An Exploration into the Opportunities and Barriers of Vegetable Production as a Poverty Reduction Strategy for Small Scale Farmers: Evidence from a Case Study in Nqutu, KwaZulu-Natal, South Africa

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Abstract

Since South Africa's democratic transition poverty, especially in terms of income, has persisted. Poverty reduction strategies must focus on closing the gaps of current policies which miss the poorest. Specifically, attention must be paid to those living in rural areas. While the use of agriculture as a poverty reduction strategy was envisioned by government as one of the key components of land reform and rural advancement, its potential has been limited as South Africa agriculture in the post-apartheid era is challenged with providing opportunities and support for small-scale farming systems.

It was thus the aim of this dissertation to address part of this crisis by engaging with small-scale farmers in an attempt to understand the barriers and opportunities that they confront when accessing inputs needed for agricultural production that contributes towards their livelihoods. This was explored through a case study in which two focus groups and ten qualitative interviews were conducted. Through this it was found that land is being used productively by resource poor farmers as a pathway from poverty. The inability to purchase fencing and the lack of easy access to water proved to be the two most significant barriers to crop production while accessibility to seeds was found not to be an issue when controlling for financial limitations. Opportunities arose as respondents relied on interdependent relationships between the different assets in their possession. Overall, it was concluded that with a more appropriate support system which focused on overcoming the lack of information and resources, as well as the lack of services and infrastructure productivity could improve giving small farmers the potential to make a larger contribution to reducing poverty.

Dedication

I would like to dedicate this thesis to my grandmother Dorothy Osborne Hinkley who is endearingly known as T-MA. Without her love and support I would not have been able to study in South Africa. I am blessed to have her as my grandmother. I will forever appreciate everything she has done to make this possible! I aspire to match her level of energy and adventure when I am older. I love you T-MA!

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It is imperative that I thank the African Cooperative Action Trust organization for giving me their time and access into Nqutu. Without this I would still be struggling to find a study site! I could never thank you enough. Keep up the good work!

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To all my fellow colleagues that I have met throughout the duration of the program: you are all the most wonderful caring people I have come across. You have stopped me from losing complete faith in the world! Thanks for your love!

Declaration

I, Ariel Elizabeth Bright, declare that

(i) The research reported in this dissertation, except where otherwise indicated, is my original work.

(ii) This dissertation/thesis has not been submitted for any degree or examination at any other university

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Signed: Ariel Bright.....
Date: 27/5/09.....

- Submitted in partial fulfilment of the requirements of the degree of Masters in Development Studies in the School of Development Studies, University of KwaZulu-Natal, Durban.

- As the candidate's Supervisor I have approved this dissertation/thesis for submission
Name:

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List of Abbreviations

ACAT:	Africa Cooperative Action Trust
CASP:	Comprehensive Agricultural Support Programme
CDE:	Centre for Development and Enterprise
CMC:	Community Management Committee
DLA:	Department of Land Affairs
DOA:	Department of Agriculture
FAO:	Food and Agricultural Organization
GEAR:	Growth, Equity, and Redistribution
GDP:	Gross Domestic Product
KZN:	KwaZulu-Natal
LARP:	Land and Agrarian Reform Project
LRAD:	Land Redistribution for Agricultural Development
NDA:	National Department of Agriculture
NGOS:	Non-governmental Organizations
PRA:	Participatory Rural Appraisal
RDP:	Reconstruction and Development Programme
SAP:	Sustainable Agriculture Programme
SL:	Sustainable Livelihoods
Stats SA:	Statistics South Africa

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Chapter One: Introduction

1.1 Introduction: The Importance of Agriculture as a Poverty Reduction Strategy in South Africa

Even though it has been more than a decade since South Africa's democratic transition poverty, especially in terms of income, has persisted (Leibbrandt *et al.* 2005). Furthermore general growth in inequality indicates that there is little hope for those on the bottom left behind in the country's post-apartheid transition (Leibbrandt *et al.* 2005). Unfortunately, there are numerous factors such as the extremely high rates of unemployment and HIV/AIDS within the backdrop of current global economic policies and international trends that leaves one questioning the possibility of change. The global food crisis is also a reality that the country faces as rising food prices further threaten the poor. Within this context, the identification and assessment of strategies of poverty reduction that include the production of food becomes of critical importance.

In South Africa, the role of agriculture on poverty reduction becomes particularly important as the country's poverty profile, taken from a census using data from 1996 to 2001, revealed that both inequality and poverty is persistent and severe throughout the country, and that there are distinct patterns of poverty cutting across geographical, racial, and gender divides (Leibbrandt *et al.* 2005). Overall, there appears to be a policy gap which misses the poorest. Poverty reduction strategies must therefore focus on closing the gaps of current policies, along with improving implementation and the use of resources. In general policy emphasis must be placed on targeting the needs of the poorest. Specifically attention, despite being more costly and difficult, needs to cut across geographical and gender divides. Thus where over 70 percent of all poor people live in rural areas and nearly half of these people are chronically poor, strategies for rural poverty reduction become of utmost importance in South Africa (Aliber 2003). Furthermore, a significant amount of South African rural households engage in agriculture (Shackleton, Shackleton, and Cousins 2001). The role of agriculture therefore has the potential to address this policy gap, and through land reform tackle the structural underpinnings of poverty and inequality as the past saw the majority of South Africans being systematically stripped and deprived of their asset-base (May and Roberts 2000).

It is within this context that the role of agriculture as a poverty reduction strategy becomes imperative to assess and this is the research problem to be address by this dissertation. In general, the more dynamic and inclusive the agricultural sector is, the more it could reduce rural poverty while increasing food security (World Bank 2007). Empirical and theoretical evidence have demonstrated that growth in agriculture leads to pro-poor growth as it has a disproportionately positive impact on poverty levels and pro-poor effects (Irz *et al.* 2001, Mellor 1999 cited in Wegerif 2004). Growth in agriculture has also been found to be more effective in reducing poverty than non-agricultural growth (World Bank 2007, Valdes and Foster 2005). This occurs through both direct and indirect contributions to poverty reduction and interventions that facilitate this, including through training and the provision of inputs, which are thus important areas for research. This dissertation will explore the impact on small-scale agricultural production made by one such intervention undertaken by an NGO located in KwaZulu-Natal, South Africa.

1.2 Rationale for Study: Agriculture and Land Reform in South Africa

It comes as no surprise that given the importance of the role of agriculture, within the backdrop of South Africa's historical legacy of land dispossession where those classified as black were prohibited from owning 87 percent of their land, denied the opportunity to own farms or other tangible property, and forced to live on "native reserves" where their underdevelopment and neglect by government was structurally linked to wealth in white urban areas, land reform has been a national priority from the onset of the democratic transition in 1994 (Terreblanche 2002, Aliber 2003). It is within this context that land becomes an important resource providing opportunities for livelihoods, as well as opportunity for residency, and security as an asset resulting in potential use for rural poverty reduction.

The Land Reform Program aims to return land to those who had been denied land based on racially discriminatory laws and to transfer ownership of land in the former homelands from the state to the people who lived on that land and had legitimate right to it. The Program comprises of three components: restitution, land redistribution and land tenure reform (Turner and Ibsen 2000). Immediately post-1994 the Reconstruction and Development Program (RDP) identified land reform as key for meeting basic needs, and set a specific target of redistributing 30 percent of agricultural land within five years. The redistribution has involved the provision of a Settlement/Land Acquisition Grant of R16, 000 equal to the basic housing grant. However, by 1999 less than 1 percent of the country's commercial farmland

was approved for redistribution (Lahiff 2001). The slow delivery provoked claims that land reform was not working and several reviews of the original policies have resulted in more flexible strategies. By 2005, the estimated number of land redistribution and land tenure beneficiaries had reached 100 000 with a further 245 000 restitution beneficiaries (May, et al 2009.

The new democratic government's initial policy documents in the Reconstruction and Development Program (RDP) viewed land reform as being the central driving force behind rural development as it was believed to be essential for meeting basic needs (African National Congress 1994; 19-20). This is supported by the Department of Land Affairs (DLA) White Paper which provides detailed economic arguments for land reform and the link to poverty alleviation (Lahiff 2007). The most important arguments within the context of poverty alleviation stem around household food security providing access to sufficient food on a regular basis, the creation of jobs, and the expanding of smallholder agriculture which could increase rural incomes by giving households the opportunity to engage in productive land use (DLA 1997 cited in Lahiff 2007). Overall, this stimulation of the rural economy through land reform is envisioned by government to result in the development of "small, medium, and large farms which promotes both equity and efficiency through a combined agrarian and industrial strategy in which land reform is a spark to the engine of growth" (DLA 1997, 14).

1.2.1 Limitations to Land Reform: Inadequate Access to Support Services

In reality, the land reform program has yet to make a significant difference in the lives of rural South Africans. Existing policies have yet to bring about expected transformation of landholding (Kepe and Cousins 2002). There are severe limitations preventing the promising potential of this program. For instance, initially, the RDP suggested polices falling outside of the neo-liberal economic approach. However, this quickly disappeared as the government, in line with global economic policies and international trends adopted a market-based approach to land reform (Wegerif 2004). Thus the White Paper on South Africa Land Policy first implemented an approach where land would be acquired through purchases at market rates from owners who agreed to sell. It was therefore demand-led leaving a minimal role for the state. This first redistribution program was structured around the Settlement/Land Acquisition Grant (Wegerif 2004).

In 2000, the Land Redistribution for Agricultural Development (LRAD) program took over, and removed poverty as a criterion for beneficiary selection as its focus became on creating black commercial farmers requiring beneficiaries to make their own contribution to projects (Wegerif 2004). This shift was in line with the government's shift in broad economic policy, as witnessed under the Growth, Employment and Redistribution (GEAR) plan which advocated for a more market- and investor friendly focus (Wegerif 2004).
This approach has gone under criticism as it has been argued that it will not benefit small producers and the rural poor as only a small minority of the black elite who are able to access the market and the opportunities of the land reform program will benefit (Tilley 2002 cited in Wegerif 2004). Further, it is argued that this approach will not allow the government to meet their targets for redistribution of land, or shift the basic structure of agriculture. To date, the program has not yet delivered at the scale and speed expected, nor involved the very poor, thus alienating potential new entrants.

Within the context of a shift in government policy another major problem is the lack of, and inadequate access to support services available once land is received by the beneficiaries. This includes inadequate access to inputs for crop production, along with insufficient access to outputs such as markets. This creates a huge problem as small-scale farmers need support since incomplete markets and institutional gaps jeopardize their survival (World Bank 2007, Jacobs 2003, Rother, Hall and London 2008, Lahiff *et al.* 2008). This is especially true in South Africa where agriculture in the post-apartheid era is challenged with providing opportunities and support for small-scale farming systems (Rother, Hall and London, 2008, Vink and Kirsten, 2003).

While this challenge has been undertaken by the DLA's land reform program, and the national and provincial departments of agriculture, the results have proven to be insignificant as there has been poor co-planning and coordination amongst the departments along with an insufficient amount of post-transfer support for those hoping to farm which has been extensively documented (Andrew, Shackleton, Ainslie 2003, Hall and Lahiff 2004, Jacobs 2003, Jacobs, Lahiff, Hall 2003).

Although discussed in finer detail in chapter three, these documented cases highlights small-farmer's difficulties in trying to obtain inputs for crop production whether they are recent beneficiaries of a land transfer or improved tenure rights, or existing farmers in the rural areas

of the former homelands. This includes for instance issues where small-farmers are unable to attain access to credit systems in order to purchase inputs and fixed capital improvements which are essential for sustainable production and the ability to generate income (Lugemwa and Darroch 1995 cited in Fenwick and Lyne 1999, Griffin, Khan, Ickowitz 2001, DLA 1998 cited in Jacobs 2003, Borras 2003). Further, the provision of extension services has proven to be inadequate, under-funded, and is directed towards the needs of the emerging commercial farmers (Jacobs 2003). Additionally, as inefficiencies in the input markets developed in the private sector access to seeds, fertilizer, pesticides, and herbicides proves to be limited for small-scale farmers, particularly for those who grow non-commercial crops. This has proven to reduce productivity for small-scale farmers in South Africa (Rother, Hall, and London 2008, Andrew, Shackleton, Ainslie 2003, Fenwick and Lyne 1999). Along with input markets the lack of infrastructure in the former homeland areas means that many small-scale farmers and land reform beneficiaries are without access to municipal services such as water, sewerage, electricity, and roads (Jacobs 2003).

1.2.2 Accounting for the Potential of Appropriate Post-Settlement Support: Countering the Centre for Development and Enterprise Report

Despite the depth and magnitude of documented evidence of the insufficient amount of post-transfer support which renders it nearly impossible for small-scale farmers to receive adequate access to inputs in order to successfully grow crops, the Centre for Development and Enterprise (CDE) was quick to dismiss the potential of small-scale farming if appropriate post-settlement support are in place, advocating instead for an urbanization approach (2005, 2008).

That is, the CDE came out with one of the most recent and comprehensive reports on land reform in South Africa, arguing that rural land reform is not the answer to rural poverty (CDE 2008). This independent research and policy organization argues that agriculture can only provide a limited contribution to development in urbanizing South Africa as small farmers cannot make a large scale, cost-effective contribution toward reducing poverty (CDE 2005, 2008). Thus, the CDE argues that rural land reform projects are failing small-scale farmers as they are not sustainable and leave farmers worse off than before. However, this assumption is not based on any substantial evidence other than alluding to the lack of post-transfer support (CDE 2005, 2008). For example, a CDE report states that, "while there is no systematic assessment of outcome of land redistribution anecdotal evidence from many

different sources indicates the complexity of resettlement and the total lack of post settlement support by provincial departments which leads for instance to indebtness and shack farming" (CDE 2005, 14). The anecdotal evidence is neither provided nor the methodology used in its collection explained.

Despite this, the CDE report concludes that small farmers could not make a large scale or cost effective contribution to reducing poverty. Therefore they argue that land reform should be part of a broader urbanization strategy of economic growth where the best route out of poverty is access to employment which will be in urban areas, and focusing on developing portable assets that can be used in urban modern contexts (CDE 2005, 2008).

However, the argument put forth by the CDE that land is not used productively by smallholders who can therefore not make a large scale, cost-effective contribution toward reducing poverty is no longer legitimate if with appropriate post-settlement support productivity could improve. Further, it is also evident that while growth is important for poverty reduction, it is not enough as more redistributive measures are needed (World Bank 2000, Rodrik 2003, Borras 2003). For instance, there is both theoretical and empirical evidence provided across both the conservative and progressive perspectives arguing that agriculture can be used by small-scale farmers as a way out of poverty (World Bank 2000;2007, Patel 2007). On the more conservative front this includes, for instance, the World Bank's stance that pro-poor growth that directly reduces poverty must be in sectors where the poor are and use the factors of production they possess. Thus, since most poor are in rural areas and depend directly or indirectly on agriculture for their livelihood, and possess labor and sometimes land, pro-poor growth must focus on improving incomes and productivity in agriculture and making use of labor (World Bank 2000). Raj Patel, in a more progressive fashion, argues that the role of small farmers and agriculture is vital in the creation of a sustainable global food system (Patel 2007). He argues that the current food system is not only unjust, unfair, and inequitable, but demands unsustainable levels of energy and water use. Thus he deems the food system as inherently weak because of the "size of its ecological footprint, the resources needed to sustain it and the exploitation it requires" (Patel 2007, 294). His call for a radical new food system which overcomes these weaknesses points to the necessity of the role of small-scale farmers in enabling both the growers and consumers to reclaim control of their food system in a sustainable manner (Patel 2007). Literature of

this nature will be discussed in the following chapter, and concludes that small-scale agriculture production is an important source for poverty reduction.

1.3 Problem Statement

Having established the importance and potential of the role of agriculture in poverty reduction, and given that the use of small-scale production in reducing rural poverty is one of the key components of land reform in South Africa it becomes imperative to understand what is limiting the success of small-scale farming as a poverty reduction strategy once beneficiaries receive land. That is, what might prevent small-scale farmers who receive or have land from effectively using it? This becomes critical since land reform is one of the policy measures being implemented to reduce rural poverty, and there is an expectation that those who receive the land will be able to use it.

However, it is clear that due to the insufficient amount of post-transfer support which renders it nearly impossible for small-scale farmers to receive adequate access to inputs in order to successfully grow crops, that many of those who receive land are not able to use it (Jacobs 2003, Rother, Hall and London 2008, Lahiff *et al.* 2008, Vink and Kirsten, 2003, Andrew, Shackleton, Ainslie 2003, Hall and Lahiff 2004, Jacobs, Lahiff, Hall 2003, Borras 2003, Fenwick and Lyne 1999).

Therefore, this research looks to explore the issues that small farmers feel are the most important opportunities and constraints to crop production for both subsistence and sale. Given the inability of smallholders to adequately access inputs, along with the recent rise in the cost of inputs[1], this dissertation will be narrowed down to concentrate on the barriers that arise from inadequate access to inputs, and the opportunities that arise from adequate access to other inputs. The ability of small-scale farming to be used as a poverty reduction strategy will also be explored. It is thus the aim of this research to engage with small-scale farmers in an attempt to understand the barriers and opportunities that they confront when accessing inputs needed for agricultural production that contributes towards their livelihoods. Therefore this study will look to small-scale cultivators using the sustainable livelihoods

[1] For instance in the Free State direct allocated variable cost for maize production was said on average to rise 71.6 percent as the cost of seed went up 15 percent, fertilizer 124 percent, fuel 93 percent, herbicides 41 percent, and pest control 10 percent (Coleman 2008).

approach to identify constraints that they face, with a particular emphasis placed on assess to inputs.

This research uses a case study of communities in an area under communal tenure administered by a tribal authority in order to focus on barriers to productive use of land arising from access to inputs rather than problems arising from the process of land transfer. The input constraints that small scale farmers face in communal areas are likely to be similar to newly established small-scale farmers who are beneficiaries of land reform and who do not receive post-settlement support. Thus, I suggest that the experiences faced by those already farming in communal areas can be used to provide insight concerning the barriers to successful small-scale production including new farmers on land reform projects. The experiences of the farmers in the case study, highlighting the need for assistance, will therefore show that problems faced by land reform beneficiaries will go beyond access to land.

1.4 Research Objectives

Given the problem statement the broad question this research looks to answer is:
How do small-scale farmers obtain inputs in order to farm?

More specifically, the research will look to answer:
What are the barriers to accessing inputs for crop production, and what are the opportunities for crop production given access to other inputs?

As there are many inputs that could be considered, a broad set of questions will be framed around the sustainable livelihoods framework. This includes five different types of capital: physical, financial, human, natural resource and social (Scoones 1998). Once understood on this broader level, specific attention will then be focused on access to seed which is commonly obtained either through the market or the farmers' own stocks (Sperling, Remington, Haugen 2006). Access to seed has become controversial within the backdrop of the global economic climate of the 1990s which saw seeds become heavily commercialized. This was followed by the rise of genetic modification technology adoption in which South Africa has one of the highest rates in the world (McGeoch and Pringle 2005). The final component of the research explores: *the accessibility of seeds.*

Reflecting on these opportunities and barriers, I will consider whether *small scale crop production is being used in order to assist the farmer in their pathway from poverty?*

1.5 Defining the Small-Scale Farmer[2]

There is no clarity on what a small-scale farmer is in South Africa as numerous definitions and descriptions have been provided by various analysts, and none are generally accepted (Machethe and Mollel 2000). For instance, the main criteria used by various analysts to classify farmers as small-scale include land-size, purpose of production, income level, and in South Africa racial group (Machethe and Mollel 2000).

While it should be noted that small-scale farmers are not a homogenous group as some may be more poor than others, for the purpose of this thesis the definition of a small-scale farmer, in accordance with the definition provided by Machethe and Mollel, will include those whose "source of livelihood are both farming and non-farm activities and have total assets and annual income whose value does not exceed that of a household which would be considered poor in terms of a country's criteria" (342, 2000). For these farmers, farming does not generate enough income for them to meet their needs, and they therefore must engage in non-farm activities. They are also generally risk-adverse, rely on family labor, own a few animals, cannot afford to pay for support services, produce mostly for consumption sometimes selling a marginal amount of their surplus, and have a small piece of farmland (Machethe and Mollel 2000).

1.6 Limitations of Research

This research ran into severe difficulty in trying to obtain a study site.[3] It was envisioned that, given the focus on the need for support for smallholders, I would be able to compare cases of small-scale farmers where different types of support have been provided or not such as state-supported versus private-supported, or those who had no support. This would have made for an interesting comparison of how inputs are acquired and managed under these different models of supports. However, in the end as so few people were able or willing to provide

[2] The title small-scale farmer is used interchangeable throughout this dissertation with the title smallholder farmer and small farmer.

[3] Due to the fact that I received no funding I was hoping to find two or three case studies within the KwaZulu-Natal province. While I contacted and met with local government officials, contacted over eight relevant non-governmental organizations (NGOs) in the province, and spoke to relevant academic contacts great difficulty was faced in securing any study sites. It was not until after two months of persistent searching that I was able to secure one study site.

support within my time constraints, I had to settle with one case study in which support was provided by a non-government organization known as the Africa Corporative Action Trust (ACAT). Although, I was not able to compare different case studies, I was satisfied with using ACAT alone. This is because they target the poorest households in rural areas and look to small-scale farming and the use of gardens in order to assist their members out of poverty. Their members therefore fit the profile for those I was hoping to research. Also, the members have been farming for different time periods providing variation in terms of their experience and activities. This provided a good sense of the effectiveness of farming, as well as the past and present constraints along with what has been done to overcome them.

Additionally, this research does not apply a detailed gender lens over the research questions. This is important as women comprise more than half of South Africa's rural population, tend to be the poorest, and are disproportionately affected by issues of rural development (Walker 2002). Rural women suffer from high unemployment rates, AIDS, illiteracy, and also structures of patriarchy which hinders their ability to own male resources such as land (Walker 2002). At the institutional level, land reform policies recognize gender equality, but this is not implemented as the market led approach of land reform ignores the needs of women favoring instead heads of households and black farmers all of whom are typically male (Walker 2002). When women do acquire land they are disproportionately affected by the lack of post-transfer support as the patriarchal structures of their societies, and cultural taboos further impede upon their ability to succeed (Agarwal 1994). While this research includes data collection from both sexes I was limited by my inability to choose exactly who I could interview, and was therefore unable to obtain interviews with a significant amount of women that are also heads of households. However, wherever feasible within the confines of the sample, I identify issues related to gender and small scale farming.

1.7 Organization of Dissertation

This study has the following six chapters:

This first chapter has provided an introduction for the study detailing the problem statement, rationale for the study, and research question. It also discussed the research approach, and the limitations and contributions to be made by the research.

The second chapter moves on to review literature related to small-scale agriculture and its role in poverty reduction. Specific attention is given to this role within the context of land reform.

The third chapter lays out the theoretical framework. It also includes literature on what inhibits small farmers from accessing inputs limiting their ability to succeed.

The fourth chapter presents the methodology and methods used for this research. Also, details of the case study are outlined, and there is a description of the challenges presented in the data collection process along with an explanation of how the data was analyzed.

The fifth chapter presents the research findings in a detailed analysis.

The final chapter concludes the entire study offering recommendations for areas of further research.

Chapter 2: Literature Review: Agriculture as a Poverty Reduction Strategy

2.1 Introduction

This chapter reviews literature related to small-scale agriculture and its role in poverty reduction. The chapter comprises of two main sections. The first explores theoretical and empirical evidence on the direct role of agriculture and its ability to benefit the rural poor. Given the highly unequal land distribution of South Africa, the second sections considers the importance of small-scale agriculture within the context of land reform as it looks to restructure and regenerate the agrarian economy.

2.2. The Role of Agriculture and Poverty Reduction

De Janvry and Byerlee in the World Development Report define agriculture as consisting of "crops, livestock, agro forestry, and aquaculture" (2007, 2). They legitimize its importance by arguing that the global decline in the incidence of poverty from 1993-2002 was caused entirely by rural poverty reduction with agriculture as the main source of growth (De Janvry and Byerlee 2007). This is not surprising as agriculture is an important source of livelihoods for an estimated 86 percent of rural people, thus more dynamic and inclusive agriculture could reduce rural poverty (World Bank 2007). Examples of where small scale production, through both direct support from the state and the liberalization of the market, has reduced rural poverty and increased employment include Kenya, China, and India, and Ghana (Ravallion and Chen 2007, Chaudhuri and Ravallion 2006, World Bank 2007, Coulombe and Wodon 2007).

2.2.1 Agriculture and Pro-Poor Growth

Agricultural growth has both empirical and theoretical backing for its ability to reduce poverty (Irz *et al.* 2001). Growth in agriculture is argued to have a disproportionately positive impact on poverty levels given the labor-intensive nature of agricultural production, and the larger proportion of poorer people who partake in agriculture (Mellor 1999 cited in Wegerif 2004). For example, a cross-country estimate reveals that gross domestic product (GDP) growth originating from agriculture has large benefits for the poor and is twice as effective in reducing poverty as GDP growth originating outside agriculture (De Janvry and Byerlee 2007). This is exemplified in Malawi where agriculture is said to be the most important sector for achieving economic growth which will benefit the poor, and increasing agricultural incomes will be the main source of poverty reduction as more than 90 per cent of the

population derive their livelihoods from agriculture (Government of Malawi 2002 cited in Chirwa 2005).

Also, studies suggest that poverty responds more to rural economic growth than to urban economic growth. For example, this was established in Wodon's study in Bangladesh as it was suggested that pro-rural development strategy would lower the poverty headcount in the country significantly compared to the present policy focusing on urban areas (1999 cited in Irz *et al.*, 2001). This was also confirmed within the context of India's experience with poverty reduction, where the effect of urban growth proved only to reduce urban poverty, where as rural growth also had pro-poor distributional effects on urban poverty (Ravallion and Datt 2002). Further, in Latin American and China growth in agriculture was found to be more effective in reducing poverty than non-agricultural growth (World Bank 2007, Valdes and Foster 2005).

2.2.2 Agriculture and Direct Contributions towards Poverty Reduction

Most direct contributions of agriculture are through generating higher income for farmers, and creating employment opportunities (Irz *et al.* 2001). For instance, it is suggested that significant opportunities exist for labor absorption through restructuring the agrarian economy in favor of smallholders (Lipton, de Klerk, Lipton 1996). This has proved to be the case in South Africa, where a research project in the Limpopo province looking at specific land reform interventions and their impact on the livelihoods of beneficiaries found that small-scale food production absorbs a significant amount of labor, can be sustainable in the long run, and directly benefits the poor households with minimal support from the state (Lahiff *et al.* 2008).

Additionally, increased agricultural production also leads to lower prices of non-tradable foods which allow the consumption basket of the poor to become cheaper (Delgado *et al.* 1994, World Bank 2007, Johnston and Mellor 1961). Evidence of this negative correlation was documented for instance in Ethiopia, Ghana, Mali, Sudan and Burkina Faso (Delgado *et al.* 1994). However, this will only be sustained if the gains from total factor productivity rise faster than the decline in food prices. If not then poor net-food-selling producers may not gain from this. However, overall an increase in staple crop productivity usually reduces poverty because more than half of the poor rural households are net food buyers (Johnston and Mellor 1961, Delgado *et al.* 1994). As witnessed in Madagascar, these lower prices also

lead to lower real wages in other sectors, which can then grow faster (World Bank 2007). This proved to be more important in reducing rural poverty in the long run for India, then direct on-farm income effects (Datt and Ravallion 1998).

2.2.3 Agriculture and Indirect Contributions towards Poverty Reduction

Indirect contributions from increased agriculture production are also recognized as a growing literature suggests that agrarian restructuring will support and stimulate the non-farm economy in rural areas as there is a raise in local non-farm profits and labor incomes in other sectors via consumption and production links (Irz *et al.* 2001, Bryceson 1997). These production links include farms demanding inputs and services for agriculture, and requiring process, storage and transport of produce. Also, farmers and labors spend their increased goods and services in the local rural economy (Irz *et al.* 2001). These consumption growth linkages have been found to be especially important in Africa (Delgado and Minot 2000). In general these agricultural growth multipliers are estimated to be around three times larger than those in non-agricultural growth (Block and Timmer 1997). However, the strength of the agricultural multiplier depends on a country's economic structure (World Bank 2007). Cross-country studies have also suggested that multipliers in the rural economy are strongest from additional consumer spending by agricultural households. Thus enabling smallholders to market at least some of their produce is essential to rural growth (Bryceson 1997).

