondent	1= Male 0= Female	M/F
EMPLOYSTAT	Employment status of the respondent	1=Fulltime 0=Part-time	Fulltime / part-time
FARMOWNERSHIP	Farm ownership	0 =No 1=Yes	Y/N
LEAGALENT	Legal entity of the farm	1=Private 2=Trust 3=CPA 4=Close cooperation 5=Government 6=Cooperative 7=Other	Legal entity
TYPELANDREF	Type of land reform / land acquisition)	1=SLAG 2=LRAD 3=PLAS 4= Redistribution equity-sharing projects 5=Private transaction 6=Other	Type of land acquisition
FARMSIZE	Farm size in hectares	hectares	ha
TOTALBENEF	Total number of project beneficiaries	Number	Number
PARTNERSHIP	Project partnership	0 =strategic partner 1=mentor	strategic partner or mentor
PROVINCE	Location of the project by province	1= Eastern Cape 2= Free State 3= Gauteng 4=KwaZulu - Natal 5=Limpopo 6=North West	Province
FARMING EXP	Farming experience of the managers	Number	Years
ACCESSCREDIT	Access to credit (Formal financial institutions)	0 =No 1=Yes	Y/N
ACCESSSMARKET	Market access (formal and informal)	0 =No 1=Yes	Y/ N

Source: Survey Data (2013)

The linear regression model is as follows:

$$\text{Agricultural income} = \beta_0 + \beta_1\text{AGERES} + \beta_2\text{GENDER} + \beta_3\text{EMPLOYSTAT} + \beta_4\text{FARMOWNERSHIP} + \beta_5\text{LEGALENT} + \beta_6\text{TYPELANDREF} + \beta_7\text{FARMSIZE} + \beta_8\text{TOTALBENEF} + \beta_9\text{PARTNERSHIP} + \beta_{10}\text{PROVINCE} + \beta_{11}\text{FARMING EXP} + \beta_{12}\text{ACCESSCREDIT} + \beta_{13}\text{ACCESSSMARKET} + \beta_{14}\text{RECAPUNDERSTAND} \dots (1)$$

### 5.3 Discriminant function analysis

Salkind (2010) defines discriminant analysis as a multivariate statistical technique that can be used to predict group membership from a set of predictor variables. The objective of a DFA is to find optimal combinations of predictor variables, called discriminant functions, to separate previously defined groups and make the best possible predictions about group membership. The discriminant functions can also indicate the nature of the differences by examining which predictor variables best describe the group membership. Burr and Doak (2007) describe the discriminant function analysis as a statistical tool used to determine which variables discriminate between two naturally occurring groups.

DFA also has a regression technique, which is used for predicting the value of the dependent categorical variable. The technique predicts a value of two categories. When the category of a dependant variable is more than two, it would simply be an extension of the simple discriminant analysis called the multiple discriminant analysis. This study used Discriminant Function Analysis (DFA) to establish the nature of the relationship between potential sustainable projects and non-sustainable projects and the factors that may affect the projects' economic sustainability. Several techniques such as discriminant analysis, probit analysis, log-linear regression and logistic regression have been developed for analysing data with categorical dependent variables, for example log-linear regression requires all regressors to be categorical, logistic regression uses dichotomous dependent variable whilst discriminant analysis strictly requires them all to be continuous (though dummy variables can be used as for multiple regression). Discriminant analysis was therefore preferred over logistic regression because of the problem of a dichotomous dependent variable (Klecka, 1980).

In this study, a discriminant analysis was run using the significant individual predictors of group membership. The model helps identify the variables that best predict a group membership so as to develop a measure for potential economic sustainable projects.

Discriminant function analysis was used by Singh *et al.* (2009) in their study to determine factors influencing economic viability of marginal and small-scale farmers in the Punjab State of India. The farmers were categorised into two groups on the basis of economic surplus left with a farm household after deducting the farm and domestic expenditure from the sum of gross returns from agriculture plus off-farm income of the respective farm household. The farmers having a positive economic surplus were grouped as viable farmers and the farmers with a negative economic surplus were categorised as non-viable farmers. Some of the variables included to differentiate the two groups are education in years, family size in numbers, farm sizes, domestic expenditure, value of productivity from crops and net income from dairy. In identifying the discriminant factors, farm size came to be the most significant.

In this study, to determine the nature of the discriminant variables, a descriptive analysis was run using individual predictors that were significant in explaining agricultural income in equation 1.

### **5.3.1 Data Analysis**

Data analysis was carried out through the use of two statistical software packages, SPSS and MS Excel, to run frequencies, descriptive statistics, and regression models and to perform a discriminant analysis. Determinants of project sustainability factors for the Recap farms were determined. A discriminant function analysis was run in SPSS, followed by descriptive analysis, while MS Excel was used in the development of figures and graphs.

### 5.3.2 The Discriminant Function

A discriminant function is a linear combination of the discriminating (independent) variables. Discriminant function analysis involves the determination of a linear equation regression that predicts which group (sustainable and non-sustainable projects) the case (beneficiaries) belongs to. The functional form is shown in equation (2).

$$L = b_1X_1 + b_2X_2 + \dots + b_nX_n + C \dots\dots\dots (2)$$

L = discriminant function

b<sub>1</sub> = discriminant coefficient

X = independent variable

C = constant

n = the number of predictor variable

Where X= age, gender, employment status, farm ownership, legal entity, type of land reform/land acquisition, farm size in hectares, number of beneficiaries at present, project partnership (strategic partner or mentor), project's location by province, farming experience in years, markets access after Recap, access to loans or finance, and total amount of the Recap grant received.

