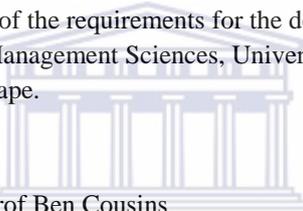


**EXPLORING CHARACTERISTICS OF FARMING SYSTEMS IN FORMER  
LABOUR TENANT COMMUNITIES: THE CASE OF NCUNJANE AND NKASENI  
IN MSINGA**

**NONHLANZEKO NONKUMBULO MTHEMBU**

A mini-thesis submitted in partial fulfilment of the requirements for the degree of Master of  
Philosophy in the Department of Economic Management Sciences, University of the Western  
Cape.

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UNIVERSITY *of the*  
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## ABSTRACT

In this mini-thesis I explore the key characteristics of the farming household and the livelihood strategies they employ with particular reference to their farming systems. The study sought to determine the contribution made by agriculture to the total household income, as a means to justify for promoting both subsistence and smallholder production as a policy direction.

I established that rural households who are former labour tenants engage in both on and off farm income generating activities as a response to capital and labour accessibility. A fairly moderate contribution was made from cash cropping; however, I argue that the value could be much higher if considering high proportion of produce is for home consumption. There is a pattern where subsistence production intensifies to smallholder production with accessibility to water, high potential land and markets. I also found cattle herd sizes to be highly variable amongst households and goat production being correlated with a pattern of feminisation in agriculture. I give evidence that calls into doubt common claims of land degradation and instead call for more clearly defined communal range land management research.

I then argue that farming systems are driven and adapted to farmer's non-static objectives and subsequent opportunistic strategies employed. This mini thesis concludes that with realistic comprehensive support to small scale agriculture there is potential for petty commodity production which will stimulate rural economies.

*Keywords: Farming systems, subsistence, smallholder, capital, labour, farm income, water, land, markets, rural economy.*

## DECLARATION

I declare that *Exploring Characteristics of Farming Systems in Former Labour Tenant Communities that received land through the Land Reform Programme: The case of Ncunjane and Nkaseni in Msinga (2013)* is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

Nonhlanzeko Nonkumbulo Mthembu

August 2013



Signed:.....

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First and foremost I would like to thank God, and my ancestors for affording me this opportunity, for their guidance throughout this journey, and for having provided me with the best supervisor, a student can ever wish for, Prof Ben Cousins.

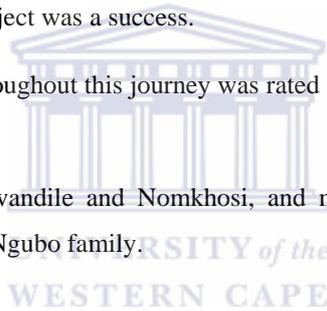
Prof. Thanks for nurturing me, for being patient with me, and for never giving up on me. It was your constant faith in me that kept me going. May you continue to believe in your students, even when they sometimes doubt themselves, God Bless you.

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I dedicate this thesis to my parents, Mzwandile and Nomkhosi, and my siblings, Sindi, Samke, Nstika, Kwanele, Nozuko, and the Ngubo family.



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## CHAPTER ONE: INTRODUCTION

### 1.1 Background

#### *Smallholder agriculture in South Africa*

South African agriculture has a dualistic agrarian structure comprising both large scale commercial white farming and small scale resource-constrained black farming. Over 90% of total farm output in the country is produced on a small number of these large scale farms, and less than 2% of households in South Africa practice agriculture as smallholders, the highest percentage being noted in Northern Cape (4.1%), North West (3.9%), and KZN (2.6%). Subsistence farming is a more prevalent form of agriculture with 21.6% of South African households practicing it. Not much is known about the smallholder agricultural sector besides the fact that it is relatively poorly organized and under-resourced, and is concentrated in the overcrowded former homeland areas. Despite exact numbers of such farmers being unknown, with some estimates reaching 2.5 million (Altman *et al*, 2009:356), it is often advocated that such households be provided with support since they do not receive much attention from policy makers (Altman *et al*, 2009:346).

Participation in subsistence farming is mostly done to provide extra sources of food, but this does not mean that households are more food secure. Farming is done at an extensive level and is one of many diverse cash generating activities that rural households engage in, with many households only turning to farming as an additional livelihood strategy (Stats SA, 2011, van Rooyen, 2012). Most farming households found in the former homelands are still characterized by poverty, hunger, poor remuneration, under-employment as well as unemployment. They derive a miniscule proportion of their livelihoods directly from agricultural sources. In its place, non-agricultural sources such as remittances and off farm work have been sought after, and the importance of government social grants has strengthened as a result of the demise of agriculture (Mudhara, 2010 and Cousins, 2012).

Small scale farming in South Africa generally combines crop and livestock production, the latter serving multiple household functions such as meeting financial, social, and cultural objectives. Productivity of these farming systems is often low due to poor access to productive assets (Lahiff and Cousins, 2005:127). Rural areas continue to lack a large number of economic activities which further limits their potential to create and sustain economic growth. There is a general lack of infrastructure, access to credit, extension and

markets, both informal and formal in nature, thus hindering expansion of the production potential of small scale agriculture (Greenberg, 1996:106; Kirsten and Zyl, 1998: 551 and Lahiff and Cousins, 2005:127).

In post-apartheid South Africa government policies and actions affecting agriculture, have created considerable uncertainty among large scale commercial farmers due to a perceived lack of consultation and transparency (e.g. in relation to AgriBEE, labour, minimum wages and property tax legislation) and a continual “shifting of goal posts” (e.g. in relation to land reform and AgriBEE) (Ortman, 2005 and Mudhara, 2010). Only 13% of South African land is suitable for arable production, whilst around 86% of land is suitable for grazing, but it is vulnerable to limited groundwater supplies, low fertility soils and unreliable rainfall. Nevertheless the National Development Plan 2030 proposes the development of highly competitive commercial and smallholder agricultural sector in South Africa. It is envisaged that a million jobs will be created through agricultural development that is based on the effectiveness of the land reform programme and recapitalisation of irrigation agriculture, as well as the development of potential industries, fisheries, agro-processing business and small scale enterprise. In addition improvements in the provision of basic services is hoped to enhance people’s capabilities to take advantage of economic opportunities (van Rooyen, 2012, Cousins, 2012).

#### *Land and agrarian policy in South Africa*

Colonial dispossession of land of the indigenous population of South Africa took place over a period of 300 years. The Dutch arrived in the 1650s at the Cape of Good Hope, and over time white settlers progressed northwards and eastwards, until eventually the best agricultural land was in the hands of the white minority, leaving only 13% of the land to the African majority, later known as ‘homelands’ or Bantustans. As much as 87% of total agricultural land fell into white hands, a group comprising only 10.9% of the population thereby making South Africa to have one of the most unequal distributions of land and income in the world. Income and material quality of life became strongly correlated with race, location and gender (Lahiff and Scoones, 2001:2; Turner, 2002:7; Lahiff, 2007:1577).

South Africa had a thriving African peasantry in the early 20<sup>th</sup> century which was dismantled by discriminatory policies (Bundy 1979). The need for land reform in South Africa is thus to redress historical injustices, alleviate rural poverty and foster economic development. The White Paper of 1997 on South African Land Policy identified three broad categories of

reform; land restitution (to provide relief for victims of evictions and forced removals); land redistribution (to redress the racial imbalances in landholding for the landless poor, labour tenants, farm workers and emerging farmers, by providing land for residential and productive use to improve livelihood and quality of life); and tenure reform (to secure and extend tenure rights of the victims of past discriminatory practices). These foundations were laid during the negotiated transition to democracy and the legal basis for land reform is articulated under Section 25, the property clause in the Bill of Rights, which forms part of the constitution of the Republic of South Africa (Lahiff, 2007:1578-9).

The pace at which land is being redistributed, has been regarded as very slow, with only 7.6% of agricultural land being transferred by 2010 (Kleinbooi, 2010:2). Inadequate support for productive use of transferred land has been a major problem facing the programme since its inception. By 1999, the initial 30% target for redistribution of agricultural land to black farmers had not been met, and the target date was then revised to 2014, and now 2025. By the end of September 2009 only 5.67 million (6.9%) land had been transferred to 1.78 million beneficiaries with over a quarter of this land (26%) generally found in the arid Northern Cape Province. The main approaches and mechanisms adopted to redistribute land, such as 'Willing Buyer Willing Seller' (WBWS); Settlement Land for Agriculture Grant (SLAG), and Land Redistribution for Agricultural Development (LRAD) programmes, have not proved effective. The lack of infrastructure, input and technical support to beneficiaries has constrained the productive use of land (Turner, 2002:6, Hall, 2006 and 2009, Cliffe, 2009 and Greenberg, 2003:110 and 2010:2).

Some critics would prefer that the target be increased to 90% of agricultural land as they see this as the only way to drastically address the extremely unequal landholding patterns in the country. However, doing so without disturbing food production, while retaining agricultural skills in the farming sector, as well as paying 'reasonable' compensation to white farmers for their investment will prove highly challenging for government (Greenberg, 2010:6-7).

Other critics argue that land valuation based on market prices, means that government has to buy land at inflated prices within the WBWS policy (Lahiff, 2008 and Hall, 2009). Greenberg (2010:6) presents budgets for land reform over the period of 1996 to 2011, and argues that they are insufficient, suggesting that government will only afford to buy 3.2 million hectares at market prices by the end of 2011. Some analysts suggest that an additional R74 billion is needed in order to meet the 30% target by 2014 (Greenberg, 2010:6). The availability of

willing sellers also varies from time to time, and since there is lack of political will to expropriate land, obtaining land to transfer becomes difficult. Farmer unions, however, blame the slow pace of land purchases by government on bureaucracy and institutional incapacity. There has been an attempt to decentralise decision making to provincial and local levels but this has resulted in bureaucratic delays. A key constraint is thus incapacity to develop efficient systems for identifying suitable land that is in line with beneficiaries' needs, and to ensure that proper channels are followed for transferring land and awarding post settlement grants thereafter.

Tenure reform has been neglected; hence little has been done to transform the plight of farm workers, labour tenants and their dependants in privately owned properties in KwaZulu Natal and Mpumalanga Provinces. To date abuse of workers, lack of housing, low wages and benefits, insecure tenure, and evictions from farms still obtain in the farming sector, with little done to protect victims. Official systems remain dysfunctional, from responses to reporting a case at the local police station, to providing sound legal support from specialised personnel within the justice system able to deal with tenure matters, to the reporting on progress with the settlement of approximately 20 000 labour tenant claims (Lahiff, 2008:4).

In response to these concerns, in August 2007 government established a network of public-private sector lawyers making up the Land Rights Management Facility. The facility seeks to address a range of farm worker, farm dwellers and labour tenant issues, through;

- Provision of legal representation as well as mediation of disputes and settlement thereof
- Eviction monitoring
- Raising land rights awareness and promoting access to services and products offered by the department through a call centre
- Training stakeholders on applicable legislation and policies and
- Establishing district, provincial and national forums (Lahiff, 2008:5).

Thus far I have briefly highlighted the characteristics of smallholder farming and introduced key land reform policy programmes, which has huge implications for the future development of the smallholders. Key policy and public debate on land and agrarian reform, together with the implications these have on rural livelihoods will be discussed in more detail in Chapter 3.

### *Evolution of labour tenancy in the Weenen District*

This study focuses on former labour tenants in Msinga who have received ownership of land through land reform. A very brief history of land tenure in the district is provided here, as general background, and expanded on in Chapter Two. Archaeological evidence indicates that African farming people had lived in the middle of the Tugela River since AD500 or earlier due to local pockets of rich riverside soil and of year round sweetveld grazing. In the late 1830s there a number of communities in the Tugela region, including some newer arrivals, namely the Mthembu, *Mbhele* and *Mchunu* tribes. At that time the Boers began to lay claim to land in the Weenen area. Private property rights and labour tenancy began to take effect in the 1840s with the annexation of Natal by the British in 1843 and the establishment of colonial administration in the land 1840s (Walker, 1982 and Mozower, 1990 and 2006).

During the 1950s the government took steps to control labour tenancy by amending the 1936 Trust and Land Act, now requiring all labour tenant contracts to be registered, and later appointing a Commission of Enquiry into the system. The commission reported in 1961 recommending the abolition of labour tenancy within seven years, due to economic factors and the fear of 'blackening the countryside' (Walker, 1982, Mozower, 1990 and Clacey, 1989:5-9). Massive removals of labour tenants from white-owned farms to the 'KwaZulu homeland' took place in the late 1960s and early 1970s, but some tenants, as in the case of one of my case studies, the Nkaseni community, were allowed to remain as labour tenants. After 1994 and the establishment of a land reform programme, the return of some of these farms to former tenants began to take place.

#### **1.2 Research Problem and Justification for the study**

This study explores the constraints and opportunities of farming systems employed by former labour tenant communities in Ncunjane and Nkaseni, located in Msinga in KwaZulu Natal. A Farming Systems Research (FSR) approach was adopted, and in the course of the research process I tried to ensure farmer participation and the validation of local farming knowledge. The key characteristics and dynamics of these systems will be identified in the hope of informing policy and the provision of appropriate post settlement support through the land reform programme. This might ensure that external support services provided are tailor made to suit farmer's needs.

In the past there was very little research and development aimed towards improving productivity for small scale black farmers in South Africa. When the apartheid was dismantled in 1994 there were high expectations that government would now assist both smallholder and emerging black commercial farmers. However, as outlined above, there has been slow delivery in transfer of agricultural land to black people, and an unclear and incoherent rural development programme, and rural poverty remains a major problem.

In South Africa poverty and inequality are highly concentrated in rural areas, where over 70% of the rural country's poor people reside. The most vulnerable households are considered to be those headed by women or children, the elderly, and people affected by HIV/AIDS (Kepe and Cousins, 2002:1). Under apartheid, agricultural production was highly constrained in the 'homelands' due to overcrowding, so many people turned to migrant labour in towns and mines, and today agriculture in these areas is commonly limited to subsistence production (Vink, 2003: 14).

Statistics generated from studying rural poverty suggest the following key characteristics;

- A high dependency on non-farm income sources namely child support grants, pensions and migrant wage remittances,
- Extreme shortage of land amidst high overcrowding with a few households owning livestock, with households generally suffer from high levels of food insecurity and malnutrition,
- Urbanisation is not necessarily permanent, with many returning to rural areas as they cannot get formal employment,
- Land based livelihoods (cropping-livestock-natural resources) make a small contribution to household income, with an estimated value per household per annum being R1543-R1200-R2792 respectively (Kepe and Cousins, 2002:1; Averbek and Khosa, 2007:413).

Nevertheless several authors argue that there is great potential for land based livelihoods including agriculture-based land reform projects, namely vegetable production; livestock husbandry; trade in wild resources and wool, as suggested by a rich body of evidence of limited successes and many opportunities for expansion of these small scale projects (May 2009, Shackleton *et al*, 2009 and Aliber *et al*, 2011). They further suggest that access to land and effective support services, tailor made for these projects, can help significantly contribute

to economic development and poverty reduction in the South African rural landscape (Phillip, 2000; Shackleton *et al*, 2000; Kepe and Cousins, 2002; Macheche, 2004; Averbeke and Khosa, 2007; Lewu and Assefa; 2009).

In further support of this view is Ortman (2005:286) who also attests that the small scale emerging farm sector in South Africa is important in terms of providing employment, human welfare and political stability. As much as 83.6% households, in KZN, engage in agriculture to produce extra source of food and 7.1% households as an extra source of income. Only 1.4% households participate in agriculture to produce their main source of food and only 2.9% households used agriculture to obtain their own main source of income (Stats SA, 2011:48). This suggests that households are largely engaged in smallholder farming for household consumption purposes. Farming activities were found to forms part of complex rural livelihoods to increase household sustainability (May, 2000:24). Households engaging in subsistence and smallholder agriculture are mostly likely to keep livestock (62.8% and 82.3%) respectively and plants crops, fruits and vegetables indicating the integration of crop and livestock production systems(Stats SA, 2011:49-50). Mixed farming systems provide a variety of goods and services to households (Shackleton *et al*, 2000).

This study will add to existing empirical evidence on the contribution of smallholder agriculture to the livelihoods of rural households. The implications of the research findings for the design of support of small scale farmers will also be explored.

Studying the farming systems of former labour tenants in Msinga will contribute to the understanding of farming systems which are practised within a similar context, as in many areas found in KwaZulu-Natal. They appear to share many general characteristics with small scale farmers elsewhere in the province, such as the unit of production being multi-generational families who engage in cropping in both small homestead gardens and larger fields; the integration of livestock inputs into crop production in the form of manure and draught power, as well as the keeping of both cattle and goats for multiple functions; and a high reliance on family labour.

This exploratory study will highlight a range of issues for rural development policy, and is therefore likely to assist in the planning of appropriate projects for beneficiaries of the land reform programme. Planning and support services for land reform must attempt to draw on the insights and skills of range of disciplines, such as agriculture and range management, applied ecology, anthropology and sociology, economics, public administration and

organizational developments and adult education. Integrating such a wide variety of disciplinary perspectives is by no means an easy task, however, and a co-learning approach has much to recommend it (Cousins, 1996:19).

The research study also explores whether or not commercialisation of small scale farming in a place such as Msinga is appropriate and the possibility that alternative small scale production systems might be more appropriate. Past neglect of black rural social and ecological realities by researchers has contributed largely to incomplete knowledge and understanding of the economic, political, institutional and ecological processes which have brought about the observable patterns described in the literature (Cousins, 1994:162).

Msinga is known to be dry and prone to erosion and is no exception in the wider development in Africa's arid and semi-arid lands has been fraught with problems and failure for years because development needs have usually been diagnosed by outsiders who may have little real understanding and appreciation of such land-use systems.

Around 13% of South Africa's total agricultural land is potentially arable, and of this, 78% is of medium and low potential. High potential land is geographically concentrated, with 90% of it found in Mpumalanga and KwaZulu Natal, where adequate water supplies are limited and dispersed (Greenberg, 2003, 97). Farming regions of in the north of KwaZulu-Natal are characterised by low rainfall of an average 601-700mm per annum, and is of thorn-veldt and rugged broken land suitable for extensive farming systems. Ncunjane and Nkaseni fall within the Thukela Valley Bushveld bio-resource STb1 characterised by shallow poor drainage soils, with almost 60% of the land too steep and rocky for cultivation (Woolley, 1983: 23 and Camp, 1995:2-8).

Msinga is situated in a dry to semi-arid zone with 600-700 mm of rainfall on average, and very high summer temperatures of up to 44<sup>0</sup>C. Existing forms of agricultural activities vary across the district; in some areas livestock production dominates, with little cropping taking place; in others production systems are agro-pastoral in character and extensive dry land cropping is practised; in yet others, cash crops are grown under irrigation. Dry land crops include maize, sorghum, pumpkins, beans and groundnuts. Some farmers have access to furrow irrigation systems fed from the Thukela and Mooi Rivers, and grow green maize, tomatoes, cabbage and other vegetables for sale. Marketing and support services for most farmers are extremely limited (Cousins, 2011b:12). Given the high level of variability in

farming systems due to the prevailing limiting environmental factors in the area, it is clear that commercialisation of farming might be risky. Former labour tenants in Ncunjane and Nkaseni shared the sentiment that the locally-based Department of Agriculture needs to be educated about the multiple farming systems found in Msinga. Therefore the rationale for this research project is to clearly depict and present to the Department the structure, composition, dynamics, challenges and opportunities which characterize the farming systems practiced by the land reform beneficiaries. The hope is that this information will be useful for the Department in planning a rural development intervention that will directly and efficiently address the specific challenges and aspirations of farmers and livestock owners in these areas. Farmers also want to use the research as a catalyst to fast track service and infrastructure delivery from the local Department of Agriculture located in Estcourt.

### **1.3 Research Objectives**

In general, this study aims to explore the nature of the current farming systems employed by former labour tenant communities, identifying the constraints and on and the opportunities within these systems. The contribution of farming to rural livelihoods will be analysed, due to its potential significance as a provider of both food and income to rural households. Hence the study specifically seeks to collect field data and undertake an exploratory analysis of the following issues;

- The characteristics of farming systems in communal areas in Msinga, in particular in the former labor tenant communities of Ncunjane and Nkaseni
- The inputs, processes and outputs that comprise the farming systems and the resultant interrelations between these components of the systems
- The determining as well as the limiting factors of these systems, and farmers' coping strategies in relation to the identified limiting factors
- The dynamics of change in these farming systems in the wake of land reform
- The policy implications of research findings

### **1.4 Research Questions**

In addressing the above mentioned objectives, some key research question had to be explored:

- What livelihood strategies are pursued by former labour tenants in the Ncunjane and Nkaseni communities?
- What contributions do these livelihoods make to the total household income and what is the contribution from agriculture in particular?
- What is the character of farming systems engaged in by agricultural producers and livestock owners in these two communities?
- What changes in farming systems have taken place after the completion of the transfer of land ownership to the former labour tenants via the land reform programme?
- What are the wider implications of the research findings for the design of land reform policies and the implementation of post-transfer support programs for beneficiaries?

## **1.5 Research Design**

### **1.5.1 Research Methods**

The study is exploratory in nature given the small and statistically unrepresentative nature of my sample. The study required the use of mixed research methods in order to achieve the research objectives. Data had to be gathered using both qualitative and quantitative research methods. I collected data over a period of five months, and had the assistance of two key informants at the field site. Local informants may be biased, may constrain your entry into some parts of community, and may apply their own subjectivity. However they can provide access to a broad and diverse sample of the group under study (Babbie and Mouton, 2007:202).

A total of 22 households in each research site were purposively selected and interviewed for purposes of quantitative data collection. Purposive sampling took the form of targeting households with varying numbers of arable plots and varying numbers of cattle owned. This was necessary to assess the potential impact of mixed crop-livestock production systems on household livelihoods. In addition, semi structured interviewing, female and male focus group sessions, together with participatory rural appraisal (PRA) tools (namely transect walks, resource mapping, and direct farmer observation) were other research techniques employed in the study. Respondents were both male and female. Table 1 shows the gendered characteristics of the sample selected in this research. In addition to individual interviews, a

total of four focus groups were convened, two comprising males (one group in each research site) and two comprise females (also one group per research site).

**Table 1. Number of respondents across research sites by gender**

	NCUNJANE		NKASENI	
	Male	Female	Male	Female
Homestead survey	15	7	14	8
Semi-structured interviews	4	3	2	3
Total	19	20	16	11

Data on livestock ownership and off take numbers, together with plot sizes and the range of crops planted, all required the collection of reliable quantitative data through a questionnaire survey. The use of this scientific procedure seeks to increase the likelihood of answers to the questions being relevant, unbiased and reliable. It further provides distinguishing features by categorising sample population into taxonomic groups, thereby providing key similarities and differences, but it lacks in explanatory power (Sayer, 1992:243 and Terre Blanche *et al*, 2006:132). Validity in quantitative research refers to the accuracy and trustworthiness of instruments, data and findings in research (Bernard, 1994:38 and Babbie and Mouton, 2007: 120). The study thus also relied on qualitative research to gather data that would allow more explanations of the actual situation, in greater depth, and to assist in understanding the meaning of the categories that emerge from the data (Terre Blanche *et al*, 2006:47).

The study collected data in three phases, beginning with the collection of preliminary data using exploratory research tools. The second phase involved the collection of quantitative data, computing and analysis using a statistical software package for the social sciences, SPSS. The third phase included collection of qualitative data and analysis, and corroboration with secondary data sources which included both published and unpublished material. Throughout all three phases, secondary data was collected relating to the research topic. The use of these research methods has broadened my understanding of the structure of farming

systems and how they work, in relation to the farming households in Nkaseni and Ncunjane from which I collected data.

### **1.5.2 Quantitative Data Collection**

A detailed and lengthy questionnaire was used to elicit information from the respondents about their livelihood strategies, livestock numbers and crop production. Code sheets were developed to enable administration of the questionnaire in a user-friendly manner. The two key informants were both prominent and trusted elders on the community, who assisted in the administration of the questionnaire. They provided simplified explanations of my questions, in cases where there were language issues. They further helped provide me with an understanding of the context of each household, enabling me to address the respondents in an appropriate manner. The reliability of the respondent's information was strengthened because of the presence of the key informant during the interviews, as they would be asked by the respondents to assist in the recollection of certain information. Key informants also advised me regarding who best to talk to, within the household, so that more accurate data could be collected.

The questionnaire allowed for gathering numerical data on household demographics which included household size, generations in the households, income sources and number of assets owned. This information could be used to indicate the most common sources of livelihoods employed by households, including an estimate of what proportion of total household income is derived from farming activities. Livestock numbers and crop production data were collected to provide more information on general stock ownership patterns, uses of livestock, and so forth.

### **1.5.3 Qualitative Data Collection**

A range of qualitative data collection techniques were used to obtain an in depth appreciation of farming systems, including the potential impact that farming has on the livelihoods of households in Ncunjane and Nkaseni. Individual livestock owners, with both relatively small and large cattle herds, and people involved in crop production were identified from the resultant taxonomic groups derived from quantitative data analysis.

Semi-structured interviewing, female and male focus group sessions together with some participatory rural appraisal (PRA) tools, namely transect walk, resource mapping, and direct

farmer observation, were employed in the study. Field trips were undertaken to both research sites at different times of the year, as and when I was available. The initial visit took place in February 2011, followed by another one in May and August 2011, and again in March and June 2012.

The distribution of field trips allowed data to be collected at different times of the year. This provided an opportunity to observe different farming activities such as ploughing of fields in August, and harvesting and selling of green mealies in March. The field trips undertaken in 2012 relied heavily on farmers' availability. As this was the peak harvesting and selling season; key individual farmers were not available for interviewing for more than an hour. Some farmers were not available at all. The key informants were also occupied during this time. This presented me with the challenge of organising and coordinating meetings with farmers.

#### *Semi-structured interviews*

Semi-structured interviewing is characterized by being flexible, iterative and continuous, rather than prepared in advance and locked in stone (Babbie and Mouton, 2007:288).

In-depth individual interviewing was done via the use of semi structured questionnaires to guide the actual process. Note taking was minimal as the interviews were recorded and later transcribed and analysed. None of the respondents had objections to the interviews being recorded. Detailed explanatory and descriptive data on the mixed crop-livestock production systems were collected using this technique. A total of 20 individual in depth interviews was envisaged, however farmers were preoccupied with selling their maize produce and as a result only 12 interviews were conducted. Nonetheless very detailed data were collected and sorted into categories. Common themes were identified, and possible causal explanations were listed.

#### *Focus Group Discussions*

Focus groups allow for the capturing of similarities and differences between participants' opinions and experiences, as opposed to reaching such conclusions from *post hoc* analysis of separate statements from each interviewee (Babbie and Mouton, 2007: 288-9). In a community where tradition is deeply entrenched, and where customary practices are embraced in everyday living, attempting to have a community meeting with both males and females in the same room is problematic. I was advised by my key informants that focus

groups would have to be convened separately, to take account of this issue of gendered roles and practices.

My intention in running these discussions was to gather data on both differences and similarities within the community, as a collective unit, regarding issues of decision making in current farming systems. They were to also undertaken in order to ascertain changes that have occurred over time, and to explore the impact that land reform has had in relation to their farming systems. A useful platform was thus provided to examine key gender issues within these farming systems, and the focus groups also seemed to provide an opportunity for asking more questions of farmers, as well as for participants to request more information about what benefit the study would be to them.

#### *Direct Observation*

Direct observation of both off-farm and on-farm activities was a core element of all the field trips I undertook. Most of my observation was made in relation to local farming practices, since I was allowed to visit all the crop lands in use. I also explored the local dipping sites and sources of irrigation. More intensive periods for observation included the exploratory week, and occasions such as the preparation of fields and the sale of green mealies.

#### *Participatory Rural Appraisal tools*

A resource mapping exercise was done as part of the focus group sessions to ascertain where natural and physical capital was located in relation to residential areas in both research sites. The objective of this exercise was to get a clear representation of the spatial aspects of settlement patterns.

A cropping seasonal calendar detailing which crops are sown at what times in the year was also used to help depict the cropping patterns and planting methods employed by farmers. Other technical crop production related issues were also discussed. The data provided supplementary information to the initial data on cropping collected using quantitative research methods.

An income versus expenditure matrix was administered to identify how cash income flowed in and out of the farming household. This data was useful in providing a better understanding of intra-household decision making around the use of disposable cash considering that crop-

livestock farming systems were in competition with other household needs such as food and transport.

A time line was also developed using information provided by respondents that attended focus groups discussions, to systematically account for key environmental, socio-economic and political events that occurred in the community as early as the 1980s. I hoped to uncover specific historical events which might have influenced management of current farming systems.

### *Secondary Data*

Available documents ranging from district municipal data to publish and unpublished research material, was consulted, to provide a wealth of knowledge on key debates and concepts relating to this study. University libraries and reputable internet search engines were visited to access more secondary data. Qualitative data findings were analysed in light of information obtained from secondary data as all observation is theory laden. Most of these data were used to formulate a comprehensive literature review (see Chapter Three).

### **1.6 Sampling Procedure**

Respondents from Nkaseni and Ncunjane were selected on the basis that they owned livestock owning and practiced cropping. The majority of households met these criteria. Purposive sampling was then employed in identifying key individual farmers and livestock owners who were most likely to provide in-depth information about the respective farming systems. Finding men who owned livestock that were present in Ncunjane at the time of conducting fieldwork proved challenging, because most of these men were migrant workers and therefore not present. Men who were available were old or disabled, or couldn't participate in the research, for reasons unknown to the researcher; as a result no more than four men from Ncunjane participated in this study.

### **1.7 Outline of the thesis**

This thesis is organised into seven chapters.

#### *Chapter One: Introduction*

This chapter introduces the general characteristics of South Africa's agrarian structure, with a particular focus on the smallholder sector. Land and agrarian reform policy is highlighted to

describe the policy context within which this study is located. The chapter outlines the objectives of this study and sets out a number of key research questions, and then describes the data collection methods employed. Lastly the reader is taken through a brief summary of all seven chapters contained within this thesis.

#### *Chapter Two: Description of Research sites*

This chapter introduces the research sites, Ncunjane and Nkaseni, and provides details about the wider area's geographical and socio-economic profile. Further descriptive data gathered from documents of the UThukela District Municipality are presented to provide the ecological context of these areas. Orthophoto maps of each research site are attached, in Appendix C, to showcase the spatial and settlement pattern, including the location of key resources and infrastructure that are essential to understanding the livelihood strategies employed by members of these former labour tenant communities.

The historical impact of labour tenancy on rural livelihoods within the district is also presented. Secondary data on the community's land laws and institutional arrangement for land allocation, use and management are presented, as extracted from Cousins' (2011a) research report. This illustrates how the social identity of these labour tenant communities is premised on land based livelihoods, hence the importance of access to land.

#### *Chapter Three: The status of smallholder farming systems in South Africa*

The study is located within wider debates of small scale farming systems in South Africa, with an emphasis on the potential contribution of crop and livestock production to poverty alleviation for millions of poor people living in the South African rural landscape. The chapter draws on the Farming System Research Approach (FSR), the conceptual framework used in the study, to analyse the constraints and opportunities presented by the current farming systems in communal areas. Besides highlighting FSR objectives and key features, a few case studies, in Southern Africa, which use the framework to identify ways to improve efficiency and productivity on farms, are also presented in this chapter. The rest of the chapter discusses the land reform programme and highlights the programme's relevance to the development of the smallholder sector. The main thrust of this chapter is to highlight that there is great complexity within rural livelihood systems, and thus they ought to be understood in their own right, and supported as a way of sustaining the rural poor.

*Chapters Four and Five: Characteristics of socio-economic structure and farming systems of former labour tenant communities: the case of Ncunjane and Nkaseni*

These chapters report the study's detailed research findings, both quantitative and qualitative, for Ncunjane and Nkaseni respectively. Key demographic features and the socio-economic structure of the rural farming households are presented. Findings are discussed in comparison to findings of similar studies in the area (Trench *et al*, 2002, Bayer *et al*, 2003, Cousins, 2011b, Budlender *et al*, 2011 and Umtshezi IDP Plan 2011-12). Crop and livestock production systems components and interrelations between these mixed farming system components are discussed. Data are presented by way of tables and graphs (quantitative data) and more descriptive explanatory accounts (qualitative data).

*Chapter Six: Discussion*

Key features of the mixed crop-livestock production systems found in Ncunjane and Nkaseni are summarised and discussed in light of the wider literature on smallholder farming, as presented in Chapter Three. Emerging interconnections between farming system components are presented in a flow diagram which also clearly depicts the key distinguishing characteristics of these mixed farming systems. The chapter is structured as a discussion of key research findings in relation to each research objectives, as set out in Chapter One. The chapter thus evaluates whether or not the research objectives have been met, and whether or not this study does in fact add to knowledge, in the form of original empirical data, to the existing literature on smallholder farming in South Africa. In conclusion, this chapter argues that smallholders should be supported by state policy, as the empirical data obtained indicates that farming is a potentially significant contributor to rural livelihoods.

