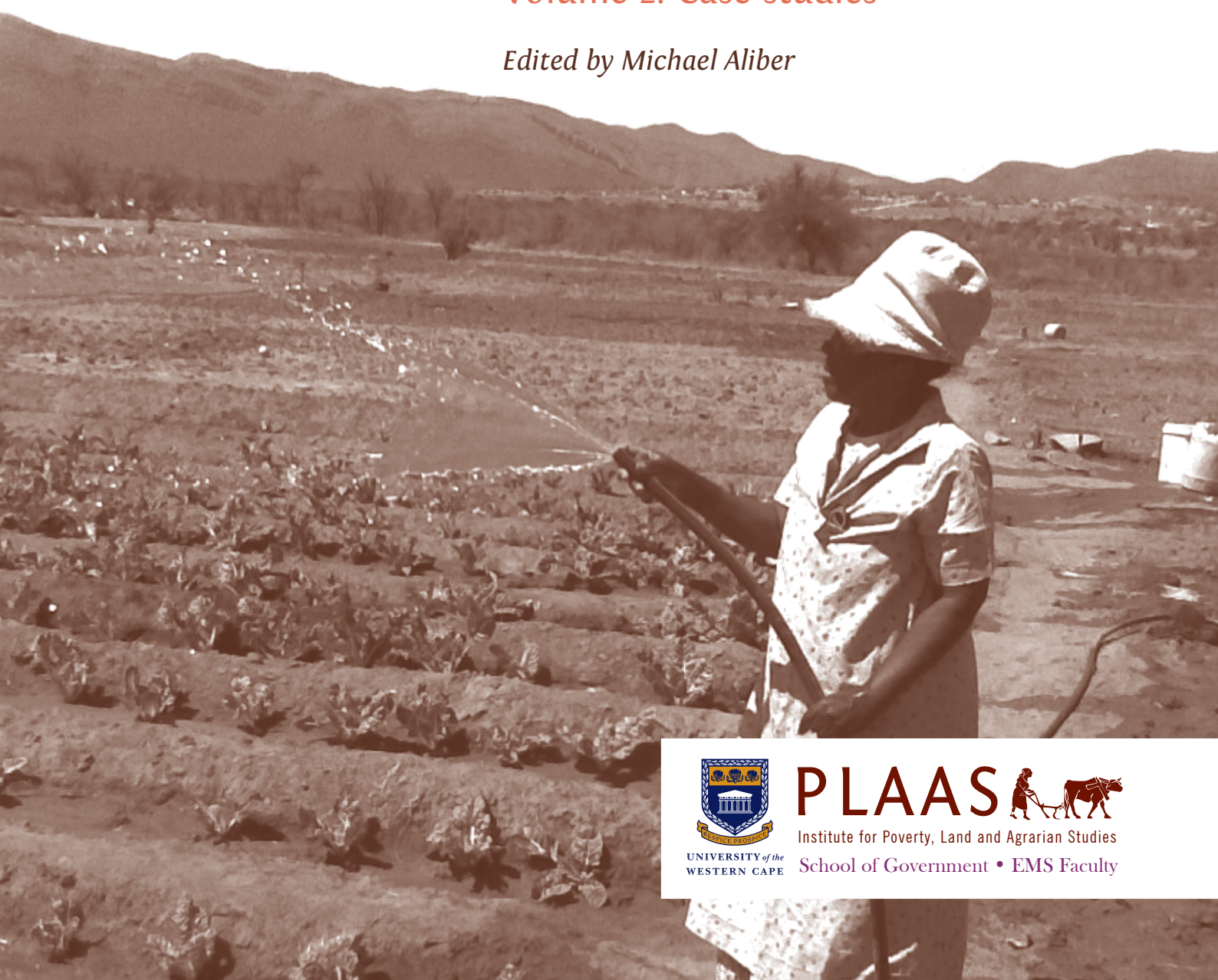
# RESEARCH Report 41

## Strategies to support South African smallholders as a contribution to government's second economy strategy

### Volume 2: Case studies

*Edited by Michael Aliber*



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***Report commissioned by the second economy strategy project***

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*Strategies to support South African smallholders as a contribution to government's second economy strategy*

*Volume 2: Case studies*

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# Preface

This is Volume 2 of the study 'Strategies to Support South African Smallholders as a Contribution to Government's Second Economy Strategy.' It contains the accounts of the 16 case studies that comprised the main 'data' for the analysis presented in Volume 1. However, beyond their function of supporting the analytical exercise presented in Volume 1, as a group these case studies have a life of their own as a rich and diverse repository of descriptive and interpretive narratives depicting various types of smallholders in diverse circumstances and environments.
Although the case studies respond to a common fieldwork methodology (see Appendix 1 of Volume 1), and although some guidelines were offered to the authors as to how to structure the write-ups, the researchers were given the latitude to deviate from the 'standardised approach', and so many case studies follow a near-identical structure but a number do not. The work in this volume reveals the authors' different styles, different emphases, and indeed different disciplinary strengths. The 'unit of analysis' also differs across case studies: some are studies of single individuals, others focus on particular schemes or projects, and still others involve a comparative analysis of individuals or projects.

Thought was given to the categorising of case studies in some meaningful way (e.g. by type of enterprise) or to sequencing them in some telling fashion (e.g. along a continuum from 'subsistence' to 'commercial'). However, the complexity of the case studies compelled us to abandon this idea: many, if not most, smallholders combine different types of activities, often dynamically, and while one cannot deny that there is a distinction between 'subsistence' and 'commercial' modes of production, it is very difficult to 'peg' actual case studies to a clearly-defined continuumt.

Therefore the case studies are merely grouped by province, with provinces sequenced very roughly from southwest to northeast. It should be noted, however, that the larger study makes no attempt to achieve 'national representivity' (thus, regrettably, there are no case studies from Northern Cape, Free State or Mpumalanga), although the case studies do address a wide breadth of agro-ecological zones and production systems.

# 1 Abalimi Bezekhaya and the Philippi Fresh Produce Market initiatives: contrasting attempts to stimulate smallholder agriculture in metropolitan Cape Town

*Rick de Satge, Phuhlisani Solutions*

## Introduction

This case study provides a comparative analysis of two different initiatives designed to promote the smallholder sector in metropolitan Cape Town.

The City of Cape Town has developed an urban agriculture policy and initiated a joint venture between itself, the Provincial Department of Agriculture and private sector partners to put in place a fresh produce market in the Philippi area. The objective of the market is to provide the "suction force to enable the establishment of more than 2 500 emerging farmers and the development of more than 5 000 hectares of farmland over a five-year period in the Philippi and Cape Flats area" (Provincial Government of the Western Cape, 2006).

Abalimi Bezekhaya is an NGO with over 20 years of experience in supporting homestead growers and group gardens. It has focused on developing a comprehensive range of services to promote and 'push' small farmers to find their place in a production continuum encompassing survivalist, subsistence, livelihood and commercial scales and modes of production. Abalimi supplies small farmers with inputs and infrastructure, provides technical advice and institutional support, and recently introduced a planned production and marketing process known as the Harvest of Hope.

We examine what is involved in these different initiatives which aim to pull or push small growers into production and the market place. We profile the Philippi fresh produce market initiative and the services provided by Abalimi. We examine the three groups which Abalimi characterise as their most successful. In the process we assess what must be put in place to develop an enabling environment for a more vibrant and sustainable urban agriculture sector which enhances household food security and generates livelihood opportunities at different points along the value chain and identify lessons for improved policy and practice.

## Context

The Western Cape is the second most urbanised province in South Africa (89% of the population is designated as urban), second only to Gauteng (for which the figure is 97%). According to the HSRC, it is also the province that experienced the fastest rate of annual population growth in the country between 1996 and 2001, at 2% per annum (Kok, O'Donovan, Bouare, and van Zyl, 2003). During this period the Western Cape experienced the highest net in-migration of metropolitan areas in South Africa, which accounted for approximately 58% of population growth within the City. The rapid growth of the City is associated with the urbanisation of poverty.

The 2003 Provincial Growth and Development Strategy, *iKapa Elihlumayo*, highlights the concentration of extreme poverty in the province's urban centres. It observes that in the Western Cape, unlike many other parts of South Africa, the cities are where the poor live while the rural areas are home to many of the wealthy.

In the Western Cape 57% of households earn less than R3500 per month, and of those more than half earn less than R1500. This economic profile means that "the majority of the population generally cannot afford service charges, let alone meeting home ownership obligations" (Department of Local Government and Housing, 2007: 25).

## Smallholder agriculture as a poverty reduction strategy

In a context characterised by acute urban poverty, the low levels of skill of many of those in poverty and high levels of unemployment, different approaches have been taken to try to stimulate small-scale agriculture within the City on the assumption that it represents a viable poverty reduction and livelihood strategy. Interventions to grow small-scale agriculture take different forms. They range from policy formulation and investment in infrastructure development projects through to small-scale support initiatives providing a complete basket of services and facilitated market access.

At one end of the continuum, the City of Cape Town has developed an urban agriculture policy and invested R35 million in a fresh produce market in Philippi in a joint venture with the Department of Agriculture and private sector partners. However, this investment and infrastructure-led approach shows few signs of securing a return on investment in the short term, as many of the small-scale farmers which the market is supposed to serve have either yet to 'emerge' or are not yet a viable productive force. Overall, there remains a significant gap between the assumptions of policy and the complex realities which characterise small-scale production initiatives on the ground.

These 'complex realities' are highlighted by the experience of Abalimi Bezekhaya ("Planters of the Home"), a registered Non Profit Organisation (NPO) founded in 1982 which provides support services such as supply of low-cost bulk compost, seed and seedlings, training and on-site project extension to groups and individuals in townships and informal settlements. Abalimi is based at the Business Place in Philippi, Cape Town. It runs two non-profit People's Garden Centre's in Nyanga and Khayelitsha, which annually supply agriculture and horticulture inputs to an estimated 2000 to 3000 home-based survivalist and subsistence gardeners and approximately 200 community agriculture and greening projects on public land.

With the introduction of their Harvest of Hope marketing initiative in 2007, Abalimi have begun to provide an 'outgrower' model through which groups and individuals are contracted to grow organically grown but uncertified vegetables. These are harvested weekly and are sorted and packed into vegetable boxes which are delivered to collection points where they are picked up by suburban consumers who sign up for the service. Abalimi provides these groups with comprehensive services and support as well as a significant subsidy to enable them to begin to access the market.

## The methodology

The preparation of this case study has involved the following elements:

- A rapid review of the literature on urban agriculture internationally with particular reference to Africa;
- A review of the documentation informing the development of the urban agriculture policy of the City of Cape Town;
- A semi-structured interview with Stanley Visser, an official in the City of Cape Town's economic development unit who has overall responsibility for urban agriculture policy development and support;
- Telephonic and e-mail follow-up with stakeholders involved in the Philippi Fresh Produce Market.
- Attendance of an introductory Harvest of Hope tour involving a visit to the Eden garden in Khayelitsha and a tour of the pack house facility and surrounds at the Business Place in Philippi;
- An interview with five members of Abalimi's field support team;
- Three separate interviews with members of the Fezeka, SCAGA and Eden producer groups.

## The contribution of urban agriculture to the livelihoods of the poor

Researchers have attempted to disaggregate the different ways in which poor urban dwellers engage in food production. They highlight the following dimensions (Ellis and Sumberg, 1998):

- Farming activities on public and private land which is often in conflict with planning and land use management regulations in cities
- Personal strategies by women to develop independent livelihood streams
- Contributions to household food security
    - o as a substitute for cash food purchases
    - o as a means of supplementary income
    - o as a commercial rather than a subsistence activity

Research also highlights the importance of distinguishing the different categories of land on which this production takes place, including:

- Home plots or gardens;
- Cultivated or grazed areas that are apart from the household on public land;
- Cultivated or grazed areas apart from the household on private land;
- Peri-urban cultivation or grazing.

It has been argued that the keeping of livestock and growing of crops can make a significant contribution to the livelihoods of the urban poor. These have been characterised as "hidden livelihoods," based on the premise that many natural resource-based livelihood activities "are not recognised, or are overlooked, in assessments of urban livelihoods" (Slater and Twyman, 2003).

It should be noted that in South Africa and particularly in Cape Town (see below), urban agriculture policy, where it exists, often rests on the assumption that recent migrants to the City will be those who opt for agricultural livelihood opportunities. This runs counter to research evidence from the rest of the continent which indicates that "established urban dwellers are more likely to be involved in agricultural activities than new arrivals from the countryside" (Sanyal, 1986, 1987; Freeman, 1991; Sawio, 1994 in Ellis and Sumberg 1998). This research concludes that the ability "to command land access" is much more significant than recent agricultural experience, and that recent arrivals are at a disadvantage in this respect.

### Urban agriculture in Cape Town

The importance of the potential of urban agriculture features in numerous spatial and development planning frameworks developed for the metropolitan area. The rural management framework for the City of Cape Town (SetPlan and Practiplan, 2002) emphasises the importance of protecting established and emerging farming areas in and around the City, and the opening up of opportunities for new and emergent farmers.

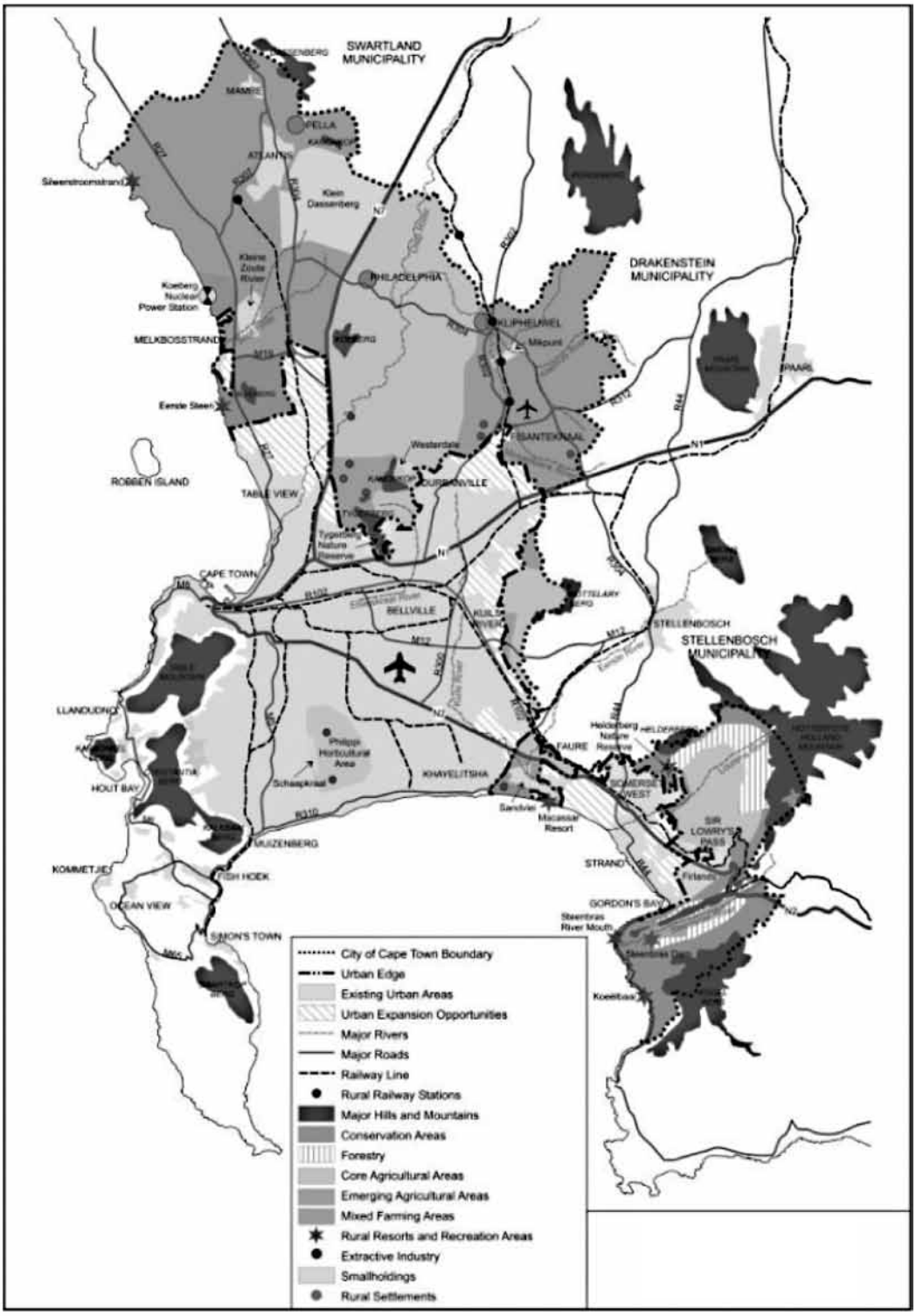
The long-term Metropolitan Spatial Development Framework (City of Cape Town, 2005) highlights the need to consolidate and expand a regional system of urban agricultural complexes. Currently, the Philippi Horticultural Area (PHA) and Joostenberg Vlakte are the only examples of such complexes. The spatial framework envisages that:

> *"A regional system of these, extending beyond Cape Town's current boundaries will ensure the ongoing sustainable production of food for the City, provide important income-generating opportunities for new arrivals to the City whose only income-generating skills are often limited to agricultural activities and provide a new way of addressing housing, economic and land restitution issues while at the same time safeguarding key parts of the City's agricultural resource base". (City of Cape Town, 2005: 5)*

As noted above, the conception which envisages agriculture as offering opportunities for new arrivals in the City runs counter to research findings which indicate that it is often long established urban residents with stronger social and political networks who are best placed to make use of urban agricultural opportunities.

In the metropolitan area agricultural land is concentrated to the north-east along the Tygerberg Hills, to the south-east around the Helderberg Mountains and to the south around Constantia and Hout Bay. Continued low-density residential expansion into these areas is placing pressure on remaining good soils and agriculture. The Philippi horticultural area situated to the south of the

## Figure 1.1: Map of different land uses in the Cape Town metropolitan area




Map source: http://planet.uwc.ac.za/nisl/Conservation%20Biology/Conservation_CCT/rural_plan_for_ CAPE%20Town.pdf

City of Cape Town is also under threat from urban expansion.

The map on the following page highlights different land uses in Cape Town.

Agricultural land in Cape Town is also increasingly threatened by a mix of illegal dumping and occupation of public and private land to establish informal settlements. A number of constraints have been identified which currently limit the growth and livelihood potential of urban horticulture and livestock keeping. These include (City of Cape Town, 2008):

Conflicts of interest between livestock keepers and City officials (livestock keepers benefit from grazing their livestock on open land adjacent to where they stay in that they do not pay grazing fees and remain in close proximity to local markets);

- Lack of data on urban farming activities in the area;
- Insufficient agricultural knowledge and skills amongst urban farmers;
- Lack of access to and affordability of water;
- Availability of suitable land;
- Very weak linkages to the commercial agricultural sector in terms of supplies, marketing and sharing of opportunities;
- Low level of alignment and coordination between all main role-players;
- Lack of tools and production inputs.

## Production in the City

Stats SA Agricultural Census of 2002 indicates the extent of vegetable production within the City of Cape Town. However, a reliable profile of who is actually growing and marketing this produce does not appear to be available.

## The Philippi horticultural area (PHA)

A recent situation analysis for the MDP/Philippi Agricultural Project (City of Cape Town, 2008) surveyed and assessed urban agricultural activities in the Philippi area between the R300 and Lansdowne Road. The Philippi Horticultural Area (PHA) totals 3074 hectares in extent, however currently only 60% (1800 hectares) of the potentially productive land in the PHA is used to produce vegetables. Growers mainly supply the Epping Market and/or grow on contract to chain stores. Currently it is estimated that about 2000 people are (self-) employed in the PHA in varying capacities.

It is in this area that the Philippi Fresh Produce Market has been constructed (see below) and where Abalimi Bezekhaya has its offices in the Philippi Business Place – one of eight centres supported by Investec to grow small business in South Africa and Botswana. In Philippi, Investec has partnered with the American Tobacco Company, Abalimi Bezekhaya, and the Sustainability Institute. Investec acquired 11 hectares of vacant land around a defunct cement factory and seeks to develop the area into a site which will com-

## Table 1.1.: Overview of vegetable production in Cape Town, 2002

| Type of vegetable | Planted (Ha) | Production (tons) |
|---|---|---|
| Potatoes | 489 | 12 274 |
| Tomatoes | 85 | 2 949 |
| Cauliflower | 194 | 4 768 |
| Cabbage | 465 | 19 113 |
| Onions | 115 | 2 559 |
| Beetroot | 38 | 522 |
| Carrots | 548 | 17 189 |
| Sweet potatoes | 15 | 121 |
| Green beans | 183 | 1 213 |
| Pumpkins | 117 | 1 942 |
| Other | 1 386 | 34 248 |

bine housing and urban agricultural opportunities. Currently (2008) the plan is to sell or lease small plots to local growers for income-generating cropping initiatives and subsistence food gardening programmes.

## The urban agriculture policy process

The development of an urban agriculture policy for the City of Cape Town has taken over five years to be approved – partly a reflection of the changing political character of successive municipal administrations and the ongoing restructuring associated with the adoption of a unicity in September 2000.

An additional complication was that the Constitution of South Africa does not list agriculture as a function of local government and, "therefore, a lot of motivation and lobbying was necessary during the consultative process to convince city council decision makers that the development of urban agriculture should be viewed as part and parcel of poverty alleviation and economic development, which are the concurrent responsibility of all spheres of government" (Visser, 2006).

The City of Cape Town hosted the first 'Urban Agricultural Summit' on 8-9 May 2002 in order to initiate the process of formulating an urban agricultural policy for the City of Cape Town. This included an attempt to determine the current status of urban agriculture in the City, which was characterised as a "superficial assessment" (Visser, 2006).

The following year, the City hosted the a follow-up summit, on 18-20 June 2003, at which it introduced the draft urban agriculture policy, discussed livestock keeping in the City, and sought to identify urban agricultural opportunities in the City.

The period between the second summit and the final adoption of the policy in March 2007 appears to have largely been spent securing political approval in a fiercely contested council environment. The City of Cape Town claims to be the first city in South Africa to have developed an urban agriculture policy. This has four overarching goals:

- To enable the poorest of the poor to utilise urban agriculture as an element of their survival strategy (household food security)
- To enable people to create commercially sustainable economic opportunities through urban agriculture (jobs and income)
- To enable previously disadvantaged people to participate in the Land Redistribution for Agricultural Development (LRAD) programme in attempts to redress imbalances
- To facilitate human resources development (technical, business and social skills training).

The City of Cape Town distinguishes between four different types of operations:

- Home producers – home dwellers using their own gardens to grow vegetables and/or keep animals on a small scale in order to supplement the family diet
- Community groups – a group of people who produce food collectively for themselves or for a community institution, mostly on public land
- Micro-farmers – individuals or groups of people involved in urban agriculture to generate an income on small pieces of unutilised (private or public) land
- Small emerging farmers – individuals or groups of people who are or aspire to be full-time farmers

While community groups can count on various types of assistance, home producers are supported only with small tools, basic production inputs and some extension services; excluded is assistance with acquiring access to land or infrastructure as the Municipal Finance Management Act (MFMA) states that municipal capital may not be used to improve private assets (such as private land) (Visser, 2006).

The policy sets out to (City of Cape Town, 2007b):

- include urban agriculture in land use management and physical planning
- create linkage with other strategies
- establish urban agricultural consultative forums
- build strategic partnerships
- release municipal land for urban agricultural purposes

- provide subsidised water to vulnerable groups
- develop a specific strategy for livestock keeping in the City
- introduce a support programme for urban agriculture
- integrate urban agriculture into commercial agricultural industry
- provide assistance for urban agricultural practitioners.

The policy was designed to align different departments *within* the municipality in order to develop a common approach to urban agriculture rather than a joint programme framework which simultaneously aligned the City with the key provincial and national government departments responsible for agriculture, land and water. In the City's conception, a "formal policy will lay the legal basis for collaboration between all municipal departments on the issue of urban agriculture and will ensure each department's undisputed commitment; and it will eliminate the need to rely on the goodwill or preferences of individuals" (Visser, 2006). However the City's urban agriculture coordinator acknowledged that "our point of departure was that urban agriculture should be a good thing without doing a lot of research on what is the status quo" (personal communication, S. Visser, 2008).

Overall information on the nature and extent of agricultural activity in the City remains patchy. While the co-ordinator has "…pockets of information on livestock and …to a certain extent on garden groups…, I don't have a total picture on what exactly is going on in the City (*ibid*).

## Implementation challenges

A number of practical and institutional constraints limit the effective implementation of the policy. In terms of capacity and co-ordination, the City's urban agriculture co-ordinator stated the following:

> *"With the Provincial department of Agriculture we are linking up with them on a local level but it is difficult. We talk the same language but when we hit the ground we just float apart again.*
>
> *"Agriculture, they can give extension support – they can talk – but the moment you want something more than that, it is a long process. You have to start an application for something and the decision-making process is too long and that is why we drift apart. They can talk with you but then when they go back it takes forever. Then when you stay on their case they disappear on you. I can understand they can't take decisions immediately but it is a problem.*
>
> *"Three years ago DLA approved that the City could purchase commonage. It is now three years later. I have given them 10 farms to consider but it has still not happened. The budget is there but it still has not happened. I think the process is too cumbersome.*
>
> *"All these civil servants they have meetings all the time and they make people despondent because nothing happens. What I am saying is that we know what the challenges are and we know what the opportunities are. Now we need to get our processes right" (ibid).*

Until recently, urban agriculture responsibilities in the City were scattered between different departments within the City and the Provincial administration but with very little co-ordination between them. At a recent strategic planning session it was proposed that the City needed 10 people to staff a mature unit promoting and supporting agriculture in the City of Cape Town.

Currently the City of Cape Town has just less than the equivalent of one full-time post working to promote and develop urban agriculture. However, they recently received approval to appoint an urban agriculture assistant and a professional officer for urban agriculture. The post was advertised in March and people were interviewed in July. However by August 2008 no appointments had yet been made.

There has been some discussion about the creation of a Special Purpose Vehicle tasked with agricultural promotion and support. One of the perceived advantages of such a unit is that it would not be bound to comply with the procurement processes of the City.

A second issue is competing land needs:

> *"Overall urban agriculture is not regarded as a priority by planners or by the majority of people settling in the City. While settlement planning frequently allocates land for*

*gardens this tends to be restricted to the conceptual phase but when you get there you find that there are just houses. The pressure to find land for settlement tends to trump other land uses. In cases where land was allocated for gardening this is usually taken up by adding additional rooms or backyard dwellings" (ibid).*

And a third issue is the tension between regulation and informality. The City has identified different categories of livestock owners in the townships and informal settlement areas. People with larger herds are often local business people with diverse livelihood sources who, the City argues, can absorb the transport costs associated with raising livestock on land outside the City. However the City has also identified many small-scale livestock owners who cannot afford such costs:

*"At the moment it does not cost anybody anything to raise livestock in the City. Most stockowners don't buy food or anything so now when you come to the commonage you have to pay a grazing fee. Or if you go to the community kraal which is based on the principle of zero grazing you will have to buy food so then it becomes less profitable. Accordable to the health regulations the informal meat trade is not allowed. Likewise you are not allowed to sell raw milk in the City" (ibid).*

## The Philippi Fresh Produce Market – a 'suction force'?

Despite a low base of information and inadequate support systems in place, the City of Cape Town entered into a joint venture with the Western Cape Department of Agriculture and MBB Consulting Engineers to put in place a new R34 million Philippi Fresh Produce Market. The 'Philippi Market' officially opened for business in November 2006.

According to the Department of Agriculture, "the market is supposed to create the 'suction force' for the establishment of more than 2 500 emerging farmers and the development of more than 5 000 hectares of farmland over a five-year period in the Philippi and Cape Flats area." The MEC for Agriculture stated that, "We cannot allow 'land to lie fallow'. We need to utilise the land and unleash this productive asset to feed our families and communities, create employment and contribute towards economic growth and development of local and rural economies. We need to involve our young people who are jobless to roll up their sleeves and go to the fields. We want to say to them agriculture is cool!" (Provincial Government of the Western Cape, 2006).

The Philippi Market set targets to secure 75% of its supply from the emerging farming sector and empowered commercial farms by 2012. It anticipated that this would "unlock further Government funding into the resource poor farming sector of the Western Cape at a tempo of more than R50 million per annum and help fund satellite depots located next to larger concentrations of new farmers from where farm produce will be transported to the market for sorting, processing and marketing" (City of Cape Town, 2006).

However, to date the 'suction force' represented by the Philippi Market has yet to stimulate the growth of a mass of emerging farmers. After six months of operation only half of the rental units were operational and the pack house for emergent farmers was awaiting a lease confirmation. The City of Cape Town reported that established commercial farmers in Cape Town and the Western Cape were the primary suppliers and that produce was further sourced from Epping Market. The Department of Agriculture was reportedly drafting a strategy to develop emerging farmers. A review of the first six months of operation by Price Waterhouse Coopers recommended that a "vigorous marketing campaign" be undertaken to attract new customers and tenants (City of Cape Town, 2007a).

MBB is currently in the process of developing a supply strategy with the Department of Agriculture to improve the linkages between small, resource-poor farmers and markets, using the Philippi Market as driver (personal communication, Jan-Willem Boonzaier, 2008). This consists of a Project Manager situated at the Philippi Market, acting as link between the farmers and supermarkets and processors. The manager's role is to coordinate the supply from emerging farmers to meet the demand from the markets in terms of volume, quality and range of produce. The manager will have access to value-adding facilities at the market to pack produce according to specs from the supermarkets or processors.

According to MBB, other role players in the strategy include an input supply company to provide seed, compost, fertiliser and planting programmes for the correct cultivars to the farmers, and the extension officers of the Department of Agriculture, who should visit the projects regularly to ensure that the planting programmes are followed. The farmers will be responsible to pre-sort their produce before it is sent to (or collected by) the Market. This strategy was reported to "still be in a developmental phase" (*ibid*).

According to MBB the Market is currently about 70% occupied, and combines food processors, a bakery, fresh produce traders, a fresh produce wholesaler, a fresh produce pack house (focusing on procuring produce from small farmers), a banana ripening and fresh produce exporter, and a dairy outlet. Furthermore, the market is in the process of establishing fresh produce production on site for supplying the market, as well as a vermiculture composting unit to compost organic waste generated on-site into compost for small farmers.

MBB highlights that the major challenges remain transport for small producers and finding a way to coordinate supply from small producers, since individually the supply is still not consistent enough.

MBB argues that the Market is still a new venture which is in a building and marketing phase. People of the surrounding area rather buy their produce from where they bought it for the past decade then at the new market; however it is anticipated that this will change over time. The low number of customers coming to the market relates to low volumes kept by the traders, which increases the prices which results in fewer people buying from the market – in other words, a vicious circle. The market has to secure a larger volume of customers to buy produce to increase the volume that can be kept on hand to improve the profitability of the tenants.

MBB reports that:

> *"[S]mall farmers that do not want to supply the Philippi Market but rather try to market their produce elsewhere (like Cape Town/ Epping Market) despite them complaining that their produce is not sold at Epping (another vicious circle – the farmers probably do not want to supply the market because of the low number of people buying from the market, but more people would buy from the market if more produce were available at competitive prices)". (ibid)*

The Philippi Market model is based on private businesses renting space from the Philippi Market Operating Company, and trying to source some of their produce from emerging farmers. An important factor of the model is thus the drivers of these businesses – the nature of agriculture (and especially the resource-poor sector) requires dynamic businesses willing to pursue the goal despite the challenges and the set-backs that are more common than with the traditional commercial sector. MMB notes that sufficient time should also be allowed for these businesses to establish themselves; the time required to establish oneself in agriculture and agribusiness (and once again especially for the resource-poor sector) should not be underestimated.

## Abalimi Bezekhaya and the 'Harvest of Hope' programme

We turn now to the other component of this case study, namely Abalimi Bezekhaya and its 'Harvest of Hope' programme.

### Brief background on Abalimi

The work undertaken by Abalimi has a long history which spans the pre- and post-1994 eras:

Pre 1994 – Abalimi started working in 1982 from offices in the Catholic Church in Cape Town. It opened its first garden centre in Nyanga in the same year and developed a second centre in Khayelitsha in 1989. However, Abalimi only really took off in the period post-1994 when access to its constituency became easier.

1995 – In 1995 Abalimi employed two additional staff and established a field programme. Fieldworkers started to visit people to introduce Abalimi's services. Abalimi began to get requests from people for training, mainly in home gardens.

1996 – In 1996 Abalimi supported the formation of the Siyazama Community Allotment Garden Association (SCAGA) in Macassar, Khayelitsha. The garden was developed on 5000 $m^2$ in a corridor under low-intensity power lines that were later decommissioned. Abalimi estimated that SCAGA could provide three to four permanent,

full-time formal jobs, but opted to promote a garden which would create 30 subsistence or livelihood augmentation 'jobs' on a mixture of individual and communal plots. At the same time Abalimi started a programme for the greening of schools. The Schools Environment and Development Programme (SEED) grew up under Abalimi's auspices before becoming independent in 1997.

1997 – In this year Abalimi employed more staff (two agricultural field workers) and expanded its institutional footprint from Khayelitsha to cover Philippi, Nyanga, Gugulethu and Crossroads.

2001 – In 2001 Abalimi expanded further, employing three field staff from amongst the membership of the groups they served.

2002 – In 2002 Abalimi facilitated the launch of the Vukuzenzele Farmers Association (VUFA), which brought together people from about 70 groups of small growers. As Abalimi grew and developed it conceptualised a production continuum to locate and track the growth and development of smallholders from what it characterises as survivalist, subsistence, livelihood and commercial levels of productive activity (see Figure 1.2). Production ranges from individual homestead gardens to groups who farm plots on vacant municipal land and in the grounds of schools and other institutions. Abalimi also has a focus on improving nutrition for people who are HIV positive (Rob Small, Kaba, and Mahusa-Mhlana, 2005). Abalimi notes that agriculture remains an activity of last resort for those located at the survivalist and subsistence end of the continuum. At these levels many will abandon agriculture in favour of other economic opportunities should they arise. However, as production becomes more consolidated and benefits are more tangible, fewer people are likely to exit production.

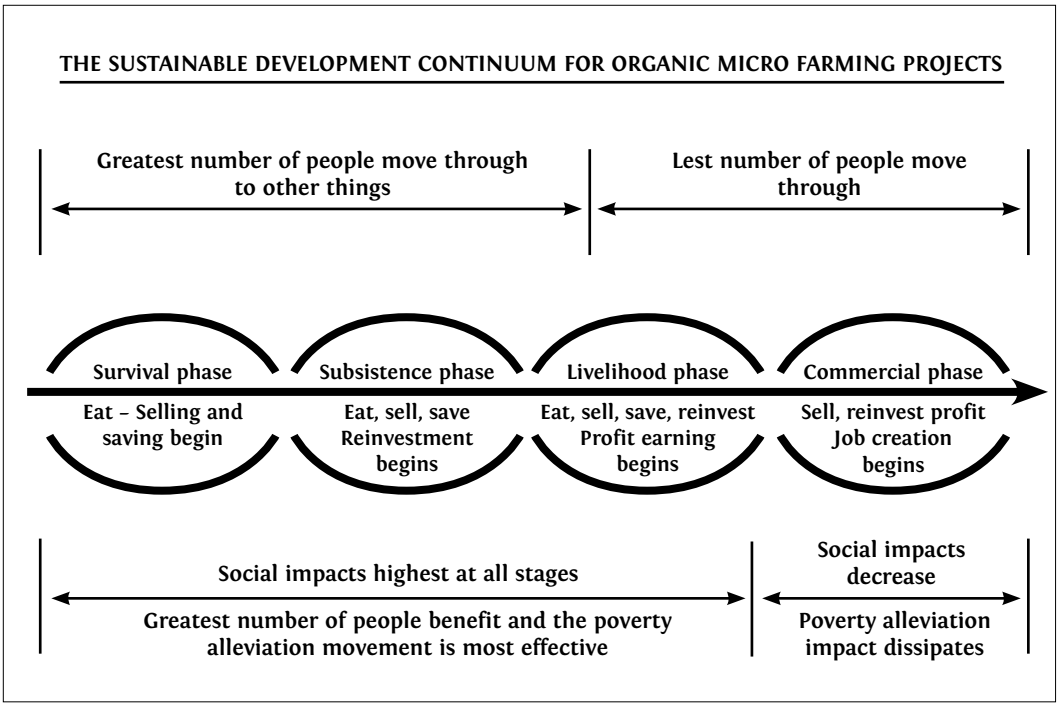
2007/8 – In 2007 Abalimi launched the Harvest of Hope programme. Current Abalimi staffing includes eight contract staff and seven permanent staff.

## Overview of the Harvest of Hope (HOH) programme

A range of support elements have been combined in the Harvest of Hope (HOH) programme:

- Abalimi Bezekhaya provides training to enable growers at different scales to produce organically grown vegetables.
- Growers learn about the business side of farming through AgriPlanner courses run

## Figure 1.2: The sustainable development continuum for organic micro-farming projects




Source: R. Small, 2007

by the South African Institute for Entrepreneurship.

- Vegetables are harvested fresh on order to customers who sign up to purchase a box of organic vegetables weekly. Vegetables are collected and packed at the Organic Pack shed established at the Business Place - a business service centre in Philippi.
- Support is provided by the Western Cape Department of Agriculture mainly in the form of improved infrastructure.

Other support interventions identified include:

- Horizontal learning (farmer-to-farmer) exchange
- Savings schemes
- Micro-credit to groups with consistent savings records will be available in the near future to projects entering the Livelihood and Commercial levels of the Development Continuum.
- Periodic farmers' markets, tunnel greenhouses, cold-storage rooms and value-adding packing sheds (Small, 2007).

Currently, Abalimi supports 22 active vegetable growing groups at different scales. Most recent figures (August 2008) indicate that 146 small growers from 9 projects produce vegetables for the Harvest of Hope programme. However the bulk of the vegetables are currently sourced through three groups – Fezeka in Gugulethu, and SCAGA and Eden in Khayelitsha which are the focus of this case study.

## Assessment of the natural and physical resources

In all three cases the groups started with unimproved Cape Flats sands (Figure 1.3). With the support of the City of Cape Town and the Provincial Department of Agriculture, Abilimi has placed a major emphasis on soil improvement by investing in organic compost, manure and other organic fertilisers such as Rapid Raiser. Production methods also emphasise the importance of mulch and the planting of indigenous windbreaks.

## Physical infrastructure

Each garden has had substantial investment in physical infrastructure including:

- Perimeter fencing
- Borehole drilling and pump installation

## Figure 1.3: Photograph of SCAGA prior to establishment of vegetable farming scheme


Picture from http://harvestofhope.co.za/?page_id=32

- Electricity supply through the installation of prepaid metres[1]
- Water tanks
- Irrigation piping and microjets
- Small nursery enclosures constructed from creosoted poles and shade-cloth
- Hand tools and wheelbarrows
- Containers for implement storage and meeting space.

## Production systems

The HOH production system is derived from an Excel-based planning and planting template that analyses weekly HOH box requirements including:

- Land area required by crop type
- Estimated yields per area of different crops by weight and quantity
- Production timelines and maturity dates of individual crops
- A succession planting plan
- An estimation of retail and wholesale prices by weight or volume for different crops.

Abalimi fieldworkers who support individual gardens manage the seedling orders, the planting process and assess availability of different vegetables for weekly harvesting on Tuesdays. Individuals in the group are responsible for watering, weeding and general husbandry of the HOH growing areas. In the SCAGA group these tasks have been individualised with individuals responsible for their own plots and receiving the value of produce sold from them. Any surplus or substandard produce is either sold or consumed by the growers. Where HOH runs short of produce they also buy from individual plots.

## Economic aspects

Harvest of Hope is an organic vegetable box project which originated from a partnership between the South African Institute for Entrepreneurship, the Ackerman Pick 'n Pay Foundation and Abalimi Bezekhaya. The project has focused on the development of an organic pack shed at the Philippi Business Place.

Initially there was a focus on the training of growers to comply with organic certification standards. However, the focus subsequently shifted to ensuring the throughput of sufficient volumes of vegetables from the producer groups through the pack house and to the market. A consultancy, Just Think, was contracted to develop the Harvest of Hope programme concept which delivers a weekly box of vegetables to individual customers who collect their boxes from scheduled distribution points at four participating primary schools in the Cape Town area. As part of the planning and implementation process Just Think has developed the Excel template discussed above, as well as a crop planning hand tool. Initial crop targets were established for 110 boxes per week and eight producer groups were contracted to grow for HOH to specified targets (Just Think, 2008).

The overall objective is to elevate HOH into a self-sustaining business enterprise. This depends on the ability of HOH to be able to produce and sell 600 boxes weekly. Income is distributed across three cost centres:

- Payment to growers – 50% the selling price of a vegetable box
- Running costs – Abalimi expenses, Just Think consultancy fees and marketing costs
- Profit.

The initial allocation of running costs was calculated at 47% of revenue. As the number of boxes increases so will costs, but these costs will fall as a percentage of overall revenue. The target is to reduce running costs from 47% to 28%, or by 5% per quarter. From a start-up profit of just 3% for the first quarter (R1325/month) it is envisaged that the profit margin on 600 boxes will be 22% (R48 583/month).

Just Think has proposed that HOH be established as a for profit company with shares distributed as indicated in the chart below. The business model sets out to provide incentives to Abalimi staff who become the largest shareholder with the most to make from the success of the scheme.

## Actual performance

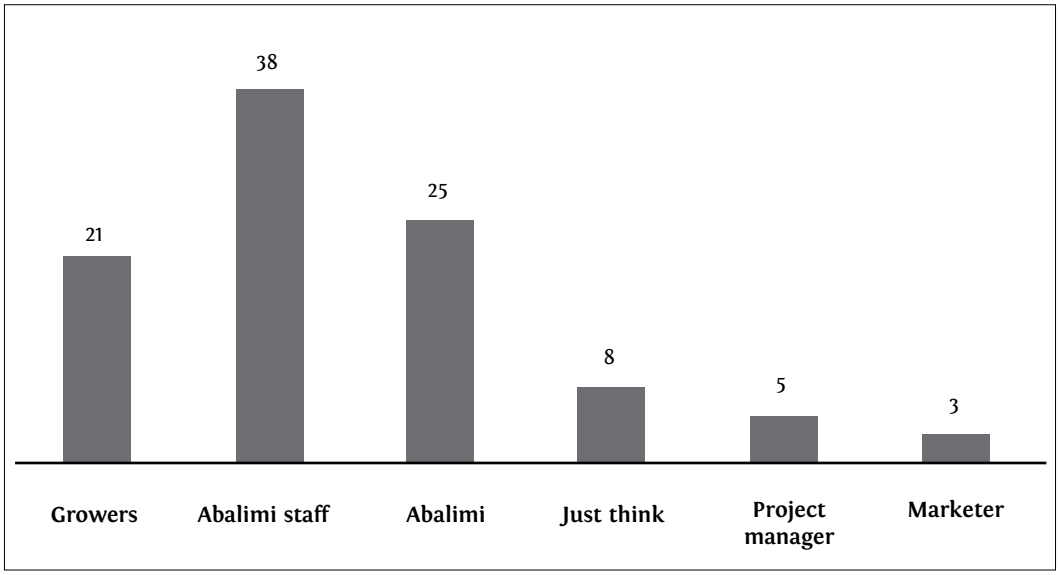
For the first three months of HOH the combined produce of the three groups amounted to 440 boxes of vegetables worth R37 410 from which they earned a total of R18 705.

1 In the case of Fezeka electricity is still provided free

## Table 1.2: Projected production and income

| Period | Feb – April 2008 | May – July 2008 | Aug – Oct 2008 | Nov – Jan 2009 | Feb – April 2009 |
|---|---|---|---|---|---|
| Boxes per week | 120 | 240 | 360 | 480 | 600 |
| Monthly income (R85 x #boxes sold x 4.33 weeks/month | 44 166 | 88 332 | 132 498 | 176 664 | 222 830 |
| Quarterly income | 132 498 | 264 996 | 397 494 | 529 992 | 668 490 |

## Figure 1.4: Proposed distribution of ownership shares in HOH




Currently, Abalimi's target is for every individual to earn R600/month from the HOH project. They reported that they were "about half way there at present." Based on the projections above it appears that to date the scheme has not managed to leverage the projected volumes required to make a profit. When Phuhlisani visited the pack house on Tuesday 22nd July there were orders for 84 boxes – 70% of the weekly total projected for Quarter 1 and 35% of the total projected for Quarter 2.[2]

### Group perceptions of utilisation of total productive output

The three groups used 'proportional piling' to estimate how their total production output was disposed of.

### SCAGA individual grower sales

In addition to money paid to the SCAGA association, individual growers in the SCAGA project were also paid out for produce sold from their plots. The table below shows the value of the individual sales.

During the same period, input costs for Eden, Fezeka, and SCAGA were R3362, R6255, and R6421, respectively, as detailed in the following tables:

### Assessing the extent of the Abalimi subsidy

Currently growers pay for seedlings, seed and electricity while Abalimi or other parties (including the Department of Agriculture, the Department of Social Services and the City of Cape Town) cover the costs of organic fertiliser, manure, transport, fencing and irrigation infrastructure repairs, transport and marketing costs.

In answer to a question about how the direct costs of production were spread between the growers, Abalimi, the City of Cape Town and the Dept of Agriculture, Abalimi responded as follows:

2 Given the lapse in time between the initial fieldwork and the finalization of this report, the authors took the occasion to check back with Abilimi in June 2009 as to production levels. According to Abilimi, current production levels are about 120 boxes per week, which they attribute to soft demand related to the financial crisis (personal communication, Bridget Impey, June 2009).

## Table 1.3: Sales 1st February – 30th April 2008

| Project | People | HOH area | 08-Feb | 08-Mar | 08-Apr | Total paid | Produce value | Boxes |
|---|---|---|---|---|---|---|---|---|
| Eden | 4 | 640 | R 2 676 | R 2 634 | R 1 804 | R 7 113 | R 14 226 | 167 |
| Fezeka | 6 | ? | R 1 763 | R 1 302 | R 888 | R 3 953 | R 7 906 | 93 |
| SCAGA | 10 | 756 | R 1 613 | R 503 | R 572 | R 2 689 | R 5 378 | 63 |
| | | | | | | R 13 755 | R 27 510 | 324 |

## Table 1.4: Summary of perceptions of product utilisation

| | Lost due to theft | Lost to disease | Consumed | Sold independently | Sold through HOH |
|---|---|---|---|---|---|
| Eden[3] | 10% | 10% | 25% | 20% | 35% |
| Fezeka | 0% | 10% | 20% | 20% | 50% |
| SCAGA | 0% | 15% | 20% | 10% | 55% |

## Table 1.5: Value of individual SCAGA grower sales for February through April 2008

| Grower | Feb | March | April | Total |
|---|---|---|---|---|
| Grower 1 | 0 | 0 | 0 | 0 |
| Grower 2 | R 100 | 0 | 0 | R 100 |
| Grower 3 | 0 | 0 | R 120 | R 120 |
| Grower 4 | 0 | 0 | R 351 | R 351 |
| Grower 5 | 0 | R 145 | R 428 | R 573 |
| Grower 6 | R 171 | R 291 | R 132 | R 594 |
| Grower 7 | 0 | R 233 | R 497 | R 730 |
| Grower 8 | R 56 | R 288 | R 407 | R 751 |
| Grower 9 | 0 | 0 | R 828 | R 828 |
| Grower 10 | 0 | R 315 | R 588 | R 903 |
| Totals | R 327 | R 1273 | R 3350 | R 4950 |

3 The three men interviewed from the Eden Group found this exercise difficult. Each man reworked the relative proportions substantially. The final result appeared to be more of a compromise between them than a consensus about the output split.

## Table 1.6: Eden's input costs from February through April 2008

| Inputs | Quantity | Costs |
|---|---|---|
| Bean seeds | 200 g | R 20 |
| Beetroot seedlings | 600 | R 120 |
| Broccoli seedlings | 200 | R 52 |
| Cabbage seedlings | 400 | R 80 |
| Cauliflower seetdlings | 200 | R 65 |
| Kale seedlings | 600 | R 120 |
| Kohl Rabi seedlings | 1000 | R 200 |
| Lettuce seedlintgs | 1400 | R 280 |
| Marigold seeds | 1 | R 11 |
| Mulch | 40 bales | R 1500 |
| Onion seedlings | 1100 | R 245 |
| Parsley | 200 | R 40 |
| Radish seeds | 4 | R 44 |
| Rapid raiser | 200 kg | R 585 |
| Total | | R 3362 |

## Table 1.7: Fezeka's input costs from February through April 2008

| Input | Quantity | Costs in R |
|---|---|---|
| Bamboo sticks | 180 | 540 |
| Basil seedlings | 200 | 40 |
| Bean seedlings | 200 | 50 |
| Beetroot seedlings | 400 | 80 |
| Broccoli seedlings | 600 | 156 |
| Cabbage seedlings | 400 | 80 |
| Carrot seed | 40 pkts | 100 |
| Fix well point | | 1 450 |
| Kale seedlings | 200 | 40 |
| Lettuce seedlings | 400 | 80 |
| Manure | 10 m3 | 2 227 |
| Onion seedlings | 1200 | 299 |
| Parsley seedlings | 100 | 20 |
| Rapid raiser | 360 kg | 1 053 |
| Spinach seedlings | 200 | 40 |
| Total | | 6 255 |

## Table 1.8: SCAGA's input costs from February through April 2008

| **Input** | Quantity | Costs in R |
|---|---|---|
| Bean seed | 500 | 90 |
| Beetroot seedlings | 800 | 180 |
| Brocoli seedlings | 400 | 80 |
| Carrot seeds | 80 pkts | 200 |
| Cauliflower seedlings | 200 | 50 |
| Fix well point | | 1 850 |
| Kale seedlings | 100 | 20 |
| Kohl rabi seedlings | 400 | 80 |
| Lettuce seedlings | 1400 | 280 |
| Manure | 11 m3 | 2 587 |
| Onion seedlings | 800 | 160 |
| Parsley seedlings | 400 | 80 |
| Potato seed | 11 kg | 143 |
| Radish seed | 5 pkts | 63 |
| Rapid raiser | 120 kg | 351 |
| Spinach seedlings | 1000 | 200 |
| Turnip seed | 3 pkts | 8 |
| Total | | 6 421 |

## Table 1.9: Distribution of direct costs among various role-players

| **Direct costs** | HOH Grower | Abalimi | City of CT/Social services | Dept Agric | **Notes** |
|---|---|---|---|---|---|
| **Seed/seedlings** | 100% | | | | Seedling costs deducted before growers paid |
| **Compost/ manure** | | 100% | | | Groups don't pay |
| **Mulch** | | 100% | | | Groups don't pay but we are realising that can't do this for ever |
| **Pest and fungal controls** | | | | | Use herbs with chilli, garlic sunlight liquid |
| **Water/ electricity** | People buy on prepaid card – pay as you go or sometimes utilise illegal connections | School pays for this where garden is on DoE land. Other land we apply for prepaid metre | | | Depends. Groups pushed to get borehole |
| **Transport** | | 100% | | | Struggling for transport – only one bakkie doing everything for the project. A significant expense, but only once a week. Fieldworkers get around by taxi |
| **Post harvest processing and packaging** | | 100% | | | |
| **Marketing** | | 100% | | | |

Overall, Abalimi estimates that the ongoing subsidy per farmer to support them indefinitely at the survival/subsistence stage is between R1000-R3000 per farmer/gardener per annum, depending on the farmer's circumstances and context. This subsidy covers all costs including training, establishment, institutional development support and ongoing permanent follow-up, taking into account regular cheap and/or free key inputs.

Abalimi estimates that to enable growers to shift from subsistence to a livelihood or semi-commercial level requires a developmental subsidy of about "R1000/farmer (or farmer group)/month, including the pack-shed costs, transport, agricultural inputs and core fieldwork support to contracted farmers". However, Abalimi observes that, "…if we include all possible associated costs (e.g. specialised focus training interventions to enhance applied skills), then the figure could easily go up to about R8000/month/farmer or farmer group during the transition stage from Subsistence to Livelihood (personal communication, Rob Small, 2008).

## Livelihood significance

Overall it would appear that the Abalimi and Harvest of Hope initiative have had positive impacts on the livelihoods of those participating. It is also clear that these impacts are also a reflection of the fairly substantial subsidy required to put in place an enabling environment for small-scale agricultural production. The exact value of this subsidy could only be calculated by a more in-depth study than was permitted by the time allocated to the research team.

## Social and institutional dimensions

The Fezeka group currently consists of seven members – six women and one man. All of the members are of pensionable age. The group members have individual plots and combine to cultivate plots from which the produce is marketed through the Harvest of Hope scheme run by Abalimi Bezekhaya.

The SCAGA garden as a whole started in 1997. Abalimi reported that in 2005 the garden hosted its fifth group of 30 people. This suggests that four groups had come and gone prior to this and that all the previous groups had given up. This reiterates the notion that agriculture is an activity of last resort which provides marginal benefits in relation to the input required. The group reported that currently their membership was eight people – all women, down by more than two-thirds from those who were there at the outset.

> *"Many people came to start with high expectations of making money. When it became clear that they would not be paid a cent except from what they got from the soil many people left. Others also left in the period before the HOH project as the money from sales was not enough." (SCAGA group interview, 2008)*

Respondents reported that members were encouraged to join by local SANCO members who advertised opportunities on the project with a loud hailer. There is some inconsistency in the dates and group sizes from different sources. The group reported that they had started in 2003 and taken over from a previous group which had given up, while Abalimi indicated that the current group started in 2005.

Initially, individual plots for home consumption were cultivated and communal plots for the local market. However, it appears that since the introduction of the HOH programme internal disputes amongst the group members concerning uneven labour investment in the group plots have resulted in individualisation of production. Labour investment seems to account to some degree for the earning differentiation amongst the membership but the relative value of the different crops grown and harvested in each individual's plots is a significant other factor in earning differentiation. Given that the group is billed jointly for seedlings, and that these are of different prices, growers of higher value crops may be receiving an indirect subsidy as the cost of seedlings is not directly reflected in their sales figures.

The Eden group consists of seven men some of whom were illegally growing vegetables in a wetland area adjacent to the N2. They were encouraged to move to the SCAGA 2 site in July 2007. When they arrived much of the garden infrastructure, namely water and an electric pump, had already been installed, Irrigation infrastructure was added in 2008.

The men gave unemployment and hunger and because "we grew up planting at home" as their reasons for becoming involved. Men have their

own plots but there was a marked difference in quality and investment between plots grown for home consumption and plots grown for the HOH market. The three members interviewed expressed a preference for growing for the market. Interviewees reported that they depended on social grants and sales from the vegetables. One informant whose household did not qualify for any social grants reported that his sole income depended on sales of vegetables together with some informal selling of small items from a home spaza run by his wife. Given that this group had only recently started the men stated that they were not in a position to assess whether production was a success.

Clearly the projects make important social contributions. Women who have worked together for several years in Fezeka reported that:

> *"We support each other if a member gets sick. We also support some people in the community who are sick with HIV by donating vegetables"*

Fezeka reported that they paid themselves R1500 each at Christmas time. However, other benefits included a daily meal cooked from their produce, which they shared in the garden.

The groups with women members have also developed small savings schemes which members contribute to and can borrow from in proportion to their savings investments. The men in the Eden group reported that members can request to borrow money from the group in the event of a death in the family or a similar problem at home. However, there was some uncertainty about how to manage this process and ensure that there was not a run on the group's resources which would undermine their ability to continue.

While there are both obvious and hidden benefits it is also clear that the projects and associated organisation can also contribute to local conflict. This was evidenced by the SCAGA group members' decision to work and get paid individually as a response to perceived 'free riders' who were set to benefit disproportionately to their labour investment.

## Institutional dimensions

Three institutional dimensions are examined:

- The extent to which the groups of growers function effectively and are enabled to increase their control over their business
- The extent to which growers are able to represent their broader interests through forming associations and engaging with the City of Cape Town, the Department of Agriculture and other institutional actors
- The extent to which the different spheres of government, NGOs and private sector partners combine effectively to support small growers.

Growers in different projects had also set out to establish their own association with the support of Abalimi. However management of the association was not without its challenges as observed by Abalimi manager, Christina Kaba:

> *"The growers have their own organisation which they call Vukuzenzele Urban Farmers Association which has a Committee and an Executive Committee. I have seen bad things happen when people get into management. If they see those funds (from donors) they think it belongs to them. We get funding for seed and seedlings and funding for manure. People want to change this and say they want a bakkie because our project is big. Money even within Vukuzenzele has caused problems. The groups are not all on the same level. Some are big and others are small but to them they say we need to share the money equally."*

As noted in the introductory section, there are a number of role players attempting to make a

## Table 1.10: Perceptions of support

| | Abalimi | Dept of Agriculture | Social services | City of Cape Town |
|---|---|---|---|---|
| Eden | 45% | 30% | 10% | 15% |
| Fezeka | 20% | 35% | 20% | 25% |
| SCAGA | 50% | 50% | | |

## Table 1.11: Abalimi's self-assessment of its support services

| Services and support | Yes / No? | Comments |
|---|---|---|
| Group formation | Yes | |
| Farmer to farmer extension – horizontal learning | Yes | We have taken people on trips from Cape Town to Transkei and Maritzburg. We organise farmers' days for the different groups to meet each other. We find that those groups supported by government often lack information. When we present what we do they always want to come to us. But we don't want them to come to us. We want them to get information |
| Clarifying production options and costs | Yes | |
| Provision of production credit | Yes | |
| Facilitation of group savings schemes | Yes | SCAGA started last year and saved R2/member each week. Now SCAGA members have increased the amount that they are saving and are banking R100/month in its own savings account which is separate from the project account |
| Production of budgets and records | Yes | In-house and to some extent with groups |
| Securing access to land | Yes | Assistance with contracts with government as landowners |
| Urban agriculture advocacy and integration into City of Cape Town IDP | Yes | Played an initial role in policy development forums; however this role has diminished. |
| Fencing and water infrastructure | Yes (apply to Agric) | We help them apply to Dept of Agriculture and the City of Cape Town if we can't help them ourselves |
| Garden design and layout | Yes | |
| Planting succession planning and rotation | Yes | |
| Access to tools and equipment | Yes | |
| Soil analysis | Yes | The Department of Agriculture does this. We have also examined this as part of our exploration of organic certification. In those gardens which are close to informal settlements we frequently test for soil contamination from human waste |
| Soil preparation | Yes | A big focus with investment in manure and organic compost to boost soil quality |
| Provision of compost and mulching material | Yes | |
| Seedling propagation/supply | Yes | Some gardens produce their own for certain crops and we also supply. HOH buy seedlings every two weeks for each planting. When the vegetables are sold the cost of the seedlings is deducted. We have considered possibility of a separate enterprise to produce the seedlings but don't have the labourpower to set this up at present. There are other projects like the Sustainability Institute who could become involved in this. |
| Pest and disease management | Yes | Only companion planting and natural remedies used – garlic and chilli, handpicking of snails and good soil quality. Also, plant health to reduce likelihood of fungal infections |
| Quality assurance | Yes | We do not have a big problem with this. Overall we have good soil preparation which ensures good quality. |
| Organic certification | Incomplete/ abandoned | We were working on getting organic certification for 10 projects but this fell to 3 and then to 1. Part of the problem is that people could not see far enough into the future to know what they wanted to plant. Organic certification works best in the context of long term planning and reasonable certainty about what will be grown. What we think will work best for us is to write our own organic standards. We work on a trust basis and we inspect every week. We can see when people are using chemicals and we do not buy from them. Examples provided were of a garden which had sprayed weedkiller and another which was using snail bait. |
| Advice and support for production for consumption and exchange | Yes | |

| Services and support | Yes / No? | Comments |
|---|---|---|
| Advice and support for production for local markets, as well as<br>production for Harvest of Hope organic market | Yes | We are also working on local markets. We are examining the Harare market in Khayelitsha. (Interestingly no mention was made of the local Philippi Fresh Produce Market) |
| Group individual record keeping and production accounting | Yes | On a very simple basis |
| Conflict resolution | Yes | There are often leadership conflicts or financial issues. When money is on the table there are often big problems to do with spending priorities – how much get reinvested and how much people take home. We get help from other organisations in the Business place who specialise in group support |

contribution to urban agriculture. However, it is clear that the working relationships between them are far from optimal.

Participants in the three projects ranked the assistance they received from different role players quite differently. In some instances however it seemed clear that for the project participants, institutional roles, functions and boundaries had become blurred.

Unfortunately the Department of Agriculture was not interviewed about its role. The groups perceived the Department of Agriculture as providing capital for pumps, equipment and some inputs but this is where their role appeared to end.

Despite Abalimi and the Department of Agriculture working from the same building it appeared that working relations and communication between them was far from optimal.

> *"I don't see them starting something. They just support what we do and supply what people ask them to give them. They are mainly providing things – fencing and equipment. They support projects but they support them financially. They don't try to make them more independent and then when they have finished with them Agriculture walks away and projects fold. They do not provide on-site follow up and support.*

> *"When HOH was starting to try and secure organic certification Agriculture provided growers with a whole consignment of non organic compost which was a problem. They asked us, 'What is organic? Why are you trying to grow organic?' We tried to explain about the compost and they said we only get compost where it is cheaper.*

> *"They have got extension people but they don't touch the soil. They are not in touch and on the ground. They want to see urban agriculture but they don't know what they are looking for or how to make things happen." (Christina Kaba – Abalimi manager)*

None of the parties interviewed for this case study appeared to have a good understanding of the urban agriculture policy and the opportunities it might create. Within Abalimi all questions about the urban agriculture policy and what the City of Cape Town could be doing to stimulate urban agriculture were referred to Rob Small. Neither the pilot project in the Philippi area or the Philippi Fresh Produce market was mentioned in any interview.

## Gender, class and human dimensions

The group profiles highlight the predominance of older women, although the Eden group consists of men only. Overall the groups appear to be catering for people with few economic alternatives. From our assessment of the membership of the three groups it is clear that in the main the formal education of people is very low. This is likely to impact on members' abilities to manage the key planning, technical and financial components of the project which are critical for their short and long-term success.

Abalimi has attempted to address the skills deficit through the design of an interactive enterprise simulation based training process called Agriplanner. This is designed to help growers "go beyond the practicalities of merely growing produce…. [G]rowers learn how to get the most productive use out of their land as well as how much money their land could produce for them, if they use it well". The programme has been designed to engage with key questions such as:

- How much money can we make from our land?
- What can we plant? When can we plant it?
- How can we keep our land productive for the whole year?
- How much money do we need to get going?
- How much money can we make each month from our land?

The programme integrates a variety of planning systems, charts and tools that growers use to plan what they will grow and what returns they are likely to achieve.

We were not able to assess this programme in action or obtain any independent evaluations of it in the time available. However it was clear from our interactions with group members interviewed that numeracy levels were poor which was likely to present an obstacle to successful participation in the learning programme.

Overall the relative success of a HOH programme in producing sufficient and regular volumes of vegetables for the market appears to depend on the strong and directive management input by Abalimi. All the groups spoke about their dependence on Abalimi to provide the planting plan, provide the required seedlings, oversee the planting and harvesting processes, and get produce to market.

