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The Survival of Peri-Urban Agrarian Livelihoods in Transitioning Spaces of Kwazulunatal, South Africa

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THE SURVIVAL OF PERI-URBAN AGRARIAN LIVELIHOODS IN TRANSITIONING SPACES OF KWAZULU-NATAL, SOUTH AFRICA

By

Umesha de Silva

A Thesis

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Dedication

In loving memory of my father who inspired me to explore, study and fulfill my goals.

Abstract

South Africa's unique history of racial segregation and spatial dynamics severely undermined the role and tradition of small-scale agriculture among the black population. In order to redress past injustices, the post-apartheid government aims to re-invigorate agriculture to improve food security and economic growth, with a particular focus on establishing a class of black small-scale farmers. However, changing livelihood trajectories, threats to sustainable agriculture, and the diverse and complex rural-urban interface challenge the sustainable role that small-scale farming can assume in peri-urban areas. On these premises, the study offers a critical reflection of the future of small-scale farming in one peri-urban community located in one of South Africa's former homelands – KwaZulu-Natal (KZN).

The overarching objectives of this thesis are: 1) to draw upon the Sustainable Livelihoods Framework to gather data in order to explore livelihood strategies of small-scale, peri-urban farmers in Umzinyathi, KZN; 2) to analyze the effects of rural-urban transitions on small-scale farmers in Umzinyathi, KZN using a political ecology framework, with an emphasis on marginalization and degradation; and 3) to reflect upon the current policy framework that has been drafted for small-scale farming in South Africa.

Qualitative and quantitative methods were used for data collection and analysis. Participatory research methods included: (a) the collection of semi-structured interviews and surveys from forty small-scale farmers, focusing on the respondent's livelihood; and (b) semi-structured, key informant interviews with two academics, three development practitioners, a tribal chief, and two commercial farmers. The fieldwork was conducted over three months between October and December 2010.

The results of the survey suggested the following trends: tribal authorities play a large role in allocating land to resource-poor households, but land tenure is weak, and access to land is still limited to some; livelihood diversification is low and households assume their income primarily from social assistance and farming activities; farmers' access to markets is restricted due to infrastructural and production barriers; and the climate conditions are perceived to have changed the nature of farming, but adaption strategies to climate shocks and stresses are limited. Through comparing field data with the literature on agriculture and livelihoods in South Africa, the study identified several trends, which could either foster agricultural livelihoods in peri-urban areas, and which could not.

It was found that rural to urban transitions could explain themes of marginalization and degradation in the research site related to the degradation of the natural resource base, the disintegration and marginalization of tribal authorities, and the marginalization of livelihoods through diminishing numbers of economic opportunities. This in turn had tremendous impacts on the feasibility of small-scale farming to improve food security, peri-urban livelihoods, and inspire economic development.

The study believes that South Africa's current policy framework for small-scale farming can make vital contributions to both the farm and non-farm sectors of the peri-urban economy, but that its uptake can improve with additional communication, monitoring, and training. To this extent, the study suggests the implementation of farming associations to act as intermediary

bodies between the state, agricultural cooperatives and individual farmers. The study also suggests areas in the peri-urban non-farm sector that could thrive in an agriculturally-driven economy.

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Thank you to all of the study's participants, especially the residents of Umzinyathi, and the Inkhosi of the Qadi Traditional Authority, who all made this work possible. I could not have completed this task without everyone's support and kindness. Thank you very much!

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Acronyms

AIDS:	Acquired immune deficiency syndrome
ANC:	African National Congress
BATAT:	Broadening of Access to Agriculture Thrust
Bt:	Biotechnology
CASP :	Comprehensive Agriculture Support Programme
CCS:	Centre for Civil Society
CBNP:	Community Based Nutrition Programme
CBO:	Community-based organization
DoA:	Department of Agriculture
DFID:	Department for International Development
ESCAP:	United Nations Economic and Social Commission for Asia and the Pacific
EU:	European Union
FAO:	Food and Agriculture Organization
FMD:	Food-and-Mouth Disease
GHS:	General Household Survey
GMO:	Genetically modified organism
GM:	Genetically modified
HIV:	Human immunodeficiency virus
IES:	Income and Expenditure Survey
IFSS:	Integrated Food Security Strategy
IFSNP:	Integrated Food Security and Nutrition Programme
IMF:	International Monetary Fund
INS:	Integrated Nutrition Strategy
ISRDS:	Integrated Sustainable Rural Development Strategy
KZN:	KwaZulu-Natal
LRAD:	Land Redistribution for Agricultural Development
MDG:	Millennium Development Goal
NGO:	Non-governmental organization
NNC:	National Nutrition Council
NNSDP:	National Nutrition and Social Development Programme
PDA:	Provincial Department of Agriculture
R:	Rand
SADC:	Southern African Development Community
SPFS:	Special Programme on food security
SOFI Report:	State of Food Insecurity Report
SAP:	Structural adjustment programs
SL:	Sustainable livelihoods
UN:	United Nations
UNDP:	United Nations Development Programme
UKZN:	University of KwaZulu-Natal
VAT:	Value added tax
WDR:	World Development Report
WFS:	World Food Summit

Chapter 1: The Beginnings and Conceptual Approach

A view of the Inanda River from a hilltop in Umzinyathi, KwaZulu-Natal.

Chapter 1: The Beginnings and Conceptual Approach

My name is Sizene, I am 44 years old and I moved to Umzinyathi 10 years ago from a rural area called Ndwedwe. I came to Umzinyathi because my parents had died, and my sister was sick. We had to move here, because Ndwedwe was too far from the bus stops, town, and hospitals. My neighbours here have cars, so it is easier to take my sister to the hospital.

It was hard to get land in Umzinyathi. This was someone else's land and I had to pay him a lot for it. Our land in Ndwedwe was much larger and more fertile. I only grow beans and *millies* (maize meal) to eat at home, but I sell fruits, peanuts, *amadumbe* (taro) and sweet potatoes to Indian neighbourhoods in Durban. I sell to African people too. At home, I used to make mats from the herbs in the garden, but I had to leave my equipment in Ndwedwe.

There are twelve people living in my household, but no one makes an income. I receive three child grants, and there is a pensioner in the household...my daughter is a domestic worker in Durban, but is now a cleaner. She would like to stay here and work as a farmer too because she is spending a lot of time and expenses to work in town...but we do not make enough money in this job.

Farming is more valuable now because you can make food and money with hard work, but it is no longer the same. In other areas, I was able to plant beans and I got lots of drums of beans. I have to use more *umquba* (cow dung) than before...and getting water is hard. The dam is good to get water from, but I do not have access to it because there is no road. I cannot grow as much, and the crops are not as good. This year, the rains destroyed most of my crops.

I have to work harder, but I am getting tired. The children do not like to farm, but I push them to work, because I know how to do proper farm work and I cannot afford to hire help. I hope for them to farm in the future and to have food for a healthy life. But, I do not feel like the government helps us. We do everything ourselves, and since I am not from this town, I do not have access to the Chief.

- Excerpts from an interview with Sizene Mchunu
Small-scale farmer, Umzinyathi, KwaZulu-Natal, South Africa
November, 2009

The Conceptual Approach

Agriculture has played a large role in the development and shaping of sub-Saharan African economies and cultures throughout its colonial and post-colonial history. Today, it is still one of the most intertwined regions to smallholder agriculture, yet, following the process of deagrarianization transpiring in other areas of the globe, sub-Saharan Africa too, has witnessed an erosion of smallholder farming in the past three decades (Bryceson, 2009; Rigg, 2006). In the aftermath of these deagrarianization processes, development practitioners and governing agents alike are confronted with the consequential issues of rising food insecurity and extreme poverty across sub-Saharan Africa. This has translated into shifting the development focus to reinvigorate smallholder agriculture for economic development.

However, the process of deagrarianization and erosion of smallholder agriculture occurred long before the 1970s in South Africa, with much more force and impact. Racial segregation became institutionalized in South Africa in 1948 through the apartheid regime. Its socio-spatial policies significantly undermined the role and tradition of smallholder farming among the black population, especially in the overcrowded and degraded former homelands (Agergaard and Birch-Thomsen, 2006). Since the end of apartheid in 1994, the South African state has implemented new policy to inspire previously disadvantaged groups to re-engage in farming with an ultimate focus of creating a class of black commercial farmers (Karumbidza, 2009). But, a decade after the inception of its extensive rural development strategy, former homelands remain enclaves of extreme poverty (Agergaard and Birch-Thomsen, 2006), marginalization and degradation.

The quotes above describe some of the continuous struggles that one agrarian household faces in post-apartheid South Africa, namely: circular migration, environmental shocks, degradation of the natural resource base, institutional and infrastructural barriers to accessing natural resources, lack of family or social networks, and decreased opportunities to engage in diverse economic activities. While these struggles are common in other areas of the globe, South Africa's unique history has created a diverse and complex rural-urban dynamic, which conditions the extent to which farming can be achieved. On this background, this study offers a critical reflection of the future of small-scale farming in a peri-urban community located in one of South Africa's former homelands – KwaZulu-Natal (KZN). The study aims to discover if smallholder agriculture is in decline, what forms of livelihood diversification are present in rural areas, and how can these livelihood strategies may be enhanced to improve rural livelihoods.

Research Objectives

In order to answer these questions, the investigation uses the Sustainable Livelihoods Framework as a guide to gather data on the various livelihood strategies assumed by small-scale, peri-urban farmers in Umzinyathi S.P. (Umzinyathi), KZN. Understanding that the area is transitioning from a rural to an urban economy, the study will then analyze the effects of rural to urban transitions on agriculture using a political ecology framework centered on themes of marginalization and degradation. The ultimate outcome of the investigation will reflect upon the current policy framework that has been used to foster rural development, food security and agriculture in South Africa to determine the future of small-scale farming and its role in contributing to development, food security and improved livelihoods in South Africa. In particular, the study will:

1. Draw upon the Sustainable Livelihoods Framework to gather data in order to explore livelihood strategies of small-scale, peri-urban farmers in Umzinyathi, KZN.

2. Analyze the effects of rural-urban transitions on small-scale farmers in Umzinyathi, KZN using a political ecology framework, with an emphasis on marginalization and degradation.

3. Reflect upon the current policy framework that has been drafted for small-scale farming in South Africa.

This research will contribute to the deeper understanding on how and why peri-urban households assimilate various livelihood strategies for survival. This in turn will suggest whether or not smallholder agriculture or agro-based activities are still vital to development in this region, and which environmental, economic or cultural causes are potentially eroding small-scale farming practices in KZN. The research will attempt to identify which industries or activities are absorbing available rural labour, and therefore will attempt to hint at the arenas, other than agriculture, that could stimulate development. Therefore, the types of training, infrastructure and inputs deemed appropriate for sustainable development in the region may be outlined. It is anticipated that this study will have policy relevance, being useful for the South African federal and provincial government as well as development donors delivering programming in the region.

Theoretical Framework

Small-Scale Farmers Defined

Definitions of small-scale, subsistence, and garden farmers can oftentimes become blurred or ambiguous. Within the definition of small-scale farmer alone, Jayne, Mather and Mghenyi (2010) note that small-scale farmers can be defined differently in different countries, agro-ecological zones, size of landholdings, type of farm production, and so forth. Likewise, Kirsten and van Zyl (1998) argue that the situation of small-scale farmers in an international context is totally unlike the South African example and dispute the common misconceptions of small-scale farming to be invariably framed in terms of small landholdings and poor profits. From a policy standpoint, Kirsten and van Zyl suggest that South Africa's agricultural policy frame small-scale farmers as those "whose scale of operation is too small to attract the provision of the services he/she needs to be able to significantly increase his/her productivity" (Kirsten and van Zyl, 1998: 564); therefore, maintaining a broad definition of the term – as do other scholars (Rigg, 2006; Anseeuw and Laurent, 2007; Kepe, 2009; Bichard, Dury, Schonfeldt, Moroka, Motau, Bricas, 2005). This study will use the terms 'small-scale' and 'smallholder' interchangeably, but will characterize its unit of analysis based on Netting's (1993) definition of small-scale farmers to be "rural cultivators practicing intensive, permanent, diversified agriculture on relatively small farms in areas of dense population" (Netting, 1993: 2).

It is also common for researchers to evade the terms of 'smallholder' and 'small-scale', opting to frame their analysis via agricultural livelihoods or households (Leroy, van Rooyen, D'Haese, de Winter, 2001; Hendriks and Lyne, 2003; Woldenhanna and Oskam, 2001; Barrett, Reardon, Webb, 2001). This study will also use household data, thus, it is important to note that in farming households the family household is the major business social unit for assembling "agricultural labour, managing productive resources, and organizing consumption" (Netting, 1993: 2). Agricultural households can be defined as households growing some crops or raising animals, assuming their income from crop production, sales of livestock and livestock products, income from wage employment, own-business activities, remittance income, and rented land (Jayne et al., 2010). The household produces a large part of its own subsistence, and generally participates in the market, where it sells some agricultural goods as well as performing other off-farm employment. "Choices of allocating time and effort, tools, land, and capital to specific uses, in a context of changing climate, resource availability, and markets must be made daily, and these economic decisions are intelligible in rational, utilitarian terms" (Netting, 1993: 2).

Small-scale farmers have ownership or other well-defined tenure rights for land that are long-term and often heritable. They are members of communities with common property and institutions that work towards sharing, monitoring and protecting such resources. Smallholders engage in intensive agriculture that produces either high annual or multi-crop yields from permanent fields. These fields are continuously harvested, and are seldom or never rested; their fertility is restored and sustained by practices such as tillage, crop diversification and rotation, fertilization, irrigation, and drainage (Netting, 1993).

The study uses Netting's definition of small-scale farmers to recruit appropriate respondents in the research area and to avoid recruiting subsistence or garden farmers. However, the research recognizes the increasing livelihood diversification and occupational multiplicity taking place in many households. Livelihood diversification ultimately "debunks the misleading categorization of people" into narrow professions, such as 'small-scale farmer', 'trader' or 'processor' (Marschke, 2005: 3). Therefore, the study uses a livelihoods analysis to appropriately capture the complexity and diversity of household activities and strategies.

Lives, Livelihoods, and Diversification

The sustainable livelihoods (SL) framework is meant to facilitate the effective collection of the study's livelihood data (*Research objective 1*). Combined with a qualitative and participatory analysis at the local level, the approach aims to recognize the diversity and complexity of livelihoods, and offer a reflection on how to improve poverty reduction and development (DFID, 1999). Livelihood studies can be traced to a body of literature that conceptualizes poverty based upon people's own definition of poverty dimensions (Sen, 1981; Chambers and Conway, 1992; Mbhele, 1998; Ellis, 2000; Batterbury, 2001; Rigg, 2006; Kepe, 2008; Bryceson, 2009). The study involves people and their perceptions of poverty, and focuses on the impact of different policy and institutional arrangements upon people and people's households (DFID, 1999). A livelihood comprises of the "assets (natural, physical, human, financial and social), the activities, and the access to these (mediated by institutions and social relations) that together determine the living gains by the individual or household" (Ellis, 2000: 10). The combination of assets, activities and access can enables (or hinder) "a household's ability to develop various livelihood strategies, each resulting in different outcomes" (Marschke, 2005:3).

A livelihood strategy combines and uses assets available to people in "pursuit of beneficial livelihood outcomes that meet their own livelihood objectives" (DFID, 1999: 3). Livelihood strategies are diversified and secured by "fostering social networks and engaging in community level work" (Bebbington, 1999; Sen, 1999 as cited in *Marschke*, 2005: 3). Strategies become sustainable when they can "cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base" (Chambers and Conway, 1992) or compromising the livelihood options for others (DFID, 1999). Households practice a diverse portfolio of activities and pursue livelihoods in multiple areas (De Haan and Zoomers, 2003). Several studies have emphasized 'multiple livelihoods' (Bryceson, 2000; Francis 2000) or 'occupational multiplicity' (Breman, 1996) or 'farm pluriactivity' – a term describing households that earn farm and non-farm incomes (Answeeuw and Laurent, 2007).

Diversification can refer to an increasing multiplicity of activities (regardless of the sector) or a shift away from traditional rural sectors such as agriculture to non-traditional activities in either rural or urban spaces (Johnson and Start, 2004). The latter would describe the process Bryceson (2002) and Rigg (2006) refer to as deagrarianization. 'Sectoral' diversification takes place at different levels of the economy. Thus, diversification of a rural economy, and the expansion of the rural non-farm economy, is separate from the diversification of a household. For instance, the increasingly urban nature of a national economy may be at odds with the increasingly rural nature of a particular family strategy (i.e. small-scale agriculture). While the local economy may become increasingly formalized - through the introduction of new institutions, infrastructure, etc.- an individual's own work may become increasingly non-formal. There are links between the diversification of an economy and household, although they are not always direct (Johnson and Start, 2004). Using the livelihoods approach, the study aims to bridge the gap between levels to emphasize the importance of macro level policy and institutions to the livelihood options of communities and individuals. This is meant to help this study to reflect upon the current policy framework that has been drafted for small-scale farming in South Africa (*Research objective 3*) and provide policy recommendations to be guided by lessons learnt and insights gained at the local level (DFID, 1999).

Livelihood strategies can be defined by economic sector, including 'non-farm' or 'primary' sector livelihoods. Primary sectors refer to agriculture, mining and other extractive activities, including the gathering of unprocessed crops from natural resources. Primary activities can be further sub-divided into on-farm and off-farm activities. On-farm activities refer to crop enterprises on private land, and off-farm activities can refer to gathering enterprises on common lands (Johnson and Start, 2004) (i.e. agricultural cooperative activities on tribal land). "Non-agricultural then covers all other forms of activity and income including processing, transport or trading of unprocessed products" (Johnson and Start, 2004: 2). Activities can also be separated on the basis of where they receive support. For instance, activities that depend on direct production from natural resources, activities that depend on exchange through market or non-market institutions, or activities that depend on direct provision of entitlement from state welfare schemes (Sen, 1981). "In these cases, 'economic sectors' have been grouped by the dominant institutions governing access to the resource either through natural resources management institutions, the market...or the state" (Johnson and Start, 2004: 2).

Livelihood strategies in rural areas are oftentimes distinguished from activities taking place in urban areas, yet, increasingly "multi-spatial livelihood strategies cut across both domains" (Johnson and Start, 2004: 2). Household strategies can sometimes include some members of the family remaining in rural areas "where costs of reproduction are lower", while others live in urban areas "where better returns can be found in labour markets" (Johnson and Start, 2004: 2). In between the rural and urban space includes rural and peri-urban sites, which are often critical "sites of accumulation for the rural rich and a stepping stone to the urban middle 'class'" (Johnson and Start, 2004: 2). Using the livelihoods approach, the research aims to gather household data regarding both non-farm and primary sector livelihood strategies, regardless of where they occur. The collection of this data is meant to help analyze the effects of rural-urban transitions on small-scale farmers in Umzinyathi, KZN (*Research objective 2*).

Political Ecology Theory

The SL approach will help guide the framework to collect livelihood data, however, it will then draw upon political ecology theory to analyze the results of the study. A combination of these two approaches will facilitate the investigation of multiple factors contributing to environmental degradation and marginalization through the 'eyes of the poor'.

Political ecology aims "to understand the complex relations between nature and society through a careful analysis of what one might call the forms of access and control over resources and their implications for environmental health and sustainable livelihoods" (Robbins, 2004: 7). The study will use political ecology to explore the relations between nature and population growth in Umzinyathi to understand people's access and control over natural resources, such as land and fresh water, and their implications on livelihoods and the sustainability of small-scale agriculture in the area. In his book *Political Ecology*, Paul Robbins describes the several theories of political ecology developed by theorists from 1979 onwards. This study will particularly draw upon the degradation and marginalization theory to analyze the results of the livelihood survey, and explain the "geography of environmental disturbance and degradation" (Peet and Watts, 2004: 6).

Environmental degradation can be defined as "the substantial decrease in either or both of an area's biological productivity or usefulness due to human interference" (Johnson and Lewis, 1995: 2). This may include "reduced production of crops per unit of land and labour as a result of decreased soil potential arising from over-cropping and reduced fallow" (Robbins, 2004: 91). In many cases, an environmental system's degradation may be a loss of one capacity in exchange for another. For example, Blaikie and Brookfield (1987) assert that forest replacement with agricultural land would not be seen as degradation by a farmer. Thus, environmental degradation can assume a number of definitions in any given situation. Robbins defines environmental degradation using four categories: loss of natural productivity, loss of biodiversity, loss of usefulness, and socio-environmental destruction - creating or shifting risk ecology (Robbins, 2004: 92).

Loss of natural productivity can oftentimes be misunderstood. For example, "direct loss of soil through erosion has historically been equated with loss of productivity", though this is not necessarily an appropriate measurement (Robbins, 2004: 93). While Robbins argues that productivity should be indirectly or directly measuring decreasing quantities of important ecological conditions, such as decreased soil nutrients or levels of salinity (Robbins, 2004), Zimmerer (2004) claims that loss of productivity can also be measured through a socio-economic and political analysis of environmental change and the perceptions and discourses of the loss of productivity from government institutions and civil society.

Human demands on the biosphere have tremendous impacts on the earth's biodiversity as well as climate (Adams, 2009). Robbins (2004) explains the loss of biodiversity as a threat to the "long-term adaptability of a community, since humans derive certain resources from the diversity of the landscapes and available species" (Robbins, 2004: 93). The magnitude of human consumption extends beyond "food and other products that are directly consumed" (ex. crops, fish, wood) to include "those consumed by livestock, as well as production consumed less directly" (ex. human-induced soil erosion) (Adams, 2009: 17).

Loss of usefulness of an environmental space is a measure that "assesses whether or not an environment is more or less useful as a result of human action" (Robbins, 2004: 94). For instance, if a farmer's cropland produces lower yields over time, then it is a sign that an important change has occurred (ex. climate conditions, soil nutrient level, etc.). The changing usefulness of a resource, such as land, can be measured by exploring past and present land uses and practices. A historical picture of resource uses can illustrate the changing capacity of the environment (Robbins, 2004). Although Robbins describes this measure as the most direct and practical, he acknowledges that the determination of an area's proper or appropriate use is also explicitly political (Robbins, 2004). Zimmerman (2004) also points that people's perceptions of changes in environmental capacity can be influenced by one's own understanding of the nature of degradation, the view of the problem associated to degradation, and the perceptions of the proper solution to degradation.

Socio-environmental destruction examines whether land use or management has led to an increasing vulnerability of an area to destruction (fire, erosion) or created new risks for local residents. This evaluation is useful in assessing if the "risk has shifted onto vulnerable or disempowered populations" (Robbins, 2004: 96). For instance, increasing land prices may push farmers on marginal and degraded lands on steep hillsides where the risk of soil erosion is higher.

Environmental scarcity is defined as scarcity of renewable resources (i.e. croplands, fresh water) or scarcity of resources essential in meeting the needs of a population (Homer-Dixon, 1999). Environmental scarcity is caused by a number of complex and interconnected factors. There are three primary sources of environmental scarcity. First, supply induced scarcity is the depletion or degradation of a resource caused by the interaction between the local population and the resource in the context of physical vulnerability of resources (Homer-Dixon, 1999). Demand induced environmental scarcity is caused by increased demand from increased growth or consumption for a static supply of resources (Homer-Dixon, 1999). Environmental scarcity can also be structural in nature (MacSwain, 2009: 6) when it is based on unequal systems of distribution that create societal imbalances (Meadows, 2002).

Homer-Dixon (1998) argues that population growth (urbanization, in-migration) increases environmental scarcity leading to the elites in society capturing environmental resources to a disproportionate degree that causes the ecological marginalization of the non-elite. This cycle of capture and marginalization leads to increased migration and institutional incapacity (Homer-Dixon, 1998). While this theory focuses on local actors, national or international actors can also influence the cycle of degradation and marginalization. For instance, national or international governing institutions and policies can shift natural resource management policies leading to unsustainable management practices, degradation of the natural resource base, and social marginalization in different localities (Watts, Peluso and Hartmann, 2001; Awanyo, 2009). Resource capture occurs when population growth together with the degradation of renewable resources "leads to an increased consumption of resources as strong regional actors anticipate increased future scarcities and thus over-consume and control resources" (MacSwain, 2009: 6). This causes increased competition for crucial resources and in turn, increased scarcity for the marginalized segment of the population (MacSwain, 2009).

A prime South African example would be to describe apartheid role in influencing a continuous cycle of degradation and marginalization in the former homelands. In the scramble

to acquire arable land for white agriculture, apartheid policies forced blacks into overcrowded homelands with degraded soils, restricting private ownership of land by black residents, and thereby undermining their ability to engage in subsistence and commercial farming (Agergaard and Birch-Thomsen, 2006). Due to the legacies of apartheid policies, some theorists argue to redress land scarcity and degradation issues among previously-disadvantaged groups (blacks, coloured, and Indian) through land redistribution, restitution, and the restructuring of land tenure (Meadows, 2002).

Blaikie and Brookfield (1987) explain the process of marginalization as one that leads to "simultaneous and increasing impoverishment and land degradation in and amongst the global poor" (Robbins, 2004: 76). The term 'margin' has been used with different meanings for various disciplines. In neo-classical economics, the concept of margin signifies the limits of production, where increasing effort, in terms of labour, cropping and cutting, in the landscape provides less output per unit of input. In ecology, the terms margin suggests ecosystems that are either unsteady or susceptible to change or slow to recover from instability. From political economy, marginalized communities are those with the least social power, bargaining strength in the market, and force in political processes (Robbins, 2004).

Marginalized people can include women, lower classes, tribal groups and ethnic minorities. These individuals and groups are often excluded from employment opportunities, various resources, and lack control in decision-making. Blaikie and Brookfield argue that "marginalization is a process whereby politically and socially marginal (disempowered) people are pushed into ecologically marginal (vulnerable and unstable) spaces and economically marginal (dependent and narrowly adaptable) social positions, resulting in their increasing demands on the marginal (increasingly limited) productivity of ecosystems" (Robbins, 2004: 77). Consequently, those individuals and groups will tend to boost their labours on the landscape, increasingly pushing it to its maximum capacity, and achieving lower and lower yields. The consequence is a degraded landscape that returns less and less to an increasingly poor and distressed community – a cycle of social and environmental degradation (Robbins, 2004: 77).

Marginalization can also be framed in terms of access to natural resources. Ecological marginalization occurs when groups in society receive unequal access to resources in the context of increasing population growth, which can be caused by urbanization or in-migration, etc. Subsequent poverty causes marginalized groups who are dependent on renewable resources to migrate to increasingly marginal rural or urban land (Homer-Dixon, 1999: 177). Based on the availability of land, marginalized groups who can no longer sustain themselves on agricultural outputs are forced to move into environmentally hazardous or vulnerable locations, such as areas with steep slopes that are at risk for soil erosion (MacSwain, 2009: 7).

The degradation and marginalization theory offers an explanation of why environmental systems change, stating that otherwise environmentally-sound local production systems undergo transition to overexploitation of natural resources, on which they depend, as a response to state development intervention and/or increasing integration in regional and global markets. This may lead to increasing poverty and overexploitation. Likewise, "sustainable community management is thought to become unsustainable because of efforts by state authorities or outside firms to enclose traditional collective property or impose new/foreign institutions" (Robbins, 2004: 14). Related assertions believe that modernist development efforts to improve production systems of local people have led incompatibly to decreased sustainability of local practice and a linked

reduction in the equity of resource distribution (Robbins, 2004: 14). While this theory focuses primarily on international actors as opposed to domestic actors, ecological marginalization and resource capture focus on local actors (MacSwain, 2009).

Methodology

The following sections explain the methodology of the research beginning with how this study evolved as well as its timeline. It will then describe the research site, the point of entry in the field, the research methods used, and finally a description of each stakeholder interviewed for this study.

Evolution of the Research

This research evolved from an interest in researching how the adoption of new agricultural technologies, such as genetically modified organisms (GMOs), influences household food security and small-scale farming operations in rural areas of developing countries. The vigorous sponsoring of agricultural biotechnology (Bt) within Africa, from donors such as the Bill Gates Foundation, attracted my attention to South Africa in particular. It was the first country in Africa to commercialize Bt, it was emerging as an African economic powerhouse, its economy was heavily invested in the agricultural activity, and its post-apartheid government had been attempting to inspire rural development by means of agricultural invigoration. These facts combined with deagrarianization trends question the role of small-scale producers to increase food security incited my interest to study this topic.

Having spent time in Durban, South Africa during a graduate field research course hosted by the Centre for Civil Society (CCS) at the University of KwaZulu-Natal (UKZN), I became interested in the province of KZN for its rich history, dual-economy and active agricultural sector. My time spent in this field course served as a perfect scoping period to analyze the main obstacles to the successful adoption of Bt by small-scale farmers in KZN. My observations not only uncovered the obstacles to the adoption of Bt, but also revealed the number of obstacles to achieving sustainable agricultural initiatives in general. Thus, combined with my growing interest in the study of livelihoods and political ecology, I decided to broaden my investigation to assess the dynamics of agricultural livelihoods in rural KZN and the feasibility of small-scale farming to inspire rural development and sustainable livelihoods.