*Chapter Seven: Conclusion*

Prominent findings are summarised and aspects which might require further research are highlighted. The broader implication for policy and practice is discussed in light of the National Development Plan's 'inclusive rural economy' strategy (NPC 2012). In concluding, I argue that smallholder agriculture has proved to be a potential contributor to total household income by providing a range of material goods and services to sustain households, which then justifies the promotion of 'petty commodity production' amongst better off farmers.

## **CHAPTER TWO: DESCRIPTION OF RESEARCH SITES: NCUNJANE AND NKASENI IN CONTEXT**

Chapter Two of this thesis sets out to give a description of the research sites, Ncunjane and Nkaseni, and their wider contexts. District-level data focusing on the socio-economic and environmental profile of the area, are discussed. Thereafter an account of the historical and political context, within which land laws and institutional arrangements for access to land are based, is presented. Secondary data on land tenure issues are summarized, drawing primarily on Cousins' (2011a) research report on land tenure in Msinga. Key issues pertaining to land reform and labour tenancy, as well as small scale agriculture, have been briefly discussed in the previous chapter, but these will be now discussed in more detail, with a greater focus on the Msinga area specifically.

### **2.1 Location and socio-economic profile of the area**

#### **2.1.2 Demographic profile**

The Umtshezi Local Municipality (KZN234) is one of five local municipalities under the UThukela District Municipality (DC23) and has the lowest population of approximately 83 907 people, with a density of 23 people per square kilometre compared to other municipalities within the District. The average household size in rural areas within the district municipality is five to eight persons. There are a total of 15 232 households unevenly distributed within seven wards, of which Ncunjane and Nkaseni fall within Ward Five. The majority of the population is concentrated in urban areas (29 934) and in farming areas (19 950). The prevailing spatial settlement pattern was largely determined by apartheid policies, and is characterised by undeveloped infrastructure and poor services, and a low economic base in the rural areas which are located at a great distance from urban areas, and hence from employment opportunities (Umtshezi Local Municipality, 2012).

#### **2.1.3 Racial profile**

Blacks make up the largest proportion of the population at 86%, followed by Indians (10.9%), then by whites (2.5%) and lastly by coloureds (0.6%). The number of females outweighs that of males across all races, with an aggregate of 38 700 females and 33 452 males (Umtshezi Local Municipality, 2012).

#### **2.1.4 Age profile**

Demographic data of the district municipality shows that the highest proportion of the population, in terms of age distributions, is youth, with as much as 71% people being below the age of 35. Only 4% of the population represents the elderly, who are above the age of 65. A more detailed age breakdown of the Umtshezi Local Municipality reveals similar trends, with the largest proportion, 37%, of people being between the ages of 15 and 34 years. The second largest proportion represents 25% of people who are between the ages of 35 and 64 years. There is also a high proportion, 23%, of children of school-going age (between 5 to 14 years). A large proportion of the annual municipal budget allocations must therefore go towards social development services such as child support grants, pensions, health care, education and public transport (Umtshezi Local Municipality, 2012).

#### **2.1.5 Income Profile**

As much as 27% of total households in the local municipality are said to be living on less than R12 per day, which translates to less than US\$2 per day. This is the universal standard for poverty, is commonly referred to as the poverty line. This therefore implies that these households are poor. It is assumed that poor households seek off-farm wages to secure disposable sources of income. This condition increases the dependency of households on non-farm income sources for securing a livelihood, thus a large proportion of the municipal budget has to go towards social grants namely child support, pension and disability grants, to provide households with additional regular income. Seeking off-farm wage opportunities might imply a lack of a viable economic base from which to generate substantial income within these areas. The Integrated Development Plan for Umtshezi suggests that promotion of local economic development projects such as eco-tourism (if the existing natural resource base permits), might play a role in providing on-farm sources of income and thereby lead to local rural development (Umtshezi Local Municipality, 2012).

The rate of unemployment is relatively high, with the main sources of livelihood being typically off-farm wages, state grants, remittances, and cash income derived from land-based livelihoods (Umtshezi Local Municipality, 2012). Other forms of livelihood would require a higher level of education, coupled with working experience. But under prevailing economic and educational circumstances prevailing within the district, producing skilled labour remains a challenge. However there are cases, in both research sites, where people are employed in

semi-skilled and skilled forms of employment. Some are formally employed in the services sector as professional teachers, social workers, policemen and healthcare givers while others are employed as taxi drivers and security guards. Cases where people operate small enterprises, with or without employees, were also found. These include owning taxi businesses, running *spaza* shops, and selling loads of fuel wood (Umtshezi Local Municipality, 2012). Rural livelihoods are therefore a complex mix of rural and urban employment, and include a range of goods and services derived from land-based livelihoods.

The 1996 census recorded a relatively low proportion of people within the 'economically active' population— only 36% of people between the age of 20 and 60 years old. Despite such low numbers, it was discovered that only 10% of this active group, earned an income of more than a meagre R500/month. They were considered to be generally poor since they lived below the poverty line. Historically, the main employer within the district was the manufacturing and trade sector. This sector included contributions from the tourism sector, and secondary support from agricultural enterprises, namely meat and dairy agro-processing together with the milling of maize.

Unemployment rose from 50% to 62.7% between the period of 1996 and 2004, yet agriculture, as a sector, employed just 2.4% of the active population at the time (Umtshezi Local Municipality, 2012). This was partly because commercial agriculture in the district is positioned within a region comprising dense settlements of unemployed farm dwellers and former labour tenant families, that are unevenly spread across both the commercial farms and the former labour reserve farms (Umtshezi Local Municipality, 2012). Furthermore there was a general concern that the sole reliance on traditional crops and lack of innovation within local farming systems including the prospects of land reform could hinder agro-processing potential, and hence reduce the agricultural contribution to employment creation in the district.

### **2.1.6 Agricultural Potential**

Agricultural potential, within the district, allows for mixed crop and livestock farming systems, mainly goat production, to take place. In general terms high agricultural potential land is scattered across the district. Good potential land accounts for 16% and 2% of the western and southern parts of the district respectively. At least another 22% of the total agricultural land, within the district, comprises low potential soils. Limited potential

agricultural land accounts for the majority, 60%, of the total agricultural land available (Umtshezi Local Municipality, 2012).

The area is suited to extensive farming systems with a low potential for production and most areas being declared non-arable due to a high risk of erosion. A large proportion, 50%, of the terrain is of even slope, yet too rocky to cultivate. Another 20% of the terrain is too steep for annual cultivation to take place, and only 4.4% of the terrain is regarded as being arable land suitable for primary production. Soils are generally loamy and clayey and are characterised as shallow with poor drainage. Hence much of the land mass falls under low potential classification. This is due to poor soils and erratic rainfall (Umtshezi Local Municipality, 2012).

The average rainfall is 601-700mm per annum (Umtshezi Local Municipality, 2012). There is good water resource potential with access to the perennial Boesman's and Tugela Rivers running through the district with numerous tributaries, namely the Ncunjane and *Skhehlenge* rivers. There was a severe drought in the early 1980s (which coincided with forced removals of large numbers of people from farms), resulting in a lack of rain and high temperatures during the months of March/April 1980 (Sato, 2006:11).

Mdukatshani Rural Development Programme's (MRDP)<sup>1</sup> (2012) archival rainfall records (see appendix A) provide accurate rainfall data for the past few decades. Droughts in the 1980 and 1983 period were marked by mass cattle deaths, particularly in the winter months (CAP, 2003:2). The year 1982 was the driest year since MRDP's arrival in Msinga in 1975, recording a rainfall of just 384.5 mm per annum. Rainfall from January 1982 to end of October 1982 was recorded at 303.5 mm. A very dry year was experienced again more recently in 2003, with archival records suggesting that from January 2003 to end of October 2003 rainfall was as low as 188 mm. This shows the unreliable pattern of rainfall in this region. By the end of September 2003 tributaries like the Sundays, or *Ndaka* River, ran dry, followed by boreholes and springs. Most recently, in 2009, these tributaries dried up, which led to hundreds of cattle deaths at Ncunjane. Consequently from 2009 onwards government supplied water in Msinga, although only to homes close to the main roads.

An estimated 90% of the local municipality is under commercial agricultural land that is surrounded by protected areas and the nature reserves which is administered by the KwaZulu

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<sup>1</sup>The Mdukatshani Rural Development Programme (MRDP) was formerly known as Church Agricultural Projects (CAP).

Natal Wildlife, such as the prominent Weenen Nature Reserve. There is presence of extensive commercial farming in the north, central, south and southwest areas of the district. Crop farming is restricted by low rainfall pattern in the central areas but intensive land use occurs where irrigation infrastructure has been installed (Umtshezi Local Municipality, 2012). Relatively little of the area is under communal tenure, since the former reserves mostly fall under a different municipality.

The most significant irrigation takes place in the valley of the Bushman's River, which boasts good potential land situated along the Tugela River, and around Weenen town (Umtshezi Local Municipality, 2012). In areas further from the floodplains, crops are cultivated under dry land agriculture and have relatively lower yields as compared to crops under irrigation. There is also marginal value from crop sales unless cultivated under irrigation. Crop choice is also limited to cold and heat stress although a range of crops are suited to the area namely cabbages, carrots, groundnuts, maize, tomatoes and sorghum, and could have higher yields per hectare under irrigation with 70% management level (Umtshezi Local Municipality, 2012 and Camp, 1995).

### **2.1.7 Vegetation**

There are up to five bio-resource units (BRUs) within the UThukela District Municipality. Ncunjane and Nkaseni are situated in low lying areas, distinguished by having erodible soils and thorn bush vegetation. The main land vegetation cover across the district is Thukela Thorn veldt and Thukela Valley Bush veldt, which is comprised of threatened and vulnerable tree species that are endemic to the KwaZulu Natal province. The indicator species commonly found are *Erograstis superba*, *Aristida congesta* (moist grassland biome Sb1); *Boscia albitrunca*, *Boscia combretum* (thorn veldt biome Tb2) and *Acacia karoo*, *Acacia nilotica*, *Acacia tortilis* (valley bush veldt biome STb1) (Camp, 1995).

The occurrence of such great diversity in vegetation cover is perhaps why the district is suited to cattle and goat production. Sustainability of the rangeland systems is questionable, but dry matter availability and carrying capacity would have to be investigated. Based on general grassland calculations, on average an animal consumes 10kg of forage per day thus requiring the veldt condition to produce 3500kg dry matter per hectare over a 350 day period to sustain animals under conventional commercial livestock production systems. At least 65% of the veldt is to be rested in the first and last rains during the rainy season, since the dormant season is over a 15 day length. Supplementary feed might be required in winter pending on

the stocking rates, in the area (Camp, 1995). Further investigations on the resilience of rangelands in Msinga would have to be done, to develop appropriate management practices in line with stock owners' objectives and aspirations.

*Boschia species*, or *umvithi*, are traditionally used as an emergency feed during drought, and is one of several species of wild trees that are harvested for their high protein leaves. Feeding *Boschia* has been a gesture, but the only gesture farmers could make in view of the lack of grazing and browse. With the woodland leafless, and the grass grazed flat, cattle often appear to be surviving by chewing spiny yucca hedges to stumps (CAP, 2003:1) several informants admitted that they keep their cattle alive by driving them onto privately-owned lucerne fields in the dark and then driving the animals back at about three in the morning. This proved to be a highly efficient survival strategy for livestock owners. Alternatively most of the stockowners have attempted to feed their animals branches of *Boschia*, *Olea*, *Schotia*, *Maerua* and even *Ficus*, although all these trees are now in short supply on the hills (CAP, 2003:4).

A thorough background on the socio-economic conditions within the Weenen District has been presented. Ecological information regarding natural vegetation, climate, soils and rainfall patterns has been highlighted. These environmental elements dictate the agricultural potential of an area, and therefore indicate which farming systems are suitable for that area. Overall this profile indicates the historical environmental constraints which limit agricultural commercialisation in the areas, as explained in the previous chapter. Hence it remains important that further ecological studies are done to identify more options for productive small scale farming in the area.

The chapter now shifts to other historical (and political) events which shook and shaped the current landscape, and perhaps people's identity and way of life. Labour tenancy, land reform and ongoing adaptations to land tenure within a system of living land laws' are described and discussed.

## **2.2 Labour Tenancy in the Weenen District**

What follow is a discussion of historical land tenure security struggles and the impacts of these on current forms of social organisation and survival strategies of former labour tenant families. This section aims to highlight the distinctive 'way of life' of a labour tenant and hopes to communicate to the reader the importance of ownership of land and access to

resources, to these people. In Chapter Three the role of smallholder agriculture in rural livelihoods will be discussed, and should be read in the light of this section on the history of labour tenancy in Msinga.

### **2.2.1 History of labour tenancy: An overview**

Labour tenancy was a system whereby people could secure access to agricultural land by working for the landowner, on a six months 'on-off' basis. Members of the labour tenant family worked on commercial farms, in exchange for being given access to land for ploughing and grazing their livestock. If any one of the family members broke the terms of the contract, or did something wrong, the whole family can be faced with the possibility of eviction. The contract did not involve payment in the form of cash but rather payment took the form of a set of use rights such as access to negotiated size of arable land and a certain number of livestock. Normally two able bodied members of the family would work for the farmer whilst women and children tended to the family fields. A trend arose whereby older children that provided their labour services on the farm for six months would leave the farms to seek off farm wage employment for another six months, before returning to commence their duties as labour tenants again. This led to an increased rate of urbanisation. Temporary migrant employment was common in the mining and manufacturing sector (Woolley, 1983:11, NLC, 1992:3, McClendon, 1995:1 and Mozower, 2006).

In South Africa labour tenancy was concentrated in Northern KwaZulu Natal and South East of the Mpumalanga province but was never experienced in the Western Cape Province. In 1980 the administration boards enforced new laws that farmers had to obey. This manifested in livestock impounding, limiting of access to land for cropping and grazing purposes, including limiting the number of livestock households could own. Some farmers introduced cash payments for labour services rendered instead of use rights on the farm. But perhaps the harshest use of power manifested itself in mass evictions of tenants from labour reserve farms, both constructive and arbitrary in nature (DLA, 2002). Such actions had adverse implications for access and use of rights of labour tenant families, which threatened their survival (Claassens, 1988:3-4, Williams, 1996).

Farmers restricted cattle numbers to no more than ten head of cattle per homestead, and the monthly wages set at R10 to R30 per month. Evidence points to variations in this standardised wage payment with the salary being paid once over a six month period. Other farmers would not pay cash but provide tractor ploughing services to the tenant family allow

labour tenants to access the remaining harvest, whilst other tenants were given food rations in the form of an 80kg bag of maize (Claassens, 1988:3-4, Williams, 1996).

The government announced the abolition of labour tenants in 1980, but mass loss of livelihoods, homelessness, and dispossession of land had already transpired by then. Greenberg (1996:91) cites the Surplus People Project's estimates that between the period of 1960 and 1983, than three and a half million black South Africans were removed from their homes, of which 1.1 million were farm workers. The next sub-section focuses on the period when labour tenancy was abolished in the Weenen district and how this affected people's livelihoods.

### **2.2.2 The abolition of labour tenancy in Weenen District**

This section focuses on the socio-economic impacts of the abolition of labour tenancy, and looks at how the beginning of a new era for labour tenants, with the introduction of the land reform programme.

The abolition of labour tenancy in the area formerly known as Weenen District was announced in 1969. As a result labour tenants came under threat of forced removals, if they were not prepared to remain in full time employment on the farms. However prior to this pronouncement, state-sponsored mass evictions had resulted in approximately 400 000 labour tenants being evicted. Consequently families lost their homes, livestock and employment. Nevertheless some pockets of tenants remained in the Muden/Weenen area, in Northern KwaZulu Natal.

Between the period of 1969 and 1980 it was reported that approximately 23 000 labour tenants had been evicted, after labour tenancy was abolished, such that most families ended up on the roadside or in concentration camps, such as the Weenen Emergency Camp set up in 1968 to accommodate evictees from the Weenen area (NLC, 1992:4 & 1995:1). Others were moved to *Nkosina* Relocation site in *Nkandla*. Others were moved to transit camps across the Tugela River, namely *Sahlumbe* and *Msusaphi*, and others were moved to nearby camps such as *Nomoya* and *Mashunka*. These camps were without any accommodation, water and sanitation facilities (Harley and Fotheringham, 1999:75-6). Such camps were characterised by lack of grazing land for livestock which is central to material security and cultural identity of these communities (NLC, 1992:4).

People were not allowed to take their extensive cattle herds, with others only allowed to keep six head of cattle, when faced with removals. There was evidence that many labour tenants refused to sell their stock and smuggled them across the river into the Tugela Basin area (NLC, 1992:5). Cattle impounding by the 1980s was recorded at a high as cattle strayed in search of feed because the resettlement areas had no grazing (Harley and Fotheringham, 1999: 76).

Some farmers were resistant to the abolition of labour tenancy as they feared a labour shortage, hence pockets of labour tenancy continued to exist in the Weenen area (Harley and Fotheringham, 1999: 77). A small number labour tenant family thus managed to escape eviction from farms, and continue to engage in family farming. The introduction of wages, within labour tenancy, is argued to have transformed tenants from labour tenants, *per se*, into semi-proletarians. Wage employment thus became the main source of income for families, and cash was invested in household reproduction activities. Some activists argued in the late 1980s that tenure security, access to resources and subsidization could therefore play a significant role in re-establishing economically productive black family farmers (Claassens, 1988: 23).

The next few paragraphs present possible explanations as to why the administrative boards proposed the abolition of labour tenancy, as a way to highlight that commercial agriculture is based on economic models that ensure increased levels of productivity and profit making. Anything but this is not acceptable and is treated as a problem that must be addressed.

With that said, Greenberg (1996:90 and 2003:99) presents an explanation which is embedded within mainstream agricultural economics. He explains that many farm workers were no longer seen as productive, and as contributing to declining production levels on the farm. From an economic perspective, farmers saw it fitting to evict labour tenants and farm workers. The following explanations, too, are grounded in an economics perspective and farmers' aspirations to ensure profitability.

Harley and Fotheringham (1999:41) concur and added that labour tenancy no longer fitted within modernised forms of capitalist agriculture, which was becoming highly mechanised. Therefore most farmers were looking to employ seasonal and casual labour, over full time labour tenants. Previously Walker (1981:15) had explained that overall there was a growing trend for consolidation of farms into fewer hands so that combined labour could be streamlined and reduced. There were also other farmers who wanted to expand land under

production, and therefore had to limit amounts of land set aside for workers to graze and plough, thus forcing workers themselves to leave the farm. From a different perspective, Greenberg (2003:99) is of the view that with the dawn of a land reform policy in South Africa, a preference to buy farms which had no labour tenant claims or tenants residing on the farms might have influenced farmer's decision to evict labour tenants. But this move too is founded in economics, and farmers' struggle to sustain their farming enterprises and livelihood.

Labour tenants themselves argued that unfair and discriminatory working conditions existed on farms. These manifested in evictions arising from disputes over wages and working hours, as well as time taken off for sickness. Farmers, on the other hand, blamed their labour force for drunkenness, theft, intimidation, insubordination, and general incompetence (Clacey, 1989:3).

It is clear that labour tenants were vulnerable to various forms of abuse by farmers, and that farmers used economic rationales to justify their evictions of labour tenants. The labour tenancy contract was of a fluid nature, falling between a lease and employment contract, where no rent and wages in cash were paid. Most of these contracts had been indefinite, and been passed from one generation to the next. Such contracts were thus vulnerable as they could be terminated without reasonable notice, with the latter being the most common premise for mass forced removals on farms (NLC, 1993:10-11). For instance in the year 1992 an agreement was reached with the landowners allowing labour tenant families to pay rent to remain on the land, after they refused evictions; however, removals continued as tenants were repeatedly accused of breaching the agreement (AFRA, 1993:7).

#### *A new dawn: the land reform program*

The year 1991 saw the repeal of all Land Acts by the government, including other discriminatory pieces of legislation. Labour tenants felt that the labour tenant question was being neglected by policymakers. Fortunately the African National Congress (ANC) adopted a land reform policy, in May 1992. This policy promised that if the ANC came to power it would seek to protect the land occupation and use rights of former labour tenants, share croppers and their families, where they have had a long association with particular a piece of land, and that no one would be evicted from land or have his or her home destroyed, unless a tribunal or another court had considered the availability of alternative land (NLC, 1993:12).

In an interview Mr. Derek Hanekom, the then chair of the ANC Land Desk, explained the rationale for the land reform programme. In summary this intervention recognised and accepted that the history of forced removals, dispossession and alienation of land had resulted in high unequal land ownership patterns, with 87% of the country being owned by whites. In addition it aggravated oppression, poverty and violation of human rights of blacks occupying rural areas and privately owned land in South Africa. The ANC in 1992 agreed to address people's historical land claims, as of 19 June 1913, through restitution and redistribution of land to the landless, both residential and agricultural land (NLC, 1993:12).

Ceilings on land holdings, a land tax, use of state land and expropriation were some of the policy options which the ANC foresaw itself using to achieving these policy objectives. Strengthening the rights of labour tenants was also going to be prioritised and addressed accordingly, through a Land Claims Court that would see labour tenants both as farm workers and farmers in their own right (AFRA, 1993:12-15).

Whilst talks about the land reform programme brought hope for some, for others life continued as usual, dark and gloomy. In April 1993 labour tenants in the Weenen District led a march to the local police station, calling for an end to evictions and cattle impounding. The march included 33 representatives from Muden, Weenen, Colenso, *Impendle*, Greytown, Ladysmith, *Ngotshe* and Vryheid. In addition to evictions, other forms of abuse and ill-treatment were prominent, such as physical abuse, with little done to protect labour tenants or at least take up these issues as legal cases. Additionally, land owners also expected labour tenants to pay trespass fees for stray cattle. Labour tenancy had long been abolished in South Africa, yet the case of in the Weenen District highlighted the persistence of this system, similarly in the Free State and the Western Transvaal provinces (AFRA, 1993:7 and NLC, 1993:13).

Ncunjane represents a stable community bound to traditional practices evident in keeping large cattle herds, for cultural slaughter and draught power, and having many generational families. People live in compound homesteads with extended family members and because polygamy is practiced there is generally two or more wives, *omakoti*, found living in a single homestead. Ncunjane formed one of the four land purchases in July 1996 which marked the first land transfer, under the Land Reform Pilot Programme. The process was facilitated by district planners (Greenberg, 1996:89). Transfer of title deeds for properties Springs 13210 (Vernier) and Koorn Spruit 4355 (Aston Lodge) occurred in 2000.

### *Labour tenants: Processing of a land claim*

Claims are based on original occupation, generations of occupation. A labour tenant contractual arrangement lasting for at least a ten (10) year period after the 1<sup>st</sup> January 1913 (as per the Restitution Act), on a continuous basis, forms the basis on which a labour tenant claim can be lodged. These are three categories of labour tenants;

- Historical establishment – those labour tenants, subject to the original arrangement, who have been able to remain on that land. Threats of evictions are not ruled out in this context, which limits access to rights enshrined in the arrangement.
- Historically evicted – this refers to labour tenants and direct descendants who have been denied their historical tenure rights through evictions from the farm or moved due to unbearable conditions created by the landowner or state. They may now reside in urban or rural areas or on another farm.
- Transitory – where continued labour tenant contractual arrangements and relations, with different land owners, has broken down, including tenants who have been evicted and forced removals by landowners or the state (NLC, 1992:3 and 1993:10).

Restoration of historic rights was granted under the Labour Tenants Act (LTA) (3) of 1997 thereby providing a mechanism for accessing rights and regulating evictions, by requiring people who have lost their historic rights to land to apply for reinstatement and restoration of their land rights were applicable (DLA, 1992). Registration took place over the 1997-8 period such that a total of 7713 claims were lodged in KZN at the end of this period. DLA (2002) revealed that a meagre 827 of the 7713 had been processed.

The report cited many challenges within the Department of Land Affairs which might account for the slow progress in resolving these labour tenants claims (DLA, 1997). The Department did not have a clear filing system to manage and prioritize cases; it lacked coordination between provincial and local administration offices, dealing with the claims; and there was much confusion arising over unclear verification and monitoring systems of the claims. An overall root cause to these secondary challenges was due to the lack of capacity among existing staff and low staffing level for implementing LTA; and incapacity to disseminate information thereafter, to a less extent (DLA, 1997).

“An eviction notice means loss of a job, as serious as that may be, it also means the loss of a home, of access to land, of security, a way of life- perhaps of life itself, and this is the plight

of an evicted farm worker and tenant (Walker, 1981:4-9).” The pilot of the land reform program promised to put an end to evictions on farms, redistribute land and improve tenure security on farms. Former labour tenants could therefore rebuild their productive farming systems and way of life, as they knew it. The transition from labour tenancy to land reform bore life changing opportunities for such communities. According to the National Land Committee, as small scale farmers, labour tenants would then need support services such as access to credit, extension, work marketing facilities and training (NLC, 1993:12).

The following section specifically discusses land laws and institutional arrangement for accessing land-based livelihoods. It gives a historical account of how living land laws have evolved over time and how they are structured today. The material comprises a summary of some key findings from Cousins’ (2011a) research report.

### **2.3 Land tenure in the research sites**

Understanding the historical context of the research sites helps ground the literature review on land and agrarian reform policy and the role of smallholder agriculture in alleviating poverty, discussed in Chapter Three.

There are a number of complex and overlapping land claims, including labour tenant and restitution claims, in the district, one result of which is that the land transfer process has been very slow. Over 21 000 hectares are claimed by around 700 labour tenant families that are generally spread over low agricultural land potential. By 2002 approximately 251 labour tenants had benefited from the transfer of an estimated 7103 hectares with an average of 27.2 hectares per household (DLA, 2002). Further support for land reform beneficiaries within the district includes clustering beneficiary projects to optimise development potential, and integration of high input projects into local value chains, and to support the development of business plans whilst ensuring that the proposals are in line with the Local Economic Development (LED) programme of the Umtshezi local municipality (Umtshezi IDP, 2011-12). There has been further development of water infrastructure in the form of a water pump and seven stand pipes within 200m of homesteads was provided by the local municipality in 2009 and 2010 respectively. A fairly new quarry dam was established as a result of excavation of quarry towards maintenance of road L150 in 2009.

The research sites for this study are located in Msinga, KwaZulu Natal, and comprise two former labour tenant communities which have taken ownership of farms through the land

reform programme. The specific *izigodi* (tribal wards) in Msinga within which they are located are Ncunjane and Nkaseni, which fall under the AmaChunu and AmaThembu traditional authorities respectively. These *izigodi* also fall under the Umtshezi (KZ 234) local municipal demarcation, as part of Ward five.

The focus of this study are former labour tenants who are now owners of 'labour reserve farms', through the land reform programme. Households are generally located within multi-generational compound homesteads, consisting of fairly large numbers of family members. These communities maintain a conservative and traditionalist world view, of which customary marriage is viewed as a central part of a Zulu traditions and customs. Broadly speaking, these communities are located in those parts of Msinga in which population densities are lower than average as a result of its history of labour tenancy.

The Ncunjane *isigodi*<sup>2</sup> is located on five commercial farms, and is one of twelve *izigodi* that are under the jurisdiction of the amaMchunu tribal authority, of iNkosi (Chief) Simakade Mchunu. The farm 'The Spring' had no tenants on it due to forced removals as a result of the abolition of labour tenancy (see Chapter One). Labour tenants evicted from elsewhere in the district settled on the farm, hence none of the current Ncunjane family heads were born on the farm. This indicates the shifting nature of tenancy on farms. Cousins (2011a:42) explains that while tribal area families may occupy the same ward for generations, farm people tended to move from farm to farm, following evictions or disagreements with the landowners.

Nkaseni is one of the *izigodi* that fall under the abaThembu tribal authority, and is located on the Bushman's River Mouth farm. When it was first surveyed, in the 1850s, it was discovered that the farm boasted abundant water for irrigation and had highly fertile alluvial soils. Therefore the farm owners subsequently subdivided the farm into numerous portions, and sold some of these to private buyers. A drought occurred in the late 1880s which led to the establishment of the Mthembu royal kraal at Nkaseni, as a strategy to access water for cropping so that there would be plenty of food during the famine. The Nkaseni people accepted allegiance to the abaThembu tribal authority, yet have always asserted some degree of independence. In 1996, Nkaseni led a successful negotiated land claim settlement for a portion of the Bushman's River Mouth farm

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<sup>2</sup>An *isigodi* is an administrative sub-unit of the 'tribe' (or *isizwe*, nation), under the authority of an *induna* (or headman).

In both these areas land ownership was transferred to the former labour tenants in the late 1990s. Residents are politically and socially embedded within a wider tribal identity, but at the same time neither recognised the role of the local headman in land allocation processes nor paid a *khonza* (allegiance) fee to the Chief. Members of these groups of former labour tenants are subjects of their chiefs and traditional councils, and thus in breach of traditional rules, but at the same time they are legally bound by the rules and regulations stipulated in the constitution of either a Trust, at Nkaseni, or a Communal Property Association (CPA), at Ncunjane. Once a title deed has been handed over to a community benefitting from land reform, they become the rightful owners of that piece of land. Yet these cases clearly show that the communities are in the contradictory position of being land owners and subjects of traditional authorities. This contradiction is evident in practical day-to-day process of land administration.

At Ncunjane, people have recently agreed to start paying a *khonza fee* to the amaMehunu *iNkosi*, whereas at Nkaseni it has never been paid, and instead a cash payment is paid to the committee by a newcomer to the community who received land. There is also still some self-allocation of land for both residential and agricultural purposes, at times with very little role played by the local headman; for example, wives are being allocated irrigated plots, which is said to be in line with the normative ideal of customary land tenure. However, there is debate as to whether or not single women, with children, should be given plots. Residents of Ncunjane are in favour of this idea, whereas it is strongly opposed by residents of Nkaseni. Thus a mix of both old and new land tenure practices is engaged in, creating a hybrid local tenure system. Definitions of property rights manifest within shifting sets of complementary and conflicting interests.

This ambiguity, created by the introduction of land reform, has extended to other social processes within these communities. Unresolved disputes are referred to the traditional courts, proof of residence letters needed to register for social grants or apply for jobs are issued by the traditional council, and fees for overseeing cultural ceremonies and rituals are also paid. However, there are a number of grey areas, such as: should people on farms have representation on traditional councils; should chiefs be elected as heads of committees of trusts or CPAs; can disputes be forwarded to a magistrate court; should a local headman allocate privately owned land; and who should decide on the criteria for allocation of land to outsiders?

Nkaseni people strongly believe that they have rightful ownership of the land, more than does the chief, as they are the ones who underwent hardships during the labour tenancy period, with very little support from the chief. Cousins states that “the history of labour tenancy on these farms, combined with relative resource abundance, means that members of this *isigodi* clearly want to retain a degree of autonomy in relation to land issues - but they also want to continue to be seen as part of the Mthembu tribe, and they continue to refer some disputes to the tribal court” (Cousins, 2011a:56).

Land rights administration, at the local level, appears to be highly flexible and fluid in nature. New practices are adopted as different actors, within local institutional structures, respond to daily circumstances. People do not want to compromise their social identity yet embrace being land owners in order to meet certain ends. Principles and values governing land allocation and use in these sites, as elsewhere in Msinga, have been shaped by pre-colonial forms of social, economic and political organisation. In Zulu culture, the patrilineal kinship system means that the significance of a homestead surname for social identity also shapes the ‘laws of the land’ (*imithetho yomhlaba*). Cousins (2011a: 30) states that “The homestead, *umuzi*, continues to play a central role in social life as a site of production, reproduction and ritual practice” but research also suggests that varying local conditions and site-specific histories have influenced interpretations and practices, and hence altered the normative model of land tenure. Cousins also suggest that this kind of ‘living customary law’ may reflect shifts in socio-economic organisation as people respond to new economic pressures (Cousins, 2011a:30).

‘Land laws’ in Ncunjane and Nkaseni are not written down but are understood and accepted as a framework of norms influencing actual practices that can vary from one tribal authority to another, at ward level, when allocating and demarcating land and enforcing rules for the use of common property. As in accordance with the normative ideal of land tenure, no documents recording land rights are issued but each family’s fields are known to the public, and therefore few disputes occur (Cousins, 2011a:30).