In statistics, significance of variables is mostly reported at three levels, 1 %, 5 % and 10 %, although some studies can go beyond the 10 % level of significance. This study interprets significance results at the 5 % level, meaning any *p*-value of the discriminatory variables greater than a 5 % level of significance was considered not to be explaining the group differences between sustainable and non-sustainable projects.

In a discriminant analysis, the value of two categories is predicted. For the two groups, there is one discriminant analysis function. When there are more than two dependent variables it becomes an extension of the simple discriminant analysis called the multiple discriminant analysis. Discriminant function analysis is multivariate analysis of variance (MANOVA) reversed, therefore, here the independent variables are the

predictors and the dependent variables are the groups, while in MANOVA the independent variables are the groups and the dependent variables are the predictors (Statistics Solution, 2014).

Discriminant function analysis was used by Singh *et al.* (2009) and Gwary *et al.* (2012) in farm assessments to determine the variables that render farms economically sustainable. To develop a measure for economic sustainability of Recap projects using agricultural income as a proxy for profit, a model similar to the one used by Singh *et al.* (2009) in the evaluation of economic viability of marginal and small-scale farmers in the Punjab State of India will be used. The variables to be included in the model are as follows: age of the respondent in years, gender of the respondent, employment status, farm ownership, legal entity of the farm, type of land reform/land acquisition, farm size in hectares, total number of project beneficiaries, project partnership (strategic partner or mentor), type of enterprise, location of the project by province, farming experience of the managers, access to credit and market access.

## CHAPTER 6

### RESULTS OF THE STUDY

#### 6.1 Introduction

The study findings are discussed and presented in this chapter and reflection was given on the research objectives as articulated in Chapter 1 of this study. The discriminant analysis explaining group membership by specific determinants on potential economic sustainable projects versus non-economic sustainable projects are presented in this chapter, followed by relationship of the variables influencing agricultural income is also outlined and results are discussed.

#### 6.2 Discriminating factors between potentially sustainable and non-sustainable projects

Discriminant function analysis of agricultural projects, as used by Gwary *et al.* (2012) through non-financial indicators, often uses similar variables during economic analysis. In this study, similar method was followed and the variables were selected as potential discriminant variables for economic viability of the Recap projects. Of the fourteen potential discriminant variables that were tested, results indicated that five variables explain the group differences with statistical significance at 1 %, 5 % and 10 % levels of significance.

The five variables that were found to explain the group differences are; type of land reform/acquisition ( $p$ -value = 0.052), total amount of recap grant received ( $p$  = 0.013), strategic intervention in a project ( $p$ -value = 0.008), projects' access to credit ( $p$ -value = 0.01), and access to market after participating in Recap ( $p$ -value = 0.006). This means that Recap projects that had a potential to be economically sustainable had either a mentor or a strategic partner (strategic intervention) to assist with mentorship, they had already received the recap grant (some more than one tranche), had access to credit (even those that had not taken any loans could do so, should they need one), and they also had ease of access to the markets, be it formal or informal. On the other hand, these factors were among the challenges faced by projects considered to be

non-sustainable, especially when it comes to the issue of access to credit and markets (especially formal markets). The majority of these projects had no access to credit, as they are considered risky borrowers by formal financial institutions and lacked collateral for loans. The coefficients of predictors to group membership in the sampled projects are illustrated in Table 6.1.

**Table 6.1: Coefficients of predictors to group membership in the sampled projects**

Variables	Coefficient	p-value
TYPELANDREF	0.632	0.052
RECAPGRANTREC	0.574	0.013
PARTNERSHIP	0.184	0.008
ACCESSCREDIT	-0.130	0.01
ACCESSSMARKET	-0.207	0.006

Source: Survey Data (2013)

The total amount of Recap grant received by the projects had the biggest coefficient at 5% level of significance (the study's threshold), indicating that it contributed the most to the prediction of group membership. The second most important predictor was ease of accessing markets by the projects, on third place is the presence of a strategic partner or mentor in a project, which was followed by access to access of credit / loans.

Majority of projects in category 2 had all four or at least three of these predictor variables, while those in category 1 mostly lacked access to credit and market access and some were still in the planning stage and had not received Recap grant. This explains the low income made by non-economically sustainable projects because they had either not received any funds yet or had no formal markets to sell to and were struggling with capital for production input.

### 6.3 Factors influencing economic sustainability of Recap projects

The linear multiple regression model was used to identify variables (of the fourteen that were selected) that best explain the dependant variable (agricultural income). The results showed which variables had an influence on agricultural income. Knowing what is lacking in projects that are not making sufficient agricultural income for economic sustainability will assist in improving implementation strategies of Recap so as to achieve projects that have a potential for being economical sustainable.

The results are presented in Table 6.2 and this model illustrates two variables that influenced the amount of agricultural income generated by projects. The two variables were both significant at 5 % level of significance. These are access to land through certain types of land reform / land acquisition (TYPELANDREF) and the amount of Recap grant already received by the project (RECAPGRANTREC).

The variable TYPELANDREF is significant at 5% level of significance in influencing the amount of agricultural income generated by projects, while RECAPGRANTREC seems to be more influential at a  $p$ -value which is significant at one 1% level of significance towards agricultural income generated by projects. The R-squared is low at 44 %, but the F-statistic of 3.393 is significant, with a  $p$ -value of 0.006. The  $p$ -value of the F-statistic indicates that, overall, the multiple regression model is significant, and together, all the explanatory variables have a significant impact on the amount of agricultural income generated by projects.