Empirical links show that there may be a connection between welfare and rural human capital as increased food production and farming incomes allow better nutrition of rural workers and investment in health and education (Timmer 1995 cited in Irz *et al.* 2001, Delgado *et al.* 1994). An analysis on a cross-section of countries also found, that raising yields by 1 percent increases the Human Development Index by .12 percent (Irz *et al.* 2001). Additionally, increased agricultural output may generate more tax revenues, thus allowing for more public investment in infrastructure. Further, increased interaction between farmers, and input and output suppliers may lead to greater social capital formation resulting in great confidence when venturing into non-agricultural businesses (Irz *et al.* 2001).

2.2.4 Agricultural Production and Food Security

The world has more than enough food to feed everyone but over 850 million are food insecure remaining undernourished (FAO 2006 cited in World Bank 2007). That is, they do not have "adequate and stable food availability, access to adequate and appropriate food, or

proper use and good health to ensure that individual consumers enjoy the full nutritional benefits of available, accessible food" (World Bank 2007, 94). The highest incidence of undernourishment is in Sub-Saharan Africa. Most of the food insecure live in rural areas where food is produced, yet they are net buyers of food (World Bank 2007). Investing in agriculture plays an important role in increasing food security. It can maintain and increase global food production, and rising productivity increases rural incomes and lowers food prices making food more available to the poor. Nutritionally improved crops through processes of biofortification can also give access to better diets enhancing the link between food security and nutrition security (World Bank 2007).

In South Africa food security is a major concern among a large proportion of the population (Maunder 2003). The macroeconomic policy of South Africa has not led to significant changes in the socioeconomic status of many, and food insecurity is identified as a root cause of poverty (Bonti-Ankomah 2001). Food insecurity is highest among the African population and rural households (Bonti-Ankomah 2001). One fifth of all children are stunted due to malnutrition, the main contributing factor being not enough food in the household, and consequently lack of a balanced diet. Concern over raising costs of food and fuel also weighs unfavorably threatening to expose more families to the vulnerability of food insecurity (Hall 2007). Social Welfare Programs and feeding schemes are not sustainable in the long-run in light of increasing government debts (Bonti-Ankomah 2001). Thus, it is argued that a national level priority should lead to agrarian reform which increases food production that is more labor intensive and less capital-intensive giving people access to land for own production and sales (Bonti-Ankomah 2001, Hall 2007). If the land is used more intensively, changes in land use patterns from larger commercial farms to smaller more self-sufficient farms could not only increase total output but lead to a greater equitable distribution of benefits. This is important since South Africa's food production exceeds consumption, suggesting that food insecurity is a problem of distribution and access, and not production (Hall 2007).

2.3 Agriculture and the Importance of Land Reform as a Poverty Reduction Strategy

In substantiating a case for small-scale agriculture in a country with highly unequal land distribution the importance of land reform as a pathway out of poverty becomes a necessary complementary measure as it looks to restructure and regenerate the agrarian economy (May, Stevens and Stols 2002). This is the case for South Africa where the agrarian economy is

characterized by highly unequal landownership, and the previous heavy public investment in large-scale farming made inefficient use of land and labor (Wegerif 2004). Consequently, most fertile lands are underused as they are owned by large commercial farmers. In contrast, high concentrations of the black population are found in areas that are both remote, have low productive potential and face potentially insecure tenure rights (van den Brink *et al.* 2007). This has created an extremely dualistic agricultural society where a highly-developed large scale commercial sector, controlled mostly by whites on privately owned land, exits alongside a large number of small-scale and mainly subsistence-oriented black farms on communally-held land (Vink and Kirsten 2003).

Thus it is believed, amidst much controversy and debate in regards to ideology, politics, history, and economic theory, that redistributive land reform can create an environment for growth in agricultural production that will in turn support broader economic growth and directly impact on poverty reduction in countries such as South Africa with highly unequal land distribution (Van Zyl *et al.* 1995, van den Brink *et al.* 2007, Negrao 2002 cited in Lahiff 2007, Wegerif 2004). Therefore, in considering the importance of using agriculture as a pathway from poverty in South Africa it becomes necessary to understand its potential within the context of land reform.

Within this context, theoretical and empirical evidence of the use of agriculture as a way out of poverty supports issues of equity, efficiency, pro-poor growth, and job creation, as land is redistributed from large to small-scale farmers and the poor given direct control over productive resources (van den Brink *et al.* 2007, Van Zyl *et al.* 1995, Hoogeenn and Kinsey 2001, Aliber 2003, Deininger and Squire 1998, Ravallion and Chen 2004 cited in van den Brink *et al.* 2007, Borras 2003).

2.3.1. Arguments of Efficiency

Increased growth in agricultural production that has been attributed to land reform comes from the "de-concentration of landholding to create or strengthen small-scale owner operated or family farms" (Wegerif 2004, 5). Agricultural economists have found that within Sub-Saharan Africa and South America redistributing land from large, commercial farms who depend primarily on hired labor to small farms, especially family farms where the owner lives on the farm, manages the farm, and is aided by other family members, brings about efficiency at the local level as they provide higher values of output per hectare and on

investments than large farms (van den Brink *et al.* 2007, Prosterman and Riedinger 1987 cited in Wegerif 2004, Berry and Cline 1997, Deininger and Binswanger 1999).

It is argued that the smaller size greater efficiency theory is valid in South Africa, where for instance, smaller farms within the former white farm areas have had higher profits and more labor per hector (van den Brink *et al.* 2007). Unfortunately the reality of the South Africa land experience shows that land reform has usually reproduced the large-scale model of farming with land use patterns similar to the past (Hall 2007).

It is important to note that the question of efficient land use is contested by many authors (Byres 2004). Also, in practice, it is likely that the average farm size increases as farmers' incomes go up. Small farmers also have competitive disadvantages even if more efficient as they face more difficulty in accessing inputs, technology, information and market access, and meeting market demands when large quantities need to be produced at once. Also, large farmers have more political power as they are able to organize and lobby governments for subsidies and tax breaks (van den Brink *et al.* 2007). This suggests that appropriate support systems are needed to compensate for these disadvantages.

2.3.2. Arguments of Equity and Pro-Poor Growth

Land redistribution, backing smaller family farms, also promotes greater equity in distribution of income and asset ownership which is more beneficial to growth and poverty reduction (Alberto and Perotti 1996, Bourguignon and Verdier 2000, Forbes 2000, Saint-Paul and Verdier 1996, Birdsall and Londono 1997, Dagdeviren, van der Hoeven, and Weeks 2000). For instance, research comparing countries with each other has suggested that equity positively benefits growth (Aghion, Caroli, and Garcia-Penalosa 1999 cited van den Brink *et al.* 2007). More specifically, it has been found that the greater land is equally distributed the higher the overall economic growth (Deininger and Squire 1998, Ravallion and Chen 2004 cited in van den Brink *et al.* 2007, Deininger 2003). China provides an example here where high sustained growth was linked to its change from collective large-scale farms to smaller family farms. Here, China's peasant sector sparked economic growth which reduced poverty (Ravallion and Chen 2004 cited in van den Brink *et al.* 2007). Further, a cross country study involving 15 developing countries evidenced that there is a strong negative relationship between initial inequality in the land distribution and long-term growth (Deininger and Squire 1998).

More importantly, inequality also proved to disproportionately affect the poor. For example, it was found that the initial distribution of assets not only affects the economic growth rate, but also affects the poverty-reducing effects of the growth that does occur (Ravallion and Datt 2002, Jayne *et al.* 2003). Furthermore, inequality also proved to reduce income growth for the poor (Birdsall and Londono 1997), and it is argued that a re-distributive growth path is likely to be superior to a distribution neutral path for reducing poverty (Dagdeviren, van der Hoeven, and Weeks 2000). Thus, a productivity-raising redistribution produces sustainable poverty reduction and ensures that distribution does not reduce poverty at the expense of growth (Dagdeviren, van der Hoeven, and Weeks 2000). Enhancing asset ownership to the poor is a feasible way to accomplish this. This suggests that a more equitable distribution of land not only promotes higher productivity and economic growth, but also gives higher incomes to the poor (DFID 2003 cited in Lahiff 2007). Thus, overall policies that transfer assets to the poor have the potential to be beneficial for growth and poverty reduction.

2.3.3 A Human Development Approach

Benefits of redistribution are also argued more progressively to directly benefit the poor and landless as it is reasoned that control over productive resources such as land and water is essential for the rural poor to overcome poverty since a significant amount of the income and livelihoods of the rural poor comes from farming (Borras 2003, Negrao 2002 cited in Lahiff 2007). Thus, land can become a major source of income generation in rural economies, allowing families to put their labor to use providing an additional livelihood which can offer both financial and future security (Thwala 2006 cited in Lahiff 2007).

This is applicable within the African context as agricultural growth is deemed essential since there are few other alternatives that will reduce rural poverty (Negrao 2000, 6 cited in Lahiff 2007). It is argued therefore that in order for smallholders to benefit they must control growth. In this way land for all the rural poor becomes an "indispensable condition for food security since it is the only valid asset for a sustainable increase in income and for the attainment of the much-desired social stability" (Negrao 2000, 6 cited in Lahiff 2007).

2.3.4 Counter-Arguing Land Reform as a Poverty Reducing Strategy

It becomes important while understanding the potential of land reform to contextualize it into the realities of South Africa policy, policy implementation, and agrarian structure. Thus, despite the above theoretical and empirical evidence supporting agriculture and the

importance of land reform as a poverty reduction strategy, it has been noted in chapter one that in reality the land reform program has yet to make a significant difference in the lives of rural South Africans, and certainly has not been the envisioned driving force behind rural development (May, Groth & Van den Brink 2007). This is due not only to the technical and implementation difficulties in the actual transfer of land, but also to the quality of the land and farms inherited along with the limitations of the market-based model leading to the insufficient amount of post-transfer support (Kepe and Cousins 2002, Wegerif 2004, Hall and Cliffe 2009). These factors have all countered the potential ability of land reform to succeed as a poverty reducing strategy.

Fundamentally, it is argued that the actual land reform model is limiting, thus policy is just now beginning to shift away from debating how land should be transferred and focusing on reframing the program around "what, and whom, land reform is for" (Hall and Cliffe 2009, 1). This is necessary as there is no vision for policy outcomes resulting in many projects being unproductive and not able to survive (Hall and Cliffe 2009). To compound the limitations on the current model, including too much reliance on the markets to determine what properties are being sold at what price further undermined by complexities in bureaucracy, land reform has received little political priority since the democratic transition (Hall and Cliffe 2009, Wegerif 2004).

Further, the limitations on the ability of agriculture alone to solve rural poverty needs to be fully acknowledged as there is only around "200,000 small and medium-scale commercial farmers in the former Bantustans" (Hall and Cliffe 2009, 2). Also, many people in rural areas count on support from the urban economy in the form of remittances, and social grants which have found to mitigate poverty at the household level (Ruth 2009, Woolard 2003). It is perhaps within this context that the 2008 CDE report argues that a belief that smallholder farming "could make a large-scale or cost-effective contribution to reducing poverty in most of rural South Africa is to succumb to unrealistic and backward-looking rural romanticism" (22). Instead they argue that rural poverty needs to be addressed through a more comprehensive development plan that is focused on urbanization and inquiring assets that can be used in urban settings. This would include for instance a rural education fund (CDE 2008). While these concerns are important, land remains an important asset for many of the rural poor, especially those in the former "Homelands" that were established by apartheid era

legislation, and an improvement in the use of this asset could be achieved at a comparatively low cost.

2.4 Conclusion

This chapter has provided theoretical and empirical evidence on the ability of small-scale farming to reduce poverty. Specifically within the South African context it was argued that land reform has the potential to address the needs of the rural poor through a restructuring of the agrarian economy based on land transfer and improved tenure. However, the limitation of land reform such as the quantity and quality of land being transferred within the realities of the South African context has been summarized. It is clear that some of the potential can only be realized if resource-poor farmers are able to significantly produce. It therefore becomes important to understand what is preventing these farmers from becoming successful. It is to this topic that the next chapter turns.

Chapter 3: Barriers to Small-Scale Farming: Institutional and Market Failures

3.1 Introduction

Now that the importance of smaller-scales of production for resource-poor farmers has been established, it is essential to understand what is limiting their production. In order for small-scale farmers to be successful there are a number of institutional support systems, requiring both the role of the state and private sector that need to be in place (Kepe and Cousins 2002, Aliber 2003, Andrew, Ainslie, and Shackleton 2003). However, this has been lacking as the decline of the role of the state in the 1980s exposed smallholder farmers to market failures, high transaction costs and institutional gaps as the private sector looked to serve mainly commercial farmers (World Bank 2007). Areas where support is lacking includes land markets, financial markets, marketing advice and information, and market access for required outputs and inputs such as extensions services, skills development, and infrastructure support (World Bank 2007, Jacobs 2003, Rother, Hall and London 2008, Lahiff *et al.* 2008). This creates a need for institutional innovations, specifically within the context of South Africa where land reform post-transfer support is insufficient (Andrew, Shackleton, Ainslie 2003, Hall and Lahiff 2004, Jacobs 2003, Jacobs, Lahiff, Hall 2003). These innovations are extremely important as examples from experiences in Africa demonstrate that productivity increases occur when the once neglected small farming sector is provided with support (Adams, Ashworth, and Raikes 1993, Ashworth 1990).

3.2. A Background: Why Small-Scale Farmers lack Support

The potential of agriculture to contribute to growth and poverty reduction depends on the productivity of the small-scale farmers. Unfortunately, there has been unsatisfactory performance of small-scale agriculture in sub-Saharan Africa (World Bank 2007). One reason given for the limited success of small-scale production is the decline of the role of state in the 1980s, followed by the rise of the private sector that is interested mainly in commercial agricultural growth (World Bank 2007, Hall 2007,Vink and Kirsten 2003).

The role of the state was minimized under the structural adjustment period of the 1980s so that they no longer provided farmers with access to land, credit, insurance, inputs, and cooperative organizations (World Bank 2007, Hall 2007). In theory it was envisioned that the private sector would take over this role providing greater quality goods at cheaper costs, however this rarely happened. While larger commercial farmers benefited at times, it was the

small farmers who were "adversely exposed to market failures, high transaction costs and risks, and gaps in service jeopardizing their competitiveness and survival" (World Bank 2007, 138). While the past decade has witnessed institutional innovations in agriculture in order to overcome shortfalls in land markets, financial services, input markets, and producer organization this has not been sufficient. Therefore it is argued that the role of both the state and the private sector must be made clear as institutional improvements are to be made. Further, there has been a noted shift in international thinking advocating for the stronger role of the state in generating policy and economic conditions supporting the growth of agriculture. As a result, governments are being encouraged to allow agriculture to provide pathways out of poverty for the rural poor (World Bank 2007, Hall 2007).

3.2.1 Liberalization and the Challenge of Small-Scale Farming in South Africa

As alluded to in the first chapter, the importance of the role of the state for small-scale farmers also proves significant in South Africa. The rise of state support for white farmers in the 1930s and 1940s contributed to the growth in the commercial farming sector as extensive state interventions in land, credit, and input and output markets provided an abundance of support (Hall 2007). Structurally, these policies created the present day dualistic agricultural sector where capital-intensive large-scale commercial farming in the white farming areas contrasts with the labor-intensive small-scale farming in the former homelands (Vink and Kirsten 2003). However these state services available to farmers decreased dramatically in the 1970s, and saw the removal of subsidies, subsidized credit, state marketing boards, trade protection, and other reforms. These were completely removed by the 1990s and price support only remains in the sugar industry (Hall 2007).

The consequences of deregulation and liberalization include simultaneous growth and decline in commercial farming, raising input costs, reducing product prices for small farmers, and an increasing schism between those who liberation and deregulation benefited and those who it did not (Hall 2007, 30). While the state has saved on subsidies and forced competitiveness in agriculture, the anticipated policy priority to black and small-scale farmers has not materialized counteracting the political justification for removing state support (Hall 2007).

This leaves land reform beneficiaries and small-scale farmers to struggle on their own as the two distinct agricultural sectors remain differentiated in terms of their access to land, credit, extension services, research and development, and market access (Vink and Kirsten 2003).

This has been backed by studies which have shown that small-scale farmers experience numerous problems accessing these services (Wegerif 2004, Bradstock 2005, Jacobs 2003). However, the weakness of state support services for small-scale farmers, and the failure of the private sector to fill the gap have received minimal attention (Jacobs 2003). Therefore, if small-scale farming is to result in a sustainable livelihood for the rural poor and bring about poverty reduction focus needs to be placed on providing adequate agricultural development support which cannot be brought through the private sector alone (Jacobs 2003, Zimmerman 2000).

However, such support has not been forthcoming. South Africa's market-led land reform requires that beneficiaries should not rely exclusively on the state for post-settlement support services, but should be able to access services form a range of public and private providers ultimately allowing the state to shirk their responsibility (Vink and Kirsten 2003). While the role of non-state actors is important it has proved not to be sufficient (Andrew, Ainslie, and Shackleton 2003). This is why support services listed in the White Paper include assistance with productive and sustainable land use, infrastructure support, farm credit, agricultural inputs, and access to markets for farm outputs (DLA 1997). Institutions responsible for supporting land reform beneficiaries that gained access to land for farming include the DLA, National Department of Agriculture (NDA), the provincial departments of agriculture, and the National Development Agency. These institutions mainly use an application-based approach to post-transfer support which, aside from being extremely inefficient, transfers the responsibility for agricultural development support from the state to resource-poor participants (Jacobs 2003).

More specifically, since privatizing the agricultural sector state intervention of small-scale and resource-poor farmers have been project-orientated as opposed to intervening in the markets (Hall 2007). State initiatives to support under-funded land reform beneficiaries and other small farmers in communal areas were first initiated in the mid-1990s under the Broadening Access to Agriculture Trust. Although this included farmer support and production loans such support has failed to materialize. The Farmers Settlement Program, which is responsible for post-transfer agricultural support had no capital budget until 2004. Although it has accounted for 18 percent of the national budget for agriculture, its settlement system is limited in scope and does not focus on restructuring the economic and market environment for new entrants (National Treasury 2007 cited in Hall 2007).

Presently, the main framework for providing agricultural support to new farmers is the Comprehensive Agricultural Support Programme (CASP) initiated in 2004. A review by the Department of Agriculture (DOA) found that infrastructure was for the most part the only form of support provided, coordination with the land reform process was inadequate and there was significant under-spending. Thus support for technical advice, training, marketing, production inputs and risk management have been non-existent. Further, CASP funds are limited in what they support and who they target, and have tended to go to emerging farmers that are more commercially-oriented (DOA 2007 cited in Hall 2007).

3. 3 The Theoretical Approach

Given this broad understanding of why small-scale farmers are failing to receive adequate support, this research is interested in the input side and trying to understand the barriers and opportunities to small scale farming that might arise from inadequate access to inputs and adequate access to other inputs. This understanding of what small-scale farmers face can be looked at through the sustainable livelihoods framework. Inputs are defined on a broader level in this framework. Emphasis here includes access to: land, financial services, extension support, seed and fertilizer, infrastructure and producer organizations. This is subsequently narrowed down to look specifically at seed accessibility under the physical asset.

3.3.1 The Sustainable Livelihoods Framework: A Brief Background

Within the past two decades there has been a shift in poverty-reduction policies which focus on improving residual welfare, to those that are based with wider social protection policies (Moser 2005). This shift looks to incorporate risk prevention and mitigation strategies, as well as necessary safety nets. In practice however, social protection still tends to focus on income/consumption protection of the poor through the provision of cash transfers and other safety net provisions (Moser 2005).

What emerged from this paradigm shift is the concept of sustainable livelihoods. This concept shifts focus from income and consumption in order to directly address the crucial role that assets and capabilities play in improving individual and household social and economic well-being (Moser 2005). An analytical framework to consider within this context is that of sustainable livelihoods (SL). The SL framework gave birth within the poverty alleviation and reduction debates of the 1990s. This debate identified the multi-dimensionality of poverty, revealing new strategies to address the issue. It was also

concerned with the relationship between inequality, economic growth and poverty reduction (Moser 2005).

In general these debates were influenced by Sen's work on entitlements, assets, and capabilities, as well as Chambers' work on risk and vulnerability (Sen 1999, Chambers 1992). It therefore defined poverty as a static concept and vulnerability as dynamic. A focus on the assets and entitlements of the poor, and the impacts of livelihood shocks were part of the policy implications derived from these debates (Moser 2005). What follows is a general discussion of SL analytical framework.

3.3.2 Sustainable Livelihoods Framework

The analytical framework for the SL approach was initially developed within the context of a rural development project tool to advance beyond cash income in order to consider other assets associated with sustainable livelihoods of the poor (Moser 2005). Within the SL approach livelihoods is defined as comprising the "capabilities, assets, and activities required for a means of living" (Chambers and Conway 1992, 5). A livelihood is said to be sustainable when it can "cope with and recover from stresses and shocks and maintain or enhance capabilities and assets both now and in the future, while not undermining the natural resource base" (Chambers and Conway, 1992; 5). Here, stresses are pressures which are continuous and predictable such as seasonal shortages, rising populations, or declining resources. Shocks on the other hand are impacts which are sudden and unpredictable such as fires, floods, and epidemics (Chambers and Conway 1992). Those who cannot cope or adapt are vulnerable and unlikely to achieve sustainable livelihoods.

Within this approach, capability, equity, and sustainability are highlighted as the main ways of obtaining a sustainable livelihood (Chambers and Conway 1992). Capability is the ability to cope with stresses and shocks and the ability to find and make use of livelihood opportunities. Equity is more equal distribution of assets, capabilities and opportunities, and an end to discrimination. Sustainability is the ability to maintain and improve livelihoods while maintaining or enhancing the assets on which livelihoods depend (Chambers and Conway 1992).

Specifically, this framework enables an understanding of what combination of livelihood resources result in the ability to follow different combinations of livelihood strategies and

with what outcomes (Scoones 1998). The ability to pursue different livelihood strategies is dependent on basic material and social, tangible, and intangible assets that people have in their possession. This includes the "livelihoods pentagon" which depicts the dimensions of livelihoods and the interdependent relationship between five dimensions of livelihood assets (Hall 2007, Scoones 1998). This includes but is not limited to natural capital, human capital, social capital, financial capital, and physical capital. Here natural capital refers to environmentally produced assets such as land and water, while human capital refers to investments in health, education and skills and financial capital refers to savings, and suppliers of credit. Physical capital is the productive equipment such as plants and infrastructure, and social capital is the rules, norms, trusts, and access to decision making. In order to create livelihoods, people must combine the capital endowments they have access to and control over (Scoones 1998). Therefore, household asset positions determine household productivity which determines livelihood strategies. Lacking asset endowment can therefore trap households in long term poverty.

For instance, in South Africa the rural poor has historically owned a minimal amount of assets and state and market failures prevent adequate returns on those assets (May 2000, World Bank 2007). Further, they are unable to cope with adverse shocks which exhaust these assets, and only allow households to adopt low risk and low return activities. This is particularly true of agriculture as it is one of the riskiest sectors of economic activity, and risk-reducing mechanisms are lacking in rural areas. Shocks such as weather, regulations for trade, crime, and health problems can deplete assets taking a long time for households to recover (World Bank 2007). Livelihood strategies are used then in order to account for the assets they do own and for the constraints imposed by market and state failures, social norms, and uninsured risks. These strategies however cannot fully compensate for these constraints thus leaving crucial roles for the improvements in their access to assets, their ability to use these assets, as well as the household's ability to manage risk and cope when hit by a shock (Shackleton, Shackleton, and Cousins 2001). Public policy must therefore be tailored to this context of asset vulnerability in order to increase the likelihood of success for rural households to secure a pathway out of poverty.

In general the SL approach is used then in order to attain an understanding of the poor's strengths and how they are used to convert these into positive livelihood outcomes. Overall, this allows one to acknowledge that people require a range of assets to achieve positive

livelihood outcomes. It also allows recognition that vulnerability such as shocks and stress affect livelihood (Moser 2005). Therefore, this approach recognizes that poverty is multi-dimensional, and thus provides a framework for addressing a range of policy issues in a more holistic manner. It also recognizes that the poor have diverse livelihood, and coping strategies. However it has been criticized for numerous reasons. Perhaps most serious is its limitation in establishing micro-macro linkages that enable policy analysis, design, and implementation to be used to improve livelihood on a national level (Moser 2005). Also, the concepts within the framework are contested. This is especially true for social capital (Heberle 2004).

3.3.3 Rural Livelihoods and the Role of Agriculture

Agriculture is a major source of one's livelihood for rural households in developing countries (Shackleton, Shackleton, and Cousins 2001, World Bank 2007). However, strategies for moving out of poverty are quite diverse including agricultural entrepreneurship in the market, through subsistence farming, through the agricultural labor market including agri-processing, and employment in the rural non-farm economy, as well as through migration to urbanized areas or other countries (World Bank 2007). These pathways are complementary as they can enhance the potential of the other livelihood strategies to be used. For instance in Pakistan remittances from temporary migrants had a large impact on agricultural land purchases, and those migrants that returned were more likely to set up a non-farm business (World Bank 2007). Thus for many smallholders agriculture offers security and complements earnings in the labor market and from migration. Therefore, the livelihood strategies of the rural poor are diverse as there are differences in what they do and the importance of what they do for their incomes within and between households. For that reason, no one specific type of livelihood will secure greater success in moving out of poverty for the general population. Consequently, potential relationships between poverty reduction and each of the pathways is difficult to establish as it is difficult to conceptualize and capture the dynamics of poverty (World Bank 2007). However, a combination of these strategies of farm, non-farm labor, and migration pathways have enhanced household income, food security, health, social networks and household savings in various countries such as Bangladesh and Tanzania (World Bank 2000, Shackleton, Shackleton, and Cousins 2001).

3.3.3.1 Rural Livelihoods and the Role of Agriculture in South Africa

This diversity of livelihoods is also the case in South Africa where the poor rural inhabitants use a number of diverse on-farm and off-farm sources for their livelihoods. It is estimated that half of the black population continues to live in rural areas where most are engaged in agriculture on a small-scale, and depend largely on non-agricultural activities such as migration to jobs in urban areas, local employment, and welfare grants (Lahiff 2008). While off-farm sources are, according to surveys, believed to be the most significant sources of income it is argued that this is a common misperception (Shackleton, Shackleton, and Cousins 2001, Andrew, Ainslie, and Shackleton 2003). For instance, while cash from government and urban areas make up a significant part of the rural economy land-based livelihood strategies, although not widely recognized, have proved to significantly contribute to overall well-being (Shackleton, Shackleton, and Cousins 2001). It was found that land-based activities accounted for 57.5 percent of the total annual value per household in rural South Africa (Dovie's 2001 cited in Shackleton, Shackleton, and Cousins 2001). Additionally, it is likely that most rural households attain their livelihoods from at least two of these categories at any one time (Shackleton, Shackleton, and Cousins 2001).

These most common forms of land use includes crop production, livestock, and harvesting and processing of natural resources for food security, income, and other basic needs (Shackleton, Shackleton, and Cousins 2001, Andrew, Ainslie, Shackleton 2003). These strategies are critical to the survival and health of most rural households, and are essential in reducing their vulnerability to risks such as disease, droughts, and loss of jobs (Andrew, Ainslie, and Shackleton 2003). Reliance on these livelihoods is also evidenced to have increased as jobs in the formal sector are becoming scarce. However, it should be noted that land-based livelihoods are constrained by natural and socio-economic shocks, as well as land shortages, resource constraints, and institutional problems (Shackleton, Shackleton, and Cousins 2001).

Of these livelihood strategies a significant amount of South African rural households engage in agriculture (Shackleton, Shackleton, and Cousins 2001). A rural survey conducted in South Africa in 1997 found that agricultural production was used by over one third of the rural households, and eighteen percent of the households used agriculture as the main source of income (Stats SA 1997 cited in Shackleton, Shackleton, and Cousins 2001). Further, families were also found to value subsistence agriculture as it is used as an important

safeguard for many rural households. For families were no one was employed, agricultural production provided twenty-five percent of household food requirements (Stats SA 1997 cited in Shackleton, Shackleton, and Cousins 2001).