> *"There is a production plan where we plant very two weeks. We know what we are going to plant when. At the moment it is the fieldworker who makes the decisions about what to plant when and where, as she has the information on the current growing conditions and plantings on the project she supports. The next step is to increase the involvement and capacity of growers so that they can move up the hierarchy into the livelihood and commercial zones". (Interview with Abalimi field staff, 2008)*

Clearly the development of local technical and managerial skills must become a key focus for future development. However this seems only likely to succeed if the skills and age profile of the groups is to change. This creates a conundrum as it is clear from the case study that access to land and ability to grow vegetables are not sufficient to secure household livelihoods. Access to a reliable and expanding market and the ability to secure a reasonable share in the value chain appears to remain the critical success factor.

## Environmental aspects

Abalimi's focus on organic production limits the likelihood of negative environmental impacts. In the case of the Eden group it can be argued that the project has had a beneficial environmental impact as it has encouraged people farming in a wetland area to relocate to land more suitable for agriculture.

It is not clear however what permissions have been sought to sink boreholes and the extent to which these may impact on ground water. It is also not clear to what extent the water quality of the groundwater is assessed. In informal settlement areas where there is inadequate sanitation Abalimi does take precautions to test soils for contamination.

As Abalimi has noted, they function on relations of trust with the different grower groups with respect to adherence to organic farming principles. This trust is not always well founded. On two occasions they have found growers using herbicides or pesticides, but they argue that close and ongoing contact with growing groups will usually ensure that pesticide use can be detected. This does however raise a potential concern with respect to the lack of certification or independent inspection to ensure standards of organic practice are met. However, it is clear that the transaction costs associated with organic certification are much too onerous for small producers like the Abalimi groups to bear.

## The future of the HOH programme

The Just Think business plan envisaged the establishment of HOH as a for profit company as discussed above. However our interview with Abalimi fieldworkers indicated concerns that the introduction of HOH had resulted in some neglect of individual homestead production. Fieldworkers stated that they needed to renew their focus on household food security and were concerned that the HOH model resulted in a net outflow of food to specialised middle class markets.

# Conclusions

The case study highlights different approaches to stimulate the development of smallholder agriculture:

- Measures designed to create an enabling environment which helps pull emerging producers into production and the market from above
- Measures to directly engage with, grow and support small producers and push them into production and the market from below

## The effectiveness of 'pulling'

The City of Cape Town and the Provincial Department of Agriculture have invested millions in the construction of the Philippi Fresh Produce Market. It seems that while there is a role for infrastructure investment in creating an enabling environment for small producers, that on its own it is not sufficient to bring new smallholders into production and the market place, or rather, that this process takes time. The construction of the Fresh Produce Market does not appear to have been preceded by an in-depth study of existing smallholder agricultural production in Cape Town and has proceeded on the basis of assumptions about would constitute an effective stimulus to this sector. Without other measures being put in place the Fresh Produce Market may end up as an expensive white elephant.

## 'Pushing' – the boundaries

The Fezeka, SCAGA and Eden cases show that many urban smallholders operate in a highly constrained operating environment which is characterised by low levels of human capital, inadequate access to land, equipment, finance and infrastructure for production, technical and institutional development support, market intelligence and enterprise management capability.

Abalimi Bezekhaya have attempted to put in place a comprehensive and subsidised production support system which systematically addresses these constraints. However there remain questions about its sustainability and the extent to which growers will become locked into relations of dependency on the support agency (however benign the latter). While it seems undeniable that these support measures are essential if small growers are to develop and in particular to access the market in a remunerative fashion, the question remains how to extend them at scale and in a way which will enable long-term sustainability of both the services and the enterprises which are established.

The effectiveness of 'pushing' appears to depend on two things:

- The capacity and co-ordination of the agencies responsible for grassroots development support, and
- Clarity as to what role subsidies should play in developing an emerging smallholder sector and the form in which they are targeted.

## Support capacity and co-ordination

The case studies indicate the current limitations of available support capacity. This seems particularly acute with respect to government land identification and agricultural extension capacity to support small growers in metropolitan Cape Town. Interviews highlight the slow processes associated with acquiring land that can be used for commonage purposes. They also indicate an approach to extension where it seems that extensions officers 'do not touch the soil' and operate more as dispensers of infrastructure and equipment.

Although Abalimi and the Provincial Department of Agriculture operate out of the same building their functions and programmes do not appear to be aligned. Likewise the services offered by the City of Cape Town and the Provincial Department of Agriculture seem in some respects to overlap.

## Reframing subsidies?

Abalimi Bezekhaya and the Provincial Department of Agriculture provide support which substantially reduces the costs of growers who participate in the HOH scheme. But there remains a lack of clarity about what constitutes legitimate subsidy and support for smallholder production.

In the EU, agricultural subsidies have been defined as "a benefit provided to individuals or businesses as a result of government policy that raises their revenues or reduces their costs and thus affects production, consumption, trade, income, and the environment. The benefit generated by policy may take different forms such as an increase in output-price, a reduction in input-price, a tax rebate, an interest rate concession,

or a direct budgetary transfer" (Mayrand, Dionne, Paquin, and Pageot-LeBel, 2003).

According to a recent OECD review of agricultural policy reform in South Africa, policy transfers to South African agricultural producers – as measured by the OECD Producer Support Estimate (PSE) – equalled 5% of gross farm receipts on average in 2000–03. This is well below the average level of support for OECD countries which stands at 31%, but is similar to levels of support provided in Brazil, China and Russia (Organisation for Economic Co-operation and Development, 2006).

Internationally, subsidies to producers in developed countries have gone to the large farmers and have also contributed to an agriculture which is dependent on high inputs of fertiliser and chemicals and mechanised production with a high carbon footprint.

It should be noted that the above definitions and approaches are narrowly economistic in nature and ignore triple bottom line accounting precepts that assess social, environmental and economic dimensions and their interrelationships.

There are strong arguments for subsidies which encourage and support organic and/or low input agricultural production and which build social capital. In the WTO context such domestic support measures can be associated with the so called Green Box which includes support for environmental programmes, government research, extension, and infrastructure provision together with income safety-net programs (La Vina, Fransen, Faeth, and Kurauchi, 2006). Overall these need to provide incentives for the development of a more sustainable and low input agriculture which has environmental benefits.

### Rethinking certification

The Abalimi experience suggests that attempting to secure formal organic certification is too onerous for small producers. This requires a new approach which either utilises state support or an alternative framework with more appropriate standards and assessment measures.

It is clear that the development of an urban agriculture policy is an important first step in the stimulation of urban smallholder production. However, for the policy to have meaning and to be implementable there needs to be investment in implementation capacity. This must combine and balance measures to simultaneously align human and financial resources and that strategically 'pull' and 'push' to secure the emergence of new smallholder producers engaged in agricultural activities which are socially, ecologically and economically sustainable.

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# 2 Friemersheim agricultural association: commercial smallholder potato farmers in a Southern Cape land reform project

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## Introduction

This example of land use by beneficiaries of land made available through a Settlement and Land Acquisition Grant (SLAG) project was selected for inclusion into the study because those farmers engaged in potato cultivation do so predominantly for commercial purposes. Relative to the size of the original beneficiary group, only a handful of beneficiaries are still actively engaged in crop production. Most of these sell their seasonal harvests to local residents in the village and to hawkers (street vendors) in the neighbouring coastal towns. However, one farmer collaborates with his employer and through this relationship is able to produce potatoes and vegetable crops for the commercial fresh produce market or on contract to a local subsidiary of an international food processing and packaging company. In essence, while most active farmers are engaged in producing for the 'second economy', one farmer, who rents land that is owned by other SLAG beneficiaries, is able to produce for the 'first economy' by virtue of his relationship with his employer. Interestingly, this farmer is not one of the original SLAG beneficiaries but is a resident on a neighbouring farm.

### Methodology

The author has conducted a number of studies in this village over several years since April 2000 until the end of August 2008. Between April 2000 and January 2006 the author visited the village at regular intervals while conducting fieldwork on a number of agricultural projects. From January 2006 until March 2008 the author lived in the village at various times for periods of up to six weeks while conducting ethnographic fieldwork. The data obtained during the different studies has been used to compile the current case.

Participatory Rural Appraisal tools (PRA) tools were used at various stages and for a number of purposes, but particularly during 2000 and 2001 in order to get historical information about the village, the farmers, agricultural projects and practices and to generate an awareness of what types of crops were produced, consumed and sold. Approximately 40 people from the village were interviewed or attended some of the workshops. Most of those interviewed were male (thirty) as agriculture is predominantly a male activity in this village. About ten females were interviewed during the course of the study, only one of whom was engaged in any agricultural activity. Those interviewed were between the ages of twenty-five and eighty-five years. Except for four men and one woman, most were over forty-five years of age at the start of the fieldwork in 2000. Attendance of the workshops was entirely voluntary and the numbers fluctuated between two and fifteen farmers and sometimes their wives. Data from the workshops was further explored by means of participant observation, and semi-structured and informal interviews. Interviewees included some of the men and women who attended the workshops as well as a number of others who were unable to attend the workshops. Interviews and partici-

pant observation sessions were typically carried out during the course of the researcher's interaction with farmers and other village residents. As crops can be grown throughout the year, participant observation sessions on agricultural practices were conducted during both growing seasons. Eight potato farmers were surveyed during 2006 and were interviewed on a number of occasions between June 2006 and August 2008. Data collected at workshops and during interviews informed the design of the survey questionnaire. The average age of those surveyed in 2006 was fifty-one years.

## Historical perspective

The village of Friemersheim lies close to the south-eastern seaboard of the Western Cape. The climate is temperate with a number of smallholder farmers and large-scale farmers in the area producing potatoes and other vegetable crops. Dairy farming is also a common activity amongst neighbouring large-scale farmers. The village and the surrounding agricultural holdings fall within the winter rainfall area of the Western Cape.

The village dates back to the early 1800s with some residents tracing their ancestry back to this period. In the middle of the 19th Century the Dutch Reformed Church (NGK) established a church and mission station. There are currently 186 households in the village. Approximately 95% have electricity and 98% have access to potable water on their property. Infants and school going children were said to make up the greatest proportion of residents. Most of the adult residents either work seasonally on neighbouring large-scale commercial farms (mainly female residents) or as artisans in the surrounding towns (mainly male residents). Some female residents work as shop assistants or as part-time domestic workers in the neighbouring towns and villages. A very small minority of the residents work for local and provincial government organs in the village, such as the primary school and the municipal offices. About four to five home-based (spaza) shops are operating in the village and provide a limited range and quantity of essential goods. There is a local general dealer that provides other supplies such as gas, electricity, groceries and even some seed. According to local residents very few people in the village are extremely poor although there are a few households that are considered to fall into this category.

The closest town is about 50 kilometres away and the neighbouring village is about 20 kilometres away on a gravel road. Once there residents can take a taxi to the towns. While there are no taxi services to the nearest towns or the neighbouring village there is a bus service between the two villages. However, the bus service only operates during weekdays, leaving the village at 6:30 am and returning in the evening at around 6:30pm. Consequently, travel outside of these times makes it necessary for households to have a motor vehicle or at least access to one. The closest hospital is in the nearest town and high school learners need to go to the neighbouring village to attend classes. Transportation to medical and educational facilities is problematic if a resident does not have a motor vehicle. As a result most households have a motor vehicle.

In 1995 one of the village elders, who was a local councillor, heard about the new land reform process and the SLAG in particular. He discussed it with about six of his contemporaries and they organised a meeting with the nearest Department of Land Affairs. At the meetings it was explained that in order to get enough money to purchase any land in the area they would have to form a communal property association (CPA) and get more members, as the proposed grant of R16 000 per household for the seven households would not be sufficient to purchase any local agricultural land. The group then approached other residents until a group of thirty members was obtained. A CPA was formed and consisted of 30 households, of which 28 were male-headed and two were female-headed. Nine of the household heads were pensioners and three were recipients of disability grants. A further three worked in the village and the remainder all worked outside the village with some only coming home on weekends or on a more irregular basis. Despite claims that all these people had a long history of experience in agriculture, for most these claims were unfounded. Probably less than half the CPA members had any experience in agriculture and for many it was confined to small vegetable gardens at their homes. A handful had been engaged in limited agricultural production on the local commonage. In the 1970s a number of residents had been engaged in dairy activities. However, most of the beneficiaries were not involved in these agricultural activities. Most agricultural activities in the village up until this time had been on a micro-scale.

In 1996 the Kagiso Trust supported this group in implementing a potato production project with the purpose of making the CPA some money for future agricultural activities. (At this stage the CPA had not yet acquired its own land through the land redistribution programme. However, adjacent to the village was a portion of farmland in extent of 115 hectares. While it was administered by the local town council its ownership was in dispute and it is still pending a decision from the Land Claims Commission. It was decided to use about five hectares of this farm for the potato project. The Kagiso Trust, local farmers, local agrochemical suppliers, and the Western Cape Department of Agriculture all supported the CPA members and the potato project. Interestingly, none of the claimants were part of the CPA and none of them were invited to be part of this project which was exclusively for CPA members. However, there was a lot of internal conflict within the CPA as many members could not help with the project, either because they did not want to or because they were employed and not available to help. A lot of friction arose and when it was decided to pay those who had helped and not the other members, further antagonism arose between members and the chairperson and those who had actually helped out on the project. In the end the CPA made very little money and a lot of ill-feelings were created amongst the members.

In September 1999, the CPA formally took possession of its own piece of land through the land redistribution programme. However, contrary to the original intention, the chairperson of the CPA organised with the Department of Land Affairs that the land be subdivided. This was a direct consequence of the conflict that arose when the farmers attempted to work together during the 1996 potato project. As a result, each household head was to obtain ownership of approximately two hectares of the land and this land was to be farmed on an individual basis. The remaining thirty-nine hectares was held in trust by the CPA. The balance of the SLAG money was used to purchase a tractor and some implements in 1999. These were and still are managed by the CPA which formed into a local farmers' association.

The subdivision of the land was effected in early 2000 and each household was allocated its stand. However, formal transfer of the subdivisions only came about in September 2007 as there were a lot of problems relating to water access. Since transfer, three households have sold their land to people from outside of the village. These were households that had not used their land at all since they obtained it in 1999.

When the land and new machinery were obtained in 1999, approximately twelve of the beneficiaries cultivated their land between January 2000 and January 2003. However, following this initial burst of excitement, there have been no more than seven farmers actively producing crops, and perhaps another four cultivating fodder, during any season. A recent visit in 2008 indicated that only five farmers had actually planted any vegetable crops for that year. Over the years discussions with the farmers – those who had planted crops at some time on this land – elicited the information that farming was for most a secondary activity. Employment off-farm was the main activity and farming was done to increase income or to increase household food supply. Some farmers did not farm for two or three seasons because they were too busy with off-farm employment activities. While the more energetic farmers considered the acquisition of farmland to be a post-retirement benefit, many of the non-farmers considered this to be an investment in land, the value of which they correctly surmised would increase in the future.

As a result of the subdivision, most farmers farm individually. In some instances related land holders may pool land and share input costs, for example siblings. Amongst the active farmers the land is predominantly used for vegetable and potato production, especially if the farmers work in the village or are pensioners or disability grant recipients. Others who are engaged in farming, but who work outside of the village, tend to use their land as grazing for cattle and to this end will plant oats and other fodder. The actual amount of land under cultivation at any one time depends largely on the season, weather patterns, the farmers' time for agricultural activities and his or her access to inputs. Most of these individuals are employed or are recipients of private or state disability grants.

## Natural resources

The village is situated at the foot of the Outeniqua Mountains in the Southern Cape and is between 300 and 325 metres above sea-level. Rainfall throughout the year is relatively consistent and ranges between 580 and 695 millimetres per annum. According to farmers the driest peri-

ods are during the months of December, January and February, and again during June and July. The area is considered to have a mild climate with temperatures ranging from a low of 8 degrees Celsius in mid-winter to 29 degrees Celsius in mid-summer.

Until the 1960s most agricultural production among Coloureds was conducted on residential plots for household consumption. Initially these plots were about 8000 m2 but as the population increased in the village the residential plots became smaller, curtailing the volume of agricultural produce that could be generated in the home gardens and on the commonage. In 1999 thirty households each got access to approximately two hectares of land when a neighbouring 99 hectare farm was purchased through the state land reform programme. The thirty-nine hectares that are held in trust are currently overgrown and much of the land is unsuitable for agriculture as it is mountainside and gullies.

A March 1998 report by the Western Cape Department of Agriculture describes the landscape as undulating, with deep ravines in places and that 25% of the land has a gradient of 1:4. The soils are deep and have good horizontal and vertical drainage. They are acidic, severely leached due to the high rainfall and low in phosphorous, copper, zinc, potassium and manganese. Parent soil material is Tafelberg sandstone and the soils on top of that have a residual nature. Red and yellow apedale soils occur on the shale layers found in the Tafelberg sandstone. Mechanical and/or biological protection of the fields is considered essential. The report pointed out that any crop could be grown on this land with the exception of tropical and sub-tropical crops, as long as the chemical content of the soil is adjusted accordingly. Small grains were not recommended due to the heavy reliance on expensive mechanised machinery. The climate was considered unsuitable for deciduous and other fruit. Vegetables from the root crop (potatoes and carrots), legumes, onions, curcubit and brassica families were recommended. Sweet corn was also recommended. The veld is largely covered in fynbos and grass and the investigators determined that it has a very low livestock carrying capacity. The natural rangeland has a carrying capacity of one livestock unit per 15 hectares. The outcome of this report was that as a result of the limited water supply only five hectares of irrigated vegetables could be cultivated during any season on the land to be acquired. This recommendation was not followed by the farmers because they wanted to farm individually and were not interested in working together.

The farm lies adjacent to the village in a south-easterly direction. It is almost L-shaped and this provides those farming on it with problems of access to water for agricultural purposes. Only those farming on the westerly side of the farm have access to water from the dams fed by the local irrigation network. This network supplies the village and the large-scale commercial farms in the area. Water allocation is based on a quota system. Sluice gates can only be opened on certain days for a few hours in order to fill the dams. This farm receives access to the system one day per week for 24 hours. Those smallholders farming close to this network have no problem with access to water as the sluice opens directly into two dams. This sluice is only really opened regularly during early summer when the area is particularly dry. Those farming on the easterly side of the farm have virtually no access to irrigation water. Initially they attempted to make use of a dam situated on adjacent land but as they do not have permanent access to this land, they have had very insecure access to irrigation water since 2000. Now there is a land claim application pending on this land and the water is not accessed at all. The distance between the dams that came with the farm is so great and the terrain so uneven that no attempt has been made to channel water to the other side of the farm. The Provincial Department of Agriculture and the Department of Water Affairs and Forestry conducted a number of visits over the years to determine how best to supply water to the stands on the eastern side of the farm. However, as of September 2008 this problem has not been resolved. All the proposed solutions are deemed unworkable as a result of the costs involved.

Since 2003 some beneficiaries and one or two non-beneficiaries, leased fallow uncultivated land from the inactive SLAG beneficiaries or their families. This was done in exchange for a small portion of the harvest or in exchange for clearing alien Hakea species from the land, which had been fallow for about a decade. In 2006 there were approximately thirteen people who were farming on this land, although only about seven were engaged in any form of vegetable cropping. Those who lease land are farming on anything between two and six hectares but not more than half of this is under cultiva-

tion at any one time. This is due to crop rotation requirements and also limited finances to purchase inputs. The most sought after land is that situated next to the two dams that are fed by the local irrigation network.

The agricultural stands are split almost equally between the two different sides of the farm and some of the farmers have now borrowed land from those owning, but not farming, the land closest to the irrigation network. This is a short-term solution and many are concerned about the future when the owners either return to farming or decide to sell the land. The sale of three stands in late 2007 was met with regret by some of the more active farmers. The current arrangements allow farmers temporary access to more land for agricultural purposes. Changes in access will curtail their agricultural activities. One farmer reported that he was already noticing the constraints. As he developed his agricultural activities and experience, his ability to increase in scale was restricted by lack of access to more agricultural land and also to finances.

During the first two years after receiving the farm the farmers identified that they had a root-knot nematode problem. A subsequent survey by the ARC indicated that the problem was severe. However, because farmers did not have the money to fumigate the soil it was recommended that they plant cabbage and work the residues into the soil as a form of bio-fumigation. The alternative, and one which most farmers opted for, was to sow oats on their field for a number of years in order to reduce the root-knot nematode problem. Oats are a bad nematode host and their presence tends to drive down the population numbers. Farmers used the oats as fodder for their cattle and consequently it was mainly those who had cattle in the beginning who followed this practice.

## Physical resources

Some mechanised agricultural implements were purchased by the CPA members using own funds and the balance of the SLAG monies, and some were provided by the Provincial Department of Agriculture. The list in Table 2.1 was first compiled in October 2002.

At the initial assessment in 2002 the farmers requested building materials in order to build proper storage facilities for their implements. They were concerned that these would get damaged as a result of the lack of adequate storage. A store was eventually built in 2005 with money provided by the Department of Agriculture. Initially the tractor had been stored at the chairperson's house and upon his death in late 2003 it was moved to one of the containers. Currently it is stored in the new storeroom.

A cursory inspection was carried out in 2008 and this indicated that most of the equipment was still there plus a bushcutter obtained from the Department of Agriculture in 2005. The implements were still usable but many had been damaged and farmers complained about this. Some of the second-hand ploughs and potato harvesters could no longer be used as they were damaged and not repaired. Farmers reported that they were no longer looked after as well as they had been although the tractor was being serviced at the allotted periods.

Basically it is the responsibility of the chairperson and the treasurer to look after the implements and see to the hiring and maintenance of the implements. Those currently responsible for this were often not available due to work commitments, many of which took them away from the village for weeks at a time. Many accusations were made during the interviews about abuse of the implements, stealing of diesel and failure to report damage.

In order to ensure that the implements could be maintained in good order and replaced after a number of years, the Department of Agriculture recommended in 2000 that an initial fee of R150 per hour be charged for the use of the tractor and implements. This included diesel for the tractor. Since acquiring the implements in 2000 the hourly charge was R50 for CPA members and R60 for non-members. In 2002 this fee was still the same. At the time the treasurer said that it was unlikely that the CPA could make a profit or even manage to cover the maintenance and diesel costs if the fee remained so low. Opposition voices said that the tractor was theirs because it was bought using the remainder of the SLAG funds and that the government could not dictate to them what they had to pay for its use. It was also felt that the rising costs of diesel would make the use of the tractor prohibitive if the fee was increased at that time. By August 2008 the farmers were paying R100 (R110 for non-members) an hour to use the tractor and implements. They had been doing so for the past two years despite the rising costs of diesel. The same com-

## Table 2.1: Mechanised agricultural implements at mechanisation centre in 2002

| Implement | Date obtained | Obtained from | Storage | Condition |
|---|---|---|---|---|
| 5-ton Trailer | 2000 | DoA | On fenced-in farmland, but exposed to the elements | Good |
| Disc plough | 2001 | DoA | On fenced-in farmland, but exposed to the elements | Good |
| Cultivator – seed bed preparer | 2001 | DoA | On fenced-in farmland, but exposed to the elements | Good |
| 3-bladed mouldboard plough | 2000 | DoA | On fenced-in farmland, but exposed to the elements | Good |
| Tractor mounted chemical sprayer | 2001 | DoA | In a container | Good |
| Large mech anised potato planter | 2001 | DoA | On fenced-in farmland, but exposed to the elements | Good [4] |
| Two second-hand storage containers | 2000 | DoA | On fenced-in farmland, but exposed to the elements | Good |
| Landini 53 kw 4X2 tractor | 1999 | DLA-SLAG | Under a shelter at the chairman's house | Good |
| Diesel irrigation pump | 1999 | DLA-SLAG | Usually unprotected and next to the dam | Good |
| Irrigation Pipes | 1999 | Land Affairs Grant | Usually unprotected on fields or on trailer | Good[2] |
| One second-hand Potato extractor | 2001 | Purchased from local farmer using own funds | On fenced-in farmland, but exposed to the elements | Fair with a section of the mechanism broken |
| One second-hand furrow plough - cultivator | 1999 | Purchased from local farmer using own funds | On fenced-in farmland, but exposed to the elements | Fair |
| One second-hand trailer | 1995/6 | Obtained from Minister Lampie Fick | On fenced-in farmland, but exposed to the elements | Fair to good and still used regularly |
| One second-hand 3-bladed mouldboard plough | 1995/6 | Obtained from Minister Lampie Fick | On fenced-in farmland, but exposed to the elements | Fair, but some blades damaged and need replacing |
| One second-hand disc plough | 1995/6 | Obtained from Minister Lampie Fick | On fenced-in farmland, but exposed to the elements | Needs repairing as some discs are bent or have come off |

4 Interviewees are concerned about the quality of these pipes. When under pressure the couplings come apart. The couplings are glued to the pipes and some interviewees considered this to be poor workmanship.

plaints remained with regard to the inability of this low fee to enable the CPA to replace the implements when they were no longer serviceable. The opposition voices remained the same. There is a lot of conflict over these resources and in some cases a few of the more active farmers resort to borrowing implements and tractors from neighbouring large-scale producers. Some use their own tractors on occasion.

Given the sizes and layout of the plots many farmers tend to use animal traction along with mechanised implements. While the latter is used for the heavier and larger work such as pre-planting soil preparation, the former is used for planting and harvesting of potatoes. However, as the farmers get used to the implements, or borrow suitable implement from neighbours, so this practice is declining. One farmer who rents farmland from one of the CPA members only uses animal traction as he is unwilling to pay the cost involved in using mechanisation. A clear observation over the past several years is that the layout of the farms and the size of the implements often make it difficult for the farmers to use the mechanised implements appropriately in the confined spaces. This is evident by the bad ploughing and crop spraying practices that are used. For example, some farmers plough down the gradient, rather than across the gradient, so that they can manoeuvre the tractor-mounted herbicide sprayer more easily. This leads to water run-off problems.

During 2006 eight of the farmers reported owning or having access to the mechanised or handheld implements for primary agricultural activities as indicated in Table 2.2.

Farmers had access to most of the mechanised implements recommended for commercially-oriented agricultural production and most had access to motor vehicles. More than half accessed and used animal traction on smaller areas and sometimes in between seasons for practical purposes and also to reduce input costs. While non-members of the local farmers association can hire many of the mechanised implements, some do not because the land they work is small. Animal traction is used, either borrowed or self-owned. These people feel that the cost and effort of us-

## Table 2.2: Respondents' access to agricultural implements

| Implements | Self-Owned | Borrowed | Hired | Self-owned and hired | No Access |
|---|---|---|---|---|---|
| Tractor | | | 7 | 1 | |
| Car | 2 | 1 | 1 | | 4 |
| Bakkie (pickup truck) | 3 | 1 | 1 | | 3 |
| Truck | | 1 | 1 | | 6 |
| Tractor mounted chemical sprayer | | | 7 | | 1 |
| Tractor drawn plough | | 7 | | | 1 |
| Horse drawn plough | 4 | | 1 | | 3 |
| Planter | | 1 | 6 | | 1 |
| Cultivator | | | 5 | | 3 |
| Spade | 8 | | | | |
| Hand held hoe | 5 | | | | 3 |
| Fork | 8 | | | | |
| Rake | 6 | | | | 2 |
| Pick axe | 8 | | | | |
| Watering can | 2 | 1 | | | 5 |
| Wheelbarrow | 5 | 2 | | | 1 |
| Hosepipe | 5 | | | | 3 |
| Sprinkler | 2 | 1 | 3 | | 2 |
| Drip-irrigation system | | | | | 8 |
| Handheld pump sprayer for chemicals | 4 | 1 | | | 3 |
| Diesel or electric irrigation pump | 1 | 6 | | | 1 |

ing the available mechanised implements is not worth the return. Similarly, if they hired these implements as often as they wanted, this would put pressure on all the farmers who wished to use them, members and non-members alike.

During the 2006 survey only one household out of the eight surveyed owned a tractor but along with the other seven households it also had access to the tractor and implements owned and managed by the local CPA. Seven of the households, as members of this association, had access to irrigation equipment, including pipes, sprinklers and a pump. The other household reported having no access to irrigation equipment, mainly because there was no water source nearby. In fact only two of the households were farming land near the local irrigation network and could access the water that came into the two dams via this network.

Since obtaining their plots the active farmers have fenced in their land and most have removed alien vegetation. Hakea trees are often used as fencing poles and droppers. The land held in trust is also enclosed but the alien vegetation has not been removed. People seldom venture on this land for any agricultural related purpose.

## Production system

Farmers in the area grow a number of crops such as potatoes, green beans, beetroot, carrots, cabbage, maize, pumpkin and peas. The two main commercially produced crops are potatoes and pumpkin. Potatoes cover the largest portion of the fields at any particular time, so the data referred to in this case relate mainly to potato production. Also, many of the other crops such as peas are only found in home gardens tended by female residents. The men initially planted carrots and beetroot, but the nematode problem discouraged them from continuing with this on a large scale. It has not, however, prevented the most active farmers from planting potatoes.

All the farmers interviewed reported that in this area there are two potato seasons in a twelve month period. However, one farmer pointed out that he only planted potatoes in winter because he experienced many problems with regard to water access during summer. In summer he would plant pumpkins as these were more tolerant to drought. As he was involved in contract farming he was able to sell his pumpkin harvest as he had a ready market for this crop. Seven of the respondents had planted and cultivated potatoes at some stage between 2003 and 2006. Only four had actually done this during the previous potato season, which was winter 2006. Those who had not, reported the following varied responses:

- one farmer was working with his brother and was experimenting with changing to cattle farming as crop farming inputs were becoming too costly and his employment was taking up too much of his time;
- one farmer was ill for some time and had allowed the land to fallow for the past three years but then planted pumpkins in 2005 and potatoes in the 2006 summer season;
- one farmer was still concerned with the nematode problem and had planted oats in an attempt to reduce the nematode population;
- one farmer had not planted at all as it was too dry in September 2005 and the access to water for irrigation purposes was a problem; also, this farmer was no longer planting as his wife had started to receive a pension and the household now had the benefit of his and her pensions.

Most farmers considered production of potatoes for sale as the most important reason for engaging in agriculture. One farmer, a pensioner, produced for household consumption and did not sell his harvest. All the farmers kept potatoes for seed and all ate some of their harvest. However, for seven of the farmers the primary purpose of production was cash income. Potatoes were not produced for any other purpose such as animal fodder.

Four of the respondents sold directly to local villagers from their homes or from their fields. Two farmers sold to hawkers who came to the village to purchase the pockets of potatoes. Only one farmer had access to the fresh produce market in one of the district towns, and this was a result of his farming in conjunction with his employer. The latter provided this access to the formal market in the form of contract farming and included his employee's produce along with his own when travelling to the market. He also did all the price negotiating and marketing on behalf of himself and the employee. This farmer was not particularly happy with this arrangement as he felt he was being under-rewarded by his employer.

## Irrigation of potatoes

Only four of the respondents actually irrigated their potatoes. The fact that the others did not can be attributed to the water problem on the farm, as previously discussed, and the fact that irrigation equipment was shared amongst the farmers who were members of the local association. This last point meant that people often had to wait for others to finish irrigating their crops before the equipment was available. Of course when there was a dry spell everybody wanted to irrigate immediately. The four respondents who irrigated their potato crops all reported using sprayer irrigation, as this was the equipment to which they had access. The sharing of irrigation equipment could lead to water stress of the crop. However, some sharing is still better than total dryland production, which is associated with higher risk. As has been mentioned, one farmer does not plant potatoes at all during summer in order to reduce his risk to crop failure from seasonal stresses and lack of sufficient irrigation. Alternatively he plants pumpkins and has an established market for this crop.

## Methods for obtaining seed potatoes

Farmers were asked where they sourced their seed from in an effort to identify the cultivars that are used and in an effort to determine the use of farmer-kept seed practices. The seed sources could explain some diseases experienced by farmers and the possible health status of the plants before they emerged. It would also indicate the reliance of farmers on certain forms of seed supply such as self-stored or purchased tubers. Farmers saved potatoes for seed and also purchased seed potatoes from a local producer and sometimes the local co-op. These activities were carried out irrespective of the cultivars and farmers predominantly bought what was available or what other farmers suggested. Farmers indicated that they kept seed from the previous season's crop and when it came to planting for the next season they would purchase more seed depending on the quality and quantity of the saved seed and the size of the land they intended to plant. They did not always plant the same size of land every year or every season. With the exception of the farmer who was involved in contract farming with his employer, some might plant a hectare at a time but most planted a quarter to a half hectare every season. The reason for this was the limited finances for inputs. The effectiveness of the seed planted could not be established as too many variables determine if these farmers buy seed or not. Generally most of the farmers purchased second generation tubers (uncertified) from a neighbouring large-scale farmer because these proved cheaper than purchasing from the co-op. Combining the practice of planting uncertified and certified seed raises more questions than it answers. This is especially in light of the extremely short rotation cycle that these farmers use. If the seed is on the same fields, season after season, the effectiveness of buying seed becomes questionable, especially if uncertified seed are infected with soil-borne diseases, as the two are often planted together.

## Potato variety preference

Farmers only cultivate BP1, Vanderplank, Astrid and Mondial. The order of preference in terms of area of land under cultivation is as follows:

- All the respondents reported producing the potato variety BP1. BP1 is a versatile cultivar that has multiple uses and generally good yields. While one person reported that it was mainly grown for food purposes, the remaining seven all said that it was grown primarily for sales and then for food because it had a good taste and was readily available in the area. One of these seven reported that it was a good summer crop. Six of the respondents reported that most of their potato production area was primary planted with BP1. Five of the respondents ranked this as their preferred cultivar.

- Four farmers indicated that they cultivated Vanderplank for food and one of these reported that it was a good cultivar for winter sales. Only one of these four farmers considered this variety to be of primary importance in terms of area under cultivation. Two of the respondents ranked it as a highly preferred cultivar. This cultivar tends to have a small but dedicated consumer group who prefer the taste and the fact that it does not go very soft when cooked. It is an excellent salad and French fry potato.

- The potato variety Astrid was cultivated by four of the farmers. Only one of the farmers considered it to be of primary importance in terms of area under cultivation and this farmer also ranked it as a highly preferred

cultivar. Astrid is a yellow coloured potato with a very specific taste that is preferred by some people. This cultivar is mainly grown in the western and southern parts of the Western Cape.

- Five of the farmers cultivated Mondial, and while all mentioned that they produced this variety mainly for sales, one of them reported that the fact that it was resistant to blight was an important reason for planting this variety. None of these respondents reported that Mondial was of primary importance in terms of area under cultivation. Nor was it ranked as number one in terms of preference. Mondial is an imported cultivar that is slightly drought resistant.

Careful analysis of where farmers obtained their seed tubers and what they planted indicates that because BP1 was the most common potato that their seed supplier had it was consequently the most common one which they had access to and therefore planted. It was available locally at a cheaper price than that supplied at the co-op and this was the main reason it was purchased. Also, its versatility means that there is a market for it in the surrounding area. In essence the appearance is given that farmers will plant what is locally available as long as the yields are generally good and there is a market for the harvest.

## Crop rotation patterns

In order to understand farmers' crop rotation patterns, they were asked to indicate what crop they had planted in the two preceding planting seasons on the land where they had most recently planted potatoes. Previous experience had shown that most farmers had trouble remembering what was planted more than two seasons previously as most farmers do not record field histories. In an effort to get some idea of the rotation it was limited to just two seasons, as it tends to identify rotation with solanaceous and other unsuitable crops. At least six of the farmers have a rotation system that would generally be regarded as too short. It is suggested that the rotation for potatoes is every four years, thus limiting the build-up of soil-borne diseases that affect potatoes. One farmer indicated that his field was fallow for several seasons; however, the fallow period was due to his illness and was probably not normal practice. Poor rotation practices of farmers need to be addressed, since this can lead to a build-up of diseases that can eventually lead to the loss of these soils for potato production. Crop rotation must take the farmers' needs into consideration, as well as the specific agro-ecological environment where they farm. Making use of brassicas for biofumigation to help control nematodes (an important pest for them) and not planting host crops are very important strategies. Ensuring that no solanaceous plants are incorporated into the cycle is also very important. A four year crop rotation is seen as the best in most cases. Where crop rotation is shorter the use of certified seed becomes crucial as the chances for infection of the soil with soil-borne diseases is reduced. However, this does not mean that a rotation shorter than four years is acceptable. These farmers need to get help from a knowledgeable potato production person who would be able to help them establish the best rotation practice for their specific circumstances. Combining their fields to help establish a longer rotation is probably not an option as local farmers prefer to take responsibility for their own land and crops.

Support from the various state and parastatal research and extension services has not been forthcoming is this regard. Since farmers obtained the farm in 1999 they planted potatoes. However, nobody has ever assisted the farmers to develop an appropriate crop rotation system based on the crops they selected to plant. This could be one factor that led to the rise in root-knot nematodes after the first three years of production.

## Potato storage practices

Farmers stored potatoes for three specific purposes: food, seed and for sales. The latter practice – followed by only two of the farmers – was to allow them to introduce potatoes onto the market when prices might be more favourable, and is also common among local large-scale commercial potato producers. However, this practice can be risky as market prices fluctuate and might not be favourable, and because storage conditions are not necessarily such as to maintain the quality of the potatoes, typically for a period of about four months. While seven farmers stored potatoes for food purposes, all eight stored potatoes for seed which they would plant in their next planting season.

Farmers were asked how they currently stored their 'table potatoes' (those they intend to consume) and seed potatoes. Cold storage was

unavailable in this village so none of the farmers could make use of such a facility. The most common method for storing potatoes was either in bags or in crates in the store. Often individual farmers made use of more than one storage means or facility. Use of a facility or storage type is dependent on availability of space and bags or crates in which to pack the stored potatoes. All respondents reported storing table potatoes in bags no matter what structure was used. Using bags for table potatoes helps limit exposure to light, thus preventing greening of the tubers. This is essential as they cannot sell green potatoes and greening breaks the dormancy of the tubers, thus causing sprouting. Consumers will buy neither green nor sprouting tubers, if they are aware that potatoes are in this stage.

A positive point is that the farmers do not store their tubers in the soil. This is especially fortunate given their expressed root-knot nematode problems. This would increase nematode populations in the soil. The piling of seed on the floor can result in many storage losses due to rodents, poor ventilation and the diseases that are associated with this. Piling of tubers makes good management of seed during storage difficult to nearly impossible. Storage of seed potatoes in bags is not always the best, as the ventilation can be compromised if the wrong types of bags are used. Ventilation is one of the most important aspects of successful storage, as the heat generated by respiration needs to be removed from the environment in order to prevent water from forming around the tubers and thus creating conditions for diseases. Storing loose tubers in crates or in thin layers tends to be the best method for storage under non-cold-room conditions. The use of diffused light during the storage of seed greens the tubers, breaks dormancy and encourages the formation of thick sprouts that do not easily break-off. Storage trials of seed at ARC-Roodeplaat and on-farm found this method to be effective for up to eight months.

## Potato storage problems

Respondents were shown photographs of 23 pests. They were asked to identify which of the pests they experienced as problems with regard to potato production, table potato storage and seed potato storage. Once the pests were identified, respondents were asked to rank them in order of significance. The most significant problem was given a ranking of 1, the second a 2, and so on. With regard to problems encountered during the storage of both food and seed potatoes, the most commonly identified problem was the presence of potato tuber moth larvae damage. In this village this damage was not originally attributed to the potato tuber moth but in fact to mites. However, when the farmers examined the photographs of various pests and the damage they cause, they identified this mite damage as being potato tuber moth damage. Although nematodes are mentioned as storage problems, they are actually a consequence of production rather than storage practices. The open method of seed storage (in piles, open on floor, in crates) can lead to tuber moth infestation at this stage, as the tubers are unprotected from tuber moths who can lay their eggs on these tubers. However, it is not always certain where the tuber moth problem comes from. Poor management practices in the field could result in infestation before or during harvesting. These farmers are well aware that steps to control nematodes and tuber moth should be implemented during production. They were both identified during the discussions on storage as it was often only after periods of storage that the farmers uncovered the damage. Some basic production and storage training could help these farmers to minimise their losses.

## General potato production problems

In response to being asked what problems they generally encountered with regard to potato production the respondents provided the following information, presented here in terms of the frequency of responses:

- Lack of access to water (7 responses)
- Blight (6 responses)
- Nematodes (5 responses)
- Millipedes (3 responses).

In total the respondents reported fourteen problems, but the above list only refers to those that were mentioned by more than one respondent. Given the problems with the water supply for a large portion of the farm, it is not surprising that the lack of access to water ranked the highest. This has been a problem since the farm was obtained and nine years later there does not seem to be any solution in the immediate to long-term future. High levels of root knot nematode populations in the soil are another problem that has been around for a number of years. Some

## Table 2.3: Potato input costs as of August 2008

| Input costs per hectare (oftr plant 0.25-0.5 ha in a setason) | How often purchased | Amount purchased | Actual Cost | Where purchased |
|---|---|---|---|---|
| Seed (tubers) | Every season | 3-4 X 25 kg crates @ 18 X R60 per crate | R3780 | Neighbouring farm |
| Fertilisers | | | | |
| Fertiliser 2-3-4 30% | Every season | 2 X 50 kg per ha @ R486 per 50kg | R902 | Local depot |
| KAN/LAN 28% | Every season | 2 X 50 kg per ha @R400 per 50kg | R556 | Local depot |
| Fertiliser 101 44% | Every season | 2 X 50 kg per ha @R400 per 50kg | R758 | Local depot |
| Fertilisers (organic) | | | | |
| None | Insignificant and no cost | | R0 | None |
| Herbicide | | | | |
| Granazon | Every season | R400 per 5 litre but uses 2 litre per ha | R160 | Local co-op |
| Pesticide | | | | |
| None | | | R0 | None |
| Tractor use (R100 per hour includes implements, diesel and maintenance) | | | | |
| Soil preparation | | | | |
| Plough | Every season | 2 hours @ R100 per hour | R200 | Farmers association |
| Disc | Every season | 2 hours @ R100 per hour | R200 | Farmers association |
| Smooth | Every season | 2 hours @ R100 per hour | R200 | Farmers association |
| Plant | | | | |
| Planter | Every season | 2 hours @ R100 per hour | R200 | Farmers association |
| Weed control | | | | |
| Spray | Every season | 2 hours @ R100 per hour | R200 | Farmers association |
| Harvest | | | | |
| Mechanical harvester | Every season | 2 hours @ R100 per hour for 2 days | R400 | Farmers association |
| Labour - only for harvesting and sorting | | | | |
| Female labour | Every season | 4-6 for 2 days @ R80 per labourer per day | R800 | Neighbouring farm |
| Own transport for purchases and sales | Every season | 100 km @ R2 per km | R400 | Own car |
| Rates on land | Monthly | R2.10 per month for 12 months | R25 | |
| Packaging | Every season | R1.20 per pocket | R1200 | |
| Total expenditure | | | R9982 | |

farmers are trying to control the population by planting oats; however, there is some evidence that this might not be a good strategy for reducing the population if the varieties are not resistant to root knot nematodes. If the oats varieties are resistant to the nematodes, they should assist in reducing the root knot nematode population in the soils. The soil population of root knot nematodes has been exacerbated by the presence of numerous Australian black wattle trees on the farm. These are hosts of root knot nematodes. Advice on integrated pest management (IPM) that incorporates aspects of biofumigation might help these farmers to reduce the nematode population, but this will only be effective if they change their rotation to four years (eight planting seasons). Given the small pieces of land actually planted this might well be possible. Blight and millipedes are also considered significant problems with regard to potato production. However, during the interviews farmers said that these could be controlled if the correct chemical controls were applied when necessary. However, most farmers admitted not using these chemical controls due to the expense associated with them.

## Economic aspects

Involvement in agricultural activities was predominantly for the purpose of supplementing household income, even for the two full-time farmers, with only the pensioners using it as a source of extra household food. Therefore, most households in this sample can possibly be construed as being 'resource-medium'. They had access to some resources and tended to farm for more commercially-oriented purposes, although they consumed some of their produce and in many cases did not rely on their agriculture production for their main source of income. For most of this sample, agriculture was important for an extra food supply and also for generating an extra income. Generally, land for agricultural activities is small in this village. Even those now farming on two hectares or more reported experiencing constraints which prevent them from scaling up their production.

During winter of 2006 and again in winter of 2008, farm budgets were compiled with potato producers. In 2006 this was done in an attempt to determine the amount of money spent on inputs and what percentage this was of the household income. In 2008 a similar activity was carried out but with the sole purpose of obtaining a general picture of the input costs associated with the production of potatoes amongst the commercially-oriented farmers, i.e. those producing predominantly for household consumption were excluded. In both instances the input costs per hectare and sales of per hectare yield was used to get the figures reported here. The figures for the expenses are indicated in Table 2.3 and for income under three different yield volumes in Table 2.4.

Farmers indicated that they do not get a consistent yield every season and that it often depended on the quality of the tubers, the season (more in summer and less in winter) and access to irrigation. They said that in their experience one could get anything from 400 to 2000 pockets per hectare depending on success of the planting. They felt that around 1000 pockets was the current average although one or two reported not getting much more than 400 -600 pockets, which meant they barely broke even. Profit is indicated below in Table 2.4 for three different scenarios.

One farmer indicated in 2008 that his input costs had doubled since the discussion in 2006. Others were equally concerned. The contract farmer indicated that his input costs had also increased to almost double. For all the farmers increased input costs were a concern as yields did not improve with the increased costs and the recent increase in market prices had not really benefited them to any significant extent that they could claim an increase in profits as a result. Two of the farmers – the more commercially oriented of the group – indicated that potato farming was not really viable for them and that many of the neighbouring commercial farmers had moved away from potato production in recent years and were now planting other crops. They saw this as a clear indication that other crops were more viable. They mentioned pumpkin and butternuts as a more viable summer crop because of their lower input costs and high yields. Planting potatoes without irrigation was also becoming a problem as they were realising that the yields in winter were less than in summer, but in order to maximise summer planting they required irrigation.

## Table 2.4: Profit from potatoes based on three different yield volumes

| | | |
|---|---|---|
| Scenario 1 | 400 pockets @ R25 per pocket | R10 000 |
| Total Income (400 pockets) | | R10 000 |
| Scenario 2 | 1000 pockets @ R25 per pocket | R25 000 |
| Total Income (1000 pockets) | | R25 000 |
| Scenario 3 | 2000 pockets @ R25 per pocket | R50 000 |
| Total Income (2000 pockets) | | R50 000 |
| Profit = Income - Expenditure | | |
| Scenario 1 (400 pockets) | | - R18 |
| Scenario 2 (1000 pockets) | | R15 018 |
| Scenario 3 (2000 pockets) | | R40 018 |

However, in an interesting turn of events, the farmers who have recently become most active tend to be those who are situated the furthest from the irrigation dams; these are the farmers whose plots are closer to the village, and thus for whom combining farming and other livelihood activities is most convenient.

Some of the SLAG beneficiaries have cattle on their land, although these are mainly those who do not plant crops. Discussions were held to determine the viability of cattle rearing and selling. All the farmers who had at some time kept cattle reported that this was not really an enterprise. Rather, the cattle performed the function of a savings account which could be accessed when required. The return was fairly good and the input costs were minimal. Those who no longer practised this said it was not a viable way of saving money because if the cattle died you lost all your money. They also said that they did not have sufficient land with adequate grazing capacity. Most of those who did not keep cattle suggested that it was only the poorer households who did so. However, observations clearly illustrated that this was not the case. People had various reasons for keeping cattle and access to different resources. These determined the care that the cattle were given. The figures given in Table 2.5 below are reported for what can be considered the general costs incurred to rear a calf in the manner practised by most households who planted feed and occasionally used communal land for grazing. Those who only used communal land would spend less money. Animals were usually sold off after three years but this was by no means a rule. The current expected price was between R2700 and R3200 per animal after three years. The figures illustrate that if the animal has no serious illnesses and the owner experiences no uncommon expenses, then cash costs are less than half of cash earnings.

## Policy aspects

It can be realistically argued that the South African Government does not really have any rea l policy with regard to addressing the needs of smallholder farmers. It can also be strongly argued that any policies that are aimed at bringing about agrarian reform in South Africa are largely commercially oriented and focus specifically on supporting groups rather than individuals. The SLAG aspect of the land reform programme is a good example of this group focus and as noted above it resulted in the active farmers having to co-opt a number of predominantly non-farmers into the CPA in order to access land. While the successor to SLAG – the Land Redistribution for Agricultural Development (LRAD) programme – has somewhat reduced the pressure for applicants to form groups, it tends to ignore the poor and especially resource-poor farmers. According to officials with the Western Cape Provincial Department of Agriculture, the SLAG beneficiaries in this village are entitled to submit applications under the LRAD support programme. However, this has been done by very few as the funding is predominantly for infrastructure development and not for implements and solutions to individual problems, etc. The store was built from some of this money. It seems that the water constraints cannot be addressed under this support programme as it is too costly an exercise. With the arrival of an Agricultural Development Officer in the village, some of the beneficiaries have accessed funds from the Comprehensive Agricultural Support Programme (CASP). However, they have had to do this in groups and these are all new projects and do not necessarily build on existing activities. Only one land reform beneficiary really has anything to do with this Agricultural Development Officer. Others argue that this official has nothing to offer except piggeries and household gardens. None of the current problems are being addressed such as the water problem and the high price of inputs.

## Social and institutional aspects

Besides organising the occasional training course, suggesting and financing the occasional project and providing some advice, local state agricultural extension does not interfere with farmers' activities. The establishment of the mechanisation centre has been useful to farmers. Farmers in the village, more specifically the land reform beneficiaries, have access to one tractor and associated implements. However, non-beneficiaries generally do not make use of this facility unless they are farming large tracts of land. Probably because numbers are small and some farmers have their own mechanised implements, they did not emphasise access to mechanisation as a constraint. Also evident from the time spent in the village is that there is a lot of conflict around the care and payment for the use of the implements at the centre. One concern was that many people were abusing the implements and accurate records were not

## Table 2.5: Cattle rearing costs and return for a single livestock unit over three years

| Input | How often purchased | Amount purchased | Cost per unit | Where purchased | Cost of 1 livestock unit for three years if purchased |
|---|---|---|---|---|---|
| Calves | 0 | 0 | R200 - R320 | Neighbouring farmer | R300 |
| Breeding services | 1 per year | 1 service | R50 - 100 | Local bull owner | R75 |
| Feed (planting of oats) | 2 per year | 8 50 kg bags per year | R86 per bag | Co-op | R229 |
| Growth accelerator feed | 1 bag per calf and mother for first year | 1 bag 50 kg | R120 | Co-op | R120 |
| Block of vitamins | 1 block per year | 1 block for all the cows | R85 | Co-op | R85 |
| Actoban | 1 per year | 250 ml | R90 | Co-op | R270 |
| Tick fever, Redwater - Teramycin | 1 per year | 250 ml | R80 - R110 | Co-op | R300 |
| Shelter | Once only | R500 | R500 | Hardware | 0 |
| Fencing | Once only | R1 500 | 1 ha - 2 ha | Co-op | 0 |
| Maintenance | When necessary | R100 | R100 | Co-op | 0 |
| Total | | | | | R1379 |

being kept. Consequently, this compounded by the low hourly tariff would prevent the future replacement of the tractor. The mechanisation centre is seen as useful and a necessity in order to access mechanised implements, but some feel that it has brought its own set of problems. Similarly, the CPA very seldom meets and this means that problems or uncomfortable issues are never resolved.

Farmers cultivating on the land reform farm tended to exchange information and also to share inputs when appropriate. Exchange of information was common between peers. Often during discussions over the years farmers reported to the researcher that they conducted certain agricultural practices. However, it was later uncovered through participant observation that they in fact did not carry out these practices because they were expensive. The rationale for telling these 'white lies' appears to be that these farmers were aware from other farmers that these were 'good commercial practices,' and did not want to be seen wanting. It also became evident over the years that farmer-to-farmer exchange is most often between peers and family members and not between different age groups, making it difficult for the young to learn from older residents.

Peers noticed that they did not always trust one or two of their number and as a result would not collaborate with a particular person or persons when it came to farming together. One must recall that the first group farming activity in the village was seen as a disaster by most of those involved. Also, it seems that local and often long-term disagreements prevent people from working together.

Local farmers and particularly the beneficiaries have always cooperated well with outside

agencies such as the Department of Agriculture, Department of Land Affairs, Agricultural Research Council and various non-government organisations. This cooperation was historically extended to local large-scale farmers, on whose farms some residents worked and elder residents enjoyed good relationships. Relationships with many of these organisations has enabled them to obtain many of the resources they require for farming, such as land, inputs, implements and some technical knowledge. Those beneficiaries, especially the active farmers, who see these relationships as being valuable, are hesitant to criticise and go to great lengths to keep up good relations. It is felt by maintaining these relationships more resources may be obtained in the future.

Six farmers purchase their seeds, plant material and agrochemicals from the co-operative in the nearest town. However, many of these also purchase potato tubers from a local commercial grower in the area, seemingly because the price is significantly less. These tubers are second generation and are not certified, hence their significantly lower price. Most of the fertilisers are bought at the local depot because this is closer than the co-operative and also because a local farmer has agreed to pay their value-added-tax, making their cost significantly lower. The co-operative only seems to be a source of agrochemicals in the form of weedkiller. Other inputs are only purchased from the co-operative when they are not available locally. Generally, most of the active farmers have a good relationship with local large-scale farmers. Often implements are lent and advice is given. On a few occasions large-scale farmers have also given old implements and tractors to local farmers. There appears to be a good supportive relationship here but again it is largely between the older and active farmers and their large-scale peers.

One farmer who had no access to a motor vehicle purchased his seeds and plant material from the local general dealer in the village or he obtained these from other farmers in the village. He also obtained his agrochemicals in this fashion but indicated that he did not use very much. The contract farmer obtained all his seeds, plant material and agrochemicals from his employer of 22 years on credit. He repaid these debts from the sales of his harvest, which as mentioned above was marketed by his employer. The other seven respondents had accessed neither formal markets nor credit facilities. However, in respect of markets, this is mainly because they preferred to get paid at the point of sale (whereas with formal markets there is often a considerable delay), produced at too modest a scale to justify marketing at great distances, and generally were unable or unwilling to cooperate with one another in order to market collectively. However, with regard to credit, one permanently employed farmer had previously made use of a Land Bank loan to purchase a second-hand tractor, but was disappointed at the interest rates charged at the time of his loan in 2001. In 2008 he was still repaying this loan after eight years because of the increasing interest rates.

## The human dimension

Historically farming is a male activity in this village and very few women are actively engaged in any form of agriculture. In 2002 a daughter of a beneficiary inherited her father's land when he died. She planted a wide variety of vegetables on the land but water constraints eventually made her stop this activity. Her husband now uses the land to graze cattle. She is busy with a chicken layer project and manages this with another villager.

The arrival of the Agricultural Development Officer in the village in 2005 saw five women get involved in household gardening using rainwater harvesting technologies supplied by the Department of Agriculture.

At present all the potato and other vegetable production on the farmland is done by male beneficiaries.

Farmers have received *ad hoc* training from various sources over the years starting in about 1996, soon after they had established the CPA, as part of the requirements to apply for the SLAG. The Department of Agriculture has provided training to some of the farmers, both beneficiaries and non-beneficiaries. This has included pig farming, vegetable production, layer production, some advice on cattle husbandry and also training on crop spraying and irrigation scheduling. Two beneficiaries were trained in tractor maintenance and driving. However, it is the opinion of the author that the farmers need more training in some of these skills along with more regular support and advice. Currently they get no advice from the extension services and only one of the active beneficiaries and farmers was aware of the presence of the Agricultural Development

Officer. Discussions with this person indicated that she was aware of many of the social constraints experienced by the farmers but was not aware of technical constraints due to virtually no interaction with most of the active farmers.

The Agricultural Research Council had conducted a few courses on general soil preparation and crop management in 2000 and 2001, but this was largely focused on fynbos cultivation which only one farmer experimented with. They also provided a series of business development courses in 2003 and 2004 that were well attended. However, these unfortunately clashed with beneficiaries' other commitments and many were unable to attend.

During the 2006 survey two of the respondents reported that they had no access to agricultural training and a third reported the use of his experience of 22 years as a farmworker on a commercial farm in the area. Five of the respondents received agricultural training and advice from the local office of the Provincial Department of Agriculture when this was available. This included attendance of some of the courses indicated previously. One reported getting his advice exclusively from other farmers. During discussions it became clear that all those in the sample shared experiences and practical advice with one another at some stage. They also used one another as sources to obtain inputs or at least to get an idea of what the purchase price of inputs should be. There is a potential within this group for sharing information and experience, but it is limited to peers. However, farmers do not want to farm communally and prefer being in charge of their production activities.

## Household livelihoods

During the 2006 survey the following profile of livelihoods was obtained and in 2008 a review of this status illustrated that it was unchanged over the past two years. Two of the respondents were full-time farmers and both received disability pensions (one private and one from the state). However, they both engaged in other off-farm income generating activities when the situation arose. Five of the farmers considered themselves to be part-time farmers with full-time employment, either in the village or in the surrounding area. However, their actual involvement in agriculture depended largely on the time they had available and their desire to experiment with new sources of livelihoods. One person was a pensioner whose agricultural activities had declined in recent years due to old age, ill-health and the fact that his wife was now receiving a pension. In essence, all respondent households had some other form of income besides that derived from agricultural activities. This status applies generally to all the SLAG beneficiaries as most were employed or received social grants at the time they applied for and eventually obtained the farm. While sometimes considered an important source of income for rural households, none of the respondent households received any form of remittances from members residing outside the household. In any event they all indicated that agriculture was not the primary livelihood of the household.

State social grants do not constitute an important contribution to most of the households, except for one household that was dependant on two state pensions as the sole form of cash income. Only three of the other seven households received at least one social security grant. The mean annual income derived from formal employment for the remaining seven households was R31 714 with a minimum of R5 400 and maximum of R63 600 per annum. The sample mean for annual income derived from formal employment for the eight households was R27 750 and the median R23 100. Only two households had members engaged in part-time employment and their average annual income from this source was R10 200.

Annual income generated from the production and sale of crops was estimated between R1500 and R20 000. Only seven households were currently engaged in this activity. While one household was realising a value of R100 per annum from household consumption of their agricultural produce, six were realising between R1000 and R2000 per annum. One household had not produced any food crops during the 12 month 2005/2006 period under review. This situation remained approximately the same when further enquiries were made in 2008.

None of the respondent households had generated any income from animal production as no animals had been sold during the period. Six households reported not consuming any animals during the period. For those two households that had consumed livestock, one reported realising a value of R100 per annum and the other a value of R2000. It appears that very few households consume livestock and seem to only sell livestock

in specific instances. Sometimes, a particular animal would be purchased four or five months before it was intended for slaughter, e.g. for a feast or special occasion such as Christmas. This was especially the case if it could be obtained at a good price. When clarity was sought on these points it was indicated that livestock, in particular cattle, are an investment and are used by households as a form of savings. They are sold when the household needs money for something specific. Even where households were trying to build up their numbers of livestock, these were not to be sold on a regular basis but when the household needed some extra income.

The total annual household income was calculated by including the above sources, except for the in-kind values as these proved uncertain due to possible under-reporting. In this village the value of R100 in a year from one household does not seem correct. The total annual income for the households ranged from R19 680 to R83 600 with a mean of R46 318. None of the households had a total annual income from agriculture that exceeded total annual income from other sources. This suggests that agricultural activities were predominantly for the purpose of supplementing household income. However, for one of the respondents the income derived from agriculture slightly exceeded personal income from other sources. For another it was only slightly less than income from other sources. Table 2.6 indicates the percentage of household income spent on agricultural inputs and the percentage contribution of agriculture to household income. Given the fact that income is often under-reported and expenses are over-reported, these figures should be treated with caution. At best they indicate a pattern rather and a fixed income or expenditure.

From Table 2.6 we can see that six of the households were getting a better percentage return on household income when investments in agriculture were made. But for some this return was not that great when compared with other households. Interestingly enough, household 8 was following conventional practices and the return on income in terms of input costs was not remarkable when compared to some of the other households. Household 1 can be explained away by the fact that the respondent was no longer actively involved in household food crop production because of his age and health and it is likely that he was unable to recall accurate figures. It is also probable that he could not calculate the correct return on his investment, as the figures he cited for return on investment were very low (R100/annum). The performance of household 5 is understood by the fact that the farmer had sown oats to improve the soil health and that he had only planted a small portion of food crops.

## Local significance of agriculture

During 2006 farmers were asked a number of questions with regard to their agricultural practices for household food security, as a source of income, production patterns, input expenditure trends and general agricultural trends over the previous five years. The purpose was to get some idea of the changes in agriculture as a significant

### Table 2.6: Percentage of household income spent on agricultural inputs and the percentage contribution of agriculture to household income

| Respondent HH | Annual HH input expenditure | % income spent on agricultural inputs | % contribution of agriculture to HH income |
|---|---|---|---|
| 1 | 420 | 2.0 | 1.0 |
| 2 | 1100 | 2.8 | 35.9 |
| 3 | 1295 | 3.5 | 0.0 |
| 4 | 1380 | 1.8 | 11.7 |
| 5 | 1720 | 4.5 | 6.7 |
| 6 | 2485 | 6.7 | 45.8 |
| 7 | 5430 | 6.5 | 26.3 |
| 8 | 19700 | 46.9 | 50.0 |

source of food or income and also to see what changes had taken place with regard to input expenditure, which is often considered to be an important constraint to agricultural participation.

One farmer reported that agriculture had become less important as a source of food during the past five years because his wife started receiving her state pension during this period and his health was declining due to his age. Also, he was not a beneficiary of the land reform programme and only had access to approximately a 0.5 hectare piece of land which was exclusively rain-fed. The other seven reported that agriculture had become more important. Six reported that increased access to land had allowed them to produce fresher and cheaper food for their households. One reported that improved access to land enabled increased production for both household consumption and sales. Two of the respondents noted that agriculture had become less important for them as a source of income. One pointed out that it was never a source of income as produce was used exclusively for household consumption. The second said that his other enterprise (non-agricultural) required fewer inputs and was a better source of income if one considered the input expenditure required for the two different income generating activities. He farmed with his brother who was in the same line of off-farm work. Later discussions indicated that the brother felt the same way. The other respondents gave the following individual replies:

- One accessed land from land reform beneficiaries who did not farm, so he was now able to produce more and sell more of the surplus;
- Few village residents plant crops and those that do have only small pieces of land, therefore there is a good local market;
- One farmer felt that access to more land meant it was now cheaper to plant for household consumption and for sales;
- Agriculture and subsequent sales helps improve the household's standard of living;
- Agriculture increases household income and pays for cost of school-going child's education;
- Agriculture both reduces household income expenditure on food and brings in an extra income.

With regard to household expenditure on inputs during the previous five years, one respondent noted that less was being spent at present because he now farmed much less than he did previously. The remaining seven currently spent more on agricultural inputs. One reported that the increase in expenditure was a result of the increasing costs of inputs, although he was not always buying more as the size of his land under production varied seasonally. Three farmers noted that the high price of inputs was the sole reason for spending more on inputs. The other three also cited the high costs of inputs but noted that they were farming more land than they had been five years previously. Generally, input costs had increased but the impact of this differed from individual to individual according to their different farming activities.

## Identity

Land reform beneficiaries in the village who were still actively producing crops in 2008, and those other farmers who were now farming on the land that belonged to other beneficiaries, felt strongly that for a farmer to be successful one had to have farming 'in the blood'. A person needs to know how to work with the soils, the crops, water and the environment and needs the knowledge and experience to do this. It was strongly felt that to be a farmer one must have a love for farming, otherwise one cannot truly be a farmer. The person must also be willing to experiment with new ideas and have sufficient money to farm. All the farmers raised the problem of the rising costs of inputs and that often the rising food prices were not enough to set-off these costs, so profits remained low. None of them felt that they could make a living exclusively from farming and relied on pensions, disability grants, and permanent and occasional off-farm employment. The two farmers with disability grants were adamant that they also needed to do occasional off-farm work in order to survive and were both fortunate that their wives worked.