Building on my existing set of contacts at the Qadi traditional authority and CCS, I was able to research in the Qadi tribal ward, and connect my findings to CCS, since they were interested in supporting this type of research, which was relatively under-developed at the Centre. CCS also offered a great platform to disseminate my findings and gather valuable local feedback in order to shape the research in a manner that would be meaningful and useful for myself and local stakeholders. Table 1.1 describes the timeline of activities between September 2008-2009.

Table 1.1: Methods Timeline

Date	Mandate
September – December 2008	- Collecting data and assemble an annotated bibliography.
January – April 2009	- Draft a rough proposal for thesis research. - Prepare to enter the field by contacting various stakeholders in Durban and Johannesburg, South Africa.
May 2009	- Scoping trip to Durban, South Africa. - Retrieve literature from local newspapers and the library at the University of KZN, Biowatch and Timberwatch. - Assess potential research sites. - Prepare a research paper on Livelihood Strategies for the South Africa Field Research Course
June 2009	- Complete research on Livelihood Strategies. - Identify gaps in research. - Refine thesis argument.
July 2009	- Read new literature on agricultural trends in Sub-Saharan Africa. - Refine research question. - Begin drafting surveys, interview questions and thesis proposal.
August 2009	- Obtain approval on thesis proposal.
September 2009	- Enter the field to conduct fieldwork and begin internship.

Study Site

The study site was selected once in Durban, South Africa. It was chosen on the basis of its accessibility, population, size, and involvement with agricultural activities, affiliation to NGOs or rural development programmes, as well as resident interest in the research. Due to the time restrictions in the field, accessibility played a key role in the site selection. Although the study initially set out to analyze a rural area, time restrictions permitted the analysis of a peri-urban area called the Umzinyathi tribal Ward (Umzinyathi), located 45 minutes northeast of Durban, KZN. For the remainder of the study, Umzinyathi will be referred to as a peri-urban area, yet it can be described as a rural peri-urban area because its population is small, it is sparsely settled, and the area is becoming more densely populated due to urbanization and in-migration. Umzinyathi is located in Ward 3 – Senzokuhle that has a total population of 31,154 with 5,284 households (eThekwini Municipality, 2007).

The male to female ratio in the area is almost levelled, where 48% of the population is male, and 52% of the population is female. Almost 100% of the population in Senzokuhle is African, with only 110 Indian, 16 White and 6 Coloured residents. Ten percent of the ward's population is between the ages of 0 to 4, 25% is between the ages of 5 to 14, 38% is between the ages of 15 to 34, 22% is between the ages of 35 to 64, and 4% is over the age of 65. The large ratio of individuals between the ages of 15 to 34 produces a low dependency ratio of 8%. The dependency ratio is the number of people below the age of 15 and above the age of 64 divided by the number of people between the ages of 15 to 64. The low dependency ratio signifies that there is a healthy working population that can support the older and non-working population. However, 33% of Senzokuhle's total population is unemployed, 46% are not economically

active, 27% receive no income, and another 23% earn only R4801-R9600 ($657-$1315)[1] per year, and over half the population is illiterate (eThekwini Municipality, 2007). Considering these trends, the ability of the population between the ages of 15-64 to support the older and non-working population is most probably very low.

Figure 1.1: Map of South Africa

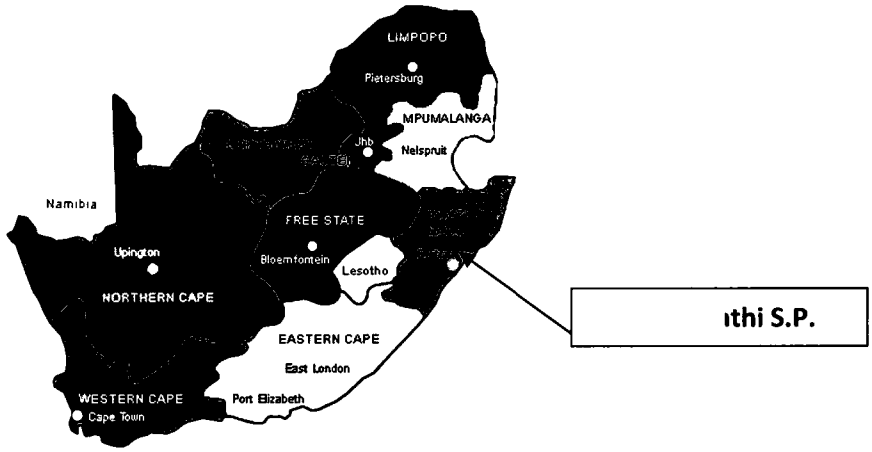
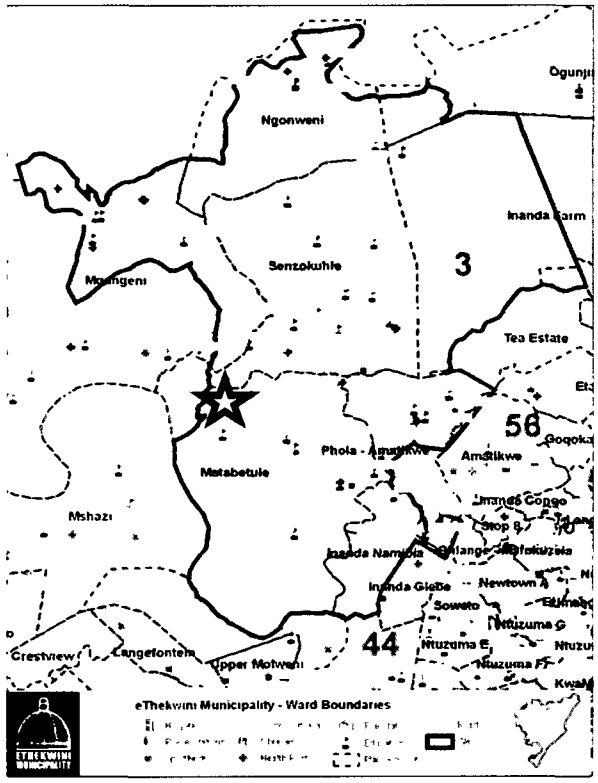


Figure 1.2: Map of Umzinyathi, KwaZulu-Natal



(eThekwini Municipality, 2007)

[1] All dollar amounts are converted to Canadian dollars using the exchange rate of $1=R7.30 (June 24, 2010)

For the most part, salaries are low in Senzokuhle with 27% of the population generating no income, another 23% earning between R4,801 to R9,600 ($657-$1315) per year and a very small segment of the population earning higher than R76,800 ($10,520) per year. As of 2007, 4% of the population were pensioners (eThekwini Municipality, 2007); however, this figure may have increased since the state amended its Social Assistance Act in 2008. The amendment included lowering the Old Age Pension eligibility age from 65 to 60 for men, yet the women's eligibility age remained unchanged. As of April 2010, the maximum eligible amount for an Old Age Pension is R1,080 ($147) per month. Additional eligibility criteria states that a single individual must not earn more than R31,296 ($4,287) per year and own assets worth more than R518,400 ($71,013). If married, the couple must not earn a combined income of more than R62,592 ($8,574) per year and possess combined assets worth more than R1,036,800 ($142,027) (Government of South Africa, n.d.). It is difficult to calculate the increase in pensioners for the ward since 2007; however, pension allowances are low, therefore not high enough to make a significant difference in salaries.

The only facilities in the district of Senzokuhle include 36 schools, 9 clinics and 4 community halls, leaving the ward without any libraries, hospitals, fire or police stations. Water is a major concern in the area while only 4% of households have flush toilets, and only 6% of households have access to water less than 200m away from their residences. According to the eThekwini Municipality, the top needs and concerns of the ward include roads, training centres, housing, satellite police stations and clean water.

The Entry Point

KZN is one of South Africa's ten homelands that were created under the apartheid regime's *Bantu Self Government Act* in 1959. The Act declared a total segregation of Africans from the South African state and the establishment of self-governing homelands for the different African Tribal groups. Rather than being one homeland, KZN was a "fusion of 'reserves' scattered in pockets within the South African Natal Province" (Agergaard and Birch-Thomsen, 2006: 89). In these tribal reserves, traditional chiefs were given the "power to exercise their customary authority to allocate land and handle local disputes" (Agergaard and Birch-Thomsen, 2006: 89). Though theoretically disestablished in 1994 (Agergaard and Birch-Thomsen, 2006), many of the former homeland areas, including Umzinyathi, still abide by traditional modes of governance.

Referred to as the *Inkhosi* in isiZulu, the chief is the primary gateway into researching a KZN tribal area. Prior to entering the field, the Inkhosi ensures that the research at hand does not have any potential negative or obstructive consequences for the tribal area or its residents. Meeting with this authority is necessary in order to be granted a permission letter that will ensure your safety in the field, allow community members to participate in the study, but also represents your own recognition and respect of Zulu traditions and modes of governance, which are oftentimes undermined by outsiders. Umzinyathi is under the jurisdiction of the Qadi Traditional Council. The Inkhosi provided additional advice on how to properly approach potential participants and some information on the types of farming found within the area and their respective locations. From the reactions and questions of the chief and his headmen (Indunas), I was able to predict the community and traditional council's level of interest in the research, and whether they saw its outcomes to be relevant to their livelihoods. This interaction pinpointed the

types of questions the traditional council was interested in finding the answers to, and thus helped the study frame itself accordingly to be most useful for the community, the traditional council and other stakeholders.

Research methods used in the field

The study included a set of diverse stakeholders including academics, development practitioners, traditional authorities, commercial farmers, small-scale farmers, and farm labourers. The general methods employed in the field were conducted during the months of November to December 2009, and included a livelihoods survey, semi-structured interviews, random sampling and snowball sampling. Table 1.2 provides a timeline of the study's field methods.

Table 1.2: Field Methods Timeline

Date	Mandate
October – December 2009	- Internship begins. - Work as an intern at the Center for Civil Society (CCS) at the University of KZN in Durban, South Africa.
October 2009	- Informal Scoping. - Testing and revising of livelihoods survey questions. - Receive the Inkhosi's permission to research the Umzinyathi area. - Interview Inkhosi and Indunas. - Set up field interview schedule.
November – December 2009	- Conduct semi-structured and key informant interviews with academics, development practitioners, and commercial farmers in Umzinyathi and Durban, KZN. - Conduct livelihoods survey with small-scale farmers and farm labourers in Umzinyathi, KZN.
December 2009	- Present a rural livelihoods and agriculture seminar at CCS. - Return to Ottawa.
January 2010	- Complete semi-structured phone interviews over the phone with four remaining small-scale farmers. - Begin assembling and deciphering the data from the field. Write final internship report.
February – June 2010	- Begin consolidating research findings, and draft thesis chapters.
July – August 2010	- Formulate conclusions and submit final thesis paper.

Study Participants

Academics and Development Practitioners

Logistics: Scheduled, semi-structured interviews were conducted with academics (n=2, 1 female, 1 male) and non-governmental organization (NGO) workers (n=3, 3 males), to discuss rural development programmes, current rural livelihood trends, and prospects for the future of small-scale farming in KZN. Interviews were conducted in one sitting, and spanned roughly one hour. Both academics were recruited through convenience sampling. One development practitioner was recruited at the Qadi Traditional Council, and the other 2 were selected through snowball sampling. A list of questions asked to academics and development practitioners may be found in Appendix B.

Criteria: The academics and development practitioners were chosen based on the academic's years of experience, field(s) and region(s) of study and their relevance to the research at hand. Both academics are affiliated with CCS, having been past employers, guest lecturers or participants at special events. Topics of research or fields of work for the academics and development practitioners included agriculture, service delivery, land reform, the environment and the role of traditional authorities.

Inkhosi and Indunas

Logistics: Scheduled, semi-structured interviews were conducted with the Inkhosi and his Indunas (n=3, 3 males) to discuss the types of resources in the area, the relationship between traditional and formal authorities in KZN, and rural livelihood trends. Interviews were conducted during 2 sittings, and lasted between fifteen to thirty minutes. A list of questions asked to the Inkhosi and Indunas may be found in Appendix B.

Criteria: The traditional authorities were chosen to participate in the study given their direct role in governing the land in the research site, and their knowledge regarding the history of the area.

Commercial Farmers

Logistics: Non-scheduled, semi-structured interviews were conducted commercial farmers (n=2, 2 males) to discuss state rural development strategies, climate change, organic certification, and access to markets. Interviews were conducted during one sitting, and spanned roughly one hour. Both respondents were recruited through random sampling. A list of questions asked to commercial farmers may be found in Appendix B.

Criteria: The commercial farmers were chosen based on the number of labourers they employed and their involvement in commercial markets. The commercial farmers generally employed anywhere from 30 to 50 labourers, depending on the season, and supplied large supermarket chains in Durban, such as Pick 'n Pay, SPAR and Woolworths.

Small-Scale Farmers

Logistics: A survey coupled with semi-structured interviews were collected with small-scale farmers (n=40, 2 males, 38 females) to retrieve information regarding the respondent's livelihood activities, occupations, household members, income, farming and climate. Interviews were conducted during one sitting, and spanned between 30 minutes to one hour. Most respondents were selected through random sampling, but some were sampled through snowball sampling. Snowball sampling was used in cases where one agricultural cooperative member would recruit other members to participate in the study. Due to time restrictions, four interviews were conducted over the phone; one from Durban, South Africa and the other three from Ottawa, Canada. The livelihoods survey may be found in Appendix A.

Criteria: The small-scale farmers that are examined in this study are similar to those defined by Netting (1993), described in Section 1.3.1, except that they operate in a peri-urban setting, harvest fruits and vegetables on at least one acre of land, and are active sellers in at least one commodity market, had been farming for at least 1 year, and they either farmed alone or within a cooperative. A co-operative, as defined by South Africa's Department of Agriculture (DoA) "is

an autonomous association of persons united voluntarily to meet their mutual economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise organized and operated on co-operative principles. An agricultural co-operative is a co-operative that produces processes or markets agricultural products and supplies agricultural inputs and services to its members" (DoA, n.d.: 2).

Farm Labourers

Logistics: The survey and semi-structured interviews were collected with farm labourers (n=4, 2 males, 2 females) to collect information regarding the respondent's history in the area, household, income, and livelihood activities. Interviews were conducted during one sitting, and spanned between 20 to 30 minutes. Respondents were selected through random sampling. The survey developed for the farm labourers may be found in Appendix B.
Criteria: The farm labourers were selected on the basis of their interest in participating in the study, and being over the age of 18. A summary of the study's participants is listed in Table 1.3.

Table 1.3: The Study's Participants

Group	Number of Participants	Male to Female Ratio
Academics	2	1:1
Development Practitioners	3	3:0
Inkhosi	1	1:0
Indunas	2	2:0
Commercial Farmers	2	2:0
Small-Scale Farmers	40	2:38
Farm Labourers	4	2:2
Total Number of Participants	54	13:41

Seminar

At the end of the fieldwork, a seminar was organized at CCS, UKZN to share research findings with the appropriate individuals, including academic and community scholars and members contributing to rural issues or agricultural activity in or around the Senzokuhle ward. The seminar's purpose was to generate realistic recommendations for peri-urban development policy.

Limitations

Time restrictions were the main limitation of the study. While the study anticipated that the December holidays would limit its fieldwork activity by mid-December, the holidays in fact restricted participant recruitment by mid-November. Many state officials and academics left the office in mid-November, and holiday festivities limited the availability of small-scale farmers in the study as well. Thus, the study would have wished to include a larger sample of each party had time permitted their participation. Contributions and insights from the Provincial Department of Agriculture or Land and Traditional Affairs may have also been useful, but was substituted by means of a secondary review of rural development and agricultural policy.

Other segments of the population whose participation would have been valued were non-farming rural households, and youth. Non-farming households would have highlighted non-farm livelihood activities, types of urban employment accessible to peri-urban households, and ideas as to which sectors could be stimulated in the peri-urban economy. The study found that many youth in the area were not interested in agriculture, but this trend was identified through the interviews with older participants and a few young participants between the ages of 25-30. Thus, limitations of the study included not interviewing participants between the ages of 18-25 to identify their perceptions of agriculture first-hand. However, their absence is due in part because these participants were rarely present in the field, but also because time did not permit their recruitment.

Initially, the study hoped to conduct oral histories and family portraits for each of the study's small-scale farmers, but time only permitted the collection of data, during one sitting, by means of a livelihoods survey and semi-structured discussions. Furthermore, these particular participatory approaches required more time in the field than initially anticipated, and there was a lack of time to verify the results of such analysis with the entire household. Conducting oral histories and family portraits therefore required extensive scheduling and coordination, which the study could not accommodate. Regardless, the livelihoods survey did cover many of the questions meant for the family portraits and oral histories.

The livelihoods survey was limited in its scope with regards to certain topics. This may have been due to the study's inability to thoroughly test and refine its interview questions because of time restraints. It may also be due to the sensitivity of such topics as health issues or income. For example, Human immunodeficiency virus/ Acquired immune deficiency syndrome (HIV/AIDS) impacts on the availability of labour were difficult to assess because respondents were either not willing to label their illness or discuss the particularities of its impacts. Although certain symptoms were discussed in conversation, identifying the illness could have led to comparing results with particular literature regarding HIV/AIDS and agriculture in South Africa. Secondly, the survey could not effectively analyze income dynamics. For example, it could not thoroughly explore household income expenditures and calculate the assembly of household income (ex. Non-farm income, farm income, remittances, social assistance etc.). Accounting for the ratio of income spent on food in the market could have revealed trends as to the relative importance of agriculture versus income to food security. Accounting for percentage of remittances or social assistance in household income could have also determined the importance of agriculture to peri-urban livelihoods. Lastly, if certain forms of employment were seasonal, it may have been tracked, yet it would have taken a far longer study to do so in an adequate manner.

As more and more data was collected, more questions arose. For instance, youth perceptions of farming are an important aspect in determining agriculture's influence in rural development. Secondly, the study became curious to the role of traditional authorities in fostering or hampering agricultural activity. Thirdly, the study became interested in land titling and the percentage of rural households that went through formal methods of assuming land titles and the percentage of households that went through informal means of assuming land (ex. through the Inkhosi versus the municipality). Finally, the study questioned if land coding impacted or changed how land was being used in Umzinyathi S.P., and if this was negatively

impacting agricultural activity. More time in the field would have permitted the exploration and research into these themes.

Given that the research site was quite small, the study found it difficult to find historical information relative to its population, natural resources, climate, agricultural activity, etc. The study had to rely on the statistics for the entire ward from the eThekwini Municipality, and had to rely on the advice of the research assistant to estimate the population size of Umzinyathi. Similarly, the study had to rely on regional or provincial climate data and farmers' perceptions of climate and the state of natural resources due to the lack of scientific, environmental data on the particular research site.

The site was ultimately chosen as a research base for its proximity to the city (thus, decreasing travel time), and its feasibility to sample a representative group of farmers. The population was estimated to be no more than 500 people consisting primarily of small-scale farmers, farm labourers and pensioners, and a small (but growing) group of urban professionals and retirees. With 40 small-scale farmer respondents, the study estimated that 8% of the population was interviewed. However, had time permitted the exploration of different sites, perhaps further from the city, as well as extra time in the field, then the study may have chosen a more rural research site. Regardless, the exploration of a peri-urban community provided an interesting and bourgeoning analysis.

Language barriers were a minimal limitation to the study; however, on occasion, conversations between the respondent and the research assistant would sometimes involuntarily flow into isiZulu, allowing the study to miss capturing potentially vital information. Other challenges working in the area included car problems or weather conditions delaying or abruptly halting fieldwork activities. For example, the research assistant explained that it is taboo to visit a household if it is raining. During the months of October and November, it would rain for days, thus, also limiting the number of participants recruited for the study.

Challenges of being a female researcher in a cross-cultural setting included not being able to enter the field alone due to safety precautions, and thus, having to heavily rely on the presence of a research assistant. This ultimately increased research costs, and extended the length of time for field research. Secondly, sex-role expectations sometimes undermined the fieldwork. For example, the study's participants would often ask if my marital status, and why the researcher was not at home tending to household chores and duties.

Being a female researcher was also beneficial at times. Trust was a critical aspect of the research process, and female-headed households (which formed the majority of the study's small-scale farmer sample) seemed comfortable in the presence of a female researcher, and were more willing to participate in the study. Furthermore, given the intrinsic racial perceptions and cultural preservation in South Africa, the researcher's Indian heritage also worked to build upon a connection with the community. Sharing both physical and cultural similarities with many of the study's respondents helped increase trust and participation levels for the study.

Thesis Organization

This thesis is organized in nine chapters, followed by a list of references and appendices. The beginning of thesis provide an overall background of on food security and sustainable

agriculture in South Africa, and the state's rural development strategies currently in place to solve these issues of poor economic development and food security. The thesis will then present the results of the fieldwork, continue on to data and policy analysis, and then turn to the conclusion of the study.

Chapter 1: This chapter provides the overall context of the research, the research objectives and significance. Theoretical frameworks guiding the research are then introduced, before turning to the case site and methodology. The chapter concludes with introducing the overall organization of the thesis.

Chapter 2: This chapter provides a history of the variances in smallholder production in South Africa, and defines food security, while examining each of its dimensions: access, availability, stability and utilization.

Chapter 3: This chapter details the numerous threats to sustainable agriculture in South Africa, while paying particular attention to livelihood trajectories, livelihood diversification, non-farming opportunities, access to markets, and environmental impacts. This chapter then summarizes the South African government's policies related to food security, agriculture and rural development. The evolution of land reform and the policy framework for small-scale farming in South Africa are discussed at the end of the chapter to provide a solid context of the various programming offered to rural and peri-urban communities.

Chapter 4: This chapter analyzes the complexity of peri-urban livelihoods by discussing the results of the small-scale farmers' livelihood survey by the following headings: land and property rights, household characteristics, social assistance, diversification of livelihoods and income strategies, access to markets, food security and climate conditions.

Chapter 5: This chapter applies the degradation and marginalization thesis of political ecology to further analyze the livelihoods system in Umzinyathi, KZN. This chapter identifies key elements that together frame the character of peri-urban livelihoods, and foreshadows the intensity of the challenges faced by smallholder production in the area.

Chapter 6: This chapter recommends how policy should take into account the livelihood trends found in the study, and provides direction on how existing policy can evolve to improve development in the research site and similar peri-urban areas.

Chapter 7: The concluding chapter discusses the research results with a summary of the key elements of the earlier chapters and provides the overall conclusions.

Chapter 2: Unpacking Food (In)Security Dynamics in KwaZulu-Natal, South Africa

Residents collecting fresh water from state delivery trucks in Umzinyathi, KwaZulu-Natal.

Chapter 2: Unpacking Food (In)Security Dynamics in KwaZulu-Natal, South Africa

Introduction

In 1996, the World Food Summit defined food security as existing "when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life" (ESCAP, 2009; FAO, 2009). This definition acknowledges that food security has four key elements: availability, access, utilization and stability (ESCAP, 2009; Gill, Farrington, Anderson, Luttrell, Conway, Saxena, and Slater, 2003). These elements – a, b, c and d -are defined in Table 2.1. This chapter aims to unpack the issues revolving these four food security elements in South Africa. Prior to the discussion on food availability, access, utilization and stability, the chapter begins with a brief discussion on the analysis of food security in South Africa, and a history of agriculture and food security initiatives in South Africa.

Table 2.1: Elements of Food Security

FAO identifies four main elements of food security:
Food Availability – The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports, including food aid.
Food Access – Access by individuals to adequate resources – entitlements – for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command, given the legal, political, economic and social arrangements of the community in which s/he lives, including traditional rights such as access to common resources.
Utilization – Utilization of food through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met.
Stability – To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access as a consequence of sudden shocks, such as economic or climatic crises, or cyclical events such as agricultural seasons. Stability is thus needed in both availability and access.

(ESCAP, 2009)

Food Security Analysis in South Africa

In most of the current studies on food security, researchers tend to focus on a regional analysis and highlight case studies on a few of the hardest hit countries within that region (Dardel, Kidane and Maetz, 2006; Clover, 2003; Aduayom, Alderman and Smith, 2006). This approach tends to generalize trends over many countries, despite the social, economic, political and physical particularities between localities. Sub-Saharan Africa is one region which oftentimes receives such investigation. Researchers will omit distinct characteristics that can critically shape the food security debate in some countries or altogether exclude entire countries from the discussion. South Africa rarely receives in depth attention in food security reports, asides from being included in tables describing the statistics within a region. There are several reasons for this oversight: South Africa is a net exporter of food, and it is a middle-developed

country with a dual-economy, containing a much smaller marginalized population in comparison to some of its neighbouring states. For both reasons, it may not be obvious that the state would suffer from acute food insecurity issues.

However, South Africa ranks among the countries with one of the highest rates of income inequality in the world. Compared to other middle-income countries, it has high levels of absolute poverty. To address these measures, the South African government has set itself a target of halving poverty between 2004 and 2014, and the national Constitution includes an ambitious clause that affirms the right to food security (Jacobs, 2009; Altman, Hart and Jacobs, 2009). Achieving household food security through proper access to food and water are crucially essential to meeting the state's overarching objectives where smallholder production is expected to play a large role in achieving these targets. Still, solving the issues of food security may be more complicated than to just invest in smallholder production. It is a challenging issue to address due to the blurred links between poverty, income and food security in South Africa's dual-economy, and the country's lack of reliable baseline information to create well-defined food security targets. Currently, there is no specific or accepted measure of food security in South Africa, or regularized ways of monitoring it (Altman et al., 2009; Jacobs, 2009; Hart, 2009).

The issues revolving food security in South Africa deserve more analysis, especially in terms of smallholder production, should it be the key to eliminating poverty and hunger. Thus, this chapter will center its discussion of food access, availability, utilization and stability in terms of its impacts on small-scale farmers and smallholder production.

History of Agriculture and Food Security in South Africa

A severe famine in the Sahel in the early 1970s underscored the importance of food security for development. United Nations (UN) agencies and bilateral donors prioritized the modernization of peasant agriculture in order to increase production and the availability of food, with the term "peasant" meaning "rural dwellers who occupationally live off the land as farmers and/or pastoralists combining subsistence and commodity production" (Bryceson, 2009). The introduction of the Green Revolution used improved seeds, fertilizers and irrigation to grow much more food - in the late 1960s and early 1970s (del Ninno, Dorosh and Subbarao, 2007; Gill et al., 2003; ESCAP, 2009). The success of Green Revolution investments in raising rice and wheat yields in South Asia during the 1960s led African governments and donors to eagerly develop staple food improvement packages, especially for maize. Beginning in the 1970s, peasant farmers in many African countries participated in subsidized fertilizer and seed programs and began to experience increasing yields.

However, the economic shock of the oil crisis in the mid-1970s undermined African smallholder production and their national economies. Most African governments had created state enterprises to market the variable stocks of commercial staple food crops produced by smallholder farmers, and these farmers had received fixed returns regardless of their distance from urban markets and demand for staple foods. This, as well as subsidized crop input packages, had created incentives for smallholder grain production. But, at the time of the oil crisis, the cost of surface transport increased, and state finances became restricted in order to support smallholder production. Therefore, rising oil prices undermined the competitiveness of their agricultural exports, which had to be transported long distances to ports. Many African

governments found it cheaper to rely on foreign imports of maize, rice, and wheat to feed the urban centres, meanwhile, African governments became indebted.

By the late 1970s, most were forced to seek debt financing from the International Monetary Fund (IMF), and in doing so, the World Bank and IMF gained leverage and led African policy formulation. In the context of emerging neoliberal ideology in the 1980s and 1990s, the World Bank claimed that the continent's decline was attributable to involvement of African states in their own economies. Structural adjustment programs (SAPs) were formulated to reduce the role of state in the economy and reduce state-provisioned infrastructure and services; thus, fertilizer and seed subsidy packages were retracted from smallholder producers.

In South Africa, increased market access and reduced export subsidies and domestic support created an open market and reduced intervention in the agricultural sector. Programs for drought relief were replaced by improved incentives and information for producers to manage and reduce risk. Credit subsidies and special tax breaks for capital investments were removed, as were single channel marketing boards that administered support programs in the past. Well-established commercial farmers responded to these new policies by shifting their cropping mix to focus on competitive products, and investing in new equipment, which decreased their demand for labour. The reduced demand for labour increased the already high level of unemployment in the country, and increased poverty in the countryside. Producers within the former homelands and in poor rural areas had more trouble adjusting to the new policies since they were highly dependent on services delivered by parastatals, and on investments financed by non-commercial development programs. Producer thus faced deteriorating and costly infrastructure and poor access to agriculture services since they did not have the financial capacity to assume additional costs or to adopt alternative technology (ISRDS, 2000).