**Table 6.2: Multiple regression model estimates of the determinants of agricultural income by sampled Recap projects**

Variable	Coefficient estimate	Standard error	t-Statistic	p-value
(Constant)	-3453978.381	3776198.953	-0.915	0.367
ACCESSSMARKET	-2716.69	17936.723	-0.151	0.881
ACCESSCREDIT	-1200172.76	1239338.684	-0.968	0.34
AGERES	-11317.036	57970.557	-0.195	0.846
GENDER	1110010.191	1433781.667	0.774	0.444
TYPELANDREF	1152740.066**	445432.874	2.588	0.014
TOTALBENEF	-52970.393	65379.958	-0.81	0.423
RECAPGRANTREC	0.906***	0.302	3.004	0.005
FARMSIZE	-486.395	959.084	-0.507	0.615

R-squared = 0.444  
Adjusted R-squared = 0.313  
F-statistic = 3.393  
Probability (F-statistic) = 0.006  
Number of observations = 98

\*\*\*Significant at 1 % level  
\*\*Significant at 5 % level  
\*Significant at 10 % level

Source: Survey Data (2013)

One of the measures of goodness of fit of a regression model is R-squared and it lies between 0 and 1. The closer it is to 1, the better is the fit. In regression analysis, a high R-squared value is preferred because it indicates that changes in the predictors are related to changes in the response variable and that the model explains a lot of the response variability. Gujarati (2004) indicated that low R-squared values may be observed especially in cross-sectional data. Wherein a low R-squared is observed, its significance is interpreted together with the computed F value and the p value. If the computed F value and the p value are significant the R-squared is also statistically significant (Gujarati, 2004; Borjas, 2000).

The R-squared of 0.44 for this study means that the two explanatory variables (TYPELANDREF and RECAPGRANTREC) explain 44% of the variability trend in

income made by the projects. This means 66% variability influence on agricultural income generated by the projects may be influenced by other factors involved. As the analysis proceeded, variables such as LEGALENT (legal entity of the project) had to be excluded from the regression model due to a linear collinearity with the variable FARMOWNERSHIP in SPSS. The results of the regression analysis indicate that access to markets is not significantly related to the gross farm income of the projects. Access to markets is a key component of running a profitable business and this is one of the requirements for a Recap grant. It is, therefore, concerning that it is not significant, as this suggests that an important component of Recap has little effect on the economic sustainability of the projects.

The high significance level in the amount of Recap grant received by the projects (RECAPGRANTREC) may indicate that a start-up capital for these emerging farmers is important for the success of their projects as many are resource-poor and have no means of purchasing the necessary production inputs. The significance of the type of land reform programme (TYPELANDREF) on agricultural income can be explained by the funding bias that was noted by DPME (2013) towards certain land reform project types, such as LRAD and PLAS farms, with PLAS farms seemingly receiving preferential treatment in terms of funding.

To test the goodness of fit, a multivariate test was done and the outcome is presented in Table 6.3, which indicates the  $p$ -value to be 0.026. This result means the  $p$ -value is significant at 5 % level of significance, implying that the model is a good fit for the data used in the analysis.

**Table 6.3: Multivariate test**

Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	0.506	23.149	12	0.026

Source: Survey Data (2013)

### 6.3.1 Discussion of the factors influencing agricultural income of the RECAP projects

**Table 6.4: Factors influencing agricultural income for Recap projects**

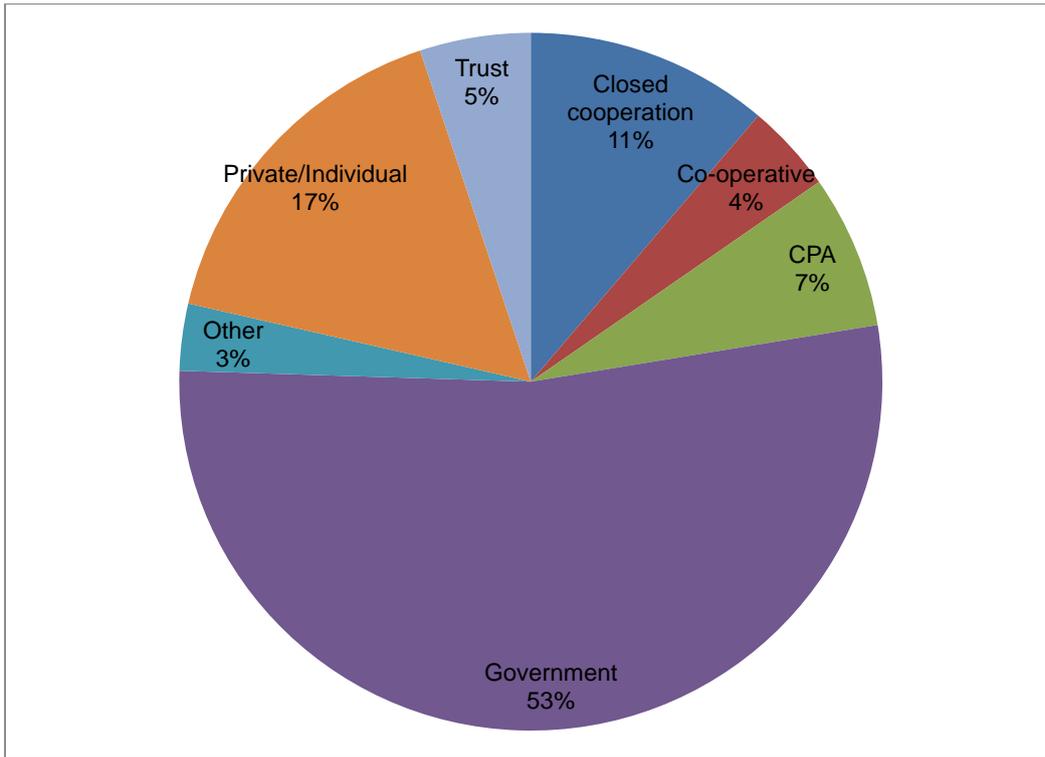
Group Statistics		
Agricultural Income Groups	Variables	Mean
Agricultural Income ≤ R500 000.00	TYPELANDREF	2.89 (1.132)
	TOTALRECAPREC	1174309 (1888623)
Agricultural Income > R500 000.00	TYPELANDREF	3.71 (2.289)
	TOTALRECAPREC	3342857 (2693113)
Total	TYPELANDREF	3.02 (1.388)
	TOTALRECAPREC	1535733 (2165266)