The contract farmer makes a living from on-farm employment as a farm worker and also through farming the land he has borrowed from two SLAG beneficiaries, so in some sense he derives an income exclusively from agriculture, but not from 'own agriculture'. He is far from happy with the arrangement with his employer who dictates what crops should be planted and how much is required. If the farmer wants to

plant more that is fine but the employer does not guarantee that he will market the extra produce. There is also discord regarding the money put on credit and that received after the crops are harvested and sold. Consequently, this does not seem to be a happy relationship, although it has been going on for almost four years and the farm worker is not willing to stop. Also, the relationship increases this small-scale farmers' household income significantly and it also raises his prestige amongst the SLAG beneficiaries who farm similar crops, who respect his ability to provide information on inputs, pest, diseases and prices. But at the same time they are jealous that he is able to enjoy the support and cooperation from his employer, despite any problems that he may have with this relationship. He is able to farm up to two hectares of crops during a season with this support. None of the beneficiaries are able to do this.

## Environment

The farming operations are so small that their effect on the environment at present seems insignificant. Very little land is actually under cultivation during any one year on the recently acquired farm. Apart from the contract farmer, those who are farming seldom use any pesticides. Their use of herbicides is of much less cause for concern than that of their large-scale neighbours. The trust land has never been used for agricultural purposes since it was obtained in 1999. It was used for grazing by a few livestock owners in the beginning but this practice has stopped due to its unsuitability: cattle died from tick fever and some broke free into neighbouring farmland. In any event, livestock numbers in the village are relatively small. Those owned by the SLAG beneficiaries and a few other residents are grazed in enclosed camps and fodder is planted for them. A few local residents make use of a neighbouring large tract of enclosed land to graze their cattle. However, the beneficiaries do not use this land as the ownership thereof is under dispute and a claim has been submitted by a group of village residents to the Land Claims Commission. In general the beneficiaries make use of conventional agricultural practices which are neither organic nor environmentally friendly. However, their use of agrochemicals is very limited. One concern in this regard is the observation that none of them wears any protective clothing when spraying.

## The future

Generally, the various farmers consulted over the years are far from optimistic about the future of agriculture. Some were concerned about the recent sales of land by three of the SLAG beneficiaries to outsiders whom they did not know. They believed that this meant that the farm land was being taken out of circulation and that if they ever needed to expand in the future this land would become less and less if the trend to sell off the land continued. Some of the land that was on the market was that next to the main irrigation dam and this might complicate their access to this water. The lack of a solution to their water problem and the continual rising cost of agricultural inputs were regularly reported as concerns. One farmer has emphasised over the years that while his father was able to support and educate a family of eleven members as a sharecropper; this would be impossible to do nowadays. Another farmer reported that agriculture appeared to become more technologically advanced with each year. He cited the example of the increased diversification of agricultural activities among many neighbouring farmers, including into tunnel farming. He said that obtaining the latest technology required increased capital expenditure and also more land. He summed up these changes by noting that the small-scale farmer would not be able to do this as both the finances and the land were extremely limited. The water problem was the biggest constraint for farming and he said that even if agriculture was not becoming so technologically advanced, the beneficiaries would always have a problem because of the water constraints.

A number of farmers in the village and land reform beneficiaries were interviewed to determine how their production trends and those in the village had changed since 1999. Most beneficiaries who had been consistently active since 1999 noted that they had been very involved in preparing their land and in producing vegetables in the first three years. However, these activities had declined for various reasons. Some beneficiaries noted that they were producing more crops since 1999 as a result of access to more land and the fact that over the ensuing years they had developed more experience in farming. One farmer attributed this to accessing more land but indicated that access to a tractor and associated implements were also major contributing factors. The farmer who was engaged in contract farming pointed out that

due to some beneficiaries not making use of the land he was able to borrow land in the village. In 2008 he was farming two hectares of land (and would be / had been? for three years) and had access to at least another two to three hectares. In 2004 he had not farmed in the village. As a result of this relationship and that with his employer, contract farming was increasing his household income by almost 100%.

Responses during discussions on whether agricultural activities were generally increasing or decreasing in the village were mixed. Some felt that it was decreasing and gave the following reasons:

- Married couples were getting grants for their children these days so households had more disposable income. Consequently, fewer households were planting crops in their home gardens.
- It was also reported that the youth (including those in their thirties) are increasingly uninterested in farming and while many farmers recalled helping their fathers or their uncles when they were young they noted that this trend had stopped. However, some youth are interested in agriculture but have no access to land.
- High input costs have put farming out of the reach of many households so people with small pieces of land farmed less or stopped altogether. Money is now spent on bought food rather than on the production thereof.
- Only a few of the households and the land reform beneficiaries are actually engaged in agricultural activities. Some are no longer involved due to ill-health or old age. Therefore, they are no longer able to farm as efficiently as they had done previously.

One person felt that people were farming more because some now had access to large pieces of land. He was considering output and area under cultivation rather than the number of local people engaged in farming. Other residents mentioned that the agricultural activities in the village as a whole had largely remained unchanged and gave the following reasons:

- There was no significant change in agricultural activities in terms of the number of people involved or the extent of land under cultivation. People had simply shifted from the commonages to the newly acquired farm. However, this argument appears unsound as the commonage has not been used for many years and houses now take up a large part of it.
- Receipt of land from the state land reform programme meant that some people now farm on bigger pieces of land and thus produce more, placing greater emphasis on commercial production. This does not mean that the numbers of people engaged in agriculture have increased. Often these have decreased but people are now able to farm larger areas of land.
- Generally households tended to plant less because land was scarce in the village. Only a few households and farmers planted at present. This was a trend that had started in the 1960s with the rising population and the scaling down of land (commonages) allocated for agricultural activities.

The author's perception, based on several years of work in the village, is that agricultural activities have decreased at household level and also on the land received from the state. However, those few beneficiaries still planting crops on the land received from the state seemed to be doing so more intensively and indicated that their incomes were improving as a result of their increased farming experience and access to this land, despite occasional seasonal mishaps such as dry spells or flooding. In terms of numbers of people actively involved in agriculture in the village, the current impression is that this has declined. However, it is also clear that none of the active beneficiaries farm all their land at any one time. There are a number of reasons for this and the most commonly mentioned one is the cost of inputs and the water constraints which prevent them from planting more than about half a hectare to a particular crop. Often only one hectare of any crop is planted in a particular season. On the other hand the contract farmer who is supported by his employer never plants less than two hectares of crops during a season. His area of land under cultivation is decided each season by his employer.

# 3 Prince Albert Commonage: diverse individual and group enterprises on municipal commonage land

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## Introduction and history

Prince Albert is a village located in the south eastern part of the Great Karoo in the Western Cape. It is situated at the foot of the Swartberg Mountains and this location provides a strange situation where there are significant water resources for agriculture close to the mountain, from water that flows to the area from the other side of the range, but it decreases rapidly within a few kilometres from the town. The rainfall in the area is between 150-200 mm per year and thus it is a semi-arid area.

Small-scale farmers have been farming in and around Prince Albert for many years but this farming has been on existing portions of municipal land (which is not large in size) and on other land obtained through *ad hoc* negotiations with current land owners. This meant that their enterprises were severely constrained and many livestock farmers have had to sell their stock when such conditions have become too restrictive.

In the late 1990s, the farmers gathered into three farmers' groups based on particular activities – pig farmers, vegetable farmers and small stock farmers (primarily sheep and goat) – and also to lobby jointly for more land as the Prince Albert Small-scale Farmers Association. The target of their request was the municipality and the Department of Land Affairs (DLA). After different options were explored it was decided that the Municipal Commonage route would be followed.[5] In association with the Department of Agriculture (DoA) and the DLA, the Treintjiesrivier farm was identified and acquired. The land was to be held by the Municipality and to be farmed by the local emerging farmers in the Association.

### Commonage policy

Most of the towns in the Western Cape and Northern Cape have acquired land over the last 150 years which became designated as municipal commonage. Such land was granted to the municipalities by churches, by individuals and by the national state (or Crown) and was granted for the specific use of the residents of the town.[6] Such municipal commonage land, because it is acquired as a result of a grant (as opposed to being bought by the municipality) becomes land of a special type with specific constraints on the sale and other adjustments to it. Moreover, the cost to the user of that land should only be to ensure the maintenance of the land and other assets – it should not be used for the generation of additional income by the owner, i.e. the municipality (Anderson and Pienaar, 2003).

Under Apartheid, commonage land increasingly became reserved for white people only, and over the years, increasingly became more privatised – most often being subject to a contractual arrangement with an individual commercial farmer, with market-related rentals attached. This was contrary to the law related to the use of commonage.

With the introduction of the *White Paper on Land Policy* introduced by the Department of Land Affairs in 1997 (Department of Land Affairs, 1997), the Department brought back the concept of municipal commonage for the use of the community. It introduced a municipal commonage policy with an associated grant to municipalities in order to acquire such land and ensure that the infrastructure and resources were in sufficient good order for the use of people in the town. A number of requirements were included with

5 The Municipal Commonage programme is one DLA's 'redistribution products', alongside SLAG, LRAD, etc.

6 This was the era before South Africa had 'wall-to-wall' municipalities, rather the 'municipality' generally referred to the jurisdiction of a town.

this grant: 1) that a notarial deed be placed on the property to ensure that it was used for the purpose for which it was bought and to place a constraint on the sale of the land (the Premier of the province must authorise such a sale); 2) that a commonage committee be established to manage the land (Department of Land Affairs, 2005); and so forth.

The Commonage Policy expressly aims to provide access to land for two primary purposes: for food security purposes, and as an initial stepping stone for those emerging farmers who want access to land from which to expand further. Importantly, commonage land only provides leasehold rights – the land remains the property of the municipality.

## Methodology

The methodology used for project-specific information and analysis was essentially primary research in the form of documentation collection and analysis; semi-structured interviews and observation. In addition, documentation regarding the related policy, industry specific information, and other more general information was obtained and analysed.

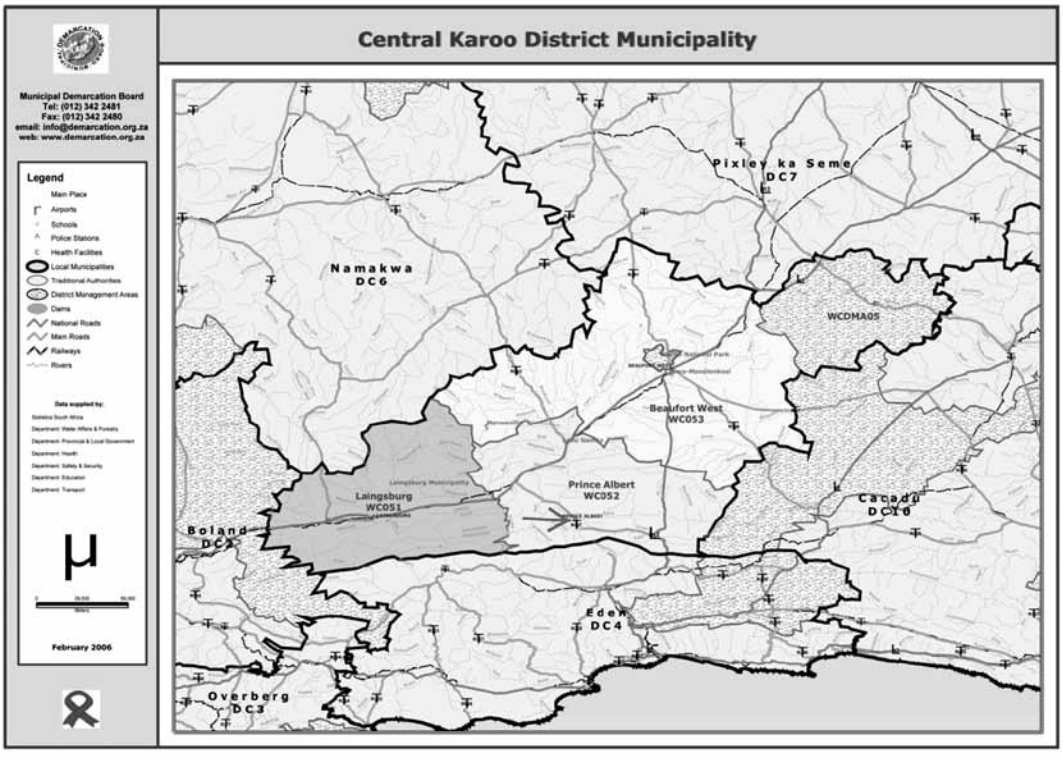
The documentary sources include the following:

- Government reports and policies including the White Paper; the Commonage Policy; the Grants and Services documents of the Department of Land Affairs; the Comprehensive Agricultural Support Policy (Department of Agriculture); and others.
- Specific plans and reports on the commonage project and the Treintjiesrivier farm, including the initial land reform business plan for the acquisition of the land; applications for the CASP and Land Care Funding; the Constitution of the Commonage Committee; agricultural plans for the Truitjiesrivier as a whole as well as for specific portions.
- Contracts between the specific farmers and the Mohair South Africa, Klein Karoo Seed Marketing (Pty) Ltd, National Development Agency and the Municipality.
- Legal documents of the Farmers Association and the Onion Producers.

Semi-structured interviews were undertaken with the following people:

- Emerging farmers

## Figure 3.1: Location of Prince Albert




Source: Municipal Demarcation Board

- Officials from the Department of Land Affairs and the Department of Agriculture.
- Officials from Mohair South Africa and from Klein Karoo Seed Marketing.
- Municipal councillors and officials.

A number of visits were undertaken to the farm and it was during these visits that most of the interviews with farmers took place. At the same time, the condition of the animals, the infrastructure and the natural vegetation was observed as were the relationships between the different parties in their working operations.

## Natural and physical resources and farm layout

The farm Treintjiesrivier (portion 1 of the farm Damascus no.153 in the Prince Albert area) was purchased in 2005. The farm is situated 6 kilometres west of Prince Albert and has a harsher climatic aspect than properties situated on the east, where river systems are stronger. It is located on the edge of the mountain range and thus includes mountain land as well as 'karoo plains'.

The size of the farm is 5580 hectares and includes the following resources, according to the valuation report submitted to the DLA at the time of purchase:

As the table above highlights, the previous owner used the land for both arable and grazing purposes and farmed with onion seed and lucerne and, in addition, raised ostrich chicks on contract to ostrich farmers in the Oudtshoorn area.

The Department of Agriculture undertook a soil potential assessment of the area where the previous owner cultivated. The assessment was divided into 6 profile areas. The dominant soil form is Oakleaf 2120 and Oakleaf 2220, both of which the Department indicates provide medium to high potential for vegetable production. One area on this section of the farm has Westleigh 2000 soil and this is indicated as poor soil for vegetable production.

There are 12 hectares of land that are currently being used for cultivation purposes, and this land is fenced with stock-proof fencing. However, a major problem is the fact that kudu roam freely on the farm and are able to scale the normal cattle-proof fencing and thus decimate the crops. The erection of Kudu-proof fencing is included in a current application for funds from the Comprehensive Agricultural Support Programme (CASP) of the Department of Agriculture.

The key resource in this area for both arable and grazing farming activities is water. The farm has eight dams in total – two earth dams with water supplied through capture of mountain water, and six cement dams supplied by as many boreholes. The water is led to the dams and drinking troughs in each camp through the use of windmills and gravity feed. In addition, there are overflow dams which capture additional water during the winter rainfall season.

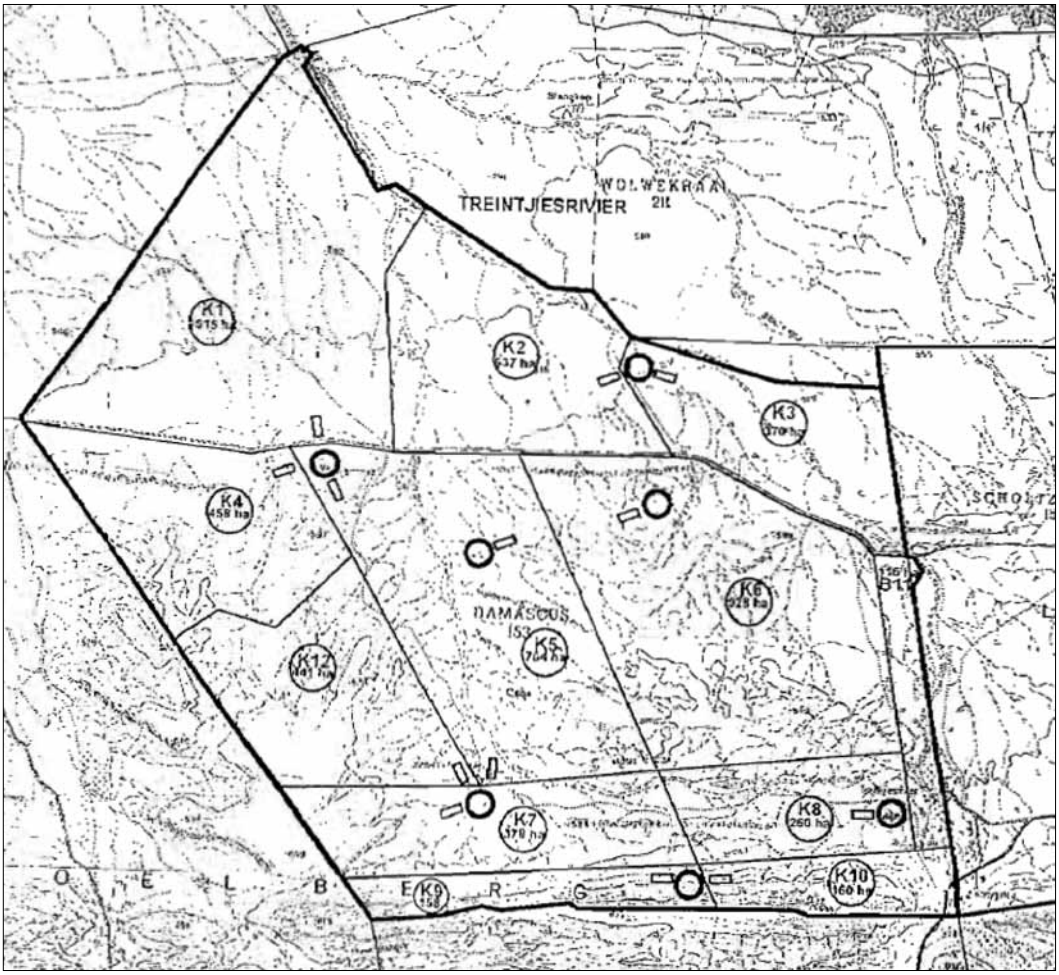
All the grazing land on the farm is natural grazing and includes pioneers karoobossieveld and grass types such as 'Boesmansgras'. The carrying capacity is estimated at 42 hectares per large stock unit. The total number of small stock possible on the farm therefore is in the order of 800 small-stock units. The farm is divided into 10 grazing camps.

## Table 3.1: Summary of agricultural assets

| Type of asset | Extent (ha) | Valuators estimated value (R) |
|---|---|---|
| Irrigated land (lucerne) | 7.0 | 280 000 |
| Irrigated land (cash crops) | 1.5 | 52 500 |
| Dry with potential to irrigate | 11.5 | 57 500 |
| Grazing | 5 560.3 | 3 058 000 |
| Total land value | | 3 448 000 |
| Accommodation | | 867 000 |
| Other buildings | | 336 480 |
| Dams | | 362 000 |
| Total value | | 5 013 980 |

## Figure 3.2: One of the two earth dams built by the previous owner

## Figure 3.3: Diagram of the location of the various camps, dams and windmills



According to the valuation report, when the farm was acquired the 10 grazing camps and the farm boundary were all fenced with stock fencing, none of which is jackal-proof.

The farm also has the following additional infrastructure:

- A house of 235 m²
- A storeroom of 175 m²
- A steel shed of 162 m²
- A chicken house of 60 m²
- Three farm workers' houses of a total of 210 m².

## Farm layout

The Department of Agriculture has supported the project from the beginning and developed a farm plan based on separating the grazing area into three sections (with the ten grazing camps divided between the three) and dividing the arable area into different sections as indicated below.

## The farmers

The project was initiated in 2004/05 to accommodate the immediate needs of 26 farmers, of whom 5 were women and 21 were men. Ten of the men were youth (35 and younger) and 18 were farm workers. Since the initial application however, the numbers of farmers in the group increased substantially to 87, with an active group of 35 active members.[7]

It was reported above that there were three groups of farmers initially – those undertaking vegetable production, pig farmers and small-stock farmers. At the time that the project was initiated, the pig farmers had formed themselves into a formal group for the sale of the pigs, called Zwartberg Varke. They had sixty five pigs at the time.

Also, at that time (2004/05), the livestock farmers had in the order of 64 sheep and goats, as well as eight calves, thus they went beyond 'small stock' farming. The vegetable farmers were farming on a small piece of land but had undergone a variety of training courses, and had worked with the DoA in order to develop a proposal to "move from subsistence farming towards the semi-commercial farming sector."[8] It was with this development in mind that the group was seeking access to additional land.

In 2008, at the time of this research, the number of actual farmers on the land was the following (note that some of the farmers are involved in more than one activity):

- 15 onion seed farmers
- 15 stock farmers farming with sheep and boergoats
- 3 stock farmers farming with Angora goats
- 3 farmers farming independently with vegetables; and
- 15 farmers (or workers) farming as part of the NDA project.

## Onion seed farmers

In 2006, the Municipality started a project where it organised the planting of 2 hectares of onions as a community project in which certain people were employed. However, once the land was planted, the Municipality changed the approach and provided the opportunity for a group of people to harvest and sell the seed. Fifteen people, focused around a particular family (the Hinkmans), came together into the 'Group of 15'. A section of this group then formed themselves into a close corporation, given that a CC has a limit of 10 members, but the group now want to form a cooperative which will allow the larger group to join.

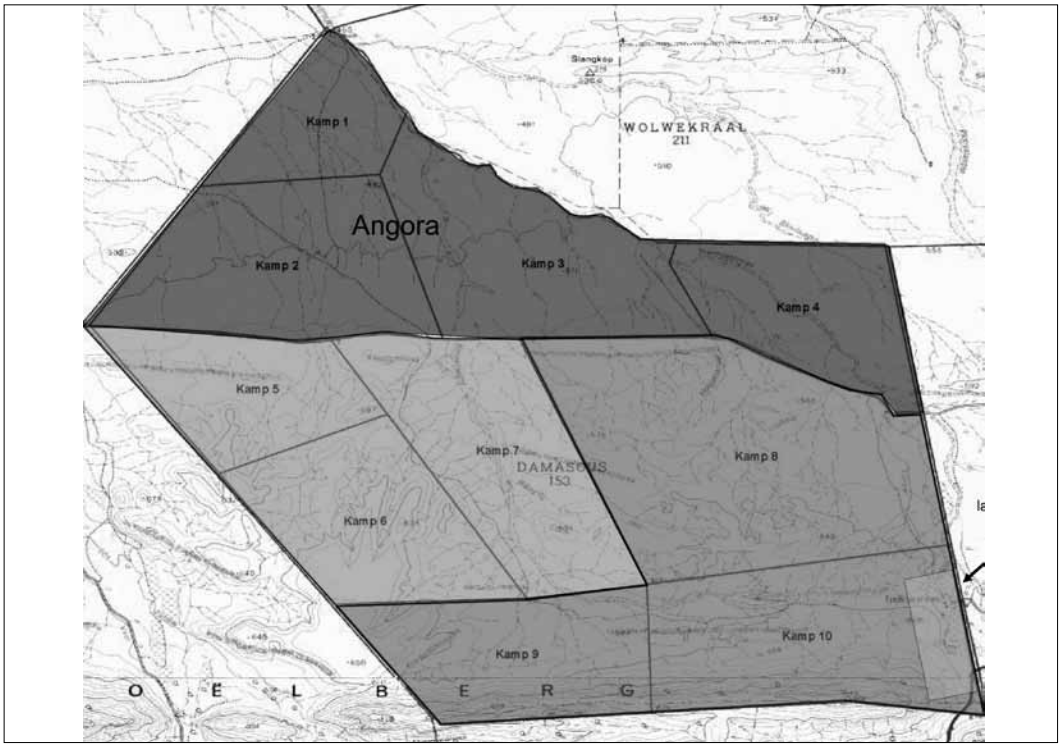
The group members include older people and youth; most of the youth are the children of the main Hinkman family. The older people are all ex-farm workers who have experience of fruit farming, vegetable and vegetable seed farming, ostrich chick rearing, and extensive livestock farming. The key person in the group has been part of the farmers' association since 1996, and held stock on municipal land until he was forced to sell it by the Municipality.

These farmers have entered into a contractual agreement with the Klein Karoo Seed Marketing company whereby they will be provided with a range of resources to produce onion seed of a particular quality, and market this through the company. Once the sale of the seed has taken place, the expenses will be recouped and the remaining amount (profit) will then be paid over to the farmers. This contract arrangement has

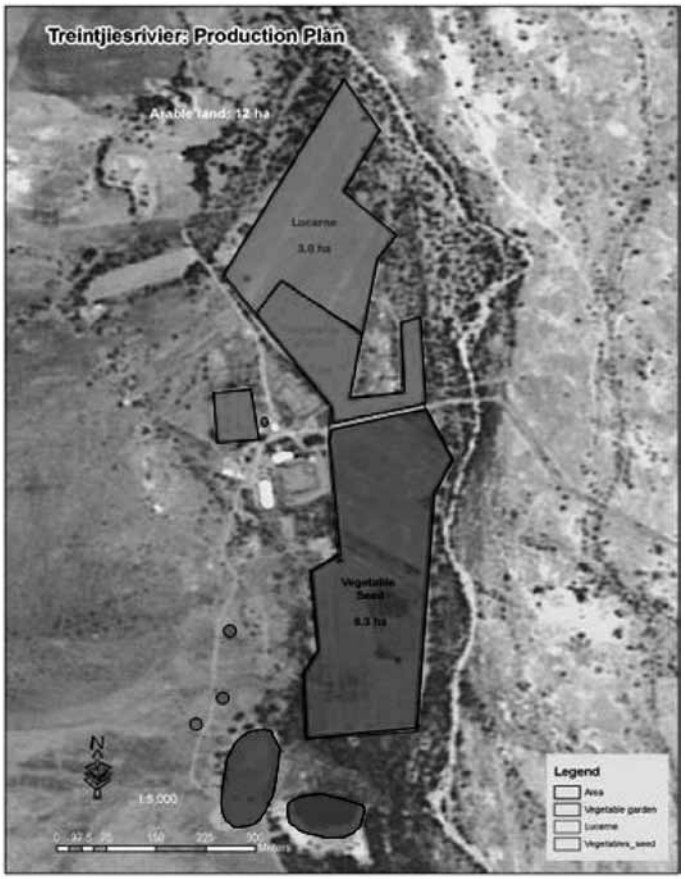
7 According to the Chairperson of the Association.

8 Fundraising proposal for the Prince Albert vegetable farmers association.

## Figure 3.4: Diagram showing the use of the extensive grazing area




## Figure 3.5: Department of Agriculture's plan showing the existing arable land and the dams with their proposed land uses



entered its second year, the first year in which the group has been responsible for production from planting through to harvest. In the previous season the farmers took over the production process after the planting had already happened as part of a municipality project.

### Angora goat farmers

The Angora goat farmers' enterprise began as a result of an interest by Mohair South Africa (MSA) to start a training project with emerging farmers, modelled on a similar arrangement supported by MSA in the Eastern Cape. In this arrangement, Mohair South Africa provided a herd of 174 Angora ewes with 7 rams to a group of four emerging farmers who are being trained and mentored over a three year period. During this period, the clip from the animals and all the progeny are acquired by the emerging farmers. At the end of the period, the farmers are required to give back a similar quality herd to MSA, who will then give that to the next group of emerging farmers. The goats were given in April 2008 so it is still a new arrangement.

The opportunity of going into the arrangement was advertised in the broader emerging farmers association and interested people were asked to apply. Only four members applied and they then formed the group. All of them are ex-farm workers, one of whom has extensive experience with Angora goats. In the early period, however, one of the members withdrew from the group, indicating that he was no longer interested. Three men therefore remain.

### Sheep and goat farmers

The sheep and goat farmers mostly include farmers who, prior to the acquisition of the commonage land, held stock in the residential area. These animals roamed freely during the day and then were kept in the backyards of the owners at night.

The current group of farmers are all members of the Farmers Association. There are currently a total of 15 stock owners who have sheep or goats on the farm. The stock holdings range from 2 to 64 animals per owner. Only one of these farmers is a full-time farmer; this person happens to also be the key onion seed farmer. All the rest of the farmers engage in stock farming as an addition to the other sources of income, e.g. from small enterprise (taverns), wage employment, etc.

### Vegetables farmers

The vegetable farmers include two types – there are farmers who have access to individual plots of land and there is a group that is drawn together into a group production process in a project funded by the National Development Agency (NDA).

Of the three farmers who have their own portion of land, two work together and one separately. The NDA-supported project appears to have 35 people working formally in/for it. It has an employed project manager, and the other people are employed on the basis of a daily wage of R35. The funding, and thus the beginning of the project, was delayed as a result of the fact that the contract with the Municipality for the use of the land took time to finalise. It therefore only began in June 2008, more than a year after the intended start.

## Production systems and economics

Each of the different enterprises undertakes farming in a different way and has different economic arrangements.

### Onion farmers

The onion farmers are organised into a production co-operative. The production systems were developed through consultation between the mentor (De Wit), who was appointed by the Klein Karoo Seed liaison person, and Mr Hinkman, the most experienced of the emerging farmers, who maintains strict control of the process.

The farmers do not own any major equipment – specifically a tractor, plough and rake which Hinkman indicated are the most important items for onion farming. They have developed a mentoring arrangement with the previous owner of the farm (De Wit) as a result of the intervention by a councillor. De Wit continues to have an interest in the success of the farm and so provides various resources to the onion seed producers. He initially offered a service to plough and otherwise prepare the land for the farmers. But when he arrived to plough the land, a number of the other farmers, including the leadership of the Farmers Association, refused to allow him to plough, as it had not been agreed that the onion farmers should have access to the land where he was going to plough. The onion farmers then negotiated that they should borrow the tractor

for a period and do the work themselves, once they had clarified which land would be available to them. De Wit then agreed to this and the farmers now only provide the diesel for the tractor and have constant access to it.

The onion plants are provided by Klein Karoo on an annual basis. In the most recent season, starting in April, the plant material was in fact surplus material provided by the Klein Karoo, which meant that the farmers did not have to pay for it.

The production process is as follows:

### *Preparation of seedlings*

Onion seed is planted in March/April of year 1 in-well-prepared soil which should not have a high clay content. It is planted at a density of about 4 grams per square metre. It is important that weeds, diseases and pests are managed and this is done with the intervention and under guidance of the production advisors of Klein Karoo Seed. This advisor also guides the irrigation and feeding of the plants.

### *Bulb production*

The seedlings are transplanted after about 12 to 14 weeks (from June to August) and sowed in a density of about 600 000 plants per hectare. The bulbs that develop are then dug up during December and are taken to the drying sheds which were built by the previous owner of the farm. Once dried, the bulbs are stored in a well-ventilated space for 3 to 4 months.

### *Planting of bulbs*

The bulbs are planted again during April (year 2) and are planted in a density of about 100 000 bulbs per hectare, depending on the variety. Weeds, diseases and pests are strictly controlled by prescribed chemicals and a detailed spraying programme is worked out in conjunction with the advisors from Klein Karoo Seed. Regular visits are made by the company advisors and the locally based mentor is also close at hand during this period to address any problems as they arise.

### *Pollination*

The flowering period is between 32 and 40 days and begins in the third week of October. This is a sensitive period and it is important for the process to be done correctly. The Klein Karoo Seed advisors are on hand and recommend a density of 8-10 beehives per hectare – for the Prince Albert farmers this means that that have had to acquire about 30 hives for their three hectares.

### *Harvesting*

The harvesting of the seed takes place when 25% of the seed heads have turned black and this is about three weeks after the pollination process and is generally in the last two weeks of December.

## Figure 3.7: The shed for drying onion seed with extractor fans

### *Drying, threshing and winnowing of seed*

Drying of the seed on the farm takes place in the drying sheds where air is forced through the seed heads with the help of fans. Once the seed is sufficiently dry, the seed is drawn out of the heads with a machine and then further winnowed. Once this is done, and the seed is clean, it is delivered to the Klein Karoo Seed offices for further working and packaging and sale. The farmers were complimented in the last season for the cleanliness of the seed they produced.

## Economics of onion production

The costs per hectare incurred in the course of producing onion seeds are as follows:

The estimated income from production depends on the type of onions produced but the following is a guide assuming an exchange rate of R7.74= $1:

Given that the farmers had not had a full season where they had been involved in the full production process, it is unclear yet how the farmers will fare. The farmers do not appear to have a clear understanding of all the financial aspects of their production but have been informed that they produced a profit of R30 000 in the previous season. By agreement, the Klein Karoo Seed company is keeping this for the various production costs for the current season.

## Angora goat farmers

The Angora goat farmers are in a training contract relationship with Mohair South Africa[9]. For Mohair South Africa, the longer term aim of the training programme with the Prince Albert farmers is to increase the throughput of mohair, while at the same time contributing to the development of black farmers in South Africa. For the emerging farmers, the aim is to maximise production in order to obtain as much return on their animals.

## Table 3.2: Per hectare costs related to the production of the onion seed

| Item | Cost (Rand) |
|---|---|
| Fuel | 600 |
| Fertiliser | 5 900 |
| Pest control | 533 |
| Bulbs | 10 000 |
| Bulb planting costs | 2 200 |
| Pollination | 2 400 |
| Weed control | 842 |
| Pest control | 3 718 |
| Insurance | 0 |
| Harvesting costs | 3 190 |
| Drying | 700 |
| Irrigation and electricity | 4 840 |
| Machinery | 129 |
| Cleaning costs | 3 000 |
| Total | 39 052 |

## Table 3.3: Estimated income from onion production

| Onion type | Production per ha (kg) | Expected income per ha (R) | Profit (range) | Break even – (kg/ha) |
|---|---|---|---|---|
| OP | 1000 | 69 660 | 25 000 - 30 000 | 400 |
| F1 | 450 | 80 109 | 36 000 - 41 000 | 220 |

9 Mohair South Africa Ltd was established as the representative organization of the industry, to facilitate functions such as research, training, information, national and international relations, and activities aimed at enhancing the entire mohair industry. The board of directors of Mohair South Africa reflects representation by all the major directly affected groups, mostly in the early stages of production, namely growers, labour, breeders, processors, buyers and brokers. J. M. van der Westhuysen, P. D. Wentzel et al. (2004).

The visit to the farm was only four months after the farmers had started operating on the farm and so the production methods for the farmers were still being sorted out and adjusted to their specific conditions.

The farmers have developed a system where one person will be responsible for looking after the stock for a month at a time, and the person will be paid a wage of R1000 which is paid by Mohair SA and then recouped from the wool sales.

All the activities are undertaken by the farmers, with additional labour or support brought in when needed. During the research visit to the farm, it was lambing time, and the farmer that is deemed most experienced with Angoras was the person that was asked to work during the August month (he had recently also been retrenched from his formal job and so was available). Importantly, he had brought another person to the farm on the day of the visit in order to help him with the lambing tasks – marking the new lambs with the same mark at their mothers.

There are usually two shearings per year, in January and July. The shearing is undertaken by the farmers themselves and they had done the first shearing in the July. The clip was then taken by the representative of Mohair SA and, in a careful assessment of the market, was sold at a time when a good price was paid. Such a system of the Mohair SA representatives obtaining the clip from farmers and selling it is undertaken by most commercial farmers as well.

The project coordinator of the training programme (Grobler), while highlighting that "it is difficult to estimate with any degree of certainty" what the income of the project would be, provided initial estimates of a twelve month budget for the enterprise, based on two shearings and on 2006 Cape Auction prices:

While this estimation is given for the gross income, Grobler stresses that "the students need to get an income from the project; the amounts involved will depend on the net income, budget requirements for the next year, and whether they wish to build up reserves for when they start out on their own".[10]

It is clear that from a financial point of view, the Angora goat farmers are being provided with an important opportunity to build the basis of their stock holdings for future farming.

### Boer goat and sheep farmers

The boer goat and sheep farmers are all individual farmers and generally farm their stock individually. A number of the farmers do, however, farm in a more cooperative manner – looking after each other's stock, dosing the stock together, working out ways to look after the new-borns together and so forth. There is also some ill-feeling or competition between the farmers, with some farmers accusing others of being drunkards and lazy, and not looking after their animals.

The animals of the farmers are obtained from a variety of sources. Some farmers obtain the

## Figure 3.8: Piet Loff and his helper herding the goats into the enclosure for marking

10 Personal communication and unpublished document provided by Grobler for this research.

## Figure 3.9: Piet Loff and his goats

## Table 3.4: Estimated income associated with the Angora goat enterprise

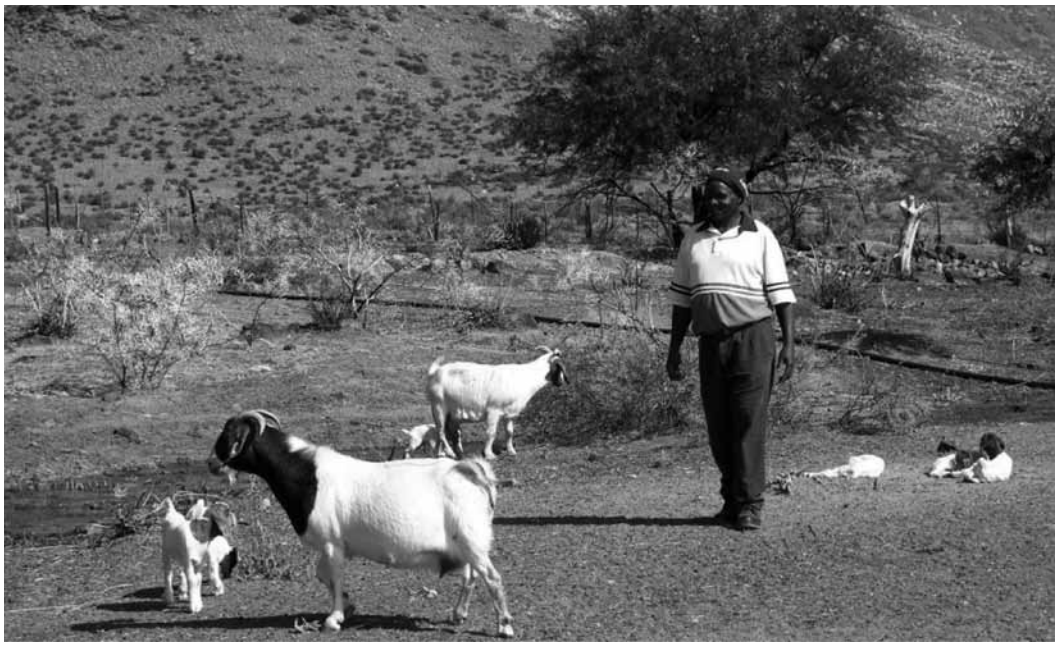
| | Mass | Price/Unit | Number | Value |
|---|---|---|---|---|
| Production income | | | | |
| Hair: kid | 1.8 kg | 122 | 80 | 17 568 |
| Hair: young goats | 3.5 kg | 74 | 70 | 18 130 |
| Hair: ewes | 4.0 kg | 50 | 100 | 20 000 |
| Sub-total | | | | 55 698 |
| Trade income | | | | |
| Old ewes | 40 kg | 8 | 20 | 6 400 |
| Kapater kids | 20 kg | Sold as farming stock | 35 | 8 750 |
| Ram | 60 kg | 6 | 1 | 360 |
| Sub-total | | | | 15 510 |
| Gross income/100 ewes | | | | 71 208 |

animals as gifts from farmers where they have previously worked; others buy the animals from other emerging farmers, from commercial farmers or other sources.

At this stage the aim of the sheep and goat farmers is to either just keep the stock that they have, or to grow their herds or flocks. Not many of the offspring are therefore sold – only the spare rams are sold. The key spokesman indicated that he had had 18 goats prior to the farm being bought, but had been forced to sell them. With the current lambing season he had once again built his stock up to 18 – but he "dreams of animals" and so was intending to expand his stock significantly.

The goat and sheep farmers generally sell their stock in the local township, but those that are growing their stock numbers have begun discussions and negotiations with local large-scale farmers to understand the marketing arrangements and to see how they can tie into these so that they can get better prices for the stock that they do sell. In addition, they have begun discussions about changing the breed of the goats in order to get a better quality animal and thus a better price when they are sold.

**Figure 3.10: Oom Elvis and his prize ewe that gives him twins or triplets each season**



### Vegetable farmers

There are two types of vegetable farmers – those who farm for themselves and those who are part of a project sponsored by the National Development Agency. There are four farmers who farm individually on portions of land that are put aside by the chairperson and endorsed by all. The right to the specific portions of land seems to have gone on for a number of years with one farmer claiming that some of the other farmers want his piece of land because it produces very good sweet potatoes.

The individual farmers produce on about half a hectare of land each. Mr Christiaan Witbooi, the most successful of the vegetable farmers, farms with his brother on their allocated plot. They try to get the various inputs in the cheapest way possible:

- He bought seed (tomato, pumpkin and water melon) in the first year that he farmed on the land, in 2006; since then however, he has successfully produced his own seed.
- He is also a pig farmer, and has got links with a beef farmer that used to gather his stock in the town before selling them; Witbooi has used the manure from these animals successfully in the last two years.
- He has purchased insecticides and other poisons from the local nurseries and other shops in the town at prices higher than he would pay if he was a member of the co-operative (which he can not become because of the high joining fees).
- His highest cost is transport – to take the fresh produce to town to sell.

While he could not provide the detail of his costs during the season, the payment of which is done from various sources through the year, Witbooi indicated that he had made a "profit"[11] of R6000 in the previous season. Most of the produce is sold to residents in the local town of Prince Albert but some is kept for the use of Witbooi and his brother.

## Livelihood impacts

The farmers currently on the farm employ a range of livelihood strategies other than agriculture, the key ones being pensions and other state social grants, the running of taverns in the local township, wage labour, taxi ownership and so forth. More importantly, however, it seems that many of the farmers engage in other income-generating activities to be able to invest in agriculture. In the onion co-operative, for example, some of the members have specifically obtained work in other jobs to provide some of the finances for the farming whereas the Angora farmers have adjusted work responsibilities to

11 It is assumed that this is total income from the sale of produce – primarily tomatoes, pumpkin and water melons.

enable some members to take up opportunities that became available outside of the farm[12].

Most of the farmers that use land at Treintjiesrivier appear to use the social relationship developed there for those specific activities only – they do not appear to engage in joint activities outside of the farm. The key exception here is the relationship between the chairperson and the deputy chair of the Association, who farm together on the farm, engage in joint family support activities when needed in the town, and are continually involved in organisational activities around the Farmers' Association.

The farm does not seem to be used for other livelihood strategies such as the collection of wood, flowers, and other natural resources, nor does it seems to be used for other business premises. As is normal in municipal commonage situations, the use of the other natural resources is assumed to be against the contracts that users have, but this is not clear as the contracts have not been finalised as yet. The management of the resources will be important and fortunately, as this point, it is under control. It is known, however, that the onion seed farmers cut down and sold some of the trees on the farm in order to get funds to buy fertiliser and other production needs in the previous season. Importantly, they were not disciplined or reprimanded for this and so it may have a negative effect for the future attempts to manage resource use.

## Environmental dimensions

There are two key environmental issues that face farmers in the Karoo, in particular the stock farmers, namely dealing with predators and managing grazing regimes in a context of ongoing drought. The main factor in this is fencing so as to manage the movement of stock and to keep predators out.

With regard to grazing, the history of land use in the area is worth noting:

> *"Early white colonial pastoralists adopted the migrant herding strategies of the Khoikhoi herders. Transhumance practices (migration with livestock to more productive areas, as and when seasons or rainfall dictated it) constitute an appropriate and sustainable environmental management strategy in the Karoo. Where rainfall is sparse and patchy, this arid, 'event-driven' eco-system could only be used on an opportunistic basis by highly mobile human groups taking advantage of highly localised conditions." (Atkinson, 2005, 2)*

With the shift to freehold tenure, on a surveyed piece of land, Atkinson quotes Hoffman to show that:

> *"Settlement around privately owned water sources and rangeland meant that grazing orbits shrank dramatically. Livestock was herded from rangeland to water source to kraal on a daily basis… (and) (t)his kraaling system has been blamed for a great deal of the degradation of the Karoo rangelands." (ibid, 2)*

A report by Phuhlisani goes on to say that:

> *"(i)t was only with significant intervention of the state and the provision of a spread of infrastructural support (windmills, fencing and so forth) that enabled the introduction of rotational grazing methods of farming and thus the relative sustainable continuation 'of alien land use practices' on 'inherently incompatible indigenous ecosystems.'" (Phuhlisani, 2008, p.79)*

This sensitive context needs to therefore be treated with care because once damaged, it will take a long time to rehabilitate.

The Prince Albert Commonage has a lack of fencing on the farm – it does not have jackal-proof fencing on the perimeter and internally the stock-proof fencing has broken. Besides the social difficulties of managing grazing in a communal management arrangement (discussed below), the lack of good fencing means that it is almost impossible to manage the grazing in an environmentally sustainable manner. The result is essentially as described in the Hoffman quote above – that overgrazing is evident around a few water sources while much of the land is not grazed at all. It is therefore fortunate that the total number of stock on the farm is well below the carrying capacity for the whole farm at the moment. The Department of Agriculture is using its CASP funding programme to try to address this fencing problem over the current two years.

The management of predators is a national problem of increasing proportions; as state support for agriculture decreased over the years, it appears that fencing of large extensive grazing

12 One of the farmers is an experienced fencing specialist and an opportunity came up for him to fence a local farmer's farm. The farmers adjusted schedules and responsibilities to enable him to do this outside work.

farms has been one of the main areas that has suffered.[13] The result is that jackal, caracal and other small predators essentially have free reign on vast areas of the central parts of the country.

All the farmers on the Prince Albert Commonage farm have suffered stock losses as a result of jackal and caracal attacks – the most severe was a loss of 20 sheep from a flock of 40! The Department of Agriculture is once again assisting in the upgrading of the perimeter fencing through their CASP funding, but the problem is then going to be getting rid of the many predators that are already on the inside, who have open access to the vulnerable stock. This is an issue which the Farmers' Association will need to address as the new fencing goes up.

## Social and institution issues

### Tenure arrangements

The land is commonage land acquired through the Department of Land Affairs' Commonage programme. The land is therefore owned by the Municipality, from which the farmers are required to lease it. Formally the Municipality is supposed to manage access to the land through a system of contracts and via land allocation. In practice, however, the Farmers' Association leadership have played that role in the absence of such management by the Municipality, which appears to be distracted by a state of perpetual political transition and turmoil.

### Contractual issues

According to the Commonage programme of the DLA, when a municipality receives land through the programme, it is required to establish a commonage committee to provide overarching management of the land, as well as entering into lease agreements with the users of the land.

At Prince Albert the users of the land have no contract with the Municipality despite having requested such a contract for a number of years. For the users, contract will provide them with a formal document enabling access to government and non-government grant funding and other support. Given the intense political infighting that has been prevalent in the Municipality, as well as the lack of capacity to develop such a contract, it has been an ongoing issue.

A local NGO, the Southern Cape Land Committee (SCLC), has been assisting the Farmers' Association and the Municipality in developing the contract but it appears that there has been an inability to find solutions to what appear to be different approaches. The SCLC has developed a draft contract which would be signed between the Municipality and the Farmers' Association, rather than between the Municipality and the specific users. The Municipality has objections to such a formulation, preferring to sign a contract with specific individual users. However, given the political tension in the Municipality, this approach has not been formally communicated to the SCLC and to the Farmers' Association, and no progress has therefore been achieved in finalising the contract.

The current situation therefore is that the only farmers who have any formal contract are the Angora goat farmers, which is a jointly signed agreement between the 'trainees', the Municipality and the SA Mohair Association. The other farmers, including the NDA project participants who received a total of R817 000, are all farming without signed contracts.

### Importance of the Farmers' Association – inhibiting open access

The lack of involvement by the Municipality, and therefore the absence of any external management intervention, is not uncommon in municipal commonage situations around the country. Anderson and Pienaar's study has highlighted this clearly (Anderson and Pienaar, 2003). In the Prince Albert situation, however, the tenure arrangements have not disintegrated into open access. While there are complaints about the leadership of the Farmers' Association from the membership, it is apparent that the association has stepped into the void and maintained some control over the process of acquiring and using land. The following process is required if a person wants to use land on the farm:

- They must take a copy of the Association's constitution and their identity document to the police station to be stamped.
- They must get a stamped certificate from the police to say that the livestock that they might want to bring onto the farm are not stolen.
- They must take the Constitution and the certificate to the Municipality to be registered.

13 Farmers in the Central and Hantam Karoo, as well as in the northern areas around Kimberley reported these developments in separate interviews.

- The Association leadership will then identify the area where they can farm on the land.

While this system is new, and there are tensions, it is apparent that there is control over the entrance and exit of land users. While on the farm, the researcher witnessed the approach by a new entrant who requested, and was granted, a specific site in order to farm with livestock, separate to the other farmers already on the farm.

The Farmers' Association has a management structure which, besides the formal portfolios, includes a 'coordinator' in each of the various divisions through whom other people work – in the goat and sheep farmers, the Angora goat farmers, the vegetable farmers and the onion farmers. While this is quite a loose arrangement, these coordinators act to ensure there is some order maintained in particular sections.

## The role of the 'Champion'

The chairperson of the Farmers' Association plays an extremely important role in the whole commonage initiative. He has been part of the group for a number of years although only joined the group in the latter period as the moves towards acquiring the land were at an advanced stage. While he grew up on the farms, as a child of farm worker parents, he moved to town at an early age, where he completed his matric. Importantly, he joined the South African army permanent force and the commandos and in the process – according to him and others in the town – developed a number of organising and management skills. While there are a number of people amongst the farmers' group that complain about him and feel that he favours one group above another (the onion farmers, for example, felt that he favoured the vegetable producers), it is apparent that he is successful in balancing the interests of the different groups. There are a number of key roles that he plays:

- If there are any disputes, he is called upon by the participants to mediate or arbitrate.
- He has developed a number of links to various service providers and grant makers and is able to combine the different needs of the different farmers' groups and develop training programmes and seek funding opportunities and market linkages for the different groups of farmers and other members of the Association. Importantly, he is assisted by the SCLC in this regard.
- He develops unity amongst the farmers and acts as their spokesperson. Any individual or company trying to consult with the Association or its members is required to go through the Chairperson. The Chairperson indicated that some people have had a problem with this approach, fearing that he is a gate keeper. However, it was evident that where formal procedures were not followed, misunderstandings by outsiders created expectations and assumptions by farmer members which could not be met in the context. The onion producers, for example, wanted to expand their production, and the previous owner of the farm (their mentor) encouraged them to do so and arrived to plough additional land one day. The land that they were to plough however had been allocated to other farmers even though they had not yet worked the land. The result was an unhappy group of onion farmers (antagonistic to the chairperson) and a disgruntled previous owner who felt that his offers of support were not appreciated and that "the farm was in chaos".
- He provides a 'service' to the members to explain the complicated issues involved in the development of the farm and their farming, particularly the legal aspects, in terms that they understand.
- He takes the initiative in formalising issues in an attempt to ensure security of tenure of the farmers on the land; other arrangements are also formalised through other mechanisms. In particular, with the help of SCLC, they have developed legal entities where these are necessary.
- He plays the crucial role of mobiliser or 'dynamiser', particularly in getting the farmers to work together in a cooperative manner.

In the context where there is a significant lack of support from the state, the role performed by the chairperson has been absolutely critical for the success of the farmers in their various enterprises, and for the initiative as a whole. A project 'champion', 'dynamisor' or development facilitator appears to be crucial for the success of land and agrarian reform initiatives.

## Commonage Committee

The DLA's Commonage Policy also requires the formation of a Commonage Committee and in

the Prince Albert situation a Committee was established for Prince Albert municipal area as a whole – not just for the Treintjiesrivier farm. The Committee includes the following role players:

- Prince Albert Municipality
- Prince Albert emerging farmers and tourism entrepreneurs
- Klaarstroom emerging farmers
- Prins Albert Weg emerging farmers
- Leeu-Gamka emerging farmers
- Vyebossie Women's Association
- Southern Cape Land Committee
- Department of Agriculture (Laingsburg)
- Department of Land Affairs (Beaufort West).

Its primary task, according to the Constitution, is to provide a "platform for all role-players to facilitate cooperation and communication for the sustainable use of commonage land in the Prince Albert Municipal area" (Prince Albert Municipal Commonage Committee, 2008). The Committee has the following secondary roles, amongst others:

- To develop contracts to hold people responsible for the sustainable use of the land and to ensure that these contracts are reasonable and affordable;
- To establish commonage committees for each farming enterprise or group and to stipulate roles and responsibilities of the committees;
- To support users in their land rights to ensure security of land rights
- To identify resources for funding and technical training for livelihood projects
- To identify markets for products, and
- To identify and obtain additional land, where necessary.

While these aims are important and relevant for the success of the various initiatives on the land, the fact that the Committee falls under the Municipality has meant that its role has been limited. It does however provide a crucial point around which the various important role-players can meet and engage on the issues facing the farmers. In reality, therefore, the Committee appears to provide the institutional backup for the Chairperson and the role he plays. If the Chairperson was not there, playing the role he does, it is unlikely that the Committee would have any role.

## Extension support

The different farmers have differing levels of extension support, depending on who they are linked to. The goat and sheep farmers appear to have no extension support from any source and the vegetable farmers are similarly not supported. The onion farmers and the Angora goat farmers, on the other hand, are supported in two ways – there is a local farmer who acts as the mentor and then each farming group also has an external specialist (or 'project manager') that visits the farm regularly to monitor developments and offer advice.

It appears that the Department of Agriculture, while they have a local "community development worker", do not provide any ongoing extension advice to the farmers. The nature of their support appears to be:

- As a funder of the infrastructure developments (through their CASP funding);
- As a training facility, providing general agricultural courses at their offices in Oudtshoorn; and,
- Providing full farm planning services (through their implementing agency – CASIDRA).

Departmental support to individual farmers in their enterprises is therefore essentially non-existent. Moreover, if farmers do not have a relationship with a local farmer, or through a marketing company, they have had to develop this on their own.

## Mohair Trust

The Angora goat project is specifically designed as a mentored programme of farmer development initiated and guided by the industry.

The aim of the project is to train emerging Angora goat farmers who, after an approximate three years hands-on training period, can graduate from the project and have the necessary skills to become active, self-sufficient commer-

cial producers of mohair. It is envisaged that every project should be able to rotate a group of students every three years.

The training includes breeding, kidding, the shearing process and classing of mohair, animal health, grazing management, financial management, budgeting, as well as management of infrastructure. Where necessary, experts in their specific fields will be involved to assist with the training (personal communication, G. Grobler, 2008).

In the Prince Albert arrangement, there is a project coordinator who is based in Jansensville in the Eastern Cape. He provides the quality controls on the hair that is produced, the maintenance of the infrastructure and the overarching management issues. He also manages the sale of the hair and animals in order to get the best price. Locally, a commercial farmer, who is also a very successful mohair farmer and on the board of the Mohair Growers Association, provides more immediate mentoring on farming practices.

At the time of this research, the programme had just begun and so it is unclear how successful this mentoring programme would be with this group of farmers; however, a similar approach is in process with another group of farmers in the Eastern Cape, and reportedly has been very successful thus far.

### Karoo Seed

The onion seed farmers are in a more formal contractual arrangement, and while the company makes allowances for the fact that these are new farmers, through providing access to cheap plant material, for example, the relationship is much more of a commercial contract farming arrangement. The 'mentoring' from the company, while important, is therefore much more that of a monitoring role where the company wants to be assured of quality produce in the end, especially given that the company is extending credit through the season.

The onion farmers therefore approached the agricultural representative on the Municipal Council to assist them in identifying a suitable mentor for their operation. The councillor approached the previous owner of the farm, who was also a vegetable seed producer, and he agreed to provide such a service to the farmers. This relationship appears to be based on a personal commitment by the farmer to supporting emerging farmers (and a link to the farm – that he was forced to sell due to a family tragedy). It has been extremely advantageous to the seed farmers, as it has included access to a tractor and other equipment, continuous and immediate advice through the season, and encouragement in the process of farming.

## The future

The future opportunities for the farmers involved in farming at the different levels of the farm are dependent on a number of aspects: access to land to expand their initiatives, the extent to which they are able to develop the expertise and capital to expand, the extent to which they want to remain at a small-scale level, and so forth.

Taking these issues into account, the following issues impact on the different groups of farmers, affecting their future prospects:

- For stock farmers, the Area Based Plan provides for access to increasing numbers of hectares acquired under the DLA's Proactive Land Acquisition Strategy (PLAS) programme – these are conceptualised in terms of PLAS 1 farms (where farmers will be able to grow their stock numbers to 90 small-stock units) and PLAS 2 farms (where they will be able to grow their stock numbers to 300 small-stock units). Currently, land acquisition in the district is proceeding according to plan according to the DLA but the additional support and management systems proposed in the ABP are not being implemented due to confusion between the DLA and the Department of Agriculture on the implementation of the Land and Agrarian Reform Project (due to be coordinated by Agriculture). Land will be available, but it appears that the necessary controls, which operate on the commonage farm through the farmers' association, will not be present on the new farm acquired.
- The problem facing the goat and sheep producers is that they have little support in terms of access to capital and expertise. The expansion of production, as is the intention of those that were interviewed, is therefore likely to be slow even with the acquisition of additional land.
- Angora goat farmers are being well set up to become independent producers (with

support in all areas) and, with access to additional land after the three year initial training programme (through the PLAS programme), it is likely that they will be successful producers in the future.

- Arable land is limited in the area, with water the primary constraint particularly further away from the mountain. There are no specific proposals to acquire arable land under the ABP, but there are allocations to joint ventures which are primarily on arable land in this district. The onion seed producers have the opportunity to become independent farmers but access to land is going to be their greatest constraint – and is already a constraint. The group has a number of skills and experience beyond onion seed and options to diversify are also possible – ostrich chicks, vegetable and other seed production have all been highlighted as options by the farmers and, given that they are all produced in a contract farming arrangement, it is certainly possible that such developments could happen – if the primary constraint of access to land is addressed.

- The lack of formal contracts has been a constraint for all the farmers as it has inhibited their sense of security of tenure and of the investment in the land that they have obtained access to, and they have been unable to use the contract as a means to secure a loan of whatever size. If there is increasing involvement of municipality in management of the farm and in the finalisation of the contracts then it is likely to provide the possibility for more structured developments by all farmers in the future. This is unlikely at present, however, as the current political battles are too strained between the ANC and the DA.

- The ABP proposed realistic institutional arrangements in the district (building on already existing institutions) – in terms of supporting the organisation of farmers, the provision of technical support and so forth. If these structures are implemented, then greater, coordinated support to all the farmers can be expected. This may then provide the much needed support at a general level, but also at a specific level with, in particular, the goat and sheep farmers. As discussed above, however, this is dependent on LARP being clarified in the province and then in the district, and sufficient resources being applied to its implementation.

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List of interviewees:

The Onion Farmers including Mr Koos, Freek and Isak Hinkman, Bianca Alexander and Mrs Hinkman.

The vegetable project workers including Mr Pieter Williams, Ms Hester Abrams, Ms Marie April and Mr Klaas Stols.

The individual vegetable farmer – Mr Hendrick Witbooi.

The Angora goat farmers – Mr Piet Loff.

The Goat farmers – Mr Elvis Guga.

The Chairperson of the Association – Mr Jan Loff.

The Acting Mayor – Ms Gaye von Haselt.

The Angora goat mentor – Mr Clive van Haselt.

The Angora project manager – Mr Gielie Grobler.

The representative of the Klein Karoo Seed company – Mr Nantie Fourie.

The Department of Land Affairs official – Ms Gaynor de Jager.

The Department of Agriculture official – Mr Charl du Plessis.

# 4 Chata Irrigation Scheme: individuals pooling their land and farming as a group

*Larry Field, Umhlaba Consulting Group*

## Introduction

Chata Irrigation Scheme is an example of smallholder irrigation scheme where landowners have grouped their plots together to farm together commercially. The case is particularly interesting from the perspective that the scheme is partly managed by its support non-governmental organisation (NGO). In this case the NGO has largely taken over the essential aspects of the management of the business, including financial and production management. This relationship is however structured in a typical NGO/community partnership manner, whereby the partnership is not defined by a paper contract, but rather by relationships, and where consultation and joint-decision making takes place on a reasonably extensive scale. In other words there is perceived mutual ownership of the outcome of the partnership work.

The scheme is located in the village of Chata on the slopes of the Amathola Mountain Range, some 230 kilometres from East London, and 17 kilometres beyond the town of Keiskammahoek. Chata is within the Amahlati Local Municipality.

The scheme is 22.75 hectares in size, made up of 20 individual plots. The plot owners became members of the scheme. Although 22 farmers were initially trained for participation, currently only 15 work and benefit from the scheme.

## Historical evolution of the scheme

### The context of revitalisation

The revitalisation of the scheme is one outcome of the settlement of the restitution claim originating from the betterment planning that occurred in the 1960s. The settlement was finally awarded in 2000. As part of the settlement, 50% of the award went to individual households, while 50% was allocated to community development. The development process has been administered by the Amatole District Municipality since mid-2001. Between 2001 and 2003, the community and various stakeholders participated in an integrated planning process which outlined how the community was to be re-developed and how the award money was to be allocated.

The success of the restitution case (particularly as a betterment case) rested on the partnership between the community and the Border Rural Committee (BRC), an NGO based in the Eastern Cape. This partnership around land rights laid the foundation for the ongoing relationship in relation to the planning and implementation of the community development initiative.

The Chata Integrated Development Plan sets out different focus areas for development, namely: infrastructure, forestry, agriculture and other LED initiatives (including tourism). Infrastructure developments flowing out of this plan have included roads (including tarring of certain steep access roads), a community hall which contains a resource centre and a crèche, as well as school classrooms. The forestry investment included rehabilitation of the wattle plantation and the planting of a pine plantation.

The main focus of the agricultural sphere has been the irrigation scheme. The scheme was based on individual family-owned plots which had been developed in the past with a flood irrigation system.

The socio-economic profiling of the villages that took place in 2000 identified 422 households living in Chata encompassing some 2300 individuals. Most of these families depended on remit-

tances from family members working outside of the area, and government grants, while only an estimated 8% of household income was derived from agriculture. Of the people living in the village only 58 had formal employment, and 13 of those were employed in the agriculture and forestry sector.

### 1999–2002: pre-scheme establishment

A small number of the land owners worked their land individually. BRC provided basic agricultural support to the land owners who wanted to cultivate their land. The results and outputs were disappointing, leading to BRC putting their support on hold until the scheme could be revitalised. This was the period in which the focus of work for BRC was on facilitating the settlement of the land restitution case.

### 2003–2004: initiation with group management

The first years of the group scheme were a difficult period for the initiative. The scheme was initiated in 2003 with a focus on infrastructure rehabilitation, training, and group establishment. The first harvest by the group occurred in 2004.