Agricultural investments across sub-Saharan Africa declined throughout the 1980s and 1990s, which coincided with a decline in the terms of trade for sub-Saharan African agricultural exports. Simultaneously, OECD countries distributed high levels of agricultural subsidies to farmers, thus, placing them at an advantage over farmers in developing countries, and displacing African farmers in commodity markets. Their displacement may not have been as severe if producers were willing and able to find viable alternative livelihoods, however, the number of displaced producers, the uncertainties of the world market (Bryceson, 2009), and the lack of alternative livelihood strategies in the rural areas exasperated poverty in the countryside.

Food Access: Vulnerable Groups and Forces Influencing Vulnerability

It is estimated that 39% of the South African population is vulnerable to food insecurity (Bonti-Ankomah, 2001), but people who are food insecure are largely hidden. Aside from immediate emergencies, food security has a much lower public profile because its achievement is based not only on ensuring that sufficient food is produced, but also that everyone has access to it (ESCAP, 2009). The most vulnerable groups to suffer from food insecurity include the poor and landless, females, and the sick. The following discussion focuses on these vulnerable groups, while paying particular between the relationship of food security and rural and urban dynamics.

The poor are oftentimes identified in terms of how long their food production at home lasts, where the 'rich' are typically identified as those who own land and produce enough food

on this land to support the household for the full year. Access to ample, arable land is low in South Africa, and is in part due to several centuries of colonial and apartheid policies, designed to restrict land ownership to black people. The legacy of apartheid policies has sustained poor living standards and a high vulnerability to food insecurity for many black households in post-apartheid South Africa. For instance, South Africa's General Household Survey (GHS) 2007 reports that only 7 to 13% of black households have some access to land for agricultural purposes (Altman et al., 2009), thus, many households do not have the land to produce food for their own subsistence. In the majority of cases, the landless and extremely poor do not produce food and have to rely on food purchases and food procured as wage goods (Gill et al., 2003; Bonti-Ankomah, 2001). If families are unable to grow or purchase enough food, and if social welfare nets are absent or ineffective, then hunger will persist (Bonti-Ankomah, 2001).

Generally, poverty levels are twice as high in rural areas than in urban areas (Rigg, 2006), thus, significantly increasing the chances of food insecurity for rural households. Furthermore, although most food is produced in the countryside, those in towns and cities have greater access to it (Gill et al., 2003). However, the 2007 GHS reports that serious hunger is widespread in South Africa and is found in similar proportions in both rural districts and metros. Aliber (2009) analyzes the Income and Expenditure Survey (IES) of 2005/2006 to show that poor rural households in South Africa spend a larger share of their total expenditure on food than their urban counterparts. Thus, demonstrating that rural households purchase their food in markets rather than relying on household agricultural production. In post-1994 KZN, "rural poor households (including many smallholder farmers) are increasingly net consumers rather than net producers of foods, and they tend to purchase their food from the expanding network of supermarkets in nearby rural towns and cities" (Baiphethi and Jacobs, 2009: 464).

Reasons for this trend may include the higher cost of food for rural households, meaning that they spend more to acquire a comparable food basket to urban households. Yet, rural households generally spend 15% less (in terms of Rand) on each adult household member than their urban counterparts. This trend remains true for households in each expenditure decile, and may be attributable to the fact that there are more people in the average rural household, but also that a rural household's food production accounts for a portion of their consumption. If household food production influences the lower cost of consumption for each rural household member, then this would ascribe small-scale, subsistence and/or garden production a gross inputted value of around R2 billion per year($285M); meaning greater savings for rural households. If the reason for the lower cost of consumption per household member in rural areas is attributable to unaffordable food prices or higher dependency ratios, then there are negative welfare implications (Altman et al., 2009). Jacobs (2009) uses the 2005/2006 IES survey to determine whether existing levels of household food expenditures enable households to cover the cost of nutritionally adequate food baskets. The results showed that on a national scale, one in five households spend enough on food to afford a nutritionally adequate food basket. However, a rural-urban breakdown shows that a substantially smaller number of rural households can afford such a food basket: one in ten rural households compared to one in four urban households (Jacobs, 2009).

There are differences between urban and rural food expenditure patterns for particular food types as well. Rural households tend to spend a larger share of their food budget on grain products, fruit and vegetables and a lower share on meat than urban households in the same

expenditure decile. This may be because, in recent decades, arable land resources in former homelands are increasingly underutilized allowing space for livestock rearing and because some rural households are suppliers of meat to local markets and/or the community. Thus, in some cases, rural dwellers are able to purchase their meat locally at a lower cost than they would otherwise have to spend in town. The opposite may also be true as well, where higher rural food prices force poor households to reduce their consumption of meat in order to purchase staple foods, such as maize and wheat (Altman et al., 2009). The 2005/2006 IES reveals that for meat, 94% of rural black households report that they make most of their purchases in chain stores or other formal sector retailers (Jacobs, 2009). For grain, dairy and vegetables, the figures are 92%, 94% and 72%, respectively (Baiphethi and Jacobs, 2009).

The reasons for the rise in income inequality between many rural and urban centres lie in its growing integration in the global economy and the rapid expansion of manufactured exports (Gill et al, 2003). Ideally, poverty and food insecurity would be addressed by expanding employment opportunities, thus, enhancing household incomes. In South Africa, employment has expanded substantially since the mid-1990s (post-apartheid), but not enough to effectively address income inequalities. Income security is an essential ingredient to address food insecurity, and evidence shows that social grants have played an important role in improving household food security since 2001 (Aliber, 2009; Altman et al., 2009). In the context of large-scale poverty and unemployment, and the present economic downturn, it is probable that the reliance on grants will continue and may increase. A discussion on social assistance in South Africa is covered in Chapter 3.

Urban and rural spaces are oftentimes studied as separate, but interactive units of analysis. However, as the rural-urban divide increasingly diminishes in the presence of growing urbanization, it is important to analyze food security issues in dynamic peri-urban spaces. Peri-urban areas are unique in that they cannot be generalized across regions. They are distinctive because they share qualities of both the urban and rural environment, yet the share of each realm's characteristics are not always inherited equally. This study is meant to pay attention to the skewed nature of peri-urban Umzinyathi in the context of analyzing food security and small-scale agriculture.

The sick are extremely vulnerable to food insecurity, malnutrition particularly affects rural areas, girls and children under five years old (Gill et al., 2003). Where work restrictions and resource poverty force households to make hard choices on rationing limited food and health resources, it is often girls and women who shoulder the burden (Messer, 1997). Household food security is oftentimes compromised when a household depends on female wage earners, since their wages are sometimes lower than those of men. The situation may be bleakest for rural women who are oftentimes the main food producers, yet, have limited access to a range of resources such as credit, land, agricultural inputs, employment opportunities and extension services within the community and the household (ESCAP, 2009).

In South Africa, women make up 61% of all those involved in farming, and commercially-oriented black farmers are equally likely to be women as men (Altman et al., 2009). In a study by Aliber (2009), households experiencing serious hunger are equally likely to be headed by men as women, both within urban and rural areas in South Africa. However, women heads of hungry urban households are significantly older on average than women heading non-hungry households, as well as than men heading hungry or non-hungry households

(their households also tend to be larger). Likewise, in rural areas women-headed hungry households tend to be larger than non-hungry households headed by women (Aliber, 2009). While women tend to have more dependents, they must assume the burden of procuring income, employment and other resources to accumulate food for a larger number of people.

In rural areas, agricultural workers are twice more likely to die at work than workers in other sectors. They may suffer severe poisoning from pesticides that they are forced to use and operate, which may incur work-related cancers and reproductive impairments. Death and debility in rural areas will reduce the effective labour force in agriculture and increase dependency ratios and place disproportionate responsibility for work and decision-making on children and the elderly (Drimie, 2005; Gill et al, 2003).

Food Availability

Food availability refers to food supply or productive capacity, and it is usually, but not always, measured with a tally of aggregate national agro-food output (Jacobs, 2009). At the national level, South Africa is food secure. It produces its main staple foods, exports its surplus food, and imports what it needs to meet its food requirements. National food security indicators revealed that in 2002 South Africa had been meeting its food needs of its growing population from domestic stocks during the past 20 years. Asides from rice, in which it imports, South Africa sources 100% of its maize, 95% of its wheat, 96% of its livestock, and 100% of its dairy products (asides from cheese) from domestic reserves. South Africa imports its small shortfall of livestock and cheese products through imports from the European Union (EU) and the Southern African Development Community (SADC). Within the SADC region, South Africa is a leading exporter. Its surplus in horticultural products and sugar underscores its strong position as an exporting country of fruit and wine products to the EU, and of the occasional maize exports to neighbouring SADC countries.

While South Africa produces sufficient food, this does not guarantee food security at the individual household level. Future projections indicate that with current production trends, domestic wheat production not supply domestic consumption trends by nearly 60% in 2010 and by over 100% in 2020. Likewise, maize, beef and mutton consumption is expected to exceed its production in 2010. Demand for poultry products has already surpassed domestic production by an estimated 22% in 2000, and is expected to increase to 92% in 2010, and 192% by 2020. Fresh milk production is expected to fall short by 207% in 2020 if production does not increase (Department of Agriculture, 2002). Therefore, even as a leading exporter, food security will remain an issue within the country for years to come if current production projection does not change. In order to stabilize or invigorate domestic production continued investments in rural infrastructure, land reclamation and water development, and improvements in agricultural research and extension are required (Gill et al, 2003; del Ninno et al., 2007).

Food Utilization

A variety of beliefs and practices may guide food utilization, which may improve the nutritional quality of a diet or be counter-productive. For example, in a study by Kruger and Gericke (2002), findings showed that in South Africa weaning diets for infants were compromised due to poor food choices, preparation practices (such as overcooking food with a

lot of water to achieve an appropriate consistency yet comprising its nutritional value) and limited variety. The respondent's nutrition knowledge regarding specific foods, their functions and recommended quantities was also poor. Mothers oftentimes adhered to their cultural beliefs regarding food choice and preparation practices, and found it nearly impossible to ignore the ill-informed nutritional advice from elders or peer groups. In a study by Peltzer and Promtussanon (2004), the authors revealed that fruit and vegetable intake among rural black adults in South Africa was low, while it was found that only 7% of adult rural villagers reported the recommended five or more fruit or vegetable servings per day. Intake correlated with perceived barriers, such as expense, confusing recommendations, and time and effort to procure these goods. Likewise, a study conducted by Jacobs (2009) found that as incomes fall, a rising proportion of households are unable to afford the average nutritionally adequate food basket.

Nutrient loss may be attributed to widespread contamination of drinking water, poor sanitation and lack of appropriate hygiene practices, as well as certain cooking practices, and nutritionally unbalanced diets (ESCAP, 2009; Gill et al., 2003). Despite national improvements in living conditions over the past decade in South Africa, there are a still relatively high proportion of South African households deprived of quality basic services, such as housing, electricity, safe water, adequate toilet facilities and refuse removal. Almost one third of South African households are situated in informal dwellings, and about two thirds do not have piped water inside their homes, approximately half are using a flush or chemical toilet, and 14% have no toilet (Statistics South Africa, 2003; Bourne et al., 2007).

Food Stability

Food stability in a country is largely dependent on international trade, which in turn affects domestic prices and household welfare. The effect of international trade on food security can be broken down into two issues: its effect on the prices of different goods and activities within an economy, and the effect of those changes on the welfare of different households (Gill et al., 2003).

As a result of the global economic crisis, developing countries are facing declines in remittances, export earnings, foreign direct investment and foreign aid. All of these factors have led to the loss of jobs and income, which has then been compounded by escalating food prices. Consequently, poor households have been forced to eat fewer meals and less-nutritious food, to decrease expenditures on health and education, and sell their assets (FAO, 2009; Altman, Hart and Jacobs, 2009). In some respect, the rise in prices that help boost the incomes of rural farmers may contribute to relieving rural poverty, improve the trade balances of net food exporters, and in the long-term, stimulate agricultural investment. On the other hand, high prices may negatively affect vulnerable groups, especially the rural landless and the urban poor, who spend half or more of their household income on food. The high prices primarily impact the poorest nations, and have caused conflict in certain areas (ESCAP, 2009).

High oil prices worldwide have also impacted global food prices. The correlation between oil and food prices is partly through the cost of fertilizers. The main fossil fuel input for fertilizer is natural gas, but since gas can be substituted for oil in many cases, "a rise in oil prices is transmitted to gas prices, thus pushing up fertilizer costs" (ESCAP, 2009). Today, farmers are also using much more electricity or diesel to operate irrigation systems, food is being transported

over greater distances, and these additional costs are compounded onto global food prices (ESCAP, 2009).

Conclusion

Due to its high agricultural performance, its middle-developed economy, and role as a net exporter of food, South Africa is rarely the focus of food security analysis. Yet, it has many indicators that signal the prevalence of acute food insecurity. South Africa has one of the highest rates of income inequality in the world, and has high levels of absolute poverty, infant mortality, and under-5 mortality. Besides these global food insecurity indicators, this chapter looked beyond the statistics to examine the dynamics that can limit access to food, as well as the dimensions of food availability, stability and utilization in South Africa.

The literature suggests that the most vulnerable groups to food insecurity include the poor and landless, those who do not participate in or have limited household food production, women, and the sick. These groups are especially vulnerable if they reside in rural centres. Food availability is one dimension of food security that could oftentimes signal that food security is not an issue in South Africa, because the country produces sufficient food. However, trends show that consumption is expected to exceed the production of wheat, maize, beef and mutton by 2010, and fresh milk by 2020. Demand has already exceeded the production of poultry. Therefore, even as a leading exporter, food security will remain an issue within the country for years to come if current production projection does not change.

Food stability is a concern due to the effects of the global economic crisis, which are influencing the decline of remittances, export earnings, foreign direct investment and foreign aid. All of these factors have led to the loss of jobs and income, which has then been compounded by escalating food prices. The rising price of food may negatively affect vulnerable groups to purchase and consume less nutritious food, to sell their assets, and to decrease expenditures on health and education. Contrarily, the rise in food prices may improve smallholder revenues and agricultural investment, yet high oil prices may stagnate production and investment due to their trickle down effects of increasing the cost of agricultural inputs.

Food utilization is an important aspect of food security, because stable access and availability to food cannot secure nutrition alone. Food utilization ensures that attention is drawn to nutritional knowledge, food choices, preparation practices, and diet variety. Given South Africa's diverse population, food utilization cannot be generalized across the nation. It must be assessed locally, although studies have shown that in South Africa, weaning diets for infants are compromised due to poor food choices, preparation practices and limited variety. Cultural beliefs can negatively influence the nutritional value of a diet, and fruit and vegetable intake among rural black adults in South Africa is low.

In order to increase access, availability and stability of food within South Africa, the state has attempted to invigorate domestic production, and improve rural infrastructure, land reclamation and water development, and agricultural research and extension. Yet, the threats to sustainable agriculture and food security delve beyond the scope of the food analysis, to include diverging livelihood trajectories and high barriers to smallholder production. These factors are discussed in the following chapter.

Chapter 3: Threats to Sustainable Agriculture in South Africa

A few farmers taking a break from working on their hillside farm in Umzinyathi, KwaZulu-Natal.

Chapter 3: Threats to Sustainable Agriculture in South Africa

Introduction

Sustainable agriculture can be considered as "food production that integrates the goals of environmental health, economic profitability, and social and economic equity" (ESCAP, 2009). The principle is to meet the food needs of present generations without comprising those of future generations (ESCAP, 2009); however, this becomes more difficult as the number of obstacles and threats to sustainable agriculture increase over time. This chapter will discuss the threats to sustainable agriculture in South Africa by analyzing the current livelihood trends that are influencing a deagrarianization process in rural and peri-urban South Africa. The chapter will continue by examining the market structure for agricultural products in South Africa, and demonstrating the challenges for smallholder participation in these markets. The chapter will then describe the environmental threats to agricultural production. Finally, the chapter will end with a summary of the current policy framework created by the South Africa government, and their strategic focus to re-invigorate small-scale agriculture and ensure food security.

Changing Livelihood Trajectories and Deagrarianization Processes

Lives and livelihoods in the rural South are becoming increasingly divorced from farming, and therefore, from the land. In his 2006 article, "*Land, Farming, Livelihoods, and Poverty: Rethinking the Links in the Rural South*", Jonathan Rigg lists several processes and trends occurring across the rural South that are expected to become more pronounced over time leading to a decrease in agricultural activity in developing countries. Many of these trends are common in South Africa; however, certain trends defy the general findings across the rural South. This section discusses the most prominent deagrarianization processes, including livelihood diversification, reliance on non-farm income, and the rising age of farmers. A list of Rigg's deagrarianization processes and their corresponding bearings in South Africa are summarized in Box 3.1.

Rural livelihoods are generally thought to be heavily attached to agricultural activity, yet, as rural areas become increasingly integrated to the global economy, the number of livelihood opportunities increase and the assortment of livelihood activities per household begin to diversify (Baiphethi and Jacobs, 2009). Occupational diversification may or may not affect the level or importance of farming to the household. In some cases, farming and non-farm activities can support one another. In South Africa, Anseeuw and Laurent (2007) found that a large majority of coloured farmers and especially the most successful farmers had multiple livelihood strategies including non-farm incomes. Non-farm income would oftentimes help improve their access to sufficient farm assets, and would progressively improve farm business growth depending on the employment situation of the sector of origin (seasonal mining occupation, etc.). In this study, Anseeuw and Laurent's findings proved that households need to rely on off-farm incomes and communal land at least during the early transitional state of commercial farming. Livelihood diversification may help reach a level of investment income that can boost farming activities.

Table 3.1: Trends and Processes Leading to the Deagrarianization of KwaZulu-Natal, South Africa

Processes	*Corresponding Trends Found in Studies in KwaZulu-Natal, South Africa*
Rural livelihoods are diversifying and are becoming detached from farming	▪ Households undertake a range of livelihood activities, with members often mixing informal trading, some agriculture, seasonal work, perhaps a formal job, semi-skilled labour, and other activities. Agriculture does contribute a small, yet significant share to many people's income; however, few people derive a very significant income from agricultural activities (Taylor and Cairns, 2001).
Non-farm income is playing a greater role in household income	▪ Government transfers and social welfare income are the most significant and important source of household income (Taylor and Cairns, 2001; Kirsten and Townsend, 1998; Browne, Ortmann and Hendriks, 2007). ▪ Other sources of non-farm income include wages, remittances, hiring out of accommodation, catering services, building houses, hawking, shop keeping, furniture making, sewing, hair braiding and taxi operations (Browne, Ortmann and Hendriks, 2007).
Increased mobility is causing livelihoods to become delocalized	▪ "In an economy where high unemployment exists, households not only migrate in search of new job opportunities, but also to ensure other means of obtaining income security and basic needs" (Cross, Mngadi and Mbhele, 1998: 639-640). ▪ In KZN, some four million disadvantaged people have migrated away from their home communities to search for a better life (Cross, 1998). ▪ Households are fluid in composition, and some, particularly those of farm workers, also maintain some of their members on a temporary or semi-permanent basis in other localities.
The average age of farmers is rising	▪ The majority of small farmers in South Africa are in fact young. A larger proportion of older people farm, but they are a smaller section of the population (Altman et al., 2009).
Cultural and social influences are changing livelihoods	▪ Broadly, young men do not want to participate in agriculture – they consider that they are educated, and will only take a job (Taylor and Cairns, 2001). ▪ People express a desire to have agricultural work as their main source of livelihood (Taylor and Cairns, 2001).

Livelihood diversification allows individuals to be flexible in transitioning to and from different activities. Participation in farming activity can fluctuate over time, but is generally included in the mix of strategies for many households since it not only provides income, but also food security. In South Africa, between 2001 and 2004, there was a marked increase in black households that practiced agriculture and thereafter a slight tapering off of agricultural activity (Aliber and Hart, 2009). Likewise, there was an increase up until 2004 in the number of households for whom agriculture represented an extra source of food; however, during the same time, there was also a decrease in the number of households relying on agriculture as a main source of food. The movement in and out of farming activity suggests that many households treat agriculture as a residual activity from which they can seek its advantages when it is suitable, but abandon it when it is inconvenient. Abandonment may arise when more remunerative opportunities surface (Altman et al., 2009).

Livelihood diversification is primarily influenced by unemployment or underemployment, availability of labour in the household and household size. High unemployment rates in KZN "affect its residents' hopes for cash employment" (Mbhele, 1998: 673). In the typical KZN household, there is a differentiation of skills, with men communiting to the province's economic centres – Durban, Pietermaritzburg, and Johannesburg, and women remaining at the rural homestead to ensure food security and land rights through agriculture (Mbhele, 1998: 673). This system of multiple livelihoods changes the nature of urabnization as urban rates of unemployment rise and second and third-generation township residents out-compete incoming rural people for jobs. These events have forced men back to their rural or peri-urban homes to pursue agricultural opportunities (Mbhele, 1998). Peri-urban areas attract both urban and rural migrants. Its close proximity to core economic centres provide an obvious risk-reduction strategy for households wishing to leverage urban economic opportunities, while not forfeiting land entitlements (Mbhele, 1998) in less densely populated areas, including communal spaces.

Transitions in and out of agriculture are associated with increases in household size. It is possible that increased household size and the associated demand for more food require engagement in subsistence production as a way of feeding a larger group of dependents (Altman et al., 2009). With "unemployment increasing in South Africa and average real household incomes decreasing against increasing food expenditures" (Bonti-Ankomah, 2001: 9), government transfers and social welfare income begins to play a great role in ensuring household food security. This is especially true in rural areas, and may explain the shift between non-farm incomes playing a greater role in household income. Although grants might offer a significant safety net, the social security system is inadequate in addressing food security as Aliber (2009) found his study on household level food security in South Africa, that of all households experiencing hunger, 51% were not receiving grants for which they would appear to be eligible. Of these, about two thirds do receive some grants, but in principle are eligible to receive more than they do. The other third are not receiving any grants, but are eligible for at least one. Thus, the government would have a greater opportunity to reduce food insecurity if its social security system was able to reach more people (Aliber, 2009).

Rigg (2006) points out that the average age of farmers in the rural South is rising. Generally, there is a perception that young people are not interested in farming, but would rather work in the urban centres in other types of employment. However, Aliber and Hart (2009) show

that the majority of small-scale farmers in South Africa are young. A larger proportion of older people farm, but they are a smaller section of the population. For example, 12% of 15-19 year olds are involved in subsistence farming as compared to 24% of 55-59 year olds, according to the March 2007 Labour Force Survey. Nevertheless, there are twice as many 15-19 year olds (more than 500 000) involved in subsistence agriculture than there are 55-59 year olds. Approximately 1.9 million subsistence farmers are aged 15-29 years (Altman et al., 2009).

Urbanization, Access to Markets and Small-Scale Farmers

The world population, especially in developing countries, is in a phase of rapid urbanization and this trend is set to continue during the next 20 to 30 years owing to the increase in global disposable income and various other factors that 'push' people towards the city (Louw, Vermeulen, Kirsten and Madevu, 2007). In South Africa, about 52% of the population lives in urban areas and this could rise to 62.2% by 2030 (Louw, Jordaan, Ndanga and Kirsten, 2008). Given the growing demand and high disposable income found in large urban and peri-urban markets, supermarkets are expanding into towns and communities and have reached closer and closer to rural areas. Their low food prices provide a means for improved livelihoods and food security, and their high demand holds the potential for smallholder participation in large, commercial markets. However, their presence also detracts consumers from local shops and smallholder markets, and their procurement strategies can exclude smallholders.

Supermarkets were introduced into South Africa in 1948 by OK Bazaars, and "by the end of 2007, six South African supermarket chains had a total of 4,219 stores and a 93.8% market share of retail sales" (Louw et al., 2008: 290). Competition amongst these chains is tough, but each chain targets a specific niche market, income or socio-economic group. Woolworths targets the high income consumer, and Shoprite targets the lower spectrum of the market. Pick'n Pay and SPAR target the middle class. To maintain their position in the market, supermarkets use tightly coordinated supply chains with increased use of market contracts, strategic alliances and franchises in the exchange process. Transaction costs refer to the search and information costs of finding the right farmers, negotiating and contracting with them over volume, quality and prices, and enforcement costs for ensuring that all parties abide by their part of the agreement. To reduce transaction costs, supermarkets will select and deal directly with only a limited number of approved suppliers, which are mostly larger companies with the necessary capital to meet the supermarkets' procurement requirements.

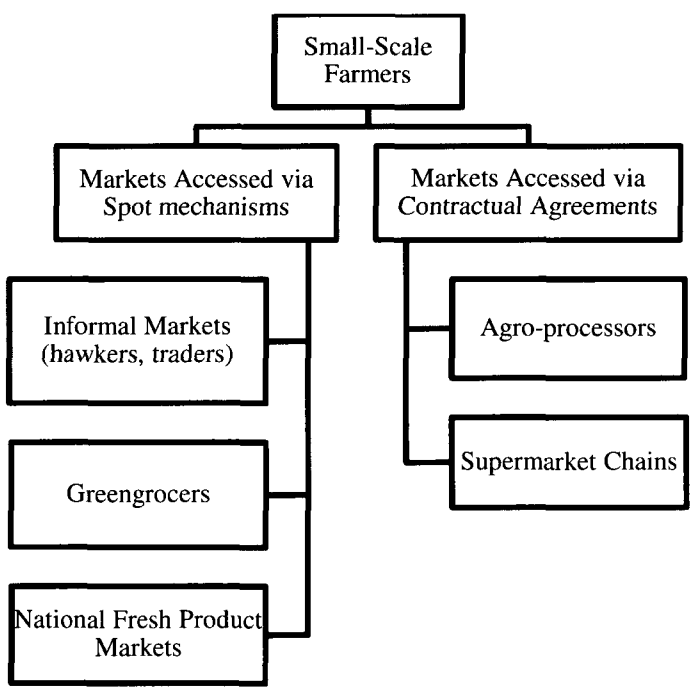
In South Africa, supermarket chains will find suppliers and farmers using their own fresh produce sourcing companies or wholesale companies and distribution centres. The sourcing companies will establish agreements usually with large contracted producers, specifying volumes, varieties and quality standards for their growing programmes. Processors and retailers use this type of coordination mechanism to get farmers to produce high quality commodities and in some cases they also provide production inputs to farmers. The volume, quality and infrastructure requirements necessary to qualify as a supermarket fresh produce supplier effectively exclude many of the smaller producers (Louw et al., 2007).

Contractual agreements between supermarkets and suppliers in South Africa follow the same trends as international supermarkets, where most of the large retailers are moving from paper based transactions and verbal orders to electronic systems, which limit the participation of small processors and producers in the supply chain. In order to ensure customer satisfaction,

South African supermarkets have also introduced their own private systems of grades, standards and labels, largely borrowed from the European supermarkets' EureGAP system. In order to meet these standards, they must take care in procuring goods from established large-scale farmers who already export produce, and thus, abide by local and international standards. Abiding by grades and standards are an important entry point to doing business in the agro-food system, but most smallholder producers are ill-equipped to meet them and therefore tend to be excluded (Louw et al., 2007; Louw et al., 2008).

Due to the stringent requirements of large supermarket chains in South Africa, small-scale farmers find it increasingly difficult to participate in market channels (Louw et al., 2008). Participation in markets is strongly dependent on the existence of land, labour and the ability to mitigate risks such as illness, pests, diseases and drought, and marketing risks such as shift in supply and demand, perishability, etc. Currently, small farmers' risk management is not adapted to the mainstream, commercial market, where market prices for goods are low, volatile and in a general decline (Louw et al., 2007); therefore, farmers must explore other markets. There are five market channels that small-scale farmers may explore. Three traditional market channels are accessed through spot mechanisms, and can include informal markets, such as hawkers and traders with trucks, greengrocers, and national fresh produce markets (FPMs). The other two channels are accessed through contractual agreements, and include agro-processors and supermarkets. The ease of entry is higher through the traditional markets, which explains why small-scale farmers are often restricted to these market options, but traditional markets are also accessible to competitive large-scale farmers (Louw et al., 2008). A summary of the various markets accessible to small-scale farmers is listed in Figure 3.1.