More recent studies also found that the production of food crops is an important source of livelihoods in the South Africa homelands, especially in the eastern part of the country where the climate is more conducive to growing (Andrew, Shackleton, and Ainslie 2003). Although the contribution of crop production to rural livelihoods is difficult to capture, these studies estimated an income contribution of 15-28 percent not including the value of produce consumed by the household (Shackleton, Shackleton, and Cousins 2001).

It is argued however that there is a tendency to understate the role of agriculture and natural resource harvesting in the lives of the rural households (Shackleton, Shackleton, and Cousins 2000). For instance, as previously alluded to the legacy of the past has resulted in a rural population where there is a dichotomy between white commercial farming areas and the former "homelands" where human population densities are high, settlements large, infrastructure and arable land minimal, and there is environmental degradation (Shackleton, Shackleton, and Cousins 2000). These rural households have lower cash incomes than urban households or commercial farmers (Shackleton, Shackleton, and Cousins 2000). This has resulted in a tendency to understate the role of agriculture and natural resource harvesting as important attributes of rural livelihoods in South Africa. For instance, more recent studies (McAlister 1998, Shackleton, Shackleton, and Cousins 2001) show the contribution of agricultural production being more significant, accounting for 25-50 percent of the total food requirements for the rural population if savings from home consumption is included, as opposed to less than 10 percent listed in other studies (Fenwick and Lyne 1999, Ardington and Lund 1996 cited in Shackleton, Shackleton, and Cousins 2000, May 1996 cited in Shackleton, Shackleton, and Cousins 2000).

Although it is problematic to seek summary values of agriculture and its role in rural livelihoods as it is often unclear what statistics is being used, it is clear crop production is an important part of the rural safety net. Given the high rates of unemployment it is important to recognize the role they play in sustaining livelihood opportunities even if cash incomes from land are limited (Ainslie *et al.* 1996). Thus, overall smallholder agriculture currently makes an important contribution to the livelihoods of a significant proportion of people living in

rural areas, and has proved to be essential for survival supplementing off-farm incomes (Levin and Weiner 1996 cited in Andrew, Ainslie, and Shackleton 2003, Cross *et al.* 1996 cited in Andrew, Ainslie, and Shackleton 2003). Increasing productivity and access to necessary resources through land and agrarian reform can therefore increase its ability to contribute to poverty reduction (Shackleton, Shackleton, and Cousins 2000).

3.3.3.2 Small-Scale Agricultural Production in South Africa

Agricultural production ranges from home gardens, to planting or larger arable fields, to small grower and farmer settlement schemes. Most households retain some or their entire yield, for instance maize intercropped with other food crops and vegetables, for home consumption (Kirsten and Van Zyl 1996, Andrew, Ainslie, and Shackleton 2003). These levels do not usually meet subsistence needs for the household, and are too low to enter most markets (Andrew, Ainslie, and Shackleton 2003). If there is a surplus it is sold locally, or further away. The extent to which commercialization takes place is argued by some to depend on the degree of land cultivated and whether producers are involved in a small grower or farmer settlement schemes (Makhura, Goode, and Coetzee 1998). The majority of farmers are not involved in a scheme and practice supplementary and subsistence type of agriculture. Most rural households grow a variety of crops and use an intercropping system which results in lower yields than under commercial high-input systems. This is a risk avoidance strategy. Inputs are low, except for labor, although this is acknowledged as a constraint to cultivation (Fenwick and Lyne 1999).

The household's ability to crop is limited to a number of constraints to the point where in any year around one-third of the land in a region remains uncultivated. Most households do not have access to water irrigation so production relies on the rainy season. Communal areas are thus seen as producing low yields inefficiently but this is not usually true, as where yields are low the value of returns to the value of inputs is better than commercial farms and there are greater real profit margins than larger-scale commercial agriculture on private farms (D'Haese *et al.* 1998, McAllister 1998 cited in Andrew, Ainslie, and Shackleton 2003). Thus, despite low yields, farming has potential in becoming a reasonable livelihood strategy for resource-poor farmers.

3.4 Limitations to Accessing Inputs

In order to realize this potential it is necessary to understand the constraints. Although the focus of this research is narrowed down to the physical asset as barriers and opportunities to accessing seed, an overview of the other assets as input barriers is first explored below within the SL framework.

3.4.1 Natural Capital Constraints: Land Policies for Secure Rights and Rental Markets

Although land is the most important natural capital used by farmers, land access can be gained in different ways with varying levels of security. In order to maximize agricultural competitiveness and productivity for small-scale farmers it becomes important for institutional and technological innovations to allow the security of property rights that support efficient land use and recognize women and indigenous groups rights to increase, and to facilitate land reallocation and access to land for the landless (World Bank 2007, Fenwick and Lyne 1999). In general, land owners who are secured against eviction have more of an incentive to invest in the land and use it productively and in a more sustainable manner (World Bank 2007). Secure property rights also enables markets to transfer land to more productive users, and lowers the cost of credit as land is used as collateral (World Bank 2007).

Further, access to land can be enhanced through enabling and strengthening land rental markets and land sales' markets, and making land reform more effective. Land rental markets help households that are landless but have plenty of labor with agricultural skills and little education to rent land from those that take up non-agricultural employment (Deininger, Jin, and Nagarajan 2006 cited in World Bank 2007).

The importance of land rental markets and tenure security to South African small-scale farmers has been extensively documented (Dengu and Lyne 2007, Crookes and Lyne 2003, Lyne and Darroch 2003, Crookes and Lyne 2001, Fenwick and Lyne 1999, Thomson and Lyne 1993, Lyne, Ortmann, and Vink 1991). These studies have found that possible constraints to the growth of small farmers in KwaZulu-Natal (KZN) include tenure insecurity and the absence of efficient land markets (Crookes and Lyne 2001, Thomson and Lyne 1993).

3.4.2. Financial Constraints: Accessing Credit

The inability of smallholder farmers' worldwide to access credit diminishes their opportunities for investment in the long term and ultimately in their ability to compete and improve their livelihoods (World Bank 2007, Griffin, Khan, Ickowitz 2001). Financial constraints for these farmers are significant in both the opportunities forgone and their inability to mitigate risk. In Honduras, and Peru those farmers with credit constraint makes up 40 percent of the agricultural producers and on average uses somewhere between 50-75 percent of the purchased inputs of those lacking credit constraint, and earns only 60 to 90 percent of their income (Boucher, Carter, and Buirkinger 2006 cited in the World Bank 2007). These financial constraints tend to be most persistent in agriculture and involve high transaction costs and risks as opposed to urban areas due to numerous factors such as lower population densities, lower quality of infrastructure, and the seasonality of rural production livelihoods (World Bank 2007).

This constraint also proves to be a problem in South Africa. Empirical studies in South Africa show that small farmers are constrained by low and irregular income which reduces their ability to save, borrow and invest in agriculture (Lyne and Ortmann 1992 cited in Fenwick and Lyne 1999). However, these small farmers lack access to credit because they are often illiterate, lack collateral, have insecure titles to land, or are otherwise perceived as less credit worthy. Accessing formal credit is difficult since small farmers lack significant collateral and experience with debt-servicing problems. A study found that small farmers without off-farm income may find it difficult to borrow in the formal sector (Lugemwa and Darroch 1995 cited in Fenwick and Lyne 1999). Small farmers thus have to rely on informal credit markets where interest rates are higher. Further, this constraint has shown to impede on the farmers ability to innovate (Griffin, Khan, Ickowitz 2001).

The situation is similar for land reform beneficiaries. The first Quality of life survey conducted by the DLA in order provide insights into the land uses and livelihoods of land reform beneficiaries found that access to credit was close to non-existent and communities wanted the government to intervene as farmers found it difficult to access credit for inputs and fixed capital improvements which is essential for sustainable production and the ability to generate income (DLA 1998 cited in Jacobs 2003).

3.4.3. Human Capital Constraints: Agricultural Extension Services and Skills Development

Agricultural extension services include information disseminated by extension workers to farmers such as technical knowledge of agricultural science (Machethe and Mollel 2000). Extension services are the main ways in which farmers access research and technology to improve production (Kristen, Van Zyl, and Vink 1998 cited in Rother, Hall, and London 2008). International experience indicates that with adequate access to farmer support services, smallholder farmers can increase productivity and production significantly (Rukuni and Eicher 1994, Birkhaeuser *et al.* 1991 cited Machethe and Mollel, Alwang, Siegel, and Jorgensen 1996).

Specifically, in South Africa agricultural extension services serves as an important link between small-scale farmers and the Department of Agriculture (Jacobs 2003). In theory they are to respond to the livelihood needs and land-use behavior of small-scale farmers as these services are important especially for farmers who have limited farmland and therefore need to farm extensively. This is more especially the case among small-scale producers who gained access to farmland through the land reform program who may require new skills, including in farm management and marketing, and well as access to the institutions of commercial farming (Machethe and Mollel 2000).

Extension services are provided to land reform beneficiaries by the national and provincial departments of agriculture (Jacobs 2003). Additionally, the Settlement and Implementation Support program of the DLA and the Department of Rural Development, developed between January 2006 and June 2007, looks to represent the interests of land reform beneficiaries at the local and district municipal levels through developing capacity to provide effective settlement and implementation support for land and agrarian reform ("Developing Capacity to Provide Effective" 2007). Although it is limiting in its impact, key components of this program include strategies such as: "reframing land reform as a joint programme of government with the active involvement of land reform participants, civil society and the private sector, and utilising area based plans to locate planning and support needs within a clear spatial and fiscal framework within municipal IDP [integrated development planning] ("Developing Capacity to Provide Effective" 2007, 1).

Unfortunately, the provision of extension services has proved to be inadequate, under-funded, and is directed towards the needs of the emerging commercial farmers (Jacobs 2003). Thus there is a shortage of suitably trained staff given the large number of small-scale farmers in South Africa (Worth 2009). Structurally the root of this problem is manifested as a two track system developed which includes a well-developed extension support for large-scale commercial agriculture along with inferior services for small-scale producers in the former homelands (Jacobs 2003). This is the case as the commercial farming sector in South Africa has been served by extension services since the early 1900s. While in the homelands, demonstrators were appointed to teach improved cultivation to small-scale farmers, however their support from government research and extension was minimal (Bembridge 1990). Also, historically, white commercial farmers and black small-scale farmers were treated differently with regard to the content and methods of extension service (Bembridge 1990).

3.4.4 Physical Constraint: Lack of Infrastructure

Along with input markets it should also be noted that the lack of infrastructure in the former homeland areas means that many small-scale farmers and land reform beneficiaries are without access to municipal services such as water, sewerage, electricity, and roads (Jacobs 2003). This poses significant challenges as for instance access to water irrigation was found to be a major constraint to farming as over seventy percent of irrigated land was controlled by white farmers (May 1998 cited in Hall 2007). This is compounded by the fact that for beneficiaries inherited land is being viewed as private thereby creating confusion as to whether municipalities are legally able or obliged to provide service. One way around this has been to convert agricultural settlements into townships, but this consequently forces some people to move to fit the organizational needs of town-planners (Jacobs 2003).

Despite the lack of infrastructure, the government has yet to take seriously the need for integrated rural development. This problem is manifested in the land reform program where, as stated in land policies, the local government is said to play the key role in service delivery after the transfer of land (DLA 1997). While this provides implications for rural development local policies and programs have yet to pay significant attention to this as land reform is dismissed in local level delivery. While rural development was initially given priority in the White Paper on land reform, it was soon overlooked as the government's new rural development program released in 2002 lacked any commitment of resources from the national government. Issues of development are neglected as, promoted under the growth,

equity, and redistribution (GEAR) macroeconomic policy, emphasis is on "service delivery by the private sector driven by commercial interest." (Shepherd 2000, 212).

3.4.5. Physical Constraints: Inefficient Input Markets

The privatization era of the 1980s saw the deregulation of input markets ending direct production subsidies and price controls on agricultural inputs and placing their control in the hands of private companies (Rother, Hall, and London *et al.* 2008). In theory this was aimed to empower excluded small-scale farmers by opening access to all markets, however reality in Africa including South Africa, shows a quite different picture (Kristen et. al 1998). The promotion of seed and fertilizer use saw investments in irrigation, rural roads, marketing infrastructure, and financial services in Asia and parts of Latin America, these complementary measures were not witnessed in Africa. Thus, following the structural adjustment period private input markets have not produced on a large scale (World Bank 2007, Rother, Hall, and London *et al.* 2008). For example, the private sector has not responded favorably to the liberalization of agricultural input markets in Malawi as only a few large-scale enterprises sell agricultural inputs and these are limited to urban and peri-urban locations far from smallholder farmers (Mulva, Chirwa, and Kadzandira 2003 cited in Chirwa 2005). Consequently, as inefficiencies in the input markets developed in the private sector access to seeds, fertilizer, pesticides, and herbicides proves to be limited for small-scale farmers, particularly for those who grow non-commercial crops. This has proven to reduce productivity for small-scale farmers in South Africa (Rother, Hall, and London 2008, Andrew, Shackleton, Ainslie 2003, Fenwick and Lyne 1999).

3.4.5.1 Accessing Seeds

While many small scale farmers rely upon saved seed, improved access to a wider range of varieties, and to improved seeds this has been an important component of improved production in the past, and the well known Green Revolution was largely built upon this. For this reason a longer discussion on seeds is required.

A farmers' ability to secure seed is described by the concept of seed security. This concept includes several different elements as described under the Seed Security Framework. This includes seed availability as a sufficient quantity of seed of target crops has to be within a reasonable proximity, and in time for sowing periods has to be made available for farmers. Farmers also need to be able to access seeds through adequate income or resources to

purchase or barter appropriate seeds. Additionally, the seed quality must be acceptable and of desired varieties promoting a healthy seed system (Sperling, Remington, Haugen 2006).

Along with the Seed Security Framework, in understanding seed (in)security, it is important to distinguish between acute and chronic seed security issues (Sperling, Remington, Haugen 2006). Acute seed insecurity affects a broad range of the population, and is caused by distinct, short-term events such as the loss of a harvest, a flood, civil war, or high levels of infestation of stored seed stocks. Farmer's who recover quickly, with and without seed assistance, are usually those who have suffered acute stress. Chronic seed insecurity, although may be affected by acute stress or disaster, is separate from it. This is characterized by continual shortage of adequate seed to plant, difficulties in acquiring seed off farm because of lack of funds, and the continued use of low quality seed and unwanted varieties (Bramel *et al.* 2002, 12). This type of seed insecurity is found among populations who have been marginalized in various ways such as economically, socially, or politically. Both acute and chronic seed insecurity often exist together during emergencies, particularly those that are recurrent events. In such times, if alleviating actions are not sufficient than those just above the margins of security may fall into chronic seed stress (Bramel *et al.* 2002).

It is thus important to distinguish between acute and chronic seed security issues, and recognize the different seed system issues under the seed security framework as they call for different responses. For example, if seed is unavailable and the problem is acute a direct distribution of seed could be beneficial, whereas if the problem was chronic then an appropriate response would be to support the development of local and regional markets, and of quality assured production or supply chains (Bramel *et al.* 2002). The complexities of this problem has been manifested itself recently throughout research (Sperling, Remington, Haugen 2006). For example, a case study of eight seed intervention cases in Sub-Saharan Africa found that six implemented acute aid in situations that are primarily chronically-stressed. Consequently, their measures have not allowed for long-term support, and have not lead their recipients out of chronic seed insecurity (Sperling, Remington, Haugen 2006).

Further, research in seed insecurity throughout Africa has suggested that a transition from acute to chronic seed insecurity is increasing as opposed to seed security recovering (Sperling, Remington, Haugen 2006). Some suggest this is because quick forms of seed relief, such as through free distribution of improved varieties, undermine the functioning of

local seed systems, compromise local diversity of staple crops, and create market dependencies Also, research which has examined multiple distributions of seed aid in more than 15 African countries found that seed was available locally in those countries but farmers lacked access to seed because they did not have a means to buy or exchange it (Sperling, Cooper, Remington 2004 cited in Sperling, Remington, Haugen 2006).

3.4.5.2 Seed Systems

In Africa small-scale farmers generally use many systems to access seeds (Almekinders and Louwaars 1999). One route, especially important when seed is used to grow crops for commercial purposes where uniformity and high quality of the product has to be guaranteed, is the formal seed systems. This system has a distinct chain of activities starting with plant breeding and looks to promote materials from formal variety release and maintenance. Within this system regulation is important as it looks to maintain variety, identify, purity, and the quality of the seed. The marketing of these seeds take place through officially recognized seed outlets, national agricultural research systems, and through relief seed programs. Within this system there is a distinction between seed and grain (Louwaars 1994 cited in Sperling, Remington, Haugen 2006).

The informal seed system, also referred to as the local, farmer, or traditional seed system, is integrated and organized locally as opposed to more centralized formal commercial enterprises (Sperling, Remington, Haugen 2006). This system recognizes the ways in which farmers produce, disseminate, and procure seeds such as through their own harvest, bartering among friends, neighbors and relatives, and through local grain markets or traders. While the informal system follows similar steps as the formal system, it is an integral part of the farmers' grain production, and seed system performance abides by local technical knowledge and standards. With some exception, such as hybrid maize, the informal system provides most of the seeds farmers use worldwide (Sperling, Remington, Haugen 2006).

While both systems exist throughout Sub-Saharan Africa there have been debates around the usefulness of each system. Those in favor of the informal system argue that the formal system acts as a threat to crop system resilience and agro biodiversity. Those supporting commercial seed production view it as necessary in sustaining increases in crop production through providing high quality seeds (Sperling, Remington, Haugen 2006). They would cite for instance, a case study done in western Kenya which found that both seeds sold through

local grain markets and saved and stored on farms, where found to be of a poor quality resulting in declining yields and inability to farm at a subsistence level (Wambugu 2005).

Despite these debates, some research has suggested that small farmers in Africa are increasingly sourcing their seeds from local seed/grain markets which bring in grains which is sorted and used by farmers for seed. This differs from the commercial formal sector seed which is specially produced as seed, and from the commonly held idea that farmers would buy seed on local markets only if they failed to harvest their own seed or were unable to obtain from family, friends, or neighbors (Sperling, Remington, Haugen 2006).

Interestingly, seed system analysis done in Sub-Saharan Africa over the past five years suggest that the market seed channels are efficient and that the farmers rely on local market seed for price, varieties, and adequate quality, and serve as an important complement to own production and commercial outlets. This has proven especially true for more vulnerable farm families (Sperling *et al.* 2004). They are the major source of seed for many farmers in different cropping systems in Africa, including beans in Burundi, and groundnut in Senegal and Gambia (Sperling *et al.* 2004).

Formal seed systems, backed by governments, are poorly integrated with local seed/grain channels as they look to maximize commercial seed sales and company profitability through sustained seed sales (Sperling *et al.* 2004). When seeds from the formal sector enter the informal sector they are multiplied and recycled within social networks, thus lowering the revenues of formal seed systems. NGOS tend to support farmer production for home or local community use, and consequently the local seed/grain markets receive little support despite its ability to disseminate new varieties appropriate to its locality. Thus, some would argue that if farmer production is to be maintained and strengthened local seed/grain markets need to receive greater support focusing on improving both the variety and quality of seed sold in local markets (Sperling *et al.* 2004).

3.4.6 Social Constraints: Producer Organizations

Social capital is often used in the SL framework, and most often as membership of groups. Producer organizations are one example of such groups. This is important to smallholder farmers since they lack influential power in factor and production markets, and face high transaction costs. They also are rarely heard in public forums, and especially given the global

political economic environment, find it increasingly hard to compete let alone survive (World Bank 2007). In order to increase their chances of success farmers have joined different types of producer organizations in order to overcome the challenges they face. These organizations include cooperatives, associations, and societies, and are membership based or federations of organizations with elected leaders. In the USA and Europe producer organizations have sustained the success of family farms, and the leading form of production. In other parts of the world, such as Africa, this has not been the case. However, since the structural adjustment programs of the 1980s limited the state's role, smallholders have increasingly looked to producer organizations as few private providers replaced the state support (Hall 2007, World Bank 2007, Jacobs 2003).

In general, producer organizations have expanded significantly, and today organize on both the regional and international levels. While serving different functions one important aspect is their ability to improve the terms of access to outputs and input markets (World Bank 2007). For example, in Ethiopia producer organizations have become the retail fertilizer distribution. This allows smallholder farmers to buy in bulk overcoming insufficient private sector delivery (World Bank 2007). However, organizations within the backdrop of global market forces, faces considerable challenges that it must overcome. For instance, they are only now starting to represent the interests of the poorest members. While governments and donors have supported producer organizations and can assist them in overcoming obstacles, they are challenged to do so without impeding upon the organization's autonomy (World Bank 2007).

In South Africa agricultural organizations are widely used in commercial farming sector as their membership controls a significant amount of farmland and resources (Jacobs, Lahiff, and Hall 2003). However, these organizations are challenged with representing and supporting smaller-scale non-commercial farmers who are resource poor and incapable of paying for their services since the agri-business sectors have not extended their operations to them (Jacobs 2003). Co-operatives also take on a similar challenge (Hall 2007). While state-supported co-operatives in input-supply, marketing and value-adding were at one time successful in supporting white farmers, they have been privatized and some have closed down. Although co-operatives have become part of the African National Congress' strategy, it has mainly been the private sector that has looked to improve market access for new small farmers and those facing similar problems in the communal areas. Private sector initiatives

however are of course largely commodity-specific therefore not benefiting those unable to grow cash crops (Hall 2007).

Agricultural cooperatives that serve smallholders in the less developed rural areas of South Africa have lacked both quality and stability (Ortmann and King 2007). In general, they have not been successful in promoting agricultural development as they have not allowed members to gain access to input and product markets (Ortmann and King 2007). Studies done on agricultural cooperatives in former homeland areas found that failure was a result of poor management, lack of training, lack of funds, and conflict among members (Van der Walt 2005 cited in Ortmann and King 2007, Machethe 1990 cited in Ortmann and King 2007).

3.5 Conclusion

This chapter has explored the limitations placed on small-scale farmers in their ability to access inputs. Specifically, an understanding of these limitations was looked at through the sustainable livelihoods framework. While these operate together to produce barriers to successful small scale production, focus is placed on access to inputs with seeds identified as an area for attention. Together with the previous chapters, the inefficiencies, inequities, and social costs pegged against the small farmer in South Africa can be revealed as a result of institutional gaps, absence of state support and market failures.

Chapter Four: Methodology

4.1 Introduction

This chapter presents the methodology and methods used for this research. In doing so details of the case study are presented along with a description of the participants, and the challenges presented in the data collection process. The chapter concludes with an explanation of how the data was analyzed.

4.2 Methodology

The aim of this data collection carried out for this dissertation is to engage with a group of small-scale farmers receiving assistance and training from an NGO in an attempt to further understand the barriers and opportunities that they confront when accessing inputs needed for agricultural production that contributes towards their livelihoods. Thus the research, being exploratory in nature, would most appropriately use a qualitative approach as it is open and flexible using inductive reasoning rather than attempting to transform aspects of the social world into variables and hypotheses (Neuman 2000). This allowed me to begin with specific observations of a particular case of farmers and build towards more general patterns creating a basis for meaningful observation (Torkington 2000). However, shortcomings to this approach are that it is time consuming, more expensive, and liable to bias (Kirk and Miller 1989). Also, this type of research could not assess the quantitative impact of the farmers' inability to assess inputs in relation to poverty reduction.

The particular methodology used to explore the research questions was the case study. Case studies are beneficial as they serve exploratory, descriptive, and explanatory purposes that help generate theory and initiate change (Blaike 2000). In case studies the researcher explores a single entity or phenomenon bounded by time and activity and collects detailed information using mainly qualitative techniques (Blaike 2000). Here, this methodology allowed for an in-depth exploration into the complexities a certain group of resource poor farmers' face when accessing inputs. This is advantageous as delving deep into the respondents' story allowed for a descriptive basis of their situation enabling the identification of their constraints to be explored within the many different angles that comprise the sustainable livelihood framework. This is important as a more holistic view enabled details from the viewpoint of the participants to come to light through using multiple sources of data. However, it should be noted that criticisms of case studies include a concern with biased

findings being presented as consequences of the researcher influencing the results due to a lack of replication, and the inability of case studies to produce good generalizations of the overall picture as each case tends to have too many unique aspects (Blaikie 2000). Also, particularly in this case, reliance upon gate-keepers to access to communities proved to be a distinct disadvantage as I was unable to secure multiple study sites. This did not allow the research to compare different case studies of small-scale farmers where different types of support were used.

However, despite this uncontrollable factor, the case study that was secured under the Africa Cooperative Action Trust (ACAT) was useful given the objectives of the research. The participants used in this case study matched the target group intended for the research as they fit the definition of a small-farmer. That is they use both farming and non-farm activities for their livelihoods, produce mostly for consumption sometimes selling a marginal amount of surplus, have small amounts of farmland, own few animals, rely on family labor, cannot pay for support services, and are considered poor in terms of their income and total asset value (Machethe and Mollel 2000). Further, the activities undertaken by ACAT are broadly similar to post-settlement support for livelihood security that could be offered to land reform beneficiaries. Ultimately, this case study allowed for an understanding of how inputs are acquired and managed by those small-scale farmers who are supported privately. Future studies could look to compare this research with case studies where small-farmers use state support or no support.

4.2.1. The Case Study: Africa Cooperative Action Trust (ACAT)

ACAT, a non-profit trust receiving local, national, and foreign funding, was established in 1979 as a Christian Development Trust committed to "enabling disadvantaged rural people to improve and sustain their quality of life spiritually, physically, materially, intellectually, socially, and environmentally" (ACAT 2000,1). The overall focus of the organization is to assist rural families who are trapped in poverty to such an extent that they can end up helping themselves (Thembinkosi 2009)[4]. They target the poorest of the previously disadvantaged rural communities operating in nineteen areas of thirty kilometers each in rural areas of KZN. They also work with over fifty communities in various parts of Swaziland (Gugu 2008)[5].

[4] Thembinkosi (Coordinating Trainer based in Nqutu, ACAT) interviewed 16 March 2009, Nqutu.
[5] Gugu (Leader of the SAP training based in Howick, ACAT) interviewed 20 November 2008, Howick.

In order to carry out their mission ACAT looks to allow the targeted rural families to "become self reliant, overcome the causes of poverty within their control, encourage others to do the same, and to become involved in groups, co-operatives, and village bank (ACAT 2000). As of 2007, this has been implemented through the integrated livelihoods approach (Thembinkosi 2009). Under this approach ACAT asks members of the community to do a wealth ranking in order to identify the poorest members. Once this is completed identified members are asked to group themselves in fives. In the study area, Nqutu, twenty groups of five were formed in 2008 (Thembinkosi 2009). From here two are chosen by the group to receive one week of basic training at the center in Howick. This training includes three programs: sustainable agriculture program (SAP), entrepreneurial development, and adult basic education and training. These programs include spiritual development, basic life skills, intervention for those infected and affected by HIV/AIDS along with information on the virus, entrepreneurial skills, and household food security gardens (Thembinkosi 2009).

When the two group members return from training they are required to share the information they learned with their other group members (Gugu 2008). From here members need to apply what they learned and decide on their main interest as a group. This could include farming, block making, owning a spaza shop, sewing, chicken rearing etc. Once decided on each group of five will then eventually come together with other groups of five that share their same interest (Gugu 2008). These interest groups come together to assist each other with overcoming difficulties in their area of specialization. After committing to being part of the group and productively pursuing an interest for over two months ACAT will offer small individual loans to assist them. These groups are to form a solid basis for potential co-operatives (Thembinkosi 2009).

From the original group of five, members who want to be community volunteers identify themselves. These volunteers take two years of advanced courses from ACAT. The volunteers help ensure that what ACAT teaches is left in the communities regardless of whether or not ACAT still exists (Gugu 2008). The community-based volunteers help organize meetings and further specialize in the interest group they are in. They therefore are able to provide further assistance to those particular interest groups. They also serve an important function in reaching out to the community at large. When community members who are not part of ACAT see what their neighbors are doing, such as successfully growing

crops, they also want to learn. The community volunteer will then train them and assist them so that they too can succeed (Thembinkosi 2009).