The infrastructure rehabilitation included fencing, levelling for irrigation, cleaning irrigation furrows, dam repairs, and soil preparation. Approximately 30 people gained short-term employment on this work. As part of the overall community development, the road that leads past the scheme was upgraded and is now a good quality gravel road.

The most important aspect of the initiation was that the scheme was established as a group scheme with the plot-holders as members. The group became the Masiphathisane Farmers Association, a constitution was developed, and members were provided with institutional training. The arrangement was that the members would be assisted by BRC, who would provide inputs, administer the finances, and ensure that advice and direction were provided. For the purpose of technical support, a farm manager from East London was contracted to provide planning, instruction and in-field production advice. Members were to receive any income earned from the crops, based on the amount of work they had put in, as tracked through the 'labour register'.

The first planting was only about 1 hectare in size and consisted of maize and cabbage, and the crop was not very successful. The maize was lost due to the lateness of planting and was therefore affected by the weather. This problem was partially due to the difficulty in securing the timely services of a tractor for ploughing. The cabbages were successfully harvested and sold, although size and quality was poor. The members estimated that their earnings were between R320 and R1000 per member for the year. Participation in the scheme rapidly dropped to about 13 from the original 22.

In the members' own evaluation of this period problems were identified as: a lack of vision among themselves, not receiving any income (wages) to motivate work, and members being 'lazy'.

### 2005–2006: evaluation and transition

By 2005 those involved in the project began to look for a new direction to save the initiative. The key problem areas were identified as being the lack of real motivation from the participants and inadequate management on the project. The first issue was linked to the lack of consistent and adequate levels of financial returns. Members perceived the situation to be one of 'volunteerism' on the project, and people clearly did not 'buy into' the concept of earnings through profit. In this context, it became understandable why external, contracted management/mentorship would prove inadequate. The contracted farm manager expected members to take responsibility without being managed on a daily basis, and react to farming needs on their own initiative as well. For their part, BRC felt the contracted manager was unable to overcome local problems and motivate the project members sufficiently.

It was therefore agreed that the project would be 'taken over' by the CPA. Formally, that meant that the project members would be employed as workers, and that the CPA would take ownership of the project. In terms of what the project members wanted, the CPA resolved to use its funds already ring-fenced for agricultural development to pay monthly wages. This was initially agreed for a one year period and later extended. In terms of management, agreement was reached with BRC that it would expand its role on behalf of the CPA and take over as full-time project managers.

### 2006-2007: expansion and new beginnings

The following year and a half saw a substantial financial injection into the scheme as well as an increased level of management support aimed at improving the scheme's productivity.

Funds were secured from Tina Sinakho and the National Development Agency during this period. Funds went to upgrading the scheme's assets. The old shed on the scheme was renovated so as to accommodate an office, equipment storage, produce storage and a large garage for farm vehicles. A one-ton truck was acquired for marketing purposes.

In terms of management arrangements, the contract with the East London based consultant was not renewed, in favour of appointing a manager from among the beneficiaries. This manager works under the direction of the designated BRC project officer. The members received regular wage payments leading to greater commitment to the scheme.

Production levels were also increased significantly during this period. In 2006, about 15 hectares were planted with a wider variety of vegetable crops. Maize was dropped off the planting list. In 2007, approximately 300 fruit trees (mainly apples and pecan nuts) were planted. However, the scheme continued to be plagued by poor crops. The 2005/2006 summer season crop was affected by heavy rains which caused water logging in the fields.

During this period the scheme began to attract attention as a success story, seeing a variety of visitors, including the MEC for Agriculture, and delegations of foreign funders.

### 2008: striving for profitability

The 2008 period appears to be one in which the focus has begun to shift to increasing productivity and effectiveness, in search of scheme profitability. Existing crops were been successfully produced and marketed both locally and in the East London area. Crop diversification and experimentation continued. New crops such as wheat and tomatoes were planted for the first time. The failed fruit orchard was replaced with a new planting of 500 apple trees, this time with better advisory support.

New equipment was purchased with NDA funds, including a tractor, a ridger, a disc, a ripper and a trailer. Two Rotivators (weeding machines) were also bought and replaced use of hand hoes.

However, concerns about the long-term viability of the scheme are evident. BRC and the scheme have begun to lobby the Amathole District Municipality to support the installation of a drip irrigation system to replace the flood system. This is expected to improve crop productivity substantially.

Institutionally, a management committee was set up, including the project members, BRC, and the CPA, with the intention of improving local participation in decision making and management processes.

## Natural resources

The scheme is located in the upper reaches of the Amatola Mountain range. Altitudes in the area range from 800 metres to 1800 metres at the mountain top.

Climatic conditions recorded in the Keiskammahoek area are as follows:

However, being higher in the mountains, conditions in Chata may be more extreme than presented in this table. Greater detail of the climatic conditions can be found in the Chata IDP (2003).

The main water source for the area is the Chata River and the many small mountain streams which feed it. The river is dammed about a kilometre below the scheme (the Chata dam).The quality of water is reported to be extremely pure. Water is used downstream for domestic needs. The vegetation above the scheme is rich in natural Afromontane forest, as well as large areas of pine and wattle plantation. The lands immediately surrounding the scheme comprise grasslands of the Dohne Sourveld variety.

A soils analysis was carried out by the Department of Agriculture in 2001. Approximately 51 hectares have been irrigated in the past. Soils identified were Oakleaf, Cloverly, Shortlands and Vaalriver. The depth of the soils varies considerably and this and the different soil types indicate the need to carefully match crops to areas within the scheme.

A generalised vegetable crop suitability framework, based on the assessment of climatic conditions and the soils, was identified as follows:

## Table 4.1: Minimum and maximum temperatures and precipitation

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean min temp (Celsius) | 16 | 16 | 14 | 12 | 8 | 5 | 5 | 6 | 8 | 11 | 13 | 15 |
| Mean max temp (Celsius) | 30 | 29 | 20 | 18 | 14 | 11 | 10 | 13 | 16 | 18 | 25 | 27 |
| Mean precip. (mm) | 88 | 95 | 111 | 62 | 48 | 29 | 30 | 38 | 64 | 87 | 91 | 83 |

- Crucifers (cabbage, broccoli, spinach, etc.) are suitable climatically and for Cloverly, Shortlands and Vaalriver soils, with the best growing period being October to April.
- Bean varieties are suitable for any of the soils as long as the drainage is good, and is most optimal from November to March.
- Cucurbit (squashes, cucumbers, etc.) are suitable in well drained soils between November and March.
- Potatoes are suitable on well drained soils, with optimal growing periods being December to February.

## Physical infrastructure and resources

The scheme is 22.75 hectares in extent. The lands are divided into five sections. Sections 1 to 4 are fenced and farmed. Section 5, the southernmost section next to the school, is not fenced or utilised at the moment.

The irrigation system is a gravity-fed system via cement furrows with two water draw-off weirs on the Chata River. There is also a storage dam that is fed from a furrow from the river. Section 1 is fed directly from the river. The dam feeds Sections 2 and 3, and can also feed Section 4. Section 4 is primarily fed from the lower weir, except in times of very low river flow. Section 1's irrigation channel requires maintenance (leakages/unmaintained), but the other channels are in reasonably good condition.

The in-field irrigation is a flood system. However, many of the flood channels are not adequately levelled, and coupled with poor drainage soils in some sections, achieving appropriate irrigation for all crops is difficult. This problem has resulted in parts of Section 2 and 3 being left unutilised.

The installation of a drip irrigation system is proposed to overcome the problems of the flood system. A cost estimate of R700 000 has been obtained for the installation of the system for the whole scheme. It is hoped that the Amathole District Municipality will fund this development, even if installation takes place in phases.

The project has a relatively new storage and administrative centre, which includes office space, equipment storage facilities, and a large storage/shed area for vehicles and crop storage (but still waiting for doors to be put on the shed area).

The scheme has its own tractor, plough, discs, ripper, a one-ton delivery vehicle, two weeding machines, sprayers, hoes, spades, buckets and other small equipment. All equipment is in good to excellent condition, with much of it being less than two years old. The tractor, however, is formally registered in the name of the CPA and also utilised on the forestry project. Equipment is maintained, and during the assessment one of the weeding machines had been taken in to the supplier for repairs.

The fencing around the sections is in good condition and is goat-proofed. The gravel access road to Chata is in excellent condition. The scheme is located along this road.

## The production system

### Crop selection

The scheme has focussed on vegetables for its income. In the longer term, income is to be realised through fruit and nut orchards. Future planting will include fodder crops.

In the 2007/2008 summer season approximately 14 hectares were planted. Current land utilisation is as follows:

- Section 1: mainly pecan nut trees (of which 90% are dead)
- Section 2: replanted with 500 apple trees
- Section 3: planted with vegetables and wheat
- Section 4: planted with vegetables and wheat.

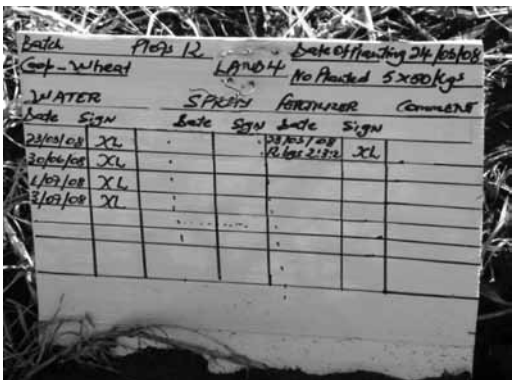
For the 2008/09 summer season the following vegetable crops have been planted: cabbage, spinach, beetroot, broccoli, green pepper, butternut, potatoes, tomatoes and two hectares of wheat. Approximately 10 hectares of vegetables have been planted so far.

In 2007 the scheme expanded into fruit and nuts, in a bid to become more profitable. These were mainly pecan nuts and apples, but also included peaches, plums and pears. Some 300 apple trees were planted. However, the scheme members and farm manager had had no prior experience of deciduous trees and training was only received after the trees were all planted. It is believed that due to incorrect watering (linked to the positions in which the trees were planted) and incorrect fertilisation the trees all died.

Similar problems were experienced with the pecan nut trees with the majority of the trees dying. It is believed that the cause of the problem is related to the poor drainage from the flood irrigation channels, and possibly also frost problems.

The scheme has recently replanted 500 apples trees and is hoping for better results. Besides the

## Figure 4.1: Photos of Chata Irrigation Scheme



one-day training on apples, they get *ad hoc* visits and telephonic advice from the specialist who supplied the saplings.

### Production planning

The BRC utilises a simple production plan guide which sets out crop cycles, seed and planting requirements, and establishes types and quantities of fertiliser, pesticides and herbicides needed. The plan also requires crop rotation in the fields. The costs and anticipated income associated with this are set out on a spreadsheet.

Purchases of inputs are done through Umthiza in Keiskammahoek, although sometimes purchases are made in King William's Town. Orders always go through BRC, although needs can be identified to the farm manager, if the planned inputs prove to be insufficient or there are unexpected needs. BRC pays the accounts directly to the suppliers.

### Staff structure

The scheme operates with 16 landowners employed on the scheme. Besides land owners there are three full time labourers employed and two drivers. The non-landowner employees started in August 2008. The labour component is structured as follows:

Of the five non-labourer posts, four are held by males and one assistant supervisor is female.

### Management responsibilities

While responsibilities can broken down to where responsibilities primarily lie, the overall approach is a consultative one which emphasises reaching consensus. BRC's management role on the scheme has developed out of its formal appointment as implementation agent for the restitution development by Amathole District Municipality, which administers the restitution funds. BRC takes primary responsibility for:

- Annual planning (strategy and production goals)
- Financial planning
- Administration
- Production planning (quarterly)
- Marketing.

The farm manager takes primary responsibility for:

- Implementation of production plans
- Monthly and weekly task planning meetings with members
- Oversight of labour management and instructions to supervisors
- On-site management
- Ordering of inputs as and when required
- Representing the scheme.

Supervisors take responsibility for:

- Organisation of their teams in the field
- Keep of timesheets
- Advising farm manager of needs and problems
- Standing in for the manager when he is away.

This division of responsibilities is reflected in the approach to the farming of the apples. The decision to plant apple trees would be motivated by BRC to the scheme members as part of the an-

## Table 4.2: Employment structure at Chata

| Position | Wage (per month) | Employer |
|---|---|---|
| Farm manager | R3 000 | BRC |
| Supervisor | R1 300 | CPA |
| Assistant supervisors (2) | R1 100 | CPA |
| Labourers | R900 | CPA |
| Drivers (2) | R1 300 | BRC |
| Records clerk | R900 | CPA |

nual planning. Once this was agreed, BRC would source the funding and put the contracts and arrangements into effect. Consultation would occur with the farm manager as to which lands to allocate, and arrangements around the implementation of the planting, training, etc. The farm manager in turn would discuss this with the members, and a team would be selected to work on the planting and looking after the apples. The details of what needs to happen when would be agreed with BRC, and the farm manager would ensure its implementation through the weekly meetings and in-field guidance.

## Administration and financial management

The scheme employed a records clerk in 2007. The clerk is a scheme member from a family which owns a plot in the scheme.

Every Friday BRC collects records of sales and stock utilised, as well as cash from sales, and returns the records on the following week.

The project does not employ any security for their office or fields, and have not had any need for security.

The scheme does not have a separate bank account. All credit and financial arrangements are made via BRC. Income from sales are not used to offset expenditure (as input costs are from grant finance), and this income is paid over to the CPA twice yearly to utilise at its discretion. As the scheme members receive salaries they have no claim to this income.

## Marketing arrangements

Crops are sold through the following avenues:

- Direct purchases from the office
- Selling via the scheme's truck in nearby villages and towns (in Keiskammahoek they discount by R2 per bag for purchases of over 10 bags)
- Selling according to arrangements/orders in King William's Town and East London (BRC arranges for the orders and the price, phones through the orders to the office, and money is collected by BRC into the account directly).

It is estimated that roughly half the crops are sold in the Keiskammahoek area, and half in the King William's Town / East London area. But this depends on production levels. For the mass production planned for 2007, 80% of the crops would have been sold to commercial outlets. During 2007 some retailers were collecting directly from the scheme. Prices vary from crop to crop but staple crops like cabbage achieve better profitability locally.

Local sales take place regularly, but sales are always better at month end (after payday) and after pension payouts. For August 2008 average daily sales from the office were between R100 and R120 rand.

Clients in the Buffalo City area include:

- East London: Pick 'n Pay, Fruit & Veg City, Pro Veg, Spar (2 branches), OK Bazaars, Sanans
- King William's Town: Fruit & Veg City, Popular Market.

Marketing with the retail outlets is undertaken by the project officer and an administrator in the BRC offices. The marketing approach is fairly basic, in that retail prices are established, and then offers are made to the various outlets. Prices are highly negotiable depending on what the retailers are willing to pay. There are no formal contracts in place. The main weakness in the marketing is that no ongoing arrangements can be established in respect to retailers' needs be-

## Table 4.3: Some examples of prices recently achieved

| Crop | Price local | Price Buffalo City |
|---|---|---|
| Butternut | R12 | R20 |
| Onion | R15 | R20 |
| Cabbage | R2 | R3.50 |

Source: figures provided by the farm manager.

cause of the lack of stability in production quantity and quality. BRC must first assess what is at hand before attempting to market.

The scheme members do their own packaging.

In terms of the new wheat crop, the scheme will have to find a miller before attempting to sell and arrangements are not yet in place. In the longer term the intention is to mill locally and produce bread for local sales.

There is no formal marketing strategy that has been evaluated for the apples, but there is an intention to process the apples in Chata and produce jams for selling.

## Overview of external support to the scheme

### *Border Rural Committee support*

As the project initiator and manager BRC is intensively involved in supporting the project. This support includes:

- Production management
- Marketing
- Finance and administration (including contract administration)
- Liaison and administration related to restitution funds and various donor funding
- Public relations
- Strategic planning and capacity building.

In 2006 the value of BRC support (direct costs) were budgeted at R278 500, which included:

- Wages of the farm manager and the driver on the project
- BRC staff wages
- Finance and administration costs
- Farming input subsidies.

In 2007 this budget had undergone a major re-evaluation and was increased nearly threefold to R828 000, and in 2008 this again increased substantially to R1.2 million, with major increases in all categories of expenditure.

The budgets have been funded from the National Development Agency (NDA) to an amount of R940 000, by Tina Sinakho to an amount of R1.58 million, and various other smaller grants.

It must be noted that this is the first major agricultural management job undertaken by BRC. BRC lacks an experienced irrigation crop specialist and has had no prior experience in marketing. BRC is learning 'on-the-job', and while the fresh approach of the NGO in managing the project has paid dividends in overcoming the initial crises, many serious production and marketing problems could have been overcome with adequate technical knowledge within the BRC team or if BRC had more effectively brought in specialist inputs.

### *Other technical support for production*

The private company Earth Innovations was contracted to provide farm management services for the period up to June 2006. This was the period in which the project experienced its worst performance, although the causes underlying these problems are varied and cannot be allocated without further investigation. The scheme members still recall this relationship in a positive manner. This farm manager and BRC parted ways partially due to different visions as how to take the scheme forward.

Currently technical support is provided for the growing of the new apple trees. As part of the supply contract, the supplier (from nearby Hogs-

## Table 4.4: Key budget items for BRC

| Budget Item | Budget 2006 | Budget 2007 | Budget 2008 |
|---|---|---|---|
| Administration costs | R21 000 | R49 500 | R95 000 |
| Motor vehicle expenses | R10 000 | R22 000 | R37 500 |
| Programme costs | R22 000 | R74 000 | R140 000 |
| Project resources | R70 000 | R420 000 | R577 890 |
| Salaries | R65 000 | R110 000 | R407 600 |

back) assessed the lands for suitability and now provides advisory services. However these services are low intensity.

### *Support from the Department of Agriculture*

In the early years of the project BRC made it a specific objective to get the Department involved in the project. However, the response of the extension services from Keiskammahoek has always been limited. It was noted that extension officers periodically visited the scheme, but have done little more than collect information on the scheme. The extension service's slow response to requests for assistance in identifying diseases, etc., was highlighted as an example of the lack of support from the Department.

The Department has donated a tractor to the community of Chata (not the irrigation project), but this is currently parked at the community hall and evidently remains unused.

## Economic aspects

Production figures for 2007 and 2008 were made available although figures provided were not for the full year. The information is presented on an annual basis, due to the major difference in production levels between the two years. In 2007 production was planned at maximum farm utilisation with the intention of achieving financial profitability. However, there were massive losses due to heavy crop damage from rains. BRC staff acknowledge that these losses were largely caused by a lack of farming experience on their part. The impact of such losses caused trauma within the organisation and resulted in a scaling back of production levels in 2008. While this is understandable considering the losses sustained in 2007, production levels in 2008 will, for the year at least, require heavy subsidisation of the scheme.

### Production in 2007

Following the take-over of the farm management, BRC attempted production at maximum possible levels in 2007. The intention was to achieve overall profitability. Figures provided from May 2007 set out the following plans:

Production costs and returns were anticipated as follows (8 month period):

In terms of actual production the following planting and harvesting returns were achieved (9 month period):

This level of production should have generated at least R250 000. However, quality of the crop was reportedly to be mostly poor. Particular problems were also experienced in getting certain crops like spinach to the market fresh enough, resulting in further losses. In all a total income of only R110 000 was achieved during 2007, resulting in losses of over R200 000, excluding management/support costs or taking account of capital investments.

### Production in 2008

Following the problems of 2007, planting has been scaled down to about two thirds of 2007 levels (at a rough estimate) in terms of vegetables. However, with the planting of the new apple trees the scheme is still planting intensively.

## Table 4.5: Production plans

| Crop | Numbers to be planted (8 month period) | Actual Planted (9 month period) |
|---|---|---|
| Cabbage | 180 000 | 137 000 |
| Broccoli | 20 000 | 19 600 |
| Cauliflower | 20 000 | 25 000 |
| Spinach | 20 000 | 17 000 |
| Beetroot | 13 000 | 16 000 |
| Lettuce | 8 000 | 10 500 |
| Potatoes | 160 kilograms of seed | |
| Onions | 0 | 10 000 |
| Peas, green beans, carrot, pumpkin, butternut, sweet potatoes | Various smaller amounts | |

## Table 4.6: Anticipated production costs and returns

| Item (up to August 2008) | Amount |
|---|---|
| Cost of seed inputs | 31 234 |
| Other input costs | 81 865 |
| Wages | 164 809 |
| Total production costs | 277 908 |
| Total income achieved | 42 450 |

## Table 4.7: Actual returns

| Crop | Actual Planting (Jan-Aug 2008) | Harvest Potential (Jan-Aug @100%) | Actual Harvest (recorded) |
|---|---|---|---|
| Cabbage | 55 000 | 25 000 | 6131 |
| Broccoli | 2 000 | 1 000 | 23 |
| Spinach | 6 000 | 6 000 | 371 |
| Beetroot | 16 000 | 16 000 | 1596 |
| Onion | 27 000 | 0 | 0 |
| Potatoes | 35 bags seed | 1225 bags | 7 |

## Table 4.8: Recent plantings and harvest potential

| Crop | Actual planted | Actual harvested | Percentage harvested |
|---|---|---|---|
| Cabbage | 137 000 | 51 000 | 37% |
| Broccoli | 19 600 | 9 600 | 49% |
| Cauliflower | 25 000 | 12 050 | 48% |
| Spinach | 17 000 | 12 000 | 70% |
| Beetroot | 16 000 | 9 750 | 60% |
| Lettuce | 10 500 | 4 875 | 46% |
| Onions | 10 000 | 7 500 | 75% |

## Table 4.9: Total costs and income

| Item | Amount |
|---|---|
| Cost of seed inputs | 61 688 |
| Other input costs | 138 000 |
| Wages | 135 000 |
| Total production costs | 334 688 |
| Total income expected (anticipated 70% production returns) | 354 820 |

## Table 4.10: Annual wage bill

| Year | Details | Amount | Monthly Average |
|---|---|---|---|
| 2006 | End year only | R26 000 | |
| 2007 | Full Year | R223 000 | R19 400 |
| 2008 | January to August | R165 000 | R20 600 |

Note: figures have been rounded off.

Note that these figures do not reflect input supplies in stock or unsold crops. It also does not separate out the fertilisers and soil preparation costs for the planting of the apple trees.

The supplier costs for the apple trees was R20 000.

### Wage costs

Wages on the project are paid both from the Restitution Fund allocation (the labourers, supervisors and records clerk) and through BRC utilising their grant finances (the farm manager, the tractor driver and the vehicle driver).

The annual wage bill, since the adoption of the wage framework on the project, is as follows:

At full land utilisation, this equates to a requirement of R11 200 in income per hectare per annum just to cover the wage bill.

### General observations

The lack of profitability from the vegetable operations is a major problem for the scheme. The failure to break even is mainly based on poor production levels and high fixed salary overheads.

Scheme members are clearly aware that the project is running at a loss. They indicated that this had been made clear from the AGM meeting. Members still expressed hope that a profit would be generated. However, profitability is not a day-to-day concern for the membership and the ongoing losses do not appear to cloud members' positive outlook on the project.

For BRC, profitability is clearly a much greater daily concern, and the staff hold a real worry about the future of the project unless losses can be turned around. Nevertheless, there appears to be a sense of uncertainty on how to turn the financial situation around. BRC is hoping that the additional activities of the fruit orchard and fodder production will assist with improving income levels.

## Institutional framework

### Land ownership

As part of the former Ciskei the scheme is established on communal tenure land. The 'land owners' who are part of the scheme are in fact from families with Permission to Occupy (PTO) certificates; in most cases the PTO is in the name of a deceased grandfather. The individual members involved therefore do not necessarily have sole land ownership rights, but rather exercise their involvement and claim their benefits as a member of a family with historical rights to the land.

### Project ownership

In 2006 the rights to the scheme were technically transferred to the Communal Property Association (CPA). However, in practice the CPA does not see its role in managing the scheme, but merely in providing a legal framework for the scheme's business operations. The CPA's role is described in terms of "providing vision and overall guidance". This role also includes resolving internal problems.

The project is currently not separately registered as a legal entity. Its bank account, credit arrangements with suppliers, and other legal commitments, are all conducted in the name of the BRC. The intention is however to set up a separate legal entity. This was provided for in the 2007 BRC Annual Plan, but is it is not regarded as a priority at this stage.

### Institutional structure

While daily and weekly decision making is made by BRC in liaison with the farm manager, monthly decision making and longer term strategic planning is done in a representative committee called the Company Committee. This committee comprises BRC representatives, CPA representatives, the farm manager, two workers, and the record keeper (as secretary). Both BRC and the farm manager present reports to this committee.

The outcome of reports and issues from this meeting are fed to the CPA Managing Board, who in turn are responsible for keeping the general community informed of issues. The CPA appears to limit its role, leaving actual management to its management agent (BRC) and the scheme members.

There is a multi-stakeholder steering committee, involving government departments and municipal representatives, which deals with the developments in Chata in general, including the irrigation scheme.

### Profile of scheme participants

#### *The farm manager: Mr Mongameli Rode*

The farm manager has a visible passion for farming and is the 'champion' or 'driver' of the scheme. Thirty-eight year old Mr Rode is a plot owner and has been farming since 1997. He had been the farm manager for 18 months as of the undertaking of the research for this case study. His previous farming experience has been in maize and vegetable production on his family plot. He has not had any special training but indicated that besides practical experience he also learns through reading.

Mr Rode perceives himself to be a farmer for life, proudly declaring that he was born in Chata and will never leave. His farther was a farmer, and he is very clear that he would like his children to learn farming as well.

#### *Profile of other scheme members*

Age levels of the scheme members range between 35 years and 65 years. Education levels range between grade 2 and grade 12, with the mean being grade 6. Members however expressed the opinion that formal education is relatively unimportant for successful farming in comparison to local knowledge and practical skills.

Seven of the scheme members are the sole breadwinners for their families. Three families receive government grants, one member has a second business (spaza shop and steel works) and the other families have another member earning wages as well.

A variety of reasons is given for individual participation in the scheme ranging from household food security and household survival, to the satisfaction of deriving value out of the land. Scheme members tended to express the opinion that it is unlikely that their children will ever get involved in farming as their children see better futures elsewhere.

## Perspectives of performance

Scheme members are currently very positive about the scheme, largely because of stable wages and a marked improvement in their livelihoods, as well as providing them with a sense of achievement and purpose. The members indicated that even if the BRC support was withdrawn they would attempt to continue with the farming (although this commitment is clearly tinged with knowledge of the past failure to farm on their own), albeit possibly with less commercial aspirations.

The project also generates a sense of community commitment. The project is seen not only to be good for those directly involved but also for the village. "There are no families starving in Chata anymore". The scheme provides a source of cheap food. For example non-commercial quality cabbages are sold for 50c and scraps are given away. Further examples of community benefits cited by the members included: fruit and nut trees encourage birdlife which will benefit the tourism venture in the village; the planned fodder production will benefit the livestock project; and the planned process operation (milling/ bread; jams from fruit) will also provide the community with cheaper food.

## Conclusions

The Chata Irrigation Scheme is perhaps a story of potential. Whether the future will show a lost potential or a sustainable enterprise will largely be dictated by how current problems are addressed.

On the positive side certain key foundation conditions for the success of the scheme are in place. These include:

- A clear institutional framework within which the group functions, which sets out roles, responsibilities and how benefits are allocated.
- A clear contractual relationship between scheme members, BRC and the CPA.
- Ownership rests in a body divorced from the daily management, so it can intervene in internal disputes which so often lead to group paralysis.
- A clear and accepted management framework with a farm manager and a supervisor directing work in the fields.
- An established support environment.
- A highly committed NGO supporting the scheme which has also brought in support from funders and technical specialists. And although the limited technical support is arguably one of the key weaknesses on the

project, the mechanism within which to bring in such support is in place.

- The scheme initiative is taking place within a context of overall community development. This results in livelihood improvements from a number of sources, meaning greater demand for produce from the community, and greater household food security for participants in the scheme.
- The project driver appears to be in place in the person of the farm manager; a group project requires the dynamism of at least one person with commitment, passion, ability to learn, and an entrepreneurial vision.
- Although he has limited experience of crop varieties and of running the farm as a business, the farm manager demonstrates the required characteristics.
- Beneficiaries are able to recognise benefits and receive direct benefits
- The outlook of the membership is very positive in terms of the impact of the scheme and they value the income received from their work on the project, a marked improvement from when the scheme was initially revitalised.
- The means of production is sufficiently in place for efficient production.
- The scheme has been rehabilitated and has received key resources needed for production and for marketing.

In terms of weaknesses, the following aspects raise concern about the sustainability of the project:

- The scheme is hugely subsidised without any clear perspective on how long this subsidy will be (or needs to be) in place or what aspects are appropriate for subsidisation.
- The management lacks critical technical skills and/or experience and this is resulting in significant production failures.
- The scheme's overheads (e.g. its fixed wage bill) place the potential future profitability of the scheme under constant pressure.
- The solution to current problems is frequently identified to lie in further capital investment (drip irrigation, etc.) which deflects a focus from other core problems.
- The framework for building the business skills and business management within the project is not in place or adequately visualised by role-players.
- While the effect of paying wages has been positive on the scheme members' motivation, it has also removed the rationale for building a profitable (i.e. sustainable) business from the members.

## References and sources

**Interviews:**

Mr Mongemeli Rode (Scheme Manager).

Group interview with all the Scheme Members in attendance

Fanelwa Mhaga (Border Rural Committee, Project Officer responsible for the scheme)

Charmaine Cockcroft (Border Rural Committee Financial Manager).

**Additional ad-hoc consultation / discussions took place with:**

Zanelwa Semane (Border Rural Committee Programme Manager)

The Manager, Sanans Vegetable Shop (Purchaser of scheme vegetables)

**Documentation:**

Chata Integrated Development Plan (2003)

Chata Agricultural Business Plan (undated copy)

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# 5 Mr Booi and the Zanyokwe Irrigation Scheme, Keiskammahoek: a successful smallholder relative to his peers

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## Introduction

In the new municipal demarcations, Zanyokwe Irrigation Scheme (ZIS) falls under the Amahlati Local Municipality of the Amatole District. The climate of the area where the scheme is located can be described as semi-arid with a mean annual rainfall of about 590 mm per annum (Van Averbeke et al., 1998). The ZIS is divided into six sections, namely, Kammafurrow, Burns Hill, Zingcuka, Zanyokwe, Ngqumeya and Lenye. These are villages that make up the scheme. The Lenye section is divided into three sub-sections, namely Lenye West, North and South. Figure 5.1 shows the fields of Lenye South. Mr Booi, the subject of this case study, is one of the farmers in that section.

## Historical perspective

Mr Booi is 56 years old, married and has four children. For five years he worked as a mine worker at Carletonville. According to Mr Booi, most farmers at ZIS started working as mine workers. However, while most of them were affected by retrenchments that began in the early 1990s, Mr Booi did not leave the mines due to retrenchments. He decided to leave his job in 1981 as he was earning very little. Back at home he made a living by selling chickens until 1984, after which he was employed as a farm worker at the scheme.

The ZIS was established in 1984, initially with 48 members (Van Averbeke et al., 1998). At the time, the Ciskei government had a strong relationship with Israel. The two governments signed a five-year agreement whereby skilled Israelis would run the scheme. The main objective of this agreement was to build the capacity of the local farmers in the areas of farming and farm management. The local farmers would then take over and run the scheme at the end of the contract period. During the contract period, the farmers – of whom Mr Booi was one – were engaged as workers under the guidance of the Israeli managers.

During this era, all agricultural inputs were subsidised by government, and all machinery and equipment were provided by government. Support services such as marketing and extension were government priorities. Most marketing functions (grading, packing, selling and buying) took place at field level. The scheme was endowed with a lot of infrastructure, including marketing facilities. A store was built on the site where buyers could come and buy products. Facilities like potato washers and maize driers were on the site. The Ciskei government employed a large number of extension officers of whom three served various sections of the ZIS on a full-time basis (Bembridge, 1999).

In 1989, the contract with Israel expired, and the scheme was handed over to the 48 members under the management of Ulimocor, a parastatal. The scheme entered a phase in which farmers began to struggle to make a profit. According to Mr Booi, the main problems that affected farmers during this time were poor management,

## Figure 5.1: Zanyokwe Irrigation Scheme

poor record keeping, and reduction in extension services. In addition, government withdrew many services (input and tractor subsidies) and sold most of the scheme's equipment and implements. With very little government support, farmers struggled to pay the labourers and as a result, many labourers stopped working for farmers.

In 1996, Ulimocor was disbanded and farmers were advised to form a trust whose main responsibility was to manage the scheme's affairs and look after its infrastructure and equipment. The scheme was supposed to be managed by a Board of Trustees, but it would appear that the trust deed was not registered with the relevant authority, and as a result, the proposed trust did not have the authority to run the scheme (Van Averbeke et al., 1998). So, the period between 1996 and 2001 was the worst time at ZIS as there was neither production nor management at the scheme. The scheme's infrastructure began to disintegrate, partly through vandalism.

In 2002, the farmers received a grant of R1 million from government in an effort to revitalise the scheme. Farmers were advised to elect a management committee to run the scheme. A committee of 12 members was elected. They also received loans from Uvimba Bank in King William's Town. However, farmers struggled to pay back the loans. In 2005, the trust was changed to a Producers Assembly (PA) committee (Monde et al., 2005).

Currently, the ZIS farmers have a co-operative, which was registered in 2007 (Monde et al., 2008). They also received a further sum of R3 million from government to improve the scheme's infrastructure. In addition, ZIS's farmers are members of the Eastern Cape government's Massive Food Programme, which aims at increasing the production of maize by small-scale farmers. In the Massive Food Programme, farmers benefit from subsidised inputs (seed, fertilisers and herbicides), while government arranges for their maize to be marketed. The fence around the scheme has been repaired, the scheme's offices refurbished, and most irrigation equipment replaced. The main problems at ZIS are markets and extension services. According to Mr Booi, the extension services have gone from bad to worse.

## Natural and physical resources

The area under irrigation in Zanyokwe is uncertain but the land area is estimated to be 635 hectares. Altogether there are 66 individual small farms ranging from 1 to 20 hectares. Mr Booi has access to 6.3 hectares of land. Of this land, 5.3 hectares is the land allocated to him, and he leases an additional one hectare from another

farmer on the scheme. The average land holding at the scheme is 3 hectares.

The soils at the scheme are rated from moderately to highly suitable for irrigation, however a significant percentage are classified as having a moderate potential (Monde et al., 2005). The main limitations are: poor depth, heavy texture and a high percentage of fine sand and silt. Cultivation difficulties and slow permeability occur on some of the heavier soils. This shows that irrigation should be carefully managed to avoid soil-related problems on the scheme and the need for appropriate training.

ZIS receives its water via an 80 centimetre pipeline from the Sandile Dam. The pipeline tapers down to a smaller diameter towards the end of the scheme. The Kamma Furrow section, which is at the very far end of the scheme, has a separate pump unit to pump water from the Keiskamma River into their reservoir or directly into the distribution system.

Because the dam also supplies domestic water, the pipeline is operated and maintained by the Amatola Water Board on behalf of the Department of Water Affairs and Forestry (DWAF). There is very little contact between the scheme and the Water Board. The assured yield from the dam is 12.7 million cubic metres and its capacity is 30.7 million cubic metres. Depending on the dam level the pressure or head at the wall varies between 10 and 50 metres. The outlet of the dam is fitted with state-of-the-art water control and measuring equipment that is in good working order.

There are nine main off take points along the pipeline to distribute water to the scheme (see Figure 5.2). The water supply to the scheme is designed with a duty of about 0.9 litres/second per hectare. This is considered to be adequate at this level of scheme utilisation. If all of the scheme were to come into production, the water would still be adequate if well managed. Each off-take was originally fitted with a flow metre, pressure gauges and filters, but at all the points visited during the fieldwork, these devices were no longer functioning and many pipes leaked (Monde et al., 2005).

ZIS makes use of sprinkler irrigation system. The sprinklers are mounted on quick coupling pipes and the water is delivered from a hydrant for each block. The hydrants receive water from a network of subsurface pipes, which are connected to the off-takes from the Sandile pipeline, or from the booster pump station or from a night storage dam. Until recently, the irrigation infrastructure at ZIS was in very bad condition. The

## Figure 5.2: Example of block off take showing flow metre, pressure gauge, filters, non-return valve and electrical supply for booster pumps

## Figure 5.3: A stack of new pipes in Booi's homestead

## Figure 5.4: A facility used to dry maize (maize drier) at Zanyokwe Irrigation Scheme

pipes were damaged and leaking, there were no hydrant pipes, and the valves did not work properly. But the infrastructure upgrade that took place in early 2008 has substantially improved the situation (see Figure 5.3).

Most of the lands on the irrigation scheme are irrigated by gravity from the pipeline, but water at Lenye North has to be pumped to a reservoir, from which irrigation is by gravity. About 15 farmers depend on this pump. Until recently, the electrical power to the pump was disconnected and apparently this had been the case for 10 years because of money owing to Eskom. The reservoir into which water is pumped leaks.

Mr Booi has access to the scheme's other physical infrastructure as well. However, most of this infrastructure is either not working or is in very bad state. For instance, the various storage facilities on the scheme are generally unusable, so farmers either use their own storage facilities or, more typically, none at all. Also, the scheme used to have maize driers (see Figure 5.4) and a potato grader (see Figure 5.5), but these are no longer in working condition.

However, the one aspect of non-irrigation infrastructure that has been recently restored is the scheme's offices; the building has been repaired and furniture and office equipment acquired (see Figure 5.6). This was largely through additional funding which the farmers managed to secure from the National Development Agency and the Small Enterprises Development Agency, which was also used to purchased some farm machinery to improve tillage and cultivation services, and to install drip irrigation on about 20 hectares of the scheme area.

## Production systems

### Main farming enterprises

Mr Booi is involved in the production of three main crops, namely, cabbages, butternuts and maize. Apart from these crops, he also grows vegetables such as spinach, carrot and onions on relatively small plots. In summer, the largest share of the land is allocated to cabbage (2.5 hectares), followed by butternut (2 hectares), and then maize (1.5 hectares); the other three vegetables are each planted on about one tenth of a hectare. In winter, he again plants cabbage (though less than in summer), as well as various vegetables. The method of cultivation is by tractor traction. Farmers at ZIS have access to three

## Figure 5.5: An old potato grader

## Figure 5.6: Renovated ZIS offices

tractors that are hired by farmers for tillage purposes. For cabbage and maize, Mr Booi buys all production inputs at cost while those of butternuts are subsidised by government.

Maize and butternut farmers at ZIS are members of the Massive Food Programme (MFP) of the Eastern Cape Department of Agriculture. Government purchases and delivers all inputs to the production site. When maize is sold, farmers pay a certain percentage of the production costs. The MFP is a five-year programme. During the first year, farmers did not pay for inputs, while in the second year they paid 25% of production costs, and every year the proportion increases until farmers incur the full costs of producing maize. Although Mr Booi is a member of the MFP, he no longer produces maize under MFP. In 2007, he decided to pull out and produce for another market. Therefore, he buys maize inputs himself from Umthiza Co-op in Alice, about 40 kilometres from Zanyokwe. With regard to cabbage and butternut, Mr Booi obtains the production inputs (seed, fertilisers and chemicals) either from King William's Town or East London, and hires transport to fetch them.

### Labour inputs

Mr Booi has one permanent farmworker, but also calls upon 'semi-paid' family labour. The farmworker is paid a salary of R45/day (about R900 per month), which is a lot higher than the average of R30/day that other farm workers earn at ZIS. Mr Booi's wife is also actively involved in farming and his two children, who are scholars, also participate in some farming activities such as weeding and harvesting. Mr Booi keeps his children motivated by paying them for the tasks they undertake on the farm. Apparently, the school children in the area have a tendency of working for other farmers when they do not receive payment in their own households. Another source of labour is 'labour exchange', which is mainly used during harvesting. The only crop that demands a lot of labour at harvesting is maize. While some farmers resort to temporary labour which is paid in cash during the harvesting (especially for maize and beans), Mr Booi turns to his relatives and pays them in kind through 'food parcels'. Those who resort to hired labour complain about the untrustworthiness of the exchange labour, however, Mr Booi does not encounter this. Instead, people are willing to help him. He thinks that they feel obliged as he usually gives them farm produce even when they did nothing for him. He usually donates food when they have social functions or simply when they do not have food. Mr Booi therefore cultivates these relationships as a means of guaranteeing a relatively cheap source labour.

### Marketing and transaction costs

During the past three years efforts have been made to improve access to markets by small-scale farmers in this scheme. Before these efforts the marketing 'system' consisted mainly of farmers seeking to hawk their produce at informal markets, so in parallel with the revitalisation programme, government has sought to make sure that these farmers have access to formal markets as well. As a result the farmers have been linked to supermarkets such as Pick 'n Pay in Port Elizabeth, the Umtata market, Provege in East London, Fruit and Veg City? in King William's Town, as well as the University of Fort Hare's Agripark processing unit. The main problems however with these markets are high transport costs and delays in payment. Farmers either hire transport to take produce to the market or the buyers pick up the produce from the production site using own transport. Either way, farmers have to pay for the transport. Most farmers complain that they do not make money as almost all profit goes to transport costs.

Farmers not only lose money on transport, but on poor quality and packaging as well. Mr Booi makes an effort to improve quality and make sure that he performs extra marketing functions such as grading and packaging. In addition, his marketing strategy is different from that of the other farmers at the scheme, as he does not rely only on the buyers or markets arranged for him, but rather searches for his own buyers and make an effort to comply with their demands. The production of maize at ZIS is supported by the Eastern Cape Department of Agriculture under the Massive Food Programme (MFP). The market for this product is Umthiza, which was also organised by the Department. Umthiza buys a 40 kilogram bag of grain at R40. This means that farmers get R1000 for a ton of maize. When Mr Booi noticed the poor price the MFP maize was fetching, he began to search for an alternative market. In 2006, he found one in Seymour in the Fort Beaufort area. He then pulled out of MFP and began to produce maize for this buyer. Mr Booi and his buyer (who is a dairy farmer), have an informal contract. The buyer wants both white and yellow maize, and when the produce is ready he collects it from the production site. The agreed price for yellow maize is R40 for a bag of cobs, which is about twice the price of R40 for a bag of grain as earned under the MFP. Mr Booi sells his white maize at R100 per 40 kilogram bag of grains. The difference is again huge as the kilogram fetches twice as much (R2.5/kg) compared to only R1/kg in the MFP. Mr Booi is happy with this arrangement and is even thinking of expanding the maize area by renting-in more land. At the time of this investigation he already contacted the land owner and the conditions of the lease were being finalised.

Mr Booi's main markets for his cabbage are hawkers and the Umtata market, which is about 300 kilometres away. According to Mr Booi, the advantage of selling to hawkers is that he does not have to pay for transport; they make use of their own transport and if the cabbage is sold at R3/head, as a producer that is exactly what he gets. In other markets such as the Umtata market, it is that price less transport costs. Together with other farmers, Mr Booi hires a truck to take the produce to this market. The cost of transport for one trip is R2000. In order to make money, the truck load must be at least 2000 bags of cabbages, i.e. so that transport costs account for R1 per bag. If the load is less than that, the effective cost per bag increases. According to Mr Booi, it is quite an effort to achieve this target. He says some farmers are not committed to production, and therefore they rarely reach the target of 2000 bags, and as a result, the cost is always more than R1/bag.

## Economic aspects

The financial analysis of agricultural enterprises is demonstrated in Tables 5.1 (farming expenses), 5.2 (gross farming income) and 5.3 (net farming profits).

The net farming profit figures of all enterprises are positive, showing that Mr Booi is making a profit in all these enterprises. However, these figures are still very low for Mr Booi to make huge investments on the farm. Maize has the lowest net farming profit (R2 715/1.5 ha) of all the crops. But in terms of maize yield, Mr Booi receives about 164 bags (50 kg) of maize, which translate to 8.2 tons from land of 1.5 hectares. This means that he is producing about 5.5 tons per hectare, which is an acceptable yield under irrigation. The main problem is high production costs, especially the costs for permanent labour. By the standards of the commercial farming sector, the wage paid by Mr Booi is average, but his wage bill is exceedingly high relative to the small number of hectares he is farming. Taking the second cabbage crop into account but excluding income from the vegetables that he plants on a

## Table 5.1: Farming expenses of cabbage, butternut and maize

| Input | Cabbage (2.5 ha) | | Butternut (2 ha) | | Maize (1.5 ha) | |
|---|---|---|---|---|---|---|
| | Amount | Cost | Amount | Cost | Amount | Cost |
| Seed/seedlings | 10 000 seedlings | 1 800 | 60 kg | 250 | 40 kg | 1 200 |
| Fertiliser | 6 50 kg bags | 1 156 | 8 50 kg bags | 1 476 | 8 50 kg bags | 1 476 |
| Pesticide | 5 litres | 200 | 10 litres | 429 | 6 kg | 30 |
| Ploughing | 2.5 ha | 1 250 | 2 ha | 1 000 | 1.5 ha | 750 |
| Discing | 2.5 ha | 875 | 2 ha | 700 | 1.5 ha | 525 |
| Marker | 2.5 ha | 750 | 2 ha | 600 | 1.5 ha | 450 |
| Casual labour | 30 days | 900 | 30 days | 900 | 20 days | 600 |
| Permanent labour* | | 3 375 | | 2 700 | | 2 025 |
| Transport – inputs | | 150 | | 50 | | 200 |
| Transport – outputs | | 575 | | 120 | | - |
| Total | | 11 031 | | 8 225 | | 7 256 |

* Permanent labour costs about R10 800 per year, which as been roughly apportioned to the different enterprises.

## Table 5.2: Gross farming income of different enterprises

| | Cabbage | | | Maize | | | Butternut (10 kg bag) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Yield (head) | Price/ unit (R) | Income (R) | Yield (50 kg bag) | Price/ unit (R) | Income (R) | Yield (10 kg bag) | Price/ unit (R) | Income (R) |
| Produce sold | 9 000 | 2 | 18 000 | 70 white | 100 | 7 000 | 900 | 15 | 13 500 |
| | | | | 83 yellow | 40 | 3 320 | | | |
| Produce consumed | 50 | 2 | 100 | 3 | 100 | 300 | 6 | 15 | 90 |
| Produce donated | 120 | 2 | 240 | 5 | 40 | 200 | 14 | 15 | 210 |
| Produce fed to animals | 0 | - | 0 | 3 | 40 | 120 | - | - | - |
| Total | 9170 | | 18 340 | 164 | | 10 940 | 920 | | 13 800 |

## Table 5.3: Net farming profits of different enterprises

| | Cabbages (R) | Maize (R) | Butternuts (R) |
|---|---|---|---|
| Gross income | 18 340 | 10 940 | 13 800 |
| Farming expenses | 11 031 | 8 225 | 7 256 |
| Net farming profit | 7 309 | 2 715 | 6 544 |

small-scale, Mr Booi's annual total net income is approximately R22 415, which takes into account the imputed value of own consumption.

## Livelihood significance

Although farming contributes more than 70% of his household income, Mr Booi's household is one of the few who have other means of surviving as well. One reason is that, like Mr Booi, most of the other farmers are in their 40s and 50s, thus contradicting the stereotype that black farmers are invariably pensioners, but also implying of course that they are not eligible for old age pensions. Mr Booi, however, has access to a monthly disability grant of about R870 for chronic disease (diabetes), and moreover has the good fortune to have two grown-up children who are working elsewhere and who send home about R300 per month. Apart from crop production, Mr Booi is also involved in animal production. He keeps cattle and chickens, which are sometimes sold for income. The money earned from the sale of animals is sometimes used to purchase agricultural inputs or pay for children's education.

Access to natural capital is a general problem at ZIS. The majority of original farmers have discontinued farming due to factors such as old age, ill health or lack of interest. Most current farmers either rent or borrow the land they cultivate. Most of those who are renting are in fact sharecropping it, i.e. the owner is rewarded not with an up-front cash payment, but with a share (e.g. 50%) of the crop or the proceeds from the sale of the crop. Whether sharecrop or loan arrangements exist, these are short-term and thus generally unstable. A typical pattern is that when a cropper does well, the owner decides not to renew the arrangement for the following planting season but rather try to resume farming for their own account, or at least threaten to do so. The common perception of sharecroppers is that owners are 'jealous' of them whenever they show signs of succeeding.

However, Mr Booi's situation appears to be better than that of most farmers at ZIS, because he owns most of the land he is using. He only rents about a fifth of the land he uses, and this by means of an upfront cash payment, which owners find highly preferable to sharecropping arrangements. In other words, it is mostly his land, and in that respect he has more secure land rights than most farmers who are cultivating land that belongs to others.

The problem of land tenure affects all farmers at ZIS. According to Mr Booi, it not only prevents them from accessing loans from formal financial institutions, but discourages farmers from remaining in farming. While in 2004 there were 60 farmers at the scheme (Monde *et al*., 2005), in 2007 there were only 47 farmers. Land tenure was mentioned as one of the reasons for discontinuing farming.

Mr Booi's strategy to deal with limited access to physical capital is to sell all his produce from the production site. Other farmers have adopted this strategy as well. However, most of them experience problems such as product spoilage due to lack of market. Mr Booi hardly experiences this problem because, to the extent that he is able, he first finds buyers or markets for his products. In other words, despite not having his own transport does he does not passively wait to see if buyers arrive at his doorstep or not, but organises for his produce to be purchased. His labour strategy, too, is different. He has at least one permanent worker; other farmers believe they cannot afford permanent labour. Having permanent labour gives Mr Booi a sense of security and peace of mind, knowing that everything is taken care of when he cannot be at his field. Most farmers make use of family labour but do not pay for it. Mr Booi also makes use of family labour, but pays for it, and to some extent pre-pays for it. Donations of farm produce to relatives and friends provide him with access to willing workers, which is most needed to accomplish farming activities such as weeding and harvesting.

The most important livelihood outcomes for Mr Booi's household are cash and food. Hunger is not a problem at all in this household. They can afford three meals a day. The adequacy of diet in terms of quality is however another issue that is beyond the investigation of this study. But the main source of vegetables is own production even though most other food items are purchased.

## Social and institutional dimensions

The land tenure in ZIS is complicated and varied, with close relation to the history of the villages that make up the scheme. A bigger share of the scheme is located around Lenye and Burnshill villages. Mr Booi is a resident of Lenye village. Lenye is located on what used to be white-owned

farms. When the whites left the area, the land was taken by the state and registered under the trust tenure system. Land under trust tenure consists of formerly white-owned land situated in proclaimed native areas. The land was eventually made available to people through the Native Trust and Land Acts. Hence the land occupied in Lenye North and South is referred to as the State or Trust Land and the farmers from Lenye therefore do not have title deeds for the land they have access to.

Mr Booi is also one of the few who have relatively secured rights over land. When the scheme was established, the fields allocated to individuals were combined, and the owners of these fields were made members of the scheme. But the labour force of the scheme included both land owners and landless. When the farmers took over, landless people were also interested in farming. There was not enough arable land and so some surrounding range land was brought into the scheme for cultivation. This land had been commonage land, in that, historically, it did not have individual owners. Mr Booi received his share of scheme land from this range land. Some of the original share-croppers have put in applications to reclaim the land and have documentation of proof of ownership. Those ZIS farmers presently using this land live in fear, not knowing when original land owners might want their land back.

The support for the scheme comes from various sources. The Department of Agriculture supplies farmers who are members of the MFP with inputs at subsidised prices. Through this programme, farmers also received free implements and a tractor. Although Mr Booi is no longer producing maize under the MFP, he is still involved in butternut production under the scheme, and thus is still a member. Therefore, he benefits from the input subsidy. The farmers at ZIS also benefit from the MAFISA and CASP programmes in the form of loans and infrastructure grants, respectively.

Furthermore, Mr Booi has access to the extension services of the Department of Agriculture. However, the quality of service has gone from bad to worse, supposedly because of the introduction of the 'ward system', whereby the already limited number of extension officers has to serve an even larger area. This results in fewer and less regular visits. Fortunately, however, ZIS has a full-time manager who provides farmers with advice.

Mr Booi is a member of the Best Management Practices (BMP) project, run by the University of Fort Hare. Researchers sometimes conduct trials in farmers' fields, and farmers have to give up land for these trials. Not many farmers are keen to do so, but Mr Booi always cooperates. Unlike many other farmers, he is open to new ideas and is always willing to learn new things. So, he benefits from the technical advice given by researchers.

The Department of Agriculture together with the University of Fort Hare have provided market support to ZIS. This support takes different forms, including a specific effort to link farmers with Pick 'n Pay, providing training courses and arranging visits to formal markets in order to expose farmers to how formal markets work.

## Gender, class and human dimensions

Although there are women farmers at ZIS, the majority are men. The wives of the male farmers, however, do participate in the scheme, but usually on a temporary basis, e.g. during weeding or harvesting times. As it is the case with communal areas, ownership of land at ZIS is in the hands of men. The few women farmers are either widows or tenants. Although not intentional, men farmers benefit more, and this is reinforced by a management structure composed mainly of men.

In terms of class, Mr Booi classifies himself as an emerging farmer coming from a historically disadvantaged background. In terms of schooling, he passed standard five. However, when the ZIS scheme was established in 1984, he received training in agronomic practices at Fort Cox College (a nearby agricultural college) for a period of six weeks. Following this course, he was trained to do book keeping at the Border Technikon (now Walter Sisulu University). However, he claims that most of his agricultural knowledge was obtained from the Israelis who managed the scheme in its early days.

## Perceptions of performance

According to the economic analysis of his main enterprises, Mr Booi is makinga modest profit and not enough for him to purchase capital. His dream is to have transport of his own, as well as a tractor because the three scheme tractors inadequate (only two are in good condition as the third one often breaks down). There are often

delays in planting as farmers have to wait for the tractors to become available.

## Policy environment

Small-scale farmers in irrigation schemes in the Eastern Cape have benefited from a number of policies aimed at the improving this sector in the 1980s. However, most of these initiatives were short-lived due to financial or political reasons. During the homeland era, new irrigation schemes were established with funding from South African Government. Irrigation development during the independent homeland era was characterised by modernisation, functional diversification and centralisation of scheme management (Van Averbeke and Mohammed, 2006). Overhead irrigation systems were used instead of surface irrigation in most schemes including ZIS. Also, the irrigators enjoyed benefits of subsidised inputs (including tractor services) and institutional support services (extension services) during this era. However, these were withdrawn for financial reasons.

With political changes in the 1990s, attention was focussed on irrigation management transfer. The closing down of parastatal organisations such as Ulimocor left a vacuum and an effort was made to transfer the management to farmers.

## Conclusion

There are a number of factors that makes the case of Mr Booi interesting:

- he has secure property rights unlike most of the other ZIS farmers. Most farmers have access to land that belongs to others, which they access either through renting or borrowing.
- he has arranged access to additional land on his own, and is not waiting for government and its Land Reform Programme. While most farmers at the scheme obtain more land by borrowing or sharecropping, Mr Booi rents the land and pays cash. With this kind of arrangement, he has not had problems, because land owners appear to prefer to rent their land for cash instead of a share of the produce, the amount of which is uncertain.
- his marketing strategy is interesting and makes him one of the successful farmers. He seeks out buyers and adheres to their specifications. He knows his limitations (e.g. lack of storage facilities) and decides to go for contract farming in which he does not have to store the produce.
- he is a hard worker and always willing to try new things.

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# 6 Rabula freehold farmers: two established middle-class farming households with contrasting farming/ livelihood strategies

*Larry Field, Umhlaba Consulting Group*

## Introduction

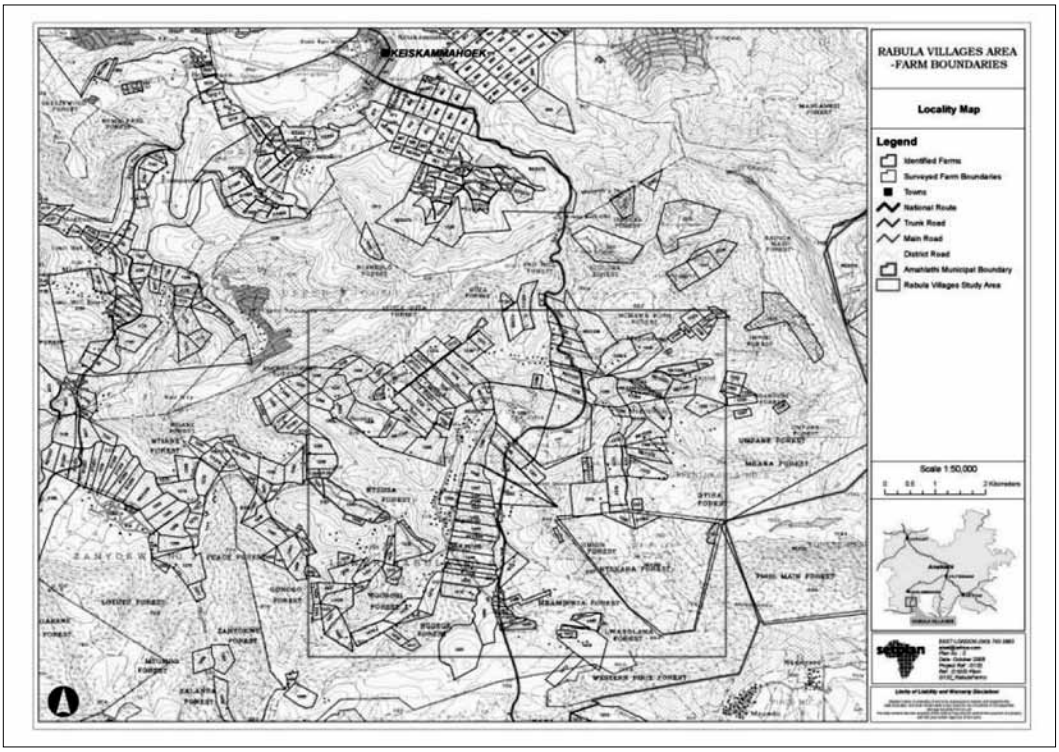
Rabula is a small rural traditional authority administrative area within the Magisterial District of Keiskammahoek, now part of Ward 11 of the Amathlati Local Municipaly. Rabula is no more than 40 kilometres from King Williams Town, easily accessed from the main tar road linking Keiskammahoek and King Williams Town. To the north of Rabula is the town of Keiskammahoek, to the west the well known irrigation area of Zanyokwe, to the east the wooded mountain slopes and forests of the Pirie area, and to the south the outskirts of Dimbaza.

Rabula currently comprises a number of communal tenure villages, commonage lands, and privately owned freehold farms (see Figure 6.1). The freehold farms are particularly interesting for study for a number of reasons:

- Firstly, these farmers come from a generation of family farmers. They have had occupation and ownership of their land for generations. In the two case studies one has had occupation of the current land parcel for nearly 30 years (but had occupation of a nearby farm long before), while the other family has had occupation and ownership since 1908.
- Secondly, these examples reflect on black smallholder farmers who have historically acquired their land through their own financial means. This is a very different context to households moving onto land post 1994 as part the government's subsidised land redistribution programme.
- Thirdly, these smallholders are interspersed with communal (Trust) villages and shared commonage lands. As such they represent a context which may emerge as the norm if the Communal Land Rights Act is applied to communal areas in the future.
- Finally, it can be argued that these farmers are small independent smallholders, as perhaps one perceives the vision of agrarian transformation goals of the current (emerging) policy of government. These farmers own small farms with multiple land uses, and in independent landholdings; i.e. they are not part of a state-initiated and organised scheme.

This case study attempts to explain the social, political and economic context within which the freehold farmers have functioned and then explore the circumstances of two freehold farmers in Rabula, namely Mr Tswengiwe and Mr Njemla. While these two farmers cannot be said to be representative of all farmers, their circumstances do reflect the realities of established freeholder farmers in the area. The farmers were selected due to their involvement in the Rabula Farmers Association, and their continued attempts to make a livelihood out of farming. The one farmer, Mr Tsengiwe, is mainly a livestock farmer, but with cropping activities as well. He lives predominantly from his farming activities. The second, Mr Njemla, has more substantial off-farm income, and his approach is far more based on a mix of many different types of activities on the farm.

## Figure 6.1: Map of Rabula villages showing farm boundaries




Unfortunately, none of the farmers were willing to go into detail in relation to their profitability, and the research parameters did not allow the time to develop a more detailed picture of the economic aspects of the case studies. However, the case studies will show that the challenges that the farmers face are multi-faceted, from economic, technical, and social perspectives. These challenges are located not only in current economic realities but also in the strong historical legacy of how Rabula was shaped from colonial times, through apartheid, and finally how current government policy is impacting on smallholders today.

## The historical context of land ownership and land rights in Rabula

Rabula was established by the British colonial authorities on land vacated during the Frontier War of 1850-1853. Lots were demarcated and became available for purchase from 1865. Both blacks and whites were allowed to acquire land in terms of British colonial laws. Land was originally sold as freehold, but later sold as quitrent. Records indicate that by the end of the nineteenth century 186 lots had been established in Rabula of which the majority had been purchased by blacks (De Wet, 1995). At this stage Rabula was characterised by individual land parcels owned through freehold or quitrent, while the land owners also had user rights to commonage land.

Land settlement initially existed almost exclusively on the farms, consisting of the land owners and their 'farm workers', who were usually in a labour tenancy relationship. Over the years labour tenants began to settle on the commonage to gain more freedom from the land owners. Children of land owners, unable to secure their own land, are also recorded as having moved onto the commonage. These people were effectively 'squatters' and were known as such by the landowners.

In 1936 Rabula became a 'released area' in terms of the Native Trust and Lands Act (18 of 1936). Whites were no longer allowed to buy land in the area and the South African Native Trust (SANT) began a process of buying up white farms. The government began a process of resettling the landless people residing on the commonage on the Trust farms, giving them household plots and arable lands. Initially the emphasis of this betterment process was on establishing viable farmers on the Trust lands, but later the emphasis appears to have shifted to settlement needs. However the betterment process

## Table: 6.1: Summary of tenure types

| Tenure type | Number (percentage) |
|---|---|
| Freehold/quitrent | Approximately 500 (60%) |
| Trust areas | 59 (7%) |
| New residential areas (on Trust land) | 237 (28%) |
| Informal settlement on commonage | Approximately 40 (5%) |

never completely removed all 'squatters' from the commonage. Research carried out by De Wet (1995) identified the following breakdown of households by tenure:

Thus Rabula today is characterised by people with different land rights histories, which forms the basis for deeply rooted social tensions that are still evident today. In the early years the land owners treated the landless as a subordinate class of people. Landowner families tended to be bigger, wealthier, and dominate important social events and positions (De Wet, 1995). The betterment process however seems to have created opportunities for those in labour tenancy relationships with the provision of land rights for landless families. De Wet notes that landowners appear to make greater use of own family for labour in the post-Betterment period (1970s onwards). For this and a number of other reasons, Betterment in Rabula appears to have had a less negative impact than in many other areas of its application.

During the homeland period, landowners embraced the opportunities provided by the new homeland bureaucracy. These opportunities included both an extensive agricultural support programme initiated by the Sebe Government, and employment opportunities in the bureaucracy for those with education. However, in the post-1994 breakdown of the land administration system in the communal areas, tensions between land owners and the landless / village residents was re-focused on the commonage, with land owners' claims of exclusivity of rights being largely ignored. Land owners also found themselves increasingly marginalised in terms of status and influence within the community. The new government's land reform programme, and other social and development benefits, have all been focused on the historically landless and resettled village groups. Black freehold land owners have been largely ignored both in policy documents and in local application of agricultural development support.