Figure 3.1: Farmer Markets



(Louw et al., 2008)

Environmental Threats to Sustainable Agriculture

Land degradation, and especially soil erosion, is a major concern in South Africa for both commercial agriculture, and the farming sector in former homelands (Critchley and Netshikovhela, 1998). Agricultural practices of South Africa's first settler communities were frequently environmentally exploitative, and by the 1930s, it had "become commonplace to describe South African agriculture as careless and destructive" (Critchley and Netshikovhela, 1998: 450). At the same time, concerns about soil depletion, shifting cultivation practices, rising populations and livestock rearing gave rise to land degradation warnings, especially for the former homelands (Critchley and Netshikovhela, 1998), which were already ecologically fragile areas, vulnerable to erosion. Since the 1900s South Africa has lost approximately 25% of its topsoil through soil erosion, furthermore, desertification is a prominent threat in about 55% of the country (Cooper, 1991 as cited in *MacSwain*, 2009). In 1988, evidence still showed considerable misuse and deterioration of natural resources in reserves and homelands (Critchley and Netshikovhela, 1998). KZN is particularly affected by degradation, as the majority of the province experiences either severe or moderate combined degradation (MacSwain, 2009). South African soil is characterized by low organic matter content, which increases issues of soil erosion and degradation of land as it is frequently cultivated. Consequently, only 13.5% of South Africa's total land is appropriate for cultivation and agriculture, and 3% of this land is considered as high potential arable land (MacSwain, 2009: 10). Soil erosion in KZN has also lead to a reduction in the storage capacity of reservoirs (MacSwain, 2009).

Evidence in KZN shows that land users' perceptions of erosion and their responses to it have a firm scientific basis, where traditional conservation practices among resource-poor farmers include stone lines, diversion ditches, stone terraces, grass strips, furrows made by tractors, check dams in gullies, and control of grazing (Critchley and Netshikovhela, 1998). However, given the extremities of climate change, traditional practices may not be effective in maintaining agricultural production levels, or adapting to risks. Climate change is expected to adversely affect agricultural production, and because agriculture is an important source of income for many rural or peri-urban communities, adaptation to climate variability is imperative to protect livelihoods of the poor and ensure food security (Bryan et al., 2009). In South Africa, severe fluctuations in rainfall patters have changed the regional climate, "including relative dryness and temperature – in a cyclical period over the past quaternary" (MacSwain, 2009: 10; Meadows, 2002: 429). Currently, KZN as a geographic region receives the minimum required precipitation for rain-dependent agriculture. The province and South Africa as a whole is characterized as relatively arid. South Africa is made up of "90% affected dry-lands with the remaining portion of the country being primarily composed of 'hyper-arid' land that is intensively vulnerable to degradation" (MacSwain, 2009: 10; Meadows, 2002).

In southern Africa, rainfall events are "now shorter and more intense than was previously experienced with some suggesting that drought and other extreme events may become more severe and more frequent under certain climate change scenarios" (Reid and Vogel, 2006: 199). Statistical records of actual temperature data in South Africa show that temperatures have increased over the period from 1960 to 2003 by around 1°C, with the increase mostly in the summer (Bryan, Derssa, Gbetibouo, Ringler, 2009). In KZN, periods of climate stress, such as droughts and floods, have resulted in a number of impacts in the past. For example, during 2004, KZN suffered a severe drought period where thousands of rural dwellers, mainly in the northern

area of the province, were left without water after boreholes, rivers and springs in KZN dried up (Reid and Vogel, 2006).

Despite the prevalence of severe weather-related crop failures due to hailstorms or heavy rainfall or extreme reductions in water supplies during drier seasons, a number of studies in KZN have shown that perceptions of climate variability by small-scale farmers are not seen to be of key significance to their every day livelihoods (Reid and Vogel, 2006; Bryan et al., 2009). Regardless of having perceived changes in temperature and rainfall, a large percentage of farmers do not make any adjustments to their farming practices (Bryan et al., 2009). Factors influencing farmers' decision to adapt include wealth, government farm support, and access to fertile land and credit. The main barrier to climate adaptation cited by farmers in South Africa is their lack of access to credit, but food aid, extension services and information on climate change have been found to facilitate adaptation among the poorest farmers in South Africa (Bryan et al., 2009). The following section will describe the current policy framework implemented by the South African government to re-invigorate small-scale agriculture and increase food security.

Rural Development Strategies and the Current Policy Framework

This section aims to outline South Africa's policy framework for small-scale production, entrepreneurship, and food security. It begins by discussing the history of apartheid policies that influenced spatial development, land acquisition, and agriculture in South Africa, and then continues by describing the state's national and provincial land and agrarian reform policies. A list of the policies discussed is included in Table 3.2. Finally, the state's strategic focus in the agricultural sector is outline, and social assistance programs are discussed.

Colonial and racial policies were centrally involved in the deterioration of agriculture in black areas (Lipton, 1977; Bradstock, 2005; Lahiff, 2007). One of the central aims of both the English and Afrikaans government in the twentieth century was to secure the exclusive use of the most valuable land for white South Africans in the country (Akinboade, 2008). Consequently, black communities were pushed to mountainous areas with degraded land, incapable of harvesting their traditional crops (as described in the previous section). Idle black settlements were soon put to use with the discovery of minerals during the late nineteenth century. The colonial state used black rural settlements as labour reserves for working the mines, and their forced employment was accomplished through the introduction of a series of legislation.

The *Natives Land Act* of 1913 stripped African cash tenants and sharecroppers of their land and prohibited Africans from owning or occupying land outside the reserves (Bantustans). Land ownership was replaced by black labour tenancy to white farmers, and only 7% of South African land was reserved for the exclusive use of black South Africans (Kepe, 2009; Akinboade, 2008). The introduction of the *Native Trust and Land Act* in 1936 increased the area reserved for blacks to 13.6% (although at this point, blacks accounted for 80% of the total South African population), but authorized the *Department of Bantu Administration and Development* to eliminate 'black spots', which were black-owned land surrounded by white-owned land (Akinboade, 2008).

Then in 1984 the Cape Colony's *Glen Grey Act* introduced a one-man-one-lot system, as well as a labour tax on all able-bodied males living in the district who had not worked outside the

district for at least three months in the previous year. The tax could only be paid in cash, to ensure forced migration to the mines and remuneration by the progression of the mining industry (Parry, 1983). Furthermore, the *Hut Tax* (introduced in Natal in 1857) ensured that residents living in huts had to pay an additional tax. The intention of these laws and taxes was to create a landless working class dependent on wage labour rather than agriculture (Kepe, 2009; Akinboade, 2008).

Two other pieces of legislations strengthened the state's campaign against black agriculture. The *Control and Improvement of Livestock in Native Areas Proclamation* of 1939, known as the *Betterment proclamation* was intensely implemented during the late 1950s and 1960s and was premised on soil conservation through control of livestock and human settlement. Cropping fields were reduced to 0.2 hectares in order to settle as many blacks as possible in the reserves (Kepe, 2009). In the process, any form of agriculture in these areas was reduced to household gardening. Additionally, it is estimated that in the whole of South Africa four million people were dispossessed of their land rights through the *Betterment proclamation* (Kepe, 2009).

Finally, the *Group Areas Act* of 1950 forbade different races to live together in urban areas. This resulted in forced resettlement of urban blacks to the already crowded reserves, thus, putting more pressure on the land (Kepe, 2009; Benjaminson, Bråthen and Kepe, 2008). "Between 1963 and 1985, approximately 3.5 million blacks were removed from areas designated for whites and sent to the homelands" (Akinboade, 2008: 860). In the homelands, most farm dwellers have access to residential land only, and a minority of the residents are labour tenants, who may have access to grazing land for their own livestock or to arable land for cultivation. In return for the accessible land, "they are required to provide (unpaid) labour to the landowner" (Akinboade, 2008: 860).

The result of all of these laws left 87% of total agricultural land in the hand of whites by the end of apartheid in 1994 (Akinboade, 2008). Whites account for only 11% of the total population (Lahiff, 2007). To this day, the effects of apartheid legislation are still apparent, and the post-apartheid government has had many difficulties in implementing legislation designed to improve the economic empowerment of the black population. In order to redress South Africa's history of apartheid injustices, the policy of land dispossession and the resulting homelessness and squatting that affected a large number of people, the African National Congress (ANC) initiated a land reform scheme to ensure the secure land tenure for rural dwellers, eliminate overcrowding, and supply residential and productive land to the poor.

Land reform includes three elements: restitution, redistribution and tenure reform (Akinboade, 2008). Of the "84,900,000 hectare of land, approximately 25,000,000 hectare of arable land" is to be redistributed through land restitution (Akinboade, 2008: 860). Based on land claims, the programme would redistribute 30% of agricultural land and complete land claim negotiations within five years. The land redistribution programme aims to address the divide between the 87% of the land dominated by white commercial farming, and the 13% in the former homelands by way of diversifying the ownership of commercial farmland (Akinboade, 2008). Land tenure reform is intended to achieve two distinct objectives: (1) "to address the state of land administration in the communal areas of the former homelands and coloured reserves by way of the *Communal Land Rights Act*"; (2) "to strengthen the security of [land] tenure of farm dwellers living on commercial farms" (Akinboade, 2008: 860).

Land reform has been very slow in South Africa and has had a major negative impact on many rural poor who rely on land-based sources of livelihoods, or who wish to engage in agriculture beyond subsistence (Kepe and Cousins, 2002; Twyman, Sporton andThomas, 2004; Bradstock, 2005; Ntsebeza, 2007; Kepe, 2009). Addressing the skewed distribution of land in South Africa should be of central importance to land reform; however, since the end of apartheid, restitution and redistribution of land to the poor have stalled as the country has adopted a pro-market approach to land reform premised on the willing-buyer, willing-seller principle (Kepe, 2009; Borras, 2003; Lahiff, 2007).

Most of the land claims settlements in South Africa, have involved financial compensation, not land. "As of February 2005, more urban than rural claims had been settled with land, while slightly more rural settlements involved financial compensation" (Akinboade, 2008: 861). This is partly because many Africans recognize the challenges attached to agricultural endeavours, especially if the plot of reclaimed land is small. Another reason is that some established farmers had formed 'Restitution Resistance Funds' and pressured claimants to accept cash, rather than the return of the actual land (Akinboade, 2008: 861). Cash compensation for land claimants are often criticized because the bonus of large sums of cash, from R17,500 ($2500) upwards, can be quickly spent in poor households without producing a lasting material benefit, livelihood, or sense of restitution (Akinboade, 2008). Furthermore, claimants have also collected sums on behalf of their communities, and have not distributed it equally. There are also instances where households do not wish to relocate to undeveloped farmland again, but instead want the restitution awards to improve their houses in the better-serviced settlements where they have been living (Akinboade, 2008; Kepe, 2009; Bohlin, 2004).

Recognizing that the development of a 'non-white' commercial farming sector cannot rest solely on the redistribution, restitution and tenure of land, state policy also takes into account supporting interventions in various types of agricultural and food security programming. The *Agriculture Sector Strategy* (2001) refers to a number of policy reforms stated in the *White Paper on Agriculture* (1995), the *Broadening of Access to Agriculture Thrust* (BATAT) document (1995), the *Strauss Commission Report of inquiry into the provision of Rural Financial Services* (1996), and the *Strategic Plan for South African Agriculture* (2001) (DoA, 2004). The reforms have influence the governance of the agricultural sector and the delivery of services, including: "the deregulation of the marketing of agricultural products; changes in the fiscal treatment of agriculture; the abolition of certain tax concessions; a reduction in the direct budgetary expenditure of the sector; land reform, restitution and redistribution; trade policy reforms; general liberalization of agricultural trade including free trade agreements; institutional reforms", especially within the three tiers of government allocated to different agricultural services" (DoA, 2004: 3).

To implement these policies, strategies were put in place to promote "household food security, household food production, farmer settlement and agricultural business development" (DoA, 2004: 3). A list and description of the national and provincial-level strategies are included in Table 3.2 and 3.3.

Table 3.2 National-Level Agriculture Sector and Food Security Strategies

Name of Programme	Interventions
Integrated Sustainable Rural Development Strategy (ISRDS)	• To improve the collaboration and consultation between government bodies and departments in order to integrate agricultural support services to the rural poor, new and emergent farmers, women, youth, and the disabled (DoA, 2004).
Land Redistribution for Agricultural Development (LRAD)	(1) To transfer agriculture land to individuals or groups: ▪ To provide grants, ranging from R20,000 to R100,000 ($2724 to $13623), depending on the amount of the applicant's own contribution in kind (ex. Livestock or machinery), labour and cash (a minimum of R5000 ($681) for a R20,000 grant) (DoA, 2004). ▪ Grants may also cater to: 1. *Food safety-net projects* – to get land to produce food or rear livestock for household food security 2. *Equity schemes* – to buy into agricultural enterprise as owners and co-workers 3. *Commercial agricultural ventures* – to combine grants with loans from banks to foster farming business (2) To transfer land to commonage projects: ▪ To foster agricultural activity in communal areas by providing the means to make use of the land for agricultural production. ▪ Grants may be used to buy land, make investments on the land, such as in infrastructure like fencing or irrigation, or for short-term expenses, such as stock, seeds or machinery (DoA, 2004).
Comprehensive Agriculture Support Programme (CASP)	▪ To provide agricultural support in information and knowledge management; technical and advisory assistance and regulatory services; training and capacity building; marketing and business development; on-farm and off-farm infrastructure and production inputs; and financial assistance. ▪ To provide advice during food crises and agricultural starter packs for food production through the Special Programme on Food Security (SPFS) and the Integrated Food and Nutrition Programme (IFSNP) ▪ To provide farm level support to the beneficiaries of the LRAD and other strategic programmes (DoA, 2004).
The National Land Care Programme	▪ To promote the sustainable use and management of natural resources, such as water, soil and veld care, by engaging farmer participation, and implementing strong institutional support structures to support sustainable practices (DoA, 2004).
Integrated Food and Nutrition Programme (IFSNP)	▪ To increase access to resources, such as land, credit, training, food production and processing technology, and irrigation and rainwater harnessing technology; and ▪ Too enhance the ownership and exchange entitlement of the poor in the trade of agriculture and food sectors, and commercialize agriculture to increase income and employment generation (Baiphethi and Jacobs, 2009).

Table 3.3: Provincial-Level Agriculture Sector and Food Security Strategies

Name of Programme	Interventions
Farmer Support Group	• To provide extension, input support and training to farmers, with an emphasis on developing emerging farmers in communal areas and supporting the beneficiaries of the Land Reform Programme. • To co-ordinate and implement various food security projects in partnership with other stakeholders, such as sister departments, municipalities and donor agencies. • To create small businesses while prioritizing vulnerable groups, especially youth, women and disabled groups. • To promote investments, partnerships, cooperatives, marketing and agribusiness development and intergovernmental cooperation in the agriculture and environment sectors to champion and support agrarian development.
Technical Research and Development Services	• To develop new technologies and communicate research to help beneficiaries adapt to new technologies in order to promote sustainable agricultural practices in KZN.
Structured Agricultural Training	• To provide tertiary and further education and training to beneficiaries in order to increase their access to local and international markets, develop their business capacities, and enhance their linkages with various partners, stakeholders and government agencies.
Agricultural Economics	• To provide market information and facilitate marketing and agricultural economic services in order to foster economic development. • To develop production and farming models to easily be adopted by farmers in their production and planning decision, irrespective of farm size.
Agricultural Credit Scheme	• To spread micro-credit and saving services to economically active, poor rural people and households, small farmers and agribusinesses. • To stimulate the extension of financial markets and economic growth, improving national household food security, increasing employment in the rural areas (thus, reducing migration to urban areas), and reducing poverty and inequalities in land and enterprise ownership (with a focus on women, youth and the disabled).

As Table 3.2 and Table 3.3 illustrate, the DoA is presently developing programmes and schemes to support the delivery of rural financial services to the agricultural sector. Its strategic focus includes stimulating economic growth through the extension of financial markets to farmers, developing norms and standards for financial assistance, and promoting the development of participating financial intermediaries for implementing the policy reforms. Agricultural cooperatives remain a focal point for the DoA as they seek to improve institutional arrangements to support and increase awareness of the cooperative movement and strengthen farming communities' cultural and managerial skills necessary for their development. Improving national household food security is a prime ambition, and raising employment in areas outside of urban centers in order to reduce migration into the cities. Finally, the DoA aims to reduce poverty and inequalities in land and enterprise ownership with particular focus on women, young people and the disabled (DoA, 2004).

The policy framework outlined above covers many aspects of agricultural extension in order to establish a class of commercial farmers from previously disadvantaged groups (blacks, coloured, and Indians). While the framework is extensive, it should be noted that the post-apartheid government has had to work with an extremely limited budget to stretch over a much larger population. Consequently, policies can further marginalize vulnerable groups and contribute to the degradation of the natural resource base. For example, with regards to land reform initiatives, Hall (2007) argues that land acquisition grants are too small, forcing groups of poor households who qualify for them to pool their grants together to buy farms being offered on the market. This has led to what is known as the "rent-a-crowd" syndrome, which results in overcrowding and unsustainable land use (Hall, 2007: 89). Similarly, Kepe and Cousins (2002) argue that most of the land on purchased group farms remains underutilized because of different economic goals of land reform beneficiaries, poor planning, and lack of government support. Lahiff (2007) argues that most of the good quality land that is available in the market is sold by public auction or private transactions and thus not available to poor land reform beneficiaries; therefore, beneficiaries mainly have access to lower quality land.

Agricultural and food security programming are not the only interventions implemented to help improve livelihoods, social security and welfare services constitute a significant poverty alleviation measure of the South African government. Compared to other middle-income countries, South Africa has an advanced social security system in terms of coverage against contingencies and spending ratios (Bonti-Ankomah, 2001). However, the country suffers from extreme poverty and inequality, and the South African social security system falls short to that described in Article 26 of the Constitutional Rights of children (CRC), which states that "parties shall recognize for every child the right to benefit from social security including social insurance, and shall take the necessary measures to achieve full realization of this rights in accordance with the national law" (Bonti-Ankomah, 2001: 10). The main social security grants in operation are the old age pension, disability grant, child support grant, care-dependency grant, and foster care grant.

People who qualify for old age pension include any South African citizen, 60 years old and older for females, of 65 years old and older for males (Bonti-Ankomah, 2001). The state pays a maximum of R540 ($77) to people who qualify by a means test (Bonti-Ankomah, 2001). The old age grant has been very critical for the survival of many

households, especially in rural areas, where household members may be unemployed. The disability grant is paid to any South African, 18 years or older, who owing to his or her disability is unable to obtain employment or does not have any other resources to support him or herself (Bonti-Ankomah, 2001). Any disabled person receiving other social grants cannot qualify for the disability grant. The maximum monthly allowance is R520 ($71) (Bonti-Ankomah, 2001).

The child support Grant was introduced in 1998 and qualifies for children 7 years old and younger (Bonti-Ankomah, 2001). The child grant replaced a much more generous state maintenance grant that qualified for anyone aged 18 years and younger and included an allowance for mothers (Bonti-Ankomah, 2001). The child grant extends R100 ($13) per month to a primary caregiver, who is "any person who takes primary responsibility for the daily care needs of the child or children and not necessarily related to the children", of a child or children under the age of 7 (Bonti-Ankomah, 2001: 10). The foster child grant is payable to a foster parent(s) in custody of a child in terms of the Child Care Act. The foster parent and child should be South African and the child should be under 18 years. The maximum amount payable per month for this grant is R374 ($51) (Bonti-Ankomah, 2001). The care dependency grant is also a grant payable to the parents or foster parents of a care-dependent child between the ages of 1 and 18 years, who due to severe mental and/or physical disability, needs full time care. The maximum monthly amount payable for a care dependency grant is R520 ($71) (Bonti-Ankomah, 2001).

The extensive support of the social security system contributes to the reliance of non-farm income in rural and peri-urban areas. In some cases, grants and pensions can help support agricultural entrepreneurship as described in the section on livelihood diversification at the beginning of this chapter, and in many cases, it can improve household food security. In a study by Case and Menendez (2007) in the Northern Province of South Africa, findings showed that the presence of a pensioner reduces household reports that adults and children missed meals because there was not enough money for food. Social assistance can either support or reduce agricultural activity in a household or community. However, the fact that households consider social assistance an important source of income for household requirements, including food, demonstrates signs of deagrarianization, where individuals may prefer to rely on non-farm income than participate in agriculture, even at the subsistence level. Given these trends, it is questionable whether South Africa's agricultural programming is relevant to the dynamics of peri-urban and even rural households.

Conclusion

Sustainable agriculture for smallholder farmers in South Africa is threatened by many factors. Current livelihood trends in South Africa support the deagrarianization process witnessed in other areas of the globe. Namely, livelihood diversification, livelihood mobility, occupational multiplicity, and a high reliance on non-farm income are common in KZN, South Africa. Smallholders are also limited by the number of markets they can access due to the low prices offered by competitive large-scale farmers and monopolistic supermarket chains. Their participation in large markets is also restricted due to the stringent and globalized procurement mechanisms set in place by expanding supermarkets.

Finally, climate variability, land degradation and soil erosion are real threats in KZN and threaten small-scale productivity.

The state has a broad range of policies set to help small-scale farmers adapt to environmental challenges, compete in large markets, and increase rural economic opportunities. The policies focus on agricultural extension to commercialize agriculture in marginal areas and improve food security through increased household food production. Interventions include increased access to credit, land, training and technology. Despite the ambition behind these robust policies, they are not always effective in promoting sustainable economic growth or food security. The reasons behind such challenges or shortcomings are not always consistent between districts or regions and therefore call for local research.

Chapter 4: Farming in the Peri-Urban: Perspectives from Small-Scale Farmers

A mother and daughter hand weeding their cropland.

Chapter 4: Farming in the Peri-Urban - Perspectives from Small-Scale Farmers

On my first visit to Umzinyathi in May 2010, I travelled with fifteen other Canadian students. At the time, we were excited to leave behind the bustling city life of Durban to experience a day in the South African countryside. What we saw surpassed all of our expectations. The physical beauty of the region was striking; the landscape was covered with mountainous hills and a sparkling river that ran its course through deep valleys. Mud huts speckled the terrain, and small crops were grown on hillside gardens. At first glance, the simple serenity of rural life and its lush natural environment, made it hard to believe that we were there to study issues of social conflict and water scarcity. However, to my mind, it became obvious that the legacy of apartheid policies had left a state of poverty, unemployment and poor services in this area, making it difficult and nearly impossible for rural dwellers to create and sustain a proper livelihood.

Introduction

This chapter sets out to satisfy the first objective of the thesis: to explore livelihood strategies of small-scale, peri-urban farmers living in one farming community in KZN. This chapter presents the primary research findings from a livelihood survey conducted with forty small-scaled farmers in Umzinyathi, KZN, along with semi-structured interviews to add further depth to the survey results. The chapter begins with a discussion on land holdings in the community, and continues to describe household characteristics and livelihood strategies, before turning to an analysis of farmer's access to markets and adaptations to climate. Particular attention is paid to food security, the effects of rural to urban transitions, and the challenges to successful smallholder production in the community. Certain data tables will be presented throughout the chapter, but for a complete list of data tables please refer to Appendix C.

Land tenure arrangements in the study area

Access to land is a basic asset for people wishing to assume an agricultural livelihood. In Umzinyathi, access to land for habitation, cultivation and grazing is allocated by the Inkhosi (the traditional village chief), his headmen, and councillors. The tribal authority may be perceived as owning the tribal land, but in fact, they only have the entitlement to allocate and administer the land rather than assume formal ownership of the land. Therefore, residents cannot own land, but they have permission to occupy land, and transfer it between generations, as long as they use it. This process ensures that land is rarely kept idle and enforces a certain level of agricultural activity in the area – where one household farms at least on a subsistence level. People who no longer tend to their land or maintain residence in the area will lose their rights to the land. The Inkhosi always encourages households to cultivate their land and has an interest in supporting agricultural activity in the area.

Acquiring land follows a system where if one needs land, then one must ask the Inkhosi for a plot of land. The ease of this process, of course, depends on the governing

style of a particular traditional authority, but within Umzinyathi, respondents felt as if they could receive land if they asked for it. However, the maximum amount of land one can receive is unclear. Generally, farmers claimed "I think I could get land if I asked for it", signally that the process of gaining additional land is not entirely clear nor necessarily asked for.

Ownership of land in the tribal area is not restricted by membership in the community; even newcomers can obtain land from the Inkhosi, usually at an additional cost. Because the area is sparsely populated, there is still vacant land that can or must be cultivated; thus, if there is unused land, the Inkhosi is usually prepared to release it for productive use. Other methods in which newcomers can access tribal land is purchasing it through the Municipality (members of the community can also access land through this channel), purchasing it from existing residents, or purchasing or accepting it from family members living in the area. Only a few of the study's respondents were outsiders or non-members of the community, having lived in the area for less than 10 years. They were more successful in purchasing or obtaining land through the Inkhosi if they had relatives in the community. If land is not accessed through relatives, newcomers generally pay a higher cost for land than community members. Factors influencing the Inkhosi's decision to grant land are described in Table 4.1.

Table 4.1: Factors Influencing Land Allocation from the Inkhosi

Factor	*Farmer, Date*	*Testimonial Evidence*
1. Gender	Mrs. Mhlongo, November 2009	"A group of women [I know] would like to start a cooperative, but my land [plot] is bigger because I have a husband, not like the others."
2. Applicant's time in the village	Mr. Shangase December 2009	"I have lived in the area since 1990, so if I need more land, I think the Inkhosi would allow me."
3. Applicant's level of agricultural entrepreneurship	Mr. Cele, Farm Labourer, December 2009	"If I wanted to get a government grant, I need the Inkhosi's signature. But, if I went to him with my brother, I think he would help us."
4. Applicant's connection to the area	Ms. Sizene November 2009	"Yes, it was hard to get land, but because my sister lives here, I was able to get [land] from the Inkhosi."

Where n=40 households, 68% ascribed a strong role for the Inkhosi in accessing land, and 63% obtained their land directly through the Inkhosi. Obtaining land from the Inkhosi means that households can avoid paying taxes to the Municipality, but it was unclear whether residents paid a token levy to the tribal authority for their land, as is the case in other tribal areas described by Akinboade (2008). The low barriers to accessing land mean that land-based livelihood activity is easily achievable and therefore popular in these areas. In fact, where n=40 respondents, 98% claimed that anyone could access farming. Forty-eight percent placed land as their greatest asset, above water and agricultural inputs, 12 of these respondents thought that land was also easily accessible. However, due to the

informal nature of land titling in communal areas, households are often limited in using land holdings in coping strategies, and can be vulnerable to losing their land to other parties. This can increase a household's vulnerability to food security and sustainable livelihoods. Where n=40 households, only 8% said they could sell their land when their household required money. These respondents had not received their land from the Inkhosi, and had either purchased their land from their neighbours or inherited the land from relatives. Therefore, these households are likely to own a title deed to the land, and have greater flexibility to use land in coping strategies.

Most communities in southern Africa are patrilineal and patriarchal; therefore, a household's land access and retention is normally dependent on the presence of an able male adult. Despite gender being an influencing factor in obtaining land from the Inkhosi, the majority of the female respondents claimed that it was easily accessible through the Inkhosi. Where n=15 female-headed households, 60% (9 households) claimed land was their greatest resource, and 6 out of these 9 (67%) households believed that land was easily accessible. Sixty-seven percent (10 households) claimed that they would never be forced to sell their land, and 9 of these 10 households obtained their land directly from the Inkhosi. Therefore, in this particular research site, the majority of female respondents did not claim to have problems with accessing. However, through semi-structured discussions, a few female respondents, especially female in-migrants, claimed difficulties with accessing land due to gender disparities.

Given the peri-urban nature of the study site and the increasing rates of in-migration to the area, the study's respondents have a good general knowledge of their rights to land, and how to access it. Nevertheless, procuring land through the Municipality is a greater financial obligation than most respondents are willing to commit to, and the process of accessing the land is far more complicated than simply explaining the need for it. The communal nature of land and the increase of in-migration and urbanization, should add pressure on respondents to ensure their retention of their land holdings; however, where n=40 households, 73% believed that they would never be forced to sell their land. A 63 year old female farmer claimed that she would "never give up land, [because] it is a spiritual and ancestral right" (Mrs. Dimba, December 2009). Only 20% believed that land would be taken away if it were not cultivated (surprisingly, 4 of these households obtained their land from the Municipality and are likely to own a title deed). According to one of the study's academics, population growth is also introducing new land codes in and around the research site, placing a greater value and demand for land, and potentially leading to land shortages in the near future. In particular, land is increasingly being coded for residential purposes and shifting agricultural land codes further away from Umzinyathi, near the Inanda River.

Accessing land will be much more costly for residents in the future. One of the study's respondents (an outsider to the community) purchased her land 5 years ago for half of what it costs to buy only half of the plot today. She claims "I have received offers to sell half of my land holdings, but this will affect my ability to sell more vegetables and keep food for the house" (Mrs. Mhlongo, November 2009). Newer land plots being allocated to households are much smaller than before, and are too small to effectively engage in smallholder, let alone commercial agricultural production. Figures 4.1 and 4.2 below, illustrate how population growth, as a result of increasing in-migration and urbanization,

increases the demand for land in the communal area, and subsequently its cost. Population growth also points to the potential for land shortages in the future and the need for institutions to formalize the distribution and allocation of natural resources, such as land. Thus, formal allocation of land and increased demand and cost for land, restrict resource-poor households' access to this vital resource. This in turn threatens smallholders production and household and community food security.