Figures in parenthesis are standard deviations

Source: Survey Data (2013)

#### a) Land reform/land acquisition types

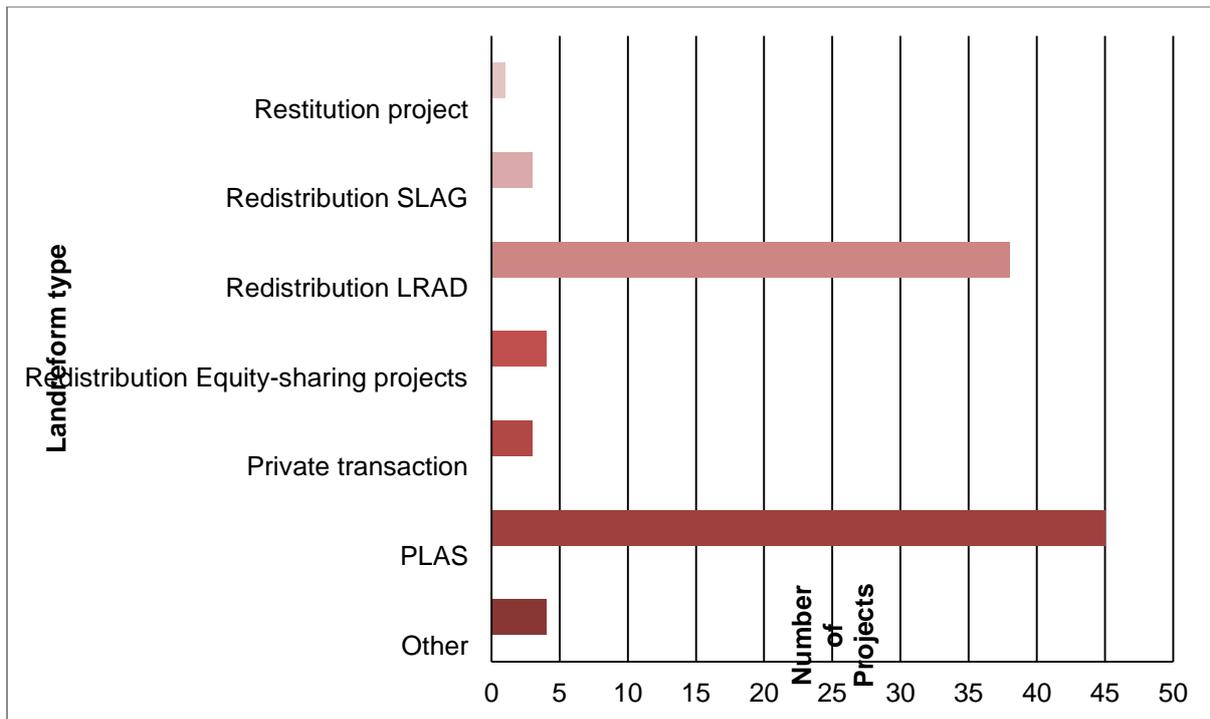
The results of the study indicate that category 2 farms (potentially sustainable group) comprise more PLAS projects than LRAD projects. Overall, of the 98 projects that were evaluated, results indicated that the majority of the farms in categories 1 and 2 are owned by the government and leased to the beneficiaries (PLAS farms) (Figure 6.1). Other legal entities, such as the Communal Property Associations (CPA), also fall under government, while the Trusts, Cooperatives and the Close Corporations consisted of both private and government owned properties. Overall, the state owned more than 60% of the projects included in sample.



**Figure 6.1: Legal entity of the projects**

*Source: Survey Data (2013)*

Although Recap assistance is available for all types of land reform projects, the results indicate that the majority of the farms that were evaluated were PLAS farms, accounting for 46% of all the projects. These were followed by LRAD farms at 39%, and the rest of the other land reform projects accounting for 15% of the sampled projects (Figure 6.2).



**Figure 6.2: Number of projects by land reform type/acquisition**

Source: Survey Data (2013)

When it comes to potential for economic sustainability of the projects, PLAS farms were better off than LRAD farms. According to a study by Coetzee and Machethe (2011), one of the barriers to the full participation of smallholder farmers in commercial farming is not having a title deed to the land that they are producing on. Accordingly, they are not able to use the property as security for money which needs to be borrowed to purchase equipment for production. This, however, was not the case with Recap projects, as there seems to be more funding channelled towards PLAS projects than LRAD projects, even though DPME (2013) indicates that the land reform projects portfolio consists more of LRAD (47.4%) projects than PLAS (36.5%) projects.

A report by DPME (2013) indicated that provincial budget allocations for North West province was R86 million for funding of PLAS farms for the 2013/14 financial year, while LRAD farms were allocated R40 million. Gauteng province received a R60 million allocation for LRAD and R93 million for PLAS, but ended up overspending by R24 million on LRAD, and R127 million on PLAS projects, for the same financial year. As compared with other programmes, both PLAS and LRAD farms are at an advantage over other projects that are being funded by Recap.