## **2.4 Conclusion**

This chapter has located the research sites in their wider context, by the describing the socio-economic and ecological profile of the district, and by reviewing the history of land laws from labour tenancy to land reform. Material from Cousins (2011a) was used to depict current land tenure systems and institutional arrangements prevailing in these areas. The land

reform programme has enabled these two communities to become owners of their land and helped them to rebuild their livelihoods and customary practices. The following chapter sets out to discuss the conceptual framework used in the research process. The wider literature will be reviewed to highlight the key characteristics of smallholder agriculture in South Africa, and the land reform programme will be discussed in more detail and progress made to date highlighted.



## **CHAPTER THREE: SMALLHOLDER FARMING SYSTEMS IN SOUTH AFRICA**

Chapter Three consists of two sections: the first section focuses on the Farming Systems Research (FSR) conceptual framework, highlighting its key features and concepts. The second section discusses smallholder agriculture in South Africa and in KwaZulu-Natal in particular, and highlights those arguments in key public debates which propose expanded support for smallholders.

### **Section A: FARMING SYSTEMS RESEARCH (FSR): The conceptual framework**

#### **3.1 The development of FSR**

The green revolution took place, in the 1960s, in parts of Asia and Latin America as these areas were characterised by high potential soils, a good climate. These farmers were provided with improved technologies, along with access to production inputs and markets. The green revolution period was marked by high rate of technology adoption, by farmers, which led to high crop yields. Hence the work of experiment station-based technicians and researchers was perceived a success (Norman *et al*, 1994:3). However this success was at the expense of increased use of natural resources, thus leading to land degradation and the depletion of natural resources (Collinson, 1982 and McCown, 1991:243). These emerging environmental constraints, and a call from donors to shift from reductionist-oriented research approaches, prompted the adoption of the farming systems research (Collinson, 1982 and McCown, 1991:244).

The green revolution did not take place all over the world, and it did not occur in sub-Saharan Africa. This part of Africa experienced bad climate, erratic rainfall, and had poor soils, which hampered farm production (Norman *et al*, 1994:3). Thus the application of on stations research would prove to be too narrow and abstract. Technicians and scientists also realised the role of farmers in processes of developing appropriate research and technologies, hence the strong call for farming systems research (Collinson, 1982).

#### *The status of national agricultural research systems in Southern Africa*

The International Maize and Wheat Improvement Centre (CIMMYT) and existing national research centres sought to develop, also promoted and implement FSR in Eastern and Southern Africa in 1976. The intention was two-fold in that FSR would help improve

efficiency in the development of technology for small scale farmers, and to improve the relevancy of national agricultural research centres and extension services to its target group. It was discovered that small scale farmers were being marginalised from research processes and this led to political and policy concern of having these farmers needs addressed through research. This begs the question as to why small scale farmers were marginalised from the beginning.

Collinson (2000:2) explained that small scale farmers lacked any form of organisation, were highly variable and that there was too many of them, thus making it difficult to link farmers to national research processes. Small scale farmers were characterised by cultivating at a subsistence level with the sole purpose to meet household food needs. These were generally poor resource endowed farmers. On the contrary commercial farmers were known to own more productive assets and were more organised. Consequently decision making processes with regard to resource allocation, on and off the farm, as well as management strategies employed differentiated the two categories of farmers.

Collinson (2000:2) further elaborated that professional agriculturalists regarded the perspective and rationale of small scale farmers to be irrational. This was simply because the agricultural training they received at tertiary level was highly skewed towards understanding and addressing the needs of large commercial farmers. This highlights an underlying structural adjustment in the education system, which embraces a wide range of production models and gives equal attention to improving production levels thereof. E

Another slightly different perspective in which to understand the argument for the isolation of small scale farmers from research processes is presented. Collinson (2000:2) turns our attention by pointing out problems within existing research systems. Agricultural research centres are critiqued on a number of issues which translates into their inability to adequately address small scale farmer's needs. Firstly the predominant criteria, used to base recommendations to small scale farmers, being biological potential and crop yields, was found to lack other complex criteria used by farmers in their decision making. Hence rendering research outputs, from the view of farmer's insufficient in addressing their production issues.

Secondly the reliance of a top-down and non-participatory approach used by government to decide on research priorities and which research findings were to be used as recommendations to small scale farmers was reported as highly ineffective (Collinson,

2000:2). Such prescriptive tendencies were further entrenched onto the operations of researchers and extension staff whereby they set down 'improved management practices' that farmers had to adhere to, without having consulted farmers.

Lastly experiment stations are geographically located at a distance from where small scale farmers lived, making it logistically challenging for researchers to communicate with their clients. This implies that farmers were excluded from participating in planning processes of experiments. Furthermore this lack of connectivity meant that researchers who did not fully understand the context under which farmers lived. Farmers' needs and circumstances are always specific to local situations and those situations are likely to differ from those found in experiment stations (Collinson, 2000:3). This often led to inappropriate research outputs that hardly had any relevance to farmers' needs. Consequently these opposing perspectives on how small scale farmers came to be on the periphery of national research, highlight the importance of designing inclusive participatory research models.

In order for research outputs to be relevant and adequately address farmers' needs in different regions, and specific localities, farmer's need to be consulted on their own perspectives and decision criteria in managing farming systems with reasonable success. Policy shifts were therefore made to accommodate small scale farmer's needs under two broad objectives; 1) to improve welfare of those who live materially below the rest of society, and 2) to help countries increase their agricultural production (Shaner *et al*, 1982: xi). FSR was introduced to applying more research which would be more relevant to solve farmers' needs. Realising the huge demand by many developing countries, USAID contracted the Consortium for International Development (CID) to write and distribute a set of guidelines on FSR methodology in the 1980's (Shaner *et al*, 1982: xv and Auerbarch, 1993:11).

### **3.2 Objectives of FSR**

In addressing small scale farmers needs it was clear that appropriate experiments had to be conducted. These would eventually yield relevant research outputs which could be rendered useful by farmers. Collinson (2000:3) draws our attention to the fundamental objectives of the FSR approach, which in light of the context painted in the previous subsection, confirms its appropriateness in tackling such issues.

Farming systems research seeks to understand the ways in which farmers make decisions; it encourages farmers to participate in research processes; and has the capacity to strengthen

linkages between researchers and their small scale farmer clients. FSR was to be used to better understand agricultural systems in holistic manner, and to apply FSR in addressing ecological sustainability as well as productive efficiency of farming systems (Collinson, 2000:4).

FSR is applied by conducting research on selected uniform physical and biological as well as socioeconomic environments where farmers' production and management practices are similar. The technology developed is expected to be applicable to farmers operating elsewhere under similar conditions (Shaner *et al*, 1982:3). The main objective of FSR is to determine and understand the inter-dependencies amongst systems' components and the physical, biological and socioeconomic environment. Thereafter to identify and generate appropriate improved technologies and adapt, test, and promote them (Shaner *et al*, 1982:4 and Norman *et al*, 1994:14). Francis and Hildebrand (1989:1) sum up the objective "FSR has strongly influenced the direction of agricultural development over the past two decades. Involving farmers, change agents and researchers, this participatory approach to technological improvement has evolved as an efficient means to develop individual components and more integrated systems that are uniquely suited to specific biophysical and socioeconomic conditions".

The highlighted objectives of the FSR approach indicate a potential to bridge the gap that existing between researchers and farmers. This eradicates the key issue of isolation which has been reported at policy level. In addition the FSR approach proposes mechanisms whereby the two parties can begin to understand each others' perspective, goals and contexts, thus allowing for unpacking of variability amongst farmers. This step can translate into a platform for inclusive and participatory learning and planning for experiments. Therefore eliminates the issue of prescriptive top-down attitude employed by researchers and extension staff. As a result makes the FSR approach relevant in effectively addressing challenges highlighted by CIMMYT, but also a useful tool to meeting CIMMYT objectives.

The following subsections will highlight the key features of the FSR approach by drawing on a wider literature and compared to other types of farming systems research tools. This descriptive discussion seeks to give a wider multifaceted knowledge of how farming systems research and extension is perceived. Later on in the section we will explore how some of these are applied to the Southern African agricultural context and assess its impact on smallholder agriculture.

### 3.3 Key features of Farming Systems Research

FSR is a dynamic process, flexible to adapt to changing perceptions of farmers, inclusive of farming community in research processes, and conducts experiments within the whole farming systems within which farmers have to survive (Auerbach, 1992:1 and 1993:12) to follow is a detailed look at features of FSR.

*Farmer-oriented:* attention is given to farmers' conditions and farmers are integrated into research and development processes (Shaner *et al*, 1982:4; Norman *et al*, 1994:14). Farmers were recognised as people who made rational decisions and were natural experimenters. They were also acknowledged for have in depth understanding of complexities within their farming systems (Norman, 1993:9). Therefore farmers' proved to be valuable in shaping research processes to be more relevant to their needs. "FSR considers the multiple goals of the farm family as well as the economic and resource situation in which the farm operates. Consideration of the time dimension within which the family makes decisions and plans for the future, makes the long-term sustainability of production and profit become central to system design (Francis and Hildebrand, 1989:2 and Dillion and Hardeker, 1993:3).

*Problem solving:* FSR seeks to identify reasonable problems and opportunities to guide research process but also extends to identifying mechanisms for bringing farmers' needs to the attention of local service providers and national policy so that farmers receive more appropriate institutional support (Shaner *et al*, 1982:4 and Norman *et al*, 1994:14).

*Comprehensive:* The focus of FSR approach is on the understanding the consumption and production elements of the farming systems. By doing so more information is generated about the system as a whole (Norman *et al*, 1994:14). The use of a systems approach to understanding farming systems allows researchers to ascertain how productivity levels on the farm can be raised and ultimately how to improve farmers and society's general welfare. In addition opportunities for bringing about change are identified based on how flexible farmers and their environment are. Moreover results are evaluated in terms of farmers' and society's interests (Auerbach, 1992: 2 and Norman, 1993:9).

*Interdisciplinary:* Research and extension staff from different disciplinary backgrounds works with farmers throughout FSR processes. This allows for detailed understanding of all variables within a farming system and how these are interconnected with one another in a comprehensive manner (Shaner *et al*, 1982:4 and Auerbach, 1993:12).

*Complimentary:* Research outputs generated by other research institutions can be used to shape and direct other researcher's prospective work (Shaner *et al*, 1982:4).

*Iterative:* The FSR approach allows for the use of research outputs from one experiment to be used by researchers to continue to build their understanding of farming systems (Shaner *et al*, 1982:4 and Norman *et al*, 1994:15). If researchers have a better understanding of small scale farmers' conditions, researchers would be in a better position to develop improved research methodologies to collect, analysis and disseminate research outputs. In that way research is more relevant to farmers and research recommendations adequately address farmer's issues.

*Dynamic:* Interdisciplinary teams introduce modest changes to current conditions at first. Favourable results obtained from introducing small changes prompts these teams, and farmers, to adopt new changes at a later stage (Shaner *et al*, 1982:4). This key feature creates room for adopting change so that farming systems become more flexible, adaptive to the ever changing global agricultural sector (Norman, 1993:9).

*Responsibility to society:* Knowledge of small scale farmer's conditions is used to determine research priorities and research methodologies. This knowledge is also used as a basis for evaluating results. FSR uses acceptance of outputs by the whole family as a key measure of success (Shaner *et al*, 1982:4 and Norman *et al*, 1994:15).

### **3.4 FSR approach versus other research approaches**

FSR is an approach to agricultural research and development and the previous subsection has outlined its key objectives and features, but in what way is the FRS approach complementary or contradictory to other research approaches within agricultural research. Perhaps an evaluation of this question will shed more light into what distinguishing feature positions FSR as an improved approach, to dealing with small scale agricultural issues (Auerbarch, 1993:10). Firstly the FSR approach will be outlined and then compared to other innovative approaches to research and development.

#### *FRS (on-farm adaptive research)*

The focus of this approach is to conduct research on the farm. Components of the body of knowledge are selected and tested using a research criterion identified as apparently relevant to the needs and circumstances of target groups. A farming systems economist, supports technicians and agricultural scientists, by tackling the 'economic question' of how farmers

decide on allocating scarce resources for on and off farm production in a way that they are able to meet their family's priorities and needs (Collinson, 2000:3). Other members of the FSR team include an agronomist to investigate the physical and biological aspect of the system and extension officer to disseminate findings.

Adaptive research processes aim at working with farmers to unpack their decision-making criteria to raise productivity of the whole system. This is done by; Describing and interpreting farmer's situation and identifying management problems and possible development opportunities; and conducting on-farm testing of potential improvements regarded as relevant and feasible for farmers. Hence this approach moves away from the use of an abstract criteria based on crop yields or effectiveness (Collinson, 2000:4, Francis and Hildebrand, 1989:2 and Hildebrand, 1986:4). FSR therefore represents a departure from traditional, discipline-bound scientific research, its part of a paradigm shift in science (Auerbach, 1993:10).

#### *Technical research*

This approach to agricultural research is conducted on experiment stations by identifying new materials and methods that are 'technically feasible' in the environment of the country or region served by the station (Collinson, 2000:3). Simply put technical research seeks to emulate small scale farmers' local conditions in its experiment stations in order to improve on the relevance of research outputs to farmers' needs. Research results add value to existing body of knowledge regarding 'potential' management improvements. This approach has two distinct research activities namely; identifying improved agronomic practices and farming methods. If used, which have a potential for improving the welfare of farmers and identifying unresolved technical problems of farmers so that these are incorporated as priorities in technical research processes (Collinson, 2000:4).

#### *Conventional research*

Conventional research tends to separate tasks into subject areas which are studied independently. The results are evaluated by the use of standards within the discipline and not by evaluating their contribution to the whole system. On the contrary FSR emphasises on integrating social sciences into research and development process, with the aim of understanding interactions within the whole farm setting. FSR considers farmer's preferences and the wider context within which farmers operate such as service providers and national

policy. The results are measured in terms of farmers' and society's goals and interests (Shaner *et al*, 1982:15).

#### *Commodity-oriented research*

Commodity-oriented research organisations such as CIMMYT and the International Rice Research Institute (IRRI) are known to incorporate FSR approach to their research and development processes. This is achieved by working mainly with farmers and other research organisations in those areas of their specialities that offer best potential for improving the particular farming systems, be it rice, wheat or maize commodities. This collaboration therefore makes commodity research more relevant for farmer's conditions and improves efficiency in appropriate technology development (Shaner *et al*, 1982:18).

Arising from this discussion, it becomes clear that FSR is a superior approach to research and development. FSR addresses farmer's needs much more efficiently by including them in research process, and conducts research on farmer fields, unlike on-station experiments, which that merely emulate farmers conditions. FSR approach investigates the farming system as a whole and proves more relevant in addressing farmers' problems, whereas in the conventional sense research is more categorical compartmentalised in nature, as prescribed by technical, conventional and commodity research approaches.

Francis and Hildebrand (1989:2) highlight an even bigger impact from adopting FSR when they wrote "perhaps most important, FSR on-farm research and technology evaluation methods has proven efficient for screening and selecting technologies that conform to the divergent environments found on farms throughout the world". The rest of this section looks at the impact of institutionalising FRS into developing countries, on smallholder agriculture.

### **Section B: SMALLHOLDER AGRICULTURE IN SOUTH AFRICA**

This section summarizes policy and public debates around support for smallholder agriculture in South Africa, as a potential alternative production model to commercial agriculture. Empirical evidence of the potential impact of smallholder agriculture on poverty within broader rural development programmes will be presented. Some of this section focuses specifically on smallholder farming systems within KwaZulu-Natal, in order to provide a situational background to the study, which is set in the province. A conclusion lists the key concepts used to understand smallholder agriculture in my case study sites.

### 3.5 Need for agrarian transformation in South Africa

Levin and Weiner (1994), Kirsten and van Zyl (1998:567), and Machethe (2004:1) find overwhelming evidence of how apartheid policies and government actions marginalised the small scale farming sector. Consequently, after 1948 it played little role in the country's economic growth and had a reduced impact on improving the livelihoods and welfare of black people in rural areas. Uneven agricultural development in South Africa is reflected in the reality that over 90% of total farm output in the country is produced on a small number of white-owned farms.

An estimated 39% of South African households are vulnerable to food insecurity, with 22% of all children under the age of nine years being stunted to as a result of malnutrition (Bonti-Ankomah, 2001 and Drimie and Ziervogel, 2011:215). Food insecurity is most prevalent amongst African households in the rural areas, 62%, compared to urban areas, 27% (Rose and Charlton, 2001:384). Food insecurity is as a result of inadequate access to food, by certain members of the population, and is not because of a shortage of food in the country (Drimie and Ziervogel, 2011:216).

The labour force statistics of South Africa indicate that small holder farmers make up four million people of the working population translating to almost two and a half million households of which 92% engage in agriculture for food production, as a main or extra source of food, but mainly the latter. The rest of the households engage in small scale agriculture for income purposes, as main or extra, but mainly the latter. Both these motivations have become premise for subsistence small holders and commercial small holders' distinction (Aliber et al. (2011, 4-7). Nevertheless there is very little empirical evidence to support the argument for or against development of small scale agriculture as a way to fight poverty in the rural poor population who make up 70% of the South African population. Debates highlight that perhaps the methodology approach of studies investigating this needs review so that it captures directly the contribution of black farming and critique for the over romanticising the potential of small scale agriculture (Klainbooi, 2010:15).

Efficiency of black small scale farming in South Africa is not well recorded (Lahiff and Cousins, 2005:127) but evidence in other parts of the world show that in undistorted policy environment and with no constraints on working capital, these farmers are often at least efficient as their large scale counterparts (World Bank, 1994: ix and Kirsten and Zyl, 1998:551).

The combination of having access to poor agricultural land, limited productive assets, and limited non-farm incomes, hinders the full use of available land and practice of intensified production methods for many rural households. The production levels of farming systems in former homelands are thus relatively low (May, 2000). Provision of productive resources is therefore a critical step in reviving the smallholder farming sector, which is an efficient vehicle to address rural development issues. It is therefore imperative to introduce a shift in current agrarian policy frameworks (Weiner, 1989:412, Stats SA, 2011, and van Rooyen, 2012).

Post 1994, the democratic South African government introduced new policies on land reform and agrarian transformation (Mkhabela and Materechera, 2003) which would accommodate and support previously disadvantaged small scale farmers. Some of the key policies were manifested in the Reconstruction and Development Plan of 1994; the White Paper on Agriculture of 1995; the White Paper on South African Land Policy of 1997; the Green Paper on Land Reform, Agrarian Transformation and Land Reform of 2011, and the ANC Land Policy Proposal of 2012, to name but a few. The main thrust of these policy reforms has focused on the equitable redistribution of land, restoration of land rights, poverty alleviation, improving household food security levels, establishing viable rural livelihoods, and fostering rural economic growth and development (Levin and Weiner, 1994, Kirsten and van Zyl, 1998, Mkhabela and Materechera, 2003, Aliber *et al*, 2011: viii).

In order to make smallholder farming more productive and sustainable, a developmental state is required. This will foster greater accessibility to productive assets at subsidised costs, and lead to improved political organisation of smallholder farmers and enhance their level of competitiveness within the agribusiness sector (World Bank, 2007:25). Hall (2009:56) similarly concludes that the neglected option of smallholder production for consumption and for the market should be a priority and that, to enable success, direct support for production, as well as interventions in input supply, processing and output markets, will be needed.

A rights-based approach and outcomes based approach was adopted in the planning and implementation of these new government policies. At the forefront of current debate is the impact of access to land and productive resources to rural livelihoods, a prerequisite of the outcomes based approach. Tensions between issues of ‘development’ and those of ‘equity, ‘rights’, and ‘historical redress’ have crippled the land reform program since its inception.

However this thesis assumes that there is general acceptance that emerging black farmers are mostly legitimate beneficiaries of land reform.

This set of farmers engages in agriculture on a part-time basis, as they also engage in other livelihood strategies, many of which may be off-farm. Research across South Africa (Lahiff *et al*, 2008, Shackleton *et al*, 2000, May, 2009, Cousins, 2010, Aliber *et al*, 2011) has led some to support the rise of a new class of black smallholder farmers, whose farming practices are diverse and labour intensive. These farmers have shown their ability to use land efficiently and sustainably and therefore create opportunities for rural jobs. A look at the broader impact of smallholder farming on rural livelihoods follows, with particular focus on crop and livestock farming systems in KwaZulu Natal.

### **3.6 Characteristics of smallholder agriculture in SA**

There are two main categories of farmers in South Africa, namely large-scale commercial (mainly white) and 'subsistence' farmers, which reflects the apartheid legacy of a dualistic agrarian structure. The latter category of farmers is associated with negative connotations of being 'small-scale' and non-productive compared to the former category of farmers who are perceived as modern and efficient (Kirsten and van Zyl, 1998, Cousins, 2011b). Sebopetji and Belete (2009) also indicate that the majority of subsistence farmers are not part of the mainstream agriculture, commercial farmers are a part of, and practice agriculture in the overcrowded, and often semi-arid, areas of former homelands.

The smallholder farming sector represents 'farmers' who do not regard themselves as farmers in the conventional sense; they are differentiated by race, class, and gender; farm on a small scale, most produce is for home consumption, with very little being sold; and few or no farm records are kept (Lahiff and Cousins, 2005:127 and Cousins, 2010:3). A further detailed categorisation of South Africa's rural sector can be said to consist of three sub-sectors; 1) smallholder sector (subsistence and semi-subsistence) consisting of self employed farmers producing staple food and some commercial goods; 2) commercial sector with medium and large size farmers and provides employment to a significant number of landless; and 3) the rural non-farm sector (Netting, 1993:2 and Machethe, 2004:2).

Small scale farming systems in South Africa often include a mix of crop and livestock production and serve multiple households functions and objectives, such as the provision of food (meat and milk), manure, and being sold to get immediate cash. These farming systems

are commonly characterised by low production, poor access to productive assets such as infrastructure and credit (Sebopetji and Belete, 2009) and structural constraints such as high transaction costs and weak links to agro-value chains (Kirsten and van Zyl, 1998:551 and Lahiff and Cousins, 2005:127).

In South Africa, as is the case in many developing countries, the small scale farming sector represents a very large proportion of the country's population and has the potential to become an important contributor to the household food security (Mkhabela and Materechera, 2003). There are about 4 million black people belonging to 2 million rural households which engage in farming at some scale, with women comprising 61% of the total number of smallholders. Agriculture is practiced by most households either as a main or extra source of food or additional source of income, implying that farming is largely a food security issue (May, 2000:201). Empirical evidence from Asia, Latin America and Africa, premised on farm-size/productivity relationships, and economies of scale, suggest that small scale farmers in developing countries are considered to be more efficient (or at least as efficient) given a level playing field, than large-scale farmers (Kristen and van Zyl, 1998).

Case studies conducted by Ngqangweni *et al* (1997) indeed confirm that small scale farmers do exist in South Africa and have been shown to be at least as viable, profitable, and efficient as their large scale counterparts, with productivity set to improve under favourable policy frameworks. Historical evidence also tells us that South Africa once had a thriving peasantry which successfully competed against large-scale farming (Bundy, 1979 and May, 2000:21). This suggests a need to for transforming the agrarian system in line with the democratic agenda (Weiner, 1989:410). However despite changes in other aspects of life, asset ownership and distribution patterns of rural South Africa remain largely those constructed by apartheid. Rural poverty alleviation and growth of the rural economy remain important issues for government policy, particularly for land and agrarian reform (May, 2000:21).

#### *Small scale crop farming systems*

Crop production on a small scale takes place in gardens within the homestead, on larger arable fields, or in farmer settlement schemes. Increasing the area of land cultivated per household may enable households to engage in varying degrees of commercialisation and sale of produce through formal markets (Shackleton *et al*, 2000:43). Households engage in low inputs production systems, typically through intercropping or agro-forestry systems,

which are seen as a risk avoidance strategy. Most production is on dry land plots since access to irrigation water is a major constraint, with drought being an issue (van Maltitz, 2004 and Lewu and Assefa, 2009).

Generally at least one member of a rural household has access to a homestead plot and practices farming to provide for the household. Smallholders have access to highly variable plot sizes. Across four district municipalities in northern KZN, plot sizes were found to vary from at least 0.2ha to at most 1.9 ha, with an average plot size of 1.6ha (Lewu and Assefa, 2009:1149). A similar study in three districts (*Ubombo, Hlabisa, and Ngwavuma*), in northern KZN, also show that plots sizes vary from 2ha to 4ha, with a minimum of 1ha (Thamaga-Chitja *et al*, 2004:10). *Mtateni* Irrigation scheme farmers in Msinga cultivated between 1.2ha and 1.7 ha garden plots (Cousins, 2013:126). Variability with regard to access to arable plots extends to the type of plot one can have access to. In the case of Msinga, households' access to different plots varies in that the majority of households (over 60%) have access to fields and homestead gardens, and very few households (18%) have access to plots under irrigation schemes or garden projects) (Budlender *et al*, 2011:96).

Generally, however, both women and men have access to arable plots. Land is either accessed through local informal land rental markets, or access to communal and commonage land as an entitlement of community membership. It was noted that land access to widows and women who have never married increased post 1994 in Msinga (Budlender *et al*, 2011:96).

Under-cultivation is highly evident across the province, as seen in other provinces of the country (May and Shackleton *et al*, 2000). In parts of Msinga, a highly poverty-stricken rural area, it was reported that as much as 90% of fields and garden plots had not been used for a whole year (Budlender *et al*, 2011:97). A number of reasons are believed to lead to under-utilisation of land. These include the shortage of labour, lack of working capital, inaccessibility to markets, lack of fencing, as well as soil erosion (Budlender *et al*, 2011:98). Inaccessibility to production information, unfavourable climate, and lack of storage facilities were cited as minor challenges by smallholders (van Maltitz, 2004: 48 and Lewu and Asefa, 2009:1149).

Production is mainly for household consumption hence the widespread cultivation of cereal crops, which can be intercropped with a wide range of other crops including beans, ground-nuts, pumpkins, and wild spinach. Maize is the main staple food crop A small proportion of

crops may be sold or donated to relatives in acknowledgement of kinship or to strengthen community ties, which are useful in a crisis (May, 2000:22 and Shackleton *et al*, 2000:55).

Incomes derived from agricultural activities were found to be highly correlated with the area of land cultivated, the proportion of household members labouring on the fields, the number of cattle available to plough and supply manure, household savings and liquidity, access to extension support, and wage earnings (Shackleton *et al*, 2000:58). This highlights the strong interconnectedness between the crop and livestock components of small scale farming systems, as well the strong linkages between on and off-farm livelihood strategies which are all used to sustain rural household livelihoods. Understanding the actual economic value of land based livelihoods and opportunities within small scale farming systems is crucial for rural development and the rural economy at large.

#### *Small scale livestock production systems*

Debates on agrarian reform have mainly focused on alternative systems for crop production and possibilities for restructuring of livestock production have not been explored in any great depth. Livestock production on extensive rangeland is potentially a highly efficient form of land use, in producing human livelihoods from low quality natural resources (Cousins, 1994:101, Schwalbach *et al*, 2001, and Kunene and Fossey, 2006).

Only 24% of African households in rural South Africa own livestock, with the average holding at approximately 5.4 mature livestock units (May, 2000:24). Studies conducted on livestock, mainly cattle, production systems in South Africa show broad commonalities such as a minority of households owning cattle but ownership is highly skewed, with more cattle being owned by households with access to higher off-farm incomes. For instance households, in the Rustenburg district in the North West province, owned between five and 149 head of cattle (Schwalbach *et al*, 2001:201) and households in Msinga in KZN, owned between five and forty head of cattle (Trench *et al*, 2002:2).

Despite ownership of cattle by a minority, the benefits are widely distributed, to even non-cattle owning households (Tapsen, 1990, Shackleton *et al*, 1990, Scoones, 1992, Cousins, 1993 and 1996, McClendon, 1997, Ainslie, 2002, and Trench *et al*, 2002). Bride-wealth payments, loaning of cattle, cooperative ploughing arrangements, milk and meat sharing, and hiring out and selling of goods and services, are some of the arrangements households use to exchange benefits.

This implies that mixed herds of livestock can provide a range of useful products. Dell (2012:4) found that mixed livestock systems (cattle, sheep, goats and pigs) were kept across South Africa for deriving diverse goods and services, as did Bayer *et al* (2003: v) in Msinga. Studies indicate that when all the goods and services are valued, communal systems will exhibit higher returns than commercial systems (Shackleton *et al*, 2000 and May, 2000). The implication is that livestock will continue to play a huge economic and social function in rural communities (Bayer *et al*, 2003: vi).

Mixed farming systems which exhibit strong inter-relationships between cropping and the livestock components are also found in small scale household-based systems and offer a range of goods and services. Draught power substitutes for human labour and extends the area under crop production. Manure used on crop lands is an effective means of recycling nutrients through the production system and building the fertility of arable fields. In addition crop residues can make a substantial contribution to animal diet (Cousins, 1994:101) and are an old practice in Msinga (Bayer *et al*, 2003: v). Tapson (1990) acknowledged the benefits of mixed farming systems in KZN.

Class formation in the homelands has led to a concentration of a significant proportion of livestock in the hands of an elite group (Cousin, 1993:114). It is not surprising, however, that poorer households, compared to well-off households, are found to make much more use of the diverse functions of livestock since they are unable to afford alternatives such purchasing pasteurised milk to drink or hiring tractors to plough their fields. Thus the ultimate objective of small scale livestock systems is to increase household investment portfolio for savings, security, and emergency cash purposes, whilst ensuring households get maximum yields of consumable goods and services (Shackleton *et al*, 2000:52). Furthermore in some cases, cattle are perceived as assets since the value of goods and services can be seen as a potential value, and not an actual value, but this potential value can be realised at any stage (Shackleton *et al*, 2000:55).

Livestock production boasts multiple functions essential to sustaining rural livelihoods hence appropriate local institutional frameworks are key in rangeland management (Kunene and Fosse, 2006 and Shackleton *et al*, 2000). The following subsection places emphasis on the role of farming systems in rural livelihoods, which lends credibility to the argument that higher levels of support must be given to smallholders.

### 3.7 Impact of smallholder agriculture on rural livelihoods

Rural livelihoods involve activities and strategies that tend to bridge the gap between rural-urban divide, mostly as a result of past 'labour reserve' policies which undermined small-scale farming. Thus formal and informal earnings from towns and cities are combined with activities (farming, livestock rearing, and natural resource harvesting and trading) in rural areas. Unfortunately, as Shackleton *et al*, (2000:37) note, this complex rural economy has often been underestimated, misunderstood, and even ignored by policy makers. A true understanding of rural livelihoods can only be achieved through qualitative and quantitative data collection, policy analysis, longitudinal studies, and the economic valuation of non-marketed goods and services derived from the natural resource base (Shackleton *et al*, 2000:39).

Multiple livelihoods strategies, to achieve food security, are an important component of the reality of poor households in South Africa. These strategies are often diverse and complex in nature in order to ensure sustainability. They are also an outcome of conflict and decision making about the use and management of household resources. Agriculture makes a small contribution to household cash income, but is the 3<sup>rd</sup> most important livelihood tactic used in rural areas after remittances and wages from low-skilled jobs (May, 2000:24). However the inclusion of the amount and value of the crops consumed by households, including minor crops intermixed with staple crops, would raise the estimates their yields and value in communal farming systems. The same applies to the non-marketed goods and services, derived from livestock production that is consumed by households. The implication is that such systems would have a higher value of return than the value of inputs, thus render these systems viable and a rational approach for resource poor households that cannot afford the high input costs associated with commercial agriculture (May, 2000:43).

Poverty is pervasive in rural areas, especially in the former homelands, where most households practice small scale agriculture (Machethe, 2004:1, Shackleton *et al*, 2000). Van Maltitz (2004) and Budlender *et al* (2011) show that a significant proportion of food consumed by rural households is produced by themselves, and includes diverse food groups to meet household nutritional needs. Benefits derived from crop and livestock production have also contributed to food security, as shown in the previous section.

Recently Lahiff (2008:70) came to a positive conclusion after investigating the impact that land reform projects had on rural livelihoods in Limpopo. He found that smallholder

agriculture can be sustained over many years, can be largely self-organised, can absorb significant amounts of labour, and can also deliver a stream of benefits directly to poor households, with minimal support from government. A study done in *Impendle* and *Swayimana*, in KZN, found that level of crop income is determined by the depth of marketing methods, the size of allocated arable land, and off-farm income (Motungul *et al*, 2002:6).

Similarly, studies done in other parts of Africa suggest that smallholder agriculture contributes to poverty alleviation in many ways. It does so by reducing food prices, creating rural jobs and therefore increasing real wages and improving farm incomes. In some cases this has led to dramatic improvements in people's welfare, employment, and at a macro-economic level led to political stability (Delgado, 1998:1 and FAO, 2004:12).