Figure 4.1: Causes for Increased Demand for Land

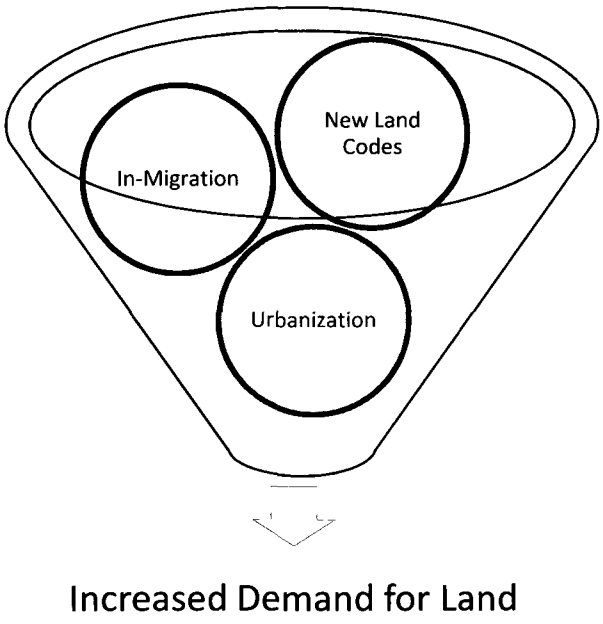
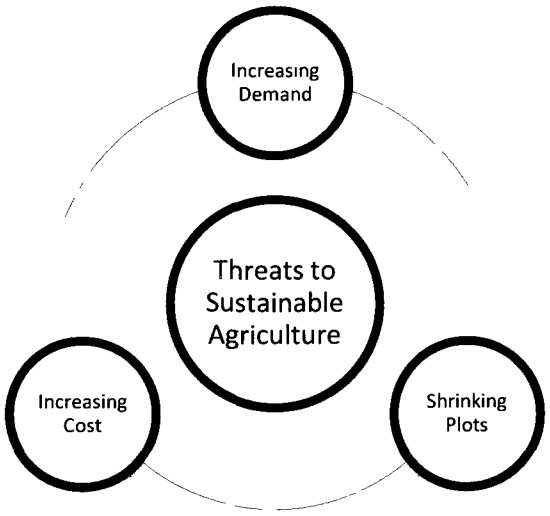


Figure 4.2: Threats to Sustainable Agriculture

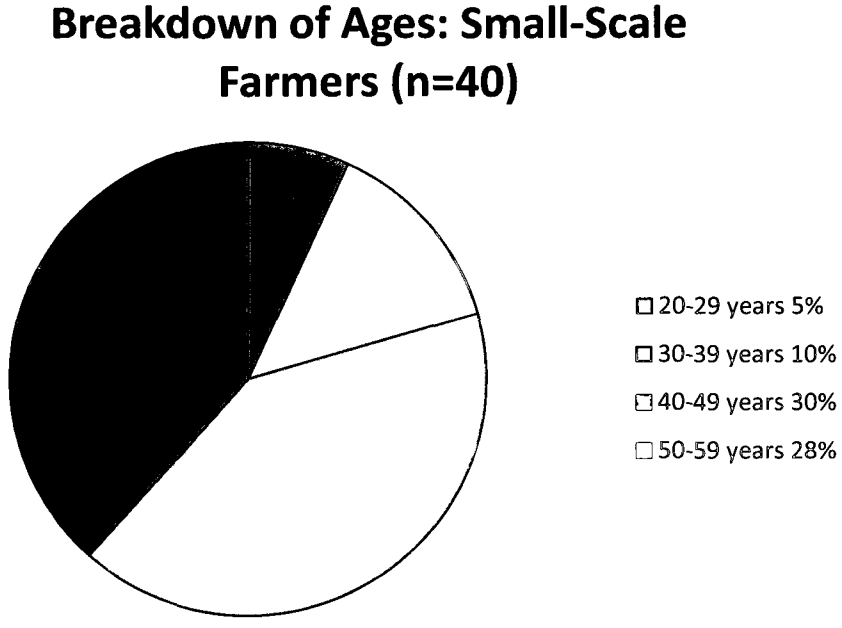


Farmer and Household Characteristics

The study recruited small-scale farmers through random and snowball sampling, and through these sampling techniques, the study interviewed 32 females. Thus, females consisted of 80% of the total sample, and were found to be the main participants in the agricultural trade within the area. An increased participation by women in agriculture than men may be explained by the fact that PTO forces residents to tend the land, and women who are either widowed or left behind by male migrant labourers, etc., are the ones left to assume agricultural work. As one 71 year old female farmer had mentioned, "I have never had any other job besides doing farming because my husband did not allow me to work, I only had one child and had to maintain the land" (Mrs. Cele, December 2009).

The average age of the sample was 52 years, and the number of young farmers in the area was extremely low. Older farmers generally complained of not having the energy to farm as they did when they were younger, stating that "it has become harder to farm because we need to work harder, and we are now getting more and more tired" (Ms. Mchunu, November 2009). The reason for the higher participation of older residents in farming is because many of them became serious about farming after retirement, and after returning to the community from assuming urban employment. Note that retirement does not mean that respondents were always over the age of 65. Many respondents considered being laid off from their urban jobs as their 'retirement', and these respondents were middle-aged. A breakdown of small-scale farmer's ages is illustrated in Figure 4.3.

Figure 4.3: Breakdown of Small-Scale Farmers' Ages



Most of the respondents in the study have been farming for a long time. Where n=40, 63% had been farming for 10 or more years, 28% had been farming between 5-9 years, and 10% had been farming between 1-4 years. A correlation between the

respondent's age and years of farming experience did not exist. Farmers with very little experience were both young and old. For example, the four respondents who had been farming between 1-4 years were ages 25, 44, 49, and 51, and the 2 youngest respondents (ages 25 and 27) had experience of 1-4 years and 10 or more years, respectively. The low entry barriers into farming most likely encourage people from all ages to participate in the trade, despite their experience or familiarity with the work. Farming knowledge was commonly passed down from generation to generation in a family, where 83% had learned to farm from family members, 15% had learned from other farmers, 10% had learned from the PDA, and 8% had learned in secondary school.

Reasons for the lack of youth participation in the agricultural trade can generally be attributed to a distaste for this type of work or their interest in assuming professions in urban centres. However, out of the 39 respondents that had children and/or grandchildren, 33% said that their children and/or grandchildren were interested in farming, but 10% said their children were too young to be able to tell. Reasons for youth interest and disinterest in agriculture are listed in Table 4.2.

Table 4.2: Youth (Dis)interest in Agriculture

Interest 33% (n=33)		**Disinterest 55% (n=22)**	
To Secure Household Food Security	20%	Would Rather Work in the City	50%
To Secure Household + Local Food Security	14%	Would Rather Work in a Different Field/Occupation	50%
To Work with the Land + Environment	5%	Believe that Farming is not a Good Profession	18%
To Work Independently	5%	Believe that Farming is Boring	4%
		Would Rather Work Independently from the Family Farming Business	4%

*(n=39 respondents who had children or grandchildren)
*Questions allowed for multiple responses, where a number of respondents agreed that there were reasons for both youth interest as well as disinterest.

The general dislike of farming and lack of participation from the research site's youth potentially indicates that the average farmer age will not decrease in the future. However, where n=40, 40% said that they wished for their children and/or grandchildren to work in a field related to farming in the future, meaning that respondents hope that farming becomes a successful and sustainable occupation in the area and for the trade to perhaps remain embedded in the community's culture. 46% said that they wish their children and/or grandchildren to work in a field unrelated to farming. These respondents believed that farming would become nearly impossible to practice in the future, given the variable climate, lack of state support and lack of access into markets for small-scale farmers.

Almost half of the respondents (49%) believed that financial security is the most important factor in their children and/or grandchildren's future, while 18% believed in education, and another 18% believed in food security as the most important aspect of their children and/or grandchildren's future. Whether each of these aspects is perceived to be achievable through agriculture is uncertain, especially since farming tends to be an activity assumed later on in life.

In the research site, new entrants into the farming profession tended to be older, indicating that farming may be a coping strategy for those entering a later stage in their life cycle. This is especially common since older respondents had a greater number of dependents than younger respondents. In fact, where n=40, 43% of respondents claimed 5 or more dependents on their income. It was not uncommon to find households that included at least three generations of family members ranging from grandparents, parents, children, step-children, and grandchildren, all living under one roof, thus, the average household size was quite large. Where n=40 households, 25% included 8 or more members, and 48% included between 5 to 7 members.

Despite the large household sizes, in most cases, households relied on only one or two incomes. These incomes were usually derived from the parents, and included at least one farming income. Disregarding grant or pension income (n= 40 respondents), 53% were members of dual-income households, and 28% were members of single-income households, where at least one income was derived from farming revenue. While incomes are generally low across the sample of respondents, larger households had a more intense issue of ensuring household food security. Out of the 10 households that included 8 or more members, 80% said that food security was a household issue, and stated problems in harvesting enough food for their large families.

Social Assistance

Evidence in the research site has shown that household income is highly reliant on grant or pension income. Where n=40 households, 83% collected some form of social assistance including child grants, old age, disability or sick pension. Most respondents were far more reliant on social assistance than farming income, stating issues of household food insecurity when grants or pensions were not collected. In certain cases, respondents described problems in collecting eligible child grants if the child's parent collected the grants and did not give the funds to the household. These respondents would be more reliant on farming income, since it was a method to stay at home and take care of the children and/or grandchildren, while making an income.

Fifty-five percent of households collected old age pensions, where 20 households collected one pension per household, and 2 households collected 2 pensions per household. Another 55% households collected child grants, but households generally collected a higher number of child grants than old age pensions per household. 30% of households collected 1 child grant per household, 13% of households collected 2 child grants per household, and another 13% of households collected 3 child grants per household. 30% of households collected both child grants and old age pensions, demonstrating the various age groups found in one household. There was no clear correlation between the number of incomes and the number of grants or pensions a household collected per month. If a household included a high number of income earners, it is still likely that it collected social assistance. Out of the 7 households that did not collect any grants, 6 were dual-income households. Where n=40 respondents, 53% came from dual-income households, 28% came from single-income households, and 18% came from triple-income households.

Given that incomes are low, reliance on government assistance to fund and support agricultural activity as well as household needs becomes essential to improve livelihoods.

The previous chapter outlined the various development strategies used to alleviate food insecurity and improve smallholder production in the South African countryside. The semi-structured interviews revealed that respondents were rarely familiar with the various agricultural and food security programmes, although in discussion, it was clear that some of them had received benefits from certain programmes. For example, one agricultural cooperative had received fencing from the local government, two farmers had been offered land from the government (although they did not accept it), and many of the farmers had received training related to climate adaptation or planting from an agronomist sent by the PDA. These services may have been granted through the Farmer Support Group progamme, which aims to provide extension, input support and training to farmers; the National Land Care programme, which provides water, soil and veld care training; CASP, which provides agricultural support to beneficiaries of the land reform and agrarian reform programme; or LRAD, which transfers agricultural land to improve people's access to tribal land.

Table 4.3 lists small-scale farmer's perceptions and descriptions of government support for agriculture. The testimonials demonstrate that farmers receive some government support, although they are not familiar with the specific programmes in which these services fall under. Due to this unfamiliarity of state programming, and despite the reliance on social assistance, it is not surprising that 55% of the study's respondents (n=40) believed that the government did not improve their livelihoods, and only 35% believed that government support improved their livelihoods.

Table 4.3 Government Support Among Small-Scale Farmers

Farmer, Date	***Testimonial***
Mrs. Ntombela, December 2009	"The Department of Agriculture is teaching us how to get dung from Duflin, it's free. The Parks Department goes and picks it up and brings it back for us."
Mrs. Ngcobo, December 2009	"Farming is better now because we have treatments for soil and grants from the government. We get seeds from the Department of Agriculture."
Ms. Buthelezi, December 2009	"The government does not know what people want, the government does not come to the communities, and do not do enough."
Mr. Zulu, December 2009	"The government does not help, but this year the government started to give us seeds. We need support from the government because we spend R4,500 per month ($642) just on our pigs."

Respondents were asked where the government should lend its services. The question allowed for multiple responses, where opinions split between improving access to water (53%), or land (15%), or agricultural inputs (15%), or education (13%), as well as providing skills training to enter other trades (15%). Generally, the majority of the opinions related to improving farming productivity, this demonstrates a strong commitment to farming rather than ambitions to join different types of employment. Yet, 50% of the respondents believed that new businesses and opportunities in areas other than agriculture

were important for the community's future, and only 25% of the respondents believed that farming was important for the community's future.

Livelihood Diversity and Income strategies

Agrarian households oftentimes assemble their income through a variety of income strategies in order to secure their livelihoods. Given the seasonality of farming, the diversity of income activities becomes vital to a household's survival. Popular occupations in the respondents' households included being a driver, domestic worker, beautician, factory worker, or traditional healer. The most common occupations aside from farming included construction work (in 4 households) and cleaners (in 7 households). Livelihood testimonials for a selection of small-scale farmers are listed in Table 4.4.

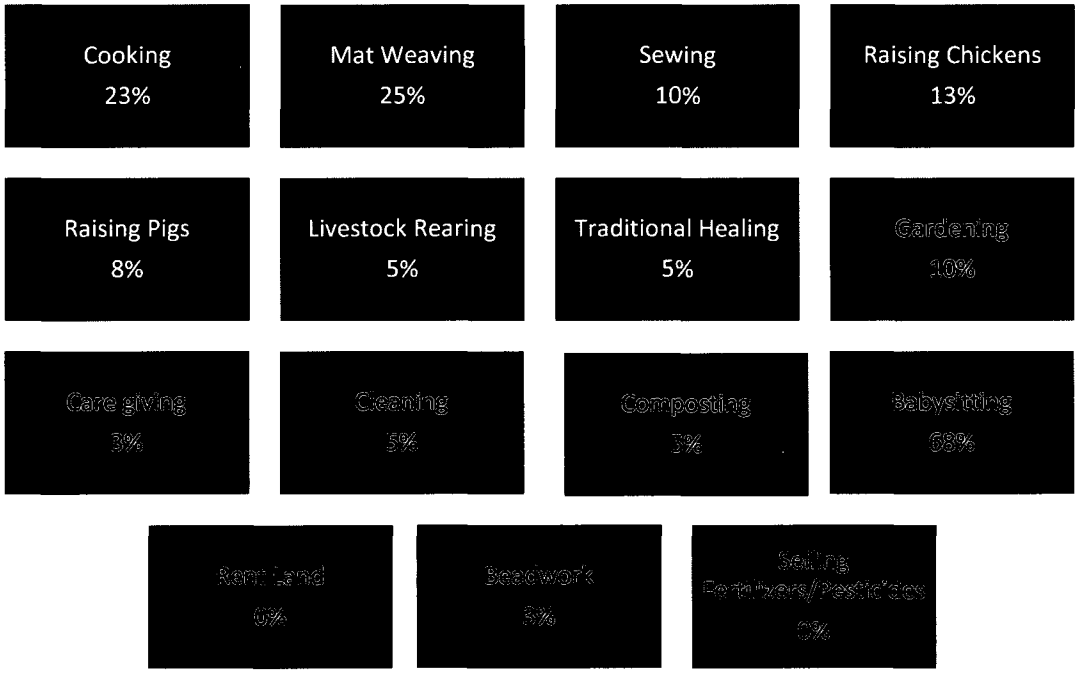
Table 4.4: Livelihood Diversification and Peri-Urban, Small-Scale Farmers

Farmer, Date	*Testimonial*
Mrs. Ntombela, December 2009	"I live with my two grandchildren, but no one works. I'm supposed to be getting [child] grants because I am living with the grandchildren and sister's grandchildren, but the boyfriend gets the grant and doesn't share all of it. 100% of my income comes from farming. I do not have markets, but I sell to people in the community. Food security is a problem, I come to the garden to try and find wild herbs to make Zulu mats – it is a good business. I have chickens and pigs, but my pigs died because of the harsh rains, and I am not selling too much chicken. I contract out land, but I do not charge for it."
Ms. Dlamini, November 2009	"I began farming because I [produced] fresh vegetables, and when I had good crops, I could get good money to buy meat. But, I farm to eat, because even if I sell [my produce], I don't make enough money. I also sew dresses, which does not really make any income, but on a weekend I can sew one dress if there is business."
Mrs. Mzobe, December 2009	"I moved [to this area] because I wanted a change, and this area is closer to Durban and most of the time I worked in Durban. I used to work in a restaurant in Phoenix, but I was laid off. I've been farming since 1994. I used to do chicken farming, but because their food costs a lot of money, I stopped. I would leave farming, but I need the money."

The research site is located within a tribal ward, governed by traditional authorities, where Zulu customs and practices are still very much embedded into the culture. Thus, the study expected that the majority of respondents would practice Zulu crafts and traditions, such as beadwork, weaving, sewing, and traditional healing, yet a very few participated in these activities. A higher number of households participating in mat weaving and beading activities may have been found had the art of making these cultural artefacts not been lost between family generations. Some respondents who were new members to the community knew how to make Zulu mats and jewellery, but had left the equipment to make these pieces at their old residences.

Common activities in the site included mat weaving, cooking, gardening, and raising chickens. Despite the range of livelihood activities found within the research area, a limited number of activities were found per household, and an even fewer number of activities generated any income. Where n=40 households, 8% participated in 4 activities, 18% participated in 3 activities, 33% participated in 2 activities, 33% participated in 1 activity, and 10% did not perform any other income activities asides from farming. Households that did not perform any extra income activities were all dual-income households, and may not feel as vulnerable to food insecurity of livelihood sustainability. Two out of the 3 households that performed 4 activities were single-income households, thus, a higher number of activities are generally found within households that have only a few income earners. However, where n= 40 households, only 15% generated income from these activities, and 50% did not. Furthermore, off season occupations were not assumed by a majority of respondents. Only one participant worked as a municipal worker in farming's off season; thus, the diversification of income generating activities is seldom and limited in the area, causing household vulnerability to income and food shocks and shortages. A breakdown of the number of household strategies is listed in Table 4.5.

Table 4.5: Livelihood and Income Strategies



*Activities that generate income are listed in white; those that do not are listed in black
*Questions allowed for multiple responses

Prior to farming, the majority of the respondents worked in other fields, but where n=40 respondents, 15% were previously unemployed and only 8% had always been farmers. The most common occupations prior to farming included domestic work (23%) and municipal employment (13%). Other occupations included gardening, teaching, cleaning, construction and serving. The main ambitions for entering farming occupations surveyed in the study included securing household financial needs (30%), satisfying a desire to farm (28%), anticipating more revenue in farming operations (25%), securing household food

requirements (23%), needing to find employment after losing a job (20%), and leaving previous employment due to feelings of dissatisfaction (15%). Some respondents mentioned that had only become 'serious' about farming after they had retired or had been laid off, thus, demonstrating that farming activities are a coping strategy for households who do not earn steady wages.

Access to Markets and Food Prices

The recent surge in food prices has created an increased interest in local food production, creating a larger buzz and appreciation for agriculture in KZN. Many farmers, as well as the Inkhosi, are positive that farming can be a lucrative business due to the rising costs in food prices in local markets. A common perception in the research site was that rising prices meant that farmers could sell their produce at a higher price and reel in greater profits. However, very few respondents acknowledged the equal rise in cost of agricultural inputs, such as water, fertilizer, pesticide and seed. This perception could occur due to the fact that most respondents do not purchase their inputs from the market; therefore, are not affected by their increasing prices. Farmers in the research site generally rely on seeds that are saved from previous seasons, and homemade organic pest control measures and organic fertilizers. A cooperative farmer used strategies to treat the soil to repel insects including watering the soil with a mixture of chopped chillies, powdered soap and water, or a mixture of pink flower grinds from the *ubukhwebezane* (lilac) tree with water. Fertilizers included using cow, goat, or chicken dung (Ms. Mfuphi, December, 2009). Manure is sometimes purchased from other farmers, but in many cases, it is donated from neighbours or the state.

For the study's small-scale farmers, accessing larger consumer markets outside of the community is challenging due to a number of barriers. Almost all of the respondents (n=40) sold their produce within the community (93%), which only includes consumers such as neighbours, family or friends. Thirty percent sold their produce to the urban community, which includes the nearby townships, and the outskirts of Durban, such as the suburbs of Phoenix and Hillcrest. These markets were primarily accessed by means of selling produce to traders entering the area, or by farmers searching for traders to transport their goods. Eighteen percent sold their produce in the local markets, which includes the street-side market in the district's main intersection. Only one respondent was able to sell to commercial markets, but this particular respondent was a member in a large cooperative, and was represented by a development donor that mentored the cooperative to make contacts with buyers from large grocery store chains in Durban. Thirteen percent had mentioned that their lack of business contacts in commercial markets hindered their ability to sell their produce. Where n=40 respondents, only 33% accessed more than one type of market. Twenty percent accessed two markets, and 13% accessed three markets. For each of the respondents accessing two or more markets, the community market and urban community market were always counted as accessible channels.

Respondents agreed that the challenges to enter into commercial and urban markets included a lack of transportation to carry goods from the field to the markets. Even commercial farmers claimed challenges, such as the decreased availability of labour and middle-men (traders) due to the impacts of HIV/AIDS (Mr. Govender, November, 2009). Many respondents did not have a car, although some respondents claimed that they could sometimes access urban markets when their neighbours were willing and able to drive them

into town. If respondents did have a car, then car problems or the community's infrastructural deficiencies would hinder their access into urban markets. Where n=40 respondents, 8% claimed that poor infrastructure in the community created an entry barrier to urban and commercial markets. For instance, many respondents would farm on their property or with a cooperative that operated on a field a little farther from the respondent's home. Oftentimes, these locations were only accessible by foot on narrow, bushy and rocky dirt trails. Thus, cars or trucks could not access these locations and it would be difficult for farmers to transport a large amount of produce to any form of transport. One academic concurred that infrastructural deficiencies lowers rural residents' economic activity and contribution to the economy.

Other perceivable challenges to enter commercial and urban markets (n= 40 respondents) included not producing a sufficient amount of produce to meet the demands of a larger market (23%). 13% of respondents claimed that their age decreased their ability to efficiently produce and sell their produce in all the markets asides from within the community, and 10% stated the same problems due to an illness or disability rather than age. 8% claimed that they could not hire labour to help increase their produce and therefore sell to larger markets, another 8% claimed that they could not meet the timing of orders made by large commercial buyers, and 3% said that farmers could not competitively price their goods to attract buyers from larger markets. In general, most respondents claimed that there were not enough markets to sell their produce to, and equally not enough consumers in the community or local markets. One academic agreed that community residents do not have ample discretionary income to support one another's entrepreneurial efforts by purchasing goods and services, which is why it is especially hard to successfully run a business in rural areas. Challenges to accessing markets are summarized in Figure 4.4.

Figure 4.4: Challenges to Access Markets

Respondents were found to rarely farm on their own, oftentimes, they partnered with family members, neighbours or friends in order to share the workload or combine land holdings. Where n=40 respondents, 48% farmed with 1 to 2 other farmers, 18% farmed with 3 to 5 other farmers, and 35% farmed with 10 or more other farmers. The partnerships that included 10 or more farmers were cooperatives, and are eligible for certain state grants and subsidies as outlined in the previous chapter.

A few respondents were members of a particular organic farming cooperative that functioned under the guidance of a development donor working in the area. 17 members were included in this cooperative, and at the time of the fieldwork, they had just been given a large plot of land from the Inkhosi in order to begin farming and meeting orders for a large grocery chain in Durban. The donor had trained the members in various business functions, such as accounting, marketing and negotiation, while mentoring the group to secure business contacts in Durban, and meet regular orders from grocery chains, such as Pick 'N Pay and Spar. The ultimate goal of this initiative is to steadily increase the number of small-scale and subsistence farmers transitioning to become commercial farmers. While the cooperative's progress was impressive compared to what independent small-scale farmers in the area are able to achieve, the development practitioner responsible for the project in the research site did state issues of working with the cooperative. The prime concern was the farmers' distaste for the amount of work involved in meeting large and consistent orders for grocery chains. Their inability to commit to consistent work threatened their ability to retain business and earn the trust of larger companies. There seemed be a general lack of initiative and leadership, which was also perceived to limit the sustainability of the development practitioner's intervention.

The PDA's cooperative initiative is the one well-known state programme in the area and has inspired new and existing farmers to enter into cooperatives in order to reap the benefits of additional support. Where n=40 respondents, 63% agreed that farmers are eager to join agricultural cooperatives. Reasons for the enthusiasm to join cooperatives include being able to assimilate land resources together and harvest more produce (43%), sharing the workload (20%), and becoming eligible for additional grants and allowances (15%). Other reasons to join cooperatives included having the ability to sell more produce to buyers, to be granted more land from the Municipality or the Inkhosi, and to secure food needs. Despite the popularity of cooperatives in the area, 13 respondents (33%) claimed that farmers were not eager to be members in agricultural cooperatives. Reasons for being reluctant (n=13) included finding the amount of work too stressful (38%), people not having enough assets to begin with in order to successfully initiate a cooperative (33%), people not liking to farm anymore (23%), not being able to commit to the work or responsibility (15%), and finding that too many people will collect the cash grants from the state once the cooperative is formed and then immediately disband (2 people).

Food Security

As discussed in Chapter 3, food insecurity is prevalent in South Africa, and the state has taken the initiative to reduce insecurity through a variety of programmes, some including the invigoration of subsistence and small-scale agriculture. In the research site, where n=40 households, 98% believed that food security is an issue in the community. Reasons for food insecurity in the community varied between households not earning enough money to meet

their food needs (15%) and not producing or harvesting enough food through agriculture (13%), and 10% of households believed food insecurity in the community was attributable to both causes. Other reasons for community food insecurity included poor weather conditions (5%), which could either cause variances in agricultural production or hamper access or transportation to food markets.

The main cause of food insecurity amongst respondents was believed to be the poor variety in diets within the community. Where n=40 households, 72% believed that not enough people had the proper amount of fruits, vegetables and meats in their diet. The range of responses demonstrates the community's sound understanding of the complexities revolving food security, especially seeing as they do not only perceive food security as an issue of income or farming, but also an issue of eating habits and access to a selection of different foods. Through the semi-structured interviews, findings showed that many respondents were especially concerned about the food security of the youth in the community, since this segment of the population was becoming more and more accustomed to eating junk food, such as chips, without assuming a healthy and balanced diet.

At the household level, where n=40 households, 58% believed that food security was an issue in their household, while 42% believed that food security was not an issue. The reasons for food insecurity at the household level also varied amongst respondents. The majority of respondents believed that food insecurity was derived from not earning enough money, while 22% believed that security was at risk due to variable agricultural production, and 9% believed that both these causes were attributable to their household's food insecurity. Thirteen percent believed that insecurity was due to the poor variety of foods in their diets, 4% believed that weather conditions caused food insecurity in the household, and another 4% believed that food security became a problem when pension or grant money was not collected. Reasons for not perceiving food security as a problem in the household included 88% believing that harvesting their own food enabled them to be food secure, and 12% believing that they had enough food and income to secure their households nutritional needs. By comparing the distribution of respondent responses for food security at the household versus the community level, it is apparent that respondents have a higher rate of associating food security with income at the household level than they do at the community level (11 versus 6 households). Yet, respondents believed that harvesting their own produce was equally important in securing food needs at the household and community level.

While exploring the issues of food security, especially the aspect of diet variety, it is important to look at the types of crops that are cultivated in the area and identify whether these food groups have an indirect or direct impact on food security, and whether food insecurity is intensified in different seasons. On average, each household harvested on average 5 crops during the winter season. During the fall/winter (April to August), the main crops that are harvested in each household (n=40) are cabbage, spinach, beetroot, and taro. Other staple crops included: sweet potatoes, maize, carrots, green beans, and butternut squash. Surprisingly, maize was not a main crop for the winter, but this could have been forgotten while listing the array of crops grown per season during the time of the interview. Maize meal is a staple food for most of the South African population all season round. Other crops grown during the winter included green peppers, tomatoes, mangos, onions and eggplant.

During the spring/summer (September to March), the average number of crops grown per household is also five crops. The main crops grown in each household (n=40) include butternut squash, green beans, taro, and maize. Other main crops included: spinach, pumpkins, sweet potatoes, and potatoes. A small production of crops grown during the summer included cabbage, beetroot, tomatoes, sorghum, sugarcane, onions, carrots and cucumbers, as well as certain nuts and herbs. A list of the seasonal crops is detailed in Table 4.6.