All the groups of five of one particular area than comes together in order to form a zone. In Nqutu, the study area, there are seven zones which conduct monthly meetings. Zone management committees are formed (Thembinkosi 2009). They are responsible for the community development within their local area and overseas the functioning of the groups in their zone. A final step up is the community management committee (CMC). Here, all the zones within a thirty kilometer radius come together for monthly meetings. The committee is responsible for the community development of this entire area (Thembinkosi 2009). The goal of this process, which starts with groups of five and eventually ends in the setting up of CMCs, is so participants take responsibility of their own development and run the programs themselves training others in their community who have not been exposed to interventions (Gugu 2008).

I met some of the participants who were part of groups of five interested in sustainable agriculture. In general the SAP training, which began in 1999, looks to enable disadvantaged small farmers or those who want to farm to overcome poverty through sustainable agriculture. That is, to develop their farms into models which are "economically sound, environmentally friendly, and enables future generations to meet their needs" (ACAT 2000, 1). This is done through low cost food production. An emphasis is also placed on those who receive training to influence and assist others with the knowledge they learned.

The program includes "promoting and teaching sustainable agriculture practices, and considering the context, needs, and problems facing small rural farmers" (ACAT 2007, 10). For instance, in 2007 around 750 new farmers had been introduced by ACAT to new agricultural skills. This includes vegetable production, fruit production, poultry, garden layout, soil fertility, plant protection, and food processing (ACAT 2007). Specifically, Thembinkosi explained that members are taught how to make compost, cultivate a garden, eliminate pests, and how to dig deep trenches.

Along with training from the center ACAT members receive assistance through the extension officer and other farmers. In 2007 around 185 visits were made to groups of farmers, and over 400 visits to farmers. Here skills training are reviewed, seedling is distributed, farmers

are assisted with their farming layout, and agribusiness, money management, problem solving, and HIV/AIDS workshops facilitated. Farmers also participate in garden layout demonstrations, soil fertility demonstrations, terracing demonstrations, and seed selection and saving activities. Farmers are also shown how to plant and transplant, create and use compost, mulch, pest control, and shown food processing and preservation demonstrations along with how to harvest water and food (ACAT 2007, 12).

The agricultural extension officer who frequents Nqutu resides in Ladysmith but comes four to five times a month in order to field questions and give advice to interested farmers. Thembinkosi, the extension officer who lives in Nqutu, also conducts modules on all topics throughout the year where farmers are able to gain further assistance (Thembinkosi 2009).

Interaction with other members is also facilitated through cross visits where farmers visit a successful farmer to discuss issues surrounding the skills learned. In 2007 for instance there were 48 cross visits which involved 696 farmers. The extension officer then monitors how farmers adapt to what they learned and whether other farmers copy it (ACAT 2007).

4.2.2 Area of Study: Nqutu

ACAT has been operating within Nqutu for nine years. Nqutu is a rural area in northern KZN. In general this province is home to some of the poorest households in the country with an income per capita that lays 25 percent below the national average (Foggin and Munster 2000). Compared to other regions of South Africa, KZN has a medium Human Development Index characterized by a poorly skilled labor force, as well as high unemployment levels in rural areas (Foggin and Munster 2000). As Nqutu was once part of the KwaZulu homeland it displays characteristics typical of an area with this history. That is it has high levels of poverty, low levels of education, and a minimal amount of resources and infrastructure (Taylor and Cairns 2001).

The Nqutu Municipality is one of four municipalities within the Umzinyathi District Council (KwaZulu-Natal Department of Health 2005) Nqutu, linking Dundee to Melmoth, serves as the Provincial Administration center with Offices of the Department of Education, Agriculture, Environmental affairs, Works, Health, Justice and Welfare. The town serves a large surrounding rural population and is strongly linked to the surrounding towns of Dundee, Vryheid, Newcastle, and Melmoth (KwaZulu-Natal Department of Health 2005). Dundee is

linked to Nqutu by the tarred roads and provides many of the administrative and institutional needs as well as employment opportunities for Nqutu residents (KwaZulu-Natal Department of Health 2005).

According to the 2001 population census around 13,8791 people live in Nqutu (Stats SA 2005). Of these, 55 percent are female, and around 61 percent of the households are headed by women. This is most likely due to males migrating to urban areas. Over 15 percent of the population is under the age of five, and 46 percent of the population is aged 14 years or younger. Nearly 6 percent of the population is 65 years or older, but 19 percent of all households are headed by someone in this age group. Also, just over 7 percent are headed by the youth under the age of 20 (Stats SA 2005).

A total of 57 percent of the adult population (15 years or older) are considered illiterate (has less than seven years of schooling), while 36 percent of the adult population has no school at all. Less than 1 percent of the adult population has received tertiary education (Stats SA 2005).

The economically active population (15-65 years) makes up 54 percent of the population. Of this, 6 percent are employed, and 79 percent are not economically active. Of those employed, 21 percent work in elementary occupations. The income is thus very low as 32 percent of all households earn R9600 or less annually, and 49 percent of all households have no annual income (Stats SA 2005).

The majority of households, around 60 percent live in traditional dwellings made with traditional materials. There is an apparent lack of services. Only around 17 percent of all households had access to electricity, while 71percent are reliant on candles for lightening, and 10 percent on paraffin. Further, 43 percent of households did not have access to piped (tap) water, 30 percent receive their water from a borehole, well or rainwater tank, and over 51 percent rely on river, stream, or spring. Also, only 14 percent of households have access to a flush or chemical toilet, while the majority use either a pit latrine (44 percent) or no latrine at all (41percent). Only, 17 percent of the households have access to a telephone in their homes (including cellular phones), and over 13 percent of all households have no access to a telephone at all (Stats SA 2005).

4.3 Methods of Data Collection

The methods used to collect data included a focus group and in-depth interviews. Consent forms were obtained from all those who participated. This ensured that they all were informed of their rights to anonymity and that they were free to withdraw from the study at any time.

In total two focus groups consisting of four respondents each and ten in-depth interviews were conducted. Overall, this combination of methods at these numbers provided substantial data that could be analyzed in order to fulfill the research objectives. More specifically, the focus group was limited to four participants as I looked to stimulate discussion as opposed to simply elicit the groups' answers in order to understand the meaning and the norms which underlined the group. As a translator was needed, I felt most comfortable with no more than four to a group. Of course, if I received any type of funding I would have preferred to spend more time in the field, but overall I was satisfied with the data collected from the number and range of respondents used.

Respondents were selected to include a fair number of both sexes, a diverse age range, and a varying ability of success in crop production. The latter was determined by Thembinkosi, the coordinating trainer for ACAT based in Nqutu. This diversity in respondents was pursued in an attempt to ensure that the different groups of farmers when taken together cover the complete range of the study population

4.3.1 Focus Groups

Focus groups are group discussions between organized samples of people chosen for their similarity of interests, ideas and experiences on specific issues (Barbour 1999). Focus groups are distinguished from the broader category of group interviews by the explicit use of group interaction to generate data. They allow participants to generate their own questions, frames, and concepts to pursue their own priorities in their own terms. Focus groups also enable researchers to examine people's different perspectives as they operate within a social network (Bloor *et al.* 2001).

Focus groups are welcomed by some because of their potential for transforming the researcher-researched relationship, as group work can shift the balance power in favor of participants (Barbour 1999). Thus focus groups can disrupt researchers' assumptions and

encourage research participants to explore issues, identify common problems, and suggest potential solutions through sharing and comparing experiences (Barbour 1999). However they can be misused as powerful public relations tool as it is relatively easy for them to be presented as consultation exercises or for findings to be manipulated to justify decisions which have already been made (Barbour 1999). Also, a lot of responsibility rests on the moderator as they need to avoid being judgmental, or presenting their self as experts or making assumptions which close off exploration (Bloor *et al.* 2001). They also need skills in balancing keeping quiet with knowing when to intervene, and to encourage everyone to participate and ensure that unexpected avenues are pursued. Thus, it is useful to have prior knowledge, enabling them to interpret the language terminology, gestures, and cultural meanings of the particular group (Bloor *et al.* 2001).

For this study the focus groups drew on participatory rural appraisal (PRA) approaches encouraging interactive and participatory processes in which information is shared (Mikkelsen, 2005). This included mapping, problem ranking, and wealth ranking exercises, along with the use matrixes and production time lines.

Two focus groups, each including four respondents, were coordinated in two different geographical areas of Nqutu. The first group came from an area that was around four kilometers west from the town center. These respondents lived within an estimated seven kilometer radius from the main tar road (R33) which connects Nqutu to Dundee. The other half of the respondents lived in an area of Nqutu called Nqopoti which is around sixteen kilometers south of the town center. One must travel this distance on an unpaved road which shoots off of the R33.

Having been introduced to the groups two days prior we were able to coordinate a time and meeting place in an empty church for one group, and an empty storage room for another. These locations were accessible to all. The various activities were done quite successfully through the help of a Zulu translator as none of the respondents spoke any English. Each group spent around three hours going through this. Light refreshments were served after the discussions concluded.

4.3.2 Interviews

The rest of the data collection focused on in-depth semi-structured style interviews with both key informants and the farmers. Face-to-face in-depth interviews are flexible and dynamic allowing an understanding of the informant's perspectives on their lives, experiences, or situations as expressed in their own words (Kirk and Miller 1989). Particularly, the semi-structured interview style was chosen since the "interviewed subject's viewpoints are more likely to be expressed in a relatively openly designed interview situation than in a standardized interview" (Flick 1998: 76). Thus, they provide the opportunity for the interviewer to respond to information given and obtain a more accurate and complete picture.

The first interview was arranged at ACAT's headquarters with Gugu who is the leading trainer for the SAP. Once in Nqutu eight interviews were conducted with farmers who were affiliated with ACAT. A final interview was also conducted with Thembinkosi.

These interviews each took around one to one and a half hours. With the exception of the interviews with the ACT employees a Zulu translator was used. While this was my first time needing a translator to collect data I at first found it cumbersome and frustrating. However, thanks to the skills of the translator, I was able to better understand how to make the process work along the way. Also, permission was obtained to quote material from all interviews.

4.4 Data Analysis

Once out of the field the interviews and focus group discussions were transcribed and the information from the participatory exercises analyzed. Next, a thematic analysis of the data collected was performed as all information was coded. Common codes were then used to construct themes. This was done in accordance to the methods described by Miles and Huberman (1994).

4.5 Conclusion

This chapter has presented the methodology used detailing the case study. It has also explored the methods used in data collection: focus groups and interviews. A description of the participants has also been presented, along with the thematic method of data analysis. The next chapter will present an analysis of the research findings.

Chapter Five: Analysis of Research Findings

5.1 Introduction

This chapter presents the findings of the research. It starts with an outline of the social and demographic characteristics of the farmers and the households in which they live. This is then followed by section 5.3 which describes the respondents' previous experiences of cultivation, and delves into their agricultural enterprise establishing that they are small scale farmers. Sections 5.4 through 5.8 then follow the sustainable livelihoods approach discussed in chapter three in order to evaluate input accessibility which gives rise to the barriers and opportunities for crop production. The inputs explored here are categorized in accordance to the "livelihoods pentagon" as structured under the SL framework. Following this analysis the last section focuses on how crop production is being used in order to assist the farmer in their pathway from poverty.

5.2 Social and Demographic Characteristics of the Respondents

In total eight farmers were interviewed individually. This included six females and two males between the ages of 34-58. Eight different farmers also participated in two different focus groups. This included five males and three females. The age group of these respondents ranged from 28-56. They have been members of ACAT's SAP from anywhere between two to seven years. Of all the respondents two are widowed female head of households and one is a widowed male head of household. Additionally, three have never been married. Of those three two are female head of households and one is a male who lives with a partner. The remaining ten are married and live with their spouse.

5.2.1 Level of Education

Table One summarizes the educational background of the respondents.

Table One: Level of Education

Level of Education Completed	Number of Respondents
Matric	1
Standard 8	1
Standard 5	3
Standard 4	2
Standard 3	3
Standard 2	2
Standard 1	2
No level of Education	2

It is clear from Table One that the respondents all have low levels of education. That is over half of the respondents have a standard three level of education or below. The other half has a standard eight level of education or below with the exception of one who completed high school. This fits the profile of Nqutu which according to Stats SA in 2005 has a total of 57 percent of the adult population (15 years or older) which is considered illiterate (less than seven years of schooling), and only 1 percent of the adult population having received tertiary education (Stats SA 2005). More generally, this fits the socio-economic profile of KwaZulu-Natal which is characterized by a poorly skilled labor force with low levels of education (Foggin and Munster 2000). These are also characteristics said to be typical of a former homeland (Taylor and Cairns 2001).

Given their lack of education and skills the importance of a more redistributive measure of poverty reduction focusing outside of economic growth is supported. Here, redistribution allows the uneducated poor to have better control over productive resources thus enhancing pro-poor growth that reduces poverty as it allows their labor and land to be used (World Bank 2000, Borras 2003, Negrao 2002 cited in Lahiff 2007). Growth in agriculture can thus have a disproportional positive impact on poverty levels given the labor-intensive nature of agricultural production and the larger proportion of poorer people who partake in agriculture (Mellor 1999 cited in Wegerif 2004). However within this context it also becomes clear why agricultural extension services play a vital role amongst smallholder farmers in South Africa (Machethe and Mollel 2000). In order to combat that lack of education and enable redistributive measures to contribute to poverty reduction the quality of provision of extension services towards small-hold farmers would need to improve drastically.

5.2.2 Number of Household Members

The number of people who currently live in their household (i.e. lived in the household for at least fifteen days in the last month) ranges from four to nine other people, with an average of six. This always included family members of either two or three generations. Only three households out of the sixteen have a member living with them who is currently employed. This only included one member of the household. These jobs were a hardware saleslady, a Shoprite bagger, and a general worker.

Of these sixteen different households, only two do not have a family member who has moved away from home in order to find work. Of the fourteen households that do have family members that moved away to find work only seven households have members who have found work and are currently employed. Five of these households receive irregular remittances and one receives regular remittances every other month.

5.2.3 Household Survival Strategies

Of the sixteen respondents, eight have been employed before (i.e. performing work for pay profit or family gain for at least one hour a week for the duration of a month). However, the average year they were last employed was in 2001. These forms of employment included home-base care, a transport bus driver, welding, working on a farm and installing communal taps. Currently only two of these eight respondents are employed. This includes earning R390 and R440 a month to clean the side of the road two and three times a week respectively. The other eight respondents have never been employed.

Currently, all respondents consider themselves to be self-employed as a farmer. Although only two of them have previously worked on a farm before where they herded cattle and planted and harvested crops for agricultural experience. Beside from being a farmer, five of the respondents said they engage in other activities in order to meet the household's needs. This included selling cement bricks, owning a spaza shop, livestock husbandry, and irregularly borrowing money in order to set up a mini shop selling snacks and cold drinks. Fourteen of the respondents earned anywhere between R200-R2000 in selling their surplus crop production last year.

Thirteen of the respondents rely on child support grants and pensions for most of their monthly income. The household monthly income ranged between R200-R2300. The total average monthly income was R848.

5.2.3.1 Ranking of Household Strategies

The respondents were asked to rank in order of importance all the activities their household uses for meeting their family's needs. Table Two is the result of this exercise. Here, all respondents who received social grants ranked this as most important. This exercise confirms that people from rural areas count on support from the urban economy in the form of remittances and social grants in order to combat poverty (Hall 2009, Woolard 2003).

When respondents were asked to explain why social grants were ranked as most important it became clear that it was an issue of reliability, and their inability to further expand their crop production. Applying the SL framework to this finding provides an understanding of what combination of livelihood resources result in the ability to pursue different livelihood strategies (Scoones 1998). Since agriculture is one of the riskiest sectors, and risk-reducing mechanisms are lacking in rural areas households must adopt low risk and low return activities (Shackleton, Shackleton, and Cousins 2001, World Bank 20007). Here it becomes evident that these farmers make use of diverse livelihood strategies in order to use the assets that they do own while managing the constraints imposed by risks, and market and state failures. For instance, Ma Santos explained that she knew she could count on the grant every month. Therefore she was able to know exactly what she could afford to buy each month. She has been growing crops for three years and says at times she does not know what to expect from the harvest. Depending on the amount of rain, and whether animals destroy her crops she does not know how much she will produce. Lindo also explained that if he were able to grow more of each crop and grow other crops then crop production would be most important to his family. This is because the food he currently buys is expensive and the amount he could make from selling his surplus would far exceed what he gets in grants.

Table Two: Household Strategies in Order of Perceived Importance

Respondent	Most Important	Second Most Important	Third Most Important	Fourth Most Important
1	Grants	Crop Production	Personal Use of Livestock	Irregular Remittances
2	Grants	Crop Production	Personal Use of Livestock	Irregular Remittances
3	Grants	Crop Production	Personal Use of Livestock	Irregular Remittances
4	Grants	Crop Production	Regular Remittances	
5	Grants	Crop Production	Cleaning Side of the Road	
6	Grants	Cleaning Side of the Road	Crop Production	
7	Grants	Crop Production	Occasionally Selling Snacks/Cold Drink	
8	Grants	Crop Production		
9	Grants	Crop Production	Livestock Husbandry	Personal Use of Livestock
10	Grants	Crop Production		
11	Grants	Crop Production		
12	Grants	Crop Production	Livestock Husbandry	Personal Use of Livestock
13	Grants	Crop Production		
14	Spaza Shop	Crop Production	Hardware Saleslady	
15	Crop Production	Shoprite Bagger	Selling Cement	
16	Crop Production	General Worker	Personal Use of Livestock	

Table Two shows that the respondents found value in subsistence agriculture as the production of food crops is an important source of livelihoods (Andrew, Shackleton, and Ainslie 2003, Shackleton, Shackleton, and Cousins 2001). However the table reflects the difficulty in conceptualizing and capturing the dynamics of poverty (World Bank 2007). The findings from Table Two recognizes that some of the respondents, despite being completely impoverished continue to adopt diverse livelihood and coping strategies including employment in the rural non-farm economy, reliance on welfare grants, as well family members who migrated to urbanized areas (Lahiff 2008). Also, the respondents attained their livelihood from all of these categories simultaneously (Shackleton, Shackleton, and Cousins 2001). Institutional innovations at the policy level must therefore bear in mind that these pathways are complementary and can enhance the potential of the other livelihood strategies to be used. Make sure that such comments also appear in your conclusion

5.2.4 Amenities

Nine of the respondents lived in a traditional dwelling made of brick and cement. The rest lived in brick and cement houses. From the mapping exercise it was clear that those defined as poorest in the community were those who did not have electricity. However, there were no distinct areas throughout the community without access to electricity. Instead, it was rather sporadic. For instance, Thandi did not have any electricity and relied on a solar panel to collect energy during the day so she could watch television at night. Her neighbors from across the street however had electricity. Thandi explained that it is frustrating since the local government has promised that she would get electricity for over eight years now. While some people she knows in the community received electricity over these past few years most has not. It is also frustrating for her because she does not understand why some of her neighbors who live less than half a kilometer from her have electricity and she does not. She says this is a common pattern throughout Nqutu.

Of the sixteen respondents twelve had access to electricity in their homes which was pre-paid using the card system method.

Access to water varied. Only two respondents had what they considered easy access to water. In these cases the water pump was within ten minutes walking distance from their house. However, in both cases these pumps were said to be unreliable as water continually dried up. When this happened, which was more often than not during the year, they would be forced to walk to the river which was a forty-five minute to an hour walk away. The other respondents all had to walk between twenty to forty-five minutes to the communal tap. However, only one of the respondents had access to a tap that is currently working. It was explained that water was last seen coming from the pumps over five months ago and before that they were very unreliable. Consequently, these respondents relied on water from either a borehole or the river. It took the respondents between thirty minutes to one hour to walk to their water source. Carrying one 20 liter bucket at a time, respondents would thus spend on average between just over an hour and two and a half hours fetching water. They would repeat this on average between three to four times daily.

The lack of amenities, infrastructure, and service delivery highlighted by the respondents above suggests that Nqutu, once part of the KwaZulu homeland, displays characteristics typical to its historical context (Taylor and Cairns 2001). This reflects the fact that

government has yet to take seriously the implementation of an integrated rural development plan.

5.3 The Small-Scale Agricultural Enterprise

5.3.1 Use of Land

Nine of the sixteen respondents acquired their land directly through the iNkosi. They either received this for free or paid R200. The others inherited their land through their family. None of the respondents lost the land they used in the past for reasons other than choosing to move to a different location. The size of the land varied from just under one hectare (six of the respondents) to around one hectare (seven of the respondents) to around two hectares (three of the respondents). The size of the land devoted to crop production also varied. All the respondents with two hectares of land said they devoted around one hectare to crop production. Eight of the respondents said their area of space devoted to crop production was around ten by fifteen meters. Five of the respondents said they devoted around half a hectare of the land to crop production.

Additionally, six of the respondents also had a bigger plot of land that was anywhere between half a kilometer to two kilometers away from their house. This land was between one to two hectares and was fully devoted to growing maize and at times pumpkin. All this land was acquired through permission from the iNkosi for free or for R200. However, of these six only one still relied on this land as a food source. Further, three more respondents said they use to have access to a bigger plot of land but discontinued using it within the last three years. The reason everyone gave for this was lack of easy access to water and not enough rain along with no fencing which allowed animals to destroy their crops. Further, one of the respondents recently acquired a bigger plot of land around half a kilometer from her house. While she was able to get this for free from the iNkosi, she does not know how successful crop production will be because as she has to rely on rain water since her water source is more than a thirty minute walk away.

The inability of these farmers to use their bigger plots of land due to inadequate irrigation systems demonstrates how the lack of infrastructure and access to municipal services poses a significant challenge to these farmers (Jacobs 2003). Along with other studies (May 1998

cited in Hall 2007), here too lack of access to water irrigation was found to be a major constraint to farming.

When asked to describe the suitability of their land for farming all of the respondents but one said the land was rocky and the soil was either dry or not fertile. Additionally, half of the respondents complained of the thick clay. This had various implications. For Shelia, whose family had two hectares of land, they were only able to use one hectare for crop production because of all the stones. Also, eight other respondents complained that it was very difficult to clear and plough the land since the stones would cause the metal grinders that the tractor pulled to break. Six of the respondents also alluded to crop failure since they would mistakenly plant in places where stones and clay were underneath.

5.3.2 History of Crop Production

The respondents have started producing a variety of crops successfully within the past two to eight years. The majority of the respondents said they produced maize at times throughout their life but did not grow other crops. Three of the respondents had tried to grow other crops before their encounter with ACAT but only Sipho was successful. He explained that he farmed on a little bit of his land before joining ACAT. This was enough to feed his household, but after gaining skills and guidance he was able to expand and sell crops for a profit. Four of the respondents did not grow anything before becoming members of ACAT.

The main reason for not farming or expanding beyond growing crops outside of maize was lack of knowledge and consequently lack of hope. For instance, Khethiwe explained that she learned through her grandmother how to grow maize but she never received knowledge beyond that. She did try to plant other vegetables that she saw people selling, but never produced a good harvest. She therefore gave up on farming although she wanted to grow a variety of crops since her husband was unemployed. Shelia commented that there are very little resources available to the community and without the help of ACAT no one is able to learn how to farm different crops. Ma Santos, who previously never farmed before joining ACAT, explained that she had longed for growing different food so she could feed her family but she did not know to grow the food. Her neighbors only grew some maize and could not advise her. She therefore gave up and tried to come up with other plans.

Another main reason for not farming, which was tied to lack of knowledge, was a loss of hope. Maria explained that always wanted to grow crops but members of her family are constantly dying and she has been emotionally and mentally disturbed. Sufiso explained that he grew up in poverty and did not know how to provide for his children. He became frustrated because there were no available options to him so he decided to give up on trying.

All the respondents credit ACAT for allowing them to farm a variety of crops successfully. They were also able to sell their crops for the first time. ACAT helped them to overcome these two important barriers. Maria explained that ACAT encouraged her to not give up and she was able to get into farming as ACAT motivated her by giving her free seeds when she first started. Betty explained that she lost all hope and ACAT members gave her confidence to believe in herself and to know she can do something about being poor.

5.3.3 Crop Production

Table Three shows the crops grown in the last two growing seasons.

Table Three: Crops Grown in the last Two Growing Seasons

Crops Grown	Number of Respondents
Maize	14
Tomatoes	13
Spinach	13
Onions	12
Cabbage	11
Carrots	11
Potatoes	10
Green Pepper	9
Sugar Beans	7
Sweet Potatoes	7
Beetroot	7
Lettuce	7
Green Beans	4
Pumpkin	4
Eggplant	2
Green Chilies	1

Table Three along with section 5.3.2 demonstrates the importance of skills training and the difference it can make in increasing the productivity of small-scale farmers and thus the ability of agriculture to contribute to growth and poverty reduction. Prior to successfully producing crops most of the respondents only knew how to grow maize. The main reason that they gave for not expanding beyond this was lack of knowledge on when and how to properly grow the other crops. Upon receiving very minimal training by ACAT extension

officers (as discussed in chapter four), the respondents began to grow a wide variety of crops successfully. Table Three shows that at least fifteen other crops have been grown over the last two years with a majority of the respondents having grown at least seven new crops.

Institutional support systems which look to overcome human capital constraints are therefore critical to the success of small-scale farmers. Institutional innovations in this case, as demonstrated in other experiences internationally, show that with adequate access to farmer support services, smallholder farmers can increase productivity and production significantly (Rukuni and Eicher 1994, Birkhaeuser et al. 1991 cited Machethe and Mollel, Alwang, Siegel, and Jorgensen 1996).

5.3.4 Livestock

Six out of the sixteen respondents own livestock. Of these six, a further two engage in livestock husbandry (i.e. breeding and selling). On average these six respondents had around eight cows which are being used for milk, ploughing, manure, selling, consuming, and breeding. The respondents also had on average around ten chickens. These were being used mainly for consumption and fertilizer. One respondent was engaging in chicken rearing. One respondent also had four goats which were being used mainly for their milk. Aside from these six respondents, a further three respondents had previously owned cows. However, they were forced to sell them because they did not have a fence and people would continually steal them.

5.3.5 Summary of Respondent's Background

The information provided above confirms that the respondents chosen for this research share many characteristics with rural poor households in the former homelands of South Africa. They have very low levels of education, comprise a poorly skilled labor force, have family members who migrated to urban areas to find work, and rely heavily on child support grants and pensions for most of their monthly income. They lack basic services and own little more than a small dwelling place, a small plot of land, and a few livestock. But, they try to engage in crop production, livestock husbandry, and low-skilled employment (Lahiff 2008). Although most are unlikely to ever benefit from the redistribution component of the land reform program, people with these characteristics are likely to be affected by policies which change land tenure rights in the former homeland and their livelihood are thus an important issue for analysis.

5.4 Obtaining Inputs: Barriers and Opportunities

Section 5.5 through 5.8 looks to answer the heart of the research objectives by attempting to understand how the respondents obtained inputs in order to farm. What arose from this conversation were their perceptions of the barriers to and opportunities for crop production. These sections attained this information through use of the SL framework which includes the "livelihoods pentagon" which depicts dimensions of livelihoods and the interdependent relationship between the five dimensions of livelihood assets (Hall 2007, Scoones 1998). As already discussed, these dimensions include natural capital, human capital, social capital, financial capital, and physical capital (Scoones 1998).

All the respondents, in both the focus groups and interviews, where therefore asked to list the different inputs they use or desire to use in order to grow crops successfully. What resulted was a list of inputs which were then broken down into their corresponding livelihood asset dimension. Once inputs were listed, all respondents were asked to discuss the barriers and/or opportunities to attaining adequate access for each input, and the implications this had on their ability to farm successfully. Additionally, the focus groups were asked to assign a number from a one through ten scale on their ability to access each of the inputs adequately. On this scale number one meant that they were easily able to access the specific input at a level that satisfied them. A ten meant they had a very difficult time accessing this input at a level that satisfied them. As a result of these discussions it became apparent that the respondents have a varying level of difficulty in obtaining the different dimensions of their capital asset base. The interdependent relationships of the capital assets also emerged.