With PLAS farms receiving preferential treatment, PLAS projects have greater advantage for being more economically viable than other farms, as indicated by the results of this study. The reason could be that, since Recap is more of an infrastructure-focused programme than development, the state is reluctant to spend huge amounts of money on property that they have no control over, as is the case on LRAD farms, unless the title deeds of the farms are endorsed so as to prevent beneficiaries from selling the farms within a certain period of time. This would allow the government to utilise their investments on these privately owned properties.

#### **b) Total amount of grant received**

Financial constraints on smallholder farmers are said to be among the contributing factors to low productivity of farms (Machethe *et al.*, 2004; Kirsten & Machethe, 2005). This challenge has been observed frequently on land reform farms. Mapholi *et al.* (2014) also observed lack of financial support as being a contributing factor to failure of land reform agricultural projects in the Ngaka Modiri Molema District of North West Province.

The amount of Recap grants received by the projects assisted these resource-poor farmers to purchase machinery, production inputs and refurbish or build structures important for running their enterprises. For example, poultry projects were able to build broiler structures with a capacity of 25 000 birds/cycle in the North West province, while those farming with pigs in the Free State province could afford to purchase an abattoir. Land reform agricultural projects often experience difficulty in accessing loans/credit, and the Recap grant alleviates this problem. However, the inability of the projects to access formal finance means that they become wholly dependent on Recap financially. Considering that Recap has a maximum of five phases of assistance to beneficiaries, projects which are not able to access other sources of finance are likely to collapse when the programme terminates at the end of the five development stages. This means that it is crucial for beneficiaries to make profit from agricultural production and re-invest the dividends into their projects so that production continues in subsequent seasons. Off-farm income can also play a role in the beneficiaries'

livelihoods, as that would mean there is more than one source of income. However, as it stands, this has not been the case for some Recap beneficiaries as their projects are the only source of income. This suggests that the sustainability of such projects is under threat.

The Recap programme consists of two functions, namely the recapitalisation function and the development function. Projects can be assisted in both or one of the functions. Those assisted through the development function only are sometimes faced with challenges of securing funds required to purchase production inputs. The revised Recap policy indicated that the programme does not necessarily assist in all five phases; therefore, being a beneficiary does not mean one is entitled to financial assistance in all of the five phases (DRDLR, 2013).

## **CHAPTER 7**

### **SUMMARY, CONCLUSIONS AND POLICY IMPLICATIONS**

#### **7.1 Introduction**

A summary of the dissertation, conclusions and implications for policy interventions are presented in this chapter.

#### **7.2 Summary**

##### **7.2.1 Background of the study**

The land reform programme in South Africa is aimed at achieving political and economic transition; hence the redistribution of land to the previously disadvantaged groups and implementation of post settlement support to land reform projects by the government. There has however, been challenges with economic sustainability of the projects benefiting from these programmes, among those is the Recapitalisation and Development Programme. This study assessed the potential of Recap projects for economic sustainability.

##### **7.2.2 Methods and procedures**

The study targeted land reform projects that had benefited from the Recapitalisation and Development Programme from its inception in 2010, up to June 2012. The study area include six provinces, namely, Eastern Cape, Gauteng, Free State, KwaZulu-Natal, Limpopo and North West. A total of 98 projects were randomly selected and both at primary and secondary data were used for the study.

The empirical data analysis was based on both primary and secondary data used in the implementation evaluation of the Recapitalisation and Development Programme (from its inception in 2010 to June 2012) by the Postgraduate School of Agriculture and Rural Development of the University of Pretoria. Projects that benefited from Recap were divided into (potentially) economic sustainable and not sustainable. The factors influencing the economic sustainability of the projects were identified and

discriminant function analysis was performed to identify factors separating sustainable and not sustainable projects.

### **7.3 Major findings of the study**

#### **7.3.1 Measure for potential economic sustainability**

The income from agricultural production was found to be an appropriate indicator of the potential for economic sustainability of the land reform projects. Projects that were making gross incomes of less than R500 000 per annum were found to be non-viable. This was because the income generated could not cover the operational expenses of the projects. This meant that some projects were operating at a loss, while some could not break even, although they were making income. Of the 98 projects that were evaluated, 71 projects are under category 1 group (non-viable) and the remaining 27 were in category 2 (viable).

#### **7.3.2 Factors distinguishing economically sustainable projects and non-economically sustainable projects**

The results of the discriminant function analysis showed that five predictors explained the difference between the two groups of projects benefiting from Recap. These were amount of Recap funding received, market access, strategic interventions, access to credit and the type of project land acquisition.

- a) **Recap funding:** The amount of Recap grant already received by the projects contributed the most to the prediction of group membership. The results of the study illustrated the significant role played by the amount of Recap grants received by the projects, and that with inadequate finance coming to the fore, there is a need for DRDLR to work together with other departments, such as DAFF, that have programmes through which loans are provided, such as MAFISA, to smallholder farmers without collateral. It may be not sustainable to provide huge amounts of grants to land reform agricultural projects in the near future, and therefore access to sources of finance other than Recap (DRDLR) is crucial for land reform beneficiaries. Strong partnerships with other

institutions that offer soft loans to small-scale farmers may be established. The state may also provide an enabling environment for the private sector to bridge the gap by making the environment conducive for credit facilitation. The government's commitment to support farmers will encourage the private financial sector to also play a role. It is, however, important that the loan and or grant recipients are able to account for the money used in the projects, with the help of their mentors and or financial advisors.