The assortment of crops grown in each season demonstrates the high potential for diet variety in the region, yet variety was shown to be a leading concern for food insecurity at the community level. As found earlier, the majority of respondents believe to have ample access to land, and believe that anyone can access farming livelihoods, which increases access to food and food security. However, responses regarding whether or not the weather nurtured farming productivity were almost split between thinking it was good or too unpredictable, therefore, unreliable (18 versus 22 households), indicating a greater likelihood that environmental factors may be hampering food security in the community. Infrastructural barriers in the community may also be limiting a household's physical access to food. Through observation, it was noticeable that many households were not accessible by road; therefore, traveling to food markets may prove to be more difficult for these households.

Table 4.6: Main Crops Grown in Umzinyathi

Top Summer Crops	%	Top Winter Crops	%
Butternut Squash	50	Butternut Squash	25
Green Beans	88	Green Beans	30
Taro	58	Taro	53
Maize	58	Maize	35
Spinach	25	Spinach	63
Sweet Potato	40	Sweet Potato	45
Pumpkin	30	Cabbage	65
Potato	38	Beetroot	60
		Carrot	33

*n=40
*Questions allowed for multiple responses
*Average number of crops grown per season = 5

When asked which season provided the greatest food security, where n=40 households, 63% believed it was the summer season, 12% believed it was the winter season, 25% believed that the summer and winter seasons provided equal food security. Reasons for food security during the summer were split between 68% believing a larger variety of crops could be grown, 20% believing that the weather was better and more reliable, 8% believing that there was ample sources of water during the summer that contributed to high agricultural productivity, and 4% believing that food could be well-preserved during the summer. Reasons for better food security during the winter included reliable and better weather, a better variety of vegetables grown that contribute to good nutrition, and fewer insects that can destroy food crops.

A favourite and common meal in the area consisted of maize meal (also called mielie meal or pap) accompanied by green vegetables, such as cabbage or spinach, but preferably green beans. Since maize and green beans were both main crops grown during the summer, this may be an indication as to why many respondents feel that the summer provides better food security. Generally, food security is most vulnerable during the rainy season. The rainfall season runs between October to March (summer) in KZN. It is interesting that the majority of households considered the summer to be more food secure, since the heavy rains and insects during this season can easily damage crops and decrease the amount of food in the region. Nevertheless, the rain would increase the availability of water in the area, which is normally a scarce resource in South Africa.

Female-headed households are often the most vulnerable to food insecurity. Where n=15 female-headed households, only 4% believed that household food security was not an issue, and 80% believed it was an issue. Reasons for household food insecurity (n=12 female-headed food insecure households), 42% believed it was due to lack of income to satisfy nutritional needs, 33% believed it was an inability to grow enough produce, 8% believed it could be attributed to both these factors, and 17% believed it was a result of a poor diet variety. Out of the 12 female-headed, food insecure households, 75% of the household-heads claimed 5 or more dependants relying on their single income; therefore, income deficiency may play a greater role in increasing food insecurity in female-headed households. With respect to female respondents from male-headed households (n=17), 59% claimed that food security was an issue in the household, and 41% were food secure. 70% of these respondents felt that food insecurity stemmed from their lack of income, even though 60% of them came from dual-income households. The females from male-headed, food secure households attributed their security to their ability to harvest their own produce; however, one respondent claimed that her household earned enough income and harvested enough food to satisfy household requirements. The fact that females from male-headed households claim food insecurity issues due to income deficits may be an indication that they lack control over household spending, choose to purchase non-food items, or simply do not earn enough income.

Climate Perceptions and Adaptation

In the research site, where n=40 respondents, 45% believed that the area's climate is conducive to farming, but 55% believed the climate had become too unpredictable. In fact, during the summer (when the fieldwork took place), the region had received strong and frequent rains, and even hail, which had destroyed many crops. Respondents suggested that weird and unpredictable weather patterns in different seasons had shifted the timing of when crops could be harvested. Testimonials of climate variability are listed in Table 4.7.

As a result of climate variability, many farmers felt as though they could not plant anything in the ground without assuming a great risk. Ninety-three percent believed that the timing of when particular crops were traditionally grown had changed over the past decade, and as a result, 60% claimed that their production yields had gradually decreased over the past decade. Thus, 68% found that it had become harder to farm successfully in the area, but 18% found that there had been no change and 15% found that it had not become harder to farm. Due to the variable climate, the few farmers that had received training from the

agronomist sent by the PDA, found the training very useful, and hoped that they would receive more frequent and periodic training in the future.

Table 4.7: Climate Variability Impacts on Small-Scale Farmers

Farmer, date	*Testimonials*
Mr. Shange, November, 2009	"You know when to begin harvesting a fruit, but you will never know when [the harvest] will end..."mangos are grown in the summer and should finish harvesting between November and January, but now they [can be cultivated until] April"
Mr. Zanele, October, 2009	"Planting sugarcane is now complicated because it used to be planted September or October, because 15 years ago September rains were short but now they drag on for one and a half months." "The climate has increased in the past five years, maybe a 2 or 3 degree increase during the winter months, and the area has witnessed a lot of pollution, requiring a lot more herbicides for crops."
Mr. Sithole, December, 2009	"You can see a definite change. Vegetable yields have dropped, may be because of pollution, global warming, and soils may be exhausted."
Ms. Sithole October, 2009	"[The climate is] good, except it rains a lot at once, ruins crops, and then it gets very hot and doesn't for awhile...so it is not consistent weather."

Adapting to changing environments is a challenge, especially if there are barriers to accessing proper agricultural inputs, and if the availability of these inputs is furthermore dependent on climate conditions. For instance, water scarcity is a major issue in South Africa, and water has become a costly luxury in many households. Rural and even peri-urban areas will have greater restrictions in accessing water than urban areas if proper infrastructure is not set in place. Currently, the community is largely dependent on tankers from the government to deliver water, as well as the river and rainwater. In the research site, where n=40 households, 93% sourced their water for their crops from nearby rivers, streams and lakes, 23% collected rainwater, and 18% utilized a garden water tank.

Access to water seemed to be a priority for many households. Ninety-three percent claimed they needed an increased amount of water to water their crops than in the past, and 53% believed that government support should be given in terms of increasing their access to water. However, only 5% identified improved water rights as an important aspect for the community's future. The number of water sources accessed per household was low, and it was apparent that water conservation techniques were not well known. This trend was also supported by the observations of one the study's academics who researches in the area as well as neighbouring regions. Thirty-three percent sourced water from two resources and the remaining households collected their water from one source. Only a few respondents owned large enough containers to be able to collect sufficient amounts of rainwater to irrigate their

crops, and none of the respondents listed any other methods to conserve their existing water supplies.

Given the water scarcity pandemic impacting the rest of the country, the research site's location may be an exception to the outcry given its proximity to the Inanda dam. Where n=40 respondents, 68% claimed that the dam had increased the local supply of water. Before the dam was constructed, residents would have to travel a great distance to collect water, and after the dam's construction, respondents claimed that puddles had turned into creeks, and streams had turned into small rivers. These water pathways intersect different properties and farmer's fields, and therefore, increasing residents' access to this vital resource. Nevertheless, the increased access to water has certain fallbacks as well. Both commercial farmers that were surveyed in the study said that the construction of the dam had changed the weather conditions and vegetation in the region. Prior to the construction of the dam, the area was very dry and conducive to planting certain crops. However, after the dam's construction, the area became greener, moister, and less favourable to growing those crops that require a drier climate.

Due to the immense protest to the increasing costs of water in nearby Durban, the survey expected to find a greater concern for water shortages and water costs, especially within agrarian households. However, since many access their land through the Inkhosi, and not through the Municipality, the majority of houses are not installed with municipal water infrastructure, such as pipes and water metres. Thus, water is free for many of the study's respondents for the time being. Higher and drier temperatures threaten water sources, and increasing urbanization could also improve infrastructure, requiring residents to begin paying for water.

Land degradation and soil erosion issues were mentioned by many respondents during semi-structured interviews. Finding arable land in the area is difficult. Two respondents noted that they had been offered undeveloped land through the Land Restitution Programme, but this land was based on a hillside with degraded soils and would be too difficult to prepare for agricultural activity. The lack of arable land was attributed to community and household food insecurity, and a lack of produce to sell in the market. The main reason for soil infertility was blamed on the need to consistently harvest the land for their livelihoods. A farmer had mentioned his disinterest to join an agricultural cooperative and frustration of working with other farmers who do not share his vision for land preparation activities, stating that "farmers are too focussed on profits rather than looking after the soil fertility before growing crops...they do not have the same vision or potential for farming, so it is difficult to work together" (Mr. Khuzwayo, October, 2009). Many farmers complained of the soil being dry, and having a sandy texture. Without ample water, this type of soil is uneasily ploughed and harvested; requiring much more labour than what is affordable (ex. hiring someone to plough the land, renting a tractor) or available (ex. family labour) by many households.

Conclusion

The livelihoods survey revealed a number of trends regarding land tenure arrangements, farmer and household characteristics, occupations and livelihood diversification, access to markets, food security, and climate perceptions in the study site.

Generally, some trends demonstrated advantages for food security and sustainable small-scale agriculture, and supported the findings in the literature. For example, increased access to land in communal areas provides many land-based activities for households to engage in, however, the communal nature of the land also restricts participation in certain coping strategies – such as renting or selling land. The literature shows that urbanization influences consumption patterns and transforms rural spaces, but its impacts on small-scale agriculture are rarely discussed. Urbanization can increase the demand and cost for land, causing land shortages and land degradation.

Farmer's ages are rising in Umzinyathi, although the literature showed that small-scale farmers were young in South Africa. Generally, there is a lack of youth participation, where a majority of young peri-urban dwellers have a poor perception of farming and wish to assume trades outside of agriculture. Findings that women were the main participants in agriculture also supported the findings in the literature. Trends, such as a high reliance on social assistance, matched the findings found in the literature. There is a higher reliance on non-farm income in the research site, especially on Old Age pensions and Child grants. Issues of food security would often increase when such grants were not collected, demonstrating the importance of social safety nets in improving food security.

Livelihood diversification in the research site did not match the trends found in the literature. Livelihood diversification is increasing across the Rural South where households assume various income strategies and occupations. Despite having access to ample land, livelihood activities are limited in the research site. Furthermore, avenues into other sectors of the economy, whether they are found in the urban or peri-urban centres, are limited. Smallholder access into multiple consumer markets is also restricted. Basically, the majority of farmers sell within their community, which is a small market with very few consumers. Challenges to accessing markets also include lack of transportation, poor infrastructure, illness/disability, low or inconsistent production levels, poor access to agricultural inputs, and an inability to compete with large commercial operations.

Food security is an issue within the community, and for many households. Generally, the agrarian households produce a variety of crops per season, which does not necessarily increase the household's diet variety or level of consumption. Because food security is highly reliant on the collection of social grants, the findings suggest that social assistance may be more valuable to improving household food security than agriculture itself. While the increased access to land in communal areas supports land-based activities, and offers even the most resource-poor households a means to a living, climate variability, decreased family labour (due to a lack of youth participation in farming), poor state presence and programming in the area, and restricted access into markets, leave smallholders extremely limited in terms of their agricultural production and entrepreneurial growth. Furthermore, population growth factors suggest that resource-poor households in the community will have decreased access to land and other agricultural inputs that rely on the local natural resource base. This in turn will negatively impact food security at the household and community level.

The next chapter will combine the literature and livelihood survey results to explore how rural to urban transitions are playing a large role in contributing to cycles of marginalization and degradation in the research site. Themes of marginalization and

degradation can be related to the degradation of the natural resource base, the disintegration and marginalization of tribal authorities, and the marginalization of livelihoods through diminishing numbers of economic opportunities. This in turn has tremendous impacts on the feasibility of small-scale farming to improve food security, peri-urban livelihoods, and inspire economic development within Umzinyathi.

Chapter 5: Deepened Cycles of Degradation and Marginalization in KwaZulu-Natal

Using a hoe, a farmer ridges her cropland for planting.

Chapter 5: Deepened Cycles of Degradation and Marginalization in KwaZulu-Natal

Introduction

The previous chapter revealed the results of the livelihoods survey, which described trends relating to land tenure arrangements, farmer and household characteristics, occupations and livelihood diversification, access to markets, food security, and climate perceptions in the study site. From the findings of the investigation, it is clear that there are certain perceptions of positive and negative pressures that are shaping the role that small-scale agriculture can assume in improving livelihoods, food security and development in KZN. The interplay of these factors determines whether state and development support to re-invigorate farming and to improve food security is feasible, reasonable, and relevant to the current trends occurring on the ground.

This chapter aims to satisfy the second objective of the thesis: to analyze the effects of rural-urban transitions on small-scale farmers in Umzinyathi, KZN using a political ecology framework, with an emphasis on themes of marginalization and degradation. The chapter begins with an exploration into livelihood diversification in small-scale farming households. The chapter then continues with an analysis of the impacts of population growth in Umzinyathi as a result of urbanization and in-migration. The chapter then finishes with an analysis of the increased integration between rural and urban spaces, which impact smallholder access to markets, labour and inputs.

In-Migration and Urbanization

The road to opportunity is attracting rural people from the interior of KZN to peri-urban areas that sit at the edge of the metropolis, secondary cities or small towns (Mbhele, 1998). Poor rural people, and sometimes those who are better off, will move to areas as 'in-migrants' where one of more factors - ease of living, flexibility, and economic opportunities, are an improvement on their current place of resident (Mbhele, 1998: 670). The "poverty route" can also perpetuate by crisis situations (Mbhele, 1998: 669). For instance, respondents that were in-migrants to the community claimed they had come to Umzinyathi due to family conflict, a death in the family, farm evictions, illness, and other emergencies in the former homestead. In these situations, in-migrants will generally migrate to other undesirable and ecologically degraded and marginal areas (Mbhele, 1998).

To this extent, in-migrants in Umzinyathi complained of having to forfeit livelihood strategies they had assumed in their previous homestead, and described a decreased quality of life in Umzinyathi despite its proximity to economic opportunities and services in Durban. They described their previous farms as perceivably larger, more fertile and able to produce higher yields of produce. In communal areas, access to resources is oftentimes "based on good connections with the tribal authority" (Mbhele, 1998: 674), where livelihood strategies are secured through fostered social networks (Marschke, 2005). Thus, following Blaikie and Brookfield's concept of marginalization, in-migrants could be considered socially marginalized groups pushed into ecologically marginal spaces (small and degraded plots of

land) and economically marginalized (vulnerable to food insecurity, and often forced into low-wage labour, such as farm labour for commercial or other small-scale farmers) social positions, resulting in their increasing demands on the increasingly limited productivity of degraded soils.

Because Umzinyathi is a destination that draws in-migrants from all areas (both urban and rural) of KZN, "unplanned and uncontrolled in-migration is likely to overwhelm" the region, and instability could lead to the degradation or scarcity of natural resources (Mbhele, 1998: 676). Homer-Dixon (1998) argues that population growth increases environmental scarcity leading to the 'elites' in society capturing environmental resources to a disproportionate degree that causes the ecological marginalization of the 'non-elite'. This cycle of capture and marginalization could potentially lead to institutional incapacity (Homer-Dixon, 1998). Umzinyathi attracts both rural and urban migrants, each of which assume different roles in Homer-Dixon's argument, and place different strains on environmental resources.

Rural in-migrants generally arrive to the area and have "multi-spatial livelihood strategies" (Johnson and Start, 2004: 2) that aim to leverage both urban economic opportunities as well as agricultural activities. Their increased migration into Umzinyathi and participation in agricultural activities place a strain on local renewable resources leading to the environmental scarcity of croplands, forests and fresh water. As population pressure increases, the stress on the natural environment leads to its collapse and results in the loss of many benefits to the entire community. Water shortages restrict the possibility of intensified agricultural production, deforestation limits the supply of local building materials and firewood; thus, the scarcity and degradation of these inputs could also limit a household's pathway into various livelihood strategies, including small-scale agriculture. Furthermore, for poor households who do not purchase food in the market but instead rely on their own household production, environmental scarcity may significantly increase their vulnerability to food insecurity.

In contrast to rural in-migrants, urban in-migrants oftentimes seek residence in Umzinyathi as a quiet refuge and as a final destination. Some of these residents are originally from the area, having spent their career in the urban centres of Durban, Johannesburg or Pietermaritzburg. With additional income, urban migrants return to Umzinyathi willing to invest in residential property. Thus, new sub-divisions of homes in Umzinyathi are placing a greater demand and competition for land for residential rather than agricultural purposes. Umzinyathi has some areas that have relatively well-developed housing infrastructure, and some houses showing considerable investment (ex. gated brick houses with glass windows, etc.). Such investment signals that residents consider the area to be a final destination, and this "type of investment also points to institutional and tenure security" (Mbhele, 1998: 671-672) and the existence of such monetary means to achieve these gains. This process illustrates how urban migrants (who can be considered the elites in society in Homer-Dixon's (1998) argument) can capture environmental resources to a disproportionate degree that causes the ecological marginalization of small-scale farmers, including in-migrant small-scale farmers (considered as the non-elite in Homer-Dixon's argument). This in turns decreases smallholder production, threatening the increase of community and household food insecurity in the area.

Cycles of capture and marginalization can lead to institutional incapacity. Presently, land is allocated by the tribal authority. There are advantages and disadvantages of tribal authorities governing land allocation and tracts in Umzinyathi. However, one downfall is that population growth may undermine their capacity to manage an expanding economy. For instance, current land tract transfers between individuals are accepted and tracked through simple written notes to the Inkhosi notifying him of the transaction. These systems cannot sufficiently manage and oversee resource allocation in a growing economy, thus, government intervention may aim to formalize the distribution of natural resources by means of land tenure security measures and the introduction of land codes. The implementation of these measures and increased presence of the state in the area may lead to the disintegration of traditional structures of authority. Because traditional authorities play a large role in diminishing the exclusion of resource-poor households to access affordable and adequate natural resources (some households still have limited access to land from tribal authorities), their potential disintegration poses many threats to the sustainability of small-scale agriculture and food security in Umzinyathi.

In the current context, many resource-poor households have at least some form of land tenure to perform land-based activities. In the presence of high unemployment and a limited number of economic and livelihood opportunities, the value of land increases tremendously because it is a means to ensure some income and some food security for the household. Furthermore, receiving land from the tribal authority rather than the Municipality allows households to avoid paying taxes to the Municipality. But in-migrants who can afford land resources from the state (ex. urban migrants) will continue to migrate to the area, potentially pushing disempowered groups into either smaller plots of land or degraded land. This dynamic may lead to unequal resource distribution and the exclusion of marginalized groups from economic opportunities.

There are advantages for resource-poor households to pay taxes to the Municipality. While they do receive many benefits from the governance of tribal authorities, paying taxes would contribute to improvements in local infrastructure. Poor infrastructure can be linked to farming issues such as lack of finance, poor soil, shortages of water and difficulties with marketing. As the study's respondents claimed, meagre roads and infrastructure limited their access to collect water from the dam and to obtain fertilizers and agricultural inputs from nearby towns or neighbours. Poor access to agricultural inputs may limit smallholder's ability to intensify agricultural productivity. Poor infrastructure also limits small-scale farmers' access into the markets, excluding them from employment or other economic opportunities, potentially contributing to further impoverishment and marginalization.

Thus, improved infrastructure has the benefits of increasing farmers' access to natural resources, and their mobility to participate in additional markets, rather than to rely upon small, community markets. As many of the respondents did not have reliable transportation (either they did not have a car, or had car problems, or had to rely on their neighbour's car), improved infrastructure increases the presence of traders entering into the community and transporting farmers' produce to various markets in urban centres and suburbs. Thus far, only a few respondents were able to sell their produce to traders because their fields were not located off the main road in Umzinyathi. Furthermore, one respondent explained that farmers need to actively search for traders in town (Durban) because they do

not enter Umzinyathi. This system of having to recruit traders into the area makes it necessary for farmers' mobility to increase. If farmers are able to sustain their production, then they will enjoy improved sales to traders. Because many households rely on income to improve household food security, additional smallholder revenue may have a direct impact on escalating food security in the community.

Improved local infrastructure holds many benefits to the sustainability of agricultural endeavours, yet despite Umzinyathi's population growth and increasing structural developments, it suffers from the slow delivery of basic needs infrastructure. Population growth matched with poor infrastructure may have dire effects on the well-being of the community. "When dealing with settlement patterns and access to infrastructure and services, it is important that they are developed concurrently so as to...allow people to develop their skills and talents, so to create their own livelihood" (Mbhele, 1998: 670). Mbhele argues that when one or more factors are lacking between infrastructure and services in an area, people will move on because their ability to secure a livelihood is hindered.

Land Degradation and the Sustainability of Agricultural Strategies

Livelihood strategies become sustainable when they can "cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base" (Chambers and Conway, 1992). Agricultural livelihoods in Umzinyathi confront numerous climate stresses and shocks that can severely undermine their ability to sustain, let alone intensify, agricultural activity. Past apartheid policies pushed marginalized groups into marginal and ecologically degraded areas in the former homelands. Out of the ten former homelands, KZN has the most degraded and mountainous land, highly susceptible to soil erosion, and only a small portion of it suitable for agricultural activity (MacSwain, 2009; Meadows, 2002). While poor climate and natural resource conditions at the provincial level cannot undoubtedly explain conditions at any given locality, farmers in Umzinyathi are challenged by historical disadvantages of harvesting crops on steeping slopes that are susceptible to soil erosion, and must rely on limited family labour to combat these conditions.

Without intense agricultural inputs, such as herbicides and pesticides, farmers are often at risk of losing their agricultural investments. Due their reliance on agricultural as a source of income, farmers are forced to cultivate the land every season. This process may result in environmental degradation causing a "reduced production of crops per unit of land and labour as a result of decreased soil potential arising from over-cropping and reduced fallow" (Robbins, 2004: 91), and a decrease in the area's productivity and usefulness (Johnson and Lewis, 1995: 2). Land degradation cannot be blamed entirely on the unsustainable practices of small-scale farmers. It should be noted that tribal authority land management policies require communal households to cultivate their land on a continuous basis in order to maintain their rights to the resource. These policies could inherently cause environmental destruction by increasing land degradation over time. This cycle of degradation poses severe livelihood risks to a small-scale farmer's household rather than the authorities who enforce these destructive practices (Robbins, 2004).

KZN has an unpredictable and volatile climate. The study asked questions to farmers designed to get a sense of their perceptions of the long-term climate change. Most farmers

commented that farming no longer produces the same results with the same inputs. One of the study's small-scale farmers claimed that "you cannot plant anything in the ground anymore without assuming great risk" (Mr. Khuzwayo, November 2009). During the fieldwork, the area experienced hail storms in the middle of the summer season, furthermore, September rains are usually short, but in 2009, the area experienced hard rains until the end of November. These harsh conditions destroyed many staple crops, such as spinach and cabbage. For many of the study's farmers, the destruction of crops meant that they had nothing to sell in the market, and had to rely on grants and pensions for food and other expenses. Despite the volatile climate, and poor conditions of the local natural resources, the residents maintain that Umzinyathi's climate fosters agricultural activity.

Residents used a very limited number of adaptation strategies to climate variability. The most common strategies included experimenting with planting dates, using additional fertilizer (cow dung), and using different crops or crop varieties, although a few farmers were adamantly against using GM varieties. Water conservation techniques never came into discussion, and only a handful of farmers used rain harvesting mechanisms. Furthermore, most farmers did not plough their fields, or use livestock for ploughing. Across all the farmers, their access to technologies, equipment, and information was extremely limited, contributing to unsustainable management practices, degradation of the natural resource base and their social marginalization.

Bryan et al. (2009) argue that factors influencing farmers' decisions to adapt to climate change include wealth, government farm support, and access to fertile land and credit in South Africa. However, within these categories, small-scale farmers in Umzinyathi have limited access to these resources because of their marginal socio-economic position in society. For instance, government support (as outlined in the policy framework in Chapter 3), requires a farmer to show their 'seriousness' of farming through their own personal investment, of which resource-poor farmers cannot afford. Certain government programmes also require consent from the tribal authority, and for applicants such as in-migrants who have poor access to the Inkhosi, the requirement of consent may confine their ability to be eligible for state support. Access to credit is limited to resource-poor farmers because of their lack of collateral. The communal nature of land in Umzinyathi inhibits private ownership of land, thus, hampering a farmer's ability to use land – their main asset, as collateral to access credit. Therefore, the institutional policies at the local (tribal authority) and national (the state) level aimed at improving the access to resources to sustain agricultural activities can oftentimes exclude the resource-poor households they aim to benefit. This process ultimately increases poor households' impoverishment and the degradation of the natural resource base in which they rely upon.

Access to Markets

Small-scale farmers face many challenges in the marketplace. Poor access to agricultural inputs and resources hinders smallholders' ability to offer the diverse variety, high quality, large quantity or low competitive pricing that commercial farmers can offer to large retailers and consumer markets. Supermarkets also compete with smallholders in terms of market share. Their monopolistic role in the food retailing sector has allowed them to expand their consumer base into rural and urban outskirts. Thus, small-scale farmers have a limited number of viable market channels to access, and within those markets, there is a

limited number of customers to sell to. Supermarkets play a powerful role in enforcing international standards on suppliers, and abide by procedures that reduce their transaction costs. These two mechanisms can effectively exclude smallholder participation from lucrative economic opportunities.

New developments as a result of increasing urbanization may have both positive and negative side effects for small-scale farmers and residents in Umzinyathi. One positive aspect of urbanization for small-scale farmers is its ability to bring new consumers into the area, and increase the size of the markets in which small-scale farmers can access. However, urbanization and increased integration with the local economy can also destruct existing consumer markets that are accessible to small-scale farmers. The elimination of these local markets can eliminate economic opportunities for small-scale farmers, pushing them into economically marginalized social positions. For example, a new commercial shopping complex constructed just outside of the district includes a large Shoprite grocery store. The complex is being constructed adjacent to a township market, but according to one of the study's respondents, once its construction is completed, vendors will be forced to relocate. Only some of the study's respondents sold their produce in this local market, but the removal of this marketplace combined with the presence of a large grocery store may mean fewer marketing channels to access, and increased competition for small-scale farmers in the research site. Similarly, Durban is the closest accessible market in which the farmers from the research site may access, and it has its own National Fresh Produce Market situated in Warwick junction located near the downtown centre. A large number of small traders, both Indian and African, participate in the Warwick Early Morning Market; however, this market is set to reduce its number of small trading stalls in order to construct a Warwick Mall development beginning in May 2010. The new trading stalls will formalize the trading system in the area (eThekwini Online, 2009), which may exclude many small traders and impact their suppliers, including smallholder farmers.

Despite the downfalls of new developments, the increasing population in the peri-urban site does signal the opportunity to sell to new consumers, especially if infrastructure (such as proper roads to increase people's mobility to markets) improves. However, as the literature suggests in Chapter 3, trends show that rural households (and in this case, perhaps peri-urban households as well) are purchasing their food in the market rather than cultivating it. Even in agrarian households, monetary means seem more vital to food security than agriculture itself. This is demonstrated by the fact that respondents claimed issues of food insecurity when grants and pensions were not collected. Therefore, a higher reliance on non-farm income and markets to obtain food does signal to the process of deagrarianization that Rigg (2006) and Bryceson (2000) point to. The increased integration with the local economy may diminish the desire for small-scale farmers in Umzinyathi to continue farming if more consumers shop from large grocers instead of smaller, local markets. Furthermore, if the integration into the economy does not produce new economic opportunities to replace agricultural activity, it will lead to increased poverty.

Livelihoods in the Peri-Urban Setting

The urbanization of rural and national economies is a defining feature of the economic development process. Urbanization should increase sectoral diversification (activities that shift away from traditional rural sectors, such as agriculture, to non-traditional

sectors) in rural and national economies; however, occupation shifts are rarely seamless or simple. Individuals do not often follow a straight trajectory of "'peasant farmer' to 'factory worker'", but instead follow a trajectory towards "increasingly diversified and multiple livelihood sources" (Johnson and start, 2004: 4). These new livelihoods are often "stuck between a traditional agricultural peasant society and more commercialized labour markets" that sometimes include non-farm work (Bryceson, 2000; Johnson and Start, 2004: 4).

Despite the increase of urbanization within the national and local economy, small-scale farming households are limited in terms of diversifying their livelihood strategies between urban, rural and peri-urban economic opportunities. Transportation linkages between Umzinyathi and urban centres are weak, and the transportation costs exceed many people's perceived benefits of assuming urban employment. Furthermore, given the high rates of unemployment and the restricted entry into skilled or capitalized activities in the formal sector (Johnson and Start, 2004) many respondents seemed discouraged to find a job (or a new job), thus, looking at agriculture as a main source of income.

These factors limit people's ability to exit land-based activities. Peri-urban non-farm activities, such as beadwork, sewing, and cooking, also do not generate income because of the surrounding context of poverty and debt in the community. Thus, farming strategies become the only viable means to gain a means to a living in this scenario, hence why many respondents continuously expressed the desire to assume farm work as their main source of livelihood. Respondents also had other reasons for assuming self-employed, farm activities. Farming livelihoods include other benefits that are lacking in labour market participation, such as flexibility, home-working (to secure land, and to raise children/grandchildren), ease of living and cultural acceptability (especially by women) (Johnson and Start, 2004; Mbhele, 1998). For respondents responsible for children, grandchildren, and other extended family members, the flexibility of farm work to allow one to manage the household while producing food for its members and potentially contributing to household income, are invaluable characteristics of the trade.