The following five sections explore the five dimensions of livelihoods assets as it pertained to these discussions.

5.5 Natural Capital

The first dimension of the SL framework to be considered is natural capital. This refers to environmentally produced assets (Hall 2007). The two inputs the respondents discussed which fall under this category is that of water and land. Table Four is a summary of this discussion. The first column lists the input, while the number in the second column represents the average number taken from the two focus groups on the scale described in the above paragraph. Thus, water was listed as extremely difficult to access at a satisfying level,

while land was listed as moderately difficult to obtain at a satisfying level. From here the third column summarizes the barriers to attaining adequate access, and the last column summarizes the implications of this. A more detailed discussion of each input listed in Table Four is then provided.

Table Four: Natural Capital

Input	Ability to Access Input Adequately : 1-10	Barriers to Attaining Adequate Access that results in a Desirable Outcome	Implications of Inadequate Access which does not Result in a Desirable Outcome
Water	10	Taps were unreliable as they always dried up, most respondents spend between ½ -2 hours fetching 20 liters of water 3-4 times daily from a river or borehole	• Big plot of land 1-2 kilometers from home- cannot grow a variety of vegetables, must rely on rain, end up discontinuing use • Crops grown near house-limits the variety of vegetables grown, severely limits overall quantity and quality of crop production
Land	6	Cost of land is the biggest perceived barrier, as a lot of land lays fallow one can easily get more land from their iNkosi, however this can cost R200 or more and can be far away from their home (i.e. around a ½- 2 kilometers away)	Unable to expand crop production, if land is attained unable to water due to size and distance from home

5.5.1 Natural Capital: Access to Water

The ability of the respondents to access water was among their top concern. Every single respondent listed access to water and lack of proper fencing as the two biggest factors limiting their production. It was felt that unless something is done to ease their ability to get water there is no way they will be able to expand their crop production significantly. As explained in the amenity section, this is because they spend anywhere between one and half to two hours fetching twenty liters of water, repeated three to four times daily.

While the majority of the respondents had communal taps within a ten to thirty minute walk they were not able to use them. The water was said to be constantly running dry and is not a reliable source. Only one of the respondents, who lived close to the tarred R33 road, was currently able to use her communal tap. However, she was confident that this would not last for long especially as the winter months came. She said it was only in the last two months that she was able to use the tap. Before that she was walking to the river which took just

under an hour one way. She believes she relies on the river as a source of water more so then the tap.

As for the other respondents they were relying on either a river or a borehole for their water source as their taps had run dry and did not work for over five months. Jabu explained that it is hard to fetch water as the government does not care when the taps run dry. Sipho suggested the government needs to put more taps as he already had to walk thirty minutes to his tap when it was working. He complained that in times of drought the river water is also scarce.

For the crops that were grown in close proximity to the respondents' houses the watering patterns varied. Some of the contributing factors were the distance away from the water source and the members at home who were able to help. Also, the respondents had different patterns in accordance with the seasons. In the summer, for instance Goodness would water her crops two times a week. In the winter, when there is little rain and it is windy she waters it two times a day daily. Betty waters her crops twice a day everyday as it only takes her thirty minutes to walk to the borehole, and she has children out of school that can help her. However, she admits that it will be difficult to expand her crop production further since it would be very difficult to fetch additional water. Khethiwe, who walks around one hour to fetch water at the river, waters her crops at least two times a week in the summer and tries to water them once a day in the winter when there is no rain. She complains that it is a very difficult task and it makes her too tired. This is the one thing she does not like about growing crops. Sibonglile waters her crops two to three times a week in the summer. In the winter when it is really dry and the crops are getting no rain water she tries to water her plants at least once a day. To help them during this time she mixes her water with cow dung and pours it over her crops. It takes her two hours round trip to collect water.

Maria relied just on rain water for the crops she grew next to her home. She explained it is too difficult for her to fetch water several times a day because it takes her around two hours to collect twenty liters of water. Her children are at school for most of the day so they cannot help as much. Her husband also recently passed away along with her eldest son. She says since she does not grow a lot this is sufficient in the summer season. In the winter she only grows spinach and cabbage because they do not need a lot of water. This is also something she learned through ACAT. She says if she was able to collect water easier she would be able to grow more crops in both seasons.

For the six respondents who grew maize and pumpkin on a bigger plot of land that was not next to their house they all relied solely on rain water. Thus the success of their harvest varied. They also cannot grow other vegetables here. For instance, Thembi explained she is unable to water her bigger plot of land because it is over one kilometer away from her water source. She therefore relies on rain water and grows only maize there. She would love to grow more vegetables so she could expand the little she grows at home but it is just not possible to get water there. Thembi also explained that she cannot rely on this plot of land because when it does not rain a lot the land is unable to produce maize for her. This happened two seasons ago when there were only a few stalks of maize able to be consumed. For the three who use to grow maize and/or pumpkin on a big plot of land they all attributed lack of access to water and fencing as reasons for discontinuing use.

As the respondents do not have access to water irrigation, let alone a reliable water source that is within reasonable distance, their ability to expand crop production is greatly impeded upon. In fact, this was listed as one of the biggest barriers to crop production. When respondents are able to attain bigger plots of the land they must rely on the rainy season. Here, only pumpkin and maize can be grown. When crops are grown around their house the quality and quantity of crop production is still greatly effected as it takes too much time and effort to collect water. Thus, only certain crops are grown in the winter time.

The lack of a reliable water source and poor service delivery highlighted by the respondents above reflects the continual failed efforts of the government to implement adequate infrastructure, or take seriously the need for quality service delivery especially within the former homelands. Consequently, the inability of the respondents to expand their crop variety and yield as they must rely heavily on the rainy season due to lack of access to water and water irrigation is consistent with other studies done in communal areas (D'Haese et al. 1998, McAllister 1998 cited in Andrew, Ainslie, and Shackleton 2003).

5.5.2 Natural Capital: Access to Land

When it came to accessing land the respondents concerns were the cost, and where their newly acquired land would be located. In general it was acknowledged that a lot of land lay fallow, and financial constraints was the only reason listed for their inability to attain more land if desired. If they were in fact able to afford to purchase land, then the issue became the

distance that land would be from their homes. This was usually around one half to two kilometers way. Of course this was a problem as they did not have adequate access to their other main natural capital: water.

5.6 Physical Capital

Another dimension of the SL framework is physical capital which refers to productive equipment (Hall 2007). The inputs the respondents discussed which fall under this category is various ploughing equipment, planting machine, seeds, fertilizers, pesticides, fencing, drying/storage area, and harvesting equipment. Table Five is a summary of this discussion. The first column lists the input, while the number in the second column represents the average number taken from the two focus groups with the exception of the seeds as all respondents were consulted for this. The third column summarizes the barriers to attaining adequate access, and the last column summarizes the implications of this listing in some cases opportunities for crop production given access to other inputs. A more detailed discussion of Table Five is then provided.

Table Five: Physical Capital

Input	Ability to Access Input Adequately : 1-10	Barriers to Attaining Adequate Access that results in a Desirable Outcome	Implications of Inadequate Access which does not Result in a Desirable Outcome
Ploughing Equipment: Tractor	7.5	Expensive-costs R300-R700, Recent Price Hikes	If one cannot afford a tractor than must rely on social capital to borrow tools, ploughing takes 1-4 weeks instead of 1 day subsequently crops are planted later than planned
Ploughing Equipment: Cattle	5.5	Most respondents no longer own cattle since they are often times stolen due to improper fencing	If one cannot use cattle than must rely on social capital to borrow tools, it takes around 4 weeks to plough instead of 1, subsequently crops are planted later than planned
Ploughing Equipment: Shovel, Spade, Hoe, Pitchfork	3	Tools are borrowed from ACAT, however if other members are using them then you are required to wait your turn, also sometimes you do not get every tool you need	Relies on social capital to borrow tools, takes 4 weeks and is very difficult, immediately limits the amount of crops grown for that season as one can only plough so much

Planting Machine	9	Too Expensive as it costs around R500-R600	Must plant by hand limiting one's ability to expand production in the long term, not a significant factor for today as small areas of land are being used
Seeds	4	Cannot afford to buy seeds for every crop	Relies on social capital to trade for seeds, unable to expand crop production, cannot grow every vegetable desired every growing season
Homemade Fertilizer	5	Lack of manure as respondents do not own animals or own few animals, also lack of mobility to collect manure and grass	Can only cover some of the soil thus limiting production as less seeds are planted or production is unsuccessful
Store Brought Fertilizer	7	Costs money, no access to information other than that provided by store, unclear which one is best to use	• Cannot always afford to buy it, does not always work effectively and/or used effectively so significant part of yield is destroyed. • Given financial constraints opportunities for crop production arises as respondents have access to homemade fertilizer,
Homemade Pesticide	9	• No information on how to make this as most did not know it existed • For the 3 who used vegetable skins for pesticides they were at times not successful	Rely on store brought which cannot always be afforded and is not used properly resulting in destroyed crops
Store Brought Pesticide	6.5	Cost money, little information is known about how it is to be used effectively, unclear which one is best to use	• Cannot always afford to buy it, does not always work effectively and/or used effectively so significant part of yield is destroyed. • Given financial constraints opportunities for crop production arises if respondents have access to homemade pesticides
Fencing	10	Too expensive to buy, uses sticks and stones	Animals are constantly destroying the crops, this is very de-motivating as it wastes time, energy, and money making it impossible to expand

Drying/Storage	1	Makes own storage out of brick and cement or uses house, not a lot of drying time is needed (mostly just for beans)	Will need to build storage or expand storage to accommodate for expansion in the future
Harvesting Equipment	9.5	Too expensive must rely on hands	Limits size of production, increases work load/energy/time

5.6.1 Ploughing Equipment

Three main methods were used in order to plough: hiring tractors, using cows, or using one's hand. These methods varied according to available income. Around thirteen of the respondents have hired tractors from private owners whom they believe are from Dundee before for anywhere between R300-R700. They all hired from people they heard about either through word of mouth or through advertisements at shops such as Boxers and Koporus in this town. When this is used the ploughing is done in one day. However, many of the respondents complained that there has been recent price hikes especially over the past year and a half. For this reason around only seven of the respondents were able to hire tractors in the 2008 growing season.

The other respondents relied on cows, or their own hands. Nancy, for instance, explained that in the past year it took her three weeks to clear her land and plough the field. She borrowed a hoe, spade, shovel, and pitchfork from ACAT as she was able to tell one of ACAT's community volunteers that she was not able to hire a tractor. Without access to the borrowed tools she said she would not have known what to do. Similarly, Thembi explained that in the past she used a tractor to plough which cost her R500. However, the price had jumped to R700 in 2008. Thus, she was unable to hire and therefore relied on her hands and tools she borrowed through ACAT. This took her over three weeks. Khethiwe also had this shared experience as she was unable to hire a tractor for R600 last year and was forced to use her hands. It took her around three weeks to do this using borrowed tools from ACAT. This caused her to plant her crops later than she was suppose to which meant harvesting the food later than planned.

The use of a tractor was the preferred method of ploughing for all respondents. However the one problem, aside from cost of hiring, is the issue of stones. In some cases the soil had large

stones and would therefore cause the screw holding the plough on the tractor to fall off. It would then be difficult to find the screw.

Other respondents said they resorted to using their cattle. Most of them relied on help from their oldest sons and said it took around one week. This, as explained by Jabu and many other respondents, is of course not ideal as a tractor can get the job done in one day. However, they are grateful they are able to use their cows instead of having to spend money on hiring a tractor.

Another issue that came up out of the discussion around ploughing is that of livestock being stolen and the issue of fencing. This was also mentioned under section 5.3.4. At least more than half of the respondents have had livestock stolen from them in the past two years. They all attributed this to their inability to provide fencing since the cost of attaining and installing barbwire fencing is too expensive. The respondents had either used no fencing at all or made a fence out of sticks or large stones. The issue of stealing was so bad that a significant around seven respondents could no longer own animals due to crime. Shelia for instance use to rely on her family's cows for ploughing but now must rely on a tractor since they were no longer able to keep livestock. Khethiwe, unable to afford hiring a tractor, would have preferred to use her cows but they were all stolen because she had no proper fencing.

5.6.2Clearing and Preparing the Land

In instances where respondents produced crops on small plots of land (i.e. on less than a half of hectare of land) the process of clearing the field and preparing beds was extensive. In all these cases the tools were borrowed from ACAT and shared amongst the immediate ACAT members in the area. This was estimated to be around a kilometer and half radius. There was one instance however where a member borrowed a hoe from a neighbor in exchange for some of her vegetables she was going to grow. Here, it would take respondents around one month to clear the land. The rocks and weeds would be removed and the soil turned over with a pitchfork. This was then left to dry leaving the grass to die. After this, the soil was raked and beds were prepared. The process of making beds would take around two weeks. All the respondents who used these techniques learned them through ACAT. It was also their first time planting anything other than maize.

5.6.3 Seeds

The question of seed accessibility was one of the original focuses of this research. After extensively talking through this issue it became clear that the issue around seed accessibility was reduced to a matter of financial limitations. All the respondents were asked if they were adequately able to access seeds. When this was ranked on a scale between one to ten (one being easily able to access seeds) the average was a 1.5 when money was not an issue. However when taking into account financial realities the average rose to 6.5. All respondents claimed this was the only barrier to accessing seeds. Further, respondents listed vegetables they would like to grow. The only reason they were unable to grow these was because they lacked information on how to grow them properly, or issues related to water access or fencing. When asked if there was ever a time when they were unable to grow a certain type of vegetable for a particular growing season because they could not find the seed everyone but one answered no. In this case Thembi responded that she is sometimes not able to find tomato seeds but this does not happen often. When it does she will transfer and trade her germinated seeds with a close by neighbor for their germinated tomato seeds.

The main concern with accessing seeds was not being able to afford them. All of the respondents said there were times when they were unable to attain seeds because they were not able to buy them. Lindo explained that during a growing season there are at least one or two crops that he is unable to grow because he cannot buy the seeds. However, it is never a struggle for him to find the seeds. Similarly, Busi explained that she cannot always buy all the seeds she would like to because she simply cannot afford it. However, when this is the case she will try to trade some seeds with her neighbors. She says often times this solves the problem because they have what she wants and she has what they want. Betty explained that during the course of her last growing season she wanted to grow green peppers and lettuce but was not able to because she had a shortage of money. She therefore had to buy all the popular vegetables first.

Thus looking within the Seed Security Framework the seed availably is adequate for the respondents as they are able to attain a sufficient quantity of seed of target crops within reasonable distance during sowing periods (Sperling, Remington, Haugen 2006). However, the respondents are constrained by their ability to access seeds through adequate income or resources to purchase or barter appropriate seeds. The seed quality is also questionable. Therefore, seed security for the respondents is somewhat of an issue. Given the financial

constraints the respondents' seed insecurity would be considered more of a chronic issue (Bramel et al. 2002). Thus, when accessing appropriate responses policies should look to support the development of local markets making seed more affordable, perhaps through a community seed bank. However, it is also important to remember that the inability to use seeds is not only limited by financial constraints. As mentioned earlier, the reason respondents were unable to grow new crops was due to lack of knowledge. Thus policies around issues of seed access and use must also incorporate teaching the advantages and challenges of growing these crops.

Given these financial constraints, the respondents used both the formal and informal sectors to access seeds (Almekinders and Louwaars 1999). The informal sector, consisting of procuring seeds through their own harvest, and bartering among friends and neighbors, was used extensively by a majority of the respondents in order to compensate for financial limitations (Sperling, Remington, Haugen 2006). However, in cases where finance was available formal outlets were used.

This is reflected here as eleven of the respondents, looking to use their social capital, relied on trading seeds as a way of coping with their financial limitations. This was done often as respondents suggested they engage in trading at least once every two growing seasons. They exchanged either other seeds or their produce for seeds. Six of these eleven respondents traded on a regular basis. Betty explained that she will buy seeds for beetroots and tomatoes and her neighbor will buy cabbage and onion seeds. They will then plant these seeds separately but once they germinate they will transfer and trade these seeds with each other. She said her neighbor is also a member of ACAT and they started doing this when they were both discussing their problems at a monthly farmers meeting. The other five respondents also said they engaged in this activity at least once every two growing seasons. Only one of these respondents was trading with a neighbor who was not an ACAT member. Here, Sipho explained that often times he would try to get seeds from his neighbor and offer to give him other vegetables once they matured. It was here that they realized they could buy different seeds and then trade them. He has been doing this for two years. He says this has helped him be able to grow more vegetables since he does not have to buy every seed.

Overall these respondents suggested that trading of seeds between neighbors has been the solution in overcoming their immediate financial limitations. However, the concern is that

they will not be able to expand their production. For instance, Shelia explained that she aspires to be a farmer that grows lots of vegetables on a large piece of land but is worried that she will not be able to get every seed she wants to grow since she only has so much to trade.

For those respondents who do not rely on trading seeds they either just started growing crops so they received seeds from ACAT and do no grow a lot of variety yet, or they have traded in the past but have not recently struggled with money for seeds. Of the latter, these three respondents happened to earn the most in selling their surplus and produced the most amongst the respondents.

The respondents were asked to list all their available options of where they could get seeds from. Table Six shows their responses along with where they do get their seeds from and reasons for this.

Table Six: Seed Accessibility

Where Respondents Access Seeds From	**Number of Respondents who Accessed Seeds here at least once in the past two years**	**Why Seeds are Accessed Here**
Boxers, a commercial shop in the town of Nqutu	5	Closest, smaller packets so less expensive
ACAT	4 (two were first time growers)	Received their first seeds from here in order to get started, helps in times of greatest financial struggle
Korporus, a commercial shop in Nqutu	5	Proper farming shop, closest, other farmers go there
Small Local Shops around the community (sells germinated seeds in buckets)	6	Closest, friends of owners, can buy the number of your choice so can save money
Cash N Carry, a branch of a shopping chain in Dundee	2	Buy in bulk with a group of farmers from ACAT to save money
Browns, a branch of a shopping chain in	2	Closest, friends go there for seeds, cheaper than

Nqutu		Koporus
Trading Seeds with Neighbors in exchange for produce	5	Not enough money to buy seeds, wanted to save money
Trading Seeds for Seeds with neighbors	7	Not enough money to buy seeds, helps save money, helps support each other, easy to do
Department of Agriculture	1	Needed assistance so ACAT helped organize
Reusing Seeds from Harvest	14	Saves money, logical, successful

In regards to the above table it should be noted that the respondents said they pay anywhere between R8-R12 on packets of seeds, and they cannot recall a recent price hike over the past few years. Also, all respondents have received seeds from ACAT when they first started planting. These seeds have motivated the members to plant and of course help them to get started. Ma Santos explained that upon receiving her first seeds she was overjoyed as she felt she could take control of her life and begin something on her own. Jabu also commented that receiving seeds made him motivated to produce food for his family. Thandi said the seeds she got represented hope as she felt she was now able to plant and grow a better future for her family. Since initially receiving seeds only two of the respondents have since received seeds from ACAT. This occurred one to two times. They explained that ACAT's community volunteer in the area was able to get them some seeds for around three to five vegetables since they were really struggling to buy them.

The one respondent who indirectly received seeds from the Department of Agriculture was also struggling to buy seeds. One of ACAT's community volunteer was finally able to get some seeds from the government department in early 2009. Khethiwe explained however that she was given a few small packets which she had to share with other ACAT members. She was not satisfied with this amount as it did not even account for half of what she wanted to plant.

Also, fourteen of the respondents reused maize from the previous harvest, nine reused potatoes, nine cut and reused the spinach, and all four of the pumpkin and green bean users reused their seeds. They said they were either taught this through their family or that it was common knowledge. Of those that reused maize and potatoes they were satisfied with its

success. However, those that reused spinach, pumpkin and green bean seeds said that they were not always satisfied with the results. In general respondents were interested in learning more about how to reuse other seeds. The reoccurring theme throughout the focus groups and most of the interviews was that they did not know what seeds they could reuse and they did not know where to get information on this.

As the respondents are new to farming and have not been able to acquire the appropriate skills and training it was difficult for them to access the quality of the seeds they used. The most common response was that the quality of the seeds differs from packet to packet as you never know what to expect each year.

5.6.4 Inefficiencies in the Fertilizer and Pesticide Markets: Lack of Information

The next two sections discuss fertilizer and pesticide use. In this case the inefficiencies in the market come mostly from lack of information. In general, when chemicals are brought from the store respondents do not know how to use them properly. They also have a rather limited selection and end up choosing the cheapest one which is used by most farmers in the area. However, they are able to access these chemicals if they desired. However, of course due to financial constraints, the respondents preferred their homemade counterparts.

5.6.4.1 Accessing Fertilizers

All but one respondent relies on either cows, goats, or chicken for manure for fertilizer compost. Of these fifteen respondents all of them learned this technique through ACAT. The other respondent learned this from her husband who used manure when growing maize. The use of organic fertilizer is well received because it does not cost money and does work sufficiently as a fertilizer. However, there are issues of yielding an adequate quantity. Only two respondents said they were satisfied with the amount they have. The issues of insufficient quantity stem from lack of manure and issues of mobility when there is enough manure. For instance, Maria explained that she use to buy fertilizer but that cost her money. Through joining ACAT she learned how to use manure and make compost and has since started to use that. While it is effective on the soil and has saved her money, she says her only complaint is that she is never able to make enough with the manure she has. She therefore uses it on half of her soil for one planting season and the next planting seasons applies some on the other half. She says this has limited her ability to produce a greater quantity of crops. Thembi also explained that it is hard to make in bulk because you need

transportation in order to gather grass and dung in large quantities. She therefore concluded that she has enough manure but is not able to collect all of it.

Jabu, who owns five cows and has around one hectare of land devoted to crop production, is completely satisfied with his homemade fertilizer. He says that he makes his fertilizer out of cow dung, hay grass and left over food like potato peels. He says he is able to make enough for an adequate supply. He enjoys doing this since he does not have to pay for store brought fertilizer which does the same job. He also was the only respondent to comment on the fact that unlike store brought fertilizers his compost does not negatively affect the soil.

For those respondents who do not own livestock they were still able to make the compost, however their supply was inadequate. For example, Sibonglile says it is difficult to make since she does not own animals but she is able to get as much as she can from immediate neighbors. However, since she lives on a hill far away from a lot of people she is never able to collect enough manure for her crops. She explained that because of this she takes the dung and mixes it with water. She then sprinkles it lightly over her beds when her seeds germinate. She learned this through ACAT. She has thus resorted to buying some fertilizer called Kuthaza Khau from a store in town called Koporus. She uses this as soon as the seeds germinate. She does not know anything else about it other than when to use it and that it enriches the soil. She learned about this product at the store, and they told her this information. She is equally satisfied with the ability of both fertilizers to enrich the soil, but wishes she was able to collect enough manure so she did not have to pay.

Thembi and Goodness also have no livestock and rely on the cow dung of their extended family in the area and neighbors. Thembi explains that she is never able to get enough as she is always asking her family and neighbors and simply collects what she can. This has made it difficult to grow more crops since she cannot afford to buy fertilizer from a store. However, she is satisfied with the quality of the compost she does make. Similarly, Goodness goes to houses near her home and asks permission to collect their cow dung. She then makes compost out of this with hay grass and skins of previously grown food. She uses this on the soil before she plants. Depending on much she is able to collect, sometimes she has enough for her soil, other times she is only able to cover half of the soil. She is satisfied with the results when she is able to use it.

There was one respondent who complained of the quality of the homemade fertilizer. Betty explained that the cow dung has animals in it which can affect the plant. However, she still uses the manure since it is free and easily accessible.

5.6.4.2 Accessing Pesticides

The use of pesticides varied for the respondents. Either they brought Blue Death and insecticidal powder containing carbaryl[6] , used their own, or did not use any.

Three of the respondents used their own pesticides through the use of certain vegetable skins such as onions. They all were taught this through ACAT and have never used a store brought chemical. Jabu explained that he preferred this over buying from a store because it allowed his crops to be healthier. He was satisfied with its performance. The other two respondents also preferred this over store brought chemicals because it was free. They both commented that it worked for the most part but at times certain crops would still end up being destroyed by bugs. They all heard of Blue Death through other farmers but have not tried it.

Eight of the respondents were currently using Blue Death. Of these eight none of them have tried using a natural pesticide. This is mostly because none of them have had knowledge of how to do this. Only two of these respondents recalled learning a natural technique from ACAT. In these cases they said they preferred using Blue Death since they knew other farmers in the area were satisfied with Blue Death. Also, insects have been a problem so they did not want to take any chances. These eight respondents all used Blue Death and have had no prior experiences with any other pesticides. These pesticides were brought by the respondents in Boxer and Koporus. None of these respondents were sure if other pesticides were offered. Seven of the respondents heard of this pesticide through word of mouth, and one said she learned of it through store assistance.

The amount of information known regarding this pesticide is very limited. For instance, Goodness explained that she does not know any information on how to use it or exactly what it does. She just knows to put some on her crops as soon as they look they are being "chowed". She says the result of this is mixed. Sometimes it seems to work other times the vegetable ends up dying. Similarly, Sibonglile uses Blue Death which she got at Koporus.

[6] Carbaryl is toxic to humans and has been classified as a likely human carcinogen by the United States Environmental Protection Agency. It is illegal in a number of countries including the United Kingdom. It is also acutely toxic to honeybees.

She does not know what it is exactly but says she asked the store for something to keep the bugs away. They gave her this. She then found out that other farmers close by also used it. They told her to spray it on any of her crops when she notices they have been damaged by insects. Even though she used this, her spinach was still eaten by insects the last growing season.

Five of the respondents have not used any type of pesticides. They had no knowledge of how to use a natural pesticide. Three of the respondents have heard of Blue Death through other farmers, but could not afford to buy it. Their understanding of this chemical was that it is a white powder you can sprinkle on your crops when insects have been eating them. Two of the respondents have not heard of any certain type of pesticides to use. Both of these respondents grow less than six types of crops in an area around ten meters by fifteen meters. Maria for instance explained that she did not have any information on pesticides. This is not something she learned about through ACAT nor has she asked about. While some of her crops have been destroyed by insects it has not been a major problem.

5.6.5 Fencing

The issue of inadequate fencing along with water accessibility was highlighted over and over again as the biggest barriers to farming and expanding crop production. None of the six respondents who grew maize and/or pumpkin on a bigger plot of land had any type of fence around their field. They all said at times animals have destroyed a significant portion of the maize. This along with their inability to water the field was the reason the other three respondents gave up growing on their bigger plot of land.

For the crops grown next to their home all of the respondents complained that animals eat and destroy their vegetables when they are not around or at night. This has become a major problem since so much of their yield is destroyed. It has deterred many of the respondents from further expansion. As they cannot afford proper fencing several of the respondents had built fences out of sticks. However, the cows and goats can easily trample over this. Two of the respondents also made fences out of large stones as they were able to borrow their neighbors' wheelbarrow in exchange for some of their vegetables. While this kept the animals out thus far, they said it was very difficult to build. They do not feel that they could expand this type of fencing much further because it is too hard.

5.7 Financial Capital: Credit

A third dimension of the SL framework is financial capital which refers to savings, and suppliers of credit (Hall 2007). The inputs the respondents discussed which fall under this category is their ability to access credit. Table Seven is a summary of this discussion. The first column lists the input, while the number in the second column represents the average number taken from the two focus groups. Here the 8.5 reflects the fact that the respondents found it very difficult to adequately access credit. The third column summarizes the barriers to attaining adequate access, and the last column summarizes the implications. A more detailed discussion of Table Seven is then provided.

Table Seven: Financial Capital

Input	**Ability to Access Input Adequately : 1-10**	**Barriers to Attaining Adequate Access that results in a Desirable Outcome**	**Implications of Inadequate Access which does not Result in a Desirable Outcome**
Credit	8.5	• ACAT and commercial banks are the only known options • Accessing credit is found to be too risky since success of yield is unpredictable • Due to low income respondents are denied by commercial banks	Cannot purchase proper fencing which is among the biggest concern, cannot hire tractor or planting and harvesting equipment, and sometimes seeds; can therefore not expand production

Given the background of the respondents they are clearly discounted from formal credit schemes. In fact only ten of the respondents had bank accounts. Further, only two of the respondents currently belonged to a stockvel. None of the respondents were part of an informal savings and credit scheme nor knew of any in the area.