De Wet's research turned up the following farming information in Rabula as at 1990:

- Only one third of landowners used their entire property. Cultivation levels, as an average per hectare, appeared to be higher in the Trust areas than on the landowner farms. This situation possibly reflects a lack of capital, support, and availability of labour for landowners to make appropriate use of their greater land assets.
- However, landowners tended to invest more in livestock, which has greater status and requires less intensive management and labour inputs. Landowners had, on average, 7.85 cattle, 10.39 sheep and 11.04 goats per household. In comparison, non-landowners had, on average, 0.16 cattle, 0 sheep and 5.0 goats per household.

## The natural resource base

The Rabula area consists of the Rabula River valley and three smaller valleys encircled by steep hills, bordered by the foothills of the Amathole mountain range. The hills that border the Rabula area are covered in thick indigenous bush (Afromontane forest), while the lower slopes are covered in thicket and grasslands with sweet thorn. The eastern mountain and hill slopes are particularly thick in indigenous forest as well as cultivated plantations (Kingwill, 2008).

The altitude within the small Rabula area ranges between 500 metres and 800 metres above sea level, although heights of up to 1400 metres are reached just to the east of Rabula villages.

The climatic conditions recorded in the Keiskammahoek area are shown in Table 6.2.

The main water source for the area is the Rabula River and the smaller tributaries of the Gxulura and the Gqubushe.

## Table 6.2: Minimum and maximum temperatures and precipitation

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean min temp (Celsius) | 16 | 16 | 14 | 12 | 8 | 5 | 5 | 6 | 8 | 11 | 13 | 15 |
| Mean max temp (Celsius) | 30 | 29 | 20 | 18 | 14 | 11 | 10 | 13 | 16 | 18 | 25 | 27 |
| Mean precip. (mm) | 88 | 95 | 111 | 62 | 48 | 29 | 30 | 38 | 64 | 87 | 91 | 83 |

# Profile A: Mr Tsengiwe

## Profile of the farmer

Mr Mtobi Tsengiwe grew up on the farm and remembers working on the land as a school boy. As an adult he obtained employment in the Department of Agriculture as an extension officer in the Ciskei area. He eventually specialised in establishing agricultural co-operatives for the Ciskei Department of Agriculture, having received training in England for such activities. However, even while he worked as an extension officer, he continued to run the farm. Mr Tsengiwe is now over 70 years old, having gone on pension in 1996. He indicated he expects his son, who currently works as an official in the Provincial Government in Bisho, to take over the farm upon his death.

Mr Tsengiwe's history as a farmer is in many senses not unusual for South Africa, but is certainly not common for a black farmer in present-day South Africa. Mr Tsengiwe is also 'not unusual' as a commercial farmer in South Africa in terms of personality, being strong willed and outspoken on a range of problems and issues facing farmers.

Despite his age Tsengiwe remains an active individual and an active farmer.

## Farm details and land use

The Tsengiwe family owns five portions of land in Rabula. One portion (farm 1439) is owned by Isaac Tsengiwe, Mtobi's brother. Mtobi Tsengiwe owns one portion in his own right (farm 1410, comprising 16 hectares), and three portions (of farms 1440, 1441 and 1438, totalling 104 hectares) are owned in equal shares by Mtobi and his three sisters. Most of this land has been in his family's name since 1908. In 1932 his farther purchased additional portions. The portion of land owned by Tsengiwe's brother is unoccupied as this brother and his household have left the farm.

The major part of the farm is in the Lower Rabula area, past the villages of Lower Rabula in the valley below the Ntsusa Forest. The gravel access road is in reasonable condition, and eventually links Rabula with Zanyokwe. In addition, Mr Tsengiwe has access to the commonage land for his livestock. However, the exact extent of the available commonage, and the utilisation of the commonage by livestock owners, could not be obtained within the scope of this study.

The separate portion of land (farm 1410) is only 16 hectares in extent, and is located near the main tar road below the Trust village. However, this portion is not farmed at present. Mr Tsengiwe indicated that problems of squatters and theft prevent him from utilising this land.

The utilised portions of his farm consist of grazing lands and arable lands. The main farm enterprise today is livestock, with the farming of cattle, sheep and goats. Although Mr Tsengiwe is unsure of the size of his arable lands, the size was estimated to be about 20 hectares. This land is farmed as dryland. About 3 to 4 hectares used to be farmed under sprinkler irrigation until the pump was stolen. The dry land is mainly used for fodder for the livestock, with some commercial and home-consumption vegetable production taking place.

Additionally, the farm has a small orchard with orange and pecan nut trees. Mr Tsengiwe also keeps chickens and pigs around the homestead. These are for home consumption, although he will occasionally sell if approached by a member of the community.

## Infrastructure and equipment

The infrastructure on the farm can be summarised as follows:

- The main Tswengiwe homestead, including garages and numerous water tanks. The homestead is in good condition.
- The homestead of Mr Tsengiwe's brother, which is more traditional in nature (wattle and daub / rondaval construction) and is in average condition.
- The homesteads, arable lands and farm boundaries are all fenced. The fencing is generally old but mostly still functional, although requires frequent repairs.
- A number of stock dams, fed by surface water run-off from the rains.

The following equipment list was provided:

- 2 old tractors (1 working, 1 in need of repair).
- 3 disc ploughs
- 1 planter
- 1 disc harrow
- 1 harrow
- 1 cultivator (7 tooth)
- 1 bakkie.

The equipment is old but, except for the 1 tractor, in working condition.

Mr Tsengiwe had a pump for irrigating about 4 hectares, but this was stolen in 1993. He has not replaced the pump, most likely due to his focus on investing in livestock farming for his income.

## The production system

### *Livestock*

Until a few years ago, Mr Tsengiwe's herd included 120 goats and 80 sheep. However, he lost all of his sheep and the vast majority of his goats to tick-related disease and is now attempting to rebuild his herd. He has 30 goats and recently purchased a ram for R2000 from a commercial auction in Bedford. He currently also has 35 head of cattle.

### *Cropping*

Crops planted in the past 12 months include wheat (1 hectare), maize, oats, and a range of vegetables (potatoes, cabbage, pumpkin, onion, spinach, beans and peas). The maize and oats are used for stock feed. The vegetables are used for a mix of commercial and home consumption. As of September 2008, Mr Tsengiwe had only 4 rows of vegetables planted in one field, along with the wheat. He indicated he is waiting for the rains, which usually come in October, before planting any further.

Field preparation is done by tractor, which is an important asset and needed in the community. However, Mr Tsengiwe does not hire out his tractor, although he may occasionally do a neighbour a favour in ploughing their lands if the family is experiencing particular hardships. He used to be a member of the tractor association in Rabula, but the association is no longer active.

Mr Tsengiwe has cut back on crop production. This is likely due to a number of factors, including old age and Mr Tsengiwe's limited marketing strategies (see below). Another factor, which Mr Tsengiwe himself identifies, relate to labour problems and the situation of the freehold farmers within the Rabula area. Mr Tsengiwe is clearly reluctant to be reliant on labour from the Rabula area and expresses his unhappiness with the lack of willingness of people from the villages to work in agriculture. He indicated his purchase of a planter for the wheat was a result of his desire to be able to plant without labour.

With his age he is obviously able to do less than previously, hence it is understandable that production on labour-intensive activities has been reduced. For regular work Mr Tsengiwe has the assistance of members of his extended family. When he does use labour from the community he uses traditional methods of compensation, i.e. by providing food and beer for workers, along with a little monetary compensation. He usually 'employs' about 15 people during harvest periods.

Mr Tsengiwe indicated that although small, crop theft does occur. Bigger problems in terms of 'theft' occur with troops of monkeys raiding his fields.

### *Wheat*

Along with other farmers he received assistance from the Department of Agriculture through the Massive Food Campaign in 2006, receiving seed and fertiliser. However, he indicated that this support was not a result of active government initiative, but only after the Rabula Farmers Association had approached the Department and shown the Department that they were already planting wheat on their farms. No assistance was granted beyond the 2006 supplies.

### *Assistance from the Department of Agriculture*

Besides the transitory assistance with the wheat farming, Mr Tswengiwe has received no assistance and has limited contact with extension officers. His perspective on the Department's extension services since the integration of the Ciskei Department of Agriculture into a single Department under Bisho is that the officers have become 'desk clerks' who don't know how to farm.

The Rabula Farmers Association (representing freehold farmers) has asked for fencing for arable lands, fencing for the commonage (which is disputed in terms of rights), a tractor for the farmers in the area, and machinery for threshing and milling of wheat. They have also asked for improved control over the commonage to prevent the informal expansion of housing onto the commonage. To date this support has not been forthcoming.

## Marketing

### *Livestock*

Oxen are sold to traders who visit the area. Most sales though are to local households for ceremonial needs. A large livestock unit is sold for between R3500 and R4500 per animal. Mr Tswengiwe is not selling any goats at present, but when his herd was at its optimum size (given at 120) he was selling up to 60 goats per annum.

He does not currently participate in the stock sale days that take place at Keiskammahoek. There used to be stock sale facilities in Rabula during the homeland days, but this has long since stopped and the facilities have been vandalised.

### *Vegetables*

Mr Tsengiwe previously sold vegetables in Stutterheim and King Williams Town, but presently appears to be less interested in, or able to cope with, regional marketing than in the past. His current approach to marketing involves driving his loaded bakkie to town to sell to retailers, but without prior arrangements or negotiations. His experience has understandably been increasingly unsatisfactory in terms of prices offered. On a recent trip to King Williams Town in February 2008, he returned home with his full bakkie load of pumpkins, refusing to sell at the prices offered.

He also used to sell to hawkers in Keiskammahoek. However, he became dissatisfied with these arrangements as hawkers kept trying to negotiate credit with him. Mr Tsengiwe refuses to sell any produce on credit, even within Rabula, citing past experience of such arrangements resulting in financial losses as people default on their debts.

The following Marketing information per crop type is shown in Table 6.3.

# Profile B: Mr Njemla

## Historical background

Mr Makuza Njemla owns a 14 hectare farm in upper Rabula near the village of Magcumeni.

## Table 6.3: Overview of marketing information per crop

| Crop type | Price information |
|---|---|
| Pumpkins | Offered R2 per pumpkin by small retailers in February 2008. Declined to sell and is mostly utilising the crop for home consumption. |
| Potatoes | Good demand, a 10 kg pocket is sold for between R10 and R15 locally. |
| Maize | Sold in 50 kg bags or smaller tins. He however has not sold for a while as he utilises the maize as stock feed. He estimates a price of R120 per bag would be attainable. |

The wheat is sold to the mill in Fort Jackson (East London).

The family took ownership of the farm in 1980 as part of a land swop organised by the Ciskei government. The Njemlas had land (farm 1431) that was wanted for forestry development, and the current farm was vacant, having been taken over from the previous white land owner in 1966. The Njemla family was therefore persuaded to move as part of a land swop. Although the farm is legally owned by Mr Njemla, the land is considered a family asset, and both his brother and his sister have homesteads on the farm.

The white family that previously owned the farm was the Cookes. During their period of ownership, the Cookes farmed oranges using an irrigation system they established based on access to an off-farm river which fed a holding dam above the land. This dam is still evident today. The Cookes also ran a small farm shop servicing the neighbouring village, which was established from 1938 onwards as Hamans 6, in terms of the Betterment processes.

The Cookes left in 1966 after being bought out by the SANT in terms of the 1936 Native Trust and Land Act. When the Cookes left, the Department of Agriculture removed all the citrus trees and the land was left vacant from 1966 until 1980, during which it was used as commonage, presumably for the new Trust village. During this period the property was extensively vandalised and the buildings, irrigation and other infrastructure destroyed.

The only assistance given to the Njemla's in re-establishing the farm was from the Department of Agriculture, which bulldozed the thorn trees out of the arable lands so the lands could be planted once more.

## Profile of the farmer

Mr Njemla is a part-time farmer. His primary occupation was as a teacher, following which he became a school principal. During this period he ran the farm with the help of a foreman. However, when Mr Njemla retired at the age of 65, he carried on farming without a foreman.

Mr Njemla is now 73 years old. As he has gotten older, he has cut back on his farming, and estimates that he currently spends no more than 20 hours per week on farming. He indicated that he would be willing to lease out the arable lands if there was a serious offer. When he dies, the family would select a new family member to run the farm. However, the farm will never be sold as it is the family's home.

The Njemla family could be considered middle class. Both Mr Njemla and his wife were employed by the state and now they receive government pensions. His brother and sister also receive pensions. He has four daughters, two of whom are earning salaries (one is employed in government), and the other two are engaged in *ad hoc* or temporary employment activities.

## Farm details and land uses

Mr Njemla is best understood as a smallholder engaging in mixed income generating practices, all of which contribute to the total household income. These household income sources include:

- Employment / pension
- Crop production (vegetables and wheat)
- Tractor services (ploughing and cartage)
- Milling (grinding maize for other farmers/ villagers).
- Chickens (selling eggs and meat)
- Ad hoc cattle sales.

The 14 hectare farm has about 6 hectares of arable land. The lands are farmed as dryland. The only stream on the farm is insufficient to support irrigation, and the previous (off-farm) irrigation network could not be re-established due to a number of factors, including costs, tensions with the villagers around water use, and possible vandalism or theft.

Besides the cropping, Mr Njemla keeps a small number of cattle for his family use. The cattle are not for commercial purposes, although an animal may occasionally be sold to a local family for ceremonial needs. Besides the small amount of grazing lands on the farm, he has access to the commonage lands for grazing.

## Infrastructure and equipment

The farm has three homestead areas for the two brothers and sister. The homesteads are large and in good condition, reflecting significant investment. Even for the residential uses, water remains a problem. Besides the many rain tanks, Mr Njemla has a water tank on a trailer which he fills from the river.

Besides the residential buildings, there is a zinc and pole construction garage facility in poor condition, and there is a self-built chicken house and pig sty.

Mr Njemla has significant ploughing equipment. This includes four tractors, all purchased second-hand. Three of the tractors are still in use. The fourth tractor no longer works, but was already in poor condition when purchased. The three functioning tractors are all Massy Fergusons, including two 240s (one 1992 and one 2000 model), and a 2004 290.

The MF 290 was purchased for an amount of R69 000. Mr Njemla paid R15 000 in cash from his savings, and took a Land Bank loan for the remaining amount of R54 000. This loan was repaid within the three-year loan period.

Besides the tractors the following equipment is available:

- 3 ploughs (all in good condition)
- 1 disc harrow (in poor condition)
- 1 disc plough (not in working condition)
- 1 trailer
- 1 hammer mill (old but in working condition).

## The production system and marketing

### *Tractor services*

Although not an income derived directly from farming his family's own land, the tractor services are perhaps the most lucrative income generating activity for Mr Njemla. His services appear to be in high demand, and he is apparently the only service provider residing in Rabula.

Ploughing is charged at R450 per hectare, which appears to be an accepted rate for the area. Mr Njemla only ploughs in the Rabula area, and refuses to service needs beyond this. For carting of wood he charges R200 a trailer load, irrespective of the actual distances travelled within Rabula.

Mr Njemla either drives the tractors himself or uses the services of a driver when necessary. The tractors are serviced by a part-time mechanic from Keiskammahoek.[14]

### *Vegetable production*

Vegetables planted include: maize, potatoes, tomatoes, beans, pumpkins, cabbage, spinach and peas. At least half of what is planted is utilised for home consumption, although this depends on amounts planted and harvested. The maize is also used as feed for the chickens and pigs, although a portion is usually sold.

Since going on pension, Mr Njemla no longer uses the services of a foreman for his crops. At the beginning of a season he has no specific plans as to what to plant. He will first gauge the rains and then decide on what to plant and the appropriate quantities. All supplies are obtained from Umthiza in Keiskammahoek.

Those vegetables that are sold are sold off-farm to local villagers. This is mainly because the quantities being sold are fairly small.

Prices achieved in the recent past are shown in Table 6.4.

### *Livestock*

Mr Njemla currently has a herd of 20 cattle. A herder is employed to look after the cattle. Interestingly, the herder is from Lesotho and not a local person. The herder is given accommodation, food and a very small wage.

No small stock are kept due to problems with predators living in the forest, such as lynx and wild pigs.

## Table 6.4: Prices (2008) received per crop

| Crop | Price information |
|---|---|
| Potatoes | R20 per pocket |
| Tomatoes | R4 to R6 per dish (depending on the size of the dish) |
| Cabbages | R7 to R8 per head |
| Spinach | R3 to R5 per bunch |

14 According to Mr Njemla, this man's situation reflects the collapse of the services from the Department of Agriculture. This mechanic is employed by the Department of Agriculture. Within the Ciskei homeland period he was employed as a mechanic, but as no such posts were allocated to Keiskammahoek, he is now employed as a watchman and does vehicle repairs in his spare time.

### *Poultry*

Mr Njemla buys batches of 50 chicks at the age of 4 days, from a nearby white farmer. He grows the chickens until 3 to 4 months old, at which stage he sells the cocks for meat and keeps the hens for egg production. Once the hens become too old for good egg production he sells these for meat as well.

Eggs are consumed by the family, and whatever is surplus is sold locally.

### *Milling*

Mr Njemla uses the hammer mill to grind maize and wheat for home consumption and as an additional way to earn income. He charges R20 for grinding a 50 kilogram bag of maize. The level of demand for this service is dependent on how good the maize crop is in the area. As the mill is powered by a tractor, there are diesel costs associated with the milling operation.

## Conclusions

The two case studies reveal interesting differences as well as similarities. In terms of differences, the farms are considerably different in size, offering very different economic opportunities. The smaller farm (14 hectares) is such that the Njemla's middle class lifestyle is crucially dependent on agri-services (such as the tractor and milling services) and non-farm income, while the larger farm (100 hectares) is such that the Tsengiwes are far more focused on traditional land-based farming activities. The other noticeable difference relates to the farmers themselves: where Mr Njemla appears to have integrated his economic activities with the needs of the local community, Mr Tsengiwe has largely made his activities independent of the wider community. This situation may be partially personality based, and partially related to the different enterprise orientations of their farms.

In terms of similarities both case studies reflected the following situations:

- Both farmers have reasonable non-farm based income sources (employment and then retirement pensions).
- There is evidence that household residence for the wider family remains an important component in the utilisation of the farm (i.e. the land is not just a market commodity). This family-based understanding of ownership of the land is also the basis for succession of one farmer to the next (though whether succession of farming actually takes place remains to be seen and is somewhat doubtful).
- Both farmers have made considerable personal financial investment into their farming operations without any government assistance (e.g. tractors, fencing, breeding stock, etc.).
- Interestingly, neither farmer was prepared to invest in irrigation, preferring to focus on other enterprise opportunities. This may be the result of the cost of irrigation investment, but also appears to be related to other factors which could bring the farmers into difficult social negotiations, especially over water and labour. This meant that, although dryland cropping was practiced, it was regarded as too risky to constitute the primary enterprise.
- Indeed, both case studies indicated problems with labour. While Mr Tsengiwe indicated this directly, there is indirect evidence to the same effect from Mr Njemla's case, for example the employment of a foreigner and lack of any real other employment on the farm. Clearly the social context of smallholders (including and perhaps especially 'freeholders') located within a context of communal land / resources, is important.
- Both farmers indicated that they receive no state assistance, either in the form of grants or extension support. It is also noteworthy that the nature of assistance that farmers are seeking is different to that of the group-based projects. The individual farmers are firstly seeking support in developing their enabling environment (roads, fencing of the commonage and along the roads, management of the commonage); and secondly assistance in equipment / support that can be pooled for their operations (shared milling and tractor equipment under the auspices of the Farmers Association).
- In the same vein, the support that was briefly received in the form of subsidised seeds and fertilisers for the wheat farming, appeared to be welcome, but was not pri-

mary on the list of needs considered. This is probably because the farmers recognise that without the milling infrastructure the planting has more limited financial opportunities. Furthermore, the farmers engage in a diverse range of cropping types, and any 'massive' food mono-crop focus runs counter to their diversification strategies.

In conclusion, it is also important to note that both farmers are over 70 years old. However, with adaptations to their farming practices they are both still active and able to generate an income out of their farms.

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# 7 Phakamani Mawethu Development Trust, Stutterheim: an emerging commercial farming project

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## Introduction

The Phakamani Mawethu Development Trust project (Figure 7.1) is situated in Bolo, an area bordering Mgwali village in Amahlathi Local Municipality. The nearest town is Stutterheim, which is about 28 kilometres away along a dirt road that follows the perimeter fence of the Dohne Agricultural Technology Transfer Institute. The members of the project come from Mgwali Village, which was established in 1873. At the turn of the century, its population greatly increased due to the eviction of farm workers from surrounding white-owned farms. Mgwali was declared a 'black spot' in the 1960s and the community was faced with relocation to Frankfort in the former Ciskei, which they resisted (Border Rural Committee, 1998).

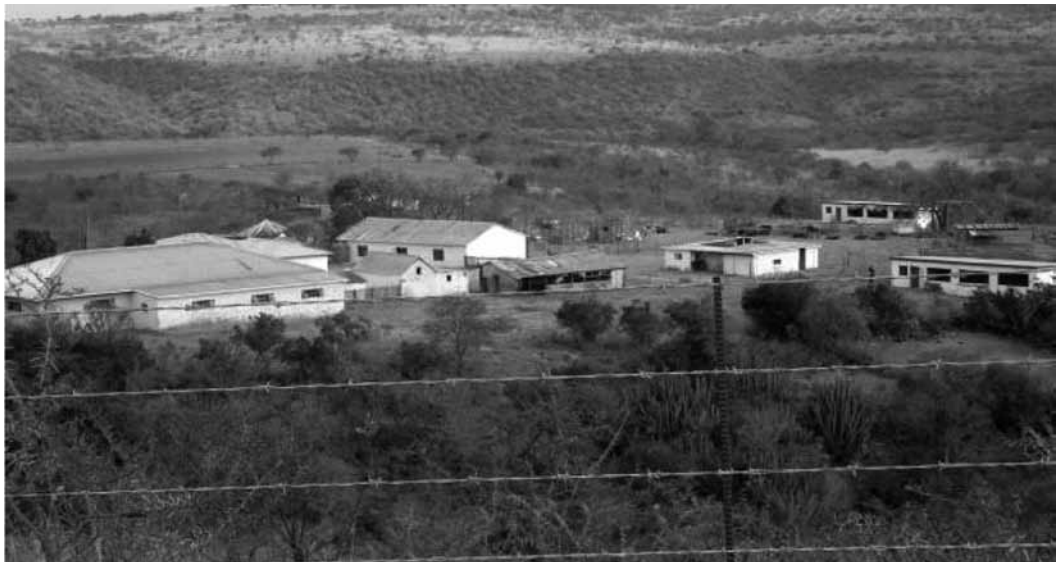
This case study presents a profile of a project that is locally considered to be very successful. Considering the project members' background of having worked on white-owned farms, they had the urge to own a farm to generate an income and also provide employment to others.

## Historical perspective

### 1998-2000

In 1998 the owner of the farm Renan, Mr Rod Buchler, was shot and killed. This was during a time when there was a wave of farm murders in the region. After his funeral, his family decided to sell the farm because of their sense of insecurity. They gave the first option to buy the farm to their four farm workers. The workers mobi-

**Figure 7.1: Panoramic view of the project farm**



lised others from the village of Mgwali, based on work ethic and trustworthiness. Eventually, they formed a group of 21 people in order form a large enough applicant group to raise the necessary funds. At the time, they were each eligible for a Settlement/Land Acquisition Grant of R16 000, meaning the group would be able to command a total of R336 000. The farm was initially priced at R600 000, but through negotiations, it was reduced to R400 000. In the end, the group was awarded a total grant by the Department of Land Affairs of R328 500 and secured a loan of R71 500. Transfer of the land took place in February 2000.

**2000**

In the process of buying the farm, a constitution and a business plan were crafted by an attorney in Stutterheim. The same attorney processed the transfer and registration of the farm on behalf of the previous owner. The project members were advised to form a trust, which was ultimately registered in the year 2000. In order to get commitment from the 21 people who had expressed interest to be part of the project, each member was required to contribute a once-off joining fee of R250, a cow and a monthly fee of R50 per person. This was done in order to raise funds to start operating the farm. However, because of these requirements, ultimately only 13 members were able to contribute as required and thus were the active members. Recently, one of the members passed-on, leaving 12 active members. On selling the farm the previous owner bought 2000 day old chicks, together with the necessary drinkers, feeders, heater (gas and electric) and abattoir equipment (stunner, plucker, bleeder) to kick-start the farming enterprise of the 'new farmers'. The new owners had to buy feed from their own funds. As it was the first time they kept broiler chickens on their own, they lost more than a tenth of them.

**2002**

This was a period when job creation was promoted by Cosatu, and a few years after the launch of the Job Creation Trust, administered by the Development Bank of Southern Africa and funded by money donated by workers. The management team of Phakamani Mawethu Development Trust approached the DBSA to secure a loan. When the project was assessed it qualified for R1.5 million as a soft loan and R300 000 as a grant, so they applied for R1.8 million.

**2003**

DBSA approved the amount of R1.8 million which was used to buy a second-hand tractor and various implements, as well as cattle, goats, 10 000 broiler chicks, feed, abattoir equipment, and office equipment. Everything went well in that year; the group even employed 15 interns from the community to assist in the abattoir and in weeding the fields.

**2004**

The group formally launched the project where an ox was slaughtered (equivalent to R4500) and 10 sheep that cost R500 each. Among those who attended were delegates from COSATU and Land Affairs. The project used part of the money they got from DBSA to organise the launch with the understanding that the funds would be refunded. Unfortunately, the money was never refunded.

**2005**

This is the year when there was an outbreak of Newcastle disease among chicken farms across the Eastern Cape. The project also was badly affected, with the loss of 2000 chickens in one house and 5000 overall; this resulted in a loss of close to R30 000. The poor condition of the poultry houses contributed to the occurrence and spread of the disease. Wild birds, which are carriers of this disease, have access to the feed and water because the poultry houses are not bird-proof. The project was granted a loan of R100 000 from Uvimba Bank. The project was able to re-stock with day-old chicks, 2000 every fortnight. The same year, Eskom gave the project a grant of R300 000, which was used in the building of additional poultry shelters. Unfortunately, the contractor who built the shelters did not do a good job because the floor started chipping a few weeks after completion. In addition the sails that were provided were of a poor quality such that they are already torn. The project did not have a say in the selection of the contractor, but depended on who the funder had decided on.

**2006**

This was the year when there was a shortage of chickens in the country due to the country-wide Newcastle disease in 2005. As a result the parent stock used in the production of day-old chicks was destroyed. So farmers could only buy 200 chicks at a time. The project continued stocking about 500 in order to supply their customers.

**2007**

This is when the project had a problem with the abattoir. It was inspected by inspectors from East London who found that it was not up to standard. For example, there was no ceiling and there were holes in the cement floor.

**2008**

The group secured support for getting a new and improved abattoir with a bigger capacity and ability to slaughter both chickens and other animals. It is funded by the National Department of Agriculture for an amount of R500 000. The chicken shelters will also be improved.

### Management

Before starting the project, the group selected office bearers based on previous experiences. The positions were Chairperson, Deputy, Secretary, Vice Secretary and Treasurer. The management team was sent for training and also the person who was tasked to run the animal production was sent for technical training at Fort Cox College of Agriculture. Further training was offered through the Department of Labour on vegetable, poultry, and pig production and fencing.

A great concern is the lack of youth involvement in the project. When the project has work, the project employs casual workers who are mostly youth. A problem is that they reportedly want payment on a daily basis and do not want to work long hours. However, each of the members has to include one of their children in their wills to ensure the continuity of the project.

At the time of registration there were 21 members, but as a result of the reduction of members, they would like to change from a Trust to another entity because it is a requirement of their registration that they be 21 in number. Their fear is that if they were to bring in new members in order to reach the stipulated number, they might in the process bring in people who could turn out to be disruptive to the project. Since the original members contributed a cow as one of the criteria of joining, this criterion has remained in place for new membership. It id felt that f a person is willing to contribute the cow it is an indication of their seriousness about the project.

Another approach they have decided on is that the married members of the project can include their spouses as memebers rather than introducing totally new individuals to the project.

## Natural and physical resources

The farm comprises a total of 515 hectares, of which 30 hectares are arable with approximately 10 hectares of irrigable land. Soil tests were conducted by the extension officers from the Stutterheim office to determine suitable crops to be grown on the farm. Rain comes in mid-September and farmers grow vegetables, potatoes and maize.

There are a total of five chicken houses, but as already mentioned, two suffered from poor workmanship and are in unsatisfactory condition. The farmers converted one of the sheds that was previously used as a shearing shed into a poultry shelter, which stocks 2000 birds. The other two buildings are rondavels, each with capacity to house 1000 chickens. Another building that is located close to the entrance of the farm has a capacity to house 3000 chickens. Several of the houses on the farm will have to be moved to ensure that the farm conforms to the requirements of good abattoir practice, where there is a clean area and a dirty area.

Each of the houses is fitted with feeders, drinkers and all are wired with electricity which is used for lighting and heat for the chicks.

The farm has a relatively new fence which was provided by the Department of Agriculture in 2006. The project also has a 3-ton Toyota truck that was funded by Shell in 2005. The project has stock dams used to water the animals. Water to irrigate the crops is from a borehole that uses an electric pump.

## Production systems

The project is involved in both livestock and crop production.

The group is involved in the production of three breeds of beef cattle, namely Beefmaster, Brahman, and Nguni. Their aim is to produce weaners which tend to fetch relatively high prices at the auctions compared to older animals. At the time of conducting the fieldwork, there were 120 cows and 3 bulls. Cattle are dipped weekly in summer and fortnightly in winter.

The project also raises goats, especially the Boergoat breed. Goats are dipped only when they

have lice, mites or when there is a high incidence of limping. At the time of conducting the fieldwork there were 80 goats.

Kraal manure from both the goat flock and the cattle herd is used as fertiliser, either on its own (especially for fields planted to a single crop) or in conjunction with chemical fertiliser. This lowers costs for fertiliser, but at the same time project members report a reduction in yields.

The project also keeps pigs. In 2003 they bought four sows and one boar; in 2004 they sold about 24 piglets at R150 each. In 2006, there was widespread swine fever, which resulted in many communities losing their pigs, and as a consequence government introduced a process of 100% termination of pigs in some areas. Although the project farm did not experience the disease, they had decided to reduce numbers; at the time of conducting fieldwork, there were only two sows and the one boar. This reduction was partly a precaution and partly in response to the project's unrelated cash flow problems (i.e. due to the closing of the chicken abattoir), as pigs are expensive to feed.

The project produces broiler chickens which they raise from day-old chicks. They use a deep litter system using wood shavings as bedding. With good feeding and management it takes approximately 6 weeks for a broiler chick to reach market weight. At the end of a production cycle the litter, which is by then mixed with the chicken droppings, is used as fertiliser, but also reportedly fed to the ruminants. The droppings are a source of non-protein nitrogen which is utilised by ruminant animals in their digestion. At the time of conducting the filed work, the broiler enterprise had been suspended because of the closure of the chicken abattoir, though why the group did not figure out a way of marketing its broilers to someone else's abattoir is unclear. In full operation the project used to stock close on 2000 chickens per week.

In 2005 the Department of Agriculture provided fertiliser to the project; however the farmers had to buy their own seeds. In addition the Department also provided the farmers with veterinary products for their chickens.

In the beginning, before they had cattle, two private farmers leased some of the project land at R20/month per cow. In fact the project's first bakkie was obtained through an exchange arrangement whereby one of the neighbouring white farmers paid in-kind for cattle grazing with a bakkie.

At present, each of the project members keeps their own animals on the farm, but separately from the project animals. Pressure on grazing resources is contained by practising rotational resting.

### Challenges

Theft is starting to be a problem, which is attributed to unemployment in the area exacerbated by hard economic times. At the time of conducting this case study, thieves had broken into the chicken houses three times. And because of the fear of theft, the project does not keep sheep, because they are easily stolen.

The project bought a second-hand tractor, which has been giving the group problems (Figure 7.2). As a result it is used for light duties only.

## Economic aspects

The project uses a range of marketing strategies. They sell locally directly to Spaza shops, but in other instances they transport their broilers to the former Transkei, Alice, Middledrift, Whittlesea, East London, to a poultry packing company, and even to KFC fast food outlet in Stutterheim. Their chicken marketing strategy has evolved greatly since they began; in fact, they sold their first batch of chickens in 2000 to the brother of the late former owner of the farm, largely owing to the fact that they did not know what to do with them. They also sold some of their broilers in the village of Mgwali.

During the time when they produced chickens, they would earn a profit of about R800 per month. But as mentioned above, when they were stopped from slaughtering chickens in the abattoir, they stopped keeping chickens. High chicken mortalities also eroded the project's funds. The project is now dependent on the goats and cattle, which they sell in order to service their loans. As a result of cash flow problems, they scaled down on the use of electricity to pump water and thus cannot irrigate the crops.

Cattle are sold at auctions when they are 18 months old, which results in higher prices compared to mature cattle. Cattle are only sold when the project has to pay loan instalments. This is a temporary measure to ensure they do not fall behind with the repayment of their debts. Goats

## Figure 7.2: The project's tractor

are mainly sold on the farm, especially during June and December which is when traditional ceremonies take place.

Sows are kept to produce piglets, which are sold off at R150 each. Ultimately the mature sows are slaughtered and the meat sold amongst the project members and the remainder sold to the community of Mgwali.

Over the years the project has managed to establish and produce profitably from various enterprises, as detailed in Tables 7.1 through 7.5. Of interest to note is the major contribution the broiler enterprise had made to the income of the project. This enterprise was possible because of easy access to finance, but now that the broiler enterprise is temporarily grounded, the members do not receive any wages and discipline is required and practised to pay outstanding loans.

The production cycle for broiler chickens is 6 weeks, following which the houses have to be cleaned, disinfected and left standing for a week or so. Overall it takes two months to restock in the same house. Considering that the project stocked 2000 day-old chicks on a weekly basis, using 4 houses, they would stock 8000 chickens in a period of 4 weeks. There would be 4 other cycles of this nature, giving a total of 32 000 chickens produced in a year. Assuming an industry acceptable mortality level of 5% (1600 chickens), and the number of chickens donated to each member at the end of each cycle (total of 192), the number sold would be 30 208 chickens. As previously indicated, during the period when the project kept chickens, the members received a monthly wage of R800. Assuming that it was over the whole 12 months, this would come to a total of R115 200.

Farming expenses for broilers include wages for 12 members for a year R115 200. Farming expenses for livestock were not accessible, but they should be minimal and include dipping and treatment costs. Although the gross income from livestock seems to be on the lower side, it should be remembered that the project sells livestock only to pay the instalments on bank loans. The gross income does not include the produce that the project members receive in-kind.

### Participation in other sections of agricultural commodity chains

The project engages in various activities of value addition, mainly slaughtering and packaging of various livestock products, and milling of maize into maize meal for household use. Plans are underway to plant peach trees facilitated by a

## Table 7.1: Purchased inputs – crop-related (2008)

| Input | How often purchased | Amount purchased | Cost (Rand) | Where purchased |
|---|---|---|---|---|
| Seeds/ seedlings | | | | |
| Cabbage | June | 50 000 seedlings | 6 500 | Umthiza Stutterheim |
| Spinach | June | 5000 seedlings | 550 | Umthiza Stutterheim |
| Potatoes | End August | 10 Kg x 70 pockets | 11 200 | Umthiza Stutterheim |
| Maize | End August | 25 Kg x 4 seed | 3 000 | Umthiza Stutterheim |
| Fertiliser, chemical | | | | |
| 2:2:3 or 3:4:3 | July – August | 50 Kg x 20 bags | 3 700 | Farmarama, East London |
| LAN | | 50 Kg x 15 bags | 1 500 | |
| Fertiliser, organic | Own kraal | 3 cubic metres/ 50 ha | Free | |
| Herbicide | Seasonally | | 2 480 | |
| Pesticide<br>Folicur 250 EW | Seasonally | Donation | Donation | Department of Agriculture |
| Diesel | Daily if ploughing | R600 x 24 days | 14 400 | Stutterheim |
| Diesel | Every 3 days carting | R300 x 10 days | 3 000 | |
| Maintenance | When necessary | Done by members | Free | Project members |
| Milling | Whenever necessary | 30 litres of fuel at R10/ litre | 300 | Stutterheim |
| Electricity to irrigate crops | Monthly | | 1 500 | Eskom |
| Total | | | 41 080 | |

## Table 7.2: Purchased inputs – broiler related (2008)

| Input | How often purchased | Amount purchased | Cost (Rand) | Where purchased |
|---|---|---|---|---|
| Day-old-chicks | Used to stock every 2 weeks | 32 000 | 64 000 | IQP East London |
| Feed | | (50 Kg bags) | | |
| Phase 1 | At the beginning of a cycle | 192 | 28 416 | Epol, Berlin |
| Phase 2 | | 640 | 80 640 | Umthiza at times |
| Phase 3 | | 448 | 47 040 | |
| Vet products | | | | |
| Terramycin pwdr | At beginning of cycle | 500 g x 128 | 19 200 | Umthiza |
| Newcastle Divac | Beginning of cycle | 32 vials | 1 280 | Umthiza |
| Gumboro vac | Beginning of cycle | 32 vials | 1 216 | Umthiza |
| Electricity<br>(lighting, heating, pumping water) | Monthly | | 64 000 | Eskom Stutterheim |
| Bedding | | 5 bales (each about 50 Kg bag x 6 | Free | Rance timber |
| Total | | | 305 792 | |

## Table 7.3: Revenue from crops (2008)

| Type of crop | Quantities | Price (Rand) | Revenue (Rand) |
|---|---|---|---|
| Potatoes | 10 Kg x 750 bags | 20 | 15 000 |
| Cabbages | 40 500 heads | 2 | 90 000 |
| Spinach | 10 000 bunches | 2 | 20 000 |
| Maize | 250 x 50 Kg bags | 100 | 25 000 |
| Total | | | 150 000 |

## Table 7.4: Changes in stock and revenue generated (2008)

| | Adult females | Revenue (Rand) | Adult males | Revenue (Rand) | Non-adults | Revenue (Rand) |
|---|---|---|---|---|---|---|
| Cattle current | 93 | | 4 | | 33 | |
| Sold within past 12 months | | | 1 bull | 6 000 | 8 units | 20 000 |
| Slaughtered for funeral | | | 1 ox | | | |
| Goats – current | 60 | | 1 | | 5 (kidding time) | |
| Sold 12 months ago | 7 | 4 900 | 6 | 4 200 | | |
| Slaughtered | 1 ( R600) | | | | | |
| Pigs – current | 2 | | 1 | | - | |
| Pigs as of 12 months ago | 4 | | 1 | | 16 | 2 400 |
| Poultry sold 12 months ago | 30 208 @ R25 | 755 200 | | | | |
| Slaughtered | 1 per member at end of production cycle | | | | | |
| Total | | 760 100 | | 10 200 | | 22 400 |

## Table 7.5: Net farming profits of different enterprises (2008)

| | Crops (R) | Livestock (R) | Broilers (R) |
|---|---|---|---|
| Gross income | 150 000 | 37 500 | 755 200 |
| Farming expenses | 41 080 | - | 420 992 |
| Net farming profit | 108 920 | 37 500 | 334 208 |

stakeholder from Paarl who is funding the seedlings. The project members are to be trained in the processing of fruit into various products like jam.

## Livelihood significance

It is apparent that the Phakamani Mawethu Development Trust project has had a positive impact on the livelihoods of the members. Members derive both income and food. In addition, members are provided with alternative grazing for their animals. Seasonal workers also derive a source of income from the project. The project provides a sense of belonging for the members, especially important since most of the members of pensioners.

## Social and institutional dimensions

The Phakamani Mawethu Development Trust has a good relationship with Mgwali Village which borders the farm where this project is located. All the project members are from that village and the project also provides seasonal jobs for some people from the village. In addition, the project farm provides grazing for the members' livestock, especially in times of droughts.

Since the project's initiation, several institutions have provided support in the form of funds, training, infrastructure development, and inputs. Table 7.6 shows the type of support and the respective institutions responsible for each input.

## Gender, class and human dimensions

The management of the project is by men. The membership profile indicates the predominance of older people and especially men. The members have identified their age to be a big challenge in the sustainability and thus the future of the project. The strategy they have adopted is for each member of the project to enrol two younger people from their families to participate in the project.

Out of the 12 members, there are only three women. These women tend to be responsible for carrying out relatively light tasks. They are responsible for the cleaning of the compound and removing grains from the cobs.

Generally the education level of the members is very low, (many of the people in Mgwali were previously farm workers who were retrenched). The exception is two people in the management of the project who have tertiary education qualifications. Despite the low level of formal education, members have the technical skills necessary for the enterprise or activity they are responsible for. Relevant skills were acquired through training offered to the group, but also from their previous places of work on farms.

## Perceptions of performance

Analysis shows that the profits of this project are good, especially from the broiler enterprise. Focus was mainly on the broiler enterprise, and when production was halted all the other enterprises were affected negatively. Irrigation of the vegetables was not possible due to the decision to rationalise in order to reduce the electricity bill.

The project has established a good quality herd of cattle and flock of goats that match commercial livestock herds and flocks. The adoption of standard production practices, like disease prevention in the form of vaccination scheduling, strict tick and worm control measures, and the selling yearlings brings in higher practices.

## Table 7.6: Institutions and types of support offered to the farm

| Type of support | Institution(s) |
|---|---|
| Funding (loans and grants) | Department of Land Affairs, Land Bank, Development Bank of Southern Africa, Uvimba Bank, Eskom, National Lotteries, National Department of Agriculture |
| Infrastructure | National Department of Agriculture |
| Training | Fort Cox College of Agriculture and Forestry, AgriSeta |
| Vehicle (3 ton) | Shell |
| Inputs | EC Department of Agriculture |

## Figure 7.3: Some members of the project

The project has been able to pay its loans as required. This is due to good management based on experience of running projects of this nature and a cohesive and supportive membership.

Despite these achievements, the fact that the members go for long periods without any income may eventually lead to loss of morale. This is also why youth are not interested who, according to members, want to receive immediate payment for work.

Some machinery, notably the tractor, will need to be replaced, although it is still used for light tasks like carting.

Success is a subjective concept. From an outsider's view, one notes that despite the several grants and support from various stakeholders, there is a shortage of cash flow. This could be explained mainly by failure of the broiler project. Despite setbacks and challenges, the commitment of all project members has helped to keep this project together. In addition, technical ability to run the enterprise with minimal outside intervention is admirable.

The ability to establish a market, to dispose of all produce is one of the fundamentals of success and one the project has complied with well. The ability to fulfil the project's financial commitments to the repayment of loans is another indicator of success.

## Environmental aspects

The Phakamani Mawethu Development Trust has incorporated an environmental protection component in their operation. One such practice is the use of organic manure from their cattle, goats and broiler enterprises, which results in the reduction of synthetic fertiliser use in crop production. Organic manure also increases the water retention abilities of soil that results in the reduction of water loss to the atmosphere. Ultimately less water will be required for irrigation.

The project uses a lot of herbicides in the effort to control weeds. These may impact negatively on to the soil and the water.

## The future

Funding from the National Department of Agriculture will see the erection of a modern abattoir and the poultry houses will be rebuilt or upgraded to a standard acceptable to industry. Following this, one expects that the project will resume its broiler production enterprise which is its main money earner. Longer-term sustainability of the project will depend on getting the youth involved. To its credit, the group is tak-

ing active steps to try to involve the youth now, showing an unusual degree of forward-thinking.

## Conclusion

Many Land Reform Programme projects, especially redistribution projects, have failed. This particular project was selected for a case study to provide some understanding of the challenges it had to overcome to succeed. Of importance are the following observations:

- Members are all elderly; no youth participates on a membership basis although seasonal labour involving youth is used.
- The size of the operation is relatively big, but this is managed through the allocation of individual responsibility for certain operations or enterprises on the farm.
- Despite the members going without wages or income for long periods, they still carry on. This is due to a sense of ownership and a strong work ethic. They have shown commitment and dedication.
- All members are constantly active in the various operations on the farm, which eliminates free riders and absentee members – a factor that has contributed to the failure of many projects.
- The success of the project thus far is also partly attributed to the management, which is consultative in style. As a result the membership gives them all the support and decisions are owned by all. This is also reflected in the financial discipline exhibited, so that the project is able to pay its loans as planned, despite financial hardships at times.
- The fact that many members have technical knowledge and skill has ensured better performance than in many other similar projects.
- The project has been able to solicit resources from various stakeholders and to maintain a good relationship with the various organisations.

# 8 Marang Women in Agriculture and Development: a profitable multi-enterprise group project in North West

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## Introduction

The Marang Women in Agriculture and Development project is a women-driven initiative with a long history of financial independence and demonstrated job creation capacity. It is located in Phokeng, which is about 15 kilometres from Rustenburg, North West Province. It is involved in vegetable production, bee farming and training. The farm has committed and hardworking beneficiaries who have won recognition and various awards from different institutions. The members of the project depend solely on the incomes from the project for their livelihoods. There are also some spin-off benefits to the immediate community in the form of affordable, quality vegetables and honey. The project blends well with a number of technologies in support of its enterprises. Some of the elements of success that can be drawn from this case study are that:

- The individual members of the project are strongly motivated and committed to achieve a sustainable living from their holdings. Each member shows clear satisfaction with her achievement.
- The project demonstrates effective partnerships and cooperation between community, government and NGOs.
- The project facilitates development through providing appropriate training, and linkages with institutions which can provide technical guidance.

However, in some respects the project bears the traits of a 'magnet project', i.e. one which attracts a disproportionate share of external support. Together with the unusually high educational attainment of the project's leaders, there are doubts as to the project's replicability.

## Historical evolution

In 1997, in the face of escalating crime, unemployment and poverty, twelve unemployed women came up with an idea of establishing an agricultural project. Due to lack of financial and technical support, the number of participants quickly dropped to four during the initial conceptualisation phase. The four remaining members eventually came up with an idea of providing training and development in agriculture for the disadvantaged communities. This women's group is called Marang Women in Agriculture and Development ("Marang" means "Sun Rays"). Initially, the group utilised the members' own small backyard plots for small-scale vegetable production. In 2000, however, the Royal Bafokeng Administration, in partnership with the Department of Agriculture, allocated a two-hectare plot to the project. In the same year, the National Development Agency (NDA) assisted the Marang group to access training in commercial bee farming.

Marang was registered as a Non-Profit Organisation (NPO) in 2001. When members realised that the production of vegetables and honey was rapidly growing, the women founded the Mar-

wa Honey Queens Close Corporation in 2003, which specialises in honey production and by-products. Also in 2003, Marang requested more land from the Royal Bafokeng Administration, and were allocated an additional four hectares. In 2007, Marang registered a co-operative.

The organisation has been functioning well and has had consistently good results because it is headed by a strong, skilled team who share the same vision. The organisation's activities are monitored and evaluated at specified times to ensure sustainability. The organisation generates income through various activities and services including:

- Training services.
- Honey and by-products – income generated from sales.
- Pollination service – commercial farmers rent hives populated with bees to pollinate their crops.
- Bee removals – problematic bees are removed from homes and buildings at a fee.
- Vegetables – income generated from sales.
- Networking – negotiating with sponsors, donors and institutions for funds.

Although Marang is involved in a variety of enterprises, they see their core business for the future in vegetable and honey production, because training is an irregular activity. Produce activities have grown from backyard plots to two hectares to the current five hectares. They intend to de-bush the remaining two hectares for further expansion of vegetable production.

Marang has won various awards from different organisations and institutions in various categories since 2001 as shown in Table 8.1.

The major challenges facing the organisation have been:

- Financial – limited funds that do not fully cover the operational costs.
- Infrastructure – especially farm equipment that needs to be upgraded.
- Water – the project has no borehole and depends on municipal water. This source sometimes gives problems to the extent that the project can stay for more than a week without water.

## Natural and physical resources

The main type of soil on the project site is a red brown sandy loam classified as Hutton. The particle size distribution of the soil is given in Table 8.2 while its chemical properties are presented in Table 8.3. The textures of the soils are within what is considered optimum for irrigation. Although no field measurements of infiltration rate were undertaken during the survey, measurements carried out in similar soils elsewhere suggest that both soils would have sustained infiltration rates in the range 60-100 mm per hour, implying that it is suitable for irrigation.

## Table 8.1: Awards and achievement certificates won by Marang since its inception

| Year | Name of awarding organisation | Name of award |
|---|---|---|
| 2001 | National African Farmers Union | Farmer of the Year |
| 2002 | Department of Agriculture | Certificate of Achievement |
| 2002 | Department of Economics and Tourism | Achiever Award Woman in Business ('Overall Winner') |
| 2002 | Impumelelo Innovation Award Trust | Silver Innovative Award |
| 2003 | Department of Agriculture | Runner-up Female Farmer |
| 2004 | Eskom Development Foundation | Sustainable Development Award |
| 2005 | Mail & Guardian | SMMES Award ('Overall Winner') |
| 2006 | Sowetan/Old Mutual/SABC | District Community Builder |
| 2006 | Eskom Development Foundation | Bronze Award Best Exhibitor |
| 2007 | Shoprite Checkers/SABC | Runner-up Woman of the year |

The phosphorus content of the soil at the site is quite high compared to soils found in many parts of the province. Phosphorus (P) is an important nutrient, the absence of which limits crop production in many soils. The general requirement is likely to be of the order of 80 to 120 kg/ha P for most crops. Use of adequate amounts of manure will help to build up the soil P levels in the long term.

In terms of the calcium and magnesium contents and pH values, the soil at the site does not require liming either for nutritional or pH amelioration purposes. In the longer term, however, with prolonged irrigation, applications of dolomitic lime might become necessary to ensure optimal plant growth. Thus, the changes in the pH and concentration of bases in the soils need to be monitored continuously. It may be concluded that the soil of the site has an excellent potential for irrigated crop production. This is mostly because in addition to being located on relatively flat terrain, the soil has a deep, well-drained profile. It has an effective soil depth of over 90 cm and the topsoil is porous. The soil is thus suitable for crop farming and is good for most types of vegetables, orchards, use as a nursery and indigenous plants.

According to hydrological investigations previously undertaken in the area, the hydro geological potential is classified as moderate to good. The quality is also considered to be suitable for irrigation. However, although there are four boreholes, they are not well endowed with water and dry up during the summer. Since project implementation requires substantial water, the participants carry water in buckets on their heads from far away. However, in late 2003 the Department of Agriculture provided the project with a R3100 grant to tap municipal water from the Bafokeng Tribal Authority to the training site. This has alleviated the problem and reduced the drudgery and water is now being drawn very close to the project. Recently, the project was granted permission by the Royal Bafokeng Administration to use local Magalies water for their activities. The connections were sponsored by Impala Platinum Mine.

Figure 8.1 shows the monthly distribution of rainfall for Phokeng, which is the closest station to the location of the project. The area falls within the dry winter and wet summer region, since 86% of the annual rainfall comes during the summer months of October to March. The rainfall is quite unreliable in both quantity and

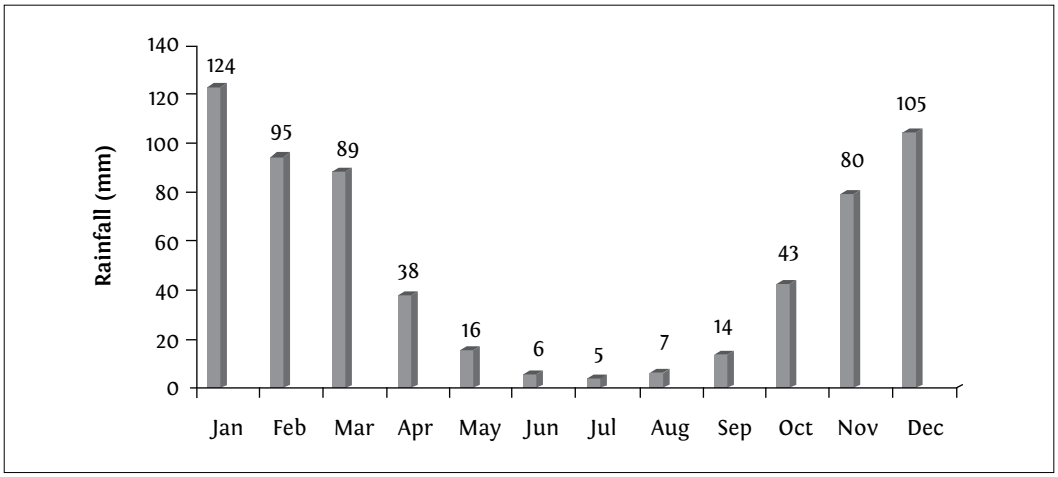
## Table 8.2: Particle size distribution analysis and texture of the soil at the project site

| **Soil Depth (cm)** | **0 -15** | **15 -30** |
|---|---|---|
| Horizon Name | Top | Sub |
| Particle size distribution (%) | | |
| Sand (>0.002 mm) | 20 | 23 |
| Silt (0.053-0.002 mm) | 70 | 67 |
| Clay (<0.002 mm) | 10 | 10 |
| Texture | SL | LS |

## Table 8.3 Chemical properties of the soils at the project site

| **Soil depth (cm)** | **0 -15** | **15 - 30** |
|---|---|---|
| Horizon name | Top | Sub |
| Exchangeable cations (ppm) | | |
| K | 40 | 34 |
| Na | 10 | 75 |
| Available P (mg/kg) | 216 | 67 |
| Organic carbon (%) | 0.8 | 0.74 |
| Ph (water) 1:2.5 | 6.06 | 6.05 |
| EC (ms/cm) | 18.2 | 17.5 |

## Figure 8.1: Monthly distribution of rainfall at Phokeng




distribution. Because of frequent prolonged dryness however dryland crop production is both risky and unreliable. Irrigation will thus have to be utilised for vegetable production. The area has hot summers with mean monthly maximum temperatures for December to February ranging between 29° and 30° C. During this time, extreme temperatures of 39° C may be recorded. These extremely high temperatures may cause heat stress in crops resulting in damage, especially for fruit and orchard crops. Winter temperatures, on the other hand, are cool to cold, with monthly means of 7° to 9° C. The area enjoys high levels of radiation and light is probably the least limiting factor of all the climatic variables influencing the agricultural potential of the area.

The risk of frost incidence in the area is considered to be relatively low, although ground frost can be expected for some 5 to 10 days each winter. However, the temperature regime in the area, which determines the frost-free period, does not pose major constraints that would restrict agricultural activity, as most crops are cultivated during the summer months. The project area is relatively flat and has a slope of less than 1:120. This slope is generally ideal for crop production and amenable to irrigated agriculture. The vegetation in the project area lies in a savannah biome called Kalahari Plains Thorn Bushveld (or commonly as 'Kalahari Thornveld'). The vegetation is characterised by a fairly well developed tree stratum with Camel Thorn (Acacia erioloba) and Boscia albitrunca as the dominant trees, along with scattered individuals of Acacia luederitzi and Terminalia serecea, which is conspicuous.

An array of infrastructure and equipment used at the farm include:

- Tractors
- Garden tools
- Hydroponics structures
- Honey processing machines
- Cold room
- Beehive boxes.

An inventory of moveable and immovable assets at the farm as at September 2008 is presented in Table 8.4. Most of the assets were acquired through grants from government and mining companies around Rustenburg. However, a few of the assets such as a farm tractor and accessories were acquired with own funding.

## Production systems

The enterprises undertaken by this project are:

Vegetable production – This involves the production of a variety of vegetables under irrigation in tunnels and under net structures. The vegetables produced on the project include tomatoes, carrots, spinach, beetroot, green pepper and chillies. In some of the tunnels, the seedlings are planted in polythene bags while in other tunnels they are planted on seed beds. The production follows a well designed rotation that incorporates both summer and winter crops. The vegetables in the tunnels are irrigated by drip while those under the nets are irrigated by a furrow irrigation system. The members also fill used tyres

## Table 8.4: Inventory of movable and immovable farm assets

| Item | Year of purchase | Present value | Condition | How it was acquired | Predicted lifespan | How asset maintained? | Who operates the asset? |
|---|---|---|---|---|---|---|---|
| Stallion bakkie | 2002 | R15 000 | Old but functional | NDA grant | 3 years | Serviced when needed | Supervisor |
| Volkswagen Citi Golf | 2003 | R45 000 | Old but functional | NDA grant | 5 years | Serviced when needed | Supervisor |
| Hydroponic structure | 2004 | R30 000 | Good | Impala grant | 5 years | Self-maintenance | Farm workers |
| Rotovator hand propeller tractor | 2005 | R35 000 | Good | NDA grant | 10 years | Maintenance monthly | Farm workers |
| Mac Ferguson tractor | 2006 | R30 000 | Average | Own funds | 5 years | Maintenance monthly | Farm workers |
| Honey processing machines | 2006 | R20 000 | Good | NDA grant | 10 years | Maintenance when needed | Farm workers |
| Net Structures | 2007 | R180 000 | Good | CASP grant (Dept. of Agric) | 10 years | Self-maintained | Farmworkers |

with soil and plant vegetables in them. Sometimes, sprinkler irrigation is utilised in the latter. Both fertiliser and organic manure are used during production. Disease and pest control are maintained by spraying with appropriate chemicals. Weeding is mostly done by hand on the project. The vegetables are harvested and sold, mostly without any value-adding.

Honey production and by-products – This involves the rearing of bees in wooden beehives. The beehives are placed in the uncultivated areas of the project site and on some nearby commercial farms. The honey is harvested using conventional technology that Marang has mastered over the years. The honey is processed using both motorised and manual centrifuges as shown below. The processed honey is then bottled for market. The main by-product is wax, which is made into candles which are sold locally. The beehive boxes are made by the women themselves and also sold to other interested smallholder farmers in the province.

Training and development – Marang provides training to farmers and the community in various disciplines such as agriculture, HIV and AIDS, basic computing, project management and book-keeping. This training is conducted at the project site, but generally only when a tender is won, hence it does not represent a reliable source of income.

Establishment of nursery – This is in the process of being established. The idea is to produce vegetables and tree seedlings that can be sold to the community.

Table 8.5 gives a summary of the enterprises, goals, activities and implementation of these activities.

All the production and marketing activities on the farm are done by the project members and by hired workers. There are also no gender-specific roles in the production and marketing of the various enterprises.

About 88% of the products from the farm are sold, 3% are consumed directly by the beneficiaries, 7% given away to 'social responsibility' projects and 2% is lost through damages. The technologies which are employed in the production of the various enterprises are mostly manual with limited modern technology. There is some value adding that is done to the honey and some of the vegetables (i.e. cleaning and packaging, but only for some of the produce). The products are marketed locally in the informal settlements

## Figure 8.1: Honey extraction machines


## Table 8.5: Enterprises, goals, activities and their implementation

| Enterprises | Goals | Activities | Implementation |
|---|---|---|---|
| Vegetable production | To promote fresh and healthy products | Different vegetables are planted, marketed and supplied to local communities and formal markets | Communities including people living with HIV/AIDS encouraged to eat fresh and healthy food.<br>Vegetables donated to needy, hospices, foster and old age homes. |
| Honey production and by-products | To promote natural and health products | Advertising, promotions, exhibitions and sales | Communities are encouraged to use natural medication from the hive e.g. pure honey, propolis, pollen, etc. |
| Training and development | To empower communities | Training in farming skills; creation of awareness of opportunities in farming sector.<br>Trained people are encouraged to start their own enterprises. | Trained in trainees' language preference.<br>Hands-on and on-site training<br>Levels of literacy are considered and training is done in an environment that is conducive to visible results. |
| Establishment of a nursery | Promote healthy, clean and attractive environment | Liaise, communicate and network with Dept. of Water and Forestry | Promote nursery projects in the communities |

## Table 8.6: Inputs used on the farm and their sources of supply

| Input | Source of supply |
|---|---|
| Seedlings | Bought from profit at Dan Man Boerdery and Multi-plant |
| Fertilisers | Bought from DICLA |
| Organic fertilisers | Self-made (compost from crop residues) |

## Table 8.7: Dealing with stresses and shocks in the past

| Stress/shock | Remedy |
|---|---|
| Drought | Irrigation |
| High fuel prices | Tried to reduce operational costs |
| High fertiliser prices | Tried to use self-made organic fertilisers |
| High temperatures | The use of net structures and irrigation |
| Excessive rainfall | Drainage channels around the field |
| Drop in marketing prices | Secure more markets |
| HIV/AIDS epidemic | Trained staff in HIV/AIDS programmes |
| Water scarcity | New connection to Magalies water; large storage tanks |

and to the major food retail outlets. The farm has a special market arrangement with DWF, which is a subsidiary company to Tshwane Fresh Produce Market. Also, the farm has marketing agreements with other companies like Smith's Dairy and local Spars for the supply of honey. The major production and marketing challenges facing the farm were listed as lack of:

- Sufficient operational funds
- Improvement of corporate image budget
- Improved infrastructure
- Modern technologies
- Additional cold room facilities for storage.

A list of inputs used on the farm and their sources of supply are presented in Table 8.6, while Table 8.7 indicates how Marang has dealt with farming stresses and shocks experienced in the past.

## Economic and livelihoods aspects

Analysis of the economic aspects of the project's operations focuses on purchased inputs (Table 8.8), regular labour (Table 8.9), casual labour (Table 8.10), capital inputs (Table 8.11), other general expenses (Table 8.12), and cash income over 12 months (Table 8.13). Loan repayments and rentals were stated as R15 000 per year. Gross cash income from farming and training was given as R587 950, and in-kind income as R57 650. Input costs excluding maintenance were given as R35 711. Expenses on regular labour and maintenance were stated as R493 200 and R4 500, respectively.

In order to determine what share of the labour costs should be regarded as farming expenses as opposed to training-related expenses, we considered the ratio of income derived from farming on the one hand (meaning vegetables and honey) versus training on the other. The total incomes from farming and training are R315 600 and R272 350, respectively, thus the income ratio of farming to training is 0.54 to 0.46. Based on this income ratio, farming expenses come to R296 142, and so net farm profit is R19 458. While this amount is very modest, it should be borne in mind that it already takes into account remuneration to project members via their salaries/wages. And yet, it is also worth comparing this figure to the net profit from training, which is R45 478, i.e. over twice as much as that from farming. The fact that training was more remunerative than farming, however, is regarded by the project leaders as neither here nor there, in the sense that the training income is erratic and unpredictable. Moreover, if one takes into account the in-kind consumption 'income' from

non-marketed agricultural products, then the total net profit from agriculture value of agriculture would be R77 108.[15]

The project creates employment for a total of 42 people (both men and women) as shown in Table 8.14. The income from these jobs was considered as the major contributor to the household food security and livelihoods of the project members.