The interest in small-scale farming in the research area also originates in large part from an interest and participation in subsistence agriculture. Many subsistence producers believe that they can become small-scale producers if they harvest successfully, and progressively increase their production. State and development support for agricultural production has fostered the hope and excitement in the community to resume agricultural livelihoods once more. The excitement is not necessarily generated from respondents accepting help through programming interventions, but from 'word-of-mouth' that the state is investing back into the economy in terms of small-scale farming, especially through their support for agricultural cooperatives. However, enthusiasm for agricultural cooperatives was cautioned by some respondents, as some farmers have been exploited either in terms of their labour or income through their participation in the activity.

In an environment of existing poverty, inequality, and debt, agricultural cooperatives have many setbacks and a limited potential to improve livelihoods. For instance, certain respondents referred to issues of cooperatives functioning on the basis of one member stealing or fleeing with the state funding, or having the agricultural work distributed unequally amongst members. The absence of labour-saving capital inputs to help intensify agricultural production makes labour a critical resource (Awanyo, 2009). Despite having

large household sizes (increased availability of potential labour), youth disinterest in agricultural activities left most of the agricultural chores to the elderly. Throughout the study, older farmers would complain that they were too tired to assume the clearing of weeds and bushes, and were unable to mobilize household labour or afford labour to manage agricultural activity. Thus, without proper labour inputs, older farmers cannot intensify their agricultural production, and are marginalized in terms of their labour.

In the case of agricultural cooperatives involving both men and women, it was principally women assuming the brunt of the work. However, they did not participate in the cooperative's decision making processes. Their marginalization in this activity may be explained through "the pervasiveness of patriarchal values rooted in traditional and cultural practices" that subsequently undervalue women's work and neglect their needs (Bob, 2004: 291). In turn, women have limited decision-making power (Bob, 2004). Another setback to cooperative initiatives is that the state's funding is rarely enough to cover the costs of running the cooperative, thus, forcing members to borrow labour, capital and other agricultural inputs in order to effectively operate the business. It is therefore difficult to reap the benefits of cooperatives in a state of inequality and debt, especially if they are to function on the basis of bulk buying, producing, transporting and selling. As Karumbidza (2009) suggests, operating cooperatives in a context of poverty debt only leads to bulk misery and bulk poverty. Thus, state intervention to increase agricultural cooperatives can inadvertently situate some farmers into positions of increased poverty and marginalization.

Regardless, agriculture remains a primary livelihood activity for many households because of the community's increased access to land, the need to secure food in the household and community, and the recent re-invigoration of agricultural productivity by the state. Prior to the state's intensive agricultural programming, many respondents had to assume careers outside of agriculture, mainly in domestic or municipal work. In the context of more people working in non-agricultural trades, the younger generation of rural dwellers did not learn to farm at the same rate their parents did, or develop the same level of 'passion' for the trade. Instead, during this time of deagrarianization and integration into regional economies, other 'modern' forms of livelihoods began to take precedence and become glamorized, explaining the eagerness for the younger generation to enter urban professions, and view farming as a 'peasant' livelihood. However, avenues to enter non-farming trades are limited in the area, forcing young residents to migrate or perhaps assume agricultural occupations.

Although there are a number of livelihood activities taking place in the research site, such as artisanship, cleaning, and care-giving, they rarely generate income or contribute to food security. Furthermore, only two respondents participated in seasonal occupations, and very few respondents were from households where a spouse or other family member had full-time jobs. Economic opportunities do exist in the non-farm, peri-urban economy; ones that could prosper in an agriculturally-driven economy, such as Umzinyathi. Respondents have the skills to operate activities such as a catering, transportation, bakery or restaurant business, but the drive and leadership to leverage these strategies is low. One reason is due to doubt that local investments will return any revenues, but also because livelihood diversification only becomes vital when income is low and desperation exists. Yet the high reliance on social assistance, in the form of grants and pensions, in Umzinyathi help

households cope through economic stresses and shocks (when assistance is received), deterring some households from maximizing their ability to diversify their portfolio of activities. Social assistance allow households to cope with hardship, yet, they can only maintain substandard livelihoods, and create an environment of persistent poverty and marginalization.

Conclusion

There are a multitude of transitions materializing in Umzinyathi, which influence the social, political, economic and environmental dynamic in the area. In particular the research site is undergoing a transition from the rural towards the peri-urban, which impacts the role of traditional and formal structures of authority, access to natural resources, economic opportunities, and livelihood strategies. While the region's integration to local and regional economies can improve peri-urban livelihoods by increasing the availability of non-farm livelihood strategies and improving local infrastructure, it can also threaten to increase existing poverty, marginalization and degradation.

Umzinyathi is one region still highly involved in agricultural activity, despite its peri-urban nature. There are limited avenues to enrol in non-farm activities, thus, households are highly reliant on social safety nets such as grants and pensions. This is turn, may contribute to a decreased need to diversify their livelihood activities beyond farming in order to sustain or ameliorate their household income earnings. A passion and desire to continue to farm exists, and this combined with the state's avid support for agricultural programming, convinces many residents to maintain agricultural livelihoods. Yet, the rates of urbanization may slowly pose significant challenges to maintaining agriculture in the area. New residents and infrastructure may increase the cost of land and water, degrading the natural resource base, and pushing its production levels to the limit. Combined with climate shocks, and the lack of participation in alternate forms of livelihoods, the research site's households are susceptible to be driven into deeper levels of poverty and marginalization. Therefore, it is necessary that peri-urban livelihoods be taken into account in state programming to determine if there are avenues to either maintain and foster agriculture in the area, or inspire other sectors of the economy as well. The following chapter will discuss policy recommendations for the state as well as other actors in order to support the sustainability of small-scale agriculture in the area, but also invigorate peri-urban, non-farm opportunities.

Chapter 6: Policy Uptake and Stimulating Non-Farm Activity in Agriculturally-Driven Areas

Fresh fruits and vegetables being sold in the local market, Inanda, KwaZulu-Natal.

Chapter 6: Policy Uptake and Stimulating Non-Farm Activity in Agriculturally-Driven Areas

Introduction

The post-apartheid government has had to use limited resources to provide services to a much larger group of recipients than what was previously included in their mandate. Given their budget restrictions, and high levels of national poverty and inequality, the task of improving economic development is quite a feat. Regardless, the state has implemented numerous ambitious policies set forth to re-invigorate agriculture and to improve food security by attempting to establish a class of black commercial farmers throughout the country. However, state programming is poorly communicated in Umzinyathi, thus, producing a low number of beneficiaries in the area.

Umzinyathi is a unique area because it is located at the edge of the rural-urban interface, thus, making it an interesting area to inspire agriculture. Its location produces certain dynamics that can limit or foster the ability for agriculture to improve livelihoods and secure food requirements. For example, agricultural development may lead to increased degradation of the natural resource base, and poverty levels of existing marginalized groups. Nevertheless, given the avid interest and tradition in practicing agriculture, it is necessary to not reject agricultural practices from peri-urban areas, but to develop an organized vision as to how agriculture may evolve in these transitioning spaces.

This chapter aims to reflect upon the current policy framework that has been drafted for small-scale farming in South Africa. The study attempts to make a modest contribution to policy by recommending the use of farming associations to communicate agricultural programming, monitor agricultural development, and increase smallholder access into larger markets. The chapter ends with suggestions to inspire the non-farming sector while allowing peri-urban residents to leverage both rural and urban economic opportunities. While it is intended that these suggested policies be managed by the state and possibly implemented by the provincial levels of government (following the mode of governance currently followed with rural development programming), their implementation is not restricted to these actors. The donor community and certain private actors (such as supermarket chains) would also benefit from recognizing or supporting these measures, perhaps on a smaller or local level.

The Current Framework

The current framework, aimed to inspire rural development and agricultural productivity, takes into accounts various aspects of agricultural support, including: the transfer of agricultural land to tribal groups, access to credit, training, irrigation and rainwater harnessing technologies, and food processing technologies. Programming also focuses on enhancing the ownership and exchange entitlement of the poor in the trade of agriculture and food sectors, supporting marketing and business development, improving on-farm and off-farm infrastructure and production inputs, commercializing agriculture to increase income and employment generation among food-insecure households, and

improving intergovernmental cooperation in the agriculture and environment sectors to champion and support agrarian development..

The array of programming policies should effectively address many of the issues explored in this study. For example, access to food processing technologies would increase livelihood diversification, opening up new economic opportunities for agrarian and other households to take part in processing and preserving food. Supporting agricultural marketing and business development would potentially help engage youth into new non-agricultural sectors of the economy, while simultaneously improving small-scale farming initiatives. Infrastructural improvements would improve farmers' access into various markets – local, urban, and commercial, as well as to allow traders and processors to gain access to smaller farms. Improving intergovernmental cooperation would help bridge the efforts between traditional and formal authorities to help streamline the governance over natural resources. Finally, agricultural training would help farmers improve their land care activities, increase production, and help them actively compete against larger farmers.

Given the broad and detailed policy framework, farmers in the research site should be adequately supported, yet the familiarity with state programming and the delivery of services to they study's respondents is low. One way in which policies can be communicated and monitored is through the effective use of intermediaries, which not only include PDA extension officers, but could also include farming associations.

Farming Associations

Farming associations can act as an appropriate implementing agency for state programming in various regions. To differentiate between a farming cooperative and a farming association, a cooperative is an assembly of small-scale farmers working together to meet their mutual economic needs through a joint venture (DoA, n.d.). A farming association is a group that supports farming cooperatives by combining individuals or professionals that can assist farming businesses by offering services such as accounting, bookkeeping, marketing, negotiating, etc. Farming associations can encourage agricultural entrepreneurship and business growth of farming cooperatives or individual farmers within a particular region. It can serve many functions, but during the early stages, it can communicate state programming to eligible beneficiaries, and help foster networks between small-scale farmers and traders, processors, and markets. If state funds permit, farming associations can be employed by the PDA and supervised by the PDA's local extension officer. If not, the farming association can operate on in-kind contributions from its small-scale farmer members, a small levy from small-scale farmers' market sales, or on a volunteer or NGO-based foundation.

Farming associations exist in South Africa, but mainly support large, established commercial farmers and cooperatives. While farming associations supporting small-scale livestock initiatives are currently being established or proposed in the research site, associations supporting small-scale horticulturalists, such as the study's small-scale farmers, is rare or non-existent. Farming associations have many potential benefits: they can communicate state programming, manage its delivery, and provide training for farmers directly and for members of farming cooperatives, both of which involve and engage locals.

While the study recognizes that in many cases, rural areas do not have the social capital necessary to foster supportive and collaborative networks or the leadership and business skills necessary to operate a multi-disciplinary support unit; it is believed that policy can expand to include training and mentoring at the community level to develop these attributes and skills over time.

Farming associations could be established in as many regions or communities as necessary (depending on the number of farmers represented in a particular region), and can specialize its services for specific crops (ex. Potato growers) or general farmers (ex. Horticulturalists). In its initial stages, farming associations can operate with a small staff (consisting of locals), and begin by communicating and promoting state programming to eligible recipients, helping candidates with their applications, and then distributing state funds to the parties. Strategically, associations can play a role in monitoring the progress of recipients to ensure that funds are properly administered and are effectively promoting agricultural productivity. Results and progress reports may then be submitted to the state as appropriate, where these reports may eventually contribute to future results-based programming.

In the long-term, farming associations can also administer state grants to farmers. New programming can include an advance payments programme, where farmers receive a loan from the state via an administrator (in this case, it would be the farmers association), and upon the sale of their produce, must repay the loan back in instalments. This type of programming ensures that farmers have sufficient capital on a continuous basis to support their agricultural activity, while also ensuring that loans are paid back in timely manner. Part of the loan may also be subsidized by state if feasible. This programming would require associations to receive proper training in book keeping, accounting, management and auditing. Training in these fields can help engage locals, especially youth, in activities that revolve around agriculture, but can also stimulate their interest and ability to promote other sectors in the local economy.

Once properly established, farming associations can also help farmers organize trade shows and fairs, provide agricultural training on new techniques, and help farmers comply with national and international standards and certification (ex. EureGAP standards or Organic certification). With a growing network of farming associations, trade shows and fairs will be feasible to organize to help farmers learn more about state programming, agricultural inputs and inventions. These activities will help ensure farmers' access into markets, ability to make contacts and relationships in the agricultural industry, and give them the proper confidence to sustain agricultural activities. Becoming certified organic farmers will also increase farmers' access into larger and profitable markets. Lastly, associations can also foster farmers' access into markets by providing drivers that can help transport goods to local markets, grocers, and/or wholesalers.

The array of services that farming associations can offer may be increased slowly and subsequently specialized in terms of particular crops, staffing may also increase. Associations have an immense potential to help bolster the economy, engage youth, and train individuals in useful and pertinent skills that are not only relevant to farming, but can improve their competencies and experience to join other sectors in the economy as well. The

state's rural development strategies are ambitious and have the ability to bolster agricultural production, and food security, yet their presence in particular communities is low, therefore, making it difficult to properly engage the appropriate actors (ex. eligible small-scale farmers, youth, women, etc.). Associations are an effective mechanism to decentralize state services, and can even work in collaboration with traditional authorities if they are operating in communal areas.

Finally, farming associations can also actively engage youth interested in entering non-farming trades. In the study site, an older generation of farmers perceived youth disinterest in farming to stem from laziness, but farming needs to be demonstrated as a business that revolves around other activities than just farming. To engage this 'lost agrarian generation' of farmers, agriculture needs to be supported both in terms of the act of farming, but also support for farming, such as the art of networking, negotiating, marketing, accounting, etc. Thus, training in business activities should be implemented, since this does not simply pigeonhole recipients into farming activities, but could also stimulate the local economies in new and innovative ways.

Despite the number of advantages that farming associations can champion, this type of participatory development is oftentimes criticized since it rests on a community's critical ability to harness social capital through collective action (Classen, Humphries, Fitzsimmons, Kaaria, Jimenez, Sierra, and Gallardo, 2008). Building social capital within a community is oftentimes difficult, since it is "embedded in a wider set of social and political relations that affect social inequality" (Bebbington and Perreault, 1999; Fox, 1996; Molyneux, 2002; Mosse, 2006;Woolcock, 2001, as cited in *Classen, et al.*, 2008: 2403). Thus, in some cases, community-driven development can compound existing inequalities and exclude the poor by ineffectively targeting marginalized groups, or delivering benefits to the relatively more privileged groups (Classen, et al., 2008; Kaaria, Njuki, Abenakyo, Delve, Sanginga, 2008). Thus, proper monitoring mechanisms must be set in place to effectively reduce discrimination, exclusion, control and capture (Classen, et al., 2008).

Improving Access to Markets

There are numerous advantages for large supermarkets to procure produce from small farmers. Smaller quantities of produce are delivered to the supermarket more often, assuring freshness. The injection of capital into the local community helps promote infrastructural development that can attract more investors to the area and create a larger market for the supermarket. However, for the supermarket, there are also a number of disadvantages to working with numerous small producers. There are higher transaction and administrative costs, emerging farmers are often unable to deliver larger volumes on a continuous basis, sometimes the quality of the produce is poor because of climatic conditions, insect damage, and inadequate farming knowledge.

If small-scale producers are to be included in agro-food markets, they will need to be able to sustain their participation by adapting their technology, management and organization, having the required financial resources, and continually transforming to keep up with changes in the supply chains. Farmers associations can strengthen farmers' position in traditional and new markets and in building their capacities in this regard. They can

promote fair trade, improve their access to services, training, and play a great advocacy role with authorities to promote policies that favour smallholder production. Furthermore, they can help foster collective marketing amongst farmers to help them meet required grades and standards, and help supermarkets reduce transaction costs associated with dealing with multiple small-scale operations.

Supermarket chains can also participate in improving smallholder capabilities by collaborating with development programmes that help small farmers improve their supply chains in order to sell to large retailers. Development interventions could focus on increasing farmer's access to credit, and production and marketing advice. Training for the farmers could also potentially lead to better quality produce through improved skills. Investments in development programming could in return lead to infrastructural and community development, which will ensure reduced transaction costs for supermarket chains in the future.

Non-Farming Sectors

Findings suggest that the sustainability of commercial and even small-scale farming may be limited in the research area due to inadequate land and water resources for a rapidly urbanizing economy. Individuals who are skilled in non-farming trades will oftentimes migrate back and forth from the city in order to seek employment. In the case of domestic workers, one of the study's respondents commented that workers will spend a great deal of money and time in transportation to and from the city, while they could make a little less doing the same work within the community. Therefore, policy must address ways to support employment within the research site that make use of existing skills and trades. Programming should include providing start-up capital for businesses relating to day-care, care-giving, landscaping/gardening, construction, catering, etc. Landscaping and construction would especially be beneficial to the community in order to improve local infrastructure, and catering or introducing restaurants or bakeries in the area would also make use of local agricultural products, and open a new market for local farmers.

Conclusion

The state's current policy framework combines various interventions that could effectively work to bolster smallholder production and participation in commercial markets, yet, their ability to communicate their programming, and to effectively monitor and track its progress, falls behind the needs set on the ground. In order to improve communications, accountability, and the effectiveness of programming, it is recommended that farming associations play an instrumental role as an intermediary between the state and its beneficiaries.

Farming associations can train beneficiaries to eventually employ them, participate in results-based reporting to help guide future programming, and help empower small-scale farmers to get proper training and access to agricultural inputs, and engage them into the commercial markets. The private sector can also play a role in improving small-scale ventures by partnering with the donor community to increase access to credit, training, and marketing to farmers, where collective marketing will help ensure reduced transaction costs for supermarket chains between them and small producers.

Finally, livelihood diversification is extremely important, especially in a diverse and increasingly integrated peri-urban economy, thus, other non-farming opportunities need to be recognized, especially those that have the power to help agricultural activity either directly or indirectly. Construction activities can help improve local infrastructure, thus, improve access for farmers into new markets, and help traders and processors enter small farms. Catering, baking, food processing and restaurant ventures can help make use of local agricultural products and help introduce small-scale farmers to new markets.

Chapter 7: Conclusions and Reflections

A farmer walking her way down to her fields.

Chapter 7: Conclusions and Reflections

Introduction

Understanding and exploring the diversity of livelihood strategies of small-scale farmers is a complex analysis requiring the recognition of multiple factors ranging from social, political, and environmental aspects. This research attempted to investigate the livelihood strategies of small-scale, peri-urban farmers in Umzinyathi, KwaZulu-Natal, which have been explored throughout the thesis. The purpose of this chapter is to offer key conclusions and reflections based on this thesis work.

Principal Findings and Implications

Below, is an overview of the main findings of the thesis. Principal findings are provided, along with a description of how these results have implications for sustaining peri-urban livelihoods, particularly in agriculturally-driven, communal economies in South Africa's former homelands.

Objective 1:

The study's first objective was "*to draw upon the Sustainable Livelihoods Framework to gather data in order to explore livelihood strategies of small-scale, peri-urban farmers in Umzinyathi, KZN*". Chapter 4 addressed this objective.

Access to land is fostered through communal governance in the community. Yet, the amount of land one can receive may not foster intensive small-scale farming. Furthermore, certain marginalized groups, such as in-migrants or women, have a more difficult and costly route to accessing land because of their marginalized position in society, which is primarily based on weak social networks. Nonetheless, for the majority of the households in the research area, land-based activities are an essential requirement to maintaining a household's claim and right to the land. For these reasons, many households do assume some type of agricultural activity.

Agricultural strategies, however, are limited by a number of stresses and shocks. Activities are assumed on degraded land situated on steeping slopes, which are susceptible to soil erosion. Harsh climate conditions, such as hail, harsh rains, and drought, also hinder agricultural strategies. Crops that are destroyed under these conditions create household food insecurity, and leave farmers without a means to a living. Access to agricultural inputs to adapt to or combat environmental shocks and stresses is extremely limited in the community. Poor infrastructure (mainly in the form of roads) restricts mobility where households are unable to fetch water from nearby water sources, or get fertilizer from neighbours. Additionally, environmental awareness and adaptive strategies to conserve and harvest water are low among the study's respondents. Poor adaptation measures and harsh climate conditions lead to the degradation of the natural resource base, and the subsequent marginalization and impoverishment of those that rely on this resource base for their living.

From an economic standpoint, the area's poor infrastructure also limits a farmer's access into local and urban markets, and the ability for traders to access their produce. Their limited access to agricultural inputs and sufficient land to produce high yields, restrict them from offering the high variety, quality (up to international standards), and quantity of produce that supermarkets are inclined to purchase. Thus, small-scale farmers are excluded from large commercial markets. Unless they can combine their efforts effectively by bulk procuring inputs, producing, and marketing (accomplished through their participation in agricultural cooperatives) then small-scale farmers cannot meet the economies of scale to actively compete in the globally integrating economy. Regardless, there are a number of attributes of agricultural cooperatives, and state programming in general, which can further marginalize and exploit the labour of small-scale farmers. Within cooperatives, women will oftentimes be the bearers of most of the labour, and state programming requirements for equal investments by the farmer, or consent of the tribal authority, automatically excludes certain eligible beneficiaries from receiving aid.

Due to the communal nature of the area's land, renting or contracting out land is almost impossible. Smallholder households participate in a number of livelihood activities, including sewing, beading, cleaning, gardening, traditional healing etc. Yet, many of these activities do not generate any additional income for the household or contribute to household food security. Despite the increased integration of the community to the local economy, economic opportunities in the peri-urban, non-farming sector remain low. High unemployment levels in the area hinder many residents from finding non-farm employment, and the collection of social assistance also allows households to cope with shocks and stresses, perhaps delaying the need to maintain a diverse portfolio of livelihood activities.

Objective 2:

The study's second objective was "*to analyze the effects of rural-urban transitions on small-scale farmers in Umzinyathi, KZN using a political ecology framework, with an emphasis on the marginalization and degradation thesis*". Chapter 5 addressed this object.

Population growth through increasing rates of urbanization and an influx of in-migrants from rural areas of the country increases environmental scarcity, namely shortages in croplands, forests and fresh water, leading to the elites in society (generally, wealthy urban migrants) capturing environmental resources to a disproportionate degree that causes the ecological marginalization of the non-elite (in-migrants lacking social power and existing resource-poor households). As population pressure increases, the stress on the natural environment leads to its collapse and results in the loss of many benefits to the community. Population pressures threaten the supply of water and land, which restrict the possibility of intensified agricultural production, deforestation limits the supply of local building materials and firewood; thus, limiting livelihood options for the 'non-elites'.

In-migration and urbanization pose serious threats to smallholder access to ample, affordable, and arable land. As new wealthy, urban residents move into the area, the demand and cost for land increases, and plots become smaller. This process thereby forces smallholders to rely on smaller, degraded land plots, increasing their demands on its

marginal productivity. Degradation of the natural resource base threatens agricultural livelihoods and the sustainability of small-scale ventures in the peri-urban research site.

This cycle of elite capture of resources and the subsequent marginalization of non-elites in society can lead to institutional incapacity. Although the tribal authority does play a major role in ensuring the majority of households have land to assume land-based livelihood strategies, the increasing pressures of population growth may eventually undermine the tribal authority's ability to effectively manage and formalize the distribution of natural resources. Government intervention will aim to formalize the distribution of natural resources by means of land tenure security measures and land codes. The implementation of these measures may lead to the disintegration of traditional structures of authority, and the exclusion of marginalized groups from receiving any land to assume vital income strategies.

Increased integration to the local economy poses certain threats and advantages to the research site. While urbanization threatens the health of the natural resource base, urbanization also holds the potential to advance local infrastructure. Improved roads will enhance smallholder access to urban and local markets, and allow for traders and processors to reach small farms. Yet, certain infrastructure, such as water meters, may increase the cost of water, and land codes for residential purposes may deter the availability of land away from agricultural needs. Thus, contributing towards a general marginalization (both economically and ecologically) of agrarian households.

Objective 3:

The study's third objective was "*to reflect upon the current policy framework that has been drafted for small-scale farming in South Africa*". Chapter 6 examined this objective in detail.

The array of programming policies offered by the state is extensive and could potentially effectively address issues of smallholder access to markets, agricultural inputs, and collective marketing. However, policy uptake is limited by poor communications and a limited state presence in the community. This in turn limits the number of eligible beneficiaries enrolling in government programming, and decreases the potential for development programming to improve agricultural productivity and food security. The study proposes that farming associations act as an intermediary between the state and beneficiaries, to actively help communicate, implement, and monitor programming. Furthermore farming associations can effectively empower farmers by networking on their behalf, making connections between them and various urban and local merchants, and helping them to collectively market their products together in order to decrease costs.

To improve non-farming sectors, funding must be given for start-up business, especially those that can help bolster smallholder production. For example, restaurants, bakeries, and caterers make utilize local produce, where both businesses stand to profit. Local infrastructure must also improve in order to connect economic opportunities available in urban or local areas to residents in Umzinyathi.

Supermarket chains can also participate in improving smallholder capabilities by collaborating with development programmes that help small farmers improve their supply chains in order to sell to large retailers. Development interventions could focus on

increasing farmer's access to credit, and production and marketing advice. Training for the farmers could also potentially lead to better quality produce through improved skills. Investments in development programming could in return lead to infrastructural and community development, which will ensure reduced transaction costs for supermarket chains in the future.

Future Research Avenues

Urbanization creates significant social, economic, and political transitions in particular areas. Umzinyathi shares its jurisdiction with both formal and informal structures of authority – the eThekwini Municipality and the Qadi Traditional Authority – thus, making it necessary to study the shifting balance of power between the two political structures in areas experiencing an encroachment of urban into the rural. The effects of urbanization can disintegrate the power of traditional authorities, and could play a part in simultaneously disintegrating Zulu culture. Likewise, the balance of power between the two structures needs to be analyzed to reveal the advantages and setbacks within each style of governance on peri-urban livelihoods, economic opportunities, and the viability of the natural resource base.

Additional research needs to focus on the dynamics unfolding in peri-urban spaces. How do rural livelihoods transition to adapt to urbanization? What forms of livelihood strategies result in this type of transition? Food security is important to analyze within the peri-urban context since access to food either improves or deteriorates under the conditions of improved infrastructure, or decreased household food production, or scale of access to consumer markets. Furthermore, consumption trends in peri-urban areas can be investigated to examine changing consumption patterns that may or may not be influenced by globalized trends in consumption. These trends may be deciphered as either improving or decreasing the nutritional value of peri-urban diets.

Finally, further investigation is required into the relevance of rural development strategies in meeting the peri-urban economy's needs, and in determining which areas could improve. In order to establish the appropriate programming for peri-urban areas, more investigation needs to be conducted to study peri-urban characteristics on a national scale. This investigation will help determine if there are particularities or similarities between each location to determine if programming needs to be site specific or if it can abide by a set of core priorities to help various areas.

Reflections

The increasing integration of the rural and urban economy creates dynamic and diverse peri-urban areas. Increasing rates of urbanization encroaching rural areas and changing patterns of (and reasons for) migration filter people into peri-urban areas are creating the need to analyze these complex areas with a lens that minimizes the relevance of past and traditional explanations of rural to urban interactions and linkages. Households not only migrate or assume residence in peri-urban areas to search for urban or peri-urban employment, but to also maintain traditional rural economic activity, such as small-scale or subsistence agriculture. The livelihood opportunities and diversification strategies used in

peri-urban households will likely change between peri-urban sites, but will depend on a household's level of wealth, support (state, social networks, etc.), access to resources, and willingness to adapt.

There are a number of threats and limitations to land-based activities in peri-urban areas, which restricts the livelihood diversification one peri-urban household can assume. Farm income remains an important source of income (and sometimes the only source of income) for peri-urban households, but population growth limits the sustainability of small-scale agriculture in peri-urban areas. Population growth contributes to the increased degradation and scarcity of natural resources, and the subsequent marginalization of disadvantaged groups, and traditional institutions of governance (the tribal authority). Population growth places farmers at the greatest risk in the peri-urban economy to lose their existing land tenure and access to natural resources, thus, increasing their household's vulnerability to food insecurity. Due to the number of threats to sustainable agriculture and food security in peri-urban households and communities, and the limited non-farm opportunities in some of these areas, development programming must search for ways in which the non-farm, peri-urban economy can operate in an agriculturally-driven area.

While this study aimed to either characterize farming strategies as either relevant or irrelevant to peri-urban livelihoods, the study found that farming was too valuable in securing resource-poor households with a certain level of income and food security to be labelled irrelevant. Despite the growing integration into the urban economy, peri-urban households remained passionate and interested in farming activities for the long haul. Therefore, this study reveals the importance to assess the sustainability of agriculture in dynamic peri-urban areas, and for policy to adapt their initiatives to focus on stimulating non-farm opportunities that invest back into agricultural sectors of the peri-urban economy.