Thembinkosi explained that ACAT does offer loans anywhere from R300-R3000. These "start-up" loans are encouraged to promote thought and research into income generating enterprises. They are available for entrepreneurial venture including agricultural use. The respondents must go through an elaborate set of prerequisites in order to qualify. Out of the respondents interviewed only six have yet to take a loan from ACAT. One of the loans was used for a spaza shop. The other five loans were R300. These loans were used for buying seeds and contributed toward hiring a tractor. Each respondent had only borrowed one loan and they all found it very helpful. Lindo explained that this enabled him to buy more of a

variety of seeds so he could sell a little bit more than usual. Thulani stated that without the loan it would not have been possible to hire a tractor.

However four of these respondents mentioned the risk involved as they did not know how successful their harvest would be and were worried they would not be able to pay it back. The remainder of the respondents said they have yet to meet the requirements for ACAT or feel it is too risky to borrow money since they are not sure how successful their harvest will be.

As far as credit schemes outside of ACAT the only place respondents knew was that of commercial banks. However, none of them tried to attain a loan as they knew they would be denied or thought that it was too risky. For instance, Jabu explained that the bank looks at your history and for this reason he would be denied. Also, he says it is too risky as you need to be sure you can pay it back. He therefore does not like to owe money because farming is unpredictable as he relies a lot on the weather since access to water is difficult. However, he would love to be able to have a loan for a tractor and proper fencing.

Similarly, Sipho also would like a loan for a fence, tractor, and harvesting equipment. Ultimately, he would like to be able to expand and upgrade his farm so he could create employment for his community and be able to sell more. However, he is waiting for next year as it is difficult now since he does not make enough money as he is new to farming, and he believes the bank would not loan him money at this time. He also commented that he does not know information about where to get loans other than the bank. He feels you need contacts if you want a loan from someone other than banks.

Betty commented that a loan would benefit her as she would be able to buy a fence and thus expand her farm. However, she does not have any information about where to get a loan. She knows ACAT offers loans but has not yet qualified. She also fears owning money to others since she is never sure how many extra vegetables she will be able to sell.

It becomes apparent that the inability of the respondent's to access credit is hampering their opportunities for investment not allowing them to expand production or innovate, a finding confirmed by other studies of small scale farming (Griffin, Khan, Ickowitz 2001, Vink and Kirsten 2003). Of course this is due in part to their low and irregular income, lack of collateral, and inexperience with debt-servicing (Lyne and Ortmann 1992 cited in Fenwick

and Lyne 1999, Lugemwa and Darroch 1995 cited in Fenwick and Lyne 1999). Also, aside from commercial banks and ACAT the respondents were not aware of any other options for accessing credit. The lack of options is a similar experience to that of land reform beneficiaries (DLA 1998 cited in Jacobs 2003). In the few instances where small loans from ACAT where used however it proved to be beneficial in aiding with their ability to expand crop production.

The major concern respondents had with using credit had the option been available is that of risk. As they own a minimal amount of assets, and are unable to cope with the unpredictability of the growing seasons, they must adopt a low risk and low return method, as is described by the World Bank for farmers in other developing countries (2007). The respondents must look to other options, such as owning spaza shops, in order to compensate for this. Here it becomes apparent, as structured under the SL framework, how the respondents' household asset position determines their household productivity which determines their livelihood strategies.

5.8 Human and Social Capital

Two other dimensions of the SL framework are coupled together in this section: human capital and social capital. Here, human capital refers to investments in health, education, and skills while social capital is the rules, norms, trusts, and access to decision making (Hall 2007). The inputs the respondents discussed which fall under these categories is the skills and training they received from ACAT, the government, and other farmers. Table Eight is a summary of this discussion. The first column lists the input, while the number in the second column represents the average number taken from the two focus groups. Here it becomes evident that attaining skills training from the government is the most difficult to access. The third column summarizes the barriers to attaining adequate access, and the last column summarizes the implications of this listing in some cases opportunities for crop production given access to other inputs. A more detailed discussion of Table Eight is then provided.

Table Eight: Human and Social Capital

Input	Ability to Access Input Adequately : 1-10	Barriers to Attaining Adequate Access that results in a Desirable Outcome	Implications of Inadequate Access which does not Result in a Desirable Outcome
Skills and Training Provided by the Government	10	Little to no knowledge of existence of government departments related to agriculture in town, no presence on the ground except to sell fertilizer, false promises, information it does offer not disseminated into the community; bottom line is no faith in government	Distills a sense of hopelessness and helplessness, feels disconnected from the outside world and unable to break poverty cycle since there is very little access to information, unable to become the aspiring farmers they want to be, unable to grow certain crops
Skills and Training Provided by ACAT	2.5	ACAT provides a good foundation for skill building, however respondents feel they cannot rely on ACAT alone as they need to learn more like how to re-use seeds	Unable to become the aspiring farmers they want to be as they are only receiving a certain level of knowledge, unable to grow certain crops
Skills and Training Provided by Other Farmers	6.5	Information provided can be misleading and is limited	Distills a sense of helplessness for the entire community as it feels like no one is able to beat poverty

5.8.1 Human and Social Capital: Agricultural Skills and Training

The people of Nqutu are cut off from access to information or skills training. There are four sources of information available to the respondents: the government, ACAT, neighbors and limited knowledge passed down from their family (e.g. how to grow maize). ACAT has been identified as the only useful source for assisting the respondents in expanding their harvest. This sense of disconnect has distilled a sense of hopelessness and helplessness into the community. Thandi explained that she does not know how her community can advance or move out of poverty since there are no opportunities for learning or growing in knowledge. She went on to say that even if students matriculate there is nowhere for them to go to find work. Because of this everyone in the community is stuck in a cycle where poverty rules over them from generation to generation. She says that people are motivated to break this cycle and are thirsty for solutions but do not know where to find them.

5.8.1.1 Government

This is certainly a fair statement as there are limited sources of information available to them. There is a Department of Agriculture in town but only those respondents who lived closest to

the town center even knew it existed prior to their involvement with ACAT. The other respondents have only heard of it through becoming members with ACAT. Only two of the respondents had been there before. Overall, respondents complained that their services were useless and filled with false promises. The only time any respondent was assisted was in the beginning of 2009. A community volunteer from ACAT had been repeatedly going to the department asking for seeds that they had promised to distribute to certain members for over two years. The community volunteer had been going to the department for over one and a half years on a monthly basis asking for assistance. Finally, in the beginning of 2009 the government gave her some seeds. However, what was given was only a hand full of small packets. These packets were then split among the farmers in ACAT who were in greatest need. This was very unsatisfactory as the community volunteer expressed that she was not impressed by this and has completely lost hope in the government system.

Further, she stated that the department only provides very basic information on farming and she does not know of a time when they visited farmers in the area. Her only experience of information being passed on is through workshops that they hold. She said for instance once in awhile the Department of Health will hold a workshop about organic food but these workshops are only opened to members of the community who are suppose to be leaders. However, the information is not passed on and does not reach a lot of other community members. She says it is for this reason that the government does not understand their needs. The biggest need is getting a proper fence but nothing has been done about this. When she has confronted people at the government department they make false promises about wanting to help.

Thandi's story is a prime example of this. Thandi said that the government had been promising her seeds since 2003. However, they have yet to assist her. She went back there every once in awhile to complain to them but they said they cannot help because they lost her papers. Thandi has given up on them stating they do not help anyone.

Further, respondents living in Nqopoti had never known the government department existed before joining ACAT. Goodness explained that the government is far away and she has never been helped by them and does not know anything about their department. Also, Lindo said he never heard of anyone getting help, nor does he know what they do. He explained that one

of ACAT's community volunteer has gone there to try to organize seeds and information on livestock. But nothing has been reported back to him on how this went.

Aside from false promises and a feeling of disillusionment the only other information respondents could give on the work of the government came from Sipho and Betty. Sipho stated that he believed the Minister of Agriculture would help him get land if he looks to purchase a large amount with a big group of people. Therefore, he and five of his friends are looking into purchasing 3.2 hectares of land. He is also the only respondent who had contact with the government outside of the above example. He explained that he seen government workers drive around and try to sell chemical fertilizer. He believes they do not think natural resources are necessary as they want you to buy from them. Sipho however shows his neighbors how to make their own organic fertilizer so they do not need to purchase some from the government workers.

Betty also stated that she heard the government will give money for co-opts but she has never seen one around or knows anyone who has been a part of one. She knows people who tried to form a group in order to approach the government but does not know if they succeeded. She also heard that the government was talking about taking the youth who has finished school and trying to organize them to become leaders of co-operatives but nothing ever materialized from this.

Thembinkosi, ACAT's coordinating trainer residing in Nqutu, explained that the government policies are biased towards larger groups. He said this creates problems as those who go in small numbers do not get any help. He believed this was the reason so many co-operative attempts failed in the area. As people heard that the government was willing to help with funding for co-operatives people would simply form groups without knowing each other or having interests other than money. As he believes money was their sole focus he explained that five to six months down the line people were no longer interested and it would fall apart.

This he explained was the reason ACAT began their present group dynamic structure (as explained in the previous chapter) which started in 2007. It is hoped that through forming interest groups and working together with other interest groups for an extended period of time that the members will really get to know each other as they need to work hard together and assist each other through different stages. They therefore get to know each other's strengths

and weaknesses, which creates mental strength allowing the group to succeed. Thus, if people know each other well and have shared interests then they will be able to form successful co-operatives based on successes and failures they shared along the way. He explained that this way the focus is not money but this is only used a tool to help them along the way.

In the early stages this structure has shown potential to succeed. Thembinkosi explained that a few members out of the different interest groups who have matured to a point where they were buying in bulk and working together have gone on to receive training from the Department of Economic Development. The end goal of this training is that they are able to form successful co-operatives which get funding assistance from the government.

Given the education level of the respondents, and their lack of agricultural skills the inability of the government to provide any type of service is detrimental not only to the farmers' ability to produce, but also to their mental health. As extension services are the main ways in which small-farmers access research and technology to improve production, these respondents are cut off from learning and growing (Kristen, Van Zyl, and Vink 1998 cited in Rother, Hall, and London 2008). As alluded to by Thembinkosi, the lack of quality and the instability of agricultural cooperatives that serve smallholders further contributes to this (Ortmann and King 2007). Government policies must encourage cohesiveness and a desire to achieve as a cooperative as opposed to an outcome focused on individual monetary gain.

5.8.1.2 ACAT

As explained earlier under the history of crop production the main reason for not farming or expanding beyond crops outside of maize was lack of knowledge and consequently lack of hope. All the respondents credited ACAT alone for allowing them to farm a variety of crops with success as this is their only reliable source. This is exemplified in Khethiwe who said she was now able to plant crops she never planted before. She is excited since her harvest was successful for the first time and she was able to grow more than maize. Also, Thembi explained that the information and support ACAT provides is so helpful since it is local and available. It therefore is able to get to the core of their problems.

Some of the information that respondents said they learned about farming through ACAT includes how to arrange crops, when to plant certain crops, how to make beds, and what to do when produce is growing such as covering items from frost, and using grass to retain the

water. They also learned how to make fertilizer from manure, how to dry produce, what crops are best to grow, and how to transplant. Respondents also said they were taught the best places to sell their produce such as at pension points and around their neighborhoods. Also, around once every two months they are able to meet with an agricultural extension officer. Here they explain that they ask questions regarding different diseases for different crops and what can be done.

However, more information is still wanted as respondents explain that they cannot rely on ACAT alone. Busi explains for instance that communication with ACAT is always open as she is able to call ACAT's community volunteers and ask questions like why is her carrot dying. However, she wants more information since nothing else is available here. She desires more training such as learning how to re-use seeds. She loves the information she receives through ACAT but believes she needs more in order to grow as a farmer.

5.8.1.3 Farmers in the Community

Respondents said they also receive some information and assistance from other farmers in the area. Why they welcome this help and are grateful for their community coming together the information they are receiving is quite limited of course since they all lack access to information. In return, they have all also helped other members in their community who are not ACAT members. Mostly respondents said they have showed them how to make their own fertilizer, and told them what crops are best to grow during different times of the year such as spinach and cabbage in the winter. The respondents loved being able to help others with the information they were given through ACAT.

Sibonglile explains that ACAT is her only source of information, but through this farmers' meetings have also been conducted so she can share with other people like her. Here they express their concerns such as not having proper fencing or difficulty with water. She also asks other farmers in her immediate area to look at her crops when they are dying. They will then offer her some hints. However, while this has been helpful at times, more times than not the advice was not able to save the crop. Goodness also says she needs information on farming methods as there are limited ways to learn. She has therefore asked other farmers in the area for advice when certain crops refuse to grow but often times the information they provide is misleading and also limited.

Ma Santos also said that once a month farmers' meetings are held. She likes attending these meetings as they are able to voice their concerns. If they are struggling to pay for seeds for instance then ACAT's community volunteer will try to get some for them or try to lend them tools they may need. Further, these community volunteers who are trained through ACAT also go around to their crops at times and helps give information on ways to grow certain seeds properly, and on diseases.

Overall, the respondents were yearning to learn more. The widespread consensus was that there is not enough information available to them. They want to be able to grow more crops such as cucumber, cauliflower, broccoli, lentils, green beans, herbs for perfume and rice. They need to learn how to plant these, what soil to use, how much water, and when to grow these. They also want to learn more on what seeds to re-use.

5.9 Livelihood Strategies Summary

This analysis of the livelihood strategies of a group of poor farmers in a former homeland has revealed that their biggest constraints are access to water and fencing. The inability of the respondents to expand their crop variety and yield as they must rely heavily on the rainy season due to lack of access to water and water irrigation is consistent with other studies done in communal areas (D'Haese et al. 1998, McAllister 1998 cited in Andrew, Ainslie, and Shackleton 2003). This analysis also revealed that they rely on manure for fertilizer and all available skills, training, and tools from ACAT and neighbors while trying to overcome their barriers. As extension services are the main ways in which small-farmers access research and technology to improve production (Kristen, Van Zyl, and Vink 1998 cited in Rother, Hall, and London 2008), it is no surprise that as their only sources of information they proved very useful albeit limited. However, it became quite clear that the farmers' strategies used for countering market and state failures and uninsured risks was not able to fully compensate for these constraints. Unless public policy is tailored to allow for such compensation the ability of the farmers to expand production will be severely hampered.

5.10 Crop Production and the Pathway from Poverty

The final research objective looked to evaluate whether small scale crop production is being used in order to assist the farmer in their pathway from poverty. In general it can be concluded that the ability to produce a variety of crops has significantly impacted the lives of

the respondents. It has above all given them hope for a better future as the respondents felt this cultivation has lifted their spirits. This physiological effect has motivated the respondents to believe in themselves and their ability to create a better life for their family. Thandi explains that since growing crops she feels a sense of freedom as she is independent of others and proved to herself she can be successful. Shelia commented that after her first successful harvest she had a renewed since of hope and purpose in life. Jabu explained that from growing crops he realized he could take good care of his family as he is able to put up a fight against poverty. Thembinkosi explained that he has witnessed a successful harvest change the mind set of members to the point where they believe they are able to do something, and are smiling for the first time. Sipho said that since he started farming nothing but good things have come to his family. Nancy explained that following the death of her sons and being unemployed she had given up on life. Once she received guidance from ACAT and was able to reap a successful harvest she felt her life was given back to her as she could provide for her family.

Along with the positive physiological effects crop production has had a very concrete impact and allowed the respondents to feed their family, it has benefited the health of their family, and has allowed money to be used on other necessities such as schooling. It has also provided a source of income, and has been used to trade. It has also benefited the community as some of the respondents gave some of their surplus to local crèches and primary schools.

Table Nine shows how the harvested crops are being used by the respondents. In order to gauge its use all the respondents in the focus groups were given a hundred stones and told that they represent all their crops produced in one growing season. The respondents then came up with a list of options of how their crop production was being used each growing season. Here four options arose: the crops were eaten by them and their family, they sold them, they traded them, or they gave them away to neighbors, friends, and crèches/schools. They then were asked to envision that the 100 stones were their entire crop production for their last growing season and to distribute the stones into the four options on a proportional basis according to how they used their crops. The amount of stones placed under each option was then averaged amongst the eight focus group members who completed this activity. The results show, therefore, that on average 58% of the crops produced during the last growing season where eaten by the respondents and their family members, while on average 26% was sold, 8% traded, and 7% given away. This is consistent with the definition of a smallhold

farmer as they produce mostly for consumption sometimes selling a marginal amount of their surplus (Machethe and Mollel 2000).

This table alludes to the poverty reduction elements of small-scale agriculture. The ability to be able to eat a new variety of food is reflected in the rising health and food security aspects discussed below, which positively benefits human capital. The crops that are traded benefit one's social capital, as for instance two respondents were able to sell to a large commercial grocery store. Also, more than a marginal amount is being traded and given away. This represents potential social capital for the future as neighbors, and school children are able being fed.

Table Nine: How Crop Production is being Used

EAT	SELL	TRADE	GIVE AWAY
58	26	8	7

5.10.1 Sustaining the Human Capital: Increasing Food Security and Health

The majority of the respondents said they produced a sufficient amount of each of the vegetables they grew in order to feed their family but would like to grow a greater variety as the total production did not meet subsistent needs for their household. This is consistent with small-scale agricultural production patterns in South Africa (Andrew, Ainslie, and Shackleton 2003).

For all respondents their ability to feed their family was their greatest motivation for growing crops and gave them their greatest satisfaction. It was also noted that the health of their family has improved. Ma Santos explained that ever since she was able to grow more than just maize she has been able to produce for her family so that they can survive. Her children are healthier as she notices a difference in their appearance and they are not getting sick as much. They are also not complaining about starving or eating the same thing over and over. Betty commented that her children are now able to eat a proper meal and no longer have to eat the same thing every night. She is proud that she can provide more food for her family. She is also proud that this has helped their health as they do not complain of being sick as much. Khethiwe explained that since she is unemployed this is her source of survival as it provides food and income for the family.

5.10.2 Sustaining the Financial Capital: Providing Flexibility with Budgeting

Along with providing food, crop production has also of course allowed money to be spent elsewhere. For Betty this made a big difference in her life as she explained she was able to send her child to school because of the money saved on food. Other respondents commented that they were able to spend more money on other food items such as meat. Or, that they were able to buy toiletry items such as soap on a more regular basis.

5.10.3 Building Potential Social Capital: Surplus Selling, Trading, and Giveaways

All of the respondents sold some of their surplus crops for income in the 2008 growing season. However, this was not significant for two of the respondents as they sold less then R25 to neighbors and stated that for now they have just enough for consumption. As for the other respondents they earned anywhere between R200 and R2000 in surpluses last year. The average was around R 337. The most common points of sale were at pension points and selling locally to neighbors. It should be noted that the marginal amount of surplus sold locally reflects small-scale agricultural production patterns in South Africa (Andrew, Ainslie, and Shackleton 2003).

Two of the growers, who had among the largest plot of land devoted to crop production, sold their surplus to a large commercial grocery store named Boxer. This was made possible as Sipho's friend worked for Boxer and encouraged him to speak to the manager. Fellow ACAT member Jabu also accompanied him when he went. Boxer now buys from them and picks up there produce from their home.

Some of their produce also went to trading. The most common item traded was in exchange for other foods such as other vegetables and fruit, or seeds. In one instance, a respondent gave a gardener food in exchange for help with making the beds for planting. Also, two of the respondents said they gave some of their maize to the local grinder so they did not have to pay for their maize to be grinded. This saved them R50 for a 50kg bag. Two of the respondents also traded their food in exchange for borrowing their neighbors' wheelbarrow.

Additionally, their produce also was given away to neighbors who were desperate for food and to local schools to improve health. Respondents such as Ma Santos reflected that she would love to start a community initiative where surplus food was able to be channeled to those really battling hunger. She also wished she had a lot more surplus so that the local

schools were able to receive a greater amount of nutritional food. A common theme among the respondents was their desire to be able to give away more to the community.

5.10.4 Towards a Pathway from Poverty

Overall, the production of crops had significantly impacted their lives. Every single respondent alluded to the fact that being able to grow crops had a major impact on their livelihood. The ability of this land-based strategy to play a critical role in the survival and health of the respondents' households, and in reducing vulnerability was also similarly found in studies done by Andrew, Ainslie, and Shackleton (2003). Further, the respondents said they would like to expand their production so that they could have more of a surplus to sell, be able to create employment in their community, and be able to give more of their surplus to schools and those in desperate need. Also, one of the respondents commented that she would like to be able to grow more of a surplus so that she is able to stop her road maintenance job since it does not pay well.

5.11 Conclusion

This chapter presented the research findings. It has discussed input accessibility and barriers and opportunities for crop production. The chapter concluded by focusing on how crop production is being used in order to assist the farmer in their pathway from poverty. The final chapter will present the conclusion and areas of recommendation for further research.

Chapter Six: Conclusion

6.1 Summary of Thesis Rationale

The use of agriculture as a poverty reduction strategy was envisioned by the South African government as one of the key components of land reform. While the role of agriculture within the context of land reform that comprises both redistribution and tenure reform has great potential in a country such as South Africa where it can address a policy gap which misses the poorest, its effects have been quite limited. This is because agriculture in the post-apartheid era is challenged with providing opportunities and support for small-scale farming systems. A major issue is inadequate access to inputs for small-scale farmers in the face of incomplete markets and institutional gaps.

Interventions that facilitate agricultural growth, including through training and the provision of inputs are thus important areas for research. Consequently, this dissertation explored the impact of one such intervention undertaken by an NGO, ACAT, on small-scale agricultural production in the Nqutu district of the former KwaZulu homeland. The goal of this was to ascertain what is preventing small-scale farmers who have land from effectively using it. Specifically, this research looked to explore the issues that small farmers feel are the most important opportunities and constraints to crop production for both subsistence and sale. This was narrowed down to concentrate on the barriers that arise from inadequate access to inputs, and the opportunities that arise from adequate access to other inputs needed within the context of contributing towards their livelihoods. It is suggested that the findings will also be of relevance to land reform beneficiaries who have just received land.

6.2 Revisiting the Research Questions

6.2.1 How Inputs are Obtained

Specifically, the study looked to small-scale cultivators using the sustainable livelihoods approach to identify the constraints that they faced. The broad research question looked to find how small-scale farmers obtain inputs in order to farm. Given that the study looked to just one model of support, it must be admitted that the data collected can only be used to reach indicative conclusions. However within the context of ACAT recipients it was found that most inputs, as it relates to the sustainable livelihoods framework, where obtained through ACAT and as a result of social capital through membership.

For instance, these particular farmers accessed most of their physical capital through ACAT, or relied on social capital to borrow from neighbors. This was especially important for crop variety as seeds were often times transplanted from one another. This finding was similar to that of Sperling, Remington, and Haugen (2006) who found that informal seed systems provide an integral part of the farmers' production. Reliance on social capital also proved important for acquiring ploughing equipment as respondents experienced hikes in the cost of tractor rental. Of course it is important to note that fencing was not accessible due to the high cost, and improvised sticks and rocks that were used as an alternative were not sufficient to protect their crops. .

As far as natural capital, the lack of rural infrastructure and government services in the former homelands became very apparent as water was difficult to access. This finding is consistent with that of Jacobs (2003). Often taps were dried leaving respondents spending a significant amount of time collecting water. Land was also available if one could afford it. However, this land would be placed far from the respondent's house and given the physical constraints (lack of fencing) and natural constraints (lack of water), it would not benefit one to have a bigger plot of land. This finding was similar to that of D'Haese et al. (1998), May (1998), and McAllister (1998) whose studies found that the inability of those living in communal areas to expand their crop variety and yield was due in large part to their heavy reliance on the rainy season due to lack of access to water and water irrigation.

In terms of financial capital, the respondents' only means of accessing credit were through ACAT. Commercial banks were the only other options known in the area, and of course the respondents would be denied access to loans due to their low income. Their inability to access formal credit systems was consistent with findings from Lyne and Ortmann (1992), and Lugemwa and Darroch (1995). As a result, it became apparent that the inability of the respondents to access credit is hampering their opportunities for investment which is not allowing them to expand production or innovate. As for instance, they cannot obtain a loan in order to purchase fencing. This general finding is confirmed by other studies of small scale farmers (Griffin, Khan, Ickowitz 2001, Vink and Kirsten 2003). The respondents also found it too risky given the unpredictable nature of crop production. This was a major concern respondents had with using credit had the option been available. As they own a

minimal amount of assets, and are unable to cope with the unpredictability of the growing seasons, they must adopt a low risk and low return method, as is described by the World Bank for farmers in other developing countries (2007). The respondents must look to other options, such as owning spaza shops, in order to compensate for this. Here it becomes apparent, as structured under the SL framework, how the respondents' household asset position determines their household productivity which determines their livelihood strategies (Moser 2005).

Turning to accessing human and social capital it became clear that ACAT was the only reliable source of information for the respondents. ACAT provided a good foundation for skills building; however respondents felt they could not rely on ACAT alone as they needed to learn more. The government however was apparently not an option as there was little to no knowledge of existing government departments related to agriculture in the area, and virtually no presence on the ground. This of course distilled a great sense of hopelessness and abandonment from the outside world. The respondents' frustrations with an inadequate extension service in the former homelands proved consistent with findings from Jacob (2003) and Worth (2009). As extension services serve as an important link between small-scale farmers and the DOA (Jacobs 2003) it comes as no surprise that the majority of the respondents knew nothing of available government entities. This is especially alarming given the low levels of education and skills of the respondents.

6.2.2 Exploring the Barriers and Opportunities to Accessing Inputs for Crop Production

Specifically, the research question looked to find out what the barriers were to accessing inputs for crop production, and what the opportunities were for crop production given access to other inputs.

Within the sustainable livelihoods framework major barriers were financial constraints, lack of information and resources available, and lack of services and infrastructure available.

These barriers, along with the profile of the respondents, become important to explore at a policy level. For instance, given their lack of education and skills the importance of a more redistributive measure of poverty reduction which focuses outside of economic growth is supported. While growth in agriculture can thus have a disproportional positive impact on

poverty (Mellor 1999 cited in Wegerif 2004), as it allows the uneducated to have better control over productive resources, it must be accompanied by adequate resource availability (World Bank 2000, Borras 2003, Negrao 2002 cited in Lahiff 2007). That is, in order to combat the lack of education and enable redistributive measures to contribute to poverty reduction the quality of provision of extension services towards small-hold farmers would need to improve drastically.

As reflected in this study, an improved support system focused on skills training and agricultural support could make a significant difference in increasing the productivity of small-scale farmers and thus the ability of agriculture to contribute to growth and poverty reduction. For example, in this case study the main reason given for not expanding beyond growing maize was lack of knowledge on when and how to properly grow other crops. Upon receiving very basic training through ACAT's extension officers and contrary to the views of CDE, the respondents were able to grow a variety of crops successful as the majority of the respondents have grown at least seven new crops. Institutional support systems which look to overcome human capital through incorporating basic skills such as teaching the advantages and challenges of growing unfamiliar crops are therefore critical to the success of small-scale farmers.

These resources and information could also increase the opportunities to accessing other inputs such as making the most out of homemade pesticides and fertilizers. Given financial constraints the use of animal dung and vegetable skins has proven to benefit the respondents. However, the information gap has barred them from taking the most possible advantage out of homemade inputs. For example, only two of the respondents knew about homemade pesticides.

Aside from lack of information, the two biggest barriers that were identified were lack of easy access to water and improper fencing. This had huge implications for the respondents' inability to further expand agricultural growth as the farmers who had bigger plots of land could not make use of it. Thus, if the government is not able or willing to bring its municipal services up to an adequate level whereby those in former homelands can have reasonable access to water than greater access to land will not amount to much. Also, a focus on some type of fencing solution such as subsidizing or developing cheaper structures needs to be emphasized at a policy level.

Upon exploring the above barriers and opportunities perhaps the biggest implication at a policy level is what these barriers mean for the land reform program. This is especially true since this program is one of the policy measures being implemented to reduce rural poverty and consequently there is an expectation that those who receive the land will be able to use it. However it becomes very clear within the context of this case study, which can serve to provide insight for new farmers on land reform projects, that problems beneficiaries face will go beyond access to land. If there are no basic agricultural support, or reasonable access to water, or ability to protect the crops with proper fencing than clearly just land is not sufficient in and of itself. As this was an expected outcome it became important to ascertain whether or not crop production was being used a poverty reduction strategy or merely a short-term survival strategy.