Government support to smallholders in Zimbabwe and Kenya has led to highly significant contributions by smallholder agriculture to the country's gross domestic product (GDP), due to some level of commercialisation of farming systems. Furthermore surveys conducted in Limpopo (Machete, 2004) and KZN province (Cousins, 2013) to ascertain the impact of smallholder irrigation agriculture to rural livelihoods, also show that farming makes an important contribution to total household income. More than 40% of total household income was generated from farming (only sale of crops) in Limpopo. In KZN respectively Cousins (2013:131) estimates that a better-than-average *Mtateni* scheme farmer who earns a profit of R1, 500 per crop from six crops per annum can earn the equivalent of an annual income of R25 920 per ha per annum. He notes that this is similar to the earnings of the most successful farmer, in the *Dzindzi* irrigation scheme, of R25 461 per annum.

Key empirical data has been presented here which highlights the significant role played by smallholder agriculture in the livelihoods in rural South African households. Government should therefore support smallholders by developing a clear-cut and effective land and agrarian reform policy and commit more funds to realising its goals. Access to credit, extension services, and improved technology and research would help improve the contribution of smallholder farming to household livelihoods (Lahiff and Cousins, 2005:129). Furthermore access to land alone will not translate to increased production or agricultural incomes, and therefore the state needs to restructure markets so that the poor can benefit (May, 2000:32).

This chapter has discussed the components of the farming systems research, and highlighted the key objectives of this research approach. Farming systems research ensures that farmers

are involved in research processes, allows for conducting experiments on farmer's fields so that appropriate technologies can be identified, and helps research understand production systems' components as whole. These principles have been used in the design of this study.

Furthermore this chapter has given a detailed discussion on the features of smallholders in South Africa, explained their motive to farm, and highlighted the production constraints faced by these farmers. Smallholders are highly differentiated groups of farmers who produce on small scale, mainly for accessing additional sources of food or income. This study also targets a group of smallholders, that are former labour tenants, and explores their farming systems.



## **CHAPTER FOUR: SOCIO-ECONOMIC STRUCTURE, LIVELIHOODS AND FARMING SYSTEMS AT NCUNJANE**

Chapter Four focuses on the socio-economic structure of the Ncunjane community, the livelihood strategies pursued by its members, and the character of their farming systems. It reports empirical findings obtained from intensive data collection which was both qualitative and quantitative in nature. The chapter highlights how former labour tenants at Ncunjane derive a living from a wide range of livelihood strategies. Key demographic and socio-economic data are summarised and compared to findings from other studies undertaken in the Msinga area. Farming systems are characterised in some detail and the significance of the contribution to livelihoods made from farming is discussed, in comparison to other forms of livelihood.

### **4.1 Demographic features**

Table 2 summarises some of the key demographic features of the 22 households sampled in Ncunjane. The mean household size for former labour tenant families living in large, compound homesteads is 9.27. This compares to the Budlender *et al* (2011) survey finding of a mean household size of 8.9 in two former labour tenant farms and other rural *izigodi* in Msinga. The median household size was 8, with most households (72.6%) having between four and ten members. Data for the UThukela District municipality, under which Ncunjane falls, reports household sizes to range between five and eight person and thus concurs broadly with these findings that households are often very large. Furthermore the mean number of generations in the household is 2.45, with six and thirteen households having two and three generations in the household respectively.

Local people's perceptions of what household membership entails includes members belonging to one blood relation from either the paternal or maternal sides, regardless of whether or not those people reside at home most or all of the time. This includes household members who are working away from home and are hardly ever at home, but who have not yet established their own family unit somewhere else. It further includes children who were born out of wedlock, regardless of whether or not they are resident most or all of the time.

**Table 2. Demographic features of households in Ncunjane (n=22)**

	Mean	Median	Range	Proportions
Household size	9.27	8	4-21	72.6% have 4-10 members; 27.1% have 11-21 members
Generations in household	2.45	3	1-3	3 households have one generations; 6 have two generations; 13 have three generations
Age of adult members	38.91	34	18-93	
Sex of adult members	There are 64 (59.8%) females and 43 (40.2%) males from a total of 107 adults in the population sample of 204			

In Ncunjane people prefer to be seen as part of a homestead unit, the *umuzi*, characterised by a number of households all located within the same boundary. The family comprises a father and mothers who live with their sons' families with each generational family having its own unique set of dwellings, known as *inxuluma*, *iqadi* and *ikhohlo*. I adopted a definition in this study which is consistent with these local perceptions, and is thus also consistent with that adopted by Budlender *et al* (2011:47) in their 2009 study of 1000 women in Msinga, and that adopted by Cousins (2011b) in his study of the Tugela Ferry Irrigation Scheme. This allows for direct comparison of my survey findings with theirs.

Table 3 shows the age distribution of the population sample. From the total of 204 individuals found in the sample, more than half (i.e. 107 people or 52.45%) were adults above the age of eighteen and a mean age of 34 years old. Young adults under the age of 30 made up 41.86% of the population with children under the ages of eighteen making up 47.55% of the total. Both age groups combined comprise over two thirds of all household members. This suggests that this population is very young, with very few older people over the age of 60 (13.09% of the total).

Females made up a higher proportion of the total adult population, 59.8%, whilst their male counterparts made up the remaining 40.2%. Similarly, the UThukela IDP plan (Uthekela District Municipality 2011:12) reported that there were more females than males within the District. In addition, households tend to have more adult females than adult males between

the ages of 18-30 years, and there are also more females above the age of 60. It is likely that young adult males are not present at home due to seeking work or are employed in distant cities, in contrast to older males who are retired and are resident most of the time at home. Table 3 shows that in this sample there were seventeen males present at home who are between the ages 40 and 59, which might be as a direct effect of declining urban employment opportunities forcing men back to the rural areas to seek other forms of livelihood.

**Table 3. Age group of adult household members in Ncunjane (n= 107)**

	Adult males		Adult females		All adults	
	n	%	n	%	n	%
18-19 yrs	5	11.63	4	6.25	9	8.41
20-29 yrs	13	30.23	18	28.12	31	28.97
30-39 yrs	5	11.63	18	28.12	23	21.49
40-49 yrs	10	23.26	7	14.06	17	15.89
50-59 yrs	7	16.28	4	6.25	11	10.28
60-69 yrs	1	2.32	5	7.81	6	5.61
70-79 yrs	2	4.65	2	3.12	4	3.74
80 yrs>	0	0	4	6.25	4	3.74
<b>TOTAL</b>	<b>43</b>	<b>100</b>	<b>64</b>	<b>100</b>	<b>107</b>	<b>100</b>

Cousins (2011b:7) asked questions pertaining to women's marital status, and found that there were a high proportion of female adults, between the ages of 30 and 50, including women with children, that had never married. A decline in African marriages in South Africa, as well as in other countries, has been reported recently (Budlender *et al*, 2011). On the contrary this study recorded a small proportion of adults that have never married, with at least one third (30.8%) of adults having never married, see Table 4. Therefore over half of the adults (or 60.9%) were either married, in one form or the other, with spouses still alive or deceased. These findings are thus in line with those of (Budlender *et al* (2011:50) who also found that marriage rates were somewhat higher in the Msinga area than in other rural areas, but even more so amongst former labour tenants.

Former labour tenants at Ncunjane showed preference to customary marriages over other forms of marriage, although variations still occur, as shown in Table 4. Married adults<sup>3</sup> who have done *ukugida* (completed the full set of customary marriage procedures) appear to be slightly less (24.35%), than adults who have done *ukugana/ganwa* (an abridged form of customary marriage) who account for 32.7%. A similar pattern, where *ukugana* is more prevalent over *ukugida*, was reported by Budlender *et al* (2011:49) and Cousins (2011b:67) across the Msinga area.

Further detailed analysis of marital status at Ncunjane, indicates that there were nine widows, who were once *gidile*, a phenomenon associated with older women or the first generation within the household, and as such explains why there were fewer elderly males than there were elderly females, as depicted in Table 3.

**Table 4. Marriage status in Ncunjane (n=107)**

Types of marriage	NCUNJANE (% total)					
	Male		Female		All adults	
	n	%	n	%	n	%
Never been married	14	35.56	19	29.69	33	30.8
<i>Ganile/ganiwe</i> -husband/wife still alive	15	34.88	20	31.25	35	<b>32.7</b>
<i>Gidile</i> -husband/wife still alive	12	27.91	14	21.86	26	<b>24.3</b>
Other form of marriage/partnership (describe)-husband/wife/partner still alive	0	0	0	0	0	0
Divorced	0	0	0	0	0	0
Separated/deserted/abandoned by husband/wife/partner	0	0	0	0	0	0
<i>Ganile/ganiwe</i> -husband/wife deceased	1	2.33	1	1.56	2	1.9
<i>Gidile</i> -husband/wife deceased	1	2.33	9	14.06	10	9.3
Other form of marriage/partnership-husband/wife/partner deceased	0	0	1	1.56	1	0.9
<b>TOTAL</b>	<b>43</b>	<b>100</b>	<b>64</b>	<b>100</b>	<b>107</b>	<b>100</b>

#### 4.2 Income sources and assets

Livelihood strategies employed by households surveyed at Ncunjane are presented in Table 5. Amidst other objectives the study sought to identify the various sources of income of rural farming households, and thereafter to assess whether or not the contribution made by income

<sup>3</sup> Adults were defined as those of 19 years or older.

derived from crop and livestock sales (agricultural activities) was of any significance to total household income.

One third (33.33%) of total household income sources came from child support grants, with another 21.91% of the total household income comprising old age grants (11.43%) and salary/wages from permanent employment (10.48%). This suggests that most if not all households survive on state subsidies that provide the primary source of income, since these income sources combine to form just over half, or 55.21%, of the total number of income sources. Perhaps more meaningful is that is the fact that some adults have a combination of sources of income, such as receive remittances and child support grants and also sell farming produce.

When respondents were asked to rank their respective sources of income, in order of their significance to meeting household needs, state subsidies were ranked in first place. This income source has surety of being received on a monthly basis. This meant that it could be, and was, prioritised for meeting immediate monthly expenses such as buying basic groceries and paying for public transport costs. Income from permanent, temporary and casual employment was ranked in second place. This cash provided additional disposable income for buying groceries in larger quantities, which included preferential food groups such as meat, dairy products, and fruits which are otherwise not affordable on income from state grants. Furthermore, secondary sources of income ensured that households, in some months, were able to meet more of their nutritional requirements and extend periods where households had access to adequate food rations per day.

Permanent and temporary jobs range from working as professional service providers at local schools and hospitals to working in the manufacturing and transportation sectors in distant cities (such as Durban and Johannesburg). A major local employer of women is the Community Works Programme, referred to as *Zibambele*, which provides permanent employment for the maintenance of roads. At Ncunjane women maintain the provincial P280 road, a major road that links Weenen to Tugela Ferry. Similar forms of employment have been cited in district reports as well. Young female adults and other household members provide their casual labour services on surrounding commercial farms during peak sowing, weeding, and harvesting seasons.

There is evidence of some gender specialisation in relation to sources of income, particularly with regards to casual jobs and self employment. For instance some men are self employed in

the sense that they sell handicrafts such as walking sticks, traps for killing crop pests (rats and porcupines), whilst other men dig residential sites at R800 each. Women too are self employed, but in contrasting ways to those of their male counterparts. Females generally make and sell pottery products, make traditional hide skirts (*izidwaba*) for married women - 'the Zulu wedding band' (ranging from R800 to R1400), and sell assorted woven products (at R30 each). The production and sale of natural resource-based craft products therefore plays an important role within the complex set of livelihoods found at Ncunjane.

In addition women collect thatch grass outside of Msinga, which they use to thatch roofs at R300-500 per hut. A few women sell snacks, cellular phone airtime and vegetables locally, whilst one male runs a small spaza shop in the area. Such diverse income activities employed by women and men call for research into the recognition and economic valuation of natural resource-based small and medium enterprises, with an extension to livestock informal trading through selling, cultural sacrifice or *lobola* payment.

Overall it is evident that women engage in more types of livelihood as seen in Table 5. There are a total of 75 females who receive some form of income, as compared to just 30 males. These figures are in line with the earlier finding that males are finding it more difficult to seek and secure urban employment than before. As a result there is evidence of a few men who are diversifying into natural resource-based enterprises to secure an income. For instance Mr Masoka retired from the mining sector and went back to the rural areas. He invested much of his payout in buying more cattle. He now survives on an old age grant and sells off livestock to get immediate cash income. His supports his three sons' families, as the sons are struggling to find employment in the cities. Masoka recalls that when he was young, migrant work was plentiful compared to current times. One of his sons secured temporary employment as a security guard, and one has since returned home. He has joined other young men in the area who harvest and sell natural products. He says that this is a better livelihood strategy than trying to find a decent job in the cities (interview with Vusimuzi Masoka, 12 March, 2012).

**Table 5. Income sources of adult household members in Ncunjane**

	Total income sources (n= 105 in Ncunjane)					
	Male		Female		All adults	
	n	%	n	%	n	%
Employee in permanent job	5	16.67	6	8	11	<b>10.48</b>
Employee in temporary, contract job	4	13.33	4	5.33	8	7.62
Do casual employee work	1	3.33	4	5.33	5	4.76
Farming activities on homestead's land that results in cash income	5	16.67	5	6.67	10	9.52
Self-employed in non-agricultural own/family income-earning activity without employees	0	0	2	2.67	2	1.90
Self-employed in non-agricultural own/family income-earning activity with employees	7	23.33	3	4	10	9.52
Work on income-generating project	0	0	0	0	0	0
Not employed and looking for work	1	3.33	1	1.33	2	1.90
Not employed and not looking for work	1	3.33	0	0	1	0.95
Old age grant from government	3	10	9	12	12	<b>11.43</b>
Pension from private employer	0	0	0	0	0	0
Disability grant	2	6.67	0	0	2	1.90
Child support grant	0	0	35	46.67	35	<b>33.33</b>
Remittances in cash	1	3.33	6	8	7	6.67
Remittances in kind (e.g. food, clothes etc)	0	0	0	0	0	0
Other - specify	0	0	0	0	0	0
<b>TOTAL</b>	<b>30</b>	<b>100</b>	<b>75</b>	<b>100</b>	<b>105</b>	<b>100</b>

Table 6 shows the ownership levels of various asset groups among adults in Ncunjane. Domestic assets comprise furniture, cutlery and cookware, whilst electronic assets include radio and television sets and a range of items powered by electricity. Bicycles, motor bicycles and cars are categorised as transport assets. All hand tools such as hoes and spades fall under the agricultural assets category, together with heavy machinery such as tractors and ploughs. The mean for all asset groups is below one per individual adult, suggesting that people are asset poor. Few adults own substantial numbers of assets, with the lowest number recorded being transportation goods, of which three out of nine are motor vehicles (bakkies) that are in a good working condition. The other two transportation assets are bicycles. In Ncunjane

domestic goods are limited to paraffin-fed stoves, bedroom and dining room suites. This furniture package is found in almost every household, as the bride's family gives these as wedding gifts to the groom's family. This is done twice during the customary marriage processes; first at *ukuqoma* (official engagement) and again at *umabo* (a ceremony to officially welcome the bride to the groom's family and ancestral lineage, marking the completion of customary marriage procedures, thus *ukugida*, as explained above.

**Table 6. Asset ownership at Ncunjane**

	Total asset (n = 107 in Ncunjane)				
	Mean/Adult	Median/Adult	Range	Total number of assets	
				N	%
Domestic	0.21	0	0-23	56	<b>22.3</b>
Electronic	0.25	0	0-27	79	<b>31.47</b>
Transportation	0.05	0	0-5	9	3.58
Agricultural	<b>0.32</b>	<b>0</b>	<b>0-34</b>	<b>92</b>	<b>36.65</b>
Knapsack sprayers	0.07	0	0-8	15	6.00
<b>TOTAL</b>				<b>251</b>	<b>100</b>

A quantitative analysis of electronic goods in Ncunjane show these to be restricted to solar energy, battery and gas cylinder operated equipment because electricity is yet to be installed. In 2009 the community was provided with free solar systems but these quickly became dilapidated, with many being stolen. Those who had working solar systems said that they bought their own, and others went back to using batteries and gas cylinders to power their fridge freezers, particularly those who ran small retail shops known as *i'spaza*. Ownership of TV and radio sets, including DVD players, was all associated with men who were migrant workers. Men would buy these items from the cities and bring them home when they visited. There were many wives had a complete package of domestic and electronic goods in their dwellings. These women were considered to be well off, as compared to wives whose husbands were unemployed and couldn't afford such assets, otherwise deemed luxuries.

Adults owned some kind of agricultural asset, with a range of 0 and 34 assets per adult, with a total of 92 assets from 22 households. Adults who did not own any agricultural asset said that they borrowed these from others within the homestead. The most commonly owned items were associated with low input farming systems, such as hoes, forks and spades. These items were cheap and could be bought as and when money was available, thus their commonality. No one owned a tractor in Ncunjane. The use of tractor ploughing started

recently, in the area, with the provision of a subsidized tractor from the Department of Agriculture. A few household heads owned one or two ox ploughs which were very old and they were kept hanging on trees or on the kraal fence suggesting they have not been used for a few years. The use of animal traction was common in the past, particularly during labour tenancy, but has ceased to exist for a number of reasons (see section on livestock below).

As mentioned above, many adult females are employed in the *Zibambele* programme where they are each provided with working tools namely a spade, hoe, rake, and sometimes a wheelbarrow. These have been added in the total agricultural assets category on the basis that women use these assets to tend to their own farming activities. They also mentioned that given that they are tasked with safekeeping of these tools, in most instances they have assumed full ownership of the tools. The ownership of agricultural assets is highly significant as it suggests that farming is an integral part of rural livelihoods pursued by household in Ncunjane.

#### **4.34 Livestock farming systems**

Cattle are regarded by most people as the most important livestock species, although not all people do keep cattle. They are animals that traditionally belong to men. Cattle are used for draught, for *lobola*, for ceremonial slaughter, for hides that are used to make traditional clothing, for meat, and for sales. Their productivity differs greatly between areas (Trench *et al*, 2002: 5, Bayer *et al*, 2003: v and Cousins, 2011b: 12). This section highlights characteristics of livestock production systems in Ncunjane.

##### *Ownership of livestock*

Livestock especially cattle and goats, are perceived as belonging to the heads of households, who are generally male, with the exception of a few female headed households. A few, male headed households, five in number, do not keep any cattle. Table 6 indicates that ten out of the total of fifteen male headed households kept cattle. Overall there were more male headed households (66%) than female headed households (44%) that kept livestock.

Male children have a right to inherit household property from their fathers on behalf of the whole family, and this includes cattle. Inheritance can only materialise once heads of

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<sup>4</sup>Cattle numbers were collected for the period 2011 and 2012, but due to highly inaccurate information collected, the study will focus only on more reliable data, that is only data from the year 2012. Cattle numbers for 2012 were either counted at the dip or dip records used.

households are deceased; however, sons are often presented with a heifer so that they can begin to build their own cattle herds. Daughters, on the other hand are not given live cows, but have cattle sold to provide disposable cash to meet their material needs. Therefore one assumes that males will continue to own more cattle than women.

On the other hand, there are other ways in which female headed households can acquire animals. For instance Mrs Yengwa started keeping cattle after her husband's death (he had previously not owned any cattle). She used her pension savings to start investing in cattle, and at the time of the interview had accumulated approximately 62 head of cattle, through natural reproduction and from receiving bride-wealth (*lobola*) for her two daughters (Interview, Mrs Yengwa, 11 March, 2012).

Most households keep small herds of between 1 and 25 head of cattle (see Table 7). As the cattle numbers increase, the number of households keeping cattle tends to decrease, with only four households keeping between 26 and 50 animals, and just three households keeping above 50 animals. The largest cattle herd in Ncunjane comprises 63 animals, thus highlighting the stark variation in cattle herd sizes amongst households.

**Table 7. Cattle ownership in 2012 at Ncunjane (n= 22)**

Cattle Data		Cattle ownership by households	Male heads	Female heads
Mean	15.68	hh with 0 cattle	5	0
Median	10	hh with 1-25 cattle	5	5
Sum	483	hh with 26-50 cattle	4	0
Minimum	0	hh with 51-75 cattle	1	2
Maximum	63	hh with 76> cattle	0	0
Range	0-63			

Apart from cattle, households also keep goats, poultry, and cats and dogs. This study will focus on goats, as these are favoured for their reproductive efficiency, and the constant

availability of browsing (see the discussion of vegetation in Chapter Two above). Furthermore, many respondents mentioned that goats sell easily and quickly, compared to cattle, since they sell for less. The mean number of goats kept by a household in Ncunjane is 44.33, with a range of 0 to 164 goats. Table 8 also shows variability amongst goat ownership by households, similar to ownership of cattle.

**Table 8. Goat ownership in 2012 at Ncunjane (n = 21)**

Goat Data		Goat ownership by households	
Mean	44.33	hh with 0 goats	3
Range	0-164	hh with 1-50 goats	11
		hh with 51-75 goats	4
		hh with 76> goats	3

#### *Uses of livestock*

A wide range of goods and services, of both a material and non-material nature, are derived from keeping cattle and goats. From a socio-cultural perspective, both cattle and goats are used in a number of cultural and social ceremonies. Goats are sacrificed in all major ceremonies and rituals, since the sound they make when slaughtered is a symbolic gesture that enables communication with the ancestors. For minor rituals chickens are preferred. Ceremonies done for 'cleansing' or *inhlambuluko*, a year after the passing on of a family member, others such as *imbeleko*, to welcome newborn babies into the family clan, as well as ceremonies for traditional healers (*izangoma*), often require that goats are sacrificed.

Customary law dictates that cattle are slaughtered after having sacrificed a goat, and having informed the ancestors about that particular ceremony that the family is hosting. This is performed in order to receive blessings from the ancestors and to bring luck and fortune for the family, more specifically the person for whom the ceremony is being undertaken. Other ceremonies are performed occasionally to give thanks to their protection and guidance. Given that cattle are seen as 'a man's animal', when adult males die, cattle are slaughtered for them. Most often this is their favourite animal, or a very healthy animal is chosen as a 'token of their love for that person'. The lifestyle led by former labour tenants at Ncunjane seems to

involve adherence to deep Zulu customs and traditions, hence livestock will probably continue to be a key asset for households.

Additionally the role of cattle in social practices cannot be underestimated. Table 3 and the Budlender *et al* (2011) study have shown that marriage rates are high for former labour tenants in the Msinga area, and it is clear from my interviews suggesting that payment of bride-wealth (*ilobolo*) through cattle has been taking place in Ncunjane.

For instance Mr Majozi, a pensioner that has assisted all his five sons to pay *ilobolo*, acknowledges that it's his duty as a father to do so. However, the five sons already have eight wives, with one son having three wives and another two sons having two wives each. The problem lies not in the practice of polygamy, as Mr Majozi himself has two wives, but in that Mr Majozi feels that his sons are taking advantage of his generosity. He explains that he is not obliged to pay all the cows on their behalf, but to donate one or two animals towards *ilobolo*. The son that is getting married is supposed to pay the bride wealth himself, to prove their commitment, manhood, and to get recognition from other married man and the bride's family. Mr Majozi feels that since he has been paying most of the bride wealth on behalf of his sons, a strict interpretation of tradition would declare that those wives are in fact married to him and not to his sons (Mr Majozi, 13 March 2012). This interview highlights the significance of cattle ownership in Ncunjane, and helps explain why sons are being given heifers by their fathers to start building their own herds. It is clear too that cattle are indeed a 'man's animal'.

Over and above the socio-cultural roles played by livestock within the homestead, other goods and services include, access to milk, manure and draught power. As mentioned above, farmers in the area have been provided with subsidised tractor ploughing services, and the need for ox-drawn ploughs has declined. When there are delays with the provision of these tractors, people are then forced to hire private tractors, at exorbitant prices. Most often farmers secure immediate cash income to hire such tractors, and to procure other inputs for farming, through selling some off goats or cattle in local, informal markets. The type of animal to sell or buy is, in most cases, dictated by the specific use of the animal. For instance those wishing to grow their herds tend to opt for heifers and cows; those wishing to perform ceremonies opt for oxen, which have higher meat content and more tenderness; bulls are preferred for 'parting away gifts', and younger cows preferred for payment of *ilobolo*. Mr Nene, a local farmer, alluded to the fact that since they have been provided with subsidised

tractor services, he is likely to start selling off his mature oxen, and notes that they sell for around R6000-8000 (Mr Nene, 11 March, 2012).

Furthermore Mrs Sibiya, another informant, said that she found selling goats to be much faster and easier than selling cattle, because they are more affordable, and are in high demand even in the off-season, since many people use them for small ceremonies (Mrs Sibiya, 11 March, 2012). Livestock is therefore seen as an investment to meet unforeseen expenses, and thus provide households with a financial safety net.

Benefits derived from keeping livestock are extended to non-stock owning households. These households have access to milk, meat, and manure, given as donations or gifts when attending ceremonies. Inter-household trade also occurs in the form of trading four or six goats for one head of cattle, and in other cases through the loaning of cattle, a practice known as *ukusisa*. The latter practice is whereby livestock owning households offer or get a request from the other household, to collectively herd and manage their livestock, on their behalf. However, *ukusisa* is no longer practiced in Ncunjane due to a breakdown of trust within the community (focus group interview, 12 March, 2012).

Livestock therefore serve multiple functions within the household, are a key asset and form of investment, and are used to strengthen social ties through donations and gifts. More important is the role played by livestock in maintaining or improving soil fertility, in homestead gardens and fields within the homestead, through urine and dung deposits. Livestock also benefit from cropping systems by feeding off crop residues, which provides additional sources of energy during the dry season (winter). This highlights the symbiotic relationship between these components of the farming system.

#### *Management issues within livestock production systems*

Livestock production at Ncunjane resembles other typical communal grazing systems, which do not have formalised rotational grazing camps, as found on commercial beef farms. Cattle owners and herdsmen are responsible for the management of the herd, which involves making decisions on seasonal grazing spots, availability of ample drinking sources for animals, and ensuring access to primary veterinary services, if at all possible.

There is a sufficient supply of browse material for goats, all year round, located in the vicinity of the homesteads, thus making goat production systems low input and low maintenance in character. Water for goats is provided by households placing water basins

around the yard. Furthermore, since goats return home by themselves, herding requirements are minimal and reduced to drawing the flocks into the kraal in the evening, and releasing them in the morning. Cases where herding might be required include instances when female (nanny) goats have misplaced their kids. Nanny goats are said to hide their kids when faced with danger, but at times end up forgetting where they have hidden them. Herding is also required during periods when females are kidding, to supervise the process and assist where problems might arise.

Kraaling of cattle is very rare because the distances cattle would have to travel to and from grazing or drinking and the homestead would be too great, despite concerns for stock theft. It would also mean that grazing time is limited. Cows which have calved feed through the night and return to the kraal in the morning in time to feed their calves and to be milked. Grazing, immediately after feeding, is often concentrated around the homestead, whilst calves feed on the more palatable grass growing around the kraal. This grazing pattern often leads to overgrazing, visible in the form of patches of bare soil within the vicinity of homesteads, which decreases towards the mountains. Herdsmen lead the animals to areas with available grazing deep in the mountains, as grass becomes more and more limited in the winter months. When there is shortage of grazing cattle feed on maize stalks, or they might be taken into a neighbouring commercial farm where there is plenty grazing during winter. However the latter strategy requires stockowners to pay R50 per animal per day, which for people with large herds of cattle and limited incomes, is simply unsustainable.

The main problem facing cattle production at Ncunjane is a lack of drinking water for cattle. The major water sources, the Skhehlinge and Ncunjane rivers, tend to dry up in the winter months. In 2010 long, dry spells in the summer led to a large number of cattle deaths. People recall that they would lose up to five cattle overnight, with many being pregnant at the time of death (Focus group interview, 11 March 2012). Herdsmen then approached a construction company that was rehabilitating a local road, to quarry materials at a single point, so that they could have a dam that would provide animals with drinking water. To date this dam is the only major water source for cattle and goats, but it dries up in winter and animals have then to be provided with water by households.

Other livestock management issues include vulnerability to stock theft, which is most rife when goats travel long distances to feed after browse material near and around the homestead is depleted. Herders have to increase their supervision of herds during the day by regularly

inspecting local key browsing spots. Goats and cattle are also susceptible to diseases, particularly during the rainy season when tick-borne diseases are rife.

Livestock farmers undertake a range of preventative and control measure to curb the spread of infections amongst animals. These include de-worming, inoculating, vaccinating, and dipping animals, either on a household basis or collectively, as members of the Ncunjane Livestock Association. Collectively dipping of cattle is done every Sunday morning, using government subsidised medication, and takes place at the communal dip tank. Since the dip tank is located approximately 350 meters away from the homesteads, cattle are then kept in kraals overnight. Expert veterinary services are often sought, on an individual basis, when the need arises. Primary animal healthcare, which extends to goats and poultry, is provided by the locally-based Non-Government Organization (NGO), MRDP.

#### **4.4 Crop farming systems**

This subsection discussed key features of crop production systems found at Ncunjane.

##### *Forms of production*

Crops are grown on four different land types, distinguished by land size, location and distance from the homestead boundary, as well as the level of technology used in the production of crops. Garden plots are cultivated using hand tools such as hoes, spades, and forks. Gardens normally occupy very little space, and are often used to grow vegetables. In this study two types of gardens are distinguished, namely gardens that are located within the homestead and those located outside of the homestead boundary.

Fields, on the other hand, tend to be larger in size, ploughed using tractors, and likely to be under cereal and legume crops. In this study it was found that some fields are located within the boundaries of the homestead, and thus two types of fields are distinguished as with gardens. The count and size of the four categories of land are shown in Table 9 below. A significant finding is that the use of gardens is twice as common as the use of field plots at Ncunjane. Only nine households from a total of 22 use fields (40.9%), whereas 19 households (or 86%) use gardens. Respondents provided a number of possible explanations for this phenomenon.

Those who simply cannot afford these costs have neglected their field plots and instead confined crop production to garden plots. Even though government tractors have been

subsidised, the drivers are, more often than not, delayed as there are multiple *izigodi* to attend to. There are also instances where the tractor simply runs out of diesel and cannot operate for days at a time. In contrast, the widespread ownership of agricultural tools (see Table 5) increases the probability of their use in small gardens.

Other explanations included a shortage of family labour to help with cultivating large fields; concerns that the fields were located too far from the households, making it more difficult for older family members to get there, and to transport manure or to take produce back home; and a lack of fencing material, so that, crops were highly vulnerable to damage by livestock and theft. Such problems were not experienced with homestead gardens, but this is not to say that gardens did not present challenges of their own.

**Table 9. Approximate land under cultivation, in square metres, at Ncunjane (n = 22 households)**

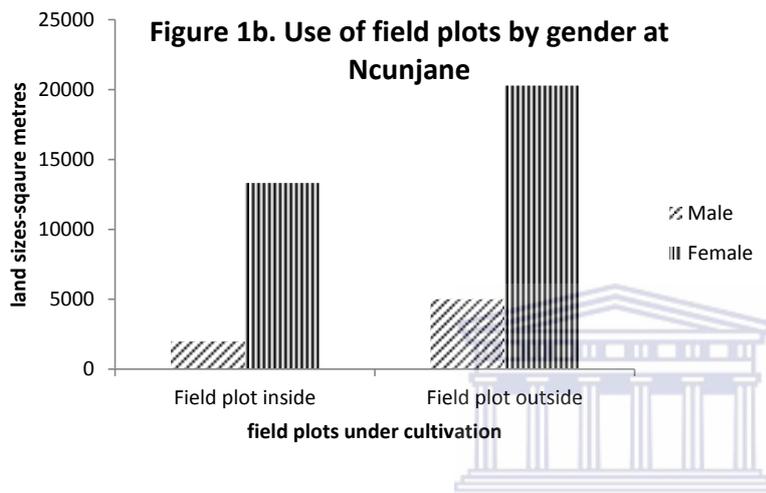
LAND TYPES	Garden inside homestead boundary	Garden outside homestead boundary	Field inside homestead boundary	Field outside homestead boundary
<b>VALID CASES</b>	<b>12</b>	<b>7</b>	<b>5</b>	<b>4</b>
Mean area	166.83	280.29	2600	15075
Median area	161.00	210	2000	15000
Range	25-408	64-824	1300-5000	10000-20300
Sum	2002	1962	13000	60300

The varying land sizes used range from 0.025ha to 0.08ha for garden plots and from 0.13ha to 2.03ha for field plots, as shown in Table 9. Use of land amongst both male and female farmers in Ncunjane appears to be highly skewed towards field plots, as shown in Figure 1a and 1b, with more females than males using this type of land.