**b) Market access:** Market access is important for commercialisation. There is a need for government to create a conducive environment for participants, especially for new participants, to access modern markets. There is an argument that if small-scale farmers were to improve the quality and consistency of their production through factors such as skills development, they might be included in modern markets, subject to their overcoming physical access constraints. Established markets will purchase from them, as long as they meet mandatory specifications and quality requirements. Recap beneficiaries faced challenges such as meeting the requirements set by established markets; some did not have transport to take their produce to the markets. There is a need for collaboration by various government departments such as Department of Agriculture, Forestry and Fisheries which has a specialised marketing directorate and also the National Agricultural Marketing Council with their expertise to assist with market-related issues, whether it be identifying or actually linking projects to markets. Government may therefore strengthen the formal market linkages of these projects, as most of them use informal markets to generate income. This, however, does not mean that informal markets must be neglected, but rather they should also be supported to ensure their expansion and development of higher standards of services to customers. Policies should be aimed at establishing additional market places (such as a hub). These areas would increase market participation, as sellers would be able to meet at the nearest common place, thereby lowering transaction costs.

- c) Strategic interventions:** The results indicated that projects with potential of economic sustainability had either mentorship or a strategic partner involved. The skills that these strategic interventions bring to projects can play a crucial role. Therefore, accredited mentors or strategic partners must be assigned to relevant projects that are related to the skills they possess, and they should not see the programme as a means of making a quick income. A healthy working relationship is also important between beneficiaries and strategic partners, meaning that the beneficiaries must be able to choose their partners from an accredited list, but they should also be advised accordingly so that they do not feel that the DRDLR imposes these partners on them, as this may cause conflicts in the management of the project.
- d) Access to credit:** Financial support in the management of the farm is an important; hence, access to sources of finance other than RECAP (DRDLR) is crucial for land reform beneficiaries. A majority of the projects under non-sustainable group indicated that they struggle accessing loans from formal financial institutions. This may mean that projects which are in the planning phase may not start with any major agricultural activities because of lack of funds to purchase production inputs. This goes back to department working together to improve agricultural funding.
- e) Type of project land acquisition:** The post-settlement support programme of the Department of Rural Development and Land Reform, namely Recap, is made available to all agricultural projects or farms of the previously disadvantaged groups. The results indicated that the redistributed farms performed better than restitution farms did in terms of project viability. This could be attributed to the funding bias towards certain types of land acquisition such as PLAS projects seeming to be budgeted more than other types of acquisition.

## 7.4 Conclusions

- *The majority (72%) of the Recap projects did not indicate potential for economic sustainability.* Some projects were not yet producing at the time of the evaluation, but with adequate support, the projects could achieve the programme's objectives. The programme is aimed at increasing farm productivity, creating jobs, alleviating poverty, etc., and much still needs to be done for projects to achieve such outcomes. The method in which the Recap support is channelled may need to be re-looked so as to achieve both the economic and social sustainability of the projects.
- *The difficulties with accessing markets and loans posed a greater challenge for the Recap projects to stay in business.* A study by van der Heijden (2013) indicated that most smallholder and emerging farmers in Africa face similar obstacles, such as market access, skills development and limited access to finance and or credit. This lack of important farmer support services may mean that, regardless of the amount of capital injected into the projects, the achievement of economic sustainability may be compromised.
- *The amount of Recap funding is a key determinant of economic sustainability of the projects.* This suggests that more projects will need to be funded in the future to increase the number of sustainable projects. The challenge will be to ensure that such projects continue to function profitably without depending on Recap funding.

## 7.5 Implications for policy

The findings of the study have several implications for policy. Although the study has focused on six provinces, the results can be generalised to Recap project sustainability in all of the nine provinces of South Africa.

- The challenges such as access to output markets which is core for any business indicates that there is a need to address and strengthen this issue in

policy making. Training of farmers on market related issues may assist Recap projects in choosing relevant enterprises for the regions they are in and also know

- As inadequate funding in agriculture comes to the fore, policy decision on developing the sector may need to look into ways in which the supply of funds may also be made available by private sector together with the government. It may not be feasible for the government to be the only source of funding in post settlement support of the land reform projects.

### **7.6 Recommendations for future research**

The study used agricultural income as a proxy for profit to analyse the economic sustainability of the projects. Future research may address this weakness by including data collected over a period of time and use financial statements of the projects in question.

The sampled projects included projects which have not yet received funding (planning stage) and those in the implementation stage (already received funding. This means the comparison might not have been a fair one. The study could therefore not clearly distinguish between projects that are not sustainable because they have not yet received funding or not sustainable because the projects were not managed properly. It may be beneficial to explore in future research projects that have gone through all the five phases of the programme and see additional factors explaining the difference between sustainable and non-sustainable groups.

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## APPENDIX A: DETAILS OF THE SELECTED PROJECTS BY PROVINCE

**Table 1: Details of selected projects in the Eastern Cape**

District Municipality	Local Municipality	Project	Rural/Urban	Strategic Partner / Mentor	Type of mentor / strategic partner	Enterprise	Implementation status
Cacadu	Sunday River	Kommando Kraal	Rural	Bono (Pty) Ltd	Corporate	Citrus (oranges)	Planning
		Nebraska	Rural	Bono (Pty) Ltd	Corporate	Citrus (oranges)	Production
Amatole	Amahlati	Jojo Farming	Rural	University of Fort Hare	Academic	Poultry	Production
	Buffalo city	Portion 4 of Montra Farm	Urban	Farmer	Individual	Tomatoes	Planning
	Buffalo city	Siyavuselela Agricultural Cooperative	Urban	Farmer	Individual	Tomatoes	Production
OR Tambo	Ngquza Hill	Magwa Tea Cooperative	Rural	None		Tea	Planning
Ukhahlamba	Sengu	Lanflo Project	Rural	Imbumba Beef Production n (Pty) Ltd	Cooperative	Beef cattle sheep	Production
		Malibuye farmers Trust	Rural	Imbumba Beef Production n (Pty) Ltd	Cooperative	Beef cattle, sheep	Production
	Maletswai	Vezemafa CPA	Rural	Imbumba Beef Production (Pty)	Cooperative	Beef cattle, sheep	Production