6.2.3. Small Scale Crop Production as a Poverty Reduction Strategy

From this study alone it is difficult to assess whether crop production is being used by these respondents as a poverty reduction strategy that can be used on a long-term scale or if it is simply a short term band aid. However, evidence from this study allows one to begin to conclude that poverty reduction can be achieved through small-scale agriculture as their ability to produce a variety of crops over a short time span has significantly impacted the lives of the respondents. Also, perhaps most importantly, it has given them a renewed sense of hope for a better future as the respondents felt this cultivation has lifted their spirits. This physiological effect has motivated the respondents to believe in themselves and their ability to create a better life for their family. Therefore, this study suggests that there is potential in using this as a long-term poverty reduction strategy. The issue determining the practicality and depth behind the poverty reduction strategy in going forward is the above mentioned ability of the respondents to receive basic agricultural support, and reasonable access to services and infrastructure.

Specifically, this study demonstrated that there were many ways in which small scale crop production assisted the respondents in their pathway from poverty. Human capital greatly benefited as rising health and rising confidence in food security were a result of the respondents' ability to be able to eat a new variety of food. Thus, for the respondents, an investment in agriculture played an important role in increasing food security (World Bank 2007). This therefore established a connection between welfare and human capital (Delgado

et al. 1994). The crop growers were also able to distribute their increased goods into the local rural economy as the crops that were being traded, sold, and given away to neighbors and school children helped to build social capital for both the present and the future. Further, two respondents were even able to sell their crops to a local grocery store. This interaction between farmers and output suppliers leads greater social capital formation which can result in greater confidence when venturing into non-agricultural businesses (Irz et. al 2001). Crop production also enabled greater flexibility with budgeting. This is perhaps the most direct contribution of agriculture (Irz et al. 2001) as the respondents were thus able to consistently buy more expensive food items such as meat and in one instance could now afford to send children to school.

6.3 Lessons at the Institutional Level

Through ACAT providing very basic agricultural support and training to those in rural areas who are largely marginalized lacking access to a minimal amount of information, they were able to significantly better their lives. ACAT's program also enabled respondents to borrow basic farming tools during opportune times, and provided them a sustaining network for connecting with others in their community with similar goals. This in turn lead to the respondents valuing their crop production as an important source of livelihoods, and being able to receive hope and encouragement for their way forward.

Seeing the tremendous effects a program which provides a base level of support can have has implications at the institutional level. This is especially relevant for South Africa given the focus the government places on land reform within the rural development context. Programs such as that being implemented by ACAT's program could be scaled up if a government department were to offer similar support or were to work with similar NGOs such as the Food Gardens Foundation, A Centre that Serves, and the Topsy Foundation. This way those previously marginalized can receive attention and feel connected to their society believing that their livelihood has not been forgotten. A scaled up ACAT program could overcome the lack of resources and information in rural areas helping to combat the educational gap. Agricultural training and classes, backed by frequent visits from extension officers, could also delve further beyond basic skills. This type of government program would then also provide a space for those receiving training to adequately raise their voices and concerns regarding the barriers to accessing the most important inputs, as well as the lack of services and infrastructure as this would have to be tackled head on if the program was serious in its

commitments, like ACAT, to allow small scale production to transform the lives of the recipients. This in turn would of course produce huge implications for land reform and the use of agricultural within rural development. For the respondents in this study, for example, it would concretely show that the first priority should not be access to more land, but rather improving the way they can use the land they have. For the land reform program this would mean focus should not be placed solely on the amount of land transferred but rather on a much more nuanced qualitative point of view.

It becomes clear that with appropriate post-settlement support there is great potential for small-scale farming. The CDE approach of advocating solely for urbanization, assuming agriculture can only provide a limited contribution to development in South Africa, proves not to be the case. Small farmers, with a very minimal amount of support, are able to make a significant contribution to reducing poverty. That being said however it is important to recognize that, in accordance with findings from this study, the rural poor continue to adopt diverse livelihood and coping strategies including employment in the rural non-farm economy, reliance on welfare grants, as well family members who migrated to urbanized areas (Ruth 2009, Woolard 2003). Institutional innovations at the policy level must therefore bear in mind that these pathways are complementary and can enhance the potential of the other livelihood strategies to be used. Therefore the ability of agricultural and industrial policy to reduce poverty in rural areas should not be viewed as mutually exclusive.

6.4 Recommendations for Future Research

As alluded to in the first chapter future research should compare cases of small-scale farmers where different types of support have been provided. This could include state-supported, private-supported or those who have no support. Given the focus on the need for support for smallholders this would allow for a comparison of how inputs are acquired and managed under these different models of supports. Here, further research must also look to explore issues of accessing appropriate outputs.

Additionally, future research should apply an appropriate gender lens when exploring these issues of support. Specifically research must look to analyze single-headed female households as a separate group.

6.5 Final Thoughts

Through ACAT providing very basic agricultural support and training to those in rural areas who are largely marginalized lacking access to a minimal amount of information, they were able to significantly better their lives. While industrial policy is important for poverty reduction this suggests that government cannot underestimate the importance of small-scale agricultural growth. Given that land is being used in order to assist resource poor farmers in their pathway from poverty government should be better supporting small-scale farmers regardless of whether or not land was attained through reform. However, it becomes imperative to recognize that in order for small scale agriculture to be effective one must be able to properly use the land they have. Thus it is most important from a policy level to allow small scale farmers to overcome barriers to inputs. For the respondents of this study the biggest barriers included access to information and resources, and lack of easy access to water and fencing. With a more appropriate support system focusing on overcoming these barriers to agricultural growth productivity could improve and lives could be considerably transformed giving small farmers the potential to make a large scale contribution to reducing poverty.

Works Cited

ACAT. 2000. *About ACAT*. Africa Cooperative Action Trust Website. http://www.acatkzn.co.za/.

ACAT. 2007. ACAT KwaZulu-Natal Annual Report January to December 2007. Howick, KwaZulu-Natal. http://www.acatkzn.co.za/ACAT_KZN_ANNUAL_REPORT%202008.pdf.

Adam, M., V. Ashworth, and P. Raikes. 1993. Agricultural supporting services for land reform. Proceedings of the Land Redistribution Options Conference. Land and Agriculture Policy Centre, Johannesburg.

African National Congress. 1994. The Reconstruction and Development Programme: A Policy Framework. Johannesburg: Umanyano Publications. http://www.anc.org.za/rdp/rdp.html

Agarwal, B.1994. *A Field of One's Own*. Cambridge: Cambridge University Press.

Aghion, P., E. Caroli, and Cecilia Garcia-Peñalosa. 1999. Inequality and Economic Growth: The Perspective of the New Growth Theories. *Journal of Economic Literature* 37(4):1615–60 cited in van den Brink, R., G. Thomas, H. Binswanger, J. Bruce, J. and F. Byamugisha. 2007. Land Redistribution, in Consensus, Confusion and Controversy: Selected land reform issues in sub-Saharan Africa. Working Paper, No 71. World Bank, Washington D.C. 1-48.

Ainslie, A., T. Kepe, S. Cinderby, and T. Peste. 1996. Rural Livelihoods and Local Level Management of Natural Resources in the Peddie District. Working Paper No. 42. Land and Agricultural Policy Centre, Johannesburg.

Alesina, A. and P. Roberto. 1996. Income Distribution, Political Instability, and Investment. *European Economic Review*. 40(6):1203-1228.

Aliber, M. 2003. Chronic Poverty in South Africa: Incidence, Causes and Policies. *World Development*. 31(3): 473-490.

Alwang, J., P. Siegel, and S. Jorgensen. 1996. Seeking guidelines for Poverty Reduction in rural Zambia. *World Development*. 24(11): 1711-23.

Andrew, M. A. Ainslie, and C. Shackleton. 2003. Land Use and Livelihoods. Occasional Paper Series No. 8. Evaluating Land and Agrarian Reform in South Africa. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town

Andrew M., C. Shackleton, A. Ainslie. 2003. Land Use and Rural Livelihoods: Have they been Enhanced through Land Reform. Policy Brief No.5: Debating Land reform and rural development. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Aquero, J., M.Carter,. and J. May. 2007. Poverty and Inequality in the First Decade of South Africa's Democracy**:** What can be Learnt from Panel Data from KwaZulu-Natal? *Journal of African Economies*. 16(5):782-812.

Ardington, E. and F. Lund. 1996. Questioning Rural Livelihoods. In M. Lipton, F. Ellis and M. Lipton.(eds). *Land, Labour, and Livelihoods in Rural South Africa. Volume Two: KwaZulu-Natal and Northern Province*. Durban: Indicator Press:31-58 cited in Shackleton, S, C. Shackleton and B. Cousins. 2000. The economic value of land and natural resources to rural livelihoods: Case studies from South Africa. In B. Cousins (ed.). *At the crossroads: Land and agrarian reform in South Africa into the 21st century.* Cape Town/Johannesburg: Programme for Land and Agrarian Studies, University of the Western Cape/National Land Committee:35–67.

Ashworth, B.1990. Agricultural Technology and the Communal Farm Sector. Background Paper for the Zimbabwe Agriculture Sector Memorandum. World Bank, Washington, DC.

Barbour, R. 1999. *Developing Focus Group Research: Politics, Theory and Practice.* Thousand Oaks: Sage Publications Ltd.

Bembridge, T.J. 1990. Agricultural Development in the Developing Areas of Southern Africa. *Africa Insight* 20(1): 19-23.

Birdsall, N., and J. Londono. 1997. Asset Inequality Matters: An Assessment of the World Bank's Approach to Poverty Reduction. *American Economic Review*. 87(2):32-37.
Blaikie, N. 2000. *Designing Social Research*. Oxford: Blackwell Publishers Press.

Block, S. and P. Timmer. 1997. Agriculture and Economic Growth: New Linkages and African Case Studies. USAID, Bureau for Africa/Agricultural Policy Analysis Project, Phase III, Washington D.C.

Bloor, M, J. Frankland, M. Thomas, and K. Robson. 2001. *Focus Groups in Social Research*. London: Sage Publications Ltd.

Bonti-Ankomah, S. 2001. Addressing Food Insecurity in South Africa. Paper presented at the SARPN conference on Land Reform and Poverty Alleviation in Southern Africa, Pretoria. The National Institute for Economic Policy.

Borras Jr, S. 2003. Questioning market-led agrarian reform: Experiences from Brazil, Colombia and South Africa. *Journal of Agrarian Change*, 3(3): 367–94.

Boucher, S., M. Carter, and C.Guirkinger. 2006. Risk Rationing and Wealth Effects in Credit Markets. Working Paper Series 05-010. Department of Agricultural and Resource Economics. University of California, Davis cited in World Bank. 2007. *World Development Report 2008: Agriculture for Development*. Washington D.C.: Quebecor World.
Borras Jr, S. 2003. Questioning market-led agrarian reform: Experiences from Brazil, Colombia and South Africa. *Journal of Agrarian Change*, 3(3): 367–94.

Bourguignon, F. and T. Verdier. 2000. Oligarchy, Demography, Inequality, and Growth. *Journal of Development Economics.* 62: 285-313.

Bradstock, A. 2005. Changing Livelihoods and Land Reform: Evidence from the Northern Cape Province of South Africa. *World Development*. 33(11):1979-1992.

Bryceson, D. 1997. Introduction. In D. Bryceson and V. Jamal (eds). F*arewell to Farms: De-Agrarianisation and Employment in Africa*. London: Ashgate Publishing Ltd. 1-20.

Byres, T. J. 2004. Neo-Classical Neo Populism 25 Years on: Déjà vu and Deja Passé. Towards a Critique. *Journal of Agrarian Change.* 4(1,2): 223-254.

Carter, M. and J. May. 2001. One Kind of Freedom: Poverty Dynamics in Post-Apartheid South Africa. *World Development*. 29(12): 1987-2006.

Carter, M. and J. May. 1999. Poverty, Livelihood, and Class in Rural South Africa. *World Development*. 27(1): 1-20.

CDE (Centre for Development and Enterprise). 2008. Land Reform in South Africa: Getting back on track. Research Report No. 16. Johannesburg.

CDE (Centre for Development and Enterprise (2005). Land Reform in South Africa: A 21st Century Perspective. Research Report No. 14. Johannesburg.

Chambers, R and G. Conway. (1992). Sustainable rural livelihoods: practical concepts for the 21st century. *IDS Discussion Paper No. 296,* Brighton: IDS.

Chaudhuri, S., and M. Ravallion. 2006. Partially Awakened Giants: Uneven Growth in China and India. World Bank Policy Research Working Paper Series 4069, World Bank, Washington D.C.

Chirwa, E. 2005. Adoption of Fertilizer and Hybrid Seeds by Smallholder Maize Farmers in Southern Malawi. *Development Southern Africa*. 22(1):122-142.

Coleman, A. 2008. SA Agri Tackle Input Costs. *Farmer's Weekly*. August 11, 2008. Http://www.caxtonmags.co.za/index.php?p[IGcms_nodes][IGcms_nodesUID]=dc546728bc65b3f1fec62f41a33e9343.

Coulombe, H., and Q. Wondon. 2007. *Poverty, Livelihoods, and Access to Basic Services in Ghana: An Overview*. World Bank, Washington, DC. Processed.

Crookes, T. and M. Lyne. 2003. Efficiency and Equity Gaines in the Rental Market for Arable Land: Observations from a Communal area of KwaZulu-Natal, South Africa. *Development Southern Africa*. 20(5):579-593.

Crookes, T and M. Lyne. 2001. Improvements in the Rental Market for Cropland in a Communal Region of KwaZulu-Natal. *Agrekon*. 40(4): 669-677.

Cross, C., L. Luckin, T. Mzimela, and C. Clark. 1996. On the Edge of Poverty. In M. Lipton, F. Ellis and M. Lipton.(eds). *Land, Labour, and Livelihoods in Rural South Africa. Volume Two: KwaZulu-Natal and Northern Province*. Durban: Indicator Press: 173-214 cited in Andrew, M. A. Ainslie, and C. Shackleton. 2003. Land Use and Livelihoods. Occasional

Paper Series No. 8. Evaluating Land and Agrarian Reform in South Africa. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Dagdeviren, H, R. van der Hoeven, and J. Weeks. 2000. Redistribution Matters: Growth for Poverty Reduction. Research Report for the International Labour Organization, United Nations, Switzerland.

Datt, G and M. Ravallion. 2002. Is India's Economic Growth Leaving the Poor Behind?. *Journal of Economic Perspectives*. 16(3): 89-108.

Datt, G.,and M. Ravallion. 1998. Farm Productivity and Rural Poverty in India. *Journal of Development Studies*. 34(4):62-85.

Deininger, K. 2003. *Land Policies for Growth and Poverty Reduction*. Washington D.C. and Oxford: The World Bank and Oxford University Press

Deininger, K and H. Binswanger. 1999. The Evolution of the World Bank's Land Policy: Principles, Experience, and Future Challenges. *The World Bank Research Observer*. 14(2): 247-276.

Deininger, K., J. Songqing, and H. Nagarajan. 2006. Efficiency and Equity Impacts of Rural Land Market Restrictions: Evidence from India. Washington, D.C. World Bank Policy Research Working Paper Series 3013 cited in World Bank. 2007. *World Development Report 2008: Agriculture for Development*. Washington D.C.: Quebecor World.

Deininger, K and L. Squire. 1998. New Ways of Looking at Old Issues. *Journal of Development Economics.* 57: 259–87.

De Janvry, A., and D. Byerlee. 2007. Introduction. World Bank. *World Development Report 2008: Agriculture for Development*. Washington D.C.: Quebecor World.

Delgado, C. and N. Minot. 2000. Agriculture in Tanzania Since 1986: Follower or Leader of Growth?. A World Bank Country Study. The World Bank, Washington D.C.

Delgado, C., J. Hopkins, V. Kelly, with P. Hazell, A. Alfano, B. Hoijatai, P. Gruhn, and J. Sil. 1994. Agricultural Growth Linkages in Sub-Saharan Africa. A Report to USAID, Africa Bureau, Washington D.C.

Dengu, T and M. Lyne. 2007. Secure Land Contracts and Agricultural Investment in Two Communal Areas of KwaZulu-Natal. *Agrekon*. 46(3): 398-409.

Department of Agriculture. 2007. *A National Review of the Comprehensive Agricultural Support Programme.* Pretoria: Department of Agriculture. March 2007 cited in Hall, R. 2007. Another Countryside? Policy Options for Land and Agrarian Reform in South Africa. Conference Paper, Cape Town. 24 - 25 October 2007. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Developing Capacity to Provide Effective Settlement and Implementation Support for Land and Agrarian Reform in South Africa. 2007. http://www.ruraldevelopment.gov.za/documents&publications/Publications/SIS%20Strategy/

33/Associated%20background%20documents%5CChapter%204%5CCapacity%20development%5Csdc_capacity_dev_strategy.pdf

DLA (Department of Land Affairs). 1998. *Annual Quality of Life Report.* Pretoria: DLA Directorate: Monitoring and Evaluation cited in Jacobs, P. 2003. Support for Agricultural Development. Occasional Paper Series No.4: Evaluating Land and Agrarian Reform in South Africa. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

DLA (Department of Land Affairs). 1997. *White Paper on South African Land Policy*, Pretoria: Department of Land Affairs.

DFID (UK Department for International Development). 2003. *Better Livelihoods for Poor People: The Role of Land Policy*. DFID: London cited in Lahiff, E. 2007. Redistributive Land Reform and Poverty Reduction in South Africa. A working paper for the research project on Livelihoods after Land Reform". Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

D'Haese, M. J. Van Rooyen, G. Van Huylenbroeck, and L. D'Haese. 1998. Problem Solving strategies for Small-Scale Emerging Commercial Mango Farmers in Venda. *Development Southern Africa*. 15(3):471-489.

Dovie. D. 2001. Woodland Resource Utilization, Valuation, and Rural Livelihoods in the Lowveld, South Africa. MSc dissertation. Johannesburg: University of the Witswatersrand cited in Shackleton, C., B. Shackleton, and B. Cousins. 2001. The role of land-based strategies in rural livelihoods: the contribution of arable production, animal husbandry and natural resource harvesting in communal areas in South Africa. *Development Southern Africa*. 18 (5): 581-604.

FAO (Food and Agricultural Organization). 2006. State of Food Insecurity in the World 2006. Food and Agriculture Organization, Rome cited in World Bank. 2007. *World Development Report 2008: Agriculture for Development*. Washington D.C.: Quebecor World.

Farrington, J., R. Slater and R. Holmes. 2004. Social Protection and Pro-Poor Agricultural Growth: What Scope for Synergies? *Natural Resource Perspectives.* No 91. London: ODI.

Fenwick, L and M. Lyne. 1999. The Relative Importance of Liquidity and other Constraints inhibiting the Growth of Small-Scale Farming in KwaZulu-Natal. *Development Southern Africa*. 16(1):141-155.

Flick, U. 1998. *An Introduction to Qualitative Research.* Thousand Oaks: Sage Publication

Foggin, T and D. Munster. 2000. Enhancing Linkages Between Rural Communities and Protected Areas in KwaZulu-Natal Through Tourism-Abantu Baysizana (People Hearing People). *Journal of Tourism Studies*.11 (1): 24-36.

Forbes, K. 2000. A Reassessment of the Relationship between Inequality and Growth. *American Economic Review*. 90(4):869-887.

Government of Malawi. 2002. Malawi Poverty Reduction Strategy Paper, Lilongwe: Minister of Finance and Economic Planning cited in Chirwa, E. 2005. Adoption of Fertilizer and Hybrid Seeds by Smallholder Maize Farmers in Southern Malawi. *Development Southern Africa*. 22(1):122-142.

Griffin, K., A. Rahman Khan and A. Ickowitz. 2001. Poverty and the Distribution of Land. Research Paper for the Department of Economics, University of California, Riverside.
Hall, R and L. Cliffe. 2009. Introduction. In Hall, R (ed). *Another Countryside? Policy Options for Land and Agrarian Reform in South Africa.* Institute for Poverty, Land and Agrarian Studies, School of Government, University of the Western Cape, Cape Town, South Africa.

Hall, R. 2007. Another Countryside? Policy Options for Land and Agrarian Reform in South Africa. Conference Paper, Cape Town. 24 - 25 October 2007. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Hall, R. 2007. The Impact of Land Restitution and Land Reform on Livelihoods. Research Report No. 32. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Hall, R. 2004. Land and agrarian reform in South Africa: A Status Report.
Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Hall, R., and E Lahiff. 2004. Budgeting for Land Reform. Policy Brief No.13: Debating Land reform and rural development. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Heberle, L. *Contesting Social Capital: Definition and Measurement Issues Continue***.** Paper presented at the annual meeting of the American Sociological Association, Hilton San Francisco & Renaissance Parc 55 Hotel, San Francisco, CA,, Aug 14, 2004. Http://www.allacademic.com/meta/p110310_index.html.

Hoogeveen, J., and H. Kinsey. 2001. Land Reform, Growth, and Equity: Emerging Evidence from Zimbabwe's Resettlement Programme-A Sequel. *Journal of Southern African Studies.* 27(1):127-136.

Jacobs, P. 2003. Support for Agricultural Development. Occasional Paper Series No.4: Evaluating Land and Agrarian Reform in South Africa. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.
Jacobs, P., E. Lahiff, and R Hall. 2003. Land Redistribution. Occasional Paper Series No.1: Evaluating Land and Agrarian Reform in South Africa. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Johnston, B.F., and J. Mellor. 1961. The Role of Agriculture in Economic Development. *American Economic Review*. 51(4): 566–593.

Kepe, T., and B. Cousins. 2002. *Radical Land Reform is Key to Sustainable Rural Development in South Africa*. Policy Brief No.3. Debating Land reform and rural development. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Kinsey, B.1999. Land Reform, Growth and Equity: Emerging Evidence from Zimbabwe's Resettlement Programme." *Journal of Southern African Studies*. 25(2):173-185**.**

Kirk, J. and M. Miller. 1989. *Qualitative Research Method: Reliability and Validity in Qualitative Research.* London: Sage Publications Ltd.

Kirsten, J. and J. Van Zyl. 1996. The Costs and Benefits of Providing Support Services to Rural Households in the Developing Areas of South Africa. *Development Southern Africa*. 14: 363-376.

Kirsten, J., J. Van Zyl, and N. Vink 1998. The Agricultural democratisation of South Africa. Africa Institute for Policy Analysis and Economic Integration. Cape Town: Francolin cited in Rother, H., R. Hall, L. London. 2008. Pesticide use among emerging farmers in South Africa: contributing factors and stakeholder perspectives. *Development Southern Africa*. 25 (4): 399-424.

KwaZulu-Natal Department of Health. 2005. Demographic Characteristics – Nqutu. KwaZulu-Natal: Health KwaZulu-Natal. http://www.kznhealth.gov.za/Cjm/demographics.pdf.

Lahiff, E. 2008. Land Reform in South Africa: A Status Report 2008. Research Report No. 38. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Lahiff, E. 2007. Redistributive Land Reform and Poverty Reduction in South Africa. A working paper for the research project on Livelihoods after Land Reform". Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Lahiff, E. 2001. Land Reform in South Africa: is it Meeting the Challenge? Research Report No. 1. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Lahiff, E., T. Maluleke, T. Manenzhe, M. Wegerif. 2008. Land Redistribution and Poverty Reduction in South Africa: Livelihood Impacts of Smallholder Agriculture under Land Reform. Research Report No. 36. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Lanjouw, J.O. 2001. *Demystifying Poverty Lines*. Http://www.undp.org/poverty/publications/pov_red/Demystifying_Poverty_Lines.pdf.

Leibbrrandt, M.., L. Poswell, P. Naidoo, M. Welch, and I. Woolard. 2005. Measuring Recent Changes in South African Inequality and Poverty Using 1996 and 2001 Census Data, Development Policy Research Unit Working Paper 05, University of Cape Town, Cape Town.

Levine, R. and D. Weiner. 1996. "*No More Tears…": Struggles for land in Mpumalanga, South Africa*. Lawrenceville, New Jersey: Africa World Press cited in Andrew, M., A. Ainslie and C. Shackleton. 2003. Land Use and Livelihoods. Occasional Paper Series No. 8. Evaluating Land and Agrarian Reform in South Africa. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town

Lipton, M., M. de Klerk, and M. Lipton. 1996. *Land, Labour, and Livelihoods in Rural South Africa.* Durban: Indicator Press.

Lipton, M and M. Ravallion. 1997. Chapter 41: Poverty and Policy, in Behrman, J. and T.N. Srinivasan. (eds.) *Handbook of Development Economics,* Vol 3. Amsterdam. 2553-2583.

Lugemwa, W. and M. Darroch. 1995. Discriminant Analysis of Seasonal Agricultural Loan Repayment by Small-Scale Farmers in Transkei. *Agrekon*. 34(4):231-237 cited in

Lyne, M and M. Darroch. 2003. Land Redistribution in South Africa: Past Performance and Future Policy. In Nieuwoudt, L and J. Groenewald (eds.). *The Challenge of Change: Agriculture, Land, and the South African Economy.* University of Natal Press, Pietermartizburg, South Africa.

Lyne, M.and G. Ortmann. 1992. Evaluation of the KwaZulu Farmer Support Programme: second interim report. Unpublished report. Department of Agricultural Economics. Pietermaritzburg: University of Natal cited in Fenwick, L and M. Lyne. 1999. The Relative Importance of Liquidity and other Constraints inhibiting the Growth of Small-Scale Farming in KwaZulu-Natal. *Development Southern Africa*. 16(1):141-155.

Lyne, M., G. Ortmann, and N. Vink. 1991. Food Security in KwaZulu-Natal: Results of a Household Based Programming Model. *Journal of Agricultural Economics.* 42(1):43-55.

Machethe, CL. and NM. Mollel. 2000. Extension and Support Services for Smallholder Agricultural Development in South Africa: Who is the Smallholder Farmer? In. B. Cousins. (ed.) *At the crossroads: Land and agrarian reform in South Africa into the 21st century*. Cape Town: University of the Western Cape .340-348.

Machethe CL. 1990. Factors Contributing to Poor Performance of Agricultural Co-operatives in Less Developed Areas. *Agrekon.* 29(4):305-309 cited in Ortmann, G and R. King. 2007. Agricultural Cooperative II: Can they Facilitate Access of Small-Scale Farmers in South Africa to Input and Product Markets*? Agrekon.* 46(2): 219-243.

Makhura, M., F. Goode and G. Coetzee. 1998. Cluster Analysis of Commercialisation of Farmers in Developing Rural Areas of South Africa. *Development Southern Africa*. 15:429-448.

Maunder, E. 2003. Nutrition and food in South Africa: Information from the National Food Consumption Survey. *Food Security Symposium,* University of KwaZulu-Natal, Pietermaritzburg.

May, J. 2000. The Structure and Composition of Rural Poverty and Livelihoods in South Africa. In B. Cousins (ed.). *At the crossroads: Land and agrarian reform in South Africa into the 21st century.* Cape Town/Johannesburg: Programme for Land and Agrarian Studies, University of the Western Cape/National Land Committee:21-34.
May, J. 1998. Poverty and Inequality in South Africa. Report prepared for the Office of the Executive Deputy President and the Inter-Ministerial Committee for Poverty and Inequality. Final Report. 13 May 1998 cited in Hall, R. 2007. Another Countryside? Policy Options for Land and Agrarian Reform in South Africa. Conference Paper, Cape Town. 24 - 25 October

2007. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

May, J. 1996. Assets, Income, and Livelihoods in Rural KwaZulu-Natal.. In M. Lipton, F. Ellis and M. Lipton.(eds). *Land, Labour, and Livelihoods in Rural South Africa. Volume Two: KwaZulu-Natal and Northern Province*. Durban: Indicator Press: 1-30 cited in Shackleton, S, C. Shackleton and B. Cousins. 2000. The economic value of land and natural resources to rural livelihoods: Case studies from South Africa. In B. Cousins (ed.). *At the crossroads: Land and agrarian reform in South Africa into the 21st century.* Cape Town/Johannesburg: Programme for Land and Agrarian Studies, University of the Western Cape/National Land Committee:35–67.