#### *Meeting production costs*

Female farmers shared how they obtain cash to purchase seed, which varies with age and marital status. *Omakoti* (young wives) used a portion of cash from different sources of income, namely remittances and child support grants, whereas *omamezala* (mother in laws)

used a portion of their pension to subsidise production costs. Mr Mchunu’s wives, MaDladla and MaThabethe, are fortunate to receive the support of their husband, in meeting production costs. He gives them money to purchase seed, assists them in fencing off the fields, and ensures that the field is ploughed on time (Focus group interview, 11 March 2012).



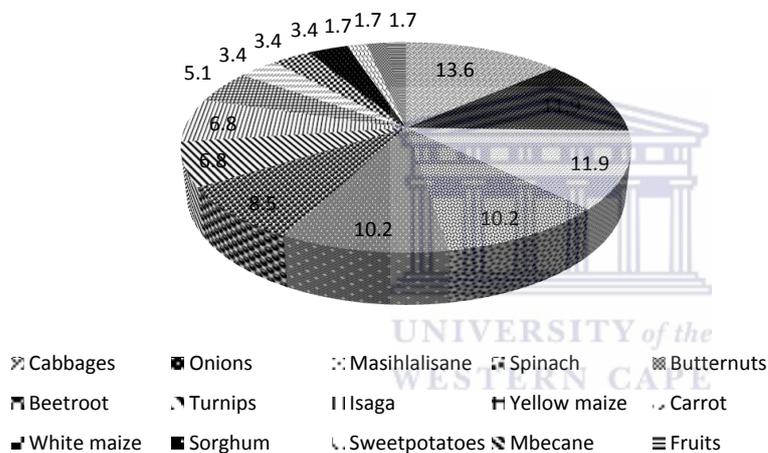
These farming systems can be characterised as low input systems that require seed, and sometimes the hiring of a tractor to plough the fields, with the use of kraal manure eliminating the need to procure expensive inorganic fertilisers, which would raise production costs. In cases where tractors had to be hired, it was found that men would usually sell some small stock (goats) to get enough cash.

The cost of crop inputs varies from town to town. This is evident in the cost of *umbecane* seed, which costs R20 for 2lt in Greytown but retails at R30 for 5lt in Tugela Ferry. Similarly, uncoated yellow maize seed costs R39 for 5litres at Greytown, yet sells for just R25 for 5lt at Tugela Ferry and at Weenen. On the other hand, hiring of a tractor ranges from R800 to R1500, depending on different sources. The local extension officer also provides a seed mix pack, enabling farmers to plant a variety of crops.

*Crop choices*

Crops are grown on each land type, with vegetables concentrated in small garden plots as compared to legumes and cereal crops, which are grown in higher quantities on field plots, (see Figures 2, 3, 4 and 5). Almost all vegetable seeds are sown into seed beds before being transplanted. Farmers have to regularly tend to garden plots to supervise crop growth and development. Farmers therefore prefer to locate such high maintenance cropping systems very close to the homestead boundary, for easier access to plots. This has been found to be more convenient in that farming activities can be incorporated within their daily household duties. The location of garden plots next to the homestead kraal also makes transporting manure to the gardens much easier, and this extends to other production activities such as irrigating and harvesting of produce.

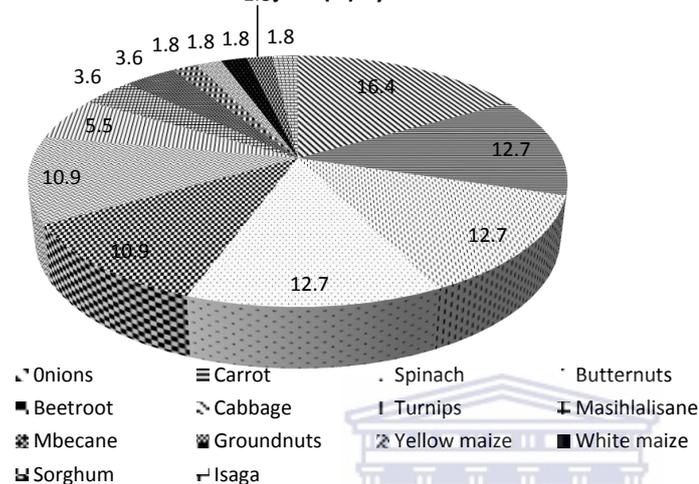
**Figure 2. Crops grown in gardens inside homestead boundary in Ncunjane(%) by 19 farmers**



Choosing which crops to grow has a direct effect on the overall household consumption pattern, access to supplementary diverse food items, and the potential for cash cropping to derive an extra source of income, with implications for household food security. Crop choice is affected by accessibility of seed, with the most accessible being traditional seed varieties that can be stored and reused in the following growing season, such as groundnuts and pumpkins. Such seed can be also accessed from local neighbours at no cost. However access to hybrid maize seed, which is not re-usable, is dependent on its affordability at the beginning of each growing season. Government-provided seed packs do not include maize, groundnuts and sorghum, but comprise mainly common leafy green vegetables, such as pumpkins (*amabhece*); butternut (*ithanga*); *mbecane* (cow peas); *ndumba* (jungo beans); yellow maize

(*umbila obomvu*); white maize (*umbila omhlophe*); sunflower (*ujika nelanga*); onions (*uanyanisi*); cabbage (*iklabishi*); carrot (*izaqathi*); groundnuts (*amakinati*); sorghum (*amabele*); *masihlalisane* and *isaga* (wild herbs); turnip/beetroot/sun hemp (Zulu names unknown), as shown in Figure 2 and 3.

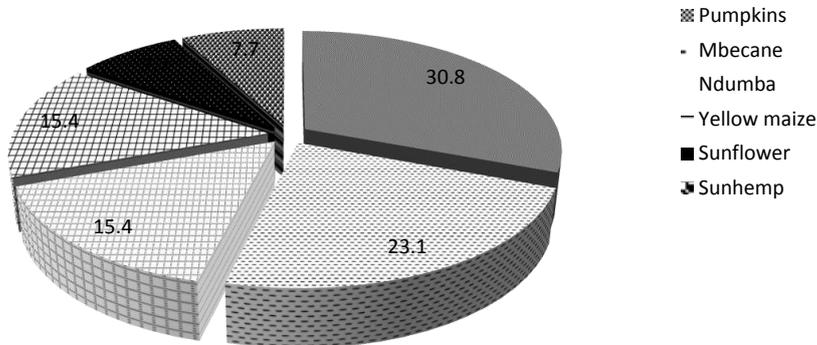
**Figure 3. Crops grown in gardens outside the homestead boundary in Ncunjane (%) by 19 farmers**



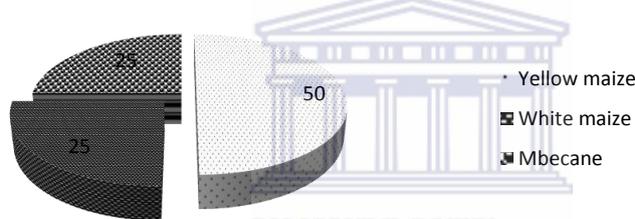
The choice of crops grown in gardens is mostly determined by internal factors related to the household economy, whereas external factors (notably, environmental constraints) affect the choice of crops grown on field plots. An erratic climate for crop production, with erratic rainfall and long dry spells during the summer months, strongly influences the choice of crops grown on fields at Ncunjane. In a good rainy season, white maize produces moderate yields. But with a lack of rain and increased day temperatures, white maize yields decline drastically, forcing farmers to explore alternative maize cultivars. Consequently drought-tolerant yellow maize is now being grown by many farmers. However, as shown in Figure 4 and 5, some households still grew both types of maize to reduce the risk of not gaining any produce. However, during the 2011-12 cropping season, maize fields were characterised by stunted growth, scorched leaves, and no yields.

Crop production on fields at Ncunjane, is mostly maize-based, with some intercropping with legumes, pumpkins and sorghum. One farmer, Mr Majozi, is experimenting with the production of sunhemp and sunflower, an innovation aimed at improving his chicken feed mixture (Mr Majozi, 13 March, 2012).

**Figure 4. Crops grown in fields inside the homestead boundary in Ncunjane(%) by nine farmers**



**Figure 5. Crops grown in fields outside the homestead boundary in Ncunjane (%) by nine farmers**



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### *Labour*

Farming households in Ncunjane have large families, within multiple-generation homesteads where husbands and wives live with their sons, daughters-in-laws and grand children. This family unit allocates different tasks to household members based on the following; availability, gender, health risk, and age of individuals. There is participatory decision making with regard to the division of farm labour, but the final decision rests with the heads of households. During the peak production season additional family members are brought in to assist the plot owner, or in other cases, the main user of the plot. Duties assigned tend to be gendered, for instance, men are assigned to fencing of the plots, using wooden poles and wire mesh. Men go in search of high quality poles, which they cut down and put into piles. Women are then assigned to fetching these from the forest, and since the collection of firewood has been generally perceived as a women’s duty, this is seen as acceptable.

Furthermore in cases where the availability of male migrant workers coincides with the growing season, men willingly provide their labour for ploughing the fields, and at times broadcasting and burying the seed mix. As prescribed by Zulu custom, women (and more especially daughters-in-law) have to keep away from the vicinity of men, and at best avoid having eye contact with them. This is viewed as a sign of respect. This gesture plays itself out even within production systems, such that so long as men work the fields, women refrain from carrying out farm labour. As a result some *omakoti* have yet to learn how to broadcast seed. One *makoti* has come to learn how to do this by force of circumstance, since her husband became disabled after suffering from a stroke. Another *makoti* has had to learn to sow seed because her husband does not get involved in farming activities, other than giving her money to purchase production inputs (focus group interview, 11 March 2012).

These gendered roles are not cast in stone, as there are cases where men and women work in tandem in the fields. This tends to be wherein homesteads an age gap between men and women occurs, and often takes the form of *omakoti* working with their sons, during after school hours, or mother-in laws working with their sons.

*Omakoti* have very little time available for farming in between carrying out domestic duties, which involve travelling long distances to fetch fuel wood and water, and attending to child rearing. Nevertheless women multitask so that they can incorporate farming activities into their busy schedules. Teenagers, on the other hand, were found to be reluctant to assist in the fields, and instead took up less laborious duties, such as watering the crops and transplanting seedlings in homestead gardens.

### *Ploughing*

Prior to the provision of a free tractor by the provincial government, animal traction was the main form of ploughing used at Ncunjane. This section seeks to compare and contrast their effectiveness. Farmers related how they have shifted from animal traction, as a predominant method of ploughing of the field plots, to tractors. About 2 years ago the local extension officer introduced free tractor ploughing services. Although oxen ploughing were a laborious activity that took at least eight hours per day and took two days to complete, farmers felt it was all they were used to. Oxen were readily available, even to non-stock owning households, because families shared their oxen or ploughs, as well as the labour involved in animal traction, and fields were always ploughed on time.

However most farmers were in agreement that they were beginning to experience fitness issues with their oxen, as there was insufficient palatable forage available in the dry season, due to reduced rainfall in summer. Hence oxen and cows could not fully recover in time for ploughing in early spring. Therefore the provision of tractors was widely welcomed. Over and above that, a few farmers expressed the view that they were anticipating problems in meeting the costs of hiring tractors to plough their fields, and thus welcomed the innovation.

Farmers were also for the adoption of mechanised ploughing since there was no labour requirement, unlike under animal traction, where a four-man team is necessary. These teams require intensive training before they can successfully coordinate a span of oxen, but there were concerns that majority of young men were not available for training purposes, due to migration. Additionally, disposal of cattle over the years resulted in a number of inexperienced oxen that would have to also undergo training,

Mechanised forms of ploughing are inappropriate in homestead gardens as the area under cultivation is small. Instead the soil is prepared using hand tools namely forks, pickaxes, hoes and spades. There were no problems relating to this form of soil preparation.

In both gardens and fields, kraal manure is applied in varying quantities prior to ploughing, in order to improve soil fertility. Crop production systems at Ncunjane do not apply inorganic fertilisers. Manure is carried, using sacks or a wheelbarrow, and is deposited in fields that are located further away from the homesteads. Dung and urine from cattle also gets deposited while cattle feed on maize stalks in the fields, and this too gets turned into the soil during ploughing.

#### *Planting methods*

Farmers employ two main planting methods, namely row planting (in gardens) and broadcasting (in fields). Row planting is highly recommended when planting very small seeds, and is ideal when transplanting seedlings, as farmers can apply precision to depth and spacing measurements. This ensures that varying planting specifications for different crops can be met, allowing for maximum growth potential to be met.

Upon opening up rows for planting, holes of varying depth are dug using small sticks. The distance between holes, within the row, are standardised at a foot distance for crops such as cabbages and beetroots. However, no intra-spacing is necessary for crops that can be later

thinned out, such as carrots. As seeds are being sown by one person, another person follows immediately behind to bury and irrigate the seed.

In the case of planting field plots, a seed mix is prepared, often comprising maize and sorghum or *umbecane* or pumpkin seeds. The seed mix is then broadcast on the ploughed plot and buried simultaneously. This sowing method was common during the use of oxen ploughs since no rows were opened. This practice is termed '*ukuhlwayela*', and is a learned skill, as seeds can get wasted if not spread and buried properly, but a lack of 'know how' regarding broadcasting seed currently exists (see above). Seeds are systematically released off the hand, by pushing the thumb finger back and forth while walking across the field.

More recently the adoption of a mechanised form of ploughing, on fields, has resulted in a shift in the planting method used, from broadcasting to row planting. The same principles of row planting are applied on field plots as is applied under garden plots.

### *Weeding*

Weeding is closely linked to the type of plough used, and is carried out as a response to visible weed growth during different stages of crop growth and development. Weed encroachment symptoms include the yellowing of maize, which is indicative of crop stress. Farmers asserted that after weeding, leaves regain their greenness. Most weeding at Ncunjane is carried out by women, although some men do carry out weeding in their own plots. Hand hoes and forks are used. Weeding is undertaken during the early hours of the morning, to avoid the hot sun during the day, and is repeated in the evening as the sets starts to set. This creates time for women to attend to household chores during the day.

Typically, as crops grow so too do weeds, therefore the timing of the first weeding activity often takes place when crops are at ankle-length. Weeding is repeated when crops are at knee length or at a later stage when crops are at chest length. Hence weeding occurs on two occasions, but the duration of weeding, as per occasion, is usually determined by a few factors. Firstly the size of the plot plays a major role in determining how long weeding will take place. This also indicates roughly how much labour is required to perform the task in a short period of time. Garden plots, compared to fields plots, generally require less time and labour for weeding. Weeding of a garden plot lasts no more than two days, when done by one person, whereas weeding of a field plot can last at least two weeks, when done by three people.

Secondly, the use of either ox ploughs or tractor ploughs has significant implications for the duration of weeding of field plots. Farmers have noticed that when ploughing with oxen, the plough digs deep into the soil, and does not open planting rows, which is the converse under tractor ploughing; in the former weed re-growth takes longer. Under these circumstances weeding is only performed once, because by the time the weeds re-grow, the full growth and development of crops would have taken place. Where weeds re-grow whilst crops are young, farmers have found that not weeding has detrimental effects on their crops.

Weeds compete for the same resources such as water, solar energy, and soil nutrients upon which crop growth is dependant, thus stunting crop growth and affecting overall crop quality and yields. The latter situation is present under tractor ploughing, characterised by shallow disking and the opening of planting rows. Consequently weeding time under ox plough is less than that required under tractor plough, with farmers suggesting that weeding, under the latter form of ploughing, has doubled to just over a space of two weeks.

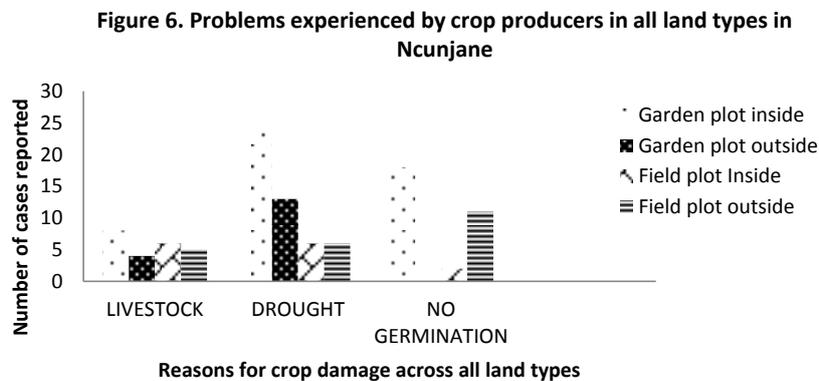
#### *Drought*

Broadly speaking crop production has been seriously affected by drought, resulting in significantly reduced rates of seed germination. Drought has recently been experienced in the year 2010 and according to farmers, there has been continued long dry spells in the summer months. Earlier in Chapter 2 (subsection 2.1.6), it was highlighted that generally, the Msinga area has a low average rainfall 601-700mm per annum, which is far from optimal for rain fed farming to take place. Henceforth farmers raised concerns about major water stress in crops. Furthermore this has been exacerbated by increased levels of heat units which results in the stunted growth of maize crops, and scorched legume leaves. In the past year there was very little or no crop yields, from field plots, however there is no data to produce for this. Figure 6 highlights the extent to which drought and other problems have affected crop production in the area.

#### *Crop protection*

Farmers experienced more than one type of pest, and these were found to be either crop specific or preferred a number of different crops. Pests were further classified as those which are flightless such as porcupines, stalk borer, and white ants, *amaye*. Pests which could fly included brightly-coloured locusts, *intethe*, bugs, and birds. Livestock in the form of

chickens, goats and cattle were also mentioned as highly irritating ‘pests’ that did huge damage to crops, especially cattle. Figure 6 shows problems experienced by farmers, in all land types, with pests grouped into the ‘livestock’ category.



The most common crop-specific pests are the stalk borer which attacks maize; beetles that eat the flowers of legume plants, and porcupines that eat the maize cobs. Birds and locusts feed on maize, and leafy vegetables grown on garden plots, whilst ants attack maize and sorghum stalks, included those of sweet sorghum. Cattle and goats are similar to birds and locusts as they feed on the leaves, stalks, and reproductive organs of cereal crops and vegetables. Whilst chickens are also considered as pests, because they dig up seeds, the fact that they also feed on ants to supplement their protein diet, is welcomed by farmers.

Similarly farmers have been quite innovative in their quest to protect crops from these pests. Some literally crush and kill ants, and other small pests on site. Recently, farmers have learnt that pouring paraffin liquid into ant burrows is effective. Perhaps a more effective form of biological pest control adopted is in the case of ash sprayed directly onto maize stalks and on the inside of the leaves, to combat stalk borer.

Only three farmers have experimented with the use of chemical pest control to treat stalk borer, hence the ownership of knapsack sprayers as shown in Table 5, but inadequate protective gear was worn, resulting in dermatological problems, and these farmers have since stopped using such pesticides. Use of a domestic chemical, known locally as ‘blue death powder’, to kill ants during summer has been extended to fighting off beetles and crawling insects that feed on leafy vegetables. This raises health concerns when consuming such produce, especially in its raw state.

### *Harvesting*

Similarly to weeding, harvesting is undertaken mainly by women, and is done collectively to reduce the risk of malpractice, especially when harvesting is market oriented. For instance, harvesting of green maize is associated with processing a transaction for a buyer. Cobs of maize are harvested and packed in sixes, with each bunch costing R20. Hence this requires that one person attends to the business aspect whilst another person harvests and packs the requested quantity of maize on the customers behalf.

The harvesting of maize takes place over two stages. This first stage of harvesting occurs when maize is being sold off as green mealies. This process is called '*ukufula*'. *Ukufula* is also done to meet household consumption purposes. The remaining cobs are harvested when they have dried up, which is signalled by the tassel's turning into a brown colour, with the leaves turning into a creamy white colour. This latter process of harvesting is called '*ukuvuna*'. It is a labour intensive process because the sacks, filled with dry maize cobs, have to be literally carried from the field to the homestead, which is quite a distance. In some cases farmers are compelled to use local public transport, such as bakkies, to deliver their harvest, thus incurring post-harvest costs.

Since only yellow maize is now planted in this area, *ukuvuna* is undertaken to provide a rich vitamin A source to supplement chicken diet. Protein supplements for chickens are sourced from harvesting sunflower and sun hemp seeds (see above). However, chickens have identified where these crops are planted and eat the seed before the farmers can commence with any harvesting.

With regard to legume plants, harvesting is performed by breaking off the dry pods of legume crops (such as *umbecane* and *izindumba*) and packing them into 50 or 80kg sacks. The sacks are then sealed and placed on the ground. Thereafter thick sticks are used to repeatedly beat the sacks to release the seeds from the pods.

Farmers find that if pumpkins are harvested very late, they end up being eaten by rats or start to decay, as they collect moisture from morning dew, thereby enabling fungus growth.

Other vegetables planted in small gardens are harvested as and when the household wishes. Harvesting is dependent on the types of crops, with some requiring that leaves be broken off, others dug from the ground, and others having fruit plucked from the branches. Packaging of harvested produce often occurs in the form of bunches, from 2 to 5 litre buckets, and small

basins accessible to households. The amount of vegetables harvested is entirely dependent on the household size.

### *Storage*

Depending on the crop, storage methods are designed to provide maximum aeration and protection from pests, particularly rats and crawling insects. Storage facilities are crop specific, with the most sophisticated being that used to store maize cobs. Maize cobs are stored in an *ingqolobane*, a storage structure which is built out of wooden poles, and is placed on the yard. The elevated position of *ingqolobane* helps keep chickens away from the maize whilst also ensuring that there is no contact with any damp soil, which can easily lead to the build up of mycotoxins. Prior to storage, maize cobs are dried by spreading them on roof tops to complete the drying process, or *ukuchaya*. Completion of the drying process is signalled by tarsal's that disintegrate from the cob, and by leaves that turn into a pale white colour. These dried up cobs are then placed on the floor of the *ingqolobane*, which is covered with sacks.

Six of the total of 22 respondents in my survey had *izingqolobane* in their homesteads. Ownership of an *ingqolobane* was associated with households that used to obtain high maize yields in the past, and therefore required large storage facilities. Since farmers at Ncunjane have been experiencing poor climatic conditions for crop production and low rainfall in particular, maize yields have been declining, reducing the relevance of *ingqolobane*. Households that do not own an *ingqolobane* use other storage methods, such as spreading the dry cobs onto sacks, which are then placed inside the house. Thereafter maize grains are stored in sacks to protect against moisture and pests. Rats are the main pests, but they are generally kept under control.

A more common storage method for the maize crop, that has been very effective for traditional maize varieties rather than hybrid varieties, involves hanging maize cobs upside down on the roof inside a kitchen. The smoke from the fire would cover the cobs causing the grains to dry up. In addition, the smoke protects against insects and fungus infections, which cause rotting (*ukuphehla*).

Apart from the maize crop, another common cereal crop is sorghum or *amabele*, which also has a specific drying and storage process. Mr Majosi relates how, as a young man, he witnessed this process unfolding. "You dig a big hole underground, load the sorghum into a sack, and use thick sticks to beat the sack repeatedly –*ukubhula*- to release the *amabele* grains

from its pockets. The women would brew beer and invite many men from the village. The men would then collect sticks, *amaveli*, to beat the *amabele*, and they would sing whilst beating up the big pile of sacks. They would then dig up a huge hole in the centre of the kraal, which is big enough for you to enter and stand inside. They would then smear cow dung all over the walls of the hole, and put in straw and wet grass that would then be burned so that no insects can come inside because of the smell.

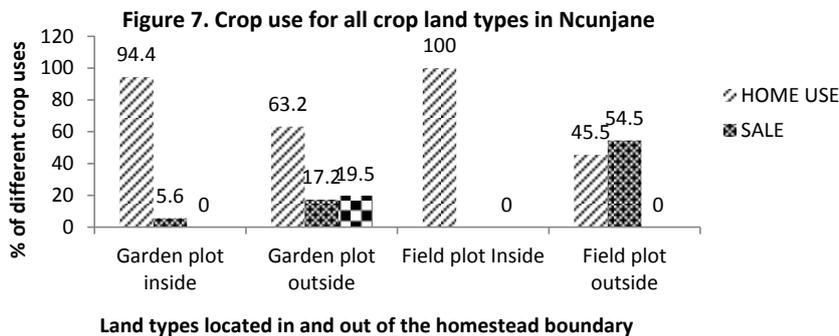
About eight 80kg sacks are then placed into the hole to be only removed after a few years. A big flat rock is then used to close the hole, and it is cemented and cow dung put all over the hole to allow cattle to continue making use of the kraal. Upon re-opening of the holes, those *amabele* found in sacks placed on the edges, are susceptible to rusting and decay, and are called *isangcobe*. Those *amabele* found in sacks placed in the middle are protected from infection, and are ready for use.” (Mr Majozi, 11 March, 2013).

Similarly beans are broken out from their pods by applying the same method of *ukubhula*, as applied for sorghum. Beans are then stored in sacks, as applied for maize. Butternut squashes, if left in the fields for too long, are susceptible to decay from collecting moisture, hence they are harvested and stored on the roof top. Thereafter rats and birds feed on the butternuts, prompting storage within the house.

#### *Crop uses*

Cropping is undertaken primarily to provide households with extra sources of food, hence the bulk of produce is used to meet home consumption needs (see Figure 7). Only a very small proportion of produce is either sold or donated to neighbours. Different vegetable crops are used in making various dishes, which are eaten together with mealie meal or rice.

‘Ready to eat’ *amabele* is used in a variety of traditional dishes such as *ugqemane*, which is dough that sticks to sides of the pot, with a chicken filling. There is also *amabele* porridge and *amabele* home brewed beer, while *isangcobe* is washed and triple rinsed, and then ground up and eaten in its raw state.



The use of the maize crop is directly affected by the stage at which the crop was harvested. *Ukufula* is undertaken either for selling fresh green mealies, or for home consumption. Green mealies are either roasted in an open fire, or boiled, or ground to prepare mealie bread. *Ukuvuna* of dry maize presents a whole variety of uses for maize. Either the dry maize is sold as chicken feed, or it is used to feed chickens belonging to the homestead. The maize grains are germinated and then ground to prepare home-brewed beer. In addition to using dry maize in a number of traditional dishes, such as porridge or samp, it is milled into mealie meal.

The milling of maize was previously undertaken at a Weenen-based milling station, hence there was no need to buy mealie meal from supermarkets. However the drastic decline in maize yields being experienced by farmers at Ncunjane in recent years implies that there is not enough maize for milling purposes.

Figures 1 to 4 above show that crop production is highly diversified, and Figure 7 shows the main uses of such produce by the household. Farmers regarded leafy vegetables and tuber crops as the most valuable with regard to daily consumption. Many combinations are used such as using the leaves of traditional varieties of spinach mixed with carrots to make a dish, which is eaten with mealie meal. Vegetables therefore provide households with a more diverse diet, over an extended period of time, thus improving household food security and nutrition levels.

#### *Significance of agriculture as a livelihood strategy*

Most farmers reported that no cash income was derived from farming activities and listed numerous reasons that led to reduced crop yields. Ncunjane farmers do not grow cash crops in their fields but focus entirely on food crops, which explain farmer's somewhat sad responses to the question around farm income and its significance as a livelihood strategy. Farmers said that they no longer obtain surplus maize and legume produce due to a lack of irrigation water (communal stand pipes only provide water to meet basic domestic needs), together with extreme heat that stunt plant growth. The few crops that manage to survive under such unfavourable conditions are susceptible to damage by pests and small stock, thus reducing the full growth potential of plants.

The picture is not, however, entirely bleak, since vegetable crops do provide small amounts of cash income from time to time. Spinach, cabbages and *umasihlalisane* mixed bunches are sold at R7-8 each. Cauliflower sales have recently started to increase, because of its superior taste to that of cabbages, but were planted post-fieldwork, and thus not captured in Figures 2 or 3. Other farmers sell small packets of *umbecane* and carrots. It is this sale of these vegetables, including the sale of dry yellow maize as chicken feed, which has led to agriculture accounting for 9.52% of the total number of household income sources (see Table 5). Income from farming was ranked fourth, which suggests that farming does make a moderate contribution to household livelihoods. In addition, households gain access to an extra source of diverse food items that contribute towards improved household nutrition.

Trading of crops is done through informal markets with most buyers being neighbours, and transactions not being recorded. But produce is rarely sold, and whatever cash comes in, is immediately used to buy cheap daily consumption items such as a loaf of bread, candles or a litre of paraffin.

Improved support and access to reliable water sources for irrigation purposes could significantly increase the current contribution made by farming to these poor rural households. It would be useful if extension officers assisting these farmers could train them to keep farm records, thus helping them make more informed decisions around their farming systems.

The livelihood strategies and their significance to the socio-economic structure of households have been explored, in line with understanding the demographics of Ncunjane people. Farming systems of Ncunjane have been explored in this chapter. An emerging pattern in livestock ownership shows that not all households keep livestock, and those that do have a

high variation in terms of actual numbers of animals. A myriad of goods and services provided by livestock to households has been discussed, and highlights the important role played by animals as a social and financial function, in the community. Livestock benefits were also discussed in relation to crop production systems, where they interrelate at the level of feeding on maize stalks, whilst providing manure which improves soil fertility. Key issues have been discussed, pertaining to the cropping systems, which include gendered land use, farming methods used, and problems faced by farmers including environmental and financial constraints. Chapter Five introduces the livelihoods and farming systems of Nkaseni.



## **CHAPTER FIVE: SOCIO-ECONOMIC STRUCTURE, LIVELIHOODS AND FARMING SYSTEMS AT NKASENI**

The previous chapter has discussed the diverse ways in which rural livelihoods are generated at Ncunjane. The demographic features of households as well as their socio-economic profile were outlined, and the key aspects of farming systems were described. This chapter also sets out to discuss these issues but using the Nkaseni households as the point of reference. Furthermore, a discussion on livestock and crop production systems will also form part of this chapter. The significance of the contribution made by farming activities as a livelihood strategy will be explored. A concluding section summarises key points in the chapter.

### **5.1 Demographic features**

A total of 22 households were surveyed in Nkaseni using a detailed quantitative questionnaire. Data regarding demographic data and the livelihood strategies employed by households, including information on the farming systems, was collected. Findings presented will be compared to those from research undertaken in the Msinga area by Budlender *et al* (2011) and Cousins (2011b), as has been the case previously in Chapter Four.

Table 10 shows that the mean size of households at Nkaseni is 11.36, with the largest household comprising 39 family members. This mean is slightly higher than that found by Budlender *et al* (2011) which were 8.9 for former labour tenant farms in Msinga. More than half (58.9%) of households surveyed in this study consisted of between two and ten family members. This further suggests that Nkaseni households fall above the average demographic findings, when compared to both studies, as well as the district municipal data.

The district municipality data indicated that the average rural household within the district comprised between five and eight persons, whereas at Nkaseni over 40% households comprising eleven and more family members. Polygamy has led to rather large compound homesteads, with 9% of households having more than twenty family members.

**Table 10. Demographic data for households at Nkaseni (n = 22)**

	<b>Mean</b>	<b>Median</b>	<b>Range</b>	<b>Proportions</b>
Household size	11.36	10	2-39	58.9% have 2 - 10 members; 31.6% have 11-20 members; 9% have > 20 members
Generations in household	2.32	2.50	1-3	4 households have one generation; 7 have two generations; 11 generations have three generations
Age of adult members	36.78	33	18-85	
Sex of adult members	There are 76 (53.1%) females and 67 (46.9%) males from a total of 143 adults in the population sample of 250			

The mean number of generations in the household is 2.32, with as many as eleven households having three generations present. With regard to the gender distribution within households, there were more females than males, particularly amongst the elderly from the age of 60 years and above, with the possible reasons having been alluded to in Chapter Four such as younger men are away on migrant work, with a few older men being at home since they have retired and are now pensioners. Women have house-bound chores which restricts them from seeking wages from distant towns.

The study recorded that the oldest participant was 85 years old; however, the mean age for adults was 36 years. The median age was 33 years, suggesting that the majority of the sampled population comprised youth. Clearly shown in Table 11 is that the highest proportion (59.43%) of the 143 adult population was between the ages of twenty and thirty-nine years old.

As stated in the previous chapter, many adults in the Msinga area, including adult women with children, have never married, and a similar pattern exists at Nkaseni too. There are as many as 35 adults in my sample who have never married; nevertheless the number of adults who are married supersedes the number of unmarried adults by over four-fold. Both forms of

customary marriages account for 66.43% of adults, where spouses are still alive, and 4.89% were spouses are deceased. These findings confirm that marriage rates are indeed higher for former labour tenants in the Msinga area, as found by both Budlender *et al* (2011:49) and Cousins (2011b:67).