## Social and institutional dimensions

The project has over the years benefited from the support of many institutions in the form of resources (e.g. land), information, training, marketing, conflict resolution and funding. The institutions that have been involved with the project are listed in Table 8.15. These instances of support have helped Marang to sustain its ac-

## Table 8.8: Operational expenses, crop-related (2008)

| Input | How often purchased | Amount purchased | Cost | Where purchased |
|---|---|---|---|---|
| Seedlings | Once a quarter | 66 000 | R11 165 | Dan Man Boerdery (Haartebeesfontein) |
| Fertilisers – chemical | Once a quarter | 20 bags | R6 498 | DICLA (Krugersdorp) |
| Fertilisers – organic | As needed | N/A | n/a | Self-made (compost) |
| Pesticide | Once a quarter | 10 x 20 litre containers | R 3 220 | DICLA (Krugersdorp) |
| Diesel | Monthly | 450 litres | R5 828 | Shell Garage (Phokeng) |
| Maintenance | Once a year or as needed | | R4 500 | Rietvlei Trok & Trekkers (Rietvlei) |
| Net structures, self-made | | 2 big & 1 small | R15 000 | n/a |
| Net structures, purchased | | 2 big | R180 000 | Obaro (Rustenburg) |

## Table 8.9: Labour – regular (2008)

| Input | Number of women | Number of men | Average payment each per month | Total payment per month |
|---|---|---|---|---|
| Directors | 3 | 0 | R7 500 | R22 500 |
| Managers | 0 | 2 | R4 500 | R9 000 |
| Farm workers | 0 | 6 | R1 200 | R7 200 |
| General workers | 1 | 1 | R1 200 | R2 400 |
| Total | 4 | 9 | | R41 100 |
| Total cost for 12 months | | | | R493 200 |

15 Two caveats regarding this figure: first, it does not take depreciation of assets into account, and thus in that respect is an over-statement; and second, it is arbitrary to have used the case income ratios from farming and training to have allocated the wage bill, when one might just as well have used the fuller (cash plus imputed own-consumption) income in deriving the ratio.

## Table 8.10: Labour – casual/seasonal/irregular (2008)

| Input | Number of women | Number of men | Average days each over year | Pay per day |
|---|---|---|---|---|
| Paid facilitators | 10 | 7 | As per available contract | As per agreement |
| Seasonal workers | 6 | 4 | 20 | R45 |

## Table 8.11: Capital inputs (2008)

| Item | Year acquired | Year made | Cost / value at time of purchase | How acquired |
|---|---|---|---|---|
| Stallion bakkie | 2002 | 1989 | R7 000 | Govt. Tender purchased with grant |
| Volwagen Citi Golf | 2003 | 1993 | R45 950 | NDA Funds |
| Hydroponic structure | 2004 | 2001 | Unknown | Impala Funds |
| Rotovator hand propeller tractor & implements | 2005 | 2003 | R58 000 | NDA Funds |
| Mac Ferguson tractor | 2006 | 1998 | R44 000 | NDA Funds |
| Honey processing machines | 2006 | Unknown | R30 000 | NDA Funds |
| Net structures | 2007 | Unknown | R191 000 | CASP Fund |

## Table 8.12: Other general expenses

| Item | Details |
|---|---|
| Rent and interest on debt | Payments to Bafokeng Authority for office and equipment rentals and interest payments on loan (R15 000 pa) |
| Bank transactions cost | Bank charges as per funds granted |
| Time taken to complete marketing arrangement | Ongoing |
| Taxes | Payment to SARS for taxes (not available) |

## Table 8.13: Cash income over past 12 months (2008)

| Item | Details |
|---|---|
| Vegetable sales | R129 600 |
| Honey sales | R186 000 |
| Sub-total farm income (vegetables & honey) | R315 600 |
| Training | |
| Soul City | R235 000 |
| Cargill | R26 950 |
| Synercon | R10 400 |
| Sub-total | R272 350 |
| Total | R587 950 |

## Table 8.14: Employment created by Marang

| Nature of employment | Men | Women | Total |
|---|---|---|---|
| Permanent employment | 9 | 6 | 15 |
| Seasonal labour | 11 | 16 | 27 |
| Total | 20 | 22 | 42 |

## Table 8.15: Institutions and types of support offered to the farm

| Type of support | Institution(s) |
|---|---|
| Resources | NDA, CASP, Impala Mines, Eskom Foundation, Bafokeng Tribal Authority |
| Information | Local Municipality and District Municipality |
| Networking | Various stakeholders |
| Funding | NDA, National Lotteries |
| Training | AgriSeta, Soul City & IDT |
| Marketing | National Marketing Council |
| Conflict resolution | Department of Labour CCMA |

tivities and its benefits to the beneficiaries. The social benefits of Marang to the surrounding communities include the supply of free vegetables to the old age homes and orphanages, and the use of the farm as learning centre for schools in the province.

## Gender, class and human dimensions

Marang was initiated by women and continues to be managed by women. The ratio of direct beneficiaries of the project is 5 women to 8 men. However, the three directors of the project are all women. Table 8.16 shows the demographics of the beneficiaries of the project. Out of the 13 direct beneficiaries of Marang, only three are below thirty-five years of age. The majority of the beneficiaries are over forty years of age. The three women directors of the project are the only ones who have been with the project since it began in 1997; the rest joined the project after 2001. Six of the beneficiaries have tertiary and college education. Most of the coordinating and managerial/directorship positions in the project are held by women while the direct field activities are done by the men.

## Perceptions of performance

The project is sustainable in its activities because it has been in operation without fail for the past 11 years. This farm is considered to be successful because of the following:

- Commitment – the group consists of members who are very committed to the farm operations.
- Networking – the farm has established and sustained good networks that have provided them with appropriate information, technology and resources required for optimal operation.
- Infrastructure – over the years of its operation, the farm has acquired a good technological infrastructural base required for effective operation.
- Skills – skills development initiatives have been undertaken by the members which have enabled them especially with management and technical skills.
- Leadership – it has a leadership which shares the vision of the farm.

## Policy environment

Marang currently relies on municipal water for its farming activities. However, in some areas of the province, there are policies that do not allow the use of municipal water for farming purposes. There may come a point when this becomes a problem for Marang as well.

Marang also needs more land in order to expand its operations. The beneficiaries indicated that it is difficult to acquire more land from the tribal authorities in the area. There is a need for policies that facilitate easy access and acquisition of land by smallholder farmers.

## Environmental aspects

In executing their cropping and bee farming activities, Marang considers the protection of the environment. Among the environmentally sound practices on the Marang projects are: the use organic manure to supply crops with nutrients; the use of hand weeding in order to reduce the amount of chemicals applied; the use of wa-

## Table 8.16: Demographics of project members

| Name of participant | Age | Year joined project | Gender | Position in project | Place of residence | Educational Level | Responsibility in project |
|---|---|---|---|---|---|---|---|
| Tshidi Mataboge | 55 | 1997 | F | Managing Director | Phokeng | Tertiary | Spearheads all projects |
| Boipelo Kubyana | 50 | 1997 | F | Training Director | Tlhabane | Tertiary | Coordinates training |
| Mato Mputle | 53 | 1997 | F | Production Director | Luka | High School | Coordinates production |
| Beauty Raseleka | 25 | 2005 | F | Office Admin | Phokeng | College | Administrate office activities |
| Kelebogile Nakedi | 23 | 2007 | F | Secretary | Phokeng | College | Typing and filing |
| Bicorly Segwape | 43 | 2003 | M | Training Manager | Bethanie | College | Overseer training activities |
| Thami Mathunda | 32 | 2007 | M | Production Manager | Wonder-kop | Tertiary | Overseer production activities |
| Shimi Mokgatle | 38 | 2004 | M | Supervisor | Phokeng | High School | Supervises Production activities |
| Happy Mabeko | 39 | 2003 | M | Farm worker | Phokeng | Primary | Operates farm activities |
| Pogiso Phiri | 55 | 2001 | M | Farm worker | Phokeng | Primary | Operates farm activities |
| Doctor Mogapi | 35 | 2002 | M | Farm worker | Holfontein | Primary | Operates farm activities |
| Hendrick Modikela | 52 | 2006 | M | Farm worker | Rietvlei | Primary | Operates farm activities |
| Letima Molokwane | | 2007 | M | Farm worker | Pella | Primary | Operates farm activities |

ter filtration to reduce the amount of salt in the water before irrigation helps to prevent soil salinisation; recycling and paper-making projects; the use of environmentally friendly techniques of honey harvesting from beehives.

## The future

The future expectation for this farm is to grow its agricultural production activities to a commercial level and to add value to the products. The group also wants to raise the level of their training centre to that of a Further Educational Training (FET) accredited unit, allowing it to share and transfer information to other interested people. According to the group, these aspirations can be achieved by having flexible policies that allow access to financial and other relevant resources.

The group sees their children having a future in this project, particular as the leadership of the project are in their 50s. The group leaders are hoping that the visible benefits they derive from the project will inspire their children to replace them when they retire.

## Conclusion

The main reasons why the project was selected for a case study include:

- Although the project was not designed to involve only women, it was interesting to observe that five years after its initiation, only women were left. Technically, the commitment of the women and dedication of the local extension workers has ensured successful application of technology on the project.
- The size and organisation of the project was stable. Compared to other similar community projects, the size of this project is small in terms of number of participants. Moreover, the clear management hierarchy in the project appears to prevent discontent from either arising or erupting to a point that it becomes disruptive.
- The design of the project capitalises on an effective blend of modern technology and local knowledge. This ensures improved productivity and sustainability.

- The location of this small-scale community agricultural poverty alleviation project within the surroundings of Rustenburg, a rapidly growing city that provides many other competing non-agricultural employment opportunities, especially in the mining and tourism sectors is conducive to growth and development.

Some of the elements of success that can be drawn from this case study are briefly summarised as follows:

- The individual members of the project are strongly motivated and committed to achieve a sustainable living.
- The project members have successfully taken modern technology and advice from external agents, then blended these with their own indigenous knowledge systems and skills
- The project demonstrates effective partnerships and cooperation between beneficiaries, government, NGOs and private institutions.
- The project facilitates development through providing appropriate training, linkages with institutions which can provide technical guidance and financial support
- National and provincial policies and institutions that create an enabling environment for the projects are required.

# 9 Wadela Trust vegetable and broiler project: a group-based poverty reduction project with unrealised potential

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## Introduction

The Wadela Trust project is involved in the production of vegetables and broilers. Most of the beneficiaries are from a peri-urban squatter area near the town of Potchefstroom. The location of the project is about 30 kilometres from Potchefstroom within the mining areas of Carletonville. The project activities are conducted on a previously commercial farm which was owned by a white farmer and which therefore has most of the infrastructure needed for farming. The members of the project depend solely on the incomes from the project for their livelihoods. One of the elements of success that can be drawn from this case study is that the major infrastructure required for sustainable production is in place. The individual members of the project are also strongly motivated and committed to achieve a sustainable living from their holdings.

## Historical evolution

This project was an initiative of the then Wadela Transitional Local Council (TLC). ('Wadela' stands for Western Deep Levels and Elandsrand.) In 1998, the Wadela TLC tasked a consultant to conduct research in the area on the issues of unemployment and HIV/AIDS, with a view to recommending possible interventions. According to the research, many of the Wadela inhabitants stated that they were interested in agriculture. This led the Council to purchase a 36-hectare farm that was on the market. The Councillors were tasked to bring people from within their wards to be registered and to offer their services on the farm and receive some remuneration for their work. The project started in 1999 with 136 people from Wadela Township.

Initially, about five hectares of the land were planted under tomatoes and green beans, including some tomato production in a tunnel. Production was also begun in the two broiler houses, each of which has a capacity for accommodating 800 birds. The project quickly encountered problems due to the fact that the farm's production could not generate enough income to pay wages to the workers. The project did not identify a reliable market; rather products were sold to poor residents within the township. These problems led to the removal of the first project manager.

The project was revived in 2000 using funds from the Department of Provincial and Local Government. A consultant was appointed to run the farm, which was to include six broiler houses with a capacity of 1500 birds each, to be built according to the specifications of a well-known company that develops poultry enterprise infrastructure (DICLA). A drip irrigation system was also installed to meet the requirements of the vegetable production. The chicken production in the six new poultry houses was staggered in order to optimise production for maximum profit. The chickens were processed in abattoirs in Elandsfontein and sold to Top-Chicks in Pretoria on a weekly basis. The project's income was put in the Council's coffers, to which the beneficiar-

ies did not have access. The Council subsequently informed the beneficiaries that the coffers were exhausted. Thereafter, the project become ineffective and was vandalised. At around the same time the consultant's contract was terminated. The beneficiaries could not produce any more and requested to have an audited statement of their account.

Between 2001 and 2004, some of the beneficiaries moved to stay on the farm with the aim of reducing vandalism and theft on the farm. By this stage, there were only nine beneficiaries still committed to the project. These nine stayed on the farm and produced vegetables in order to sustain themselves. They later leased the farm to a white farmer from Khutsong who paid rent for use of the land. The new lessee used the nine remaining members as a source of labour, but subsequently failed to pay either the rent or their wages, which resulted in the termination of the lease agreement. In 2004, the MEC for Agriculture sent a task team to look at what was needed to refurbish the farm. Following this, the Department of Agriculture allocated R1.2 million to the project for the construction of three tunnels, cables, repair of four boreholes and other operating expenses.

Some of the major achievements of the group are that the project once supplied President Hypermarket with tomatoes, and had a contract with a commercial farmer from Randfontein who purchased chickens from them on a weekly basis. The project managed to sustain itself through the profits and beneficiaries realised monthly wages of R1200 for all nine beneficiaries. At the time of the fieldwork for this case study, the project had managed to accumulate an amount of R100 000 in the project's bank account. It is one of the only commercial projects around in which women outnumber men. Major challenges of the project have been theft by neighbouring community members and emerging broiler producers in the immediate area who could compete in the future for the same market. In respect of the theft and vandalism problem, the police have responded by conducting regular patrols around and inside the farm.

## Natural and physical resources

The farm's soil is sandy loam which varies from Avalon to Hutton with a mid-slope topography. The soil is deep and has no limiting layer within the effective rooting depth (1.2 metres). The borehole water used on the farm is Class 1 Low Sodium water. The vegetation of the land is mixed Bankenveld of Cymbopogon contortus and Themeda Triandra. The climate varies from warm summer to cold winters. The good quality soils have allowed the continual planting of vegetables, which is in demand by hawkers from Carletonville and the Greater Wadela Community. The physical resources on the project include:

- 3 tunnels (10 x 30 metres)
- 1 tunnel heater
- 6 1500-bird broiler houses
- 2 800-bird broiler houses
- 4 boreholes (of which only 2 are equipped)
- 1 tractor
- 2 ploughs

The inventory of the farm assets is presented in Table 9.1. Most of the assets were acquired through funding from Local Government and the provincial Department of Agriculture through the Comprehensive Agricultural Support Programme (CASP).

## Production system

The enterprises undertaken on the farm include vegetables in tunnels and in the open field (spinach, carrots, beetroot and green peppers), and broiler production. The group takes 6 weeks to raise and sell chickens with an average weight of 1.8-2.0 kg and sells to President Hypermarket at Fochville and the Carletonville hawkers. They take about 60-80 days to raise tomatoes in the tunnels, which are then packaged in plastic bags and boxes (value adding) and sold to President Hypermarket; the surplus is sold in the local communities. The technology used in the tunnels for vegetable production involves the planting of tomato seedlings on sawdust and the scheduling of the fertigation machine to supply water and fertilisers. The vegetables are irrigated with a well designed drip irrigation network in which drippers are allocated directly to the rooting zone. The humidity inside the tunnel is controlled by vents that are located around the side and top of the tunnels. Other vegetables grown on the farm include spinach, carrots, cabbage and beetroot and this is done in

## Table 9.1: Investments in farm assets over time (2008)

| Item | Year of purchase | Present value | Condition | How it was acquired | Predicted lifespan |
|---|---|---|---|---|---|
| 2 x broiler house (800 capacity) | 1998 | R25 000 | Good | Through Local Gov't Funds (DPLG) | 20 years |
| 6 x broilers houses (1500 capacity) | 2000 | R20 000 | Good | Local Gov't funds (DPLG) | 20 years |
| 1 x tunnel | 1998 | R11 000 | Vandalised | Local govt funds | 5 years |
| 3 x tunnels | 2006 | R70 000 | Good | DACE (CASP) | 5 -10 years |
| 1 x tunnel heater | 2007 | R110 010 | Good | DACE (CASP) | 5-10 years |
| Borehole testing equipping | 2007 | R65 029 | Good | DACE (CASP) | 10 years |
| 3 x tunnels | 2007 | R148 029 | Good | DACE (CASP) | 10 years |
| Broiler houses refurbishment | 2007 | R123 179 | Good | DACE (CASP) | 10 years |
| Electrical equipment for boreholes | 2007 | R2 856 | n/a | DACE (CASP) | n/a |
| Water connections | 2007 | R2 875 | n/a | DACE (CASP) | n/a |
| Broiler house equipment | 2007 | R50 196 | Good | n/a | n/a |
| Hydraulic lift pump | 2007 | R4 372 | Good | DACE (CASP) | n/a |

n/a=not applicable

rotation. The vegetables are cleaned and packed for sale in surrounding areas.

The chickens are produced in deep litter houses with semi-automated waterers and feeders. The day-old chicks are bought from Serfontein Kuikens in Potchefstroom and DICLA Farm and Seed Company at Muldersdrift at a rate of 1500 chickens per cycle. The feed is high grade Agro concentrate that is purchased form Farmer City (Silverlake). The bedding for the floor is purchased from Hansie Millers. The production uses hygienic practices and follows disease control procedures in each house. The chickens are dressed and wrapped at the farm and sold to nearby shops. However, the farm's facilities do not constitute a proper abattoir, and would not qualify for an abattoir license.

The group decided to engage in these enterprises because the infrastructure was available, and because they have a brief production cycle and the potential for high turnover. The other factor considered was the low input costs of vegetable production. Another consideration was that the farm is only 36 hectares indicating the appropriateness of intensive production systems. Members of the group normally consume non-marketable chickens and surplus vegetables which are over-ripe. Excess production (tomatoes) is stored temporarily in the farm house and poultry in the broiler houses. The production and marketing challenges facing the farm are that they cannot supply orders for processed chicken products to the mining houses and restaurants in the area due to the lack of a licensed abattoir. Another concern are the steep increases in input costs experienced over the past few years, e.g. for fuel and feed product. The security on the farm is also of much concern in that there have been several break-ins.

## Economic and livelihood aspects

The analysis of the economic aspects of the project focuses on purchased inputs (Tables 9.2 and 9.3), regular labour (Table 9.4), capital inputs (Table 9.5), other general expenses (Table 9.6) and cash income over a 12 months period (Table 9.7). The loan repayments and rentals were stated as R43 000 per year. The 15% interest on the loan was given as R6450. The gross cash farming income was given as R678 000. The farming expenses on inputs, regular labour and maintenance was stated as R550 510. The net farm profit is therefore R121 040.00. The project creates employment for a total of nine people, of whom three are men and six are women. The income from these jobs was considered as the major contributor to their household food security and livelihoods. The group consumes the unmarketable vegetables and chicken produced from the farm, and this seemingly constitutes their main source of food. Currently, there is gross under-utilisation of the resources by the beneficiaries. The capacity of the resources on the farm is capable of generating over R2 million annually. Presently, the group is using only one

## Table 9.2: Purchased inputs – crop-related (2008)

| Input | How often purchased | Amount purchased | Cost | Where purchased |
|---|---|---|---|---|
| Seed/seedlings | Quarterly | 950/tunnel | R14 500 | DICLA Farm and Seed Co; Muldersdrift |
| Fertilisers – chemical | Bi-annually | 15 items | R450 | DICLA Farm and Seed Co; Muldersdrift |
| Fertilisers – organic | None (get chicken manure from farm) | N/A | N/A | Get it freely from the farm |
| Pesticide | Annually | 5 litres | R390 | RJ Besproeing; Potchefstroom |
| Diesel | Annual | exact quantity unknown | R5 000 | Excel Service Station; Carletonville |
| Total | | | R20 340 | |

## Table 9.3: Purchased inputs – livestock-related (2008)

| Input | How often purchased | Amount purchased | Cost per unit | Total cost | Where purchased |
|---|---|---|---|---|---|
| Day-old chicks | Weekly | 1500 chicks | R4.50 | R6750/cycle x 4 cycles x 4 houses= R108 000 | Serfontein Kuikens - Potchefstroom and DICLA Farm and Seed Co; Muldersdrift |
| Feed | Monthly | 4 kg/2 kg chick x 1500 chicks = 6000 kg/50 kg bag<br>=120 bags x R145/ bag =R17 400 x 4 cycles<br>= R69 600 x 4 houses<br>=R278 400 | R145/bag | R278 400 | Farmer City (Silverlake); Potchefstroom |
| Vet products | Monthly | 5 items | R55 x 6 months | R330 | SENWES and Serfontein Kuikens; Potchefstroom |
| Electricity | Monthly | 3 KVA | R2000 x 6 months | R12 000 | ESKOM; Carletonville |
| Bedding | Quarterly | 3 tons | R50/ton | R600 | Hansie Miller; Viljoenskroon |
| Maintenance | Monthly | 3 x tunnels and 4 x broiler houses, tractor and machinery | R3 500 x 6 months | R21 000 | DICLA Farm and Seed Co; Muldersdrift |
| Total | | | | R420 330 | |

## Table 9.4: Labour – regular (2008)

| Input | Number of women | Number of men | Average payment each per month | Total payment per year |
|---|---|---|---|---|
| Paid; managers | 6 | 0 | R1200 | R86 400 |
| Paid; non-managers | 0 | 3 | R600 | R21 600 |
| Total | 6 | 3 | | R108 000 |

## Table 9.5: Capital inputs – e.g. tractors, vehicles, implements, livestock, etc.(2008)

| Item | Year acquired | Year made | Cost/value at time of purchase | How acquired |
|---|---|---|---|---|
| Tractor and implements | 1999 | 1992 | R60 000 | Bought by Merafong City Council |
| Bakkie | 1999 | 1999 | R230 000 | Bought by Merafong City Council |

## Table 9.6: Other general expenses (2008)

| Item | Relevant details |
|---|---|
| Local transport | R800 |
| Transport hire | R500 |
| Rent | R0 |
| Commission paid | R0 |
| Storage cost | R0 |
| Bank transactions cost | R45/month x 12 = R540 |
| Time taken to complete marketing arrangement | 3 days |
| Interest on loan. R43 000 on feed (Farmer City, Potchefstroom): 15% p.a. | R6450 |
| Total | R8290 |

## Table 9.7: Cash income over past 12 months (2008)

| Item | Describe and capture relevant details |
|---|---|
| Poultry | 1450 chickens x R25 = R36 250 x 4 = R145 000 x 4 houses = R580 000 |
| Vegetables (spinach) | 500 bundles x R300 = R15 000 x 3 weeks = R45 000 x 2 cycles = R90 000 |
| Poultry manure | R800/bag x 100 bags = R8 000 |
| Total income | R678 000 |

## Table 9.8: Overall financial performance (2008)

| Gross farming income | R678 000 |
|---|---|
| Farming expenses | – R550 510 |
| Net farming income | = R127 490 |
| Interest on loans | –R6 450 |
| Net farming profit | = R121 040 |

of its seven tunnels and uses a fraction of its broiler capacity.

## Social and institutional dimensions

The identification of this project followed the 'sacred cow approach' – an announcement was made by senior officials to the effect that a project would be created, and junior officials were compelled to create it regardless of the many problems they saw with the idea. This division has carried on over time, whereby the project enjoys high-profile support, but only grudging support from implementation-level staff. One dimension of the misgivings of government staff is that the project resources are of such great value and represent such great economic potential, and yet the beneficiaries are primarily ethnic Xhosas (in an overwhelmingly Tswana area), whose ability to cling to the project is subtly but strongly resented.

One peculiar feature of the project is the degree to which it remains under the control of civil servants; for example, a Department of Agriculture official maintains the books and determines what money may be paid out as wages and what must be deposited into the project's bank account. While this is not necessarily the norm among agricultural projects in North West, it is not unique. The need for continued 'support' of such projects is partly a function of their usual group nature: virtually all of the agricultural development projects in North West promoted by the provincial department of agriculture and supported by the National Development Agency, are group projects, and the general perception is that external management support is required to compensate for groups' internal inadequacies. Why this is the case rather than a distancing from group projects is unclear.

## Gender, class and human dimensions

The demographics of the project beneficiaries are shown in Table 9.9. The group consists of six women and three men. The age range among the beneficiaries was 44 to 62 years. None of the beneficiaries had reached matric. The project has created nine permanent self-employment opportunities for the beneficiaries and six temporary jobs for other people from the Wadela Township. Other sources of income to the beneficiaries beside the project were mainly old age and child support grants. Task distribution among the beneficiaries is not influenced by gender. One peculiar characteristic about the group, as mentioned above, is that all the women are Xhosa speakers. One possible interpretation is that when the project shrunk from its original number of 136, the few that remained behind were the most marginal in the community, i.e. ethnic outsiders.

There was no indication of serious conflicts among the beneficiaries, although it was indicated that the project had its own internal mechanisms of dealing with conflicts when they arise.

## Perception of performance

Even though the project can be said to be sustainable, its performance at this stage is still nowhere near optimum capacity. The tunnels and some of the poultry houses are currently grossly under-utilised. A conservative estimate of the annual income possible from the existing infrastructure is R2 million. All the poultry houses and the tunnels are fully equipped but are not fully utilised. In 2007, when the project managed to improve the scale of operation, it made a profit of R212 000 out of which R100 000 was saved. In order to improve the output, a farm manager has to be appointed to take charge of all the production activities on the farm.

## Policy environment

The Council bought the land for the Wadela Trust around 1999. The farm is leased for free to the beneficiaries with the intention to purchase. The policy of the provincial Department of Agriculture of providing support to smallholder projects for one year only is impacting negatively on this project. The Department provided funding for the farm's operation and some of the infrastructure on the farm through CASP. Now, operating capital is needed to fully utilise the assets, but the Department cannot provide any further financial assistance in terms of its own policies. Since the group does not have a title deed to the land, acquiring loans through the commercial banks is problematic.

## Environmental perspective

The project has tried to practise environmentally friendly approaches to production including the use of organic manure from chicken droppings in the vegetable production. This avoids the use

## Table 9.9: Demography of the project beneficiaries

| Name of participant | Age (yrs) | Year joined project | Gender | Position in project | Edu level | Responsibility in project | Is HH food secure? | Income/ month from project | Other sources of food security | Other benefits from project |
|---|---|---|---|---|---|---|---|---|---|---|
| Angel Mxoli | 44 | 1998 | Female | Treasurer | Grade 10 | Makes cash related transactions, Keeps records of receipts and expenses | Yes | R1200 | Own grant (disability) + 2 x child support grant | Employment, income generating, training site, experience and knowledge |
| Joyce Tshapile | 45 | 1998 | Female | Blank cell? | Grade 8 | Rears chicks and general farm work | Yes | R1200 | 3 x child support grant | Employment, income generation, training and development site and knowledge |
| Monica Siko | 46 | 1998 | Female | Chairperson | Grade10 | Overseer of the whole farm/project | Yes | R1200 | 2 x child support grant | Employment |
| Florence Nkotswana | 64 | 1998 | Female | General secretary | Grade10 | Keeps records and minutes of all meetings | Yes | R1200 | Old age grant | Employment |
| Nobantu Pato | 46 | 1998 | Female | Additional member | Grade 5 | Overall project work – tunnels and broilers | Yes | R1200 | None | Employment |
| Deliwe Mamkeli | 45 | 1998 | Female | Additional member | Grade 2 | Overall project work – open field crops and broilers | Yes | R1200 | None | Employment |
| Alfred Nkotswana | 61 | 1998 | Male | Additional member | Grade 2 | Repairs and maintenance to broiler and tunnel equipment | Yes | R1200 | Old age grant | Employment |
| Ben Mothibedi | 62 | 1998 | Male | Additional member | Grade 1 | Tractor driver, repairs and maintenance to all broiler and tunnel equipment | Yes | R1200 | None | Employment |

of chemical fertilisers which tend to be detrimental to the soil environment.

## The future

This project has the potential to be successful in that it has good infrastructure and committed beneficiaries whose livelihood and futures depend on the success of the project. The project also enjoys a lot of support from the Merafong City Council and the Department of Agriculture.

The future expectation of the beneficiaries is to expand the project by adding more enterprises and also to meet market-related demands, especially to the mining companies in the area. To bring about the described changes require an injection of extra capital and training of the participants in agribusiness. There is also the need to appoint a farm manager as an overseer. The group would also like to purchase the farm from Merafong City Council and transfer it into their own names.

## Conclusion

The Wadela Trust Vegetable and Broiler Project is one case of a small-scale agriculture initiative that has succeeded due to the persistence and commitment of its members despite experiencing many problems. This project is interesting in that it has a well developed infrastructure and committed beneficiaries who need little motivation and operational finance to succeed. The vegetable and poultry enterprises work well together. The project seemed to be well aware of this idea and was willing to increase the number of enterprises. The marketing potential for the products from this project is readily available from the mining companies surrounding the project. However, this potential can only be realised if the scale of production is increased to the optimum of the available infrastructure. The level of technology and infrastructure provided to this project and the current status of production requires that higher levels of productivity could be achieved. This cold be achieved if a mentor or manager is engaged. During this time the beneficiaries could be appropriately trained and guided to enable them to sustain all farming activities on which they embark.

# 10 Msinga smallholder irrigation farmers: commercially successful smallholders using mixed technologies

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## Introduction

Msinga smallholder irrigation farmers are renowned within the KwaZulu-Natal Midlands for their production and marketing of green mealies and vegetables. Although productivity varies widely among farmers (Mkhabela, 2005), a number of smallholders have maintained vibrant levels of crop production despite the withdrawal of government subsidies after 1994. This contrasts with the collapse of many similar irrigation schemes in former homelands across the country following the same move. While smallholder irrigators in provinces such as Limpopo and the Eastern Cape have since received substantial government and private sector assistance in infrastructure rehabilitation, revitalisation of crop production and integration into the mainstream commodity markets, Msinga smallholders have received no such assistance, apart from a vegetable pack house that was established in 2001 through donor funding. However, in light of the failure of assisted agricultural commercialisation in many reported cases, such as projects under the Revitalisation of Smallholder Irrigation Schemes (RESIS) Programme of Limpopo Province Tapela 2009; Denison and Manona, 2007), the success of Msinga farmers is not only ironic but may shed light into alternative ways of assisting South African smallholder irrigators. This case study sought to gain insights into factors underlying the success of the Msinga farmers.

## Socio-economic context

The Msinga Irrigation Scheme is located along the Tugela River, close to the small town of Tugela Ferry in the KwaZulu-Natal Midlands. The area falls within Msinga Local Municipality, which is one of the four local municipalities that comprises Umzinyathi District Municipality. The nearest urban centres include Greytown, Pietermaritzburg, Weenen, Kranskop, Dundee, Ladysmith and Mooi River. Umzinyathi District Municipality is one of the rural poverty nodes prioritised by South Africa's Integrated Sustainable Rural Development Programme (ISRDP). Of the District's four local municipalities, Msinga has the lowest levels of basic services (Table 10.1).

The population of Msinga is 171 071, with more women (58%) than men (42%) owing to higher migrancy rates among men. The municipality is largely rural in character, with 69% of the area (1725 km$^2$) comprising Traditional Authority land held in trust by the Ingonyama Trust and the remaining 31% consisting of commercial farmland (Msinga Local Municipality, 2008).

As in many other predominantly rural municipalities, the rate of unemployment is relatively high. The main sources of livelihood in Msinga are remittances from migrant workers, social grants (pensions, child support grants and disability grants), crop and livestock production, sales of craftwork, sales of fuel wood and thatching grass, as well as informal trading (Mkhabela, 2005). Labour tenancy is still found on some farms in the district, and some people are employed as waged farm workers (ibid). A small number of people are formally employed in the local service sectors, such as health, education and retail, while others are self-employed in the informal economy, where they run small

## Table 10.1: Descriptive statistics of Msinga and other local municipalities within Umzinyathi District Municipality, 2008

| Local Municipality | Area (km) | Population | Population density (people/km) | Percent of households having access to... | | | |
|---|---|---|---|---|---|---|---|
| | | | | electricity | water | sanitation | Refuse removal |
| Nquthu | 1454 | 150 000 | 103 | 11 – 20% | 11 – 20% | 11 – 20% | 0 – 10% |
| Endumeni | 1612 | 50 000 | 31 | 61 – 70% | 71 – 80% | 71 – 80% | 71 – 80% |
| Msinga | 2500 | 171 071 | 68 | 0 – 10% | 0 – 10% | 0 – 10% | 0 – 10% |
| Umvoti | 2509 | 90 000 | 36 | 31 – 40% | 31 – 40% | 31 – 40% | 21 – 30% |

Source: Msinga Local Municipality IDP, 2008-09.

enterprises such as taxi services, vehicle repairs, retail shops and micro-manufacturing industries (Msinga Local Municipality, 2008; Mkhabela, 2005). A significant number of people practise small-scale agriculture on an estimated 1967 hectares of land, of which 767 hectares are under irrigation.

There seem to be ongoing shifts in the pattern of livelihoods in Msinga. According to Mkhabela (2005), remittances appear to be in decline, due to high levels of unemployment in the formal economy. However, they remain an important source of income for households, and many young men are absent either at work or seeking work in urban areas, especially Gauteng. Older men generally have a history of migrancy and some have invested earnings in large herds of livestock (ibid), with the municipality recording 46 000 head of cattle and 45 000 goats (Msinga Local Municipality, 2008). The dry area with a relatively low average summer rainfall of around 600 mm is indeed better suited to livestock than crop production (Cousins and Mwheli, 2008; Mkhabela, 2005). In contrast with the past, fewer households presently grow crops in rain-fed arable land on a reasonably large scale. The main crops are maize, sorghum (for beer making), beans, pumpkins, melons and imifino (spinach). Some people grow dagga, a lucrative but risky crop given periodic police efforts to destroy dagga fields. However, dryland crop production has been in decline as a source of livelihood for some years and increasing numbers of households do not cultivate all their arable land (Mkhabela, 2005; Cousins and Mwheli, 2008). Due to the limited formal employment opportunities in the area, the decline of remittances and the aridity of climate, irrigated agriculture has become more central to livelihoods of many people in Msinga, directly and indirectly contributing to livelihoods of an estimated two thousand five hundred (2500) households.

## Profile of the Msinga irrigation scheme

The Msinga Irrigation Scheme has existed for over one hundred years and comprises an area of 767 hectares, which is divided into five 'blocks'. The younger blocks were established around 1960. This was soon after the Bantu Promotion of Self-Government Act of 1959, which paved the way for the establishment of 'homelands' and 'independent states' in South Africa. Each of the blocks has a sub-committee, and three members of each sub-committee together comprise the umbrella management committee for the scheme. Sub-committees are responsible for the day-to-day operation and maintenance activities, and the umbrella committee coordinates and oversees the overall management of the scheme.

The irrigation scheme falls within the Traditional Authority Land Area held in trust by the Ingonyama Trust. Plots of land within the scheme are allocated by chiefs and chairpersons of irrigation scheme committees. Access to land within the scheme is also through inheritance, informal leasing and share-cropping. Some of the plots have been passed down through inheritance for three to four generations.

Between 500 and 1000 smallholder farmers are estimated to eke livelihoods from the irrigation scheme. Difficulty in determining the exact number of farmers relates to the constantly changing pattern of the use of plots and a co-existence of single and multiple plot users, sharing of plots and unused plots. Plots are called umthathe or 'beds' in the local vernacular. The average plot size is 0.162 hectares or 180 metres x 90

metres (Mkhabela, 2005), with plot sizes ranging from 800 m² to 0.2 hectares. Some farmers have access to more than one plot while many have four plots. This study identified one farmer who had access to 12 plots through a combination of inheritance, informal leasing and share-cropping arrangements. Farmers can lose their access to plots of land if they do not use these for a few consecutive years.

Msinga smallholders have had a fairly long history of involvement with formal institutional structures. Involvement with the Ingonyama Trust, through traditional leadership, has been and remains consistent. Smallholders have also interacted with the Zulu homeland government Department of Agriculture, which in the 1980s implemented irrigation scheme reorganisation, infrastructure development and the introduction of furrow irrigation. After 1994, irrigation scheme management passed on to the KwaZulu-Natal (KZN) provincial Department of Agriculture and Environmental Affairs. Msinga smallholders began intersecting with this structure at a time when government subsidies were abruptly curtailed, partly to dismantle apartheid systems and partly in line with international developments in Irrigation Management Transfer (IMT). While smallholders perceived support by government at that time as lacking, the department appears to have redeemed itself through its mandate to develop small-scale farmers and the launch of several farmer assistance programmes, including subsidy schemes for seed, seedlings, fertiliser and extension services. More recently, through IMT, Msinga smallholders have assumed responsibility for operational and maintenance functions. It is within the IMT framework that block committees and the umbrella committee for smallholders have been formed.

## Production system

Msinga smallholders practise furrow irrigation. Farmers dig furrows from canals to their plots and flood channels in the cropped area. All farmers interviewed expressed a concern over water losses from leaking canals. A few farmers have connected pipes to the canals in order to increase efficiency of water supply to their fields. Concerns were also voiced about water shortages, which resulted in farmers often spending days and nights tending the flow of water to guard against crop water stress. Apart from the problem of water shortage, farmers were concerned about crop losses from livestock breaking through the old, dilapidated fence. Although farmers had attempted self-reliance by contributing R50 each for fence repairs, the total amount of money raised was not sufficient. Consequently, farmers spend additional time in their plots guarding against entry by stray livestock.

Msinga smallholder farmers grow green mealies and vegetables, such as tomato, butternut, green peppers, sweet potatoes, spinach, mustard greens, beetroot, peas and beans. Farmers grow these crops primarily for the market and surplus is consumed by households. Each farmer works individually in the production process, often with the assistance of household members or hired labour. Increasingly, household members are demanding to be paid for their labour. Remuneration for hired labour varies, with workers paid R30 per day (the work generally being to prepare or weed a plot), a share of the crop produced, or a larger amount of money after the crop is harvested and sold, where the work has involved preparing or weeding multiple plots.[16] In some circumstances, farmers voluntarily pool their labour to work on each others' plots (i.e. 'labour exchange') using hoes, shovels, picks and rakes. Ploughing is done mostly using donkey-drawn ploughs and sometimes by tractor. It costs R110 to hire a tractor from the municipality and R120 - R190 to hire a donkey-drawn plough from local community members. Most farmers, however, use the more expensive donkey-drawn ploughs because there are too few municipal tractors.

Inputs, such as fertiliser, seeds and seedlings, are sourced either from the small local town of Tugela Ferry or from the more distant urban centres, such as Greytown and Pietemaritzburg. The provincial Department of Agriculture and Environmental Affairs assists farmers with extension services and subsidy schemes for seeds, seedlings and fertilisers. The Department also provides farmers with transport for inputs sourced from more distant suppliers. This is part of the Department's mandate to develop the smallholder farming sector in the province. Msinga smallholder irrigators have also received support in the form of technical advice and extension services from non-governmental organisations and tertiary institutions, such as Church Agricultural Projects, the University of KwaZulu-Natal, and Zakhele Agricultural College. Such support, however, is far below that received by smallholders in Limpopo and Eastern Cape provinces under the RESIS and RESIS-Recharge Programmes. The

16 Many farmers have four plots and when they hire workers will hire them to work all four, which is why many farmers report total labour costs per season of R120 (i.e. four x R30). The payment is typically made after selling the produce because many farmers are too cash constrained to pay at the time the work is done.

performance of Msinga smallholders following the support given has been varied, with some farmers achieving impressively high levels of productive efficiency while others not improving their productivity significantly (Mkhabela, 2005). The present case study was interested in gaining insights from the more successful farmers among the smallholders.

Marketing strategies vary depending on the type of crop. For green mealies, buyers travel to Msinga from places as far afield as Durban, Ladysmith, Dundee, Mooi River, Pietemaritzburg and Weenen. In the 2007 season, the more successful smallholders earned net profits ranging from R2000 to R2500 per bed from selling green mealies (Table 10.2). With most farmers cultivating two beds of green mealies per season, farmers typically earned net profits of R4000 to R5000. By contrast, the marketing of vegetables requires farmers to go out in search of buyers. Crops such as tomato and green peppers are packed in crates and transported either by private or public means. It costs farmers R7.00 per crate and R16 per person to transport farm products from Msinga to markets in Greytown and Pietemaritzburg, for example. Since these crops are highly perishable and markets not assured, farmers invariably express concerns about the high levels of risk associated with these crops despite their high value (Table 10.2). A few farmers deliberately refrain from producing these crops as a measure of risk-avoidance. For other crops, such as sweet potatoes and butternut, there is a relatively low risk of spoilage. The bulkiness of these crops, however, entails high public transport costs, which restricts the range of produce since many farmers are compelled to market these crops mostly within local markets in and around Tugela Ferry. Although market prices for sweet potato are relatively low (Table 10.2), the low input costs for producing the crop have resulted in most farmers growing sweet potatoes. Over-supply of the crop reinforces the low market prices.

## Success criteria

Although the study took cognisance of observations by Mkhabela (2005) of the relatively high levels of mean technical efficiency (84.3%) in the Msinga Irrigation Scheme, this study deliberately refrained from relying solely on conventional criteria for gauging smallholder farmers' success, namely 'economic viability' and 'technical efficiency'. An attempt was made to broaden criteria for assessing success, both from the point of view of farmers and their communities and from perspectives of outsiders, such as agricultural extension officers, social researchers and non-governmental organisations (NGOs). The following criteria were therefore used:

- Income from crop production
- Technology
- Labour
- Ownership of the production system
- Individual versus collective action
- Number of plots used in crop production;
- Productive versus non-productive use of plots
- Number of crops planted per year
- Nature of involvement in contract farming
- Land ownership versus leasing
- Achievement of specific livelihood objectives
- Attainment of social well-being.

## Factors contributing to the success of the Msinga smallholders

In many ways, factors contributing to the 'success' of the Msinga smallholders go against con-

## Table 10.2: Illustrative net income from selected crops

| Crop | Profit (Rands) |
|---|---|
| Green maize | 2000 – 2500 per bed |
| Tomatoes | 5000 – 8000 per bed |
| Green peppers | 6000 – 9000 per bed |
| Sweet potatoes | 1290 per bed |

Source: fieldwork, 2008

ventional thinking in South African government and other circles on requisite interventions to assist smallholder farmers. The Strategic Plan for South African Agriculture (DoA, 2001) and Water Allocation Reform (WAR) Programme resonate with NEPAD's Comprehensive Africa Agricultural Development Programme (CAADP) in their inclusion of the objective to enable smallholders to become integrated into the mainstream, globalised and highly competitive commodity sectors within agricultural value chains. At the launch of the Water Allocation Reform (WAR) Strategy on 12 April 2005, the Minister of Water Affairs and Forestry stated:

> *"We will continue to strive to help our people along the journey from being small subsistence water users to, if they so wish, large commercial, productive and competitive water users not just in South Africa but internationally."*

Prescriptions for achieving smallholder integration and commercialisation include rehabilitation and upgrading hydraulic infrastructure and shifts from subsistence to commercially-oriented farming. The support to smallholders is often articulated through government-facilitated joint ventures or strategic partnerships between resource-poor farmers and private investors, and the promotion of capital-intensive production of high value crops. Evidence from post-1994 smallholder farmer assistance programmes such as RESIS in Limpopo Province (Tapela 2009; Dennison and Manona, 2006; Veldwisch, 2004) and RESIS-Recharge in the Eastern Cape (Dennison and Manona, 2006) shows that the "revitalisation" of smallholder irrigated agriculture has often compelled smallholders to shift away from low-cost production methods, such as furrow irrigation and small implements like hoes and spades, towards the use of sophisticated irrigation technology, such as micro-filter sprays and 'floppy' systems. By contrast, Msinga smallholders have not received such assistance, apart from a donor-funded vegetable pack house that was constructed in 2001 and remains unused. While the non-use of the pack house resonates with post-1994 smallholder assistance cases such as Hereford (Tapela 2005), in many ways the case of Msinga smallholders runs contrary to prevailing prescriptions and interventions.

## Low-cost technology

Msinga smallholders have retained the use of low-cost farming technology, such as furrow irrigation, donkey-drawn ploughs and small implements like rakes, hoes, spades, picks and shovels. As already mentioned, Msinga farmers hire municipal tractors at a cost of R110 for ploughing a 'bed', but rely mainly on donkey-drawn ploughs, (R120 - R190 per bed) because of the unavailability of enough tractors. In the context of rising input costs and an absence of massive subsidies, reliance on low-cost technology has ensured that Msinga smallholders obtain relatively higher profit margins than many similar smallholders elsewhere.

## Labour intensity

Msinga smallholders use labour-intensive methods of crop production. This is linked to their widespread use of small implements as well as the continuing traditional practice by some farmers of pooling labour resources to help each other with specific tasks. Other farmers have moved away from this practice and prefer to hire neighbours and household members to work on tasks such as planting, cultivation and harvesting. Problems of water shortage and the risk of crop losses due to stray livestock, which are cited by all respondents, also compel farmers to tend irrigation furrows throughout much of the day and overnight to ensure that their crops get adequate water and are not eaten by stray animals. Despite the disadvantages of long hours spent guarding against crop losses, labour intensive farming seems to contribute to higher yields and quality produce, while providing employment to a larger number of local people. This is not to argue, however, for the preservation of a status quo that obviously disadvantages smallholders. Ultimately, there is a need to repair infrastructure and secure access by smallholders to sufficient water.

## Individual ownership of the production system

Individual ownership provides an incentive for full-time commitment to farming by Msinga smallholders. The farmer is in control of most of the decisions and actions relating to crop production. Individual ownership of the production system also removes problems of free-riding and power dynamics that are often observed when farmers work in groups.

## Shared procurement of inputs

Although crop production is on an individual basis, farmers voluntarily cooperate in specific

activities. Apart from the pooling of labour resources by some of the farmers, most farmers also cooperate in the procurement of inputs, thus taking advantage of economies of scale associated with bulk purchasing. For example, a 25 kilogram bag of maize seed is shared among two to ten smallholders, such that each smallholder ultimately pays a lower price per unit of seed than what they would otherwise pay when individually purchasing the same amount in smaller quantities.

## Cooperation in determination of producer prices

The Msinga smallholders also cooperate in determining a common price for green mealies. Such cooperation seems borne out of a realisation that when farmers rather than buyers determine crop prices, there is a greater possibility that producer prices will be fair. The strategy (or 'closing of ranks') by Msinga smallholders, however, only works for prices of green mealies and not for vegetables. The reason is that the strategy works because it is employed in conjunction with related adaptation and innovation strategies for ensuring that Msinga smallholders succeed in establishing and maintaining a niche in markets for green mealies.

Adaptation and innovation strategies have included a re-orientation from 'subsistence' to 'commercial' production. This change seems to have emerged voluntarily and organically following the reorganisation of the irrigation scheme, construction of gravity-fed irrigation canals and promotion of furrow irrigation by the Zulu homeland government in the 1980s. A few farmers led the adoption of commercially-orientated farming and awareness of the advantages of this type of farming spread to the rest of the smallholders through diffusion. Many Msinga smallholders made the shift from subsistence to commercially-oriented production between the mid-1980s and the early 1990s. It is worth noting that this shift also coincided with the return of many Msinga men from the mines in Kimberley and Gauteng during the hostel-based violence of the 1980s. These men needed to continue earning incomes. Their return to Msinga appears to have exerted a strong influence on decisions to adopt commercially-orientated farming.

Innovation and adaptation strategies have also included a shift by smallholders from producing the more common 4.1.4.1 strain of maize seed to the Zimbabwean developed SC-701 strain, which is in greater demand in green maize markets. A cob of the latter strain retails a higher price than the more common varieties like 4.1.4.1. While the high demand for the crop variety and relatively high retail price for SC-701 has allowed Msinga farmers to raise producer prices for the crop, this strategy has been complemented by the practice of early planting to ensure that Msinga farmers' produce gets to the markets long before that of other farmers, particularly established large-scale commercial farmers.

The production and marketing of green mealies reflects the capacity of Msinga smallholders to adapt and innovate. While the high demand for early green mealies has been a strong pull factor drawing buyers to the irrigation scheme to purchase the produce in situ, a critical factor has also been the farmers' use of cell phones to link up with prospective buyers. Those investing in and making effective use of cell phones were the leading farmers, who recognised the critical importance of communication in the setting of market prices and in securing buyers for a highly perishable crop such as green mealies. The strategy of using cellular networks is particularly effective in light of the fact that most Msinga smallholders do not farm under formal contracts and therefore have no assurance that the crop will be bought other than the certainty that the produce is in high demand when it enters the markets.

## The use and non-use of market contracts

Although conventional wisdom is that contracts provide the required regulation and coordination mechanism for transactions between producers and buyers, many Msinga farmers view formal contracts for green mealies as a source of risk in that they restrict farmers' freedom to determine prices or decide to whom to sell their produce. Smallholders have therefore tended to avoid market contracts, preferring to enter into loose arrangements with buyers. Such arrangements are not strictly binding, and if a buyer does not turn up at an agreed date, the farmer has the freedom to sell his green mealies to an alternative buyer. The logic behind the success of this strategy seems to hinge precisely on the timing of sales of green mealies at peak demand in November. Despite the absence of formal contracts, which embody the conventional institutional economics notions of coordination and

security, Msinga farmers' niche and competitiveness in markets for green mealies seem resilient so far. This is evidenced by the fact that in spite of a number of incidents of violent attacks on and armed robbery of buyers by local criminals, buyers continue to 'run the gauntlet' in order to gain access to the produce. It is not certain, however, whether the smallholders' success with green mealies would be able to withstand unexpected factors, such as competition by other farmers for the same niche market.

By contrast, contracts for vegetables, such as green peppers and tomatoes, are seen as desirable. Farmers with contracts to produce these vegetables are among the more successful farmers. Presently, however, most vegetable producers farm without entering into contracts with buyers. They frequently experience losses due to the uncertainty of markets. Despite these losses, many Msinga farmers continue to grow tomatoes and green peppers because of envisaged profits from these high value crops. Consequently, there is often an over-supply of tomatoes, resulting in the spoilage of surplus produce and lowering of producer prices. In a context where most tomato producers use the more expensive public transport to take their produce to markets, the lowering of prices narrows profit margins and increases the risk of smallholders' financial losses. A number of smallholders deliberately refrain from producing tomatoes in particular, in order to avoid risk. For crops such as sweet potatoes, with low input costs and low perishability, the level of risk is relatively low. Almost all farmers therefore grow sweet potatoes as some form of security to hedge against possible losses from the more perishable, more input-intensive and higher value vegetable crops. Income from sweet potato, however, is relatively low (Table 10.2).

## Income from farming

The amount of income earned from farming is viewed as an important success factor by smallholders. Farmers, however, do not compute this income using conventional agricultural economics approaches. For example, they do not calculate the opportunity costs associated with the time they spend farming, which is not to say they do not recognise the value of their time. Their work on the plots, which at times involves labouring days and nights, is taken as a necessary component of a successful production system. This might be construed by economists as an uneconomic practice by smallholders to subsidise their own production system, to the point where taking the value of farmers' time into account through proxies could be used to demonstrate that farmers are actually incurring 'losses'. However, since Msinga farmers compute the economic performance of their enterprises differently, the result is one of profitable incomes. What this perhaps indicates is that smallholder farmers' conception 'economic viability' does not squarely match that of project planners and economists.

## Achievement of specific livelihood objectives

Success among the Msinga smallholders is also measured in terms of achievement of specific livelihood objectives. Respondents consistently allude to farming having enabled them to build houses for their families, buy vehicles, educate their children and ensure food security for their households. In a context where Msinga Local Municipality, which is an ISRDP poverty node, has a very high rate of unemployment, low incomes and low levels of infrastructure and social services (Table 10.1), such achievements are significant. A number of smallholders who have been able to achieve livelihood objectives using income from farming are elderly, widowed women, who have single-handedly provided comfortable homes, food security and education for their children and grandchildren. Without access to productive land in the irrigation scheme, these women farmers may have been confined to a life of abject poverty. For that reason, contributions of smallholder agriculture to the livelihoods of these farmers and their progeny should not be under-estimated.

## Attainment of social well-being

The attainment of a sense of social well-being within the community is considered by all respondents to be important. Social well-being in this instance is indicated by a sense of self-esteem emanating from being gainfully employed and from contributing to the livelihoods of others in the community. Such esteem enables farmers to command a degree of respect from their fellow community members. Social well-being derived from farming, however, is not attained in isolation, but is strongly linked to farmers' contributions to the maintenance of healthy social relationships within the community. This is often at the smallholders' own expense.

For example, smallholders consciously make efforts to adopt peaceful means of resolving problems of crop losses due to stray livestock rather than engage in conflicts with owners of such livestock, who may or may not be fellow irrigators. Smallholders have in the past unanimously cooperated in contributing R50 each towards mending old fences, although the total amount raised was insufficient to resolve the problem. As a result smallholders are compelled to spend longer hours in the plots guarding against entry by stray livestock.

Another example is that of smallholders adhering to the customary practice of ukuzila, which is abstinence from farming for a few days before and after the death and burial of a fellow community member. Contravention of this practice entails a high cost in terms of social relationships and farmers' well-being within the community.

Seen from an outsider's narrow economic viability lens, these two examples might be construed as wasteful and inefficient aspects of the Msinga smallholder production system. What the outsiders' lens would fail to account for, however, are the less tangible social losses that might result from conflicts between livestock and crop farmers or between aggrieved and bereaved members of the community and 'errant' smallholders who break the ukuzila custom. Where there is a recognised need to reduce the time spent on ukuzila, for example, negotiation might be a useful approach to ensuring that the interests of both smallholders and the community are reconciled.

## Number of plots used in crop production

Among smallholders, an important measure of success is the number of plots used in crop production. The more 'successful' farmers use at least four plots. This study identified a smallholder who produced crops on 12 plots. There seems to be a need, however, to guard against capture of plots belonging to indigent smallholders by the more affluent farmers.

## Productive versus non-productive use of plots

Closely linked to the number of plots used is the productivity of farmers using plots. While many of the more successful farmers used several plots, those perceived to be the most successful are often smallholders who made productive use of all the plots.

## Number of crops planted per year

Productive use of plots is related to the number of crops planted per year. Farmers who produce three to four crops per plot per year are perceived by their peers and external agencies, such as extension officers and NGOs, to be among the more successful. An example is Mrs MM[17], a widowed pensioner, who produces four crops per plot per year in each of her four plots (Figure 10.1).

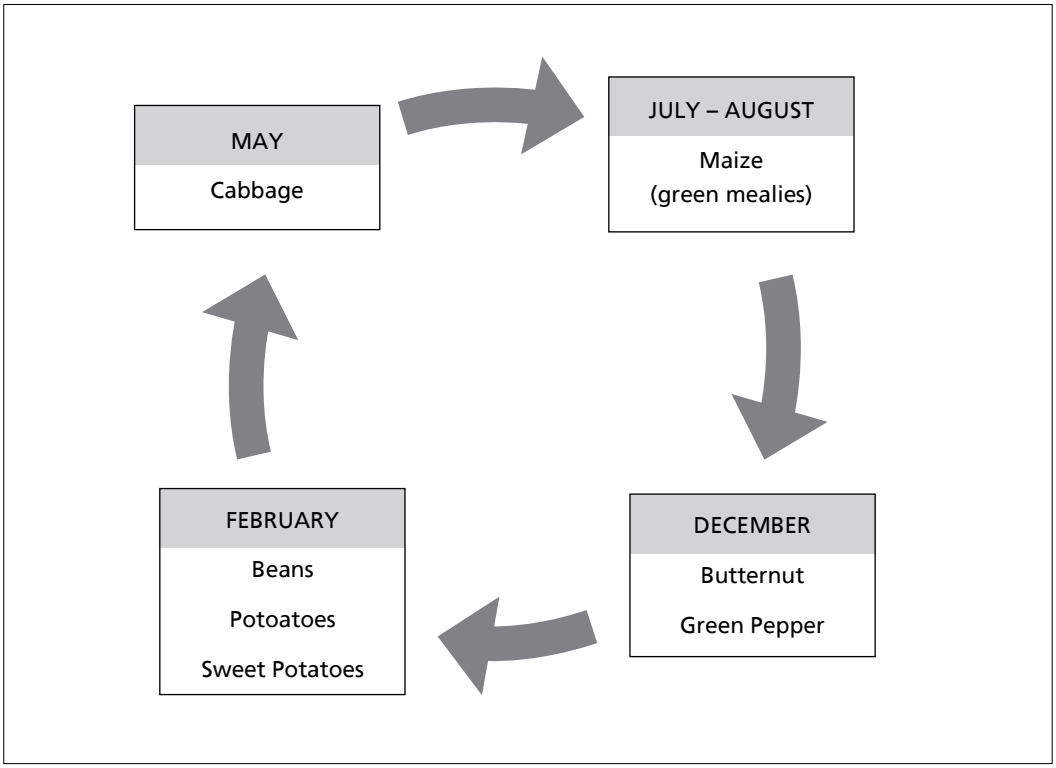
## Land ownership versus leasing

A critical factor with respect to land is security of tenure. Those with secure tenure tend to make more investments in developing their plots. This is regarded as generally true among smallholders worldwide, but was also vividly demonstrated in the course of our fieldwork with smallholders at Msinga. For example, Msinga smallholders are able to invest in hydraulic infrastructure such as irrigation pipes and water pumps. Smallholders whose tenure is most secure are those who have inherited the land through kinship ties. Other tenure arrangements, such as informal leasing and sharecropping, do not seem to provide smallholders with sufficient levels of security to enable long-term investments. All respondents allude to constraints due to insecure tenure. While smallholders have no problems with requirements by lessors for lessees to either plough lessors' plots or to give them a share of their produce in lieu of cash rentals for use of land, there is a strong sentiment that the short-term of use of leased land severely disrupts production and perpetuates insecurity among smallholders.

Short-term leasing needs to be understood in the context of the need to retain rights to the land by those whose extended families hold permission to use it. Such land rights extend several generations into history and provide an important safety net for members of that family group. Such land rights, however, can be lost if the land remains unused for an extended time (Cousins and Mwheli, 2007). There are deep-seated fears, though, about such land being lost if it remains for too long in the hands of people outside the particular extended family holding rights, hence the short duration of informal lease arrangements. Although the short duration of informal leasing is a constraint to production, the fact that

17 Real name withheld to protect the privacy of the respondent.

## Figure 10.1: Mrs MM's annual cropping pattern




it allows for unused land to circulate and hence become productive is a positive factor. What is perhaps required are mechanisms to ensure that leasing affords both the land rights holders and lessees security of tenure.

## Challenges

Many of the voiced challenges experienced by the Msinga smallholders revolve around institutional issues. The less known challenges pertain to implications of narrow definitions of commercial and subsistence farming against the backdrop of water sector reforms.

### Institutional organisation, capacity and coordination

The role of the block committees is to maintain canals and fences, manage the sharing of water and collect administration fees from farmers. The role of the umbrella committee is primarily to coordinate all management functions. The transfer of management functions to smallholder institutional structures has not been matched with resources to enable these institutions to perform their responsibilities.

Farmers' committees lack the capacity to resolve challenges, such as leaking canals and aged and broken fences, which require funding and technical know-how. Although farmers' committees are tasked with the management of water use, they lack the technical capacity to determine the percentages of water lost through leakages. While committees have made attempts to raise funding for repairing fences, such funding has fallen short of required amounts.

A second institutional problem is the poor coordination between farmers and relevant government departments. For example, water shortage is cited by all respondents as a major constraint to crop production. Apart from a lack of information on water losses due to canal leakages, none of the respondent smallholders, committee representatives or agricultural extension officers knows how much water is allocated to Msinga smallholders from the Tugela River. Such information should be available from the Department of Water Affairs and Forestry (DWAF). The problem of poor coordination is also evident in the lack of awareness by respondents of the availability of subsidies to repair dilapidated infrastructure, such as canals and fences. An example of such subsidies is that availed through the DWAF 2005 Policy on the Financial Assistance to Resource Poor Irrigation Farmers. Another example relates to subsidies provided through the

LandCare and WaterCare Programmes of the Department of Agriculture under the Conservation of Agricultural Resources Act (CARA). Improved coordination and communication would contribute to a reduction in the amount of time spent by farmers guarding against crop losses due to water deficit or stray livestock.

### Narrow conceptual definitions of 'commercial' and 'subsistence' farming

A major challenge for Msinga farmers is the prevailing narrow definitions of 'commercial' and 'subsistence' farming in various South African circles. Such definitions view these types of farming as discrete and mutually exclusive. The narrow definitions consider commercial farming as simply involving market-orientated production and subsistence as entailing production strictly for own consumption. In practice, however, there is an overlap between the two concepts and definitions are therefore broader than often realised. The distinction is that commercial farming, on the one hand, is primarily geared towards the markets, with the surplus often consumed by producer households. Subsistence farming, on the other hand, is mainly aimed at own consumption, with surplus produce often sold in order to generate extra income. In light of ongoing reforms in South Africa's water sector, the narrow definitions of subsistence and commercial farming pose significant implications for the sustainability of livelihoods of smallholders, such as Msinga irrigators.

In terms of the National Water Act (Act 36) of 1998, Msinga farmers are currently using Tugela River water lawfully, since such use predates the promulgation of the National Water Act by more than two years. The same Act requires all commercial water users to register their use and obtain licenses for such use. In the interests of administrative efficiency, licensed users are required to pay the full economic cost of water resource management services. Exemptions to the licensing requirement apply to water 'rights' namely, water for basic human needs and the ecological reserve. Human rights to water are administered under the Water Services Act (Act 108) of 1997, and refer principally to domestic uses for food preparation, hygiene and sanitation purposes. Under the National Water Act, exemptions to licensing relate to Schedule One water use, which refers to limited abstractions for narrowly 'subsistence' crop production on plots of less than 0.1 hectare, provided such plots do not collectively constitute significant levels of water use. Schedule One use also refers to stock watering and *ad hoc* uses of water, such as in cases of emergency.

While a concerted effort has been made to broaden access to water for basic needs, a large number of the poor, particularly the rural poor, still do not have adequate access to water. Access problems are compounded by the narrow focus of water policies on allocations of water for basic needs and narrowly-defined commercial and subsistence uses. Provisions of the water policy for direct abstractions of water without the requirements for registration and licensing of use, limit such abstractions to non-commercial uses. Effectively, therefore, resource-poor farmers such as the Msinga smallholders, who eke out livelihoods in informal economies, are often left without means of access to water for livelihood strategies that are neither basic nor narrowly 'commercial' or 'subsistence', but contribute nonetheless to local economic well-being. It is also inappropriate that the articulation of South Africa's National Water Act should view the market orientation of crop production by resource-poor black smallholders as not much different from the highly industrialised and established large-scale white commercial farmers. It is essential therefore that measures to support smallholders should start by correctly defining, in broader terms, the different categories of commercial and subsistence producers, and make appropriate legal provisions to ensure that the livelihoods of these farmers are not compromised in the interest of neo-liberal notions of economic efficiency in water resources management.

## Conclusion

The Msinga case demonstrates a need for greater flexibility in the definition of 'viability' of farming. Any programme of interventions to support resource-poor smallholders should begin by shifting away from:

- Narrowly-conceived notions of viability in terms of conventional economic approaches and agricultural technical efficiency to, for example, a suite of measures that includes livelihoods;
- Narrow definitions of commercial and subsistence farming to a recognition of the existence of a middle ground where both

forms of production orientation overlap, and in which many smallholders eke out a living for themselves, their households and their communities. Such recognition should be accompanied by relevant practical mechanisms that address the interests of smallholders such as those of Msinga;

- The commonly practiced one-size-fits-all approach, which ignores the social differentiation of smallholders and therefore their different interests, to an approach that accommodates the variety of socio-economic needs and objectives;
- The equally common group approach used in projects to support black smallholders, which has been dogged by problems of free-riding and group power dynamics, to an approach that recognises and accommodates the value of individual enterprise in black farmers;
- The prevailing poor institutional coordination, communication and capacity to a more effective governance framework that draws on synergies between various sectors to ensure meaningful support to smallholders.