**Table 2: Details of selected projects in the Free State**

District Municipality	Local Municipality	Project	Rural / Urban	Strategic partner / mentor	Type of mentor / strategic partner	Enterprise	status of implementation
Xhariep	Kopanong	Pro-Active Brandewynskuil	Rural	Dipalemo	Corporate	Cattle, sheep	Production
	Kopanong	Pro-Active Vlakwater	Rural	Dipalemo	Corporate	Cattle, sheep	Production
Lejweleputswa	Masilonyana	Pro-Active Fonteinloop	Rural	Dipalemo	Corporate	Maize	Production
	Matjhabeng	Thakamakgoa	Rural	Grain SA	Corporate	Maize, sunflower	Production
	Tokologo	Pro Active Kroomspruit	Rural	Two Roads	Corporate	Beef cattle,	Implementation
	Tokologo	Pro Active Korrelkop	Rural	Two Roads	Corporate	Maize	Implementation
	Tswelopele	Dabulamanzi	Rural	Farmer	Individual	Maize, potatoes, cattle	Production
	Nala	Mafabatho	Rural	Grain SA	Corporate	Maize, sunflower	Production
	Matjhabeng	Gelukspan	Rural	Agridelight	Corporate	Poultry (broilers)	Production
		Pro-Active Uitkyk	Rural	Dipalemo	Corporate	Beef cattle	Production
Motheo	Mangaung	Pro-Active Vergezicht	Urban	Grain SA	Corporate	Maize, Sunflower	Production
		Pro Active Gelukshoek	Urban	Bloemfontein Abattoir	Corporate	Maize Sunflower	Production
		Pro Active Cecilia	Urban	Bloemfontein Abattoir	Corporate	Beef cattle	Production
	Thaba Nchu	Pro Active Eaton	Urban	Dipalemo	Corporate	Maize Sunflower	Production
	Mangaung	Swartkoppies	Urban	Bloemfontein Abattoir	Corporate	Beef cattle	Production

Thabo Mofutsanyana	Setsoto	Pro Active Astoria	Rural	Grain SA	Corporate	Maize, sunflower	Production
	Setsoto	Zoopjefontein farm	Rural	Bloemfontein Abattoir	Corporate	Beef cattle	Production
	Dihlabeng	Pro Active Spioenkop	Rural	VKB	corporate	Beef cattle	Implementation
	Nketoana	Pro Active Bronkhorstfontein	Rural	VKB	Corporate	Maize, sunflower	Production
Fezile Dabi	Moqhaka	Pro Active Zandfontein	Rural	Dipalemo	Corporate	Maize, Sunflower	Production
	Ngwathe	Heilbron	Rural	Renosterri vier	Corporate	Poultry	Production
	Ngwathe	Itekeng	Rural	Agridelight	Corporate	Livestock	Production

**Table 3: Details of selected projects in Gauteng**

District Municipality	Local Municipality	Project	Rural/ Urban	Type of mentor/strategic partner	Enterprise	Status
Ekurhuleni Metro	Boksburg	Siyavuna	Urban	Individual	Vegetables	Planning
	Mid-Vaal	African Plant Biotechnologies	Rural	None	Vegetables	Planning
	Vanderbijl Park	Vlakplaas 53	Rural	None	Maize, layers	Production
	Emfuleni	Blesbokfontein	Rural	Individual	Maize, Pigs	Production
	Sedibeng	Lesedi	Leeuwfontein (Portion 11)	Rural	Individual	Beef Cattle
City of Tshwane	Tshwane North	Kromdraai portion 38	Urban	Individual	Pigs	planning
	Nokeng tsa Taemane	Bubis Trading	Rural	Individual	Maize, Sweet potatoes	Production
	Metsweding	Kungwini	Vaalbank occupiers (Inkanyiso Trust)	Rural	Individual	Maize, Sweet potatoes
	Randfontein	Daba	Rural	Individual	Beef Cattle, sheep and goats	Production
	West Rand	Westonaria	Bambanani Fruits BEE	Rural	Individual	Peaches, plums and apples

**Table 4: Details of selected projects in KwaZulu-Natal**

District Municipality	Local Municipality	Project	Rural/Urban	Type of Strategic partner/mentor	Type of mentor/strategic partner	Enterprise	Implementation status
Sisonke	Ingwe	Kwazamani farm	Rural	Illovo Sugar Company	Corporate	Sugarcane	Production
	Ubuhlebesia	Mjila	Rural	Illovo Sugar Company	Corporate	Sugarcane	Production
Umgungundlovu	Mpofana	Hlanganani	Rural	Agribusiness Development Agency	Corporate	Vegetables	Planning
	Mkhambathini	Valsch River	Rural	Farmer		Citrus	Planning
	Ndwendwe	Malungisa Sugar farm	Rural	Tongaat Hulett Sugar Company	Corporate	Sugarcane	Production
		Kwabinda/Ptn 13&15 Sprowston	Rural	Tongaat Hulett Sugar Company	Corporate	Sugarcane	Production
		Aubrey Laing cc	Urban	Tongaat Hulett Sugar Company	Corporate		Production
	Kwadukuza	Sentara Investment CC	Rural	Tongaat Hulett Sugar Company	Corporate	Sugarcane	Production
		Gumbi and Family Cane Farm CC	Rural	Tongaat Hulett Sugar company	Corporate	Sugarcane	Production
	Umlazi	Khanya Kude Sugar Estate	Rural	Gledhow Sugar company	Corporate	Sugarcane	Production
Ugu	Vulamehlo	Equeefa-Majola	Rural	Illovo Sugar Company	Corporate	Sugarcane	Production
		Nqobile Sugar Estates	Rural	Illovo Sugar Company	Corporate	Sugarcane	Production
		Dlala Farm	Rural	Illovo Sugar Company	Corporate	Sugarcane	Production
		Thembinkosi Farm	Rural	Illovo Sugar Company	Corporate	Sugarcane	Production