**Table 11. Age groups of all adults at Nkaseni (n=143)**

	Adult males		Adult females		All adults	
	n	%	n	%	n	%
18-19 yrs	6	8.95	5	6.65	11	7.69
20-29 yrs	18	28.86	21	27.64	39	27.27
30-39 yrs	20	29.85	26	34.21	46	32.16
40-49 yrs	8	11.94	8	10.53	16	11.19
50-59 yrs	9	13.43	6	7.89	15	10.49
60-69 yrs	5	7.46	8	10.53	13	9.09
70-79 yrs	1	1.49	1	1.32	2	1.40
80 yrs>	0	0	1	1.32	1	0.70
<b>TOTAL</b>	<b>67</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>143</b>	<b>100</b>

Households in both research sites are deeply rooted in their traditions and customs as the Zulu tribe, and men take pride in owning relatively large cattle herds. As the old isiZulu saying goes, “*indoda yinhle ngezinkomo zayo*”, meaning that a man is as beautiful as the cattle he owns, a metaphor indicating that a man without any cattle cannot get married and be fully inaugurated as a man amongst other men. Bachelors, regardless of how old and mature they may be, will remain as ‘boys’ in the view of other men until they marry and start their own families. It is only then that they are recognised as men, and are allowed to partake in manly activities, such as eating from the same tray as men at a ceremony, or being permitted by their ancestors to slaughter a beast for them.

There are a total of six widows in my sample who are *ganile*, and are yet to complete the full process of customary marriage. This is seen as ‘compulsory’ in Nkaseni, as failure to do so can implicate future generations that wish to complete their customary marriage processes.

Under such circumstances widows have to undergo *ukugida*, in an *umabo* ceremony, as explained in Chapter 4, and thereafter the following generations. *Ukugida* ensures that the new bride is officially welcomed and formally recognised by the ancestors, as a bride, thus ensuring that the bride's offspring can rightfully take up the groom's surname. It is under that surname that the offspring will marry in future.

**Table 12. Marital Status of adults at Nkaseni**

Types of marriage	NCUNJANE (% total)					
	Male		Female		All adults	
	N	%	N	%	N	%
Never been married	17	25.38	18	23.68	35	24.85
<i>Ganile/ganiwe</i> -husband/wife still alive	38	56.72	39	51.32	77	53.85
<i>Gidile</i> -husband/wife still alive	10	14.92	8	10.53	18	12.59
Other form of marriage/ partnership (describe)-husband/wife/partner still alive	1	1.49	1	1.32	2	1.40
Divorced	0	0	0	0	0	0
Separated/deserted/abandoned by husband/wife/partner	0	0	1	1.32	1	0.70
<i>Ganile/ganiwe</i> -husband/wife deceased	0	0	6	7.89	6	4.19
<i>Gidile</i> -husband/wife deceased	1	1.49	3	3.59	1	0.70
Other form of marriage/partnership-husband/wife/partner deceased	0	0	0	0	0	0
<b>TOTAL</b>	<b>67</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>143</b>	<b>100</b>

## 5.2 Income sources and assets

Table 13 shows the total number of household income sources in my sample at Nkaseni. From a total of 143 adults interviewed, there were a total of 155 household income sources, suggesting that some adults at Nkaseni had more than one type of livelihood. This might indicate that households are relatively much better off those households at Ncunjane, where there was one income source per adult.

The highest number (31.96%) of total household income sources were from forms of employment, namely permanent, temporary, and casual jobs. This category of livelihoods was skewed towards males, who worked as migrant labourers in the manufacturing and logistics sector in distant cities such as Cape Town and Johannesburg. Most females work as professionals in local primary schools and hospital located in Tugela Ferry. As in Ncunjane, where many women worked on the Zibambele programme, so too do they in Nkaseni. There was also a councillor from the area, who unfortunately passed away during the intensive phase of this study.

Almost one third (29.3%) of the total number of household income sources comprised state transfers, in the form of child support grants and old age pensions. These were highly skewed towards females. Respondents regarded state grants as the most significant household income source, since they are received on a monthly basis, and are used to meet basic household needs such as groceries, transport costs, and airtime. Cash income derived from employment provided households with supplementary disposable income, which is seen as increasing the household's buying power.

Nkaseni household members engaged in diverse livelihood strategies, which include self employment (14.01%), remittances (11.47%), and farming activities (9.03%). This improved the probability of households being able to purchase more expensive goods, such as building material, agricultural tools, and luxury food items such as proteins, fats and oils. This further implies that households with more diverse and a higher total number of income sources have a better chance to improve their food security and nutrition levels.

Both farming and self-employment activities tend to be land-based livelihoods since they have a high dependence on the use of natural resources. Activities included the harvesting of grass to thatch roofs, running small spaza shops, and harvesting and selling natural resource-based products namely handicrafts, weaved mats, and pottery. A closer look at Table 13 shows that the total percentage of adults carrying out farming activities and those who are self employed, equates to the percentage of adults who do casual work and those who receive old age grants respectively. This highlights the significant role played by land-based livelihoods in comparison to state subsidies and employment as household income sources.

**Table 13. Income sources of adult household members in Nkaseni**

	Total income sources (n= 143 in Nkaseni)					
	Male		Female		All adults	
	n	%	n	%	n	%
Employee in permanent job	18	30.51	8	8.33	26	<b>16.56</b>
Employee in temporary, contract job	3	5.08	7	7.29	10	6.37
Do casual employee work	12	20.39	2	2.11	14	<b>9.03</b>
Farming activities on homestead's land that results in cash income	7	11.86	7	7.29	14	<b>9.03</b>
Self-employed in non-agricultural own/family income-earning activity without employees	3	5.08	3	2.08	6	3.82
Self-employed in non-agricultural own/family income-earning activity with employees	3	5.08	13	13.98	16	<b>10.19</b>
Work on income-generating project	0	0	1	1.04	1	0.64
Not employed and looking for work	1	1.69	0	0	1	0.64
Not employed and not looking for work	1	1.69	0	0	1	1.64
Old age grant from government	6	10.16	10	10.41	16	<b>10.19</b>
Pension from private employer	0	0	0	0	0	0
Disability grant	0	0	0	0	0	0
Child support grant	4	6.77	26	27.08	30	<b>19.11</b>
Remittances in cash	0	0	18	18.75	18	<b>11.47</b>
Remittance in kind	0	0	1	1.04	1	0.64
Other- Specify	1	1.69	0	0	1	0.64
<b>TOTAL</b>	<b>59</b>	<b>100</b>	<b>96</b>	<b>100</b>	<b>155</b>	<b>100</b>

Individuals own a range of assets<sup>5</sup>, but in very low volumes, as shown in Table 5, with all asset group means being below one, which suggests that some households are very poor. Both domestic and electronic assets are owned by 25.38% of adults with some having as much as 39 assets. These include paraffin stoves, sewing machines, radio and TV sets, amongst a wide range of assets. Transportation assets include three small trucks ('bakkies')

<sup>5</sup>Refer to the previous chapter, section, 4.2, for a detailed description of the different asset categories shown in Table 5.

that are in a good working condition, with the remainder being bicycles. A large number of adults owned some form of agricultural asset, and this is reflected in a slightly higher mean, as shown in Table 14.

**Table 14. Asset ownership by individuals in Nkaseni**

	Total assets (n =143)				
	Mean	Median	Range	Total number of assets	
				n	%
Domestic	0.28	0	0-39	75	<b>25.38</b>
Electronic	0.28	0	0-39	75	<b>25.38</b>
Transportation	0.08	0	0-11	21	7.10
Agricultural	<b>0.31</b>	<b>0</b>	<b>0-42</b>	<b>94</b>	<b>31.76</b>
Knapsack sprayers	0.12	0	0-17	31	10.48
<b>TOTAL</b>				<b>296</b>	<b>100</b>

With regard to the varying types of agricultural assets owned, at Nkaseni most respondents said that they had bought hand tools such as pickaxes, hoes, rakes and spades, using cash income from state grants, farming activities, and from self employment activities. Similarly a handful of women, employed under the *Zimbabwe* programme, publicly acknowledged that they had simply assumed ownership of their working tools given to them for use in carrying out their road maintenance duties. Many insist that the hoes, spades and wheelbarrows will be inherited eventually in future, and according to them this has been happening in some areas. This incidence replicates that which occurred at Ncunjane.

There is a minority of farmers that own knapsack sprayers, used for both the application of herbicides and pest control measures. Overall, the relatively high accumulation of agricultural assets confirms that households are engaging in farming activities, as one of the range of livelihood sources sought after by households (see Table 13). None of the respondents owned a tractor, however, and there was a sense of great dependency on the subsidised tractor ploughing services.

The shift from the use of ox-drawn ploughs to subsidized tractors, dates back approximately two years, and similar operational shortcomings are experienced at Nkaseni as those highlighted by farmers at Ncunjane. Constant delays in delivery of ploughing services, and frequent shortages of fuel, were cited as perhaps the main problems with regard to the implementation of this service. The hiring of private tractors from neighbouring commercial

farms is seen as the most effective, yet expensive solution, to having one's fields ploughed on time (see more details on this in the section on crop production below).

### **5.3 Livestock farming systems**

This subsection seeks to describe in detail the key features of livestock production systems at Nkaseni. Cattle ownership and distribution of animals amongst households surveyed is assessed in light of the uses of and benefits derived from keeping livestock. Management issues arising from livestock keeping are also discussed.

#### *Ownership of livestock*

Households keep both small and large livestock since they serve multiple household functions, which have been discussed above (Chapter Four, subsection 4.3). Quantitative data collected with regard to cattle ownership, at Nkaseni is shown in Table 15. The mean number of cattle owned by households is 12.32, with animal numbers ranging from 0 to 73. Not all households keep cattle, particularly households headed by younger males. In addition there is a high range, in spite of having a relatively small mean, and a median of only one animal per household, suggesting that there is high variability in animal numbers amongst households.

Table 15 clearly shows this, whereby there is a skewed distribution pattern towards households keeping small herd sizes. While there are six households that keep between one and ten animals, larger herd sizes, of between 21 and 30 animals, are kept by only half (or 3 in total) of the number of households that kept smaller cattle herds. Thus the emerging pattern in cattle ownership is that as herd sizes increase, the numbers of households that keep cattle tend to decline. Somewhat surprisingly there is no significant variation in cattle ownership, between male and female headed households.

Livestock farming systems at Nkaseni include flocks of goats and poultry, besides cattle. The numbers of goat owned by households, as shown in Table 7, resembles a distribution pattern similar to that found in cattle ownership. That is to say that as goat numbers increase, the number of households that keep goats tends to decrease. Flock sizes range from 0 to 127 animals, with the mean number of animals being 37.12 per household, but the median is 11, so numbers are still highly variable. It was mentioned, in Chapter Two, in subsection 2.1.6, that the Msinga area is highly suited to goat production, and this may explain the prevalence of large flock sizes.

**Table 15. Cattle ownership by household in 2012 at Nkaseni (n= 22)**

Cattle data		Cattle ownership by households	Male heads	Females heads
Mean	12.32	hh with 0 cattle	6	1
Median	1	hh with 1-10 cattle	2	4
Sum	279	hh with 11-20 cattle	1	2
Minimum	0	hh with 21-30 cattle	3	0
Maximum	73	hh with 31-40 cattle	1	1
Range	73	hh with 41> cattle	1	0

**Table 16. Goat's ownership in 2012 at Nkaseni**

Goat Data		Goat ownership amongst households	
Mean	37.12	hh with 0 goats	3
Range	0-127	hh with 1-50 goats	9
Median	11	hh with 51-75 goats	5
		hh with 76> goats	5

The majority of the cattle herds comprise a majority of heifers, cows and calves, thus highlighting that stock owners keep them to ensure the continued self-reproduction of the herd. Oxen and young bulls, on the other hand, are deemed to be less meaningful for reproductive purposes, and they have a tendency to fight with each other in the kraal. Hence they are earmarked for sale and or for ceremonial slaughter. Breeding is a shared effort in that one household in Nkaseni keeps bulls with strong genetic traits, and allows for communal interbreeding; hence these are mixed herds of interbred *Nguni*, Brahman and other breeds.

### *Uses of livestock*

Just as Ncunjane livestock owners derive multiple goods and services from keeping both large and small stock, so too does the same range of benefits derived from livestock keeping apply in the Nkaseni case. Households use cattle and goats to meet a range of household production and reproduction needs, which include the hosting of cultural ceremonies, payment of *ilobolo*, and gaining access to by-products such as meat, milk, and manure. The feeding of babies with cow milk that has been boiled and cooled is a very common practice at Nkaseni. Furthermore kraal manure not only serves as a means to improve soil fertility, but is commonly used as a floor polish, which keeps floors shiny and protects against an invasion by ants. During financial difficulties livestock are often sold to raise capital to meet immediate household needs such as groceries and farming inputs including buying vaccination medication to treat livestock diseases.

Perhaps the most important symbolic significance of cattle is the widespread belief in Nkaseni that ancestors show their anger at the household by first killing off animals before harming members of the family. Mysterious cattle deaths are seen as a warning for households to act on a problem.

Cattle loaning (*ukusisa*) is still widely practiced at Nkaseni, unlike at Ncunjane. A few households have turned to the practice of cattle loaning due to compelling circumstances. A case study is presented here in order to highlight the significance of this age-old practice. One of my respondents noted that “We, the Masoka family do *sisa* cattle for a few of our neighbours. The Mtshali’s cattle were known to be very troublesome, and suffered from a range of illnesses such as boils, defective udders, and other dermatological problems. The family then approached us for help, and we agreed to *sisa* their cattle. Upon assuming this responsibility, we noticed that the health of the cattle improved immensely. The Mtshali’s later gave us a cow, as token of their appreciation”.

“*Ukusisa* is not a mere custom or rule passed by a chief but it’s a practice arising from my own willingness to help others, and by having good relations within the community. For instance, in cases where I have too large a herd, I ask you to *sisa* some of the cattle for me, and then give you a cow in return. This does not require a written contract but parties involved in *ukusisa* simply understand, through respect of one another, that all the new calves born during *ukusisa* still belong to the original owner of the animals”.

“The Mvelase family next door tragically lost all the male members of their household. As a result there was nobody available to assume herding of the cattle, so the cattle were astray and got impounded on repeated occasions. On a few occasions the wives could afford to get bail money for the release of the cattle, but as time went by they ran out of funds. It was then that maMkhize, the first wife and now head of the household, decided to sell off all the animals because it was too costly to maintain the herd. They have about twenty cattle. So I then willingly requested to become the guardian of the cattle, and since then their cattle have been reared together with ours. Every now and again, the Mvelase wives present us with a cow, for our service.” (Interview, Mr Masoka (a), 15 March, 2012).

The continued practice of *ukusisa* indicates that these former labour tenant families have maintained strong social relations with each other, from one generation to the next. This is crucial in strengthening communication amongst stock owners, which in turn directly affects livestock management in the community.

#### *Management issues within livestock production systems*

Focus group interviews were attended by stock owners and herdsman, who provided a great deal on information on pertinent issues they were faced with within livestock production. However most of the information was somewhat similar to that shared by the groups of stock owners at Ncunjane. Therefore a summary of these management issues will be given, with attention to stark differences that may occur between the two production systems. There is no rotational grazing system in place at Nkaseni, with grazing and browsing occurring around the homesteads, and then gradually proceeding deep into the mountains as feed becomes more and more scarce.

The distance travelled in search of feed is extended during the winter months, when the availability of palatable grasses is strictly limited. It is during such times that the role played by stock owners and herdsman, with regard to literally searching for grazing and water, is intensified. Hence the innovative use of cellular phones to communicate about key issues pertaining to locating possible grazing spots, coordinating dipping arrangements, and other management issues that may arise. Mr Masoka praised the use of cellular phones. He mentioned that they enables livestock farmers to be proactive, and stay informed about stock movements during the day, thereby being in a position to undertake preventative measures to avoid stock theft and the impounding of livestock (Interview, Mr Masoka (b), 15 March,

2012). This innovation comes at a time when stock theft of both small and large stock has become a major issue at Nkaseni.

The kraaling pattern resembles that at Ncunjane, which is relaxed and only performed when necessary, namely during the calving period or in preparation for dipping. Dipping also takes place in a similar manner, as discussed in Chapter Four. The dipping of cattle take place at a newly renovated dip tank, since the former dip tank was poorly built, and as result cattle would drown and die or be stuck inside the tank.

In contrast to the situation at Ncunjane, there are ample drinking sources available for livestock at Nkaseni. However the challenge of having to travel long distances between the drinking points and grazing spots also presents a major issue in Nkaseni livestock production systems. Cattle and goats usually drink from shallow parts of the Tugela River and the upper sections of the Boesman's River. However, the lower sections of these rivers are also being used by families to collect water for domestic use, and this might pose a health risk for community members. Additionally, another three dams, located at the entrance to the large cropping fields, provides livestock with a constant supply of drinking water. Recently a crocodile has been spotted in one of these dams, which might pose a threat to livestock, but no cases of attacks were reported during the course of the field work.

Despite the availability of sufficient water amongst farmers, there is a feeling that it would much better to have a large dam located within residential areas, as this would reduce the distance travelled by livestock in search of water. The need for goats to have to cross the road to reach the water sources would then be eliminated; goats are apparently terrified of motor vehicles, and thus find it challenging to cross the road to get the one of the dams.

Cattle are spiritually recognized to belong to the ancestors, and it is therefore obligatory to uphold rituals to give thanks for the protection and prosperity that they bestow upon the living. The multiple goods and services rendered by livestock position these animals as crucial role players within society at large, and they are seen as a vitally important part of a whole way of life. Livestock, as explained in the previous chapter, also contribute significantly to mixed farming systems. The following subsection discusses the characteristics of crop production systems at Nkaseni. The role played by livestock, in cropping will be highlighted, showing clearly just how broad the functions of livestock are.

## 5.4 Crop farming systems

This subsection will discuss the key features of the crop production system, at Nkaseni. The different land types, on which cropping takes place, as well as how households allocate resources for farming will be discussed.

### *Forms of crop production*

Crops are grown in differentiated plots of land in Nkaseni, as at Ncunjane, as has been described in the previous chapter. These different categories of arable plots share similar characteristics, but in the case of Nkaseni the fields outside the household boundary have comparative advantages due to their location. In Ncunjane these fields are located in rocky terrain with highly erodible soils and a lack of irrigation water, but the fields at Nkaseni are positioned alongside the Tugela and Boesman's Rivers, providing ample irrigation water. This floodplain location further provides good alluvial soils that have good water holding capacity, and thus have good agricultural potential.

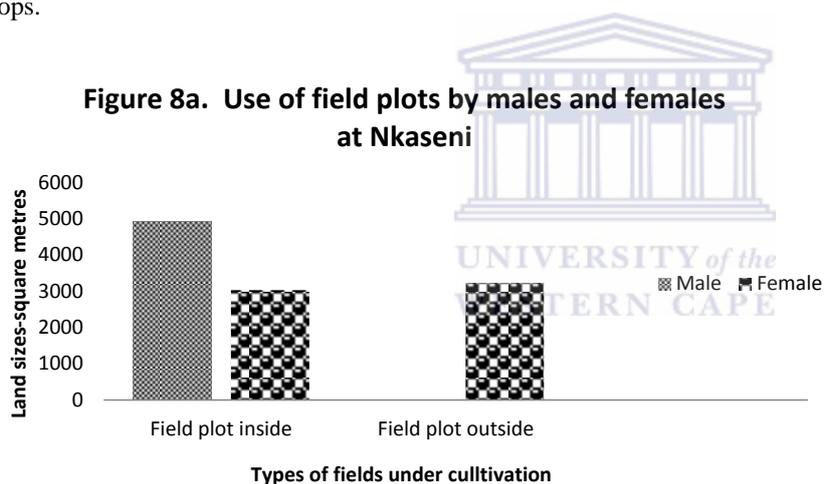
**Table 17. Approximate area of land under cultivation in square metres at Nkaseni (n= 22 households)**

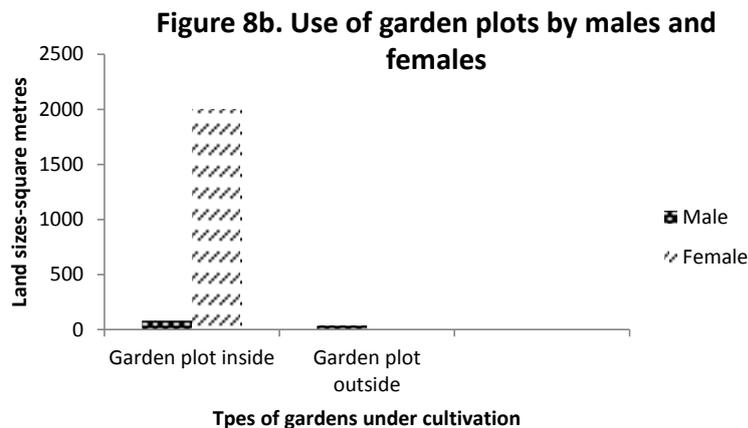
LAND TYPES	Garden inside hh boundary	Garden outside hh boundary	Field inside hh boundary	Field outside hh boundary
VALID CASES	8	1	4	16
Mean	64.75	1998	4912	3108.13
Median	61	1998	3040	2821.50
Range	14-138	0-1998	2638-8292	2448-6149
Sum	518	1998	19648	49650

Whilst only a few households (9) make use of garden plots, there are a high proportion of households that grow crops on field plots. Table 8 shows that the total area of land used is approximately 2 ha and 5 ha for fields within and outside the homestead boundary respectively. The measurement, some by measuring and the larger ones by estimating, of fields only considered the portion of the plot that was in use and the total plot sizes were not measured. Farmers, during a focus group session, indicated that the area under cultivation has

slightly declined from 2011 to 2012, due to a shortage of funds to procure sufficient production inputs.

Farmers gained access to plots of land via the heads of households, who assume the role of allocating household resources, including land. The local headman, (*induna*), oversees allocation of land for various purposes to homesteads (see Chapter Two). Vast gendered differences in the use of land for crop cultivation are evident, with high levels of use of all land types, with the exception of gardens within the homestead boundary, by men. Women concentrated some of their efforts on gardens that were found within the homestead boundary, but an even higher number of women grew crops in fields, located outside of the homestead boundary (see Figure 8a and 8b). It was explained at the female focus group session that women preferred gardens due to their close proximity to the household, since most of their routine duties are household-bound. However the use of fields provided women with opportunities to supplement their incomes by means of cultivating and selling cash crops.





### *Funding of production costs*

Individual interviews with farmers highlighted several key common issues faced by farmers. Farmers encounter a huge financial constraint as a result of the lack of savings, and or a lack of start-up working capital, at the beginning of a growing season. The majority of farmers, in particular those that undertake cash cropping, work with very limited cash resources at their disposal. MaSibiya attested to this, saying that “saving is an acquired skill that many of us female farmers, I think, lack. We get huge profits from selling fresh produce but use up all of it, never thinking about the future’ (Interview, MaSibiya, 16 March, 2012). This presents a good opportunity for the local extension officer to begin to educate farmers about agribusiness and to provide basic bookkeeping skills, so that farmers can improve on their farm management skills.

All farmers in the focus group concurred with MaSibiya, and there was a consensus that savings could effectively solve their financial problem. The backdrop to this, however, is the need to acknowledge that there is already a huge gap in meeting expensive household needs, which are expected to be met using profits generated from cash cropping (see below for details on which household expenditures are met from profits from cash crops). Miscellaneous reasons given for the inability to save included having a large number of dependents, having only one main source of income which only provides only enough money to meet immediate or monthly household needs, and women now assuming some of their husband’s duties, due to either being widowed or having unemployed husbands. The financial burden encountered by these households thus has a direct negative impact on the ability to

engage in farming. Nevertheless, farmers are motivated by the high rate of returns on cash crops.

Only one farmer said she saves income from crops (around R500 each time) for use in purchasing inputs in the following growing season, because she has a nuclear family, and most of the household expenses are met by her permanently employed husband. Other farmers, (like MaSithole, a young bride whose husband suffered from a stroke and had to take early retirement from work, making her the sole breadwinner in the family), have to seek other means to obtain enough working capital for their farming activities.

Productions costs are often met using cash derived from a number of household income sources, namely state grants, remittances and employment. Varying amounts are taken from these income sources until farmers have sufficient capital to purchase seeds and chemical inputs, and hire tractors when necessary. Note that just as farmers at Ncunjane are subsidised with vegetable seed packs, by the provincial government, so too is this the case at Nkaseni. Hence the seed that is bought by farmers at Nkaseni is almost exclusively hybrid maize seed.

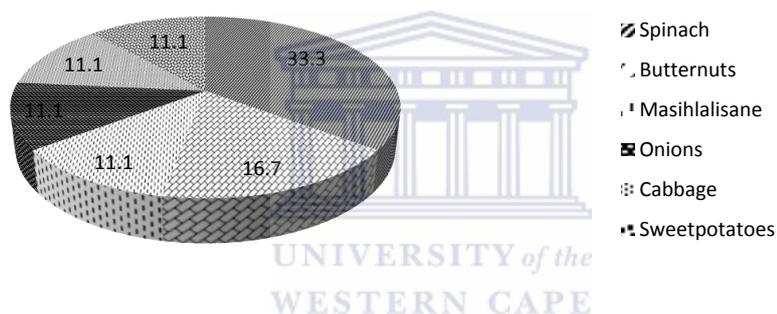
Crop production systems at Nkaseni can be characterised as high input systems that mimic industrial farming systems, in that high levels of inorganic fertilisers and chemical pest control measures are applied. This contrasts with the crop production systems of Ncunjane farmers, which are low input systems that do not make use of many chemical inputs.

Paying for expensive inputs, such as the hiring of tractors, is sometimes addressed by the sale of small stock, and in a few cases, a head of cattle. A single goat can sell for anything from R600 to R850, while a young female cow can generate as much as R7000. Since livestock (and cattle in particular) are seen as a male domain, it is no surprise that this strategy is highly gendered. Women at Nkaseni have an entirely different strategy to acquire sufficient working capital, and that is to form teams of a minimum of two women, to pool together their financial resources, and procure large quantities of inputs, equally sharing them at a later stage. This ensures that all women have access to just enough seed and fertiliser at the beginning of every growing season. Again, this practice marks strong social relations between women, similar to those shared by the men who practice cattle loaning (*ukusisa*) amongst themselves.

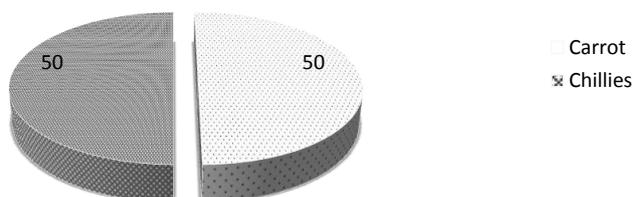
### Crop choices

A total of nine households in my survey cultivated crops on garden plots, with only one household making use of a garden located outside of the household boundary. The vegetables grown on these plots comprised crops from the free government seed packs, such as cabbages, spinach, carrots, and onions. Sweet potatoes, chillies, and butternuts were easily accessible to farmers because they contain re-usable reproductive organs such as dried seeds and leaves. Households preferred to direct their financial and human resources towards field plots, since their comparative advantage allows for cash cropping and profit making opportunities.

**Figure 9. Percentage of crops grown in gardens inside the homestead boundary in Nkaseni**



**Figure 10. Percentage of crops grown in gardens outside the homestead boundary in Nkaseni**

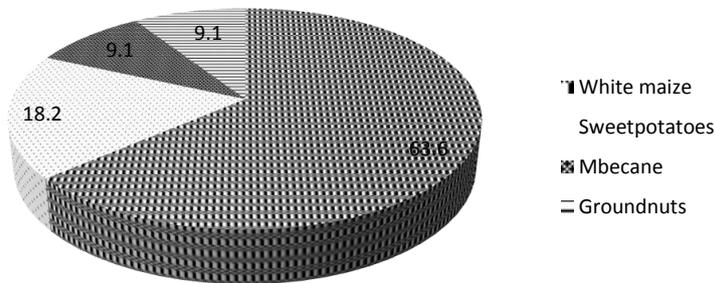


The use of garden plots involved little crop diversity, as shown in Figure 2 and 3, unlike in the case of Ncunjane, but these do provide households with a supply of food over a certain period of time. (It is clear that, due to a lack of highly productive soils and access to irrigation, most cultivation at Ncunjane, occurs on garden plots, which is very different in the case of Nkaseni). Crop choices are clearly affected by which scale of production is perceived to make more economic sense. This is premised on the fact that farmers have limited working capital, which they would rather invest in a lucrative production system, and in Nkaseni this means cash cropping on large arable fields.

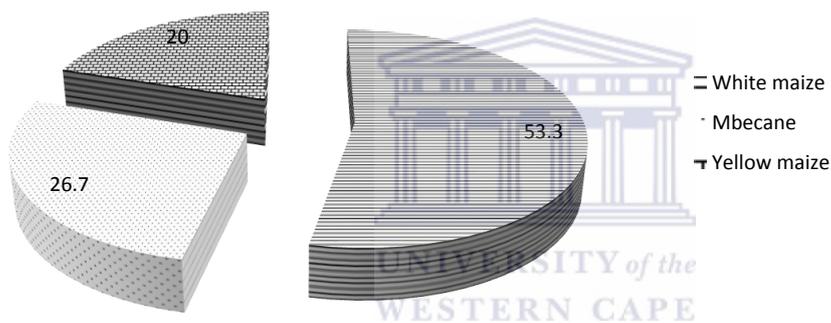
Field plots are located approximately 600 metres from the residential area, but are within close proximity to rivers and dams that provide ample water for irrigation via furrows. These furrows are very old and in need of constant maintenance, as mud and shrub growth often clogs the waterways and prevents water from reaching the fields. Furrow maintenance impacts on crop rotation practices, simply because in the winter months most farmers devote their labour to cleaning the furrows, when there is less water available for irrigation during this time too. Fields are then rested and cattle are allowed to graze on the maize stalks as an extra source of energy, which is important since there is a shortage of grazing in winter.

The main cash crops are maize (the hybrid SC701 is the main cultivar used), groundnuts, and *umbecane-cow peas*, see Figure 11 and 12. Sweet potatoes are grown mainly for home consumption, but a small percentage of the cash crops are eaten at home too. The choice of the white maize cultivar was strongly influenced by customers, who prefer its sweet taste and pale cream colour; it also has a short growing period.

**Figure 11. Percentage of crops grown in fields inside the homestead boundary in Nkaseni**



**Figure 12. Percentage of crops grown in fields outside the homestead boundary in Nkaseni**



When white maize reaches its dry stage, its uses are limited to milling into mealie meal, with other minor uses its use in traditional dishes and in production of home brewed beer. But households keep large numbers of chickens, plus some geese and guinea fowls, which are fed on dry maize, and farmers have realised that chickens prefer yellow dry maize to white dry maize. The latter becomes too dry for chickens to digest and process, and is ejected as whole grains, which raised concerns over the health of the chickens. One Nkaseni farmer is experimenting with growing sun hemp and sun flower seeds to improve the nutritional value of chicken feed.

It is clear that decisions on which crops to grow are rather sensitive in Nkaseni, since this impact on food security, the possibility of generating a cash income from farming, and the nutrition of livestock.

### *Labour*

As described above, Nkaseni households are fairly large, compound homesteads, comprising around eleven family members on average, and there are more females (53.1%) than males (46.9%) in the total adult population. This implies that labour for farming should be in plentiful supply from within these households. However women are already highly burdened with household chores, which include carrying out time consuming activities such as fetching water and fire wood from afar. In addition, the men present at home are usually somewhat elderly, as most young men are away in search of employment opportunities. Men who present at home attend to livestock production.

Despite these constraints, this study established that farming systems at Nkaseni are labour intensive, relying solely on the use of family labour. They are also characterised by a highly gendered division of labour. Family members present at the homestead provide their labour services for free to the plot owner, or main user of the plot, during the peak cropping season. I observed many young wives engaged in farming activities, with their babies on their backs, or groups of men working together in the fields.

An individual example illustrates this general pattern. MaSibiya is the second of three wives in the Masoka household. She lives with two of her sons that attend school, and during the day she helps her daughter-in-law to care for her two babies. MaSibiya has a small garden plot and a large field plot, but also works as a casual farm labourer on a neighbouring commercial farm. Her sons do not provide much help with farming activities; hence MaSibiya and her daughter-in-law carry the babies on their backs, and go to work in the fields (Interview, MaSibiya, 16 March 2012).