What is perhaps most important is that interventions to support smallholders should build upon what is already in place, rather than radically introduce completely new farming practices. While the intention to enable smallholders to successfully compete in national and international commodity sectors is perhaps a worthy goal, such an ambition needs to be tempered by the sober reality that attaining the goal will necessarily be a process that requires interventionists to work hand-in-hand with smallholders rather than hurriedly push them 'into the deep end'. This view is based on observations that smallholders face significant constraints to establishing niches within the highly competitive and globalised commodity sectors. While contract farming has the potential to launch enterprising smallholders into mainstream commercial production and markets, due care should be taken to ensure that smallholders are not exposed to inordinately high levels of risk.

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# 11 Smallholder irrigation schemes in South Africa with a focus on Dzindi Canal Irrigation Scheme in Limpopo: dynamic smallholders amidst contested policy priorities

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## Introduction

### Smallholder irrigation schemes in South Africa

South Africa is a dry country and the productivity of much of its arable land can be substantially enhanced when irrigation water is available. South Africa has about 1.3 million hectares under irrigation but only about 0.1 million hectares (7.7%) is held by smallholders (Backeberg, 2006). Du Plessis et al. (2002) categorised smallholder irrigators into four groups, namely,

- farmers on irrigation schemes;
- independent irrigation farmers;
- community gardeners; and
- home-gardeners.

Backeberg (2006) estimated that there were between 200 000 and 250 000 smallholder irrigators in South Africa but among them at least four out of five were community gardeners or home-gardeners, who farmed very small plots of the order of 0.1 hectares or smaller, primarily to provide food for home consumption. Less than one out of five smallholders were operating as independent irrigation farmers or as plot holders on irrigation schemes, cultivating somewhat larger plots, of the order of one or more hectares, for subsistence or commercial purposes. Not much is known about the population of independent irrigation farmers but a considerable body of knowledge has been compiled on smallholder irrigation schemes.

Denison and Manona (2007a) define South African smallholder irrigation schemes as multi-farmer irrigation projects larger than 5 hectares in size that were either established in the former homelands or in resource-poor areas by black people or agencies assisting their development. Using this definition, they counted 317 smallholder irrigation schemes in South Africa in 2003. Different estimates of the combined command area covered by these irrigation schemes range between 46 000 hectares and 49 500 hectares (Bembridge, 2000; Backeberg, 2003; Denison and Manona, 2007a). On average these schemes cover about half (47%) of the total smallholder irrigation area in South Africa and 3.6% of the 1.3 million hectares under irrigation (Backeberg, 2006). Denison and Manona (2007a) estimate that the land on smallholder irrigation schemes was held by about 31 000 plot holders. Dividing the total smallholder irrigation scheme area by the number of plot holders, the average size of irrigated plots on these schemes is about 1.5 hectare. By comparison, the average size of irrigated holdings in the large-scale commercial irrigation sector is about 42 hectares.

Most smallholder irrigation schemes are found in the economically under-developed former homelands of South Africa, where the incidence of poverty is high. In these areas, smallholder irrigation schemes present an opportunity for local economic development. For homesteads that hold land on these schemes, the irrigation plot is an asset that can be used to augment or diversify their livelihood (Mohamed, 2006). Smallholder irrigation schemes can also have positive

economic impacts on people other than plot holders. On the plots there may be employment opportunities for farm workers, whilst additional livelihood opportunities may arise from backward and forward linkages, such as the provision of land preparation services, the trade in fresh produce, and processing of farm produce.

## Historical development of smallholder irrigation schemes

The history of smallholder irrigation scheme development in South Africa was influenced by policy perspectives and the technology that was available at the time. Accordingly, Van Averbeke (2008) identified three important smallholder irrigation scheme development eras, namely,

- The smallholder canal scheme era (from about 1930 until about 1969)
- The homeland era (from about 1970 until 1994); and
- The irrigation management transfer (IMT) and revitalisation era (1995 to present).

Table 11.1 provides an indication of the origin of existing smallholder irrigation schemes in South Africa in relation to these three developmental eras.

### Smallholder canal schemes

Most of the schemes that were established during the smallholder canal scheme era were constructed between 1946 and about 1960. Their establishment was aimed at providing African families residing in what were then called the 'Native or Bantu Areas' with livelihoods that were entirely based on farming. During the 1950s they were considered to be highly successful development projects. A country-wide survey conducted during 1952-53 found that the mean farm income derived from plots of 1.5 morgen (1.28 ha) and a livestock holding of 5.2 animal units was £110 on these types of schemes. On average, 55% of farm income was obtained in the form of food for own consumption and 45% from the sale of produce. By contrast, the nationwide mean annual income among rural families with livelihoods that were completely land-based was only £57 (Commission for the Socio-Economic Development of the Bantu Areas within the Union of South Africa, 1955).

Socially and institutionally, tenure and farming on canal schemes differed from traditional arrangements. When the state identified land for scheme development it first sought to transfer ownership of the land from the tribe to the state and then imposed Trust tenure and Betterment planning. Farmers held their plots by means of Permission to Occupy (PTO). Trust tenure provided the state with the necessary powers to prescribe land use and to expel and replace farmers whose practices did not comply with its prescriptions. In selected cases, the state effectively used these powers to enforce the production objectives of the scheme by evicting poorly performing farming families. A similar authoritarian and paternalistic approach by the state prevailed on white settler schemes established during the great depression and WWII period (Backeberg and Groenewald, 1995).

From a design perspective, many smallholder canal schemes relied on a concrete weir to di-

## Table 11.1: Categorisation of existing smallholder irrigation scheme development in South Africa

| Era | No of schemes | Area (ha) | Mean area per scheme (ha) | Main irrigation technology used |
|---|---|---|---|---|
| Smallholder canal scheme (1930-1969) | 74 | 18 226 | 246 | Gravity-fed surface irrigation |
| Independent homeland (1970-1996) | 62 | 12 994 | 210 | Different forms of overhead irrigation |
| IMT and revitalisation (1997-present) | 64 | 2 383 | 37 | Pump and sprinklers or micro-irrigation |
| Year of establishment uncertain | 117 | 15 897 | 136 | Mostly overhead irrigation |
| Total | 317 | 49 505 | 156 | |

Source: Van Averbeke, 2008.

vert water from a river, from which a system of concrete canals and furrows conveyed it to field edge. Plot size typically ranged between 1.5 and 2 morgen (1.28 to 1.71 ha) (Bembridge, 1997).

## Independent homeland schemes

Smallholder irrigation development during the independent homeland era was characterised by modernisation, functional diversification and centralisation of scheme management. Examples of large projects (>500 ha) in the Eastern Cape that were characteristic of irrigation development during this era were the Keiskammahoek, Tyefu and Ncora irrigation schemes (Van Averbeke et al., 1998) (see Table 11.1).

On large schemes, economic viability was pursued by means of a strategy of functional diversification. Typically included were a commercial function in the form of a central unit which was farmed as an estate, a commercial smallholder function in the form of medium sized plots (also called 'mini farms'), which were 5 to 12 hectares in size, and a subsistence function in the form of food plots, ranging from 0.1 to 0.25 hectares in size (Van Averbeke et al., 1998). It can be argued that functional diversification was a way of catering for rural livelihood diversity, although this concern was not necessarily stated explicitly in the plans. In practice, however, functional diversity provided rural homesteads with different options to benefit from irrigated agriculture, depending on the structure of their existing livelihood. For example, the mini farms were meant to cater for homesteads that sought full land-based livelihoods, whilst the food plots provided homesteads that derived their livelihood from external sources – such as male-migration or old-age pensions – with an opportunity to enhance these livelihoods by producing food for home consumption. The estate component offered opportunities to members of rural homesteads who were searching for employment and monetary income close to home. Management of these large schemes was centralised in the hands of specialised parastatals, such as Ulimocor in Ciskei, Tracor in Transkei and Agriven in Venda.

Socially and institutionally, the large schemes were very complex. Arrangements to use the land for irrigation development often involved the provision of services to historical land holders (Van Averbeke et al., 1998). Social unrest and conflict during the late nineteen-eighties further reduced the sustainability of these schemes. When the post-1994 provincial governments decided to dismantle the agricultural parastatals in the former homelands, these large schemes were particularly affected, because they were the most complex and had been centrally managed from inception, resulting in exceptionally high levels of dependency among farmers (Van Averbeke et al., 1998). Partial or total collapse of production followed this decision almost immediately (Bembridge, 2000; Laker, 2004).

In terms of design, the irrigation infrastructure on the large schemes established during the independent homeland era was amongst the most modern that was available at that time, but even on smaller schemes, pressurised overhead irrigation was used instead of surface irrigation.

## The irrigation management transfer (IMT) and revitalisation era

The irrigation management transfer and revitalisation era started in earnest around 1997 and is still continuing. During this era, the focus of smallholder irrigation development has mainly been on the transformation of existing schemes, but the approach used by the state to achieve this has been subject to review and change. As a result, this era can be subdivided into several phases.

The first phase, which was transitional, occurred during the political transition period between 1990 and 1996, when several new small irrigation schemes were established as part of the Reconstruction and Development Programme (RDP) in support of rural poverty alleviation. Denison and Manona (2007a) counted 62 irrigation schemes that were established during this era. Combined, these new schemes added about 2400 hectares to the total smallholder irrigation scheme area (Table 11.1), at an average of about 39 hectares per scheme. Typically, they use mechanical pump and sprinkler technology to extract and apply irrigation water.

The second phase commenced more or less when GEAR (Growth, Employment and Redistribution) superseded the RDP as the overall economic development policy of South Africa. Under GEAR, the strategy to eradicate poverty shifted from funding community-based projects à la RDP, to pursuing economic growth through private sector development. Existing irrigation schemes were identified as important resources for economic development in the rural areas, but they

required revitalisation first. Revitalisation was linked to Irrigation Management Transfer (IMT). IMT refers to the transfer of the responsibility of managing, operating and maintaining irrigation schemes from the state to farmers themselves. Elsewhere in the world IMT had been implemented as a strategy to improve scheme management performance, increase the profitability of irrigated agriculture and reduce recurrent public spending on the operation and maintenance of irrigation schemes (Vermillion, 1997; Shah et al., 2002). Adoption of the policy of IMT was aligned with GEAR, because it promised to improve the lives of poor people by means of a process that empowered them to take control of their own resources and destiny, typically with a commercial economic focus.

Among the different IMT initiatives in the country, the Revitalisation of Smallholder Irrigation Schemes (RESIS) of Limpopo Province stands out for its comprehensiveness. The RESIS programme evolved from the WaterCare programme launched in 1998, which aimed to revitalise selected smallholder irrigation schemes in Limpopo, not only infra-structurally but also in terms of leadership, management and productivity. Using a participatory approach, WaterCare involved smallholder communities in planning and decision-making, and provided training to enable these communities to take full management responsibility over their schemes (Denison and Manona, 2007a). In 2000, much of Limpopo was ravaged by severe storms, which resulted in widespread floods and damage to roads, bridges and also to the weirs that provided water to many of the smallholder canal schemes. Declared a disaster area, Limpopo Province was allocated special funding to repair the damage to its infrastructure, providing impetus to the WaterCare programme.

In 2002, the provincial government of Limpopo broadened the scope of its irrigation scheme rehabilitation intervention by launching a comprehensive revitalisation programme, called RESIS (Revitalisation of Smallholder Irrigation Schemes). RESIS adopted the participatory approach of the WaterCare programme, but planned to revitalise all smallholder schemes in the province (Limpopo Department of Agriculture, 2002). As was the case in the WaterCare programme, RESIS combined the reconstruction of smallholder irrigation infrastructure with IMT. In support of IMT, the programme dedicated one-third of the revitalisation budget to capacity building among farmers. RESIS also sought to enhance commercialisation of the smallholder farming systems on the schemes, in order to improve the livelihood of plot holder homesteads (Limpopo Department of Agriculture, 2002). However, during the WaterCare programme and the first phase of RESIS (1998-2005), the emphasis was primarily on the rehabilitation of the existing scheme infrastructure and on sustainable IMT, and less on commercialisation. Canal schemes that were revitalised during this phase remained canal schemes.

The third phase of the IMT and revitalisation era commenced around 2005, when commercialisation, water productivity and water use efficiency became the principal development objectives of smallholder scheme revitalisation. In Limpopo Province the Department of Agriculture developed the view that canal irrigation was associated with subsistence farming and inefficient water use. Consequently, the Department terminated the revitalisation of canal infrastructure and only considered applications for revitalisation of canal schemes if farmers agreed to the replacement of their canal systems with modern irrigation technology, such as micro-irrigation or floppy sprinkler systems. However, the Department soon discovered that commercialisation was not just a function of irrigation technology, and in 2007 it encouraged plot holders of revitalised schemes to enter into partnerships with experienced commercial farmers to form joint ventures. Makuleke Irrigation Scheme became the flagship project of the Department's new approach.

Under RESIS, Makuleke had been revitalised when new sprinklers and pumps were installed. Supported by CottonSA, farmers agreed to produce cotton, but low prices marginalised the production of cotton and the project collapsed. Subsequently, the Department financed the replacement of the sprinkler system with centre pivots and arranged for a joint venture with a commercial farmer. The joint venture was structured around 43 smallholders supplying a total of 138 hectares of irrigation land for the commercial partner to farm. Profits were shared at the end of each production cycle (60% for the commercial partner and 40% for the plot holders). During the first year of production (2007/08), smallholders twice received R5000/hectare as a share in the profit of a potato and a maize crop. Considering that each smallholder on average contributed 3.2 hectares, they each

earned about R32 000 during the first year of production. Plot holders received this income solely by making available their plots as all costs were carried by the commercial partner, who also brought in his own labour force. Highly satisfied with this outcome, the Department announced the application of the joint venture approach on 15 other smallholder schemes that had been revitalised and equipped with modern irrigation technology.

## Options for smallholder irrigation scheme development

Denison and Manona (2007b) point out that successful revitalisation of smallholder schemes depends on a clear and unambiguous statement of the objectives of revitalisation. They argue that one of the weaknesses of smallholder irrigation scheme revitalisation in South Africa has been that the objectives guiding revitalisation efforts were sometimes contradictory, making it impossible for revitalisation to achieve all its stated objectives. Moreover, they identified scheme-specific factors that preordained the objectives that could be achieved in any particular case. This made them conclude that the direction of smallholder irrigation scheme development needed to consider the locally specific circumstances. They outlined four principal development pathways or trajectories that could be considered, depending on local conditions. These are described as follows:

- **The 'business farmer' – commercial production on consolidated farms:** This developmental pathway involves the establishment of farm enterprises held by individuals who produce commodities on relatively large farms ranging between 5 hectares and 40 hectares, depending on the commodity being produced. Business farmers are expected to have the required technical and managerial capacity and financial resources to deal with the risk associated with commercial farming, and to sustain the use of moderately to highly sophisticated irrigation technology. Under certain circumstances, particularly in relation to produce markets, business farmers could also act as outgrowers producing one commodity only, as in the case of the cane growing sector. Revitalisation objectives congruent with this trajectory are increased production, economic viability, commercialisation, establishment of an African peasant or commercial farmer class, and Black Economic Empowerment (BEE). It must be noted that for many smallholder schemes, selecting this particular developmental trajectory would require the consolidation of existing plots into larger units.

- **The 'smallholder farmer' – diversified farming and reduced risk:** This development trajectory accommodates livelihood diversity among plot holders, with particular reference to the various roles farming plays in their livelihoods. Denison and Manona point out that this trajectory is unlikely to be a financially feasible proposition on schemes where the cost of the overheads and management of the irrigation are high, and suggest that this trajectory is best suited for low-cost canal schemes. The only tangible revitalisation objective of this trajectory is improved efficiency of the canal system resulting in increased delivery of water to the plots, but from an economic perspective the impact of revitalisation is highly dependent on how farmers make use of the improved conditions.

- **The 'equity-labourer' – plot holders in large-scale commercial partnerships:** This development trajectory calls for commercial partner investment to cover the cost of overheads and management of irrigation and production. Denison and Manona postulate that this trajectory is probably best suited for large and complex schemes that are remote, such as the Ncora Irrigation Scheme in western Transkei. They point out that this trajectory largely transfers control over the assets and the mode of production to the commercial partner in return for jobs, probably at the minimum wage level and the opportunity to earn some dividends. As such, job creation is the revitalisation objective congruent with this trajectory, but evidence from Makuleke indicates that dividends paid to plot holders can be an important objective also.

- **The 'food producer'** – irrigated food plots and home gardens: This development trajectory aims to provide homesteads with the opportunity to enhance their access to food through own production on small irrigated plots of 0.25 hectares or less. Poverty

alleviation and enhanced homestead food security are the revitalisation objectives that are congruent with this trajectory.

Denison and Manona (2007b) indicate that revitalisation of a particular scheme could involve the adoption of more than one development trajectory. For example, the business farmer trajectory could be combined with the food producer trajectory by subdividing the scheme into parts, each with its own specific revitalisation objectives.

## Current smallholder irrigation scheme development in Limpopo Province

Of the nine provinces in South Africa, Limpopo dominates in terms of smallholder irrigation scheme development. Mohamed (2006) reported that in 2004, 57% of the total number of smallholder irrigation schemes (154 out of 287), and 54% of the total area under smallholder irrigation (24 795 hectares out of 46 000 hectares), occurred in Limpopo Province (Table 11.2). Combined, the Limpopo smallholder schemes were farmed by 15 919 plot holders, which represented 51% of the national total of farmers on smallholder irrigation schemes. The average size of smallholder irrigation schemes in Limpopo Province was 161 hectares, the average number of plot holders per scheme was 103, and the average land holding per plot holder was 1.5 hectares. Other provinces in which smallholder irrigation schemes are important include the Eastern Cape with 21% of the total irrigated area and 7 845 (25%) plot holders, and KwaZulu-Natal with 14% of the total irrigated area and 6 174 (20%) plot holders (Table 11.2).

The current policy of the Limpopo Department of Agriculture favours the 'equity labourer' development trajectory and funds for smallholder irrigation scheme revitalisation are allocated accordingly. The case study presented in this report argues that this policy is too narrow. Reasons supporting this argument include:

- The policy does not take into account that circumstances among irrigation schemes differ substantially, as pointed out by Denison and Manona (2007b). At some schemes the application of the 'equity labourer' development trajectory is likely to be problematic because factors such as slope or plot size may limit the possibilities for consolidation of the land.
- The application of the 'equity labourer' development trajectory may not be acceptable socially because on some schemes plot holders have built sustainable agrarian livelihoods and they may not be interested in becoming share holders or farm workers.

Whereas the 'equity labourer' development trajectory may yield impressive financial returns for plot holders, these only materialise following substantial public investment in new irrigation systems, which have a limited lifespan. The question of who will take responsibility for the repair and replacement of these systems when they start to age or reach the end of their life span arises.

Moreover, the application of the 'equity labourer' development trajectory at Makuleke indicates that this trajectory contributes little towards the establishment of a commercial African farmer class. On the contrary, the way in which the joint venture operates at that scheme completely divorces plot holders from production decisions and practices.

The case study presented here analyses farming on a smallholder canal irrigation scheme called Dzindi. It draws on reports by Mohamed (2006) and Van Averbeke (2008), which elaborate different aspects of this scheme, but uses new fieldwork to present up-to-date farm enterprise information. Updating the enterprise information provided indications of how farmers have coped with changes that have occurred since 2003, when Mohamed (2006) collected enterprise budget data at the scheme. During the five-year period that has elapsed since then, important macro-economic developments have occurred, such as the rapid increase in the cost of diesel and chemical fertilisers.

The case study provides material that supports the revitalisation of selected canal irrigation schemes, such as Dzindi, using the 'smallholder farmer' development trajectory proposed by Denison and Manona (2007b). From an irrigation technology perspective, this trajectory calls for the refurbishment of the canal infrastructure, which may be cheaper than replacing the canal system with another type of irrigation. Furthermore, the study argues that under specific circumstances, the development of new canal schemes could be considered. The study dem-

## Table 11.2: Summary data on South African smallholder irrigation schemes by province

| Province | Schemes | | | | Number of farmers | Mean plot size (ha) | Active schemes | | | | Number of schemes by size category | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | Command area (ha) | Mean size (ha) | Proportion of total command area (%) | | | No. | % | Area (ha) | % | < 5 ha | 5-50 ha | 51-150 ha | 151-500 ha | 501-1500 ha | > 1500 ha |
| Limpopo | 154 | 24 795 | 161 | 54 | 15 919 | 1.6 | 95 | 62 | 10 962 | 44 | 0 | 46 | 70 | 27 | 9 | 1 |
| Eastern Cape | 74 | 9 624 | 130 | 21 | 7 845 | 1.2 | 50 | 68 | 3 843 | 40 | 16 | 41 | 7 | 4 | 3 | 2 |
| KwaZulu-Natal | 36 | 6 621 | 184 | 14 | 6 174 | 1.1 | 35 | 97 | 3 097 | 47 | 17 | 4 | 2 | 8 | 3 | 1 |
| Mpumalanga | 8 | 990 | 124 | 2 | 209 | 4.7 | 8 | 100 | 556 | 56 | 0 | 5 | 3 | 0 | 0 | 0 |
| Western Cape | 9 | 425 | 47 | 1 | 737 | 0.6 | 8 | 89 | 386 | 91 | 0 | 7 | 0 | 1 | 0 | 0 |
| North West* | 3 | 3 524 | 1 175 | 8 | 423 | 8.3 | 2 | 67 | 2 816 | 80 | 0 | 2 | 0 | 0 | 0 | 1 |
| Free State* | 3 | 20 | 20 | 0 | 2 | 10.0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Total | 287 | 45 999 | - | 100 | 31 309 | - | 198 | 69 | 21 660 | - | 33 | 108 | 82 | 40 | 15 | 5 |

*Data on North West and Free State scheme sizes were incomplete. Subsequently, an additional 30 schemes were added to the data base.

Source: Mohamed, 2006.

onstrates that enterprises on smallholder canal schemes can generate financial returns per unit area that match those obtained by plot holders involved in joint ventures, using Makuleke Irrigation Scheme as a benchmark. One of the most powerful arguments in favour of canal irrigation is the longevity of the system. At Dzindi the canal system is 54 years old and there are several other functioning canal schemes that are as old if not older. In addition, canal schemes use gravity for the conveyance of water, making it independent of the cost of energy. Some of the weaknesses and limitations of smallholder canal schemes are also pointed out.

# Methods

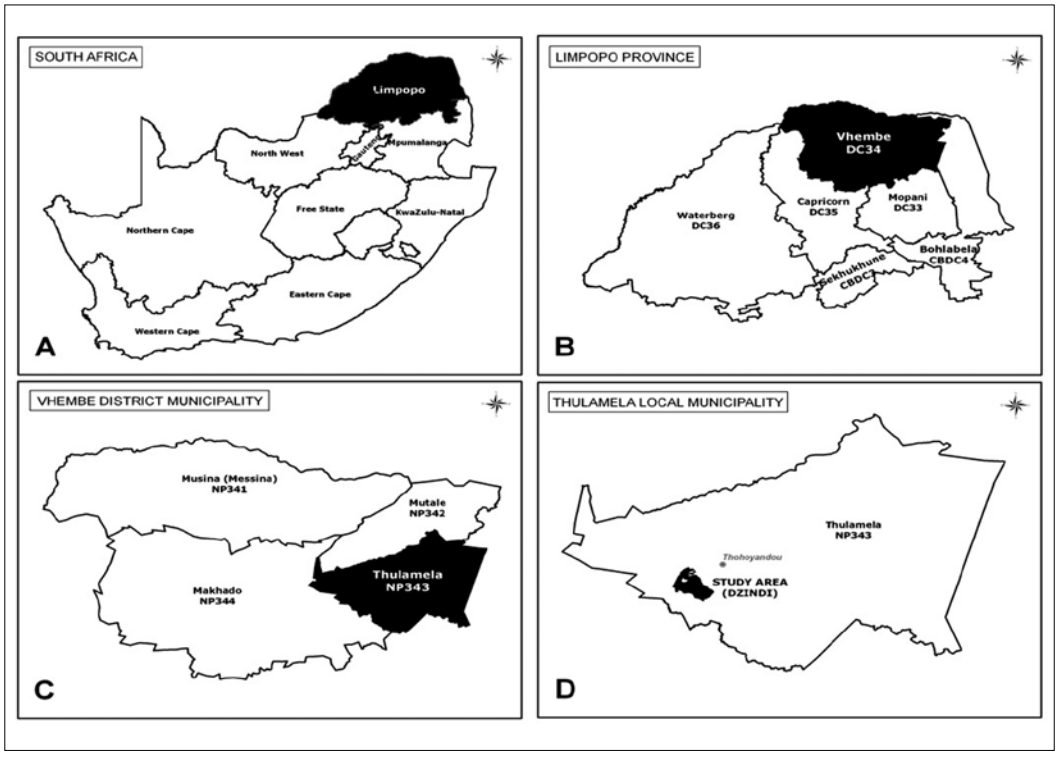
## Study site

Dzindi (23o 01'S; 30026'E) is located in Itsani, about 6 kilometres southwest of the town of Thohoyandou, in the Thulamela Local Municipality, Vhembe District, Limpopo Province (Figure 11.1). The scheme was established in 1954 and has a total command area of 135.6 hectares that is subdivided into 106 plots of 1.28 hectares each, which are held by 102 plot holders. In terms of scheme size, plot size and plot holder population Dzindi more or less typical of smallholder canal irrigation schemes in Limpopo (Mohamed, 2006).

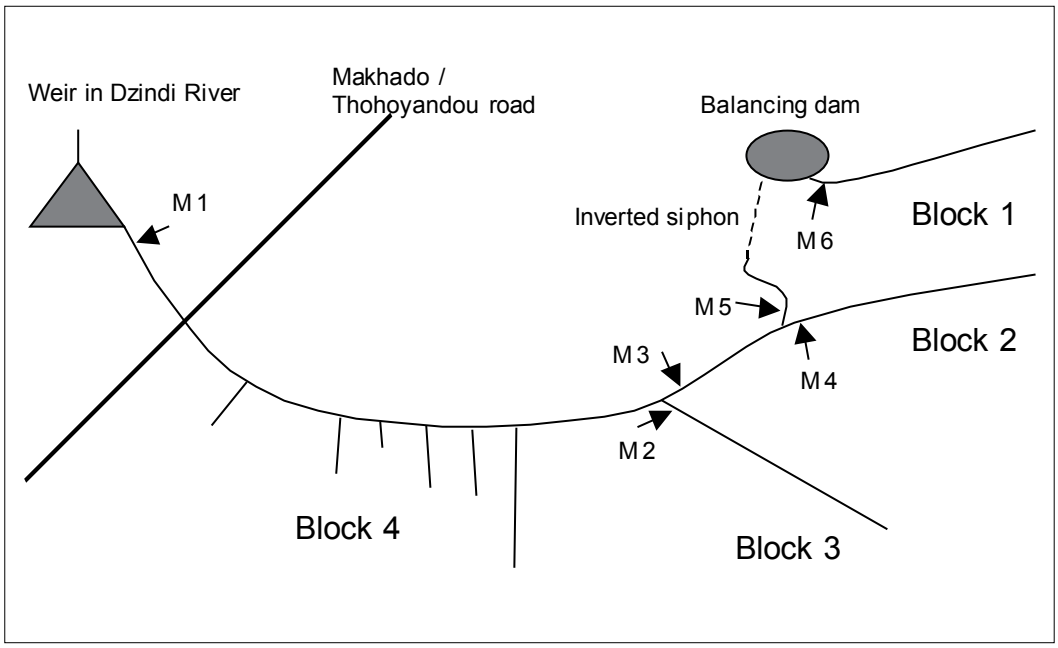
At Dzindi, water is supplied by the diversion of the Dzindi River by a concrete weir. The Dzindi River is perennial, but its water flow is subject to considerable seasonal variation (Van der Stoep and Nthai, 2005). At the weir, water enters the main concrete canal, which runs over a distance of about 14 kilometres and conveys the water to the four irrigation blocks (Figure 11.2). The irrigation blocks are divided into plots, which receive their water by means of secondary concrete canals. Most of the land at Dzindi is sloping and for this reason, the plots are terraced. Farmers refer to these terraces as beds. On average, a plot consists of 15 beds but the number varies considerably from plot to plot. Contour bunds separate the beds from each other and the area occupied by these bunds occupies about one-quarter of the plot. As a result, the effective cropping area of a plot is just under 1 hectare.

Dzindi has one night-storage dam, which supplies Block 1. The amount of water entering the scheme is sufficient only to allow each farmer one irrigation per week. Each day, two farmers per secondary furrow have the right to draw water, one during the morning and the other dur-

## Figure 11.1: Location of Dzindi Irrigation Scheme



## Figure 11.2: Schematic layout of the water distribution network at Dzindi




Source: Van der Stoep and Nthai, 2005.

ing the afternoon. This rule applies during daylight hours only. During the night anyone who needs water may irrigate except farmers in Block 1, because the night storage dam is replenished during the night. According to Van der Stoep and Nthai (2005), water conveyance at Dzindi is within the acceptable irrigation efficiency limits, even when water losses through seepage and spillage due to the poor conditions of the water conveyance system are taken into account.

For various reasons, such as the lack of money to pay for land preparation or the occurrence of water shortages, not all the available irrigated land at Dzindi is cultivated (Table 11.3). During the period August 2005 to March 2007, the proportion of land that was covered with a growing crop ranged between 22.7% and 65.4%. The intensity with which land is cropped varies from plot to plot. Summer use is higher than winter use because that is the season when many plot holders produce grain for their families. Table 11.3 shows that maize was by far the most important crop and featured throughout the year at Dzindi, because maize is not only grown for grain but also for the harvest of green cobs, which are nearly all marketed. Conditions at Dzindi allow for the planting of maize throughout the year. Winter plantings are aimed at exploiting out-of-season demand for green maize. In 2002, about two-thirds of the grain produced at Dzindi was used for home consumption and the other third was sold. Besides maize, farmers also grow exotic vegetables (cabbages, Swiss chard and onions), and African leafy vegetables (Chinese cabbage and nightshade) during winter, and pulses (mostly groundnuts), tubers (sweet potatoes), traditional vegetables (pumpkins and melons) and exotic vegetables (tomatoes, green peppers and cabbages) during summer.

The 2003 livelihood survey by Mohamed (2006), which covered 97 of the 102 plot holder homesteads at Dzindi, demonstrated high levels of livelihood diversity. All of the homesteads farmed their plots but only 20 of the 97 homesteads obtained more than half of their income from farming. Using main source of income (>50% of total) as the criterion for differentiation, plot holder livelihoods at Dzindi can be categorised into five main types, namely:

- Social grant holders-37%
- Employees-22%
- Farmers-21%
- Petty entrepreneurs-11%
- Diversified-income households-9%.

Mohamed (2006) also reported considerable variability in the way homesteads approached

## Table 11.3: Land use at Dzindi

| Land use | Aug-05 | Dec-05 | Mar-06 | Jun-06 | Aug-06 | Dec-06 | Mar-07 |
|---|---|---|---|---|---|---|---|
| | Proportion of total irrigated area (%) | | | | | | |
| Fallow | 34.23 | 33.91 | 61.26 | 41.62 | 36.58 | 22.90 | 44.27 |
| Prepared | 23.52 | 8.66 | 16.06 | 27.74 | 32.33 | 11.73 | 23.06 |
| Maize | 22.70 | 47.37 | 13.65 | 2.12 | 8.65 | 58.60 | 6.98 |
| Indigenous leafy veggies | 4.27 | 0.00 | 3.80 | 15.13 | 7.97 | 0.00 | 11.66 |
| Chinese cabbage | 0.79 | 0.00 | 3.75 | 10.28 | 3.02 | 0.00 | 10.95 |
| Nightshade | 3.48 | 0.00 | 0.05 | 4.85 | 4.95 | 0.00 | 0.71 |
| Exotic leafy vegetables | 6.55 | 0.16 | 2.30 | 8.88 | 8.92 | 1.05 | 5.98 |
| White cabbage | 3.74 | 0.05 | 2.30 | 6.52 | 5.64 | 1.05 | 5.71 |
| Swiss chard | 2.85 | 0.11 | 0.00 | 2.36 | 3.28 | 0.00 | 0.27 |
| Root and bulb crops | 2.95 | 1.28 | 0.99 | 2.25 | 2.13 | 1.19 | 3.06 |
| Sweet potatoes | 1.53 | 1.11 | 0.99 | 1.75 | 0.77 | 0.81 | 2.98 |
| Onions | 1.42 | 0.00 | 0.00 | 0.40 | 1.22 | 0.00 | 0.08 |
| Beetroot | 0.00 | 0.05 | 0.00 | 0.10 | 0.15 | 0.24 | 0.00 |
| Carrots | 0.00 | 0.11 | 0.00 | 0.00 | 0.00 | 0.14 | 0.00 |
| Vegetable fruits | 0.69 | 0.69 | 0.07 | 0.14 | 0.52 | 0.40 | 1.71 |
| Tomatoes | 0.69 | 0.16 | 0.00 | 0.00 | 0.42 | 0.32 | 0.84 |
| Green peppers | 0.00 | 0.32 | 0.07 | 0.14 | 0.10 | 0.08 | 0.05 |
| Chillies | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.82 |
| Cucurbits | 3.35 | 3.75 | 0.25 | 0.00 | 0.41 | 1.40 | 0.02 |
| Pumpkins | 3.35 | 3.54 | 0.18 | 0.00 | 0.11 | 0.37 | 0.02 |
| Butternut | 0.00 | 0.21 | 0.07 | 0.00 | 0.30 | 1.03 | 0.00 |
| Pulses (fresh and dry) | 1.74 | 4.18 | 1.62 | 2.12 | 2.49 | 2.73 | 3.26 |
| Dry and green beans | 1.32 | 0.16 | 0.49 | 1.81 | 2.22 | 0.00 | 2.31 |
| Bambara groundnuts | 0.00 | 0.11 | 0.24 | 0.00 | 0.00 | 0.00 | 0.19 |
| Groundnuts | 0.42 | 3.91 | 0.89 | 0.00 | 0.00 | 2.73 | 0.76 |
| Peas | 0.00 | 0.00 | 0.00 | 0.31 | 0.27 | 0.00 | 0.00 |
| Total under growing crops | 42.25 | 57.43 | 22.68 | 30.64 | 31.09 | 65.37 | 32.67 |

Source: Van Averbeke, 2008.

farming. Diversity in farming was described using the farming style concept. Van der Ploeg (2003) defined farming style as an integrating concept that portrays a particular way of practising agriculture and called it an expression of how farmers combine and order the elements that are used in the process of agricultural production.

Analysing 96 farm enterprises at Dzindi, Mohamed (2006) identified three distinctly different farming styles at Dzindi, namely food farmers, employers and profit makers. A fourth category, designated 'other', was created to accommodate homesteads whose farming did have the defining characteristics of any of the three main farming styles.

The key objective of *food farmers* was to produce food for own consumption at low cost and low risk, funding production using income derived from other sources, mostly social grants.

*Employers* typically left farming to full-time farm workers because they were involved in other livelihood activities, or because they were

too old to farm. Employers adopted a partially market-oriented approach to recover at least part of the cost of labour, which was the principal variable cost in this particular farming style.

*Profit makers* farmed to earn cash income and in pursuit of this objective they adopted a strategy characterised by relatively high levels of risk. Production of white cabbages and green maize featured prominently in their farm enterprises. Profit makers tended to be highly dependent on farming for income. They mainly relied on family labour but hired casual labour on a daily or piece-work basis during peak times. Additional information on farming styles at Dzindi were presented by Van Averbeke and Mohamed (2007). Table 11.4 shows the frequency distribution of livelihood types and farming styles at Dzindi in 2003.

### Data collection during 2008

Fieldwork conducted for this case study involved interviews with nine plot holders during July and August 2008. The main objective was to find out to what extent change in circumstances had affected farming of the selected homesteads. For this purpose, particular attention was paid to the enterprise budgets, which were collected for the period 1 July 2007 to 30 June 2008. Additional information that was collected was the life history of the plot holder, the current structure of the livelihood of the plot holder homestead, the marketing strategy of the plot holder and involvement in collaboration, perceptions of success and perspectives on the future.

Sampling of the nine plot holders was purposive with a bias for the selection of plot holders who were making a living from farming (the 'farmer' livelihood type) while using a commercial approach to agriculture (the 'profit maker' farming style). Table 11.4 shows that in 2003, 20 of 96 plot holder homesteads had a farmer livelihood type and 16 out of 96 had a profit maker farming style. For this reason, generalisations of the findings of this case study to scheme level are not warranted.

Table 11.5 indicates the livelihood type and farming style of the nine plot holder homesteads included in the sample using the same criteria for categorisation as those used by Mohamed (2006).

## Case studies

### Historical perspective

The focus of this section is on the life history of the nine plot holders who were selected for the case study. Considering that the Dzindi smallholder canal irrigation scheme started 54 years ago, most plot holders are second- or even third-generation, but one of the original plot holders has been included in the study (Case 5). Table 11.6 summarises the life histories of the nine plot holders featuring in this study.

The nine life histories illustrate how agrarian livelihoods are or were constructed using the irrigation plot as the central asset. One of the prominent themes is the association of youth with off-farm work and urban migration. All eight male farmers covered by the study first sought to make a living off-farm, often as migrant workers. For various reasons, they chose or were forced to return home and decided to make a living from farming. They then (re)-activated the plot that was left to them by their families and set out to develop their farm enterprises. In some instances this was achieved successfully (Cases 1, 3, 4, 5, 7 and 9), whilst in others the plot holders lacked the resources to

## Table 11.4: Relationship between livelihood type and farming style at Dzindi (2003)

| Livelihood type | Farming style | | | | |
|---|---|---|---|---|---|
| | Food farmer | Employer | Profit maker | Other | All |
| Social grant holder | 17 | 9 | 1 | 9 | 36 |
| Employee | 11 | 4 | 3 | 3 | 21 |
| Farmer | 4 | 2 | 11 | 3 | 20 |
| Petty entrepreneur | 8 | 1 | 0 | 1 | 10 |
| Diversified-income household | 4 | 0 | 1 | 4 | 9 |
| All | 44 | 16 | 16 | 20 | 96 |

## Table 11.5: Livelihood type and farming style of the nine Dzindi plot holder homesteads sampled in 2008

| Case number | Age of farmer | Gender of farmer | Livelihood type | Farming style |
|---|---|---|---|---|
| 1 | 44 | Male | Farmer | Profit maker |
| 2 | 56 | Male | Petty entrepreneur | Other |
| 3 | 41 | Male | Farmer | Profit maker |
| 4 | 40 | Male | Farmer | Profit maker |
| 5 | 74 | Male | Grant holder | Other |
| 6 | 44 | Male | Diversified income household | Other |
| 7 | 63 | Male | Diversified income household | Food farmer |
| 8 | 43 | Female | Farmer | Profit maker |
| 9 | 56 | Male | Employee (spouse) | Profit maker |

## Table 11.6: Summary of life histories of selected plot holders at Dzindi (2008)

| Case | Brief life history |
|---|---|
| 1 | The eldest son of a Dzindi plot holder, Mr Musecho grew up in a homestead that had an agrarian livelihood. Livelihood activities included irrigated cropping, the marketing of produce in town using a donkey cart for transport, and a spaza shop. Mr Musecho left school after Grade 5 at the age of 17 and migrated to Gauteng to look for work. He remained a migrant worker until 1994. In the meantime he got married and started a family. At the age of 30 he was retrenched and returned home to take over the plot of his father, who had passed away. He has based his livelihood on farming the plot ever since. His spouse is a security guard, earning R1500 per month, and they also receive two child support grants. |
| 2 | Mr Baloyi grew up in a farmer homestead. Livelihood activities included irrigated cropping on the scheme and livestock farming. He left school after Grade 2 and travelled to Gauteng to look for work at the age of 17. He remained a migrant until 2004, holding a variety of jobs. He combines farming the plot with earning income from painting houses. His spouse is not working but they receive one child support grant. |
| 3 | Mr Mushidzi grew up in a farmer homestead and applied for work in the army after completing high school, but was not successful. He found work as a driver for a supermarket in the region but did not enjoy the work and felt he could do better farming the plot left to him by his father. He has since added broiler production to irrigated cropping, growing four batches of 100 chickens per year. His spouse is working and earns R2500 per month. |
| 4 | Mr Mabulanga dropped out of school in Grade 8. He never left Dzindi. He was given two beds (about 1200 m2) by his plot-holding father to start farming on his own and worked as a tractor driver at the scheme for 12 years. He saved to buy his own tractor and received an additional 10 beds when his father retired from farming. The use of the rest of the plot was given to his four siblings. During winter, he rents in excess of 40 beds from other plot holders. He earns income from irrigated cropping and the provision of land preparation services. |
| 5 | Mr Tshikhudo grew up in a family that practised irrigated farming near Lwamondo using river diversion. He completed Grade 7 and became a shop assistant. His life story is a classical example of the growth and development of a smallholding. Through the accumulation of assets in support of an agrarian livelihood, Mr Tshikhudo was able to provide for the tertiary education of his children, but his success meant that there is no successor. He is now well past 70 years old and his enterprise is now in decline. |
| 6 | Mr Mawela grew up at Dzindi and when he was a high school student his father lent him a bed which he cropped to pay for school and to earn pocket money. After high school he became a migrant, working for a Johannesburg construction company. He saved enough to enrol in a teacher training college in 1992. He qualified in 1995 but failed to find work. To assist him his father gave him 12 beds in 1997 but after 10 years he still struggles to lift his enterprise to the level where he can earn an adequate income to invest in high-value crops. |
| 7 | Born in 1945, Mr A Nethonzhe is a first-generation plot holder at Dzindi because his father registered a plot in his name in 1956. He completed Grade 7 and in 1965 he joined other young men to become a migrant worker in Johannesburg, until he returned to Venda in 1975 to earn a living as a driver. In 1983, at the age of 38, he decided to farm full-time. As in the case of Mr Tshikudo (Case 5), his enterprise flourished at one stage but now it is in decline. |
| 8 | Mrs Mudau is the spouse of a migrant worker but her husband has more or less abandoned her, making her the decision-maker. In many ways her situation resembles that of Mr Mawela, being characterised by a lack of financial resources to make full use of her plot. |
| 9 | Mr B Nethonzhe grew up in a very large farming family and attended school until Grade 10. He became a migrant worker in 1978 working for a construction firm. He returned to Venda in 1978 and started his own construction company, building schools and later on houses, but business slowed down and in 2002, when his father transferred his plot to him, he became a full-time farmer. He is considered an innovator and he is also a prominent scheme leader. |

achieve full development (Cases 2, 6 and 8). In this way, the case studies illustrate the lifecycle of plot enterprises, characterised by phases of development, growth and then finally decline in line with the lifecycle of farmers, which is a common feature of family farms throughout the world.

## Natural and physical resources

From a natural resource perspective, irrigated farming centres on land and water. Generally, the quality of the irrigated soils at Dzindi is good. Approximately three-quarters of the command area is covered by deep, well-drained soils (Hutton form), which are considered suitable for irrigation. The rest of the land is of lesser quality including a small portion of coarse sandy soils which, from a plant nutrition perspective, is of very low quality. Access to irrigation water at Dzindi is limited as a result of the water sharing institutions and the seasonal variation in the flow of the Dzindi River. During drought, access to irrigation water is severely limiting.

From a physical resource perspective, canal irrigation centres on the conveyance system. To function optimally, the canals and concrete furrows must be maintained and kept clean at all times. Cracks and breaks result in seepage and leaks and these reduce the conveyance efficiency of the system. Sediment, weed, algae and other obstructions in the canals and furrows reduce water flow. At Dzindi, cleaning of the conveyance system and the execution of simple repairs are a collective responsibility. When the scheme started, the state enforced this collective responsibility but since about 1975, state control has been withdrawn. During the past 15 years, scheme leadership has found it difficult to maintain the old patterns of collective action, ultimately resulting in the outsourcing of the cleaning works to local contractors. Plot holders have to contribute financially towards the services of these contractors.

## Production system

Without exception, farmers at Dzindi practise short-furrow irrigation. When a bed is prepared, it is usually ploughed, then disced and then ridged. The bed is then subdivided in smaller parcels by filling the longitudinal furrows at 10 to 20 metre intervals. When a bed is irrigated the water flows along the ridge closest to the contour bund. As the water flows it is diverted into the first parcel and each of the furrows in the parcel is filled with water. Then the passage into the first parcel is closed off and entry to the second parcel is created. This process is continued until all parcels in the bed have received water. Short-furrow irrigation typically has a high distribution efficiency, meaning that along the length of the plot the amount of water that is applied is more or less constant.

Characteristic of production at Dzindi is that plantings occur on a small-scale of the order of 0.1 hectare. This allows farmers to do all operations manually, with the exception of land preparation. Differences in approach tend to reflect risk. Crops such as green maize and cabbage carry more risk than traditional vegetables and maize grown for grain, primarily because the variable costs per unit area are higher and quality assurance is critical. Profit makers tend to take risks whilst food farmers avoid risk.

Farmers and Dzindi make use of chemical fertilisers and plant protectants. They are also familiar with hybrid seed. The presence of a farm supply outlet close to the scheme facilitates access to these inputs. Use of animal manures is also common. Cattle manure is purchased from kraals in neighbouring villages, whilst poultry litter is purchased from broiler units in the area.

## Economic aspects

Table 11.7 provides summary information on the 2007/08 enterprise budgets for each of the nine cases.

When evaluating the information in Table 11.7 it should be kept in mind that at Dzindi it is possible to grow two or even three crops per year on the same piece of land, explaining why in some instances the amount of land that was cropped exceeded 1 hectare, being the effective area available for crop production on the 1.28 hectare plots. Another important fact is that farm size differed among the enterprises. Some farmers were renting-in land or had activated parcels of unscheduled irrigation land, whilst others did not have use of a full plot.

Gross income data in Table 11.7 represent the monetary value of the produce. When produce was sold, the actual income was recorded. When produce was consumed at home, the local Rand value of the produce was used to impute the monetary value of the produce.

## Table 11.7: Summary of the 2007/08 enterprise budgets of nine plot holders at Dzindi

| Case | Livelihood type | Farming style | Variable costs (R) | | | | | | Gross income (R) | Gross margin (R) | Total area Cropped (ha) | Gross margin per unit area (R/ha) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Land preparation | Seed | Fertilisers | Plant protectants | Hired labour | Total | | | | |
| 1 | Farmer | Employer | 3 990 | 2 366 | 6 644 | 649 | 1 520 | 15 169 | 29 470 | 14 301 | 1.7564 | 8 142 |
| 2 | Petty entrepreneur | Other | 1 680 | 678 | 3 784 | 572 | 0 | 6 626 | 10 180 | 3 554 | 0.8320 | 4 271 |
| 3 | Farmer | Profit maker | 2 100 | 1 720 | 7 266 | 840 | 3 570 | 15 496 | 43 740 | 28 244 | 1.1093 | 25 461 |
| 4 | Farmer | Profit maker | 2 310 | 541 | 5 060 | 407 | 1 980 | 10 298 | 25 500 | 15 202 | 0.8716 | 17 441 |
| 5 | Grant holder | Other | 1 440 | 1 138 | 4 158 | 568 | 2 520 | 9 824 | 9 580 | -244 | 0.6807 | -358 |
| 6 | Diversified income household | Other | 760 | 463 | 4 803 | 545 | 0 | 6 571 | 9 380 | 2 809 | 0.4877 | 5 600 |
| 7 | Diversified income household | Food farmer | 1 365 | 0 | 2 327 | 520 | 1 120 | 5 332 | 11 390 | 6 058 | 0.4576 | 13 239 |
| 8 | Farmer | Profit maker | 735 | 255 | 2 334 | 396 | 600 | 4 320 | 14 940 | 10 620 | 0.6131 | 17 321 |
| 9 | Employee (spouse) | Profit maker | 2 310 | 541 | 5 060 | 407 | 1 980 | 10 298 | 25 500 | 15 202 | 0.8716 | 17 441 |
| Mean | | | 1 854 | 856 | 4 604 | 545 | 1 477 | 9 326 | 19 964 | 10 638 | 0.8533 | 12 062 |
| Proportion of total (%) | | | 19.9 | 9.2 | 49.3 | 5.8 | 15.8 | 100 | | | | |

Table 11.7 shows that all but one of the sampled farmers achieved positive returns from farming. Mean gross income was R19 964 and mean total variable costs amounted to R9 326, resulting in a mean gross margin of R10 368.

Reporting on the 2002/03 production season, Mohamed (2006) reported a mean total gross farm income of R4 692 and mean total variable costs of R3 429 for all farmers at Dzindi, resulting in a mean gross margin of R1 263. Focusing on plot holders with a profit maker farming style only, which is more in line with the sample of plot holders contained in this case study, he reported a mean total gross farm income of R8 966, mean total variable costs of R3 256 and a mean gross margin of R5 710.

Based on the nine cases presented here, farmers appear to have adapted well to changes in selected factors that affect the variable costs of production, namely sharp increases in the price of diesel and fertilisers.

## Livelihood significance

Agriculture plays a very important role in the livelihood of most of the nine plot holders that feature in this case study, but this does not apply to all plot holders at Dzindi. Mohamed (2006) pointed out that the way the plot is used depends on the structure of the livelihood of plot holder homesteads.

## Social and institutional dimensions

Canal maintenance, sharing of water, land tenure and marketing of produce are important social and institutional domains at Dzindi. Canal maintenance was dealt with above. Sharing of water on canal irrigation is an important source of conflict because of the front-ender versus tail-ender effect. Farmers who are located near the front-end of the canal tend to get more water than those at the tail-end, unless the rules that govern access are strictly adhered to. During times of water scarcity, which typically occur in spring when farmers prepare to plant maize but the summer rains have not yet arrived, conflicts over water occur most frequently. Since plot holders are responsible for scheme management, it is the elected scheme leadership that has to deal with conflicts of this nature, and in the event it often struggles to do so (Van Averbeke, 2008).

When Dzindi was established, the land was 'detribalised' and Trust tenure was implemented before the scheme was settled. Strict land use instructions applied and non-compliance resulted in plot holders being expelled. Transfer of the plot was controlled by the state but in practice plots tended to remain in the family. Plots had to be transferred wholly to a single person. When researchers from the Tshwane University of Technology (TUT) first arrived at Dzindi in 2003, renting land to others was not permitted, but as a result of encouragement by TUT researchers, this practice has taken root. Another practice that has gained prominence is the transfer of a plot to multiple family members even though the plot is registered to a single person. It appears that this arrangement also existed in the past but was hidden from officials.

Farmers at Dzindi market individually. Fresh produce hawkers play an important role in the chain from producer to consumer, and many farmers depend on them to market their crops. Hawkers seek to exploit competition among farmers for markets to keep the price as low as possible. In 2008, farmers in Block 2, who mostly deal with hawkers from Muledane, colluded to fix the price of commodities as a strategy to deal with this practice of hawkers.

## Gender, class and human dimensions

Men dominate at Dzindi, primarily because plots are transferred to males. Widows can hold their husband's plot, but when they pass on the plot it is usually once more allocated to a male person. On the farms themselves, women feature more prominently, but at scheme level they have little say in decision-making even though they attend meetings.

Plot holders at Dzindi are not rich but few if any are destitute. Most are able to educate their children and maintain a reasonable standard of living. All but a few have brick homes. Several among them own a vehicle.

The level of education among plot holders is probably not much different from that in other rural areas. As elsewhere, the trend is for formal education levels to rise with successive generations. Plot holders take their children to the field to transfer farming skills but most of them desire their children to become professionals through tertiary education. Farming is usually seen as a fall-back option, as indeed it was for some of the nine cases presented above.

### Perceptions of performance

Perceptions of performance differed among the nine cases. The plot holders described in Cases 2 and 8 were of the opinion that their enterprises were performing below potential because they lacked financial resources. The plot holders in Cases 5 and 7 were of the opinion that their enterprises were on the decline because they were getting too old to handle the work. The other five cases were positive about the performance of their enterprises.

## Policy environment

The current policy of the Limpopo Department of Agriculture, which is responsible for smallholder schemes in the Province, is highly negative towards canal irrigation. Requests by farmers for upgrading of the canals have been rejected. Small repairs are being done by the Department of Public Works, but plot holders have to purchase the materials. Dzindi has not received any financial support for at least the past 10 years. Even the extension officer, who used to be dedicated to Dzindi, now serves a much more extensive ward.

## Environmental aspects

The impact of the scheme on the environment is mostly through the extraction of water from the Dzindi River, which undoubtedly has an impact on the base flow and the river ecosystem. Inflow of nutrients may be another impact.

## The future

The future of Dzindi is uncertain given the current policy towards canal irrigation. Yet, this case study shows that canal irrigation presents a viable option for successful livelihoods and local economic development.

## Conclusions

This case study shows that smallholder canal schemes such as Dzindi are durable and resilient and such projects contribute significantly to the local economy and to the livelihoods of plot holders and other people making a living in or around such schemes. Homesteads who focus on farming for their livelihood continuously adapt their farming to maintain positive returns from their enterprises. The evaluation of current enterprise budgets against those of five years ago shows that this is being achieved successfully. The peri-urban location of Dzindi contributes to the ability of smallholders to explore and exploit new markets for produce. The question arises whether smallholder communities on schemes such as Dzindi should not be considered as sources of land reform beneficiaries. The case studies show that some plot holders are interested in farming on a larger scale. Elsewhere in the world it has been shown that experience in running a farm enterprise is a key success factor in successful land reform.

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# 12 African vegetables and food security for poor agrarian households in Limpopo Province: effective but neglected indigenous knowledge under threat

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## Introduction

African indigenous people, including many South African ethnic groups, have survived for millennia by consuming plants collected from the wild (Fox and Norwood Young, 1998). Such practices are still prevalent in South Africa today. The different parts of the plants that are used as foodstuffs include roots, tubers, stems, rhizomes, leaves, flowers, fruits, nuts, gums and berries. Generally, at least two parts of the plant can be eaten, of which the young leaf is almost always one. This has resulted in many researchers calling these plants African leafy vegetables (ALVs) (Laker 2007). However, given that more than one part is generally consumed and because dishes, the *morogo* dish, for example, often contain more than just the leaves of a single plant,[18] in this case study we use the term 'African vegetables'. This more inclusive term is used by many rural consumers. *Morogo* is the sePedi word that refers to a relish made from a number of these leafy and fruit plants that are either harvested in the wild or are locally grown for food consumption. This relish is also known as *marog, imifino* or *miroho* and is regularly consumed in rural areas as an accompaniment to maize porridge. The plants which make up this relish may be indigenous to rural areas or they may be exotic vegetables that have been indigenised and incorporated into the local diet over a number of generations through migration or trade, either prior to or during the colonial era (Schippers, 2002).

According to Jansen van Rensburg *et al*. (2007) the most prominent of these plant species that are used as a relish in South Africa are Amaranth (*Amaranthus* spp.), Spider flower (*Cleome gynandra* L.), Jute or Jew's Mallow (*Chorchorus olitorius* and *C. tridens*), Black Jack (*Bidens pilosa* L. *and B. bipinnata* L.), Nightshade (*Solanum nigrum* complex), various Curcubits and Cowpeas (Vigna inguiculata L.). The leaves of all of these plants are consumed and in some instances the fruit are also consumed (e.g. nightshade, curcubits and cowpeas). Many other plants are found in different regions of South Africa and are harvested and consumed as food, the prevalence of which depends on local availability and preference. Some of these plants have not yet been identified by researchers. While many of the identified plants occur naturally in the wild, some are actively cultivated or their presence encouraged in homestead food gardens where they appear after the first seasonal rains. In parts of South Africa, active cultivation of some plants needs to be encouraged because they are becoming a diminishing resource due to overharvesting in the wild (Hunter et al., 2007).

This study of two villages in Limpopo was selected because it illustrates how rural households in arid areas practise agriculture for food security purposes. While a handful of residents, not more than 32, are active members of two extension-supported communal vegetable garden projects, they and most senior female household members also grow crops in their home gardens. During different temporal dimensions (when water is available or unavailable) and spatial dimensions (at home and at the communal garden projects), they resort to different agricultural prac-

18 Morogo may contain leaves of other plants, the fruit of the same or other plants such as unripe pumpkins, cowpeas, tomatoes and groundnuts.

tices, either 'conventional' (as for wider scale commercial production) or 'traditional' practices.[19] The case illustrates how people resort to local agricultural practices and 'traditional' crops when the infrastructure in extension-supported communal food gardens is stolen or not working and that this is the predominant form of production at home for food security or household consumption. The shift in practices is despite the extension officers' emphasis on conventional practices involving high volumes of costly and locally scarce inputs and the emphasis on irrigation. It is a result of the need to reduce risks and costs when the necessary resources for conventional crop production are unavailable.

### Methodology

Between January 2005 and May 2006 the author and four researchers conducted a study of agricultural practices of African vegetables used by resource-poor rural households in a rural village situated in the northeast part of Limpopo Province. While one of the fieldworkers was permanently based in the village, the rest of the team lived in or visited the villages for up to twenty-one days at a time for certain periods, in order to get more involved in village life and to conduct the fieldwork. The author made two follow-up visits in August 2008 to obtain further information. A variety of research methods and techniques were used for data collection, complementing one another and allowing for triangulation of data.

Participatory Rural Appraisal (PRA) tools were used at various stages of the study, but particularly at the beginning of the study in order to obtain background information about the village, agricultural projects and practices and to generate an awareness of what types of crops were produced and consumed. Approximately 42 people (forty women and two men) from the village attended the workshops at various times, and all except ten women were involved in the two vegetable garden projects introduced by government extension services. Thirteen of the participants were between the ages of thirty and sixty years. The remainder were all over the age of sixty. Workshop attendance was entirely voluntary. Data from the workshops were further explored by means of participant observation, semi-structured and informal interviews. Interviews were conducted with some of the women and men who attended the workshops as well as a number of others (two women and four men) who were unable to attend the workshops. Interviews and participant observation sessions were typically carried out during the course of the researchers' interaction with residents. Most of the participant observation sessions on agricultural practices were conducted during the planting and growing season between November 2005 and March 2006. A formal questionnaire survey of 108 randomly selected households was conducted in June 2005, in order to get inferential socio-economic statistics on the population of the villages and to get an idea of the extent of consumption patterns and the significance of African vegetables as a foodstuff at the household level. Data collected at workshops and during interviews informed the design of the questionnaire.

The visits in August 2008 involved discussions and interviews with several local women, the initial extension officer (who has subsequently moved to another area), and a local male resident. The main purpose here was to get updated knowledge about the projects, practices and to note changes over time.

## Historical perspective

### Historical overview of the village

Limpopo Province is described by government sources as poor. The village which is the focus of this case study is situated in an area of Mopane District Municipality, in which 71% of the population lives in poverty (AGIS, 2008). The village is situated in the northern part of the Nkuna Traditional Authority Area, which formed part of the former Gazankulu homeland, about 15 kilometres north of its major town, Nkowankowa. The population of the area consists primarily of sePedi and Tsonga speakers and the village consists of two adjacent but distinct settlements, each with its own Nduna (headman). However, they are collectively serviced as one unit by the local government and extension services. The Greater Tzaneen Municipality provides minimal services to this and other villages in the surrounding rural areas. A gravel cul-de-sac links the village to the tarred road and the nearby village of Mafarana (which houses the local municipal clinic), which is about 10 kilometres west of the small agricultural town of Letsitele.

The older of the two settlements comprises the village we will call Settlement A. It consists of

19 By 'conventional', we mean those practices that tend to be promoted by government's extension officers.

the descendants of local families that have lived in the area for generations, before any formalisation occurred. Settlement B is made up of the descendents of farm workers, who, in 1963, with their families were living on the South African Government-owned citrus farm near Letsitele and were then forcibly removed in terms of the Group Areas Act to this area. Despite there being no clear boundary between the two settlements, locals give the settlements different names. It was only in 1969 that any formalisation of the area took place. The Ndunas from each settlement and officials from the South African Government marked out stands and roads in the area. The people who had been living in the surrounding hills moved onto the stands, as did other people from neighbouring areas who were looking for places to stay. In 1986 more people moved into the area and were allocated stands between Settlement B and the tarred road in the west. Over time this portion of land was gradually settled.

Census figures obtained from the Greater Tzaneen Municipality indicate that in 2003 the village had 3821 residents in approximately 721 households. In 2005 researchers estimated the number of households in both settlements to be approximately eight hundred. During the August 2008 visit it was evident that the number of households had modestly increased over the previous three years, as previously unsettled areas were now being settled. It is estimated that the number of households is probably around 830 at present (2008). The data that follow are based on the survey of 108 households in June 2005 and on qualitative interviews and workshops that were held during 2005/2006 and in August 2008.

Ninety-one percent of the survey respondents were directly involved with household food production, harvest and preparation. Of the survey respondents, 93% were female and 7% were male. The mean household size was 4.77 people per household with 81% of the households having six or fewer members and 19% between seven and eleven members. On average the households had 2.64 members who were 18 years or older and would be in the position to seek employment. About 55% of the households surveyed were *de jure* female-headed and 24% were headed by pensioners.

## The vegetable garden projects

In 1983 a number of women in Settlement A formed a care group. This was a group of women who shared sentiments and information, and collaborated and supported one another in various situations. In 1984 members of this care group started a vegetable garden using land acquired from the Nduna. Each woman brought seeds to plant on her demarcated plot. They generally grew cowpeas, maize, groundnuts, pumpkins and beans, and maintained African vegetables already growing on the plots. In 1985 the Gazankulu Department of Agriculture provided the group with a borehole and pump, irrigation piping, a reservoir and a fence. Unfortunately, in 1991 the borehole pump was stolen. The group continued to plant crops in the field but were now once again dependent on rainfall for yields. They concentrated on traditional crops as they considered these to be drought tolerant. No crops were produced during winter due to the lack of irrigation. Members reported that the harvests were usually insufficient, as they had no surplus to sell. Between 2003 and early 2006, the extension officer (now with the Limpopo Provincial Department of Agriculture and Environment) organised various donors to provide the project with a new fence, irrigation pipes, a water tank and an electric borehole pump and some other inputs. The new borehole pump, installed in late 2006, was ineffective as it did not have the capacity to irrigate a plot bigger than about 400 $m^2$. This problem had not been resolved by August 2008. The Department of Agriculture also initiated a broiler project with the members and the chicken houses were built by late 2005. However, the ineffectiveness of the borehole pump meant that water had to be transported in containers from a household tap to the chicken houses. As a result of limited water only a small number of chickens are produced.

After the first democratic elections in 1994, the Nkuna traditional authority was given money for the development of the villages within its area of influence. The Nduna for Settlement B decided that their allocation should be used for a vegetable garden project so that the people could produce more food and sell any surplus. He approached the Limpopo Department of Agriculture for assistance. The Nduna allocated land for the project and used the allocation to obtain irrigation piping, taps, a borehole and diesel pump, and a reservoir, and the Depart-

ment provided fencing. The members initially each paid a R12 registration fee and R2/month to purchase diesel for the pump. In 1995 the local extension officer started supporting them by providing advice and organising training on exotic vegetable management, fertilisation and irrigation practices. In 1998 project members took part in a local agricultural competition in a neighbouring extension ward and won first prize for their crops. This created an awareness of their products, with people coming from neighbouring villages to purchase their produce. In late 2004 the extension officer had organised with the SPAR supermarket in Tzaneen to purchase their produce. However, in November 2004 the borehole pump was stolen. As a result of the lack of irrigation and unfavourable rains in 2004/2005, the project members lost the major proportion of their summer exotic vegetable crops and were unable to sell any produce to the SPAR. In 2005 an anthropologist who had lived in the village for a number of years during the late 1980s organised another borehole pump. However, given the good rains during the summer of 2005/2006, the group decided to only begin using it in the winter of 2006. There were also concerns about its security and given that the borehole for the domestic water source had not been installed, some residents were demanding that this pump be used to supply water for all the Settlement B residents. However, when the pump was to be connected in late 2006 it was found that it did not fit properly and that extra parts and adaptations were necessary. A visit in 2008 indicated that this pump had still not been installed and connected, as the group did not have the money to pay for the adaptations. While they attempt to save money to purchase the necessary fittings, the pump remains stored at the chairperson's house – where it has been for the past two years. The Department of Agriculture is not prepared to pay for the necessary adaptations.