May, J., L. Groth, and R. Van den Brink. 2007. Monitoring the quality of life of land reform beneficiaries: 2005/2006. Technical report prepared for the Department of Land Affairs. Durban/Pretoria: University of KwaZulu-Natal/World Bank cited in Hall, R and L. Cliffe. 2009. Introduction. In Hall, R (ed). *Another Countryside? Policy Options for Land and Agrarian Reform in South Africa.* Institute for Poverty, Land and Agrarian Studies, School of Government, University of the Western Cape, Cape Town, South Africa.

May, J., M. Carter, L. Haddad and J. Maluccio. 2000. KwaZulu-Natal Income Dynamics Study (KIDS) 1993-1998: A Longitudinal Household data set for South African Policy analysis. *Development Southern Africa.* 17 (4): 567-581.

May, J. and B. Roberts. 2000. Monitoring and evaluating the quality of life and land reform beneficiaries 1998/99. Summary report prepared for Department of Land Affairs. Final report, 19 June 2000.

May, J., T. Stevens, and A. Stols. 2002. Monitoring the impact of land reform on quality of life: A South African Case Study. *Social Indicators Research*. 58(1-3):293-302.

McAllister, P. 1998. Deagrarianization Project: Shixini Study. Institute for Social and Economic Research Occasional Paper. Grahamstown: Rhodes University cited in Andrew, M. A. Ainslie, and C. Shackleton. 2003. Land Use and Livelihoods. Occasional Paper Series No. 8. Evaluating Land and Agrarian Reform in South Africa. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town

Mellor, JW. 1999. *Pro-Poor Growth: The Relation Between Agricultural Growth and Poverty Reduction*. Unpublished document cited in Wegerif, M. 2004. A critical appraisal of South Africa's market-based land reform policy: The case of the Land Redistribution for Agricultural Development (LRAD) programme in Limpopo. Research Report No. 19. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Melodie, M. and K. Pringle. 2005. Science and advocacy: the GM debate in South Africa. *South African Journal of Science*. 101:7-9.

Mikkelsen, B. 2005. *Methods for Development Work and Research*. Thousands Oaks: Sage Publications Ltd.

Miles, M., and A. Huberman.1994. *An Expanded Sourcebook: Qualitative Data Analysis.* Thousand Oaks: Sage Publications Ltd. 50-88.

Moser, C. 2005. Assets, Livelihoods, and Social Policy. Arusha Conference: *New Frontiers of Social Policy*. December 12-15, 2005.

Moser, C. 1998. The Asset Vulnerability Framework: Reassessing Urban Poverty Reduction Strategies. *World Development*. 26(1):1-19.

Mulva, P., E. Chirwa and J. Kadzandira. 2003. Poverty and Social Impact Assessment in Malawi: Closure of ADMARC Markets. Final report prepared for the World Bank and Deutsche Gesellschaft fur Technische Zusammenarbeit (GTZ) GmbH, Zomba: Wadonda Consult cited in Chirwa, E. 2005. Adoption of Fertiliser and Hybrid seeds by Smallholder Maize farmers in southern Malawi. *Development Southern Africa*. 22(1): 321-334.

National Treasury. 2007. Estimates of National Expenditure 2007/08. Pretoria: Government Printers cited in Hall, R. 2007. Another Countryside? Policy Options for Land and Agrarian Reform in South Africa. Conference Paper, Cape Town. 24 - 25 October 2007. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Negrao, J. 2002. Land in Africa-An Indispensable Element Towards Increasing the Wealth of the Poor. Oficina does Centro de Estudos Sociais. No. 179, University of Coimbra, Coimbra cited in Lahiff, E. 2007. Redistributive Land Reform and Poverty Reduction in South Africa. A working paper for the research project on Livelihoods after Land Reform. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Neumen, L.W. 2000. *Social Research Methods: Qualitative and Quantities Approaches.* Boston: Allyn and Bacon.

Ortmann, G and R. King. 2007. Agricultural Cooperative II: Can they Facilitate Access of Small-Scale Farmers in South Africa to Input and Product Markets*? Agrekon.* 46(2): 219-243.

Patel, R. 2007. *Stuffed and Starved: The Hidden Battle for the World Food System*. Brooklyn: Melville House Publishing.

Prosterman, R and J. Riedinger. 1987. *Land Reform and Democratic Development.* Baltimore: Johns Hopkins University Press cited in Wegerif, M. 2004. A Critical Appraisal of South Africa's Market-Based Land Reform Policy: The case of the Land Redistribution for Agricultural Development (LRAD) programme in Limpopo. Research report No. 19. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town

Ravallion, M and B Bidani. 1994. How Robust is a Poverty Profile? *The World Bank Economic Review*. 8(1): 75-102.

Ravallion, M and S. Chen. 2007. China's Uneven Progress against Poverty. *Journal of Development Economics*. 82(1):1-42.

Ravallion, M, and S Chen. 2004. China's (Uneven) Progress against Poverty. World Bank Policy Research Working Paper Number 3408. World Bank, Washington, D.C. cited in van den Brink, R., G. Thomas, H. Binswanger, J. Bruce, and F. Byamugisha. 2007. Land Redistribution, in Consensus, Confusion and Controversy: Selected land reform issues in sub-Saharan Africa.Working Paper, No 71. World Bank, Washington D.C. 1-48.

Ravallion, M. and G. Datt. 2000. Why Has Economic Growth Been More Pro-Poor in some States in India than Others?. *Journal of Development Economics*. 68(2):381-400.

Rother, H., R. Hall, L. London. 2008. Pesticide use among emerging farmers in South Africa: contributing factors and stakeholder perspectives. *Development Southern Africa*. 25 (4): 399-424.

Rodick, D. 2003. Growth Strategies. NBER Working Paper 10050. National Bureau of Economic Research, Cambridge.

Rukuni, M. and C. Eicher. 1994. *Zimbabwe's Agricultural Revolution*. Harare: University of Zimbabwe cited in Machethe, CL. and NM. Mollel. 2000. Extension and Support Services for Smallholder Agricultural Development in South Africa: Who is the Smallholder Farmer? In. B. Cousins. (ed.) *At the crossroads: Land and agrarian reform in South Africa into the 21st century*. Cape Town: University of the Western Cape .340-348.

Saint-Paul, G. and T. Verdier. 1996. Inequality, Redistribution, and Growth. *European Economic Review*. 40: 719-728.

Scoones, I. 1998. Sustainable Rural Livelihoods: A Framework for Analysis. IDS Working Paper N. 72.

Sen, A.K. 1999. *Development as freedom.* Oxford University Press: Oxford.

Shackleton, C., S. Shackleton and B. Cousins. 2001. The role of land-based strategies in rural livelihoods: the contribution of arable production, animal husbandry and natural resource harvesting in communal areas in South Africa. *Development Southern Africa*. 18 (5): 581-604.

Shackleton, S, C. Shackleton and B. Cousins. 2000. The economic value of land and natural resources to rural livelihoods: Case studies from South Africa. In B. Cousins (ed.). *At the crossroads: Land and agrarian reform in South Africa into the 21st century.* Cape Town/Johannesburg: Programme for Land and Agrarian Studies, University of the Western Cape/National Land Committee:35–67.

Shepard, A. 2000. Rural Development and Poverty Reduction at the end of the Century: Lessons for South Africa. In B. Cousins (ed.). *At the crossroads: Land and agrarian reform in South Africa into the 21st century.* Cape Town/Johannesburg: Programme for Land and Agrarian Studies, University of the Western Cape/National Land Committee:211-223.

Sperling, L., H. Cooper and T. Remington. Moving Towards more effective Seed Aid. Research paper for the Center of Tropical Agriculture, Rome cited in Sperling, L., T. Remington and J. Haugen. 2006. Seed Aid for Seed Security Advice for Practitioners: Understanding Seed Systems Used by Small Farmers in Africa: Focus on Markets. Practice Brief No. 6. International Center for Tropical Agriculture, Rome.

Sperling, L., T. Remington and J. Haugen. 2006. Seed Aid for Seed Security Advice for Practitioners: Understanding Seed Security. Practice Brief No. 3. International Center for Tropical Agriculture, Rome.

Sperling, L., T. Remington and J. Haugen. 2006. Seed Aid for Seed Security Advice for Practitioners: Understanding Seed Systems Used by Small Farmers in Africa: Focus on Markets. Practice Brief No. 6. International Center for Tropical Agriculture, Rome.

Stats SA (Statistics South Africa). 2005. *Census 2001- Household Statistics: Municipality Level*. Pretoria: Statistics South Africa. http://www.statssa.gov.za/timeseriesdata/pxweb2006/Database/South%20Africa/Population%20Census/Census%202001%20-%20NEW%20Demarcation%20boundaries%20as%20at%209%20December%202005/Municipality%20level%20-%20Households/Municipality%20level%20-%20Households.asp.

Stats SA (Statistics South Africa). 2005. *Census 2001- Person Statistics: Municipality Level*. Pretoria: Statistics South Africa. http://www.statssa.gov.za/timeseriesdata/pxweb2006/Database/South%20Africa/Population%20Census/Census%202001%20-%20NEW%20Demarcation%20boundaries%20as%20at%209%20December%202005/Municipality%20level%20-%20Persons/Municipality%20level%20-%20Persons.asp

Stats SA (Statistics South Africa). 2000. Stats in brief 2000. Pretoria: Stats SA. cited in Wegerif, M. 2004. A critical appraisal of South Africa's market-based land reform policy: The case of the Land Redistribution for Agricultural Development (LRAD) programme in Limpopo. Research Report no. 19. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Stats SA (Statistics South Africa). 1999. *Rural Survey 1997.* Pretoria: SSA cited in Shackleton, C., S. Shackleton and B. Cousins. 2001. The role of land-based strategies in rural livelihoods: the contribution of arable production, animal husbandry and natural resource harvesting in communal areas in South Africa. *Development Southern Africa*. 18 (5): 581-604.

Taylor, N and R. Cairns. 2001. May Farming make a contribution to poverty alleviation in a "deep rural" area in South Africa?. Paper presented at SARPN conference on Land Reform and Poverty alleviation in Southern Africa. Oxfam, Great Britain.

Terreblanche, S. 2002. *A History of Inequality in South Africa*: *1962-2002*. Durban: University of KwaZulu-Natal Press.

Thomson, D. and M. Lyne. 1993. Constraints to land Rental in KwaZulu: Analysing the Transaction Costs. *Oxford Agrarian Studies*. 21(2):143-150.

Thwala, W. 2006. Land and Agrarian Reform in South Africa. In Peter Rosset, Raj Patel and Michael Courville. (eds). Promised Land: Competing Visions of Agrarian Reform. Food First/Institute for Food and Development Policy. Oakland, Ca. cited in Lahiff, E. 2007. Redistributive Land Reform and Poverty Reduction in South Africa. A working paper for the research project on Livelihoods after Land Reform". Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Tilley, S. 2002. An examination of market assisted agrarian reform in South Africa: Discussion paper *2*. Paper for the International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations (IUF) Land and Freedom Project cited in Wegerif, M. 2004. A critical appraisal of South Africa's market-

based land reform policy: The case of the Land Redistribution for Agricultural Development (LRAD) programme in Limpopo. Research report no. 19. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Timmer, C. 1997. How Well Do the Poor connect to the Growth Process? CAER II Discussion Paper No. 17. Cambridge, MA: Harvard Institute for International Development cited in Irz, X., Lin, L., Thirtle. C. and S. Wiggins. 2001. Agricultural Productivity Growth and Poverty Alleviation. *Development Policy Review*. 19(4):449-466.

Torkington, N.P.K. 2000. *Community Health Needs in South Africa*. London: Ashgate Publishing Ltd.

Turner, S. and H. Ibsen. 2000. Land and Agrarian Reform in South Africa: a Status report. Research Report no. 6. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

van den Brink, R., G. Thomas, H. Binswanger, J. Bruce and F. Byamugisha. 2007. Land Redistribution, in Consensus, Confusion and Controversy: Selected land reform issues in sub-Saharan Africa. Working Paper, No 71. World Bank, Washington D.C.: 1-48.

Van der Walt L. 2005. *The resuscitation of the cooperative sector in South Africa*. Paper presented at the International Co-operative Alliance XXI International Cooperative Research Conference, Cork, Ireland, August 11-14, 2005 cited in Ortmann, G and R. King. 2007. Agricultural Cooperative II: Can they Facilitate Access of Small-Scale Farmers in South Africa to Input and Product Markets*? Agrekon.* 46(2): 219-243.

Valdes, A. and W. Foster. 2006. Making the Labor Market A Way Out of Rural Poverty. Rural and Agricultural Labor Markets in Latin America and the Caribbean. Background paper for the WDR 2008.

Van Zyl, J., K. Binswanger and C. Thirtle. 1995. The Relationship Between Farm Size and Efficiency in South African Agriculture. World Policy Research Working Paper Number 1548. World Bank, Washington, D.C.

Van Zyl, J. and J. Kirsten. 1997. Economic Empowerment in South Africa. In L. Haddad. (ed). *Achieving Food Security in Southern Africa: New Challenges, New Opportunities*. Washington D.C: International Food Policy Research Institute cited in
May, J., Stevens, T., and A. Stols. 2002. Monitoring the impact of land reform on quality of life: A South African Case Study. *Social Indicators Research*. 58(1-3):293-302.
Vink, N. and J. Kirsten. 2003. Agriculture in the National Economy. In Niewoudt, L & J. Groenewald. (eds). *The Challenge of Change: Agriculture, Land and the South African Economy.* Pietermaritzburg: University of Natal Press.

Walker, Cheryl. 2002. Agrarian Change, Gender and Land Reform A South African Case Study. Research Paper no. 10 UNRISD Social Policy and Development Programme, Geneva.

Wegerif, M. 2004. A critical appraisal of South Africa's market-based land reform policy: The case of the Land Redistribution for Agricultural Development (LRAD) programme in Limpopo. Research report no. 19. Programme for Land and Agrarian Studies, University of the Western Cape, Cape Town.

Wondon, Q. 1999. Growth, Poverty, Inequality: A Regional Panel for Bangladesh. Policy Research Working Paper 2072. World Bank, Washington, DC cited in Irz., X., L. Lin, C. Thirtle and S. Wiggins. 2001. Agricultural Productivity Growth and Poverty Alleviation. *Development Policy Review*. 19(4):449-466.

Woolard, I. 2003. Impact of Government Programmes Using Administrative Data Sets: Social Assistance Grants. Project 6.2 of the Ten Year Review Research Programme.

World Bank. 2007. *World Development Report 2008: Agriculture for Development*. Washington D.C.: Quebecor World.

World Bank. 2000. *The Quality of Growth*. New York: Oxford University Press.

Worth, Steven. 2008. *An Assessment of the Appropriateness of Agricultural Extension Education in South Africa.* Thesis (Ph.D.). University of KwaZulu-Natal, Pietermaritzburg.

Vink, N and J. Kirsten. 2003. Agriculture in the national economy. In Niewoudt, L and J.Groenedwald, J. (eds). The challenge of change: agriculture, land, and the South African economy. Pietermaritzburg: University of Natal Press.

Zimmerman, F. 2000.Barriers to Participation of the Poor in South Africa's land Redistribution. *World Development*. 28(8): 210-219

Appendix A: Interview Schedule

Organization/Community Details (if applicable):
Name:
Location:

Participant Details:
Name:
Date:

A) Background
1. What was your age at your last birthday?
2. What is your marital status?

Married:	
Not Married:	
Divorced:	
Widowed:	

3. If married, are you living with your spouse?
4. If not married, are you currently living with a partner?
5. How many people currently live in your household? Include all those who lived in your household for at least 15 days in the last month.
6. List the age and gender of each of these people and their relation to you? If they are employed, what is their current employment?

Name of Person Living With You	**Age**	**Gender**	**Relation to You**	**Current Employment**

7. Are there any family members who moved away from home in order to find work?
8. Are they currently working?
9. Do they provide remittances in cash or kind? Do you receive them regularly or irregularly?
10. What is the highest level of school that you completed?
11. Have you ever been employed? (performed work for pay profit or family gain for at least one hour a week for a duration of a month) What did you do, what year was this?
12. Have you ever worked on a farm before in order to get agricultural experience?

13. Are you employed now? (performed work for pay profit or family gain in the seven days prior to the survey interview for at least one hour or was absent from work during these seven days but did have some form of work to which to return.)
14. Beside farming do you do anything else to earn money?
14. Describe your most recent job.
15. What is your occupation?
Manager
Professional
Technician
Clerk
Sales and service
Skilled agriculture
Craft
Plant and machine operators and assemblers
Elementary (labourer)
Domestic worker
Unspecified
*skill agriculture includes skilled field crop and vegetable growers; gardeners, horticultural and nursery growers; dairy and livestock producers; poultry producers; and forestry workers and loggers; while unskilled farm labourers fall in the elementary occupations group

16. In general how do you use your land?

Crop Production	
Livestock Husbandry	
Agro Forestry	
Consuming Natural Resources	
Trading Natural Resources	
Craft Production	
Allowing others to live on land for cash or kind	
Other activities	

17. What goals/needs does each activity help you meet?
18. Aside from current employment, your household members current employment, remittances from family members living outside the home, and activities related to land, what other activities are used by members of the household in order to meet family's needs/goals?
19. Rank all these activities (employment, remittances, activities related to land and those listed in the above question) in order of importance for helping to meet you family's need.
20. Do you have a bank account?
21. How much does your household earn in a year? How much is from selling crops?
Under R1000, 1-2, 2-3, 3-4, 5-6, 6-7, 7-8, 8-9, 9-10, 10-15, 15-20 , 20-25
B) Land
1. Do you have access to land for cultivation or grazing?
2. Do you own the land? (husband own?) individually or communal owning? Do you feel you have secure rights to the land or do you feel threatened by outside forces taking away some or all of your land?
3. Have you previously owned land in the past that you do not own now?
4. How did you lose the land?
5. How did you acquire the land you own (or use) now?
6. Around how many hectors of land do you own/have to use?
7. How much is used for farming? What is the left over used for?

7. Describe the land you have. (i.e. is it suitable for farming?)
8. What are the benefits of having land? Of farming?
9. What are the negatives of having land? Of farming?

C) Agricultural Enterprise
1. How long have you been farming?
2. If you own livestock, what do you own and how much?

Animals	How Many	Used for what	Used for what	Used for what

2. And what are they used for? (i.e. collateral for credit, form of insurance in drought situations, sacrifices in rituals, retirement plans, savings, draught power, provision of food, energy, fertilizer, building material).
3. How long have you been growing crops?
4. How much land is devoted for crop production?
5. How many growing seasons do you have throughout the year? How much time do you or other members of the family devote to crop production throughout the year? Compare time spent on this activity with other activities the household uses.
8. Is there any hired labor? If not, would you benefit from hired labor? Why/why not?
9. What activities are done during the winter seasons when crop production is limited?

D) Core Questions
1. What are all the important inputs you currently use that allow you to produce your crops?
2. How do you access these inputs?
Do you use fertilizers? Pesticides? Herbicides? What? Where do you access this? How did you learn about this? How did you learn how to use it? Do you feel using these are beneficial? Do you feel it would be more beneficial if you had greater access to these, or would you prefer not to use any of these if possible? Would you prefer to be using a different kind? What is preventing you from using more/different kind/none? If you do not use any, would you like to? Why are you not using any? If you knew more information would you be more likely to use it?
3. Of these inputs what do you need more of? What is preventing you from accessing this?
4. What inputs do you not have but wish you did? What is preventing you from this accessing them?
5. Has your total production yield grown over the years? If not, was this out of choice? What prevented this?

If it did, by how much has it expanded/over what time period? How much would you like it to expand?
6. Would it benefit you to be able to produce more? What would you do with this surplus, and how would this be used?

Has a lack of money and credit affected your ability to farm successfully?

Do you currently have/or ever had access to credit? Where? What are your options? Has this helped you/what have you used it for? Is there a high risk involved? What would help mitigate this risk? Do you engage in activities to reduce this risk such as insuring assets? What activities/what is insured? (i.e. mutual insurance with community members, save food/cash to self-insure, insure items through creditor?). Is the credit you accessed significant, or would you prefer to take out more? If you do not have access, why not? (i.e. due to high risk)? What were your options? Do you think it would benefit you? If you had access/greater access to credit how would this benefit you

7. Since you cannot access all the inputs you require, what do you do in order to compensate for this? (Be sure to discuss this with a key informant on the ground first).
8. What are the most important opportunities in improving crop production that you have available to you? (e.g. extension officer etc)
9.Where do you get your seeds for each particular crop you grow?
10. If the seeds are saved from harvest and reused how many seasons is this for, and do you feel these seeds are of top quality or you are using them out of convenience? Where did you first get them from?
11. Are there other seed varieties you would prefer to use instead for that crop? Are there other kinds of crops you would grow if you could get seeds for them? What is preventing you from getting these seeds? (high cost, no markets)
12. What are all your choices in seed selection for each of your particular crops? (purchase, barter through social networks i.e. friends, family, neighbors)
-- If money was not a factor do you feel a sufficient amount of seeds for the crops you want to grow is available within a reasonable distance from your house and you could access them in sowing periods?
13. Why did you pick the seeds you use? Is it your first choice? Are they of good quality? What ones are of better quality?
--Are you satisfied with the crop varieties (quality of the seed…i.e. crops with low yields, wrong cycles, poor taste, and poor marketing qualities)
14. Has there been a general incline/decline of seed quantity, quality, or accessibility over the years? Why?

E) ACAT
1. Are you a member of any other farm association or co-op?
2. Before ACAT what farming skills did you have? Where you learn these?
3. How long have you been a member?
4. How did you find out about the organization and come to join it?
5. What specifically have you learned through ACAT? Did you go to training center or learn through other farmers or extension officer?
6. What difference did it make in terms of your crop production?
7. How has this benefited you? (income, health etc)
8. Do you feel the organization understands your concerns, and has effectively dealt with them?
9. What problems did you have before that it helped you overcome?
10.What problems did it not help you overcome?
11. Would you recommend other farmers to join?
12. Have you interacted/shared information with other members? Was this beneficial?
13. Overall how has farming benefited your and your family's life?

Probing Questions to Ask if questions are not answered by core questions:

3. Market Access for Inputs:
Do you have adequate access to water supply for your crops? What are barriers preventing you from obtaining adequate access? What difference would greater access to water make? What equipment do you currently use? Would it benefit you from having other equipment? What? What is preventing you from getting this?
Do you use fertilizers? Pesticides? Herbicides? What? Where do you access this? How did you learn about this? How did you learn how to use it? Do you feel using these are beneficial? Do you feel it would be more beneficial if you had greater access to these, or would you prefer not to use any of these if possible? Would you prefer to be using a different kind? What is preventing you from using more/different kind/none? If you do not use any, would you like to? Why are you not using any? If you knew more information would you be more likely to use it?
Where do you get your seeds for a particular crop? If seeds saved from harvest and reused how many seasons is this for, and do you feel these seeds are of top quality or you are using them out of convenience? What are all your choices in seed selection for that crop? Why did you pick the seeds you use? Are they of good quality? What ones are of better quality? Are there other seeds you would prefer to use instead for that crop? Are there other kinds of crops you would grow if you could get seeds for them? What is preventing you from getting these seeds?

4. Financial Barriers
Has a lack of money and credit affected your ability to farm successfully?
Do you currently have/or ever had access to credit? Where? What are your options? Has this helped you/what have you used it for? Is there a high risk involved? What would help mitigate this risk? Do you engage in activities to reduce this risk such as insuring assets? What activities/what is insured? (i.e. mutual insurance with community members, save food/cash to self-insure, insure items through creditor?). Is the credit you accessed significant, or would you prefer to take out more? If you do not have access, why not? (i.e. due to high risk)? What were your options? Do you think it would benefit you? If you had access/greater access to credit how would this benefit you?

5. Barriers to Human Capital
Who taught you how to farm? Have you received any formal training in farming? Where? Do you feel having more knowledge and skills would help you farm more productively? If given the opportunity would you attend training classes/information centers? What would you hope to learn more about there?
Have you received any help from agricultural extension services? What? When? Where? Did this benefit you? How resourceful is this service? Are the messages and technologies suggested appropriate for your farming system? Do you feel their services are beneficial to you? Have you ever received any other form of help from the government?
Have other farmers given you/(or vice-versa) advice on how to farm or what to farm, or where to access inputs?

6. Natural Resource Barriers
Is the quality of your land suitable for farming? Is the size of your land hindering your ability to farm more successfully? Is the weather suitable for farming? What can you do to lessen the risks involved with the weather? (i.e. Irrigation system, crop insurance)

7. Social Resources

If interviewing members of an association/co-op: How long have you been a member? How did you find out about the organization and come to join it? How has this benefited you/what difference did it make in terms of your crop production? Do you feel the organization understands your concerns, and has effectively dealt with them? What problems did you have before that it helped you overcome? What problems did it not help you overcome? Would you recommend other farmers to join? Have you interacted/shared information with other members? Was this beneficial?

If not a member: Do you know of any associations or co-ops? How? Do you want to join one? How could this benefit you? What has prevented you from joining one?

Appendix B: Focus Group Guide

1) Mapping Exercise: Each participant receives markers and white board. Asked to draw their community including where they live, what they own, and detailed account of crops and livestock. They are also to include key landmarks from their daily life and community resources and places of gathering.

2) Proportionality: Discussion around the crops and then hand out 100 stones representing all of last season's harvest. Then asked to distribute stones into piles in accordance to how they were used.

Crops Grown Last Year- list first growing season crops first followed by second growing season	**Amount Produced Annually**	**Happy with Amount - if no what prevented**	**Eat-proportion (1-10)**	**Sell-proportion (1-10)**	**Trade (For what)-proportion (1-10)**	**Give to friends/family (Whom)-Proportion 1-10**	**Amount Made Annually**
Crops You Use to Grow							
Crops You Want to Grow							Total amount earned in YEAR

3) Time Line of Cultivation: Use a production time line, 12 months, describing each activity involved in crop cultivation, leave out livestock, but get information on livestock ownership in the mapping. Thus start in winter when nothing is cultivated, go month by month through the season with a matrix. Then fill in the information that you are interested in each block. Do this in a participatory fashion filling in the information and then recording how many of the participants do the activity that has been mentioned (show of hands, buttons).

Activity	Jan	Feb	March	April	May	June
Seed						
Clearing Land						
Ploughing						
Planting						
Pesticide						
Herbicides						
Fertilizer						
Water						
Weeding/ukula						
Harvesting						
Drying/Storing						
Selling-how long						

4) Barriers to Input: Discussion around the following using flip cart/stones

Asset	Adequate access? (1-10 and explain)	Barriers to getting adequate access	Implications of inadequate access	What is done to overcome these limitations?
Water Supply				
Land-size/quality				
Seeds				
Ploughing Equipment-Tractor/cost to hire				
Ploughing Equipment-Cow				
Planting Equipment (list equipment you have and want)				
Fertilizer				
Pesticide				
Herbicide				
Finance for Agricultural production-money,				
Credit				
Agricultural Skills-Training courses/demonstrations				
Agricultural Skills-Extension Officer (acat or gov)				

Agricultural Skills- Government Agri building in Nqutu				
Agricultural Skills- other farmers /anywhere else?				
List other inputs you need- (fence, harvest machine etc)				

5) Accessing Seeds: Discussion around the following using flip chart/stones

Crop Grown	**Reason for choosing this crop**	**List all your choices for where you can get seeds for this crop (name of store, town; barter with neighbors/friends, Acat, government, other farmers)**	**Where do you get your seeds/what size bag? Why do you get your seeds here? Price, convenience, quality etc)**	**Reasons do not get from other places you listed?**	**Are you satisfied with the quality of the seeds you use? (low yield, poor taste, wrong cycles) Was there ever a time when you were not able to get the number of seeds you wanted for this crop? (if yes why?)**	**Can this seed be saved from previous harvest? For how many seasons can it be reused?**	**Do you save this seed? Why or why not? Any problems with doing this?**	**Out of all choices what seed varieties would you prefer to use for this crop? (rank order all the options available)**