		Zwide Sugar Estate	Rural	Illovo Sugar Company	Corporate	Sugarcane	Production
Zululand	Abaqulusi	Liberty farmers co- op	Urban	Farmer	Individual	Maize, dairy cattle	Production
Amajuba	Newcastle	Nizenande	Urban	Farmer	Individual	Poultry	Implementation
	Ntambanana	Needmore project	Urban	Tongaat Hulett Sugar Company	Corporate	Sugarcane	Production
Amajuba	Ntambanana	Isibusiso Project	Rural	Tongaat Hulett Sugar company	Corporate	Sugarcane	Production
	Umlalazi	Magalela farm	Rural	Umfoloji Sugar company	Corporate	Sugarcane	Production
	Umfoloji	Ekusasalet hu/Jengro Estate	Rural	Umfoloji Sugar Company	Corporate	Sugarcane	Production
	Mbonambi	Nsombosi	Rural	Umfoloji Sugar Company	Corporate	Sugarcane	Production
Umkhanyakude	Mtubatuba	Mokana	Rural	Umfoloji Sugar Company	Corporate	Sugarcane	Production
Uthukela	Umtshezi	Sunnyside farm	Rural	Farmer	Individual	Sugarcane	Production

**Table 5: Details of selected projects in Limpopo**

District Municipality	Local Municipality	Project	Rural/Urban	Type of Strategic partner/mentor	Enterprise	Implementation Status
Capricorn	Polokwane	African Indian vegies	Rural	Individual	Vegetables; goats	Production
		Nakatha	Rural	Joint Education Project	Broilers	Production
	Blouberg	Matlabeke	Rural	Farmer	Beef cattle, goats, game, poultry	Production
Waterberg	Lephalalele	Ditlou le Dinare	Rural	Farmer	Layers, vegetables, Lucerne	Production
	Lephalalele	Babirwa	Rural	None	Vegetables, beef cattle and layers	Production
	Belabela	Molefi Trust	Rural	None	Beef cattle, goats	Production
	Mookgopong	Ndilo – Muthathe	Rural	Farmer	Beef cattle and game	Production
Vhembe	Makhado	Kharishume Poultry	Rural	None	Poultry, maize, vegetables	Planning
Mopani	Greater Tzaneen	Kwena Projects	Rural	Farmer	Maize, goats, bananas, mangoes (sub-tropical)	Production
		Makatleni Trust	Rural	Farmer	Mangoes and avocados	Production
		Machimana Trust	Rural	Farmer	Broilers, mangoes	Production
	Letaba	Modderspruit Forestry Project	Rural	Farmer	Forestry	Production
Sekhukhune	Elias Motsoaledi	Kopano disabled primary co-operative	Rural	Farmer	Vegetables	Production

**Table 6: Details of selected projects in North West**

District Municipality	Local Municipality	Project	Rural / Urban	Type of Strategic partner / mentor	Type of strategic partner / mentor	Enterprise	Implementation status
Bojanala	Madibeng	Hartbeespoort 166	Rural	Stanford Holdings	Corporate	Beef, maize, poultry and vegetables	Implementation
		Hartbeespoort 780	Rural	Stanford Holdings	Corporate	Beef cattle, vegetables	Planning
		Hartbeespoort 876	Rural	Farmer		Broilers, vegetables	Implementation
		Mosaikwena	Rural	Stanford Holdings	Corporate	Horticulture	Production
	Koster	Shumani Broiler Production	Rural	Agri-delight	Corporate	Poultry	Production
	Kgetleng	Khuphuka- Salga Projects	Rural	Agri-delight	Corporate	Poultry, beef cattle	Production
Dr Kenneth Kaunda	Matlosana	Tshwaragana ng	Rural	Stanford Holdings	Corporate	Beef cattle	Planning
		Mojakhomo Project	Rural	Agri- delight	Corporate	Poultry	Production
	Ventersdorp	Morgenzon	Rural	Stanford Holdings	Corporate	Maize and	Production
Ngaka Modiri	Ditsobotla	Kliplaagte	Rural	None		Beef cattle, sheep, maize and sunflower	Production
		Vaalbank	Rural	Stanford Holdings	Corporate	Maize, sunflower, beef	Production
	Tswaing	Bamboo Rock	Rural	Farmer	Individual	Maize, sunflower	Planning
		Vukandukuzempi Security	Rural	None		Maize, sunflower, beef cattle	Production
		Batuka Farming Project	Rural	Farmer	Individual	Beef cattle	Production
Dr. Ruth S. Mopati	Molopo	Montana	Rural	Bloemfontein Abattoir (terminated)	Corporate	Beef cattle, game	Production
		Rochele	Rural	None		Beef cattle, sheep, goats and horses	Planning
		Soetasbes	Rural	Farmer	Individual	Beef cattle	Implementation
Dr. Ruth S. Mopati	Taung	Reilvilo	Rural	Agri-delight (after terminating Bloemfontein Abattoir)	Corporate	Beef cattle, sheep and goats	Production
		Kgomo Bokamoso Coop (Panfontein)	Rural	Agri-delight (after terminating Bloemfontein Abattoir)	Corporate	Beef cattle, sheep and goats	Production