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Appendix A: Small-Scale Farmers Livelihoods Survey

Date: Household ID#:
Respondents(s) (sex and age): Main livelihood earner in HH: Yes No

---

1. Is the household head male or female? Circle

2. How many people are there living in your household?
   a. 1-4
   b. 5
   c. 6
   d. 7
   e. 8 or more

3. How many people depend on your income?
   a. 0
   b. 1
   c. 2
   d. 3
   e. 4
   f. 5 or more

4. How long have you lived in this village?
   a. 1-5 years
   b. 6-10 years
   c. 11-15 years
   d. 16-20 years
   e. More than 20 years

5. Does your household collect any of the following grants?
   a. Pension
   b. Child Grant
   c. Both
   d. None
   e. Other (specify):

6. How many pensions does your household collect?
   a. 0
   b. 1
   c. 2
   d. 3 or more

7. How many child grants does your household collect?
   a. 0

b. 1
c. 2
d. 3 or more

8. How many people in your household regularly generate income?
    a. 0
    b. 1-2
    c. 3-4
    d. 5 or more

9. How long do you intend to stay here?
    a. Not for long
    b. Not sure
    c. Forever
    d. Other:

10. Is food security an issue in your household?
    a. Yes
    b. No

If yes, why?

    a. Do not earn enough money to buy food everyday
    b. Do not grow enough produce to eat everyday
    c. Other:

11. Do you consider food security to be a problem in your community?
    a. Yes
    b. No

If yes, why?

    a. People are hungry
    b. People are poor
    c. Both
    d. Other:

12. How long have you been a farmer?
    a. Less than one year
    b. 1-4 years
    c. 5-9 years
    d. 10 or more years

13. What occupation/field did you hold prior to being a farmer?
    a. Unemployed
    b. Gardener
    c. Domestic Worker
    d. Health care
    e. Education

f. Factory worker
g. Artisan
h. Other (specify):

14. Why did you begin farming?
    a. Was unemployed
    b. Lost job
    c. Unsatisfied with old job
    d. More income found in farming
    e. Inherited land
    f. Other (specify):

15. How did you learn to farm?
    a. Family members/friends
    b. Other farmers
    c. Former employers
    d. Department of Agriculture
    e. Technical College
    f. Other (specify):

16. Who can access farming?
    a. Anyone
    b. Individuals with land
    c. Individuals with farming skills
    d. High income households
    e. Other (specify):

17. How does one get land?
    a. Inkhosi
    b. Umzinyathi District Municipality
    c. Neighbors/Friends
    d. Relatives
    e. Other (specify):

18. How was your land obtained?
    a. Purchased
    b. Rented
    c. Granted by the state/municipality/Inkhosi
    d. Inherited from relatives
    e. Other:

19. When is one forced to sell one's land?
    a. Never
    b. When the land is not used
    c. When money is needed
    d. Other:

20. How many people do you farm with?
    a. 1-2
    b. 3-5
    c. 6-9
    d. 10 or more

21. Can you afford to hire employees?
    a. Yes
    b. No

If yes, how many labourers do you employ?
    a. 1
    b. 2-3
    c. 4-5
    d. 6-7
    e. 8-10
    f. 10 or more

If no, what are the reasons for not hiring help?
    a. Cannot afford
    b. Not reliable
    c. Can do the work myself
    d. Too hard to manage
    e. Other:

22. Why do you believe is the main reason that farm labourers work on your farm rather than operate on their own?
    a. Do not own land
    b. Do not like the responsibility
    c. More income
    d. Need to learn the trade
    e. Other (specify):

23. Do you consider other farmers eager to form co-ops?
    a. Yes
    b. No

24. Why are farmers eager to form coops?
    a. Can pull land resources together to harvest more crops
    b. Can sell more produce
    c. Will receive money from the state/Inkhosi
    d. Will be granted more land from the state/Inkhosi
    e. All of the above:
    f. Other:

25. Why are farmers reluctant to form coops?
    a. People dislike the amount of work in a co-op (find it too stressful)

b. Certain farmers like to work independently (be their own boss)
c. Too many farmers will collect the money then disband
d. Too many farmers will collect the money then not responsibly participate/work
e. All of the above
f. Other:

26. Where is your farm located?
a. Less than 0.5 km from your home
b. 0.5-1kn from your home
c. 1.1-2kn from your home
d. 2km or more from your home

27. Which products do you produce in the winter?
a. Spinach
b. Amadumbe
c. Beets
d. Carrots
e. Cabbage
f. Other(s):

28. Which products do you produce in the summer?
a. Spinach
b. Amadumbe
c. Beets
d. Carrots
e. Cabbage
f. Other(s):

29. Which season provides the best food security?
a. Summer
b. Winter
c. Neither

If a or b, why?
a. Reliable/Good weather
b. More variety in crops
c. Other:

If c, why?
a. Weather is too unpredictable in either season
b. The cost to produce is too high in either season
c. There are no markets to purchase crops in either season
d. Other:

30. Which markets do you sell your produce to?
a. Local

b. Commercial – Pick n Pay, Spar, Checkers etc.
c. Urban Community (Townships, Cities)
d. Community (you sell at your doorstep to neighbors)

31. What are the main challenges to selling in markets?
    a. Lack of Transportation
    b. Poor infrastructure
    c. Lack of Business Contacts
    d. Not enough produce to sell
    e. Cannot sell at a competitive price
    f. Timing of sales is too tough to meet
    g. Other:

32. What other activities take place within your household?
    a. None
    b. Beading
    c. Weaving (Mats)
    d. Sewing
    e. Cooking
    f. Gardening
    g. Care giving
    h. Other:

33. Do any of these activities generate any income?
    a. Yes
    b. No

34. Which resources are the most valuable in rural areas?
    a. Land
    b. Water
    c. Farming Equipment
    d. All of the above
    e. Other (specify):

35. Are these resources easily accessible?
    a. Yes
    b. No
    c. Somewhat (explain)

36. In general, do you think that government policy helps to make your livelihood:
    a. Better
    b. Worse
    c. No impact
    d. Other:

37. How do you think government policy could improve rural livelihoods?
    a. Improve access to water

b. Improve access to land
c. Provide Farming equipment – fencing, hoes, tractors
d. All of the above
e. Improve access to Education
f. Improve infrastructure
g. Other:

38. Are your children interested in working with agriculture?
    a. Yes
    b. No

    If yes, why?

    a. They see it as a good profession
    b. They know it will secure their food needs
    c. They are interested in assuming what their parents do
    d. Other:

    If no, why?

    a. Would rather work in the city
    b. Interested in other forms of work
    c. They do not perceive farming as a good profession
    d. Lazy
    e. Other:
    f.

39. What would you like your children to do in the future?
    a. Something related to farming
    b. Something unrelated to farming
    c. Anything that secures a living

40. What do you consider to be important for your community's future?
    a. Education
    b. Farming
    c. Housing
    d. Land
    e. Water
    f. Proper road/infrastructure
    g. New businesses
    h. Other:

Questions on Climate:

41. Has it become harder to farm successfully?
    a. Yes
    b. No

42. Has the size of produce shrunk, grown or remained the same over the past decade? Circle

43. Has the yield of produce shrunk, grown or remained the same over the past decade? Circle

44. Are crops grown at the same time each season, or has this changed over the past decade?

45. Do your crops require more, less or the same amount of water they did in the past?

46. Do your crops require more, less or the same amount of labour they did in the past?

47. Where do you source your water from:
    a. Nearby river/stream/lake
    b. Garden water tank
    c. Household supply
    d. Other:

48. What are the unique climate trends occurring in Inanda?
    a. Good for farming
    b. Too dry
    c. Too wet
    d. Unpredictable
    e. Other:

49. How has the Inanda Dam affected farming?
    a. Good
    b. Bad
    c. Same

Appendix B: Interview Questions for Development Practitioners, Academics, Farm Labourers, Commercial Farmers, and the Inkhosi

Questions for Development Practitioners

1. Which areas in KZN do you work with?
2. Are households struggling to farm? Have these struggles been increasing in magnitude over the past few years?
3. Which assets are the most valuable in rural areas? Why?
4. Are these assets easily accessible? If not, could access be improved?
5. What other livelihood strategies are most common in these areas?
6. Which strategies could be encouraged to build upon sustainable livelihoods?
7. Is the state taking an active role in trying to improve rural livelihoods?
8. What improvements could be made to rural development from different actors at different levels? (State, residents, NGOs, etc.)
9. If farmers had the opportunity to work elsewhere, in another job, do you believe they would?
10. Do you think that the state's rural development strategies will be implemented?
11. How do you think government policy could better help rural livelihoods?

Questions for Academics

1. Which areas have you researched or worked with in KwaZulu-Natal?

2. Which crops were traditionally harvested in these areas?
3. Has the depletion of natural resources or environmental hazards deteriorated the harvest of these crops for many small-scale farmers?
4. Are there any crops that are still profitable to grow?
5. Have you witnessed an incline or decline of small-scale agriculture in KZN?
6. What do you believe are the reasons for this incline/decline?
7. Has farming become more difficult over the past 5-10 years? Why/How?
8. Do you find that households have enough water to harvest their crops?
9. Which strategies do households use to save their water?
10. Has land been effectively distributed to tribal communities?
11. Is redistributed land usually used for agricultural purposes?
12. Which other purposes is land used for by communal residents?
13. Do you believe that farming can generate improved livelihoods?
14. What other income activities do you consider important in communal areas?
15. Which sectors do you believe may become more important in rural areas in the future?
16. Are there better ways to integrate rural communities in the economy other than in their participation in agriculture?
17. Are there any cultural characteristics in Zulu communities that undermine their own agricultural productivity in KZN?

18. Do you consider rural youth to be interested in agriculture?

Questions for Farm Labourers

1. How long have you lived in this village?
2. Which town or village did you live before?
3. What is the distance between your previous town/village to this village?
4. Why did you move to this village?
5. How long do you intend to stay here?
6. How many people are there living in your household?
7. How many people depend on your income?
8. Is the household head male of female? Circle
9. How many people in your household regularly generate income?
10. Does this income come from any of the following government grants? (Specify the number per household)
11. Is food security an issue in your household?
12. Do you consider food security to be a problem in your community?
13. How long have you been a farm labourer?
14. What occupation/field did you hold prior to being a farm labourer?
15. Why did you begin working on other farms?
16. How did you learn to farm?
17. Do you work for a small-scale or commercial farmer? Circle
18. Which rate of pay do you earn?
19. Which additional benefits do you earn from your employer?
20. Who can access farming?
21. Do you own land?
22. How does one get land?
23. When is one forced to sell one's land?
24. When is one forced to sell one's labour?
25. Why do you choose to work on other farmer's land than your own?
26. If you are not a native of the village, does this affect your ability to own land?
27. How many farms do you work on?
28. How many days per week do you work on each farm?
29. What other jobs do you hold?
30. Do you consider other farmers eager or reluctant to form co-ops?
31. Are you eager or reluctant to form a co-op?
32. Where is your job(s) located?
33. Which months are generally slow periods for employment? Why?
34. Which strategies do you take to ensure your household's food security during these months?
35. What other activities take place within your household?
36. Which resources are the most valuable in rural areas? Why?
37. Are these resources easily accessible?
38. What would help you to create a better livelihood?
39. In general, do you think that government policy helps to make your livelihood easier, more difficult or has no impact?
40. How do you think government policy could improve rural livelihoods?

41. Are your children interested in working with agriculture?
42. What would you like your children to do in the future?
43. What do you consider to be important for your children's future?

Questions for Commercial Farmers

1. How long have you lived in this village?
2. How long do you intend to stay here?
3. Do you consider food security to be a problem in your community?
4. How long have you been a farmer?
5. What occupation/field did you hold prior to being a farmer?
6. Why did you begin farming?
7. How did you learn to farm?
8. Who can access farming?
9. Do you consider other farmers eager or reluctant to form co-ops?
10. How does one get land?
11. When is one forced to sell one's land?
12. When is one forced to sell one's labour?
13. How many partners do you farm with?
14. How many labourers do you employ in the summer?
15. How many labourers do you employ in the winter?
16. On which rate are your employees paid?
17. Which added benefits do you provide them with? Circle
18. Which products do you produce in the winter?
19. Which products do you produce in the summer?
20. Which markets do you sell your produce to?
21. What other businesses or activities are you involved with?
22. Which resources are the most valuable in rural areas? Why?
23. Are these resources easily accessible?
24. Has the profitability of farming increased or decreased in the past 5 years? Why?
25. What do you consider to be the greatest challenges in managing a farming business in the future?
26. What would help you to create a better livelihood?
27. In general, do you think that government policy helps makes rural livelihood easier, more difficult or has no impact?
28. How do you think government policy could improve rural livelihoods?
29. Do you believe agriculture could foster rural development?
30. Which other sectors do you believe could inspire rural development?
31. Do you foresee farming to be a profitable trade in the future? Why or Why not?
32. Would you want your children to farm in the future?
33. In which trade or profession would you wish your children to work?

Questions on Climate:

34. How have you changed your farming practices over the past decade?
35. Has the size of produce shrunk, grown or remained the same over the past decade?
36. Has the yield of produce shrunk, grown or remained the same over the past decade?

37. Are crops grown at the same time each season, or has this changed over the past decade?
38. Do your crops require more, less or the same amount of water they did in the past?
39. Do your crops require more, less or the same amount of fertilizer/herbicide they did in the past?
40. Do your crops require more, less or the same amount of labour they did in the past?
41. Have your water bills increased, decreased or remained the same in the past few years?
42. Have your electricity bills increased, decreased or remained the same in the past few years?
43. Has solar or wind power become available?
44. What are the unique climate trends occurring in Inanda?
45. Are these trends related to the village's proximity to the Inanda Dam?
46. Do you plant GM seeds?
47. Are these seeds useful/efficient?
48. Are there more profits associated with organic produce than GM produce?
49. How does one become a certified organic farmer?
50. Who enforces or encourages these standards?

Questions for the Inkhosi

1. Is food security a concern in Umzinyathi?
2. Are the numbers of farmers increasing in Umzinyathi?
3. Do most farmers farm for household subsistence or for commercial sale?
4. What do you believe are the reasons for the incline/decline in small-scale farming?
5. Which assets are the most valuable in rural areas? Why?
6. Are these assets easily accessible? If not, could access be improved?
7. How are decisions made as to how much and which land gets allotted to whom?
8. Have non-farming sectors in rural areas been improved over the course of the last decade?
9. Which sectors do you believe may become more important in the village in the future?
10. How do you think government policy could better help rural livelihoods?

Appendix C: Small-Scale Farmer Survey Results

Male/Female Ratio	
Male	8
Female	32
TOTAL	**40**

Age	
20-29	2
30-39	4
40-49	12
50-59	11
60-69	7
70-79	2
80 and over	2
TOTAL	**40**

Respondent is Main Livelihood Earner in Household?	
Yes	17
No	23
TOTAL	**40**

Number of People Living in Household	
1 to 4	11
5	6
6	5
7	8
8 or more	10
TOTAL	**40**

Sex of Main Livelihood earner in Household	
male	25
female	15
TOTAL	**40**

Number of People Depending on Participant's Income (# of respondents)		
0 dependents	1	3%
1 dependent	6	15%
2 dependents	6	15%
3 dependents	5	13%
4 dependents	5	13%
5 or more dependents	17	43%
TOTAL	**40**	**100%**

Time Living in Village (years)	
1 - 5	1
6 -10	4
11 - 15	5
16 - 20	6
more than 20	24
TOTAL	**40**

Length of Time Intended to Stay in Village	
Not Sure	3
Forever	37
TOTAL	**40**

Number of Old Age Pensions Per Household (Number of Households)	
0 pensions	18
1 pensions	20
2 pensions	2
3 pensions	0
TOTAL	**40**

Which grants are collected in the household?	
None	7
Pension	22
Child Grant	22
Sick Pension	1
Disability Pension	1
TOTAL	**53**

Number of Child Grants Per Household (Number of Households)	
0 grants	15
1 grants	12
2 grants	5
3 grants	5
Grants are not collected by household	3
TOTAL	**37**

Number of People in Household that Generate Income		
0	0	0%
1	11	28%
2	21	53%
3	7	18%
4	0	0%
5	1	3%
TOTAL	**40**	**100%**

Occupations found in the household other than farming	
Nursing	2
Construction	4
Farm Labourer	1
Carpentry	2
Cleaning	4
Policing	1
Tack Shop	1
Traditional Healing	2
Driver	2
Domestic Worker	1
Restaurant Worker	1
Beautician	1
Call Centre	1
Garbage Picker	0
Highway Radio	1
Manufacturing Worker	1
Community Worker	2
Sewage Plant worker	2
Casual Worker (Cleaner)	3

Occupation During the Off Season from Farming (Number of Respondents)	
Cleaning	1
Garbage Picker	1
TOTAL	**2**

Is food Security an Issue in the Household?		
Yes	**23**	**58%**
Reasons		
Do not earn enough money	11	48%
Do not harvest enough food	5	22%
Poor variety in diet	3	13%
When pensions/grants not collected	1	4%
Do not earn enough money and harvest enough food	2	9%
availability of food not consistent because of weather	1	4%
No	**17**	**43%**
Reasons		
Harvest our own food	15	88%
Have enough income to buy food in the market	0	0%
Have enough food and income to secure household needs	2	12%
TOTAL	**40**	**100%**

Is food security an issue in the community?		
Yes	**39**	**98%**
Reasons		
Do not earn enough money	6	15%
Do not harvest enough food	5	13%
Poor variety in diet	28	72%
When pensions/grants not collected	1	3%
Do not earn enough money and harvest enough food	4	10%
Availability of food not consistent because of weather	2	5%
No	**1**	**3%**
Reasons		
Households harvest enough food	1	100%
Households earn enough money to maintain food needs	0	0%
Households have ample land to harvest crops	0	0%
Households have enough variety in their diets	0	0%
TOTAL	**40**	**100%**

How long have you been a farmer?		
Less than one year	0	0%
1-4 years	4	10%
5-9 years	11	28%
10 or more years	25	63%
TOTAL	**40**	**100%**

What occupation/field did you hold prior to being a farmer?			
Unemployed		6	15%
Gardener		1	3%
Domestic Worker		9	23%
Nurse		0	0%
Teacher/Principal		2	5%
Factory worker		3	8%
Artisan		1	3%
Development Worker		1	3%
Municipal worker		5	13%
Cleaner		2	5%
Have always been a farmer		3	8%
Convenient store owner		0	0%
Traditional Healer		1	3%
Construction Worker		2	5%
Restaurant cook		1	3%
Waitress		2	5%
Union Worker		1	3%
TOTAL		**40**	**100%**

Why did you begin farming?		
was unemployed	2	5%
lost job	8	20%
unsatisfied with old job/left job	6	15%
more money	10	25%
to stay at home	1	3%
passion	11	28%
secure food	9	23%
family was involved	5	13%
started to receive pension	1	3%
could not find another job	2	5%
help family financially	12	30%
had to retire at age 65	1	3%
TOTAL Number of Respondents	**40**	**100%**

How did you learn to farm?	
Family members/friends	33
Other farmers	6
Former employers	0
Department of Agriculture	4
Secondary School	3
Technical College	0
TOTAL	**46**

Who can access farming?		
Anyone	39	98%
Individuals with land	1	3%
TOTAL	**40**	**100%**

How does one get land?		
Inkhosi	27	68%
Municipality	6	15%
Neighbors/Friends	0	0%
Relatives	0	0%
Ask Anyone	7	18%
TOTAL	**40**	**100%**

How was your land obtained?		
Purchased from neighbour	3	8%
Rented	0	0%
Granted by the state/municipality	6	15%
Inherited from relatives after they passed away	3	8%
Purchased from the Inkhosi	25	63%
Being lent out from local clinic	1	3%
Given by relatives	2	5%
TOTAL	**40**	**100%**

When is one forced to sell one's land?		
Never	29	73%
When not used	8	20%
When need money	3	8%
TOTAL	**40**	**100%**

How many people do you farm with?		
1 to 2	19	48%
3 to 5	7	18%
6 to 9	0	0%
10 or more	14	35%
TOTAL	**40**	**100%**

Can you afford to hire employees?		
Yes	**15**	**38%**
How Many Employees do you Employ?		
0	3	20%
1	3	20%
2 to 3	6	40%
4 to 5	0	0%
6 to 7	3	20%
No	**25**	**63%**
What are your reasons for not hiring employees?		
Cannot afford	18	
Not reliable	0	
Can do work ourselves	15	
TOTAL	**40**	**100%**

Why do you believe is the main reason that farm labourers work on your farm rather than operate on their own?		
Do not own enough land	2	15%
Do not like the responsibility	0	0%
More income working elsewhere	1	8%
Need to learn the trade first	5	38%
Do not have start-up capital	1	8%
They are sick and cannot afford to work everyday	2	15%
They do not enjoy farming as a profession	1	8%
Not sure	1	8%
Total	13	100%

Do you consider other farmers eager to form co-ops?		
yes	25	63%
no	13	33%
depends	2	5%
TOTAL	40	100%

If yes, Why are farmers eager to form coops?	
Can pull land resources together to harvest more crops	15
Can sell more produce	1
Will receive money from the state/inkhosi	4
Will be granted more land from the state/inkhosi	1
All of the above:	2
Can share the workload	8
Can secure food and money	3
Total Number of Respondents	34

If no, Why are farmers reluctant to form coops?		
People dislike the amount of work in a co-op (find it too stressful)	5	25%
Certain farmers like to work independently (be their own boss)	1	5%
Too many farmers will collect the money then disband	0	0%
Too many farmers will collect the money then not responsibly participate/work	2	10%
Do not have the same farming strategies	1	**5%**
People do not have enough assets to begin with	4	**20%**
People do not like farming anymore	3	**15%**
People will collect the food then disband	1	**5%**
Can't commit to the responsibility	2	**10%**
Do not want to commit until they see the coop is a success	0	**0%**
Do not want to commit unless there are many people involved	0	**0%**
Do not want to commit unless the coop has a lot of land to work with	1	**5%**
Total Number of Respondents	20	**100%**

Winter Crops		
Spinach	10	25%
Cabbage	14	35%
Butternut squash	26	65%
Beans	43	108%
Lettuce	3	8%
Green pepper	9	23%
Beetroot	13	33%
Tomatoes	10	25%
Maize	28	70%
Sugarcane	2	5%
Sweet potatoes	13	33%
Taro	25	63%
Pumpkin	12	30%
Maize	4	10%
Potatoes	2	5%
Mangos	1	3%
Carrots	13	33%
Peas	6	15%
Onions	4	10%
Eggplant	3	8%
Number of Farmers	40	

Summer Crops		
Spinach	10	25%
Cabbage	7	18%
Butternut squash	20	50%
Green beans	35	88%
Lettuce	0	0%
Green pepper	0	0%
Beetroot	9	23%
Tomatoes	8	20%
Maize	23	58%
Sorghum	2	5%
Sweet potatoes	16	40%
Taro	23	58%
Pumpkin	12	30%
Sugarcane	4	10%
Cauliflower	2	5%
Onions	4	10%
Potatoes	15	38%
Carrots	8	20%
Nuts	3	8%
Herbs	3	8%
Striped beans	3	8%
Cucumber	5	13%
Number of Farmers	40	

Which season provides the best food security?		
Summer	**25**	**63%**
Reasons for Summer Food Security		
There is more variety in crops	17	68%
Profits are higher on the sales of produce	0	0%
There is reliable/better weather	5	20%
There are less insects/birds	0	0%
Can preserve food	1	4%
Produce greater quantities of food/crops	0	0%
There ample sources of water in the area because of the rain	2	8%
Winter	**5**	**12%**
Reasons for Winter Food Security		
There is more variety in crops	0	0%
Profits are higher on the sales of produce	0	0%
There is reliable/better weather	1	20%
There are less insects	2	40%
There are less birds	0	0%
There are more vegetables grown that add to the nutrition in one's diet	2	40%
Equal	**10**	**25%**
Neither	0	0%
TOTAL	**40**	**100%**

Which markets do you sell your produce to?		
Community	37	93%
Local	7	18%
Commercial	1	3%
Urban Community	12	30%
Outside Local Venues	1	3%
Number of Farmers	40	

What are the main challenges to selling in markets?		
Transportation	20	50%
Infrastructure	3	8%
Business Contacts	5	13%
Lack of Produce	9	23%
Cannot competitively price	1	3%
Tough timing of sales	2	5%
No markets/customers	12	30%
Illness/disability	4	10%
age	5	13%
not enough labour to help	3	8%
not enough time to dedicate to business	2	5%
Number of Farmers	40	

What other activities take place within your household?		
None	4	10%
Beading	1	3%
Weaving (Mats)	10	25%
Sewing	4	10%
Cooking	9	23%
Gardening	4	10%
Care giving	1	3%
Carpentry	0	0%
Cleaning	2	5%
Raising Chickens	5	13%
Raising Pigs	3	8%
Traditional Healing	2	5%
Raising Cattle	2	5%
Composting	2	5%
Child Rearing	27	68%
Number of Farmers	40	
Do any of these activities generate any income?		
No activities	4	10%
Yes	6	15%
No	24	60%
Not Regularly	6	15%
TOTAL	40	100%

Which Resources Are Most Valuable?		
Land	19	48%
Water	15	38%
Equipment	6	15%
TOTAL	**40**	**100%**

Are these resources easily accessible?		
Yes	12	30%
No	28	70%
TOTAL	**40**	**100%**

In general, do you think that government helps to make your livelihood		
Better	14	35%
Worse	4	10%
No Impact	22	55%
TOTAL	**40**	**100%**

How do you think government policy could improve rural livelihoods?		
Improve access To water	21	53%
Improve access to land	6	15%
Provide training on how to farm	1	3%
Provide Farming equipment	1	3%
Improve access to Education	5	13%
Improve infrastructure	5	13%
Alleviate Health Issues	2	5%
Improve Housing	2	5%
Provide skills on how to process foods	1	3%
Increase speed in which they deliver services	1	3%
Provide more grants to farmers	3	8%
Provide training to develop new skills in other trades	6	15%
Provide farming inputs: seeds, fertilizers, pesticides	6	15%
Improve access into markets	0	0%
TOTAL	**40**	

Are Children Interested in Farming?		
Do not have children	1	3%
Yes	13	33%
No	22	55%
Too young to tell	4	10%
TOTAL	**40**	**100%**
If yes, What are the reasons why?		
They like to help family/community	5	38%
they like working with the environment	2	15%
like to secure food needs	7	54%
like being their own boss	2	15%
If no, What are the reasons why?		
rather work in city	11	50%
interested in other jobs	11	50%
don't think farming is good profession	4	18%
lazy	3	14%
want to be independent	1	5%
farming is boring	1	5%

What would you like your children to do in the future?		
related to farming	16	41%
unrelated	18	46%
any occupation	5	13%
TOTAL (respondents with children)	**39**	**100%**

What do you consider to be important for your children's future?		
Education	7	18%
Involved in Farming	3	8%
Financial Security	19	49%
Food security	7	18%
Family	2	5%
Job Security	1	3%
TOTAL	**39**	**100%**

What do you consider to be important for your community's future?		
Education	1	3%
Farming	10	25%
Housing	0	0%
Land Rights	6	15%
Water Rights	2	5%
Proper road/infrastructure development	0	0%
New businesses/opportunities in other areas than agriculture	20	50%
Health services	1	3%
TOTAL	**40**	**100%**

Has it become harder to farm successfully?		
Yes	27	68%
No	6	15%
No Difference	7	18%
TOTAL	**40**	**100%**
How has the yield of produce changed in the past decade?		
Increase	7	18%
Decrease	24	60%
No change	9	23%
TOTAL	**40**	**100%**

Has the timing of when crops grow changed over the past decade?		
Yes	37	93%
No	3	7%
TOTAL	40	100%

Do your crops require more, less or the same amount of water they did in the past?		
increase	37	93%
decrease	0	0%
no change	3	7%
Do your crops require more, less or the same amount of labour as they did in the past?		
increase	38	95%
decrease	0	0%
no change	2	5%
TOTAL	40	5%

Where do you source your water from?		
River/Stream/Lake	37	93%
Garden Water Tank	7	18%
Household Supply	0	0%
Collected Rainwater	9	23%
Total	40	
Number of Respondents With 2 Sources of Water	13	32.5%
Number of Respondents With 1 Sources of Water	27	67.5%

How is the climate in Inanda?		
Good for Farming	18	45%
Too dry	0	0%
Too wet	0	0%
Unpredictable	22	55%
TOTAL	**40**	**100%**

How has the Inanda Dam affected farming?		
Good	27	68%
Bad	2	5%
No Impact	11	28%
TOTAL	**40**	**100%**