Sons and husbands generally prepare the fields for ploughing, using a 'slash and burn' method (i.e. clearing the plot of vegetation and burning it on site), sometimes with the assistance of women. These kinds of labour intensive farm activities are usually assigned to men, and also include sowing of seed (in field plots only), digging of waterways along the fields, and maintenance of the supply furrows. However, men generally keep at a distance when it comes to working in homestead gardens. Less labour intensive farm activities are assigned to women, who often work as groups when carrying out sowing (in garden plots), weeding, irrigating, and harvesting. Where applicable, the sale of produce is performed by the main person responsible for the crop, the 'farmer', who calls upon the assistance of family members when extra labour (e.g. for harvesting crops for a purchaser) is required.

### *Ploughing*

Ploughing methods in fields at Nkaseni are similar to those applied by Ncunjane farmers, with the exception of a pre-ploughing stage, termed 'slash and burn' or *ukukhesha*. This involves the clearing of fields by removing litter and cutting down remaining maize stalks. The 'refuse' is then placed in a huge pile, on the edge of the field, where it is then burned. The resultant ash is then thrown away. In contrast litter and maize stalks are ploughed into the soil at Ncunjane, providing much needed organic matter which adds to the continuous recycling and release of soil nutrients to plants.

This implies that the application of the 'slash and burn' technique in Nkaseni takes away from rather than adds valuable elements to soil fertility. The application of chemical fertilisers, and in a few cases kraal manure, compensates for this loss of soil nutrients. However, not many farmers (only five in all) apply kraal manure on their fields, since transporting it all the way to the fields is labour intensive and is difficult without a cart. Those that do apply kraal manure, in addition to applying inorganic fertilisers, have transformed this production system into a hybrid, positioned somewhere between traditional and conventional farming systems.

Just as at Ncunjane, animal traction has now been substituted by the use of tractors, subsidised by the provincial government, and similar operational problems to those mentioned in Chapter Four are experienced at Nkaseni. As a coping mechanism, farmers are sometimes forced to hire tractors from neighbouring commercial farmers at exorbitant prices. Mr Mtshali said that he hires the tractors ploughing services of Mr McNelly, a nearby vegetable farmer, at R1500 per plot. However, he often ends up having to pay around R3000, since men are responsible for ensuring that all the fields belonging to the household, including those used by their wives, are ploughed on time. This is a common scenario in both research sites.

### *Planting methods*

There are more commonalities than differences in the crop production systems employed by farmers at Ncunjane and Nkaseni. One element they have in common is the method of sowing seeds and seedlings, across garden and field plots (see Chapter Four).

There are a few differences. In contrast to the Ncunjane case, after maize and groundnut seeds have been buried, and before watering, farmers at Nkaseni apply small quantities of

fertiliser, usually NPK 2:3:4. The fertiliser is applied onto the surface of the soil to avoid direct contact with the seeds and burn them. Upon watering, the fertiliser slowly sinks into the soil. Once young plants emerge from the ground, a urea-based top dressing is added, and boosts crop growth and development.

Chemical fertilizers are limited to two main cash crops at Nkaseni, maize and groundnuts. Farmers believed that they were in competition with other farmers, especially those at *Mtateni* Irrigation Scheme at Tugela Ferry, and so they had to maintain high crop quality standards. One of the ways to achieve this competitive advantage was by use of conventional planting and crop management practices. Crop production systems of Nkaseni therefore mimic commercialised agricultural systems. These are familiar to farmers as they have worked as labour tenants, on commercial farms, and have carried out application of different agro-chemicals, from fertilisers to chemicals for pest and disease control.

#### *Weeding*

The availability and willingness of extended family members to assist in weeding of field crops is seen as the main factor in determining the duration of weeding activities. A confounding factor is the ownership or accessibility of hand tools used in weeding. It defeats the purpose if there are five people willing to assist the plot owner, but there are only two hand hoes to share amongst all of them. Table 5 showed that the mean number of agricultural assets per adult at Nkaseni is 0.31, so some adults do not own agricultural assets, while other adults own up to 42 agricultural assets. This results in much borrowing/lending of these hand tools.

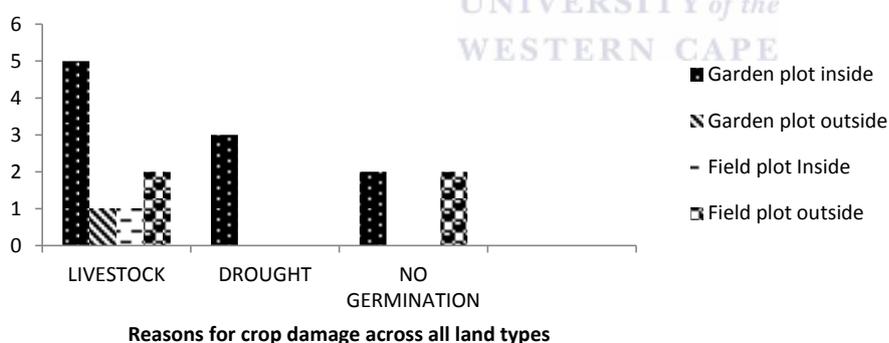
The use of herbicides to kill off weeds is another key distinguishing element, between the two crop production systems. Even though farmers at Nkaseni have access to knapsack sprayers, as shown in Table 14, the focus group sessions exposed the risks facing farmers when applying these herbicides. Farmers lack protected gear to wear when administering herbicides, and showed a general lack of understanding of how to correctly apply recommended dosages. Farmers mentioned that they experienced severe coughs and skin irritations after herbicide applications. Furthermore, there were instances of crops damage. This situation calls for urgent attention from the local extension officer, who should provide information on protective clothing, or enter into discussions with farmers about alternative, more agro-ecological, weed control measures.

### Crop protection

Just as crop farmers at Ncunjane experience problems with a wide range of pests, so is the case at Nkaseni. Farmers complained about both flying and crawling pests, and encroachment by livestock into homestead gardens. Figure 13 highlights what problems are encountered under each land type. Factors contributing to high levels of crop damage by livestock are the low levels of fencing of garden and fields, and the level of herding of small and large stock to avoid encroachment. The one independent factor which affects crops, thus rendering farmers overpowered, is drought and consequently a lack of seed germination.

Farmers apply biological pest control measures, some of which have been discussed in the previous chapter, such as crushing pests on site or spraying stalk borers with ash. Apart from erecting scarecrows to chase off birds, traps are also set along the paths used by porcupines, and new fencing and a gate have been installed in the fields. These control measures are successful only to a point, and need to be improved upon. For instance, birds no longer react to the scarecrow, and more traps are needed if more porcupines are to be killed. Additionally farmers are sometimes negligent and forget to close the gate leading to the crop fields, and livestock enter and cause massive damage to crops.

**Figure 13. Problems experienced by crop producers across all land types in Nkaseni**



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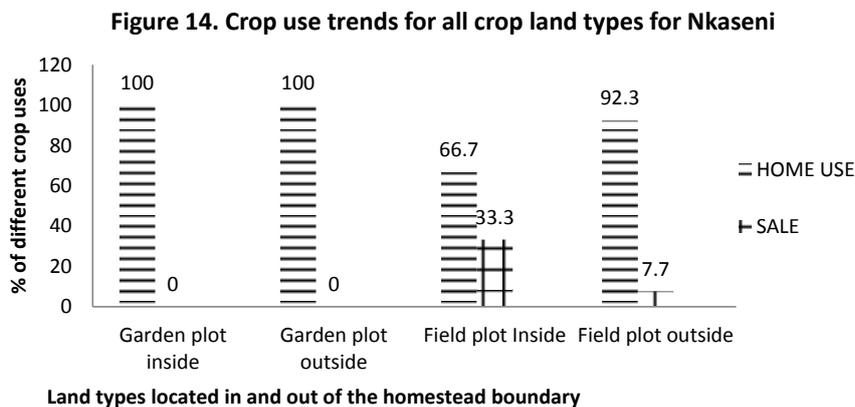
The application of pesticides is undertaken to specifically treat stalk borers which attacks the maize plant. This form of chemical pest control has adverse effects on the farmer's health, as discussed in the previous subsection.

### Harvesting and Storage

Processes undertaken to harvest different categories of crops, namely cereals, legumes and other vegetables, as outlined for the case of Ncunjane in Chapter Four, are performed in the case of Nkaseni as well. Maize crops are harvested in two stages, i.e. *ukufula and ukuvuna*, and beans undergo *ukubhula*. The same kinds of storage facilities are used, namely *ingqolobane* for dry maize, sacks for beans, and the same procedure for drying these crops is followed. In the case of groundnuts, these are kept in their shells and packed into porous sacks that are then hung on the roof top or *umgibe*, inside the house. Farmer's incur post harvest production costs, in hiring local bakkies to have produce delivered to their homesteads.

### Crop uses

Figure 14 shows that the primary use of crops is to meet household consumption requirements, with 100% of vegetables grown in gardens, and 66.7% and 92.3% of crops grown in fields inside and outside of homesteads respectively used for domestic consumption. Cash cropping is carried out by 14 households (or 64% of a total of 22 households), which means that a large proportion of farming households, generate a significant cash income from farming activities. Fresh green maize is sold, along with groundnuts and sweet potatoes, but households also use some of the produce at home. A total of 41% of field crops are cash crops.



### *Marketing*

Some customers who purchase produce grown at Nkaseni come from nearby *izigodi*, including Ncunjane, but some are street traders from local towns and bakkie traders also come from as far afield as Ladysmith, Bergville, and *Qwa Qwa* in the Free State Province. The maize growing season at Bergville begins in early summer (e.g. October), later than in Nkaseni, where the growing season begins as early as late August. Nkaseni thus has an earlier maturity date with regard to green mealies, since the crop variety planted here takes only three months to mature, and Nkaseni farmers have become one of the earliest suppliers of green mealies within the province. Farming systems of *Qwa Qwa* are said to be typically located on dry, thin soils and are under dry land agriculture, which creates unfavourable conditions for the maize crop. Hence many people have resorted to buying their green maize, rather than producing it themselves.

Apart from the huge demand for hybrid maize, there is also a high demand for groundnuts, which have become a local specialisation amongst Nkaseni farmers. The main market for groundnuts is at Weenen, where it attracts buyers who see its value-adding business potential such as making peanut butter. Having high aspirations for profit making, some farming households were contemplating the practice of rotating their summer crops with winter vegetables such as tomatoes, cabbages, and spinach because they have seen how successful farmers in the Tugela Ferry Irrigation Scheme, also known as *Mtateni*, are in selling these crops (see Cousins 2013). The issue of having no access to irrigation water in winter, due to furrow maintenance, remains their biggest stumbling block in the pursuit of this venture.

Different marketing techniques are employed to either attract new customers or remind regular and distant customers that there is ample supply of fresh produce at Nkaseni. The fields are located along the main P280 provincial road which links the town of Weenen and Tugela Ferry. Passers-by going to purchase produce from *Mtateni* farmers request information about the sale of maize since they can see that it will soon be ready for sale, and start placing their orders. Passers-bys are made aware that there is fresh produce for sale, when they see a bamboo stick with a cob at the tip, which is erected on the roadside. When official selling commences, farmers await customers from the early hours of the morning, along the roadside or at the main entrance to the fields. Female farmers travel in groups for security reasons, since it is dark so early in the morning.

Farmers have realised that there are high levels of competition amongst them, so in order to ensure they have buyers, they have created their own databases of reliable customers with whom they maintain contact to ensure that they continue receiving their business, year after year. Recently a handful of Nkaseni farmers preferred to transport their produce to local towns where they can source a new market (street hawkers and the urban based working population); in a sense, they are mimicking the bakkie traders who purchase their produce. In employing this strategy, farmers have had to increase their old standard local price of six cobs for R10, to accommodate transport costs to and from town and still ensure that they get a profit.

#### *Significance of agriculture as a livelihood strategy*

The 64% of households in my sample which engaged in cash cropping contributed 9.03% of the total number of household income sources. This number may have increased if cash income from livestock sales was taken into account, as well as the value of all the goods and services derived from land-based livelihoods. Income from farming is used to meet various household needs, such as buying building material, and different food items. The cash is also used to transport post-harvest produce from the fields to the residential areas.

The calculation of a gross margin for a typical farmer at Nkaseni shows that cash cropping of green maize can have moderate to good returns, despite the production system being a high-input one. Input costs include hybrid maize seed (R1200/25kg), NPK fertiliser (R350/25kg), Urea top dressing (R340/25kg), tractor hire (R1500/plot), and herbicide (R120/5lt). The farmer may sell a cow at approximately R6000 in order to meet all the production costs which total up to R3510<sup>6</sup>. Actual cash income generated from selling green maize, groundnuts, and sweet potatoes, from a high crop yield, can amount to R7500, hence a gross margin of R3990. Post harvest costs (the delivery of produce) would reduce this by around R200.

Extension officers assist in the delivery of fertiliser and maize seed bags, thus saving farmers the costs of transporting the inputs from the local towns to the fields. However this is done on condition that farmers buy in bulk, and at the same time, so that there will only be one trip. Otherwise additional transport costs, amounting to R26 or R50, from either Weenen or

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<sup>6</sup>One farmer expressed his frustration and reluctance towards having to sell livestock to regularly maintain the basic survival of his family. He calculates that a goat sale, if invested in farming, can reap twice the money it was sold at and this motivates him.

Estcourt, will have to be considered. Gross margins can be further increased if farmers pool together their working capital and procure their inputs as a collective.

Farming income at Nkaseni is used to subsidise children's education and clothing. Two female farmers said that they were investing in goat production, with the hope that once they have four or six animals, they could trade them for a head of cattle. This was seen as a more affordable way of gaining entry into cattle production, compared to buying one animal at a time at high cost. A few male farmers indicated that they use money from farming to invest in other kinds of assets, with two having bought bakkies, and it is also used to buy medication for vaccinating and de-worming goats. Hence agricultural incomes play a major role by boosting a household's or individual's purchasing power, even though this is an occasional income source compared to regular sources of income such as state grants and remittances.

This chapter has highlighted the characteristics of farming systems as part of a complex set of livelihoods engaged in by residents of Nkaseni. Households are more secure against food insecurity and more able to fight off poverty since they have many members who participate in some form of livelihood. Land-based livelihoods provide households with extra sources of income, and diverse food, which improves household nutrition, and cash cropping is also potentially highly profitable. The addition of income generated from the sale of livestock, and the appropriate economic valuation of other land-based livelihoods would further increase our appreciation of their contribution to the total number and actual value of household income sources. To enhance the contribution of agriculture, cash cropping at Nkaseni should be prioritised by extension staff, providing farmers with more training on crop production methods, and assistance with the provision of improved irrigation infrastructure, as well as access to guaranteed markets.

This chapter has discussed the demographics of Nkaseni households, highlighting that these are fairly large compound homesteads with an average of eleven family members. Over half of the population is youth, and there is high marital status in the area. Livestock keeping was also discussed, and I discovered the herd sizes are highly variable, as shown in Ncunjane. The uses of cattle also extended to *ukusisa*. There were emerging gendered patterns in the use of different land types with women making use of gardens more than men. Nkaseni farmers engaged in cash cropping and received high gross margins. The next chapter will compare and discuss these findings in relation to the wider literature on smallholder agriculture.

## **CHAPTER SIX: ANALYSIS OF LIVELIHOODS AND FARMING SYSTEMS AT NCUNJANE AND NKASENI**

This chapter briefly revisits the stated research questions and then set out to answer these, drawing from the empirical data reported in Chapters Four and Five. Key similarities and contrasts between the nature of the livelihoods contribution made by farming in Ncunjane and Nkaseni will be discussed, as will the similarities and contrasts between key features of the farming systems of these two communities. These issues will be discussed in light of the wider literature. The first four research questions will be addressed in this chapter. The wider implications of the research findings, which are question five, will be discussed in Chapter Seven, which is the conclusion.

This study set out to ascertain from both communities the sorts of livelihood strategies they engage in to meet basic household needs. A detailed and descriptive synopsis of these livelihoods and of farming in particular, has been main focus of the previous two chapters. This helps to determine the impact of small scale agriculture on livelihoods on land reform farms. Furthermore, the relevance of the findings to the wider debate on smallholders and irrigation agriculture in South Africa will be discussed.

### **6.1 Similarities and contracts between livelihoods at Ncunjane and Nkaseni**

#### *Complex sets of livelihoods*

Members of former labour tenant communities at Ncunjane and Nkaseni engage in multiple sources of livelihood, including employment and self-employment, with some jobs being done in a combination with other jobs, whilst other jobs require full time engagement. For instance farming activities can be done in conjunction with self-employment. There are also jobs which are more seasonal in nature, compared to those which are permanent, and therefore can be done as and when feasible, such as working as a casual farm worker. Some jobs require less skill compared to jobs which requiring a high level of skill. Jobs are either on-farm or off-farm in nature.

Households were found to practise mixed farming systems, combining crop and livestock production. Farmers at Nkaseni were found to engage in cash cropping, while farmers at Ncunjane also sold produce, but at as a secondary strategy only since most of the produce was for subsistence, as discussed in sections 4.4 and 5.4 above. As an addition to the set of livelihood strategies, households also harvested and sold natural resource-based products, and

were self-employed in small enterprises. Therefore households engaged in highly complex, and diverse strategies in order to sustain a living and meet their household needs. The following subsections will highlight the contribution made by these various income generating activities to total household income, and their overall significance in sustaining rural households.

## 6.2 Contributions by different livelihood strategies to overall household income

### *Employment*

This study found that adults engage in one or more income generating activities. Out of a total of 105 adults in Ncunjane there are 105 income sources, which implies that adults have on average one form of income-earning activity. However the findings at Nkaseni (where a total 143 adults have a total of 155 income sources) imply that here there are twelve extra income sources spread amongst a few more adults. Furthermore, at Nkaseni employment (permanent, temporary, and casual jobs), was the primary contributor to income (contributing 31.96% of all sources of income); with the addition of self employment (11.42%), this results in employment and self-employment being 43.38% of the total number of household income sources. At Ncunjane employment (22.86%) and self employment (14.01%) together contributed a total of 36.87% to the total number of household income sources, slightly less than then that found at Nkaseni.

Migrant males tend to work in distant cities and towns, often in semi-skilled jobs in the transport sector (as taxi or truck drivers), in the mining sector, and as security guards. In addition, there are some men who are skilled workers or artisans in large manufacturing companies. There are similarities in the types of employment engaged in by migrant men from both areas<sup>7</sup>. Within both areas one finds a few professionals, mostly government officials employed as teachers and nurses.

Socio-economic studies conducted in the North West and KZN Provinces also reported that most household income was derived from off-farm employment (Schwalbach *et al*, 2001:202 and Kunene and Fossey, 2006:3). People worked in the mining and logistics sector, whilst other worked as casual farm workers on timber plantations. There were those who were

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<sup>7</sup>One unusual form of employment identified in the survey is that of a professional bodyguard from Nkaseni.

public servants (schools and police) and others were pensioners (Schwalbach *et al*, 2001:202 and Kunene and Fossey, 2006:3).

Adults who were present at home most or all the time also sell their labour locally. This usually takes the form of working as casual farm workers on neighbouring commercial farms during sowing and harvesting seasons. Direct observations in the field, and statements made in female focus groups, suggest that such employment is limited to women, particularly unmarried women, since farm workers are required to reside on the farm premises for the duration of the job. This practice is similar in both Ncunjane and Nkaseni, as appears to have become a kind of 'rite of passage' for teenage females in both communities.

The forms of livelihood engaged in are influenced by age and gendered roles within the household. There was evidence that older women and young wives, who have child rearing responsibilities in addition to other household chores, are thus bound to the household and limited to selling their labour on a seasonal basis, on farms closer to home. This practice is more common at Nkaseni as the area lies within close proximity of a few commercial farming enterprises, whereas Ncunjane is geographically positioned at some distance from such farms. Furthermore, these categories of women also tend to be employed by the Department of Public Works on the Zibambele programme, as reported in Chapters Four and Five. Farmers were also differentiated by age, in a Northern KZN study on livestock production, whereby majority of farmers (38%) were between the ages 41 and 50, 26% were between the ages 51 and 60, and only 4% of the farmers were less than 30 years old (Kunene and Fossey, 2006:3).

I also found some cases where people are self-employed in small informal enterprises, ranging from *spaza* shops, to taxi businesses, and making and selling arts and crafts. The latter type of self-employment is natural resource-based in that grass, clay, water, and reeds are used in the making of thatch roofs, pottery, handicrafts, and weaving. Most of these jobs are done on a permanent basis depending on the availability of time, raw materials and demand for products.

In summary, adults in both areas tend to take on at least one or more income generating activities, sometimes simultaneously. These former labour tenant families therefore have a complex set of livelihoods, often involving links between the urban and rural economy, and this creates a safety net for households.

### *Livelihoods not based on employment*

At Ncunjane and Nkaseni respectively almost half (44.76%) and nearly one third (29.3%) of the total number of household income sources come from state transfers, in the form of child support and old age grants. The contribution made by state grants to overall livelihoods is thus of similar order of magnitude to that made by employment. Similarly Dell (2012:3) also found that although employment (58%) was the main source of income, social grants were found to comprise over one third (33%) of total number of household income sources, across four provinces. Nevertheless, respondents asserted that social grants were a more reliable source of income for households since they are received on a monthly basis, and are thus seen as a guaranteed source of disposable cash income. This enables households to meet their immediate needs such as groceries, transport costs and health care expenses on a regular basis. This is because those household members who are employed are not compelled to send money back home every month, and those who do, do not send a standardised amount of cash, making this income source unpredictable and unreliable.

Similarly, a moderate contribution to cash income is made by crop farming, which in both cases is limited to cash from sale of crops. There was no significant difference between the contributions made from farming in Ncunjane (9.52%) and Nkaseni (9.03%) to the total number of household income sources. However in the northern KZN crop sales contributed only 2.6% to the total household income (Kunene and Fossey, 2006:3), which was far less. In addition Dell (2012:4) found that 80% of households produced crops mainly for own use, another 2% produced for primary source of income, and another 6% for secondary source of income. This suggests that poor households produce to first meet their dietary requirements before considering selling crops to generate an income. When compared to other non-employment based sources of income such as remittances, income from farming as a livelihood, contributes less than remittances (11.47%) at Nkaseni, However, a higher contribution is made by farming at Ncunjane, since remittances there contribute only 6.67% to the total number of household income sources.

A survey commissioned in five communities in the Northern region of KwaZulu-Natal found income from agricultural sales, pensions, and remittances were the primary contributors to household income (Van Maltitz, 2004:29). A similar pattern was found in the Umtshezi and Msinga local municipalities that are plagued by high rates of unemployment. Rural household income and expenditure data revealed that the main types of income sources were social

grants, remittances, and income from agricultural sales and informal trading, in that order (Umtshezi IDP, 2011-12; Aliber, 2011:133). This study found that employment rather than state subsidies made up the highest proportion of household income sources. This may be partly as a result of the fact that labour tenant families have a higher mean number of members per household compared to other rural households within the district. Nevertheless, state subsidies, remittances and income from farming all make moderate contributions to total household income in Ncunjane and Nkaseni, with state subsidies being ranked first as the most significant source of income during focus group sessions. As much as 11.8% of the small scale farmers surveyed at *Enseleni* district, had a sole income from pensions, compared to 36% of farmers who relied on employment and income from livestock sales (Kunene and Fossey, 2006:4). There was also only 23% respondents, in the North West survey, who were full time farmers, whilst the other 77% reported that they relied on employment and then on livestock sales. Only 29% cattle farming households earned an annual income of R3000 or more, whilst another 23.6% received between R500 and R1999 per annum ((Schwalbach *et al*, 2001:202). These studies highlight the importance of agriculture as an income source but states that farming is mostly done as an additional, and not as a primary source of income.

### **6.3 Comparison of farming systems in Ncunjane and Nkaseni**

The previous two chapters have thoroughly described and discussed the key features of farming systems in Ncunjane and Nkaseni. An analysis of the key similarities and differences between the systems will be provided here, drawing on the wider literature.

#### *Commonalities in crop production systems*

Cropping systems in both areas could be described as maize-based, intercropped with a variety of vegetables and root crops, and using low-input technology, making it typical of cropping systems found in Msinga and other parts of the province (Lewu and Assefa, 2009 and Aliber, 2011). This pattern extended to KZN, Limpopo, and the Eastern Cape were over 60% households produced maize and vegetables (Dell, 2012:4)

Distinct farming practices employed by farmers in both research sites stem from as far back as the days of labour tenancy. One such is the substitution of ox-ploughs by the use of tractors, which have been subsidised by the provincial government. The use of tractors is a common thread in smallholder irrigation schemes at Msinga (Aliber *et al*, 2011:135). The operations carried out during crop production such as sowing, weeding, harvesting, and

storage, are performed in a similar manner by all farmers across the two sites. Common problems experienced include delays in the government-funded ploughing service, which affects planting dates, and the unavailability of the tractors when needed. As a result farmers have to incur exorbitant costs in hiring private tractors.

Other key challenges include insufficient working capital, shortages of agricultural tools and equipment, lack of fencing, and pests, amongst others experienced by farmers in both areas. This has resulted in 'under-farming', which is a phenomenon across other parts of Msinga, as confirmed by (Budlender *et al*, 2011:98). The study found that farmers were faced with general challenges which are common to smallholder agriculture in South Africa, such as unfavourable climate, lack of production inputs, and a lack of extension support (Shackleton *et al*, 2000:58, Dell, 2012:5).

Another common feature within these two production systems is the symbiotic link that exists between crop and livestock components of farming systems. Whilst cattle feed on the crop residues (maize stalks) during winter as an additional source of energy, dung and urine are deposited on the fields, which improves soil fertility. Cattle are also sold to subsidise crop production inputs, and profits from cash cropping are also invested in buying medication to treat animal disease. Livestock-crop interactions in farming systems have considerable potential to enhance nutrient recycling in large fields when kraal manure and urine is applied. This begs for further research on both suitable dry land crops and irrigated dual-purpose crops so that more farmers can embrace crop-livestock mixed farming systems (Bayer *et al*, 2003:vii).

Localised, mixed production systems ought to be better understood by extension services, since they work for farmers, instead of outsiders attempting to implement standardised agricultural models that might not be suited to specific locations. Mixed farming systems are perhaps more resilient and better adapted to cope with constraints than specialised systems; as this study has shown, resources can serve multiple purposes, as in the case of cattle providing draught power and soil fertility nutrients, and crops providing cash income, food and fodder.

Cattle are kept for multiple objectives and perform several functions, ranging from providing rich sources of protein, to being a source of income in the form of sales, savings and investment, and providing a range of in-kind benefits to non-stock owners, (see Figure 8 above). In the mixed farming perspective, cattle are often kept for providing draught power

but this is reduced now in these sites with the introduction of subsidised tractor ploughing services.

#### *Differences in crop production systems*

Arable fields at Nkaseni are located on a floodplain that boasts alluvial soils, and are supplied by plentiful irrigation water from two rivers and three dams. There is also irrigation infrastructure in the form of a supply canal and in-field furrows. These fields were previously used for commercial vegetable production, and thus are known to be highly productive soils. Farmers have continued to embrace conventional production methods, which they are familiar with, such as the application of fertilisers and chemical pest and weed control measures. But farmers maintain the use of kraal manure, a traditional practice to improve soil fertility levels, and rely on family labour.

In contrast, fields used by farmers at Ncunjane are located on rocky and steep terrain, which is characterised by high level of risk from soil erosion. Furthermore, there is no access to irrigation water, and cropping is thus confined to dry land fields. There is no use of inorganic fertilisers, or any other chemical inputs, as farmers rely heavily on the use of kraal manure and biological pest control measures (see Chapter Four, subsection 4.4 above). Crop production systems of Ncunjane are more typical of others found around the KZN province, where rain-fed agriculture is practised due to water scarcity (van Maltitz, 2004 and Lewu and Assefa, 2009). These external factors have directly influenced the form of production followed.

Consequently crop production at Nkaseni, has become a high-input system as compared to the low-input system at Ncunjane. This manifests itself in a number of ways, the main being the use of hybrid maize by farmers at Nkaseni to meet consumer preferences, versus the use of drought-tolerant varieties to counteract the lack of irrigation at Ncunjane. The decision to engage in cash cropping at Nkaseni, and to concentrate on subsistence-oriented farming, at Nkaseni, was as a direct result of differential access to water for irrigation.

Differences between the two production systems also result in variations in the proportion of households participating in farming, as well as difference in plot sizes. It was found that a total of 20 out of 22 households at Nkaseni (or 91%) use their fields and relatively few (nine out of 22 households, or 41%) at Ncunjane use their fields. Plot sizes vary too: plots under cultivation at Ncunjane range from 0.01ha to 0.3ha in area (for the majority of farmers) to

1.5ha (for a small number), and at Nkaseni plot sizes range from 0.006ha to 0.5ha (for a small number) to 3ha (for the majority). This compares to the perspective offered by Lahiff and Cousins (2005:128), who found that because subsistence and small-scale farmers appear to come from differentiated households, this manifests in very high variations in plot sizes ranging from 0.5ha to over 5ha.

#### *Livestock production systems*

People owned a range of livestock, which includes cattle, goats and poultry. Most households own cattle in Ncunjane, (77.2% of the total), and at Nkaseni (72.7%) and thus a moderate proportion of households do not keep any cattle. This was also the case, as almost two thirds of households in KZN kept cattle, whilst 85% kept chickens, with labour tenants having the highest cattle ownership compared to people in communal tenure (Dell, 2012:3). This pattern extends to goat ownership where there are high levels of ownership by households, (81% and 86% at Ncunjane and Nkaseni respectively). This is in stark contrast to findings in the wider literature, which suggest that, a minority of rural households in South Africa (around 24% of the total) own livestock, and that ownership is highly skewed (May, 2000:24). However, this study did find that herd sizes amongst stock owning households are highly variable.

The majority of households kept small herds of between one to twenty five animals (in Ncunjane this accounted for 58.8% of the total, and in Nkaseni, 70.6%), whilst relatively fewer households kept larger cattle herds. “Wealthier households tend to have higher levels of livestock ownership (Dell, 2012:3)”. For instance there were only seven households that kept over 50 head of cattle and only six households that kept over twenty head of cattle, at Ncunjane and Nkaseni respectively (see Table 7 and 15 above). Similar patterns are described for rural South Africa more widely by Lahiff and Cousins (2005:128), who report that the majority of cattle herds comprise fewer than ten animals, and elite groups own considerably larger herds of over 50 animals. Varying levels of control over the means of production and social differentiation amongst households might have a role in creating such variations.

The majority of livestock owners, at *Enseleni* district, were all crop farmers, and had between 11 and 20 head of cattle and goats, and between 1 and 20 chickens. This represents a normal distribution pattern and is contrary to the North West case where households have between 5 and 149 cattle, with a mean of 29 animals (Schwalbach *et al*, 2002:200 and Kunene and Fossey, 2006: 3). Furthermore Dell (2012:60) shows that most households (71.9%) own between 1 and 10 cattle, with just a few (0.6%) households owning 100 and more cattle.

There was a similar skewedness in goat ownership as most (68.3%) households kept between 1 and 10 goats, and only 1% of households kept 100 and more goats. However there is slight difference with regard to ownership of poultry as majority (59.3%) households kept between 11 and 100 chickens.

Approximately 50% of the total land area in KwaZulu-Natal is used for stock grazing, and Msinga is a predominantly a dry area that experiences a relatively low average summer rainfall of around 600mm, and is therefore sited for livestock production (van Maltitz, 2004:11 and Aliber *et al*, 2011:134). This implies a potential for expansion of livestock production and for more households to start keeping cattle in particular. Livestock numbers may have increased from the year 2002 to the year 2012; Trench *et al* (2002:2) reported that households in Msinga, owned between five and forty head of cattle, compared to the larger herds recorded in this study, with the largest cattle herds comprising 63 head in Ncunjane and 73 in Nkaseni respectively. It is difficult, however, to be more definite in the absence of accurate herd data over time.

#### **6.4 The significance of the contribution from mixed farming systems to the livelihoods of rural households**

The various functions of crop and livestock production within livelihood systems are discussed here, with a particular emphasis on the dynamics that hinder the optimal use of production resources. Emerging policy implications are explored in relation to supporting small scale agriculture as a means to fighting malnutrition at household level.

##### *Multiple benefits derived from crop production*

While employment and state subsidies make a significantly higher contribution to the total number of household income sources in both Ncunjane and Nkaseni, the contribution made by self-employment and from farming should not be underestimated.

Respondents pointed out that these land-based livelihoods not only provide much needed extra sources of cash income, they further provide a range of non-cash goods and services to rural households. These include access to diverse food items, thus enabling rural households to meet their dietary needs, and access to natural resources such as thatch grass, and clay, which are used to generate an income by selling arts and crafts. This is the case across rural South Africa. For example, a livelihood impact assessment of smallholder agricultural projects which are under land reform in the Limpopo province echoed the same sentiments.

Beneficiary groups attested that they gained more than just land, as there were self-employment opportunities that were created; people obtained cash income from cash cropping and through sale of livestock, and households secured a supply of staple food crops, as well as access to natural resources particularly firewood (Lahiff *et al*, 2008:63).

Across both Ncunjane and Nkaseni, the cropping systems produce produced multiple benefits which included sales, home use and in-kind benefits, and differed according to farmer's priorities. Incomes derived from irregular sales of vegetables at Ncunjane provide an extra source of income which is used to buy additional food items. Small scale farmers at Nkaseni sell green mealies, groundnuts and sweet potatoes, which yield significant cash income, which the majority of women invest in building material, furniture, education and goat production. Other small scale irrigation farmers in Msinga achieve similar livelihood objectives from engaging in farming, amongst other achievements such as attainment of social well-being, gaining individual ownership of production systems as well as expanding the number of plots and types of crops used in crop production (Aliber *et al*, 2011:140).

This reinforces the argument that expanded access to the means of production opens a myriad of opportunities for sustaining rural livelihoods, and are thus valuable in providing extra sources of income and food, thereby cushioning households against food insecurity, should something adverse occur in relation to employment or state subsidies as the main household sources of income (Shackleton *et al*, 2000). Therefore the call for land and agrarian reform policy to look beyond achieving household food security, and instead aim to improve prospects of small scale farmers in general is befitting. As argued by some scholars, this would require using a class-analytical approach to redistributing productive assets such as high potential land, water and finance to small scale farmers who have the potential to advance from subsistence-based production to petty commodity production, and thereby foster accumulation from below (Cousins, 2010 and Mudhara, 2010).

#### *Multiple benefits derived from herds of livestock*

Different kinds of livestock are kept in both research sites, ranging from cattle (mixed exotic and Zulu breeds) and goats, to poultry that comprised chickens, guinea fowls and geese. This study shows that livestock provide a rich source of protein in the form of milk (but is limited to cow's milk), and meat as and when cattle, goats and chickens are slaughtered. "The chickens were regularly slaughtered than other livestock, but also provided more protein in the form of eggs (Kunene and Fossey, 2006:5)". Livestock are also seen as an investment and

a form of savings that can be realised as cash, as and when necessary. Schwalbach *et al* (2001:201) and Kunene and Fossey (2006:5) reported that 91% and 22.1% of livestock owners kept cattle for cash-related reasons, similar to those mentioned in this study. Exchange of bride wealth was also cited as a major benefit across both research sites, and this is true of other rural regions across the country (Bayer *et al*, 2003; Lahiff and Cousins, 2005; Budlender *et al*, 2011 and Aliber *et al*, 2011) and in neighbouring African countries (Cousins, 1996; Scoones and Wolmer, 2002 and Scoones, 2010).

There was also evidence of the survival of the practice of cattle loaning, commonly referred to as *ukusisa*, but this was limited to Nkaseni (see section 5.3 in Chapter Five above). Although this practice was limited to a few households at Nkaseni, it had once been a popular practice amongst stock owning households at Ncunjane but which has since ceased to exist.

Households also keep goats and chickens, alongside cattle, to meet cultural sacrifice purposes, for an occasional meat supply, as well as to sell to meet immediate household needs. One household at Ncunjane keeps geese, as ‘watch dogs’ at night to protect against stock theft. Livestock also play an important role in improving soil fertility levels; apart from the use of kraal manure, chicken manure is also added into homestead gardens. In addition, chickens act a form of biological control by feeding on crawling insects, and ants that attack crop leaves. It is clear that livestock serve multiple household functions, and play a major role in the operation of mixed farming systems. They also form a key part of the social and cultural lifestyle of former labour tenants, and for this reason households try to ensure that moderate numbers of animals are kept at all times.

## **6.5 Dynamics within current farming systems**

### *Factors affecting crop production*

There are a range of underlying factors at play which might make it difficult to realise the full potential of farming in these two communities. One such is insufficient working capital to access the necessary production inputs; this has clearly been one of the main drivers of under-cultivation of arable land. Consequently not all households participate in farming, and fields end up being fallow. This confirms arguments made by Lahiff and Cousins, (2005:127) and Kirsten and van Zyl (1998:551), who agree that the generally low contribution of small scale agriculture to rural livelihoods can be attributed to the lack of resources particularly land, equipment, working capital, as well as support services from the state and private sector. In

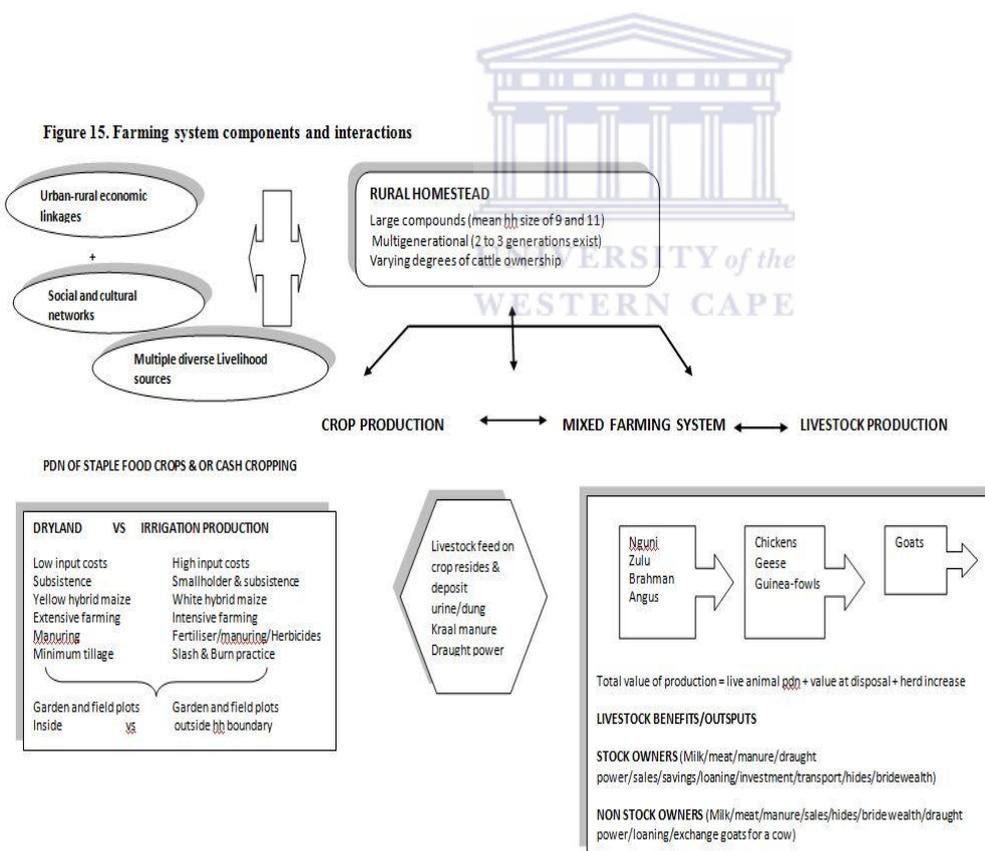
attempts to mitigate this constraint, farmers in these two sites are now forming groups and pooling together their financial resources. They then buy inputs in bulk so that they can get a reasonable quantity at lower prices. This strategy seems to be working for farmers.

Similarly Budlender *et al* (2011:96) also suggested that whilst poverty can motivate the intensified use of land use, or expansion of land under cultivation, there was evidence of 'under-farming' in Msinga, even though a high number (64% and 39% of the total, respectively) of women in Ncunjane and Nkaseni were found to produce more than half of the food they consumed at home. Earlier studies in Msinga (Mkhabela, 2005 and Cousins and Mwheli, 2007) had reported that fewer households were growing crops under dry land conditions, and that increasing numbers of households were not cultivating all their arable land. This study found fallow fields at Ncunjane and under-cultivation at Nkaseni. Production-related problems encountered by farmers also lead to a decline in the quality of crops, and reduces the quantity of crops suitable for trading.

Not all types of crops grown are produced primarily for cash cropping purposes, as is the case in commercial crop enterprises. Farmers pointed out that a selected few types of crop serve this purpose, based on demand for the crop, and perhaps a cost-benefit analysis which takes into consideration the risks and cost of produce these types of crop. At Nkaseni, green maize, groundnuts and sweet potatoes are classified as cash crops. This is understandable as maize and dry beans are the main staple food, with surplus being sold locally, as is often the case more generally in rural South Africa (Nqangweni *et al*, 1999:237). There are no crops considered as cash crops at Ncunjane as their farming systems slightly differ, but *umbecane* and leafy vegetables are sold locally (see Figure 15).

It was also established that due to limited formal employment opportunities in the area, the decline of remittances, and the aridity of the climate, irrigation agriculture is the key factor accounting for the potential for cash cropping. This has huge implications for the future well-being of rural households who rely on income from farming as one of many livelihood sources. It has been shown here that irrigation agriculture at Nkaseni, compared to rain-fed agriculture at Ncunjane, yielded higher yields, more food, and greater profits for farming households. If productivity levels are increased at Nkaseni, yields could improve and farmers might have a chance at becoming petty commodity producers (Cousins 2010). However state and private support is required, and alternative farming models must be explored, and farmers to be consulted in planning processes (Schreiner *et al*, 2010).

In the context of rising input costs and an absence of state subsidies, reliance on low-cost technology (fallow irrigation and small hand implements) has ensured that Msinga smallholders obtain relatively higher profit margins than many similar smallholders elsewhere (Aliber *et al*, 2011:137). Hence the future of such farmers is promising, if external support promotes inclusive and participatory processes to bring about change. Small scale farmers (for example, those at the *Mtateni* irrigation scheme along the Tugela River) despite being reasonably successful, face numerous problems and challenges: high value crops are highly perishable; markets are not assured; production costs sometimes exceed the market value of crops; and high storage and transportation costs are incurred. These therefore pose a number of risks which farmers' have to assess and cope with. Hence further research into alternative production models which may be aligned to current farming systems is necessary since smallholders are heterogeneous, engage in multiple forms of livelihoods, come from complex household systems, and no uniform notion of 'smallholder' has been established (Cousins, 2010 and Mudhara, 2010).



## **6.6 The impact of land reform on livelihoods: from labour tenancy to land ownership at Ncunjane and Nkaseni**

This section provides a qualitative account of the changes brought by land reform to two communities which had been subjected to labour tenancy for many decades, and discusses the implications for agrarian reform policies. This offers an historical context to situate the existing farming systems discussed earlier in this chapter, and provides further clarity on why things are as they are, and how they might be in future, with regard to the provision of support for farmers.

Male respondents from Ncunjane, who attended a focus group session, said that land reform had brought only a few changes to their farming practices, yet these were significant. They stated that under labour tenancy, not only did they work the land in return for obtaining residential and agricultural land, but they also had plenty of fields for cultivating sorghum and maize. This was simply because the white land owners did not restrict their plot and herd sizes. They pointed to numerous plots of land which had been under cultivation at the time, and said that many households had built storage facilities for maize and sorghum since crop yields had been reasonably high. In those days spans of oxen and cows were shared amongst households to plough the large fields under crops.

Comparing then and now, two old men painted a similar picture in relation to the stark differences in access to government subsidies and extension services. These were reserved for white farmers only under apartheid, whereas now households are provided by government with a variety of vegetable seeds to plant in their homestead garden plots, which provides a diverse food supply for home consumption purposes. The Ncunjane farming community is also provided with free tractors for ploughing their fields, which have substituted the use of oxen-drawn ploughs. However most recipients of this service are dissatisfied, because tractors are often delayed and do not plough all the available arable land. Consequently farmers miss the planting season and use only a proportion of the total available arable land, which considerably reduces expected crop yields.

A relatively high proportion of total arable land on which mixed cereals were cultivated in the past now lays fallow, and garden and fields within the homestead boundary have become more prominent for agricultural use. Drought spells, reduced rainfall during the summer months, and the reduced availability of healthy oxen were some other reasons suggested for this downturn. Some respondents suggested that these fields are distant from their homes, and

they find it challenging to transport inputs to the fields, hence the turn to arable land within the homestead vicinity.

It appears that Ncunjane did not experience the harsher restrictions under labour tenancy reported in the literature (see Chapter Two), which explains why land reform has not been seen as more meaningful in enabling households to seek off-farm wage employment, and to continue to practice agriculture with some government support.

The focus group session at Nkaseni shed more light on their historical experience as labour tenant farming families, which is quite distinct from that outlined by the farmers at Ncunjane. In comparisons to the Ncunjane community, these families were subject to more restrictions in both crop and livestock production. Respondents remembered that they were restricted to keeping a maximum of around five head of cattle, and five goats per household. Surplus stock had to be sold off to the farmer, or via the farmer, who would often be at liberty to set the selling price and choice of which particular animals were to be sold. Those households which owned oxen would contribute towards communal ploughing to ensure that all households had their arable land ploughed. Respondents recalled that they were allowed to use the farmer's dip tank, but were not allowed to use irrigation water. Further restrictions were imposed with regard to plot sizes, which allowed cropping to take place for home consumption purposes only.

Large cropping fields with irrigation water from furrows were redistributed to the Nkaseni community through the land reform programme, and now they have access to extension support and subsidized tractor services. These have enabled farmers to increase the amount of land under cultivation, and thus obtain extra sources of food and income by practising cash cropping. Livestock numbers have dramatically increased as more grazing land was made available.

A survey of the livelihood impacts of land reform on smallholder agriculture in Limpopo Province found similar results in relation to cattle ownership. In two case studies, beneficiaries' herds had increased in value and they were able to generate a small income from sales of cattle. Access to land was noted as the most valuable asset obtained but a number of resources were also provided along with the land reform programme, namely financial support to generate working capital, access to extension and veterinary services, and subsidised tractors and seed (Lahiff *et al*, 2008:64).

The Ncunjane and Nkaseni cases suggest that land redistribution has the potential to ensure that communities increase their participation in farming activities which have been proven to promote household food security. The socio-economic living standards of members of both communities have been improved through the transfer of land ownership, and they seem to be willing to invest income in productive assets, thereby creating vibrant economic links between the rural and urban sectors of the economy. Farming is a major livelihood source as households obtain significant benefits from mixed crop and livestock production systems. The same can be said for claimant families at *Mahlaluvani* in Limpopo, who occupied and used land, pending the negotiation process, to cultivate field crops and vegetables. These families were able to provide a significant portion of their household food needs, for many months, and to sell surplus produce to generate small amounts of income (Lahiff *et al*, 2008: 37).

Extension support, which embraces and supports the current production models, together with government investment in productive infrastructure, is critical in promoting competitive smallholder farming in rural areas. Limited access to irrigation water hinders cropping, as seen in Ncunjane, whilst a lack of working capital and modern irrigation infrastructure, impedes the optimum use of the total arable land available at Nkaseni. This suggests the need for context-specific support mechanisms to ensure the success of subsistence and small-scale commercial farmers. Cousins (2010:72) argues that since this group of farmers has the potential to meet the challenge to expand production and become petty commodity producers, it makes economic sense that they be targeted for redistribution of high potential land, and that land and agrarian reform policies more widely ought to accommodate these kinds of farmers. The implications for land and agrarian policy will be discussed in the conclusion, Chapter Seven.

This chapter has discussed the livelihood strategies employed by households at Ncunjane and Nkaseni, highlighting the communities and differences that occur. A discussion on the farming systems of these former labour tenants was also part of this chapter, and was compared to other findings from wider literature within South Africa. In summary, these production systems of former labour tenants fit within the description that “the use of newly acquired or restored land by resource-poor land reform beneficiaries tends to follow very conventional uses amongst resource-poor people in communal areas. These land uses include individual residential sites, communal grazing for individually or collectively owned livestock, small-scale low input cultivation for self provisioning (and sometimes small

amounts of income), and the use of natural resources for basic household needs. Households do not subsist off these land-based livelihood strategies, but use them to supplement off-farm income (Andrew *et al*, 2003:17)".

This study has shown that current farming systems provide former labour tenants families, with additional sources of food and income, and also play important socio-cultural roles. In addition, there is potential for farmers to intensify production and raise their earnings from agriculture. However farmers are faced with many production-related problems and require support that is tailor-made for the Msinga area. Government has already started assisting these land reform beneficiaries, through the provision of extension support and animal health care services. In conclusion, I quote an opposite recommendation from a leading scholar of land reform: "If land reform is to be a catalyst for structural change in society and the economy, then it needs to change patterns of investment (capital), productive land use (land), and employment (labour) in other words, it must change the mix of production and restructure farming systems (Hall, 2009:23)".



## CHAPTER SEVEN: CONCLUSION

The previous chapter has compared two cases of former labour tenants making a living on redistributed land in KwaZulu-Natal. Here a brief summary of key research findings will be followed by an assessment of the wider policy implications thereof, hopefully adding value to current debates on land and agrarian policy in South Africa, and perhaps Southern Africa. Finally, some key research implications will be discussed.

### 7.1 Main research findings: livelihoods and farming systems

Former labour tenants in KwaZulu-Natal participate in multiple livelihood strategies which can be categorised by the varying levels of skill required, whether or not they are based locally or in distant urban areas and whether or not they are formal or informal in nature. A high level of diversity was found in both research sites with regard to types of livelihood, and types of employment. Employment took the form of migrant workers living in urban areas as far away as Johannesburg and Cape Town, either in permanent, temporary or casual jobs, in the transport, mining and manufacturing industries. Hence remittances remain a key source of livelihood amongst these households.

A handful of people are employed as professionals in the public service sector, others sell their labour as casual wage workers in neighbouring commercial farms, with yet others being self-employed (often relying heavily on natural resources). These land-based livelihoods include thatching roofs, weaving mats and making other accessories, and extend to significant income-generating activities such as cash cropping and sale of livestock. The main contributions to total household income are from state grants and employment, whereas self-employment and income from farming (mainly the sale of crops, in this study) provide considerable extra sources of income. It is likely that the contribution made by farming to total number of income sources would have been higher had more reliable and accurate data on livestock and crop sales been collected.

Land ownership and secure access to land has been a key catalyst in increasing levels of agricultural production, both in terms of the number of individuals using land and in terms of crop outputs, as well as investment in productive resources. More women have gained access to arable field plots, particularly at Nkaseni. Moreover, land reform has assured beneficiaries of receiving extension support as well as government subsidies in the form of seed and tractor services. Over and above these, Nkaseni has received irrigation land with low cost

technology (i.e. mud furrows and two storage dams), which has distinctively positioned Nkaseni farmers as market-oriented smallholders. This is unlikely to become the case at Ncunjane, because they lack access to irrigation and mean rainfall is low.

At Nkaseni farmers are able to respond to demand from local and urban markets and then apply cost-benefit analysis in producing the desired crops. Their farming system is maize-based, combined with groundnuts and sweet potatoes, with other vegetables being grown primarily for home use. In contrast, farmers at Ncunjane plant drought-tolerant staple crops, namely dry beans, yellow maize and assorted vegetables.

Mixed farming systems are predominant in Ncunjane and Nkaseni, and there is a symbiotic relationship between crop and livestock production. Thus kraal manure and dung/urine deposits promote soil nutrient cycling. An extra source of starch, in the form of maize stalks, is provided to cattle during winter when there is shortage of palatable fodder. Despite the subsidisation of tractors, cow and oxen-drawn ploughs provided an efficient way to plough some fields in both communities. A wide variety of livestock are kept including cattle, goats, and poultry (chickens, geese and guinea fowls), but ownership patterns suggest a high degree of variation amongst households. A few women are investing in goats using income from crop sales and self employment.

A shortcoming of this study was the lack of quantitative data pertaining to livestock sales; stock owners did attest to selling livestock but emphasised their socio-cultural value, as these are conservative, or 'traditional', communities. Multiple purposes are served by livestock included a financial element (cash sales, savings, investment), a social element (cattle loaning amongst neighbours, trading a certain number of goats for a cow to start own herd, communal sharing of by products such as meat, milk, and manure), as well as a socio-cultural element linked to homestead social reproduction processes (exchange of bride wealth, rituals, ceremonies).

Key issues in relation to the use of land in both areas include;

- A noticeable decline in the number of field plots under use, and evidence of under-farming (not all total arable land is put under cultivation)
- Production-related concerns include high input costs (comprising transportation and chemical inputs), delays in planting dates as a result if inconsistencies in the availability of subsidized tractors, constraints in the transportation of kraal manure

and harvested produce to and from the fields, a lack of animal healthcare knowledge, erratic summer rainfall, a lack of irrigation water and hydraulic infrastructure, drought, and insufficient animal feed during winter

- The significance of engaging in small-scale agriculture (providing an extra source of food for several months in the year, and an extra source of income). Income from farming is valued because households are able to pay expensive household expenses such as purchasing building materials and household assets, and subsidizing education and transport costs

In the light of these findings, the implications for national policy will now be discussed. The main thrust of this study was to add value to the existing literature, by gathering more empirical data on the impact that small-scale agriculture has on rural livelihoods. I advocate that policy makers pay more attention to this livelihood strategy, as part of the national rural development agenda. This suggestion has already been made by others in the South African context (Cousins, 2011; Aliber *et al.*, 2011; Lahiff *et al.*, 2008) and elsewhere in Africa (Scoones, 2010; Oya, 2010; Scoones and Wolmer, 2002). With that said, this study's findings suggest that some key issues do need to be addressed at national policy level.

## **7.2 Policy implications**

### *Role of small scale farming in rural livelihoods of former labour tenants*

Empirical data suggests that former labour tenants have benefited from engaging in small-scale agriculture. Households gain access to extra sources of food to meet a range of nutritional requirements, and income from either selling surplus crops or from cash cropping. Similarly cash income is generated from the sale of livestock, particularly cattle, goats and poultry. Other food items such as starch, fats and oils are bought using this income, together with meeting other household expenses such as education, transport and household assets. I found that households use a combination of income sources, including farming, to invest in more productive assets and other livelihood options, thus potentially fostering 'accumulation from below' (Cousins 2013).

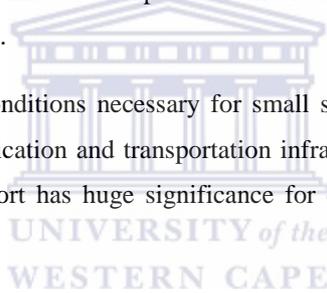
Overall the contribution made from farming is significant despite the fact that there was under-farming in both areas, and it contributes a relatively small share of total household income sources. Small-scale agriculture amongst labour tenant communities has been shown to have a high impact on rural livelihoods, thus providing an efficient mechanism to fighting

rural poverty. Hence more institutional support, further research, and development of appropriate technologies is imperative for improving the lives of farming households and potential farmers.

#### *Irrigated land and land redistribution*

Having access to irrigable land was the main distinguishing feature of the farming systems at Nkaseni. This gave farmers a comparative advantage over farmers at Ncunjane, who practiced dryland agriculture. As a result, farming systems were primarily based on cash cropping at Nkaseni whilst farming systems at Ncunjane were subsistence-oriented with only surplus produce being sold. Therefore farmers at Nkaseni were found to have a higher return on their investment in farming than farmers at Ncunjane. Provision of conventional low-cost irrigation infrastructure could assist farmers in expanding the area of land under cultivation and the intensification of land use. These findings suggest that the redistribution of farms that are already under irrigation, or farmlands located along perennial rivers, can make a much more significant contributions to rural livelihoods compared to the redistribution of poor agricultural land with no access to irrigation.

Secure access to land is but one of the conditions necessary for small scale agriculture to materialise. In addition, access to communication and transportation infrastructure, different marketing avenues, and to extension support has huge significance for creating a thriving successful small-scale farming sector.



#### *Multiple-function livestock systems*

Livestock are an integral component of mixed farming systems across much of Africa. They serve the rural household as a source of food, draught-power, and manure, and also serve numerous cultural functions. Livestock ownership patterns vary amongst households, with many starting to invest in cattle and goats after the transfer of land via land reform, and a few members of the rural elite having acquired larger herds and flocks. Establishing and maintaining large herds and flocks ensures continued household reproduction. This implies that increased accessibility to veterinary services is essential. Similarly, efforts to develop appropriate and resilient rangeland management systems, and efficient common property administration tools that will work for former labour tenant communities, are also needed.

### *Women's role in small scale farming systems*

The majority of the population sample, in both Ncunjane and Nkaseni, are women. I have established that women not only have domestic responsibilities, which require that they are often house-bound, but they also actively participate in the local economy. Time available for farming activities might be greatly reduced, but they make up for this by using family labour, especially during peak seasons for sowing, weeding and harvesting. Some women only tend smaller, more manageable garden plots for vegetable production, due to these time constraints. Women also extend their participation in farming by investing their own production inputs, and being the main labourers who attend to crop pests and diseases, watering, and selling of produce. This shows just how capable women are as farmers.

Gendered divisions of labour in these contexts do not generally allow women to invest in cattle, as cattle are seen as a 'man's animal' in patriarchal settings. Nevertheless I found that female farmers used their farm income from cash cropping to subsidise investments in goat production. At a later stage, goats would be then traded for a cow, as a way to then enter into cattle production. This would enable women to access independent sources of income that can be used to meet their needs. Women are thus proving to be business-minded, with clear potential to actively participate in agro-food value chains. Women also kept traditional breeds of poultry, which were sold and or slaughtered to provide households with a supply of protein at regular intervals.

Women's inclusion as key role payers in agriculture in communal areas has the potential to improve household food security, meet a range of household needs, and help set women up as independent income-earning members within households. Rural households would gain supplementary sources of income by having more breadwinners, and be better positioned to fight household malnutrition. Customary practices and patriarchal arrangements might need to be re-configured to allow for women (single, married and widowed), to access high potential land and other productive assets, and thus promote fairness and equity within small-scale farming systems.

Labour tenant communities, as conservative and traditionalist as they are, might have to adapt their mindset, to allow women to participate in agricultural-oriented decision making and to sit on local governing bodies and farmers associations. Policy makers and government officials must recognise the socio-economic complexities within which farming in former labour tenant communities is embedded, and are urged to promote women in agriculture.

### *Commercialisation of small-scale agriculture*

Instead of promoting commercialisation of small-scale agriculture, the nature of these hybrid farming systems should be understood, embraced, and incorporated into mainstream plans and budgets of national agricultural and rural development departments. Current farming systems cut across and incorporate elements of both traditional and conventional agricultural systems, and seem to be working for former labour tenants. These farming systems rely on the use of family labour, but all individuals engage in multiple livelihood options, and not just farming. Farming occurs on varying plot sizes that are currently under-utilised due to lack of working capital and labour. Hence with regard to the level of technology used, capital and labour intensity, and the fact that farming is not seen as a single livelihood or career, commercialisation of farming systems of former labour tenants tends to be misplaced. Therefore land use planners and extension officers should acknowledge the efficiency of these farming systems, given their multiple benefits.

Commercialisation of individual farmers and not farming systems in their entirety might be a possibility, considering that farming households are socially differentiated, in terms of access to the means of production and participation in diverse rural livelihoods. Some farmers are better endowed with productive assets, as a result of participating in off farm employment, than others. This enables them to invest in agriculture and bear the risks of producing certain commodities. Even were such farmers to be targeted, the implications of commercialisation for use of common property resources would need to be addressed. Similarly, the prospects of local job creation and general improvement of rural livelihoods using commercialisation of small scale agriculture as a vehicle have to be unpacked. Policymakers must place emphasis on the provision of increased agricultural support services, over extended periods of time, whilst allowing farmers to experiment through trial and error, much like the processes that developed commercial farmers under the apartheid government.

### **7.3 Research implications**

#### *Limitations of current data on small scale agriculture*

This study was undertaken to gather empirical data, both quantitative and qualitative in nature, on the components of and interactions within farming systems of former labour tenant communities. The research output would hopefully feed into the wider literature, with the main focus being on the impact on rural livelihoods that practicing small scale agriculture

under land reform has. This study has sought to add value and insight to help generate robust and well-founded debates, and thus influence policy making within the land and agriculture sectors in South Africa, considering that current base of empirical data is often inadequate, (Shackleton *et al*, 2000:58).

*Need for more research*

I recommend that more quantitative and qualitative studies be conducted on communal area agricultural production systems, incorporating social science perspectives and a more anthropological approach. This will help enrich conventional scientific and economic studies by bringing in the social lens that will deepen our understanding of the living conditions of smallholders, the factors that influence their decision making, and of just who the 'real farmers' are in our society. Farming systems research can promote a 'farmer first' approach, which will help in the design and adoption of appropriate technologies, and the acknowledgement of multi faceted agricultural models, besides the mainstream commercial agricultural model.



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**APPENDIX SECTION**



**APPENDIX A: RAINFALL RECORDS IN MSINGA (1975-2010) (MRDP, 2012)**

<b>TIME</b>	<b>1975</b>	<b>1976</b>	<b>1977</b>	<b>1978</b>	<b>1979</b>	<b>1980</b>	<b>1981</b>	<b>1982</b>	<b>1983</b>	<b>1984</b>	<b>1985</b>	<b>1986</b>	<b>1987</b>
<b>JAN</b>	N/A	N/A	N/A	N/A	11.7	100	N/A	101	148	138	91	68.5	85
<b>FEB</b>	N/A	N/A	N/A	N/A	N/A	31.25	N/A	16.5	20	82.5	151.5	56.5	101
<b>MAR</b>	N/A	N/A	N/A	N/A	N/A	30	N/A	65	68.5	79.5	15	112	226
<b>APRIL</b>	N/A	N/A	N/A	N/A	18.25	51.25	N/A	N/A	52	94.5	N/A	41.5	N/A
<b>MAY</b>	N/A	N/A	N/A	N/A	N/A	23.3	10	N/A	8	N/A	N/A	N/A	N/A
<b>JUNE</b>	N/A	N/A	N/A	N/A	N/A	N/A	12	N/A	N/A	N/A	N/A	27	6
<b>JULY</b>	N/A	N/A	N/A	N/A	40	N/A	N/A	5	16	36.5	N/A	N/A	N/A
<b>AUG</b>	N/A	N/A	N/A	N/A	21.25	N/A	N/A	N/A	19	N/A	N/A	13	72
<b>SEPT</b>	N/A	N/A	N/A	N/A	35.5	45.7	33	10	15	19.6	5	3.5	N/A
<b>OCT</b>	N/A	N/A	N/A	N/A	N/A	28	38.5	106	89	69.2	101.5	56	43
<b>NOV</b>	N/A	N/A	N/A	N/A	42.5	47.5	120	37	125.5	32.5	132	59.5	55.5
<b>DEC</b>	N/A	N/A	N/A	N/A	71.5	107	39.5	44	130	143.5	100.5	147	85
<b>TOTAL</b>	<b>768.5</b>	<b>854.7</b>	<b>808</b>	<b>660.6</b>	<b>541</b>	<b>464</b>	<b>489</b>	<b>384.5</b>	<b>691</b>	<b>695.8</b>	<b>596.5</b>	<b>584.5</b>	<b>673.5</b>

<b>TIME</b>	<b>1988</b>	<b>1989</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>
<b>JAN</b>	53	30	25	89	77.2	64.2	57.5	171.2	190.2	121.5	129	89.5	54
<b>FEB</b>	41	71.5	60	74	75.9	87	83.5	39	221.5	127	62.5	39	46
<b>MAR</b>	150	45	41	142	43.5	112	171.2	80.5	142.5	116.5	117	59	12
<b>APRIL</b>	N/A	12	69	7	4.75	N/A	32.5	21.75	6	138.5	11.5	6	68.5
<b>MAY</b>	5	11	3	2	N/A	N/A	N/A	N/A	13.5	31	37	N/A	55
<b>JUNE</b>	19	N/A	N/A	20	N/A	N/A	N/A	N/A	N/A	80.5	N/A	14	N/A
<b>JULY</b>	31	N/A	N/A	N/A	N/A	N/A	15	N/A	82	26	4	6.5	N/A
<b>AUG</b>	N/A	N/A	83	N/A	39	15	38	10	15	31	N/A	17.5	N/A
<b>SEPT</b>	N/A	N/A	N/A	35	N/A	18	N/A	14.5	18	31	1	N/A	49.75
<b>OCT</b>	88	N/A	31	133.5	17.5	128.5	47.50	25	126	47	40	36	68.5
<b>NOV</b>	51	20	16.5	71	68	40.5	21.5	99	41	99.5	173.5	45.5	38.5
<b>DEC</b>	N/A	N/A	149	83.5	113.5	105.5	110	141.75	89	47.5	114	127	149.75
<b>TOTAL</b>	<b>438</b>	<b>189.5</b>	<b>477.5</b>	<b>657</b>	<b>437</b>	<b>550.75</b>	<b>576.75</b>	<b>602.75</b>	<b>944.75</b>	<b>897</b>	<b>689.5</b>	<b>440</b>	<b>542</b>



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