During 2005/2006, 32 people were active in these projects. The project at Settlement B had 12 active members, of whom two were men, and the Settlement A project had 20 active female members. The chairpersons of each project were both women. The extension officer – who spent one day per week at each project – moved to another area at the end of 2006 and another extension officer took over his role. This latter person is very ill and contact with the villagers is rare and irregular.

The problems related to the borehole pumps at both garden projects and consequent lack of irrigation renders these two projects largely ineffective in improving the livelihoods of members, and decidedly not the other village residents who are not reached by the extension services.

## Natural resources

Attempts to obtain natural resource data from the local Department of Agriculture office proved difficult as they did not have this information, despite servicing the village since 1995. Most information was obtained from the AGIS website and is not specific to the village but rather a projection of the surrounding area. The settlements are situated on sloping terrain (13-20% slope according to AGIS, 2008), backed by steep hills. Officially, the area is classified as an arid zone and has limited potential for agricultural production (*ibid*.). Annual pan evaporation is relatively high at between 2001 and 2200 $mm^{a-1}$ (*ibid*). Official figures for average annual rainfall in this area estimate it to be around 500 mm (*ibid*.). From mid-April 2005 until the end of April 2006 daily rainfall readings were monitored and recorded by the fieldworker who lived in the village. Daily readings were done at 8 am every morning and then the instruments were reset. A total of 906 mm fell during this 13-month period. For four months (July to October 2005) there was no rain at all and for a further two months (May and June 2005) the rainfall was insignificant at around 1 mm. In essence there was no rainfall during six months of the year. Most of the rain fell between November 2005 and March 2006. This totalled 867 mm and was considered much higher than normal by local residents, suggesting that official projected figures are closer to the reality. Local residents also mentioned that the first summer rain was delayed as it usually came during September, suggesting that they had experienced a heavier rainfall but over a much shorter period. During discussions in May 2006 residents reported that they had obtained a better than usual harvest during the 2005/2006 summer cropping season as a result of the unusually high rainfall. The rainfall pattern was largely due to the El Nino and La Nina weather patterns that prevailed during this period.

Using a Trend Line during the various workshops, residents indicated the rainfall pattern trend for the previous ten years. The Trend Line showed that the villages last received very high rainfall during the summer of 2000/2001.

Residents reported that the rainfall during that season was excessive and recalled flooding and the destruction of crops. Since then the rainfall has reverted back to low 'normal' patterns during the summer seasons between 2001and 2005. According to residents, the high rainfall experienced in 2005/2006 was nowhere near the amount experienced during 2000/2001, but was still significantly more than usual. The pattern illustrated by the Trend Line suggested that high rainfall is abnormal with the local perception being that the area usually has a low rainfall during the summer months. Thus, the rainfall figures recorded during 2005 and 2006 seem to be unusually high for this village and while it increased crop yields it also caused erosion which is likely to negatively affect production in the future. Rainfall erosivity is officially considered to be high in this area.

### Household gardens and fields

Despite the shortage of water and limited period of summer rainfall, usually between September and April, in the 12 months prior to June 2005 most households grew a number of food crops in their household gardens (90%) or allowed a number of naturally occurring African vegetables to grow in their gardens (5%). The remainder did not cultivate any crops during the previous twelve months for various reasons. These included having recently moved to the area, not having implements, money or material to erect a fence to protect crops from roaming livestock.

While 94% of the households had access to one home garden only, 6% had access to two or three gardens. These figures include the plots allocated at the vegetable garden projects, which provided the affiliated households with access to additional land on which to grow food crops. Home gardens were on average 853 $m^2$ with the smallest being 100 $m^2$ and the largest being 4550 $m^2$. During the 2005 survey the respondents indicated that households intercropped the following crops in different ways: African vegetables (87%); maize (89%) and legumes (83%). Table 12.1 reports a detailed list of crops produced. Winter crops reported by the extension officer included: spinach, cabbage, onions, beetroot, carrots, green peppers, tomato and sweet potato. With the exception of sweet potato, these winter crops were almost exclusively produced at the two vegetable garden projects and only when the irrigation systems were working. During the survey, 3% of the households, all with a water tap on their property, indicated that they produced some exotic vegetables during the previous twelve months. About 61% of households reported growing fruit such as paw-paw (papaya), marula (*Sclerocarya birrea*), avocado, litchi and mango.

According to the respondents, 88% of their home gardens were managed and maintained by adult female household members. Others might be managed by men but maintained by women. Observations indicated that the activity of young and old men was limited to ploughing with donkeys, ensuring that crops such as maize were planted, and taking care of fruit trees. During summer, the women responsible for the household garden spent on average 2.6 hours per day (with the median being 3 hours) and an average of 3.65 days per week (with the median being 4 days) working in the household food garden. However, 30% indicated that they spent five days per week working in these gardens. Usually this was from early morning until midday, by which time it was too hot to work in the gardens and other household chores required attention. Producing food for the household is predominantly an activity undertaken by women.

A handful of men and even fewer women accessed larger fields surrounding the village (approximately one hectare in size) which they cropped during the summer period, relying on seasonal rainfall. Large fields were predominantly intercropped with maize and groundnuts or cowpeas. On occasion curcubits were also intercropped with maize. These producers reported that they cultivated traditional crops on these fields in order to generate a little extra income for themselves, but that often these crops were mainly for consumption by household members. One farmer was known for selling small quantities of his maize and other produce locally.

## Physical resources

### Water supply

Agriculture in this village is highly dependent on seasonal summer rainfall. While the physical water infrastructure is available, its uses and availability need to be clearly understood, especially the reasons why it is seldom used for agricultural purposes. In 1979 communal taps were installed for household purposes. Water was pumped from the Letaba River to reservoirs,

## Table 12.1: African vegetables, grains and exotic vegetables found in the villages

| Tsonga | English | Latin |
|---|---|---|
| **African vegetables** | | |
| Tinhwembe | Pumpkin / squash leaves | Cuccurbits sp. (often local landrace of C. pepo) |
| Kwembe | Pumpkin / squash fruit | Cuccurbits sp. (often local landrace of C. pepo) |
| Swiluva | Pumpkin / squash flowers | Cuccurbits sp. (often local landrace of C. pepo) |
| Tinyawa leaves | Cowpea leaves | Vigna unguiculate |
| Tinyawa fruit | Cowpeas | Vigna unguiculate |
| Muxiji | Blackjack | Bidens pilosa L. and B. bipinnata L. |
| Mihlata | Sweet potato tubers | Ipomoea batatas |
| Tshimbu | Sweet potato leaves | Ipomoea batatas |
| Guxe | Jews/jutes mallow | Corchorus tridens |
| Ntsumbula | Cassava / manioc | Manihot esculentum |
| Xiyakayana | Wild gherkin | Cucumus anguria |
| Gumbu-gumbu | Milk thistle | Sonchus oleraceus |
| Mariwa | Tsamma | Citrullus lanatus |
| Nkaka | Balsam apple | Momordica balsamina |
| Vilolo | Purple flower | Talinum sp |
| Rirhudzu | Spiderflower plant / cat's whiskers | Cleome gynandra L. |
| Thyeke | Amaranth | Amaranthus grassians / spinosum/ cruentus |
| Phuphuruka | Kale | Brassica oleracea L. / Sabellica L. |
| Sindza mbita | Meidebossie | Waltheria indica |
| Nkeketi | Wild bindweed | Convolvulus farinosus |
| Marhanga | Calabash / bottle gourd | Lagenaria siceraria |
| Mandhanda | Okra | Abelmoschus esculentus |
| Mapampunu | Boerpampoen | Cucurbita maxima |
| Vurhakarhaka | Wild gherkin | Cucumus sp |
| Biriviri | Local chilli | Capsicum frutescens L. |
| Makalavatla leaves | Bitter melon | Citrullus lanatus var lanatus |
| Makalavatla fruit | Bitter melon | Citrullus lanatus var lanatus |
| Timanga | Peanut / groundnut | Arachis hypogaea |
| Tindluwa | Bambara groundnut | Vigna subterranean L. |
| **Grains** | | |
| Mavele | Maize | Zea mays |
| Matimba | Soetriet / chewing sorghum | Sorghum bicolour |
| **Exotic vegetables** | | |
| Swikwembyana | Butternut | Cucurbita moschate |
| Swikwaribani | Gem squash | Cucurbita pepo |
| Matamatisi | Tomatoes | Lycopersicum lycopersicon |
| Tinyala | Onions | Allium cepa |
| Tikherotsi | Carrots | Daucus carota |
| Khavichi | Cabbage | Brassica oleracea var. capitata |
| Tiherekisi | Peas | Pisum sativum |

which supplied the taps in the village. In 1986 three boreholes were established in Settlement A and fed the communal taps by means of two diesel pumps and one electric pump, the latter installed in 2003. A single borehole was introduced in Settlement B during 1986, equipped with a diesel pump. It was connected to the existing network of taps. Because this single borehole and pump supplied a settlement equal in size to Settlement A, certain parts of Settlement B had access to water only on certain days. In practice the schedule was not adhered to and the supply of household water was erratic. In August 2005 the diesel pump was removed and there were plans to install an electric pump. Although a new pump house was built in early 2006 the pump was only installed at the end of that year. In the meantime, people relied on the taps in Settlement A and the summer seasonal streams for household water supply.

The 2005 survey indicated that one household had plumbed in cold water from a self-installed borehole on its homestead. Only 11% of the surveyed households had a tap on their stand, access to which they shared with their neighbours. About three quarters of the respondent households had to travel more than one hundred metres in order to obtain water for household purposes, an activity mainly carried out by women and children. A number of residents in Settlement B reported having to access water from a stream during summer for household purposes as this was the closest source of water. This illustrates that the municipal provision of water is inadequate for domestic use and that water is a very scarce resource in the village.

During workshops respondents noted that the water they collected from the taps and the streams was used exclusively for domestic activities, such as washing, cleaning, drinking and cooking. Household garden crops were generally not irrigated because the collection of sufficient water for irrigation purposes would require too much time. Similarly, the use of communal taps for the collection of water for irrigation would prevent other households from collecting sufficient water for important domestic uses. Particularly in Settlement B, this is a result of the water supply being irregular and only being available in certain areas on certain days of the week. Consequently, home gardens were rain-fed and generally crops were only grown during the summer rainfall season. Some residents mentioned using very small amounts of household water to irrigate pumpkin/squash and kale plants when first planted if they deemed this necessary.

Despite the water problems experienced by most households, rainwater harvesting was not really practised. About 92% of all dwellings had sloping corrugated zinc roofs, but none of them had gutters. When a heavy downpour occurred some people would place bowls and other containers underneath the roofs but this was a very ineffective means of rainwater harvesting as most of the water was not collected. The little water harvested in this fashion was typically used for domestic purposes.

## Agricultural implements owned by households

Access to agricultural inputs and resources often dictate the type and extent of agricultural activities that can be undertaken. It was noted previously that conventional input usage was restricted by household income. A similar situation applies to access to agricultural implements. Most households owned handheld implements only. One household owned a tractor which was sometimes hired by a few households to plough the larger fields. This household also had a plough and some other implements for the tractor. Only 6.5% of the households owned donkeys and had ploughs that could be drawn by donkeys. During 2005 donkeys were hired out at between R60 and R80 per span to plough a household garden. In 2008 this price had increased to R100 per household garden. This price could be higher if a household had a larger-than-average size garden. Observations suggested that many women used handheld implements to prepare the soil before planting as they could not afford to hire donkeys. Table 12.4 indicates the percentage of households that owned handheld implements.

This data suggest that most households are not in the position to actively pursue agricultural activities requiring modern technologies, implements and associated inputs. Most households do not own more than the implements with which to perform basic agricultural activities on garden plots. These handheld and animal traction implements were also used at the vegetable gardens projects. At the time of the June 2005 survey, 97% of household gardens and plots were fenced as were the community garden projects. During winter most households allowed their livestock and that of others to graze

## Table 12.2: Percentage of households having various handheld implements

| Agricultural Implements | Percent |
|---|---|
| Spade | 82% |
| Handheld hoe | 83% |
| Fork | 57% |
| Rake | 66% |
| Pick-axe | 61% |
| Watering can | 4% |
| Hosepipe, sprinkler or drip system | 14% |
| Handheld pump sprayer for agrochemicals | 7% |

on the previous season's crop residues. This was often considered necessary as very little winter cropping was done and livestock needed fodder in winter.

# Production system

### Naturally occurring and cultivated plants

African vegetables start growing at the beginning of the summer rains and some can be harvested from two weeks after the first rainfall. A list of the identified African vegetables and other prominent crops grown in the settlements are indicated in Table 12.1. Groundnuts, along with pumpkins and cowpeas, are so entrenched in the Tsonga and Pedi food culture that they are discussed as part of the African vegetable group. The June 2005 survey revealed that 95% of the respondents had African vegetables in their home gardens or fields at some time during the preceding twelve months. When it came to prioritising a particular African vegetable plant, local residents attached highest priority to those plants that could provide a household with more than one foodstuff during the plant's lifecycle, such as curcubits, which can provide at least three products at different times. Second highest priority was given to those plants whose leaves could be dried and stored for consumption during the winter months. Perceived nutritional value and drought tolerance were given some subsequent priority. Taste only became a preference after these factors. For example, elderly respondents said that the cowpea plant provided leaves and fruit (peas), and that both were dried making it a very important African vegetable. When it came to taste they preferred the dried peas to the leaves as these were said to be tastier and could be eaten alone or added to other dried leaves to increase the flavour and nutrition of the dish. However, both were considered important foodstuffs. The order of prioritisation suggests that food security is a very important consideration when it comes to selecting plants and ranking their usefulness.

About 95% of the surveyed households indicated that African vegetables were important foodstuffs for their households. Reasons for attributing importance to African vegetables were:

- local availability and in plentiful quantities (more than similar exotic vegetables) (90%);
- better productions capacity under local conditions without irrigation requirements (97%);
- taste is preferable to that of similar exotic vegetables such as cabbage and spinach (96%);
- they are believed to be nutritious (98%);
- some can easily be dried and stored for consumption during the winter months when they are not freshly available (94%).

It is evident that their local availability over a protracted period, perceived nutrition content and the ability to produce them within the constraints of the local environment are important criteria for using African vegetables to ensure household food security. Local production allows households to spend limited household income on other goods and services which they cannot produce locally.

Identified naturally occurring food plants in home gardens included Thyeke (*Amaranthus sp.*), Guxe (*Chorchorus sp.*), Xiyakayana (*Cucumis anguria*), Rirhudzu (*Cleome gynandra*), Nkaka (*Momordica sp.*), Muxiji (*Bidens pilosa*), Vilolo (*Talinum sp.*), Gumbu-gumbu (*Sonchus oleraceus*) and Nkeketi (*Convolvulus farinosus*). Another nine plants were mentioned but the research team was unable to identify these. Less than 8% of households reported actually planting any of the plants listed above, but 82% reported encouraging their growth. This was done by turning over the soil and working the previous season's crop residues into the soil prior to the first rain (all households), working manure into the soil (only those households owning livestock that supplied sufficient manure) and in some cases by adding fertiliser mixes (SASOL 2:3:4 (30%) + Zn 5grms/kg) (about 6% of households). Only those households that could afford synthetic fertiliser applied it in conjunction with manure. Poorer households did not use manure or fertiliser but merely ploughed the plant residues from the previous season back into the soil. Agricultural practices invoked the use of local agricultural knowledge – especially low external input principles. Ploughing was usually done by hand using a handheld hoe. The crops selected and planted tended to be drought tolerant. As most households could not afford to purchase agrochemicals, fungicides, pesticides and herbicides were generally not used. Intercropping and companion planting were the order of the day. For example, maize was often intercropped with cowpeas. The cowpeas protect the soil from erosion, and fertilise it with nitrogen and organic matter. These local practices prevail when water is a constraint, both at home and at the garden projects.

Once the African vegetable plant has germinated it is not weeded out of the garden unless there are too many in one place and they threaten the growth of a planted crop. Only a few women, mainly the elderly, collect seeds of Thyeke (Amaranthus), Guxe (Corchorus), Rirhudzu (Cleome gynandra), Muxiji (Bidens pilosa), Vilolo (Talinum sp), Nkeketi (Convolvulus farinosus), Gumbu-gumbu (Sonchus oleraceus) and Xiyakayana (Cucumis anguria). When the plants are not growing in areas where they are wanted, then the women broadcast the seeds in their gardens. All other naturally occurring African vegetables are allowed to flower and reseed themselves at the end of their growth cycle. However, this practice is gradually resulting in the depletion of the seedbed, which is made worse by rainfall erosivity.

A high number of households (79%) planted other plants that they also categorised as African vegetables because these were indigenised into the local food culture. Tinwhembe (*Curcubits sp.*) was the most popular, being cultivated by 79% of the households; Tinyawa (*Vigna unguiculata*) was the next most popular (74%), followed by Mandhanda (*Abelmoschus esculentus*) (40%), Marhanga (*Lagenaria siceraria*) (40%), Makalavatla (*Citrullus lanatus*) (31%), Tshimbu (*Ipomoea batatas*) (28%) and Phupuruka (*Brassica oleracea L. / Sabellica L.*) (8%). These plants' seeds (or vines in the case of sweet potato) were sown or broadcast at the time of ploughing. Depending on the household's resources, manure and compost might be added. Curcubitis sp., Abelmoschus esculentus and Brassica oleracea L. / Sabellica L. might be watered during the first month by some households. All other cultivated and naturally occurring African vegetables relied exclusively on rainfall. Except for the seeds of okra (*Abelmoschus esculentus*) and kale (Brassica oleracea L. / Sabellica L.) the seeds of the other actively cultivated African vegetables can be purchased at the co-operative in the nearby town of Letsitele. Despite this availability many women reported preferring to save and store seeds as this not only saved money but also allowed them select the best seeds for storage and replanting. Consequently, a number of the more entrenched cultivated African vegetables were local landraces. Seeds were typically replaced if they were damaged during storage or if the yields appeared to be deteriorating despite sufficient rainfall. Women reported exchanging seeds amongst themselves but acknowledged that if many people were short of seed then people usually purchased seed in Letsitele. Seed saving and storage is mainly done by older women and it is clear that most of the younger women have no idea how to collect and store seeds. Because of the introduction of new crops some women, again mainly the elderly, were interested in learning how best to collect and store the seeds of these crops. It must also be noted that while men might contribute money for maize seed they did not do so for African vegetable seed.

## Consumption patterns

During the survey all of the respondents reported eating African vegetables at some stage during

the preceding twelve months. Most households surveyed generally consumed three main meals a day (93%), with 72% typically consuming African vegetables at two of these meals. In winter, cabbage was often the replacement for African vegetables, especially at times when the household had money. While brown bread was usually consumed at the first meal of the day by 95% of the households, maize porridge was consumed at the other two meals by 89% of the households. When they could afford to do so households indicated that they tended to consume red meat (79%), chicken (mainly necks, head and feet) (82%) and fish (mainly canned fish or fish heads) (76%) with their maize porridge. The regularity of consuming any type of meat depended largely on a household's access to livestock and income. Limited food diary recording, facilitated by the fieldworkers, indicated that meat (usually chicken parts) was seldom consumed more than twice a week and that vegetables were consumed at most midday and evening meals although not necessarily twice a day.

The leaves of some of the naturally occurring and cultivated African vegetables were often dried and stored for later consumption. For most households (94%), dried African vegetables were the main source of vegetables in winter when fresh vegetables were scarce. As a result of drying and depending on the volume harvested per household, respondents said that dried vegetables could be the main source of vegetables consumed for up to nine months (25%), with 29% indicating that they could be consumed for twelve months of the year if they had harvested and dried sufficient quantities. However, this is probably not strictly true as very few households were able to harvest sufficient quantities to store for several months and stocks were generally depleted two months before the next summer rains, indicating that they were consumed for approximately four months after the summer rainfall season. Follow up interviews confirmed that this was the most common pattern. It was also noted that some households would combine the dried leaves of amaranthus, spiderflower and black jack (only freshly available during October to December) with the fresh leaves of other plants to diversify the flavour of the dish and that this would last as long as the supply of these dried leaves was available during the summer period. As the stored supply of dried African vegetables decreases during winter, so the households consume them at fewer meals, typically replacing them with the less nutritious and locally purchased cabbages. Given this decline in stocks, it is unlikely that households would consume African vegetables in any form twice a day although twice-daily consumption is likely in the summer months when incomes are lower and the availability of a wide range of fresh African vegetables is greater.

A seasonal calendar was compiled with local residents to determine when the fresh and dried leaves were consumed. These are summarised in Table 12.3 and indicates that some leaves could be consumed fresh for up to seven or eight months, such as Guxe (*Corchorus*). In other instances the time period was generally shorter (approx. five to six months) as in the case of Nkaka (*Momordica* sp.), Tinwhembe (*Curcubits* sp.) and Mandhanda (*Abelmoschus esculentus*). It should also be noted that the preference was for young and tender leaves and the leaves of

## Table 12.3: Seasonal consumption patterns of African vegetable fresh and dried leaves

| Crop | Jan | Feb | March | April | May | June | July | Aug | Sept | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Guxe | F | F | F | F | F | D | D | D | D | F | F | F |
| Tinhwembe | F | F | F | F | D | D | D | D | D | D | D | F |
| Tinyawa | F | F | F | D | D | D | D | D | | | | |
| Tshimbu | | | | | | F | F | | | | | |
| Nkaka | F | F | F | F | D | D | D | D | | | F | F |
| Mandhanda | F | F | F | F | D | D | D | D | | | | F |
| Rirudzu | D | | | | | | | | | | F | F |
| Thyeke | D | | | | | | | | | | F | F |
| Muxiji | D | | | | | | | | | | F | F |

D=Dried, F=Fresh, Blank Space=Not consumed in any form

older plants would generally not be harvested for fresh consumption.

The percentages of the households that dried and stored leaves are provided in Table 12.4. Another two naturally occurring plants were mentioned but because they were not easily found and the research team was unable to identify them they are not indicated in the table. Drying and storing is an important part of the production system. Most leaves of the plants are harvested when young and dried on a corrugated zinc sheet. Some leaves are blanched before being dried as this makes them tender and speeds up the drying process. After a few days the dried leaves are placed in old maize meal sacks and are stored for latter consumption.

## The significance of African vegetables in household food security

The survey indicated that 80% of households felt that African vegetables were important in ensuring food security. At the same time, 51% said that exotic vegetables were not important to the household for food security because they were expensive, could not be grown locally and could not be dried. While 18% felt that exotic vegetables were important, only 2% said that both were important. During discussions on the importance of these crops for food security, the general impression was that attributed importance differed vastly from household to household. Households without a constant income tended to be more reliant on African vegetables, both in summer and winter. This was especially true where unemployment was high and in households where children no longer qualified for child support grants and adults were not yet eligible for state old age pensions. In South Africa, food is generally more expensive in the rural areas and in winter certain crops are more expensive. Therefore dried African vegetables formed the basis of nutrition in most rural households and especially the poorer households, contributing up to 80% of their total vegetable consumption in winter. In summer this figure was closer to 95% due to the greater availability of these foodstuffs. Given the manner in which African vegetables are prioritised, it is clear that most rural households attached importance to these plants for their food security. However, their label as a 'poverty or backward food' negatively affected the youth's perception of these foodstuffs. The youth (generally adults under 35 years) strongly preferred exotic vegetables, such as cabbage and spinach, to African vegetables. Taste seemed to be a big issue regarding preference for the youth. Elderly residents, on the other hand, preferred African vegetables as they said they could produce these locally with their limited resources and also because they grew up with these plants and foodstuffs, while exotic vegetables were a relatively recent addition to the food basket. Only 3% of households reported growing any exotic vegetables in the previous twelve months. This was attributed to the lack of irrigation and other required production inputs. Despite their preference for exotic

## Table 12.4: African vegetable leaf drying and storing practices

| Tsonga name | Common name | % dried and stored |
|---|---|---|
| Predominantly naturally occurring | | |
| Guxe | Jutes mallow | 88% |
| Muxiji | Black jack | 47% |
| Thyeke | Amaranthus | 43% |
| Rirhudzu | Cleome / spiderflower | 43% |
| Nkaka | Balsam apple | 42% |
| Xiyakayana | Wild gherkin | 34% |
| Predominantly cultivated | | |
| Tinwhembe | Pumpkins/squash | 95% |
| Tinyawa | Cowpeas | 74% |
| Makalavatla | Melon | 21% |
| Mandhanda | Okra | 19% |
| Marhanga | Bottle gourd | 9% |
| Tshimbu | Sweet potato | < 1% |

vegetables, the youth acknowledged having to consume African vegetables as their socioeconomic and local agroecological circumstances prevented them from purchasing or producing the preferred exotic vegetables most of the time. Affirming the benefits of African vegetables (much of which has already been done by recent research on nutrition) and addressing the status issue would help to promote the consumption of African vegetables amongst the youth.

# Economic aspects

## Economic significance of maize and African vegetables in the village

In August 2008 approximate figures were obtained with regard to costs and yields for maize and African vegetables for the 2007/2008 summer rainfall season. While some attempt is made to understand the direct (sales) and indirect (savings by not having to buy) financial implications of own production and consumption of maize and African vegetables, the usefulness of this data to determine any real value to the household is limited. This is because of factors such as the size of the land under cultivation, the size of the household and the amounts harvested. Also, a comprehensive economic analysis would have to accurately determine the costs of all the inputs required and other costs involved. The information provided indicates a general pattern and does not distinguish poorer from wealthier households and larger from smaller plots. Households used in this study ranged from three to seven members in size and access to land ranged from one to two plots of varying sizes.

The amount of maize harvested for own consumption ranged from 50 kilograms to 350 kilograms of grain. Generally it was felt that the production of their own maize could feed a household for between three and five months. If this amount of maize was purchased from the local shops it would cost the household between R160 for 50 kilograms of maize meal and R1120 for 350 kilograms, and thus implies a similar saving for the year.

When discussing the consumption of African vegetables, respondents reported that the consumption of fresh leaves was difficult to determine as these were picked from the plants as required. This ensured that the leaves consumed during the season were always fresh. They estimated the volume of fresh leaves to be between 25 kilograms and 50 kilograms and that these plants would be consumed by the households for between four and six months. This consumption would contribute to a saving for the household of between R1000 and R2000 during the season. Similar figures were given for dried leaves with the exception that they were consumed for only three months after the season. This paints a different picture to the survey which suggested a longer period of consumption for dried leaves.

African vegetables generally cost nothing to produce as the people involved in this exercise all attempted to save seeds of the most popular African vegetables. Maize and African vegetables were planted and cultivated (or encouraged) at the same time. Most of the expenses involved are considered to be a result of growing maize rather than growing African vegetables. The cost of ploughing using donkeys was R100 at the beginning of the season. Between two and five bags of maize seed were purchased and the cost was between R10 and R20 per bag depending on the supplier. The largest amount sown was five bags at R20 per bag resulting in a cost of R100. Only one household bought fertiliser (LAN) and this cost about R50, while the others used differing amounts of kraal manure, which had no cost implications. No pesticides, herbicides or fungicides were used during the planting and growing season. The maximum input costs are therefore R250. Based on these figures own production, harvesting and storage of maize and African vegetables could provide a household with a saving of up to R4870 (R5120 – R250) during the year. While on the face of it this might not appear significant, it is nevertheless substantial if the household income is less than R12000 per annum, for example a pensioner headed household with between two and five unemployed dependents.

The villagers regard dried African leafy vegetables as a very important part of their diet in the six (6) months of May to October – depending on rainfall patterns – when fresh vegetables are not available. They have to buy exotic vegetables if they do not have enough Miroho (dried leaves), and they usually buy cabbage. If they do not have to buy cabbage because they have enough Miroho, they then use the money to buy other food such as chicken, bread, etc. or they save the money for other expenses such as clothing and schooling requirements. They say they eat better if they have dried Miroho during the winter months. During discussions many households re-

ported giving Miroho to neighbours and family that did not have their own supply.

## Sales of African leafy vegetables in the study area

Some African vegetables are sold in the nearby towns of Letsitele and Nkowankowa. Sales are conducted in informal markets at the taxi ranks or other well-visited public places. Guxe (Corchorus) and Thyeke (Amaranth) were the main African vegetables sold in these towns. However, pumpkin leaves (Tinhwembe) and okra pods (Mandhanda) were sold on a few occasions. While these vegetables are generally sold fresh in bags, some informants reported that out of season one might occasionally come across dried African vegetables, but that this was rare. Researchers did not observe this at any time during the past three years. Like the fresh produce, dried leaves are apparently sold to urban residents who do not have access to them in their home gardens.

The Letsitele informal market area has a few vendors that sell African vegetables. In 2006 one woman was regularly selling pumpkin leaves (R3 a bunch) and pumpkin flowers (R1 a handful), Muxiji leaves (R3 a bag), and ground peanuts at R2 for a small sandwich-bag-sized bag. Sometimes green okra pods were sold at R3 for a one-kilogram bag. Another woman sold a large bunch of pumpkin leaves and flowers for R5. She also sold pumpkins and cowpeas. In winter the vendors sold exotic vegetables such as cabbage, spinach and kale. They refused to disclose their suppliers to the researchers and generally seemed concerned about competition. The pumpkins seemed to originate from a farmer with good access to water.

Two customers at the Letsitele market indicated that they come to Letsitele from Nkowankowa as the vegetables are much cheaper at Letsitele, and that although they are happy with the quality they would like to have more variety than is locally available.

One woman was selling African vegetables next to the Nkowankowa police station in October 2005. She was the only African vegetable vendor in the area. She sold pumpkin leaves and flowers together (R3/bundle), Guxe (Corchorus) for R3 per 1 litre container, spinach (R3/bundle), kale (R3/bundle) and peeled groundnuts. In January and February 2006 she sold kale and spinach. She was also vague about her suppliers. She kept most of her stock in huge blue plastic bags that she kept closed to ensure it remained fresh. Her displayed produce looked very attractive.

In January 2006 there were eighteen stalls at the Nkowankowa taxi rank. Five out of the eighteen stalls sold African vegetables. The prices throughout the market were the same for the produce. The sizes were smaller, but not enough to warrant the cost of driving to Letsitele to purchase them. Prices do not fluctuate over the season. One woman had a tub of water in which the produce was kept and she was almost sold out because her produce still looked fresh. Only one person had produce that looked poor, and she was not selling anything. There is evidence that buyers are critical of the produce, and the freshest looking produce is sold first. Pumpkin leaves and flowers are sold for R3/bundle. All stalls sold this and it was the most popular product. Most of the stalls sold Guxe at R3 per double handful. One stall sold red amaranth at R3 per 2 litre container of compressed leaves. Tinyawa (cowpeas) are sold when available. Some stallholders cannot find Cleome but would sell it if available. One stallholder said she sold pumpkin, cleome, Muxiji (*Bidens pilosa*) and amaranth in the summertime. She sold spinach and Mukwariba (not identified during the study) in winter. Powdered peanuts cost R4 for one and a half cups. Only one stallholder sold pumpkin flowers separately, at R2/handful. Only one woman indicated that she sells Nkaka when available. If the plants do not sell they perish very quickly due to the sun and the heat. Keeping the plants in water helps to improve their shelf life, but this technique was the exception rather than the rule.

Trade on pension day in the village is very active. However, local people only sold pumpkin leaves and groundnuts. The pumpkin leaves went for R5 per 2 litre container of compressed leaves. The other traders are usually from outside the village and tend to sell crops and products that are not available in the village such as broiler chickens, tomatoes, cabbage, etc. They also sold maize seed, both traditional and pesticide-treated seed.

All three areas of sale suggest that the selling of African vegetables could be profitable, but in most cases transport is required. Shelf life of fresh produce is a problem and wastage can be high if there is a lot of competition. The market for African vegetables needs to be studied to identify the best vegetables, prices, location and

presentation thereof. When compared to other crops, the profit margin on African vegetables is low. When compared to cabbage that sold at R5 per head in 2006 and R7 per head in 2008, the pumpkin leaves were inexpensive.

Any attempts at increasing commercialisation will need to be approached with caution. There are some concerns about the possible effects of changing African vegetables from a predominantly women-produced household food security crop to a cash crop. Several cases (personal communication during several conferences and experience in East Africa) have shown that men take over cash crops, thus leaving women with fewer crops available for their home gardens. Women might stand to lose the small amount of money they do make from sales of these crops if they attained commercial significance. Higher prices and the development of less tolerant and adaptable varieties could remove them as a ready source of food from rural households. Research on Amaranthus as a commercial crop was recently undertaken by the ARC-Roodeplaat with funding from the Department of Agriculture. It focused predominantly on large scale production.

## Income sources and livelihoods

The total monthly household incomes for June 2006 are indicated in Table 12.5 and suggest that most households do not have a very high income and that almost half the households are poor by South African standards[20]. At the extremes, one household reported having no monthly income and another reported having a total income of more than R5000 per month. Some of these figures may be higher than usual because the survey was carried out at a time of year when households were more likely to benefit from seasonal employment.

To get a deeper understanding of the contribution of household income to food security, respondents were asked about constraints relating to household income. Most significant was the fact that 48% of the households experienced problems relating to food security and reported not having enough food or income to purchase food for the household at various times during the preceding twelve months. This is a concern according to Stats SA's national General Household Survey of 2004; slightly less than 20% of rural households in Limpopo Province reported experiencing food insecurity at some stage during the twelve months preceding that survey.

Food insecurity seems to be a problem for just under half the households in this village. Only five percent of the surveyed households had at least one member who was involved in the two vegetable garden projects run by the Limpopo Provincial Department of Agriculture and Environment (LPDAE) or other agricultural associations (not necessarily in this village). Through interaction with project members, the researchers determined that probably no more than 32 people were active in the two garden projects during the study period. This indicates that there is very little opportunity for the majority of the residents, who are not members of a project or association, to get agricultural information as all engagement in this area is done at the vegetable garden projects. It is questionable whether these services are contributing to the food security of the majority of the villagers, especially as almost half of the households reported being food insecure at some stage.

Table 12.6 indicates that employment outside of the village and state grants are the widest contributors to household income. Seasonal employment is highest during the late autumn and winter months, from mid-May until mid-September. At this time of the year some men and wom-

## Table 12.5: Household incomes

| Household total monthly income | Percent |
|---|---|
| R2000+ | 14% |
| R1000 – R1999 | 34% |
| R750 – R999 | 22% |
| R500 – R749 | 10% |
| R1 – R499 | 19% |
| No monthly income | 1% |
| Total | 100% |

20 With an average household size of 4.77 members, 83% of the residents would be living on less than US$2 per day and 49% would be living on less than US$1 per day.

en are employed on the citrus farms and packing sheds in the area, providing 20% of households with a necessary income during the dry winter months. Few people are employed in seasonal work outside of this period. Consequently, only about 46% of households have members who are employed regularly for the remaining eight months of the year.

State grants are an important source of household income in the two villages and are the most common source of income, although amounts are relatively small, especially given the mean household size of almost five members. Old age pensions and disability grants in 2005 were R810 per person per month (females 60 years and over and males 65 years and over). Child support grants were for children up to the age of 14 years and were R180 per child per month. While these amounts can be considered low, most people reported that they were vital for the household and contributed to the survival of all household members and not just the grantees.

Remittances from household members living temporarily or permanently away from the village also make a contribution to household income, but most people reported that these contributions were irregular and often only received when the person visited or returned to the village. Often remittances would be in the form of food or clothing and not in cash.

Very small numbers of the households indicated that they harvested the natural resource base surrounding the villages for food and other livelihoods, such as selling firewood. However, observations clearly indicated that most households harvested fuel-wood in the areas surrounding the village. A visit during winter 2008 indicated that barren areas had increased and that trees on the surrounding hills were now being harvested for firewood.

Residents indicated that they relied on a number of other lesser and infrequently used income-generating strategies for their survival and general well-being. These included the making of traditional beer and clay bricks which are sold locally.

While Table 12.6 illustrates that households have a number of diverse sources of livelihoods, it is

## Table 12.6: Household livelihood sources

| Household livelihood sources | Percent |
|---|---|
| At least one member with some form of employment | 66% |
| A member with full-time employment | 22% |
| A member with regular part-time employment | 24% |
| A member with seasonal employment (predominantly in winter months) | 20% |
| State grant recipient households | 83% |
| State old-age pension | 24% |
| State child grant or disability grant | 59% |
| Remittances from temporary migrants | 22% |
| Remittances from family member permanently living away from village | 7% |
| Collecting wild edible plants | 7% |
| Hunting, trapping or collecting wild animals and insects | 3% |
| Collecting and selling firewood | 2% |
| Agricultural activities | 90% |
| Production of crops | 90% |
| Extra source of household food | 83% |
| Primary source of household food | 5% |
| Extra source of income | 2% |
| Production of livestock | 59% |
| Extra source of household food | 29% |
| Primary source of household food | 26% |
| Extra source of income generating purposes | 4% |
| Other – including reselling of crops/groceries and making traditional beer | 5% |

evident that social grants and off-farm work are the most common sources of income for households. Agricultural activities are the most widespread means of livelihood and involve livestock and crop husbandry. About 59% of households acknowledged producing various livestock at intervals during the previous twelve months. While 29% did so for extra food, 26% did so as a main source of food and only 4% produced livestock primarily for income generating purposes. Although livestock husbandry was common, the figures in Table 12.6 indicate that the percentage of households owning livestock other than poultry was low. Wealthier households tended to own more livestock, particularly cattle and goats. Slightly more than half of the households owned chickens during the preceding twelve months. Households owning donkeys used these animals to generate an income through their use in ploughing household gardens and transporting firewood and water. All livestock, with the exception of poultry and pigs, grazed on communal land in and around the village. Most livestock were unattended while they grazed although some cattle owners with large herds would employ a local herdsman to look after the cattle during the day. Goats roamed the area freely with only a handful being tethered while they grazed.

Crop production is the most widespread livelihood activity and is primarily practised for household food security purposes. This seems to be done more as a food safety-net, rather than for income, and is heavily reliant on summer seasonal rainfall. Of the 90% of households that produced agricultural crops as a livelihood source 83% noted that this was to ensure an extra source of food for the household and 5% reported that it was the main source of household food. Cropping is practiced at the two vegetable garden projects in the village and at most homesteads. However, the practices at the vegetable garden projects and the home gardens differ at times and this needs to be examined in order to determine the relative contribution of agriculture to food security at these different sites.

## Policy issues

*The Strategic Plan for South African Agriculture* – which represents the founding document of the Presidential Working Committee on Agriculture and is effectively government's primary statement regarding agrarian reform – says virtually nothing about specific measures to support smallholders. Rather the document speaks broadly of allowing/promoting "the entire spectrum of enterprises and farm sizes" (DoA, 2001: 8). It also does not directly address the question of agricultural production for household food security. Despite the vegetable garden projects and their exotic crops appearing to be failures, the extension services and the government do not seem to be able to develop a better and more focused food security strategy for rural households facing similar conditions as those found in this village. The dogged commitment to introducing high-input technologies and crops seems to prevent government agricultural services from addressing the problems at hand. If nothing else, the predilection for community projects that involve readily stolen borehole pumps must be recognised for the stalemate that it is. Rainwater harvesting and water management strategies may well be more appropriate help in the long-term than merely replacing the pumps or purchasing the missing parts.

The extension officers involved are currently not making any comments in this regard except to say that the people cannot afford to maintain or replace the pumps as they are too poor. It is possible that support might be obtained under

## Table 12.7: Livestock ownership

| Livestock resources | Percent of households owning livestock | Mean number owned among owning households |
|---|---|---|
| Dairy cattle | 6% | 7.6 |
| Beef cattle | 13% | 6.6 |
| Goats | 15% | 8.2 |
| Pigs | 4% | 11.2 |
| Poultry – chickens and pigeons | 53% | 14.2 |
| Donkeys | 6% | 7.0 |

the Comprehensive Agricultural Support Programme (CASP) but similar questions about appropriateness would arise given the content of the existing support programme.

## Social and institutional issues

One consistent benefit of the vegetable garden projects is that they provide the thirty or so affiliated households with access to an extra piece of land on which to grow food crops. So despite their problems they have some benefit. Especially for the women who started the care group, this has provided them with a social environment to produce what they want and discuss relevant matters away from male influences. The projects also enable the women and few men involved to interact with outside agricultural service providers, which does increase their knowledge of agriculture, and this has resulted in a few women experimenting on their own in their home gardens, and is a reason for some households using fertiliser at their home gardens (although discussions with project members highlighted that very little technology that was practiced at the projects could be used in the household gardens). They also remain expectant of receiving more resources and inputs from the extension services.

Women are also engaged in their own seed storage and exchange network with other women in the village. While some women were willing to share information freely with one another, others tended to keep information to themselves.

## Human dimensions

Most people reported that they learned their agricultural skills from their parents and grandparents, and developed them further by exchanging information with one another. They noted great differences between practices at home and on the projects; at home they practised agriculture the 'traditional' way and did not want to lose this part of their culture as it enabled them to secure food, even in times of poor rainfall.

One or two of the wealthier men who were not part of these projects were affiliated to agricultural associations outside the village and reported that they obtained information from these sources. Some people had also developed knowledge about conventional farming from exposure to commercial farms at some stage in their employment histories. Others had obtained this from interacting with the extension-supported projects. However, it was clear that irrespective of whether or not these technologies are agro-ecologically appropriate, most people did not practise them because of the associated costs.

Local people argued that despite the presence of the vegetable projects with their conventional approaches to agricultural production, their own local and traditional practices were equally important to agriculture and food security. However, despite the problems experienced with the water and borehole pumps over the years, they did not frown upon technologies, as they had seen the benefit of these under certain conditions, i.e. when everything worked well. They reasoned that perhaps they could blend certain aspects of the two approaches. At the end of the 2005/2006 study they had compiled a list of potential areas of cooperation between their practices and what they considered to be 'conventional' (technologically-based) or external practices. This was due to the fact that many people could see the strengths of both types of farming as well as the constraints evident in both.

The discussions and observations indicated that most of the more active farmers, who were acknowledged as such by their peers, tended to be those who were either very poor or by contrast those with enough money to be able to afford external inputs. Interestingly, both of these groups seemed to be more open to experimentation than those in the middle. Wealthier farmers tended to adopt more conventional practices more readily than the poorer ones; however, many of the poorer farmers were engaged in their own experimentation.

## Environmental issues

Despite African vegetables being significant for household food security, various agro-ecological conditions, combined with social circumstances, are contributing to a decline in their availability as a foodstuff. The preferences and attitude of the local youth mentioned above is only one of these factors. Others are soil erosion due to overgrazing and poor land and water management.

During the dry winter season the vegetation on the communal lands and home gardens is reduced and the ground is left bare after harvesting and grazing. A significant amount of erosion can be attributed to the mismanagement of the commons. This is a result of the extensive and

unmanaged harvesting of wood for fuel and the overgrazing of livestock, especially unattended goats, donkeys and cattle. There were some plans to reduce overgrazing, but in winter it was said that this was hard to enforce because forage in any form is scarce. Measures included tethering livestock and rotating them on a daily basis so that they are not able to overgraze any particular area. However, not everybody complied with this practice and during the study very few tethered livestock were actually seen on the commons.

The village experiences most of the summer precipitation in the form of thunderstorms. The rainfall is hard but generally short in duration. The water rushes down the hills, through the village, and removes the topsoil from fields and homestead gardens. This has a significant negative impact on soil availability, suitability and the presence of seeds of self-seeding plants in the area. A few women residents have tried to control water flow and run-off by erecting stone bunds and digging furrows. However, rather than collecting the water or controlling the flow, these measures tended mainly to divert the water away from these homesteads towards others and the gravel roads, thus exacerbating downstream problems. In some areas patches bare of topsoil had developed, and even during the rainy season these patches were not covered with any vegetation due to the loss of nutrients, seeds and the bare soil being too hard for root penetration. These areas were especially prone to water and wind erosion.

In the smaller home gardens it was observed that people did not plough across the slope in order to restrict the water flow. Inadvertently, much of the rain ran down the slope without penetrating the soil sufficiently. While intercropping may contribute to erosion control it is not as efficient as it could be under current practices. It was also observed that people in the village had no knowledge of simple and effective water management technologies such as grass strips, planting pits, semi-circular pits, earth basins and raised beds. Similarly, there was no use of household grey water for crop production. Management of this water could allow for the production of certain crops during winter. It was previously mentioned that the majority of dwellings have zinc roofs and therefore the potential for rainwater harvesting. However, the lack of guttering prevented this from being used with any effectiveness.

## The future

Official agricultural activities generally and also in the study area tend to overlook the benefit (and constraints) of local agricultural knowledge and practices while exclusively focusing on the transfer of conventional technology.[21] By and large this is inappropriate, as virtually none of the households have the resources to use this technology. Also, those who are involved in the projects ironically practise one type of agriculture at the project site and another in their home gardens and fields. by focusing more on local practices and knowledge and supporting and enhancing the principles inherent in this knowledge, more households could receive the benefits of conventional agricultural technology. An effective mixture of the principles inherent in the two systems would go a long way to achieving this.

During the discussions at focus group workshops and also during informal interviews with residents, a number of areas were identified where they requested support and information. These are described below:

- Seed systems – Many women stored seeds and some requested further information on this practice, especially with some of the exotic vegetables that were becoming indigenised. There would be value in sharing information on all aspects of exotic and traditional vegetable seed systems, such as how and when they can be harvested and cleaned, how long they can be stored, etc. Emphasis should be placed on promoting seed systems for African vegetables and re-introducing the selection of fruits and plants for seed harvesting to ensure that adequate and good quality seeds are harvested. Effective nursery establishment on a small-scale within home gardens would help many households to increase their access to healthy and nutritional plants. 'Seed fairs' could be one way in which awareness of the importance of seed systems in rural villages might be improved.

- Appropriate training – There is a need for more appropriate training that is relevant to specific local circumstances. This often requires follow-up visits by specialists to help with adaptation of technologies to local conditions. In some cases technology is not being used optimally, and might in fact be causing a loss of total yield per area.

21 The reader should bear in mind that the intention was never to assess the current Provincial Department of Agriculture projects. In fact when the field site was selected we were unaware of their purpose and only knew that two projects were located in the area. This case is not an assessment of the two projects but rather suggests that they are inappropriate in their current form due to various technological and local social constraints. Given this they could be altered in various ways so that available technology could serve the majority of the residents as opposed to the few people who are involved in the two projects.

Researchers, extension officers and farmers need to work together to determine the effectiveness of practices, and to promote adaptations that are locally appropriate and where needed. The appropriateness and timing of training in communities should be decided together with the community members for whom it is intended.

- Livestock care – During the study and the survey a number of male residents indicated a concern about their livestock, especially cattle. In winter forage is scarce and a few men mentioned cattle dying from disease at this time. Livestock information seems to have been lost at several levels and to varying degrees. The following are possible areas for training: breeding and selection of all livestock, dipping practices (found to be ineffective in many communities, probably also here), livestock management, stocking rates, feeding alternatives in winter. Farmers should know when to decide to sell, rather than let their livestock die during winter. The services of donkey experts should be made more widely available to provide advice and support to local donkey owners and users. This would be especially useful with regard to nutrition and the repairing and fitting of harnesses, carts and ploughs to ensure comfort and efficiency.

There were some other areas in which local residents require information so that they could include this in their practices. These include the following:

- Utilisation of African vegetables – African vegetables make a significant contribution to food security and household nutrition. However, there are some possibilities of this being undermined if the crops are not protected – e.g. being kept free of aflotoxin and mycotoxin contamination – during cropping, harvesting, processing (drying) and storage. Improved hygiene and food safety during drying and storage would reduce contamination and losses. This could be done by introducing a number of health safety principles to the residents. At the same time, awareness should be created of the different methods of food preparation that will help to increase the nutritional content of the food (e.g. the addition of a little fat, chopping, optimal boiling times, etc.). There is an argument for specifically promoting the production of yellow fleshed sweet potatoes as these are high in beta-carotene from which vitamin A is derived.

- Cultivation – Local residents are very aware of the principles of their soil preparation and cropping activities. However, collaborative research might improve this within the constraints of the resources which are available to them. Pension and other social grants are often used to purchase inputs such as seed and fertiliser. Research could optimise production and possibly reduce the expenditure on these items. There is a need to evaluate the possible use of liquid manure in the communities and also the use of grey water. Trench/door gardens, raised beds and micro-gardens might prove viable alternatives and enable basic food production with minimal effort, even in winter. This will enable households with sick members and working women to produce some crops if they so desire. It is possible that planting patterns can be optimised, even with some form of rotation, and here farmers and researchers can combine their knowledge.

- Soil and water management – The study indicates that there are two primary areas that need to be addressed in order for any previously mentioned requests and suggestions to achieve optimal benefit. Without addressing soil and water management, it is possible that agricultural production will decline and people will move towards other sources of livelihood. Some villagers mentioned that already they are unable to produce some crops. The youth are averse to a number of traditional crops and very few seem to be involved in any sort of agricultural production. If water and soil management are optimised in the local situation, then residents will not only be able to optimise their cropping of traditional foods and African vegetables, but will most probably be able to introduce some exotic vegetables into their home gardens. This will enable them to diversify their diets. Such crops might even be sold for income generation purposes, thereby taking food security beyond mere household consumption. However, the production of these crops is clearly not going to come about if people have to rely on communal boreholes and projects. The handful of farmers who have access to water in winter along with other resources

is already involved in production for selling, but there is scope for more people to become involved. The information and training transferred by the Department of Agriculture would then benefit more households. This information could be shared by means of farmer-to-farmer extension throughout the villages and surrounding areas.

Data collected during the course of the study indicate that water is a problem for two reasons: it is scarce, and when it does rain it often promotes erosion. Existing water management practices are inadequate. This means that the water needs to be controlled and the soil managed so that it can maximise the use of the limited water supply. The water needs to be controlled so that it is absorbed by the soil. Also, alternative sources of water need to be investigated. In addition, the soil structure and nutrient quality need to be improved. These two practises go hand in hand and need to be done together. It is clear that farmers already have certain local knowledge and agricultural research could assist in enhancing this knowledge and improving farmers' management practices. Collaborative or participatory research could help find solutions for problems relating to these two primary constraints.

With regard to water and soil management, the following is suggested as initial practices to be shared with and discussed in collaboration by farmers and researchers:

- Water harvesting strategies and people should be encouraged to test the methods for themselves, thus ensuring that they use the most appropriate techniques for their resources and conditions. A number of options are available and include terracing, stone bunds, trench or raised beds, semicircular bunds, furrows, and even small dams or catchments for those living adjacent to the hillside.
- Water retention methods for decreasing water loss during thunderstorms would increase yield potential by decreasing the loss of topsoil. These methods would also reduce the loss of seeds in the seedbed.
- Water recycling methods could be investigated for non-root and tuber vegetables.

The soil's fertility along with its ability to absorb and retain sufficient water for production purposes needs to be improved. Practices such as mulching, composting, and the use of liquid and green manure need to be investigated. Working sufficient organic matter into the soil will improve its nutrient content by encouraging animal and micro-organism life in the soil and the subsequent conversion of organic matter into humus. This will also ensure that the soil is of the right texture so that it retains sufficient moisture for crop production and simultaneously reduces water and top soil run-off.

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# 13 Madiba Trust Farm, Limpopo: a redistribution project exhibiting 'classic' group problems and elite capture

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## Introduction

The Madiba Trust Farm is located in the Maruleng District Municipality in a village called Lafdal, 30 kilometres south of Tzaneen. The farm is a registered legal entity under the Trust Property Control Act of 1988. The Madiba Trust Farm is a 165 hectares farm involved in the production and marketing of mangoes and horticultural crops. The farm has been under the ownership of 187 beneficiary households from Sekororo and Ballon since 2000. The beneficiaries acquired the land through the land redistribution programme using the Settlement/Land Acquisition Grant. The governance and leadership of the farm is handled by a board of trustees while daily operations of the farm fall under the responsibility of a farm manager. Currently, only two beneficiaries reside at the Madiba Trust Farm, including the farm manager.

The farm has a significant amount of necessary infrastructure in place, including two functional boreholes (with another two boreholes to be equipped in the future), 10 hectares of land with main line pipes for irrigation, two reservoirs with 20 000 litre capacity each, a workshop and a farm house. Other valuable assets include a 5-ton truck, a tractor, a bakkie and a disc plough.

## Historical evolution

The Madiba Trust Farm was bought in 1998 from John Green on behalf of the beneficiary group at the market value of R2.1 million. The farm was officially handed over to the beneficiaries in the year 2000. The farm had been in operation for more than 15 years before it was handed over to the group. At its peak, the farm employed about 50 permanent workers in addition to many casual labourers.

According to the business plan that was formulated during the planning stages of the project:

> *"The vision of the project is an agro-based firm engaged in the primary production of high value horticultural crops and subtropical fruits driven by the need to build a first-class sustainable and profitable rural agricultural hub.*
>
> *"The mission of the farm is to expand its operations to its full production capacity and to produce high value crops satisfying customer needs and creating a sustainable and profitable farming venture for its beneficiaries."*

However, while the project never collapsed as many other land reform projects have, it certainly never came close to satisfying its lofty ambitions. The problem had many of the characteristic features of 'rent-a-crowd' redistribution projects in particular, whereby the reality of the participation of many of the official beneficiaries was questionable from the beginning, while the functioning of the project faltered early on. This is despite significant spending early on to improve the irrigation infrastructure (to an amount of about R800 000, which came out of the 'balance of grant'), and efforts to provide training and management support. For example, in the first two or three years, a non-governmental body, Technoserve, was brought on board to assist with management and securing of loans. Through Technoserve, a local commercial farmer was engaged to advise the farm management

on production and marketing aspects. However, for reasons that are unclear, this relationship ended.

The project has effectively been taken over by the Board of Trustees and the farm manager (who is himself a beneficiary). Divisions within the Board, which appears to pit most of the Board members against the chair on questions of control over and allocation of revenues, contribute to a sense of paralysis and paranoia. Presently, production carries on under the day-to-day guidance of the manager and assistant manager, who are the only two permanent members of staff on the project. The manager reiterates the growth objectives of the project (in terms that echo the language in the business plan regarding the project's 'vision' and 'mission'), but it is clear that the necessary capital to realise these goals will not be forthcoming any time soon.

## Natural and physical resources

Madiba Trust Farm has a total area of 165 hectares, of which 105 are arable land. The whole farm has flat fields of mostly fertile red soils. The farm is partially fenced and has several buildings, including the main farm house and another house that is being leased to an Eskom worker. The main house currently serves as the farm office and is mostly bare, reflecting the current production and possibly financial situation of the farm. There are workers' quarters for about four workers on the farm. The farm has two 30 $m^2$ pack houses and an old pack house that was formerly equipped with a cold room and packing equipment. Moreover, there are two sheds for equipment and a workshop. There are two or three concrete water tanks and a total of 8 boreholes. Most of the infrastructure on the farm has been neglected for a long time and all the physical structures on the farm need some form of refurbishment.

## Production systems

Mango trees cover 33 hectares of the total area of the land, while another six hectares are carries various vegetable crops, including green pepper, green beans, baby marrow, butternut and tomatoes. Butternut and tomatoes are currently produced on relatively small plots. There is potential to increase the production of vegetables to about 30 hectares, provided all the boreholes are brought into service.

Observations showed good management of the vegetable crops but rather poor management of the mango orchards. Some of the mango trees need to be rejuvenated through pruning, there is tall grass in some of the mango orchards, and there are no basins at the bases of the trees to enhance moisture conservation given that the orchard is not irrigated. It seems there is no management related to fertilisation or pesticide spraying effected on the mango trees.

## Economic aspects: gross margin analysis of fruit and vegetable crops

Madiba's primarily mango customers are neighbouring atchar processing factories around Tzaneen and the Johannesburg Fresh Produce Market, the latter also being the market for about 60% of the farm's vegetable produce since 2003. The balance of the produce is sold to bakkie traders and local customers at farm gate.

## Figure 13.1: Photos of Madiba Trust Farm

**Baby marrow showing powdery mildew**

**Poorly tended mango trees**

The vegetables produced are presented and packed in various bags per size and weight ranging from 1, 4, 10 and 25 kilograms, as well as 1000 kilograms for mangoes. The farm plans to secure off-take contractual agreements for 80% of the vegetable produce and to supply mangoes to atchar processing factories, juicing companies and local customers. Other envisaged crops to be incorporated in the marketing plan include baby marrows and patty pans.

According to the information obtained from the farm manager and assistant farm manger, the selection of vegetable crops included in the current production system is informed by a number of general factors such as suitable climatic conditions and soils, availability of water for irrigation, and availability of market. Currently, the three main vegetable crops that are grown on the farm are baby marrows, green beans and green peppers, while smaller amounts of land are devoted to butternut and tomatoes. According to the information obtained from the farm manager, these latter two crops may not be grown in the future. Thus, the gross margin analysis was done on the three main vegetable crops only and for the mangos. It should be noted that the farm does not keep proper farm records, making quantitative estimation of inputs and outputs difficult. Analysis of gross margins is based on recall and assisted estimation of input costs and revenue from the sale of crops. The gross margins for all crops were worked out on a

## Table 13.1: Gross margin for mangos (2008)

| Item | Rand/ha | Details |
|---|---|---|
| A. Gross income | 25 000 | 1000 boxes/ha @ R25/box |
| B. Total variable costs | 12 123 | |
| Land preparation (tractor) | 1 000 | |
| Transplants (labour) | 1 200 | |
| Fertiliser | 800 | |
| Herbicides | 350 | |
| Irrigation (electricity) | 2 500 | |
| Harvesting (labour) | 1 500 | |
| Packing and grading (labour) | 2 000 | |
| Marketing, transport | 2 773 | |
| C. Gross margin (A-B) | 12 877 | |

Note: there are about 200 mango trees per hectare of land.

## Table 13.2: Gross margin for green beans (2008)

| Item | Rand/ha | Details |
|---|---|---|
| A. Gross income | 26 250 | 875 boxes/ha @ R30/box (box = 4 kg) |
| B. Total variable costs | 9 600 | |
| Land preparation (tractor) | 950 | |
| Seeds | 200 | |
| Planting materials (staking supports) | 1 200 | |
| Irrigation | 1 000 | |
| Fertiliser | 900 | |
| Pesticides | 1 000 | |
| Labour (weeding, harvesting, etc.) | 1 850 | |
| Packing, marketing, transport | 2 500 | |
| C. Gross margin (A-B) | 16 650 | |

Note: The farm manger and extension agent of the area have indicated that the yield of green beans on a hectare of land is 3.5 tons on average.

## Table 13.3: Gross margins for green pepper (2008)

| Item | Rand/ha |
|---|---|
| A. Gross income | 24 000 * |
| B. Total variable costs | 12 543 |
| Land preparation (tractor) | 1 500 |
| Fertilisers | 850 |
| Irrigation (electricity) | 1 200 |
| Crop protection | 500 |
| Labour | 1 993 |
| Materials (crates, cartons) | 3 000 |
| Packing and marketing | 3 000 |
| Other sundry expenses | 500 |
| C. Gross margin (A-B) | 11 457 |

* 4 crates/tree, 800 crates/ha, @ R30/crate

## Table 13.4: Gross margins for baby marrow (2008)

| Item | Rand/ha |
|---|---|
| A. Gross income | 30 000 * |
| B. Total variable costs | 15 300 |
| Land preparation (tractor) | 975 |
| Irrigation (electricity) | 2 979 |
| Fertiliser | 2 678 |
| Pest control | 568 |
| Weed control | 1 144 |
| Transplanting (labour) | 1 421 |
| Harvesting (labour) | 1 350 |
| Packing and grading (labour) | 1 900 |
| Marketing, transport | 2 315 |
| C. Gross margin (A-B) | 14 670 |

* 1200 boxes/ha @ R25/box

hectare basis. It should also be noted that gross margins are taken as relative indicators, rather than absolute enterprise profitability as they exclude farm overheads.

The three vegetable crops show varied profit margins ranging from R12 877/ha for green peppers to about R14 670/ha for baby marrow, while the margin for mango was R11 457. The gross margins for green beans and baby marrows are relatively high and thus make these vegetable crops very attractive. However, the rosy picture painted by the figures is probably not accurate. In particular, there is a concern that the figures – which were provided by the farm manager and who, as mentioned above, could not produce anything like detailed and comprehensive records[22] – over-state income, seemingly by using the best price achieved for the whole harvest when in fact different prices were paid according to different markets, product quality, etc. Another important consideration is that, although the land planted to vegetables is irrigated, it does not appear that the project regularly gets more than one harvest per year, suggesting that it is operating at below potential in more ways than one.

The area where the farm is situated is known for good mango production, however due to the poor agronomic practice (e.g. no timely pruning) on the farm, the yield of mangos per tree and hence per hectare is quite low. Land allocation for each vegetable crop does not seem to be done proportionately based on profit margins as the current land allocation for baby marrows is one hectare and that of green beans four hectares.

Notwithstanding concerns about the accuracy of the enterprise-level figures, we estimated that the total turnover for the farm was about R950 000 per annnum in 2008, total operational costs were R480 000, and net farm income was R470 000. The total wage bill was a conspicuously low R81 000, which excluded payments made to the manager and assistant manager, about which we were unable to obtain any information.

An essential component of successful vegetable production is the ability to access markets. Market channels for these crops are the Johannesburg Fresh Produce Market and large supermarkets such as Pick 'n Pay and Woolworths. Also, bakkie traders are very visible in the area where the farm is located.

It should be noted that the farm has a total area of 165 hectares and yet only about 39 hectares of land are under production. Of the remaining land, most appears to be unutilised, though some is rented out to a nearby commercial cattle farmer for grazing.

## Livelihoods significance

While this net farm income seems quite ample, it works out to only about R2500 per beneficiary

22 This is despite the fact that having an accountant attached to the farm is a requirement for registration as a trust. The farm's financial records are therefore evidently kept by an accountant based in Polokwane. We did not have access to these records and thus cannot comment on how accurate or up-to-date they are; as for why the farm manager did not have copies, or why he was not willing to share them, is another question.

household for the year. Even adding the wage bill as a form of benefit to project members, if one takes (estimated) overhead into account, the potential income per beneficiary still probably works out to about R2500. However, we know little about how the income from the farming operations is shared out, and still less about what happens with the lease income theoretically accruing to the project. In effect, the benefits accruing to beneficiaries are somewhere between very modest to non-existent.

To what extent this is because the farm is operating below potential, and to what extent this is intrinsic to the nature/design of the project, is uncertain. If the farm were operated at its commercial potential, the scale of benefits would be decidedly more significant. Assuming the project were able to boost the area under vegetable production to 30 hectares and plant multiple crops per year, then the profits could be three or more times what they presently are. But this begs the question how any such additional profits would actually be used. In short, the acquisition of Madiba Trust farm 10 years ago has had little impact on the livelihoods of the beneficiaries and surrounding communities, unless that impact is negative as a result of the loss of regular employment.

## Social and institutional dimensions

The project is supposed to promote people's incomes and improve their social status in terms of food security, improved health, ability to cater for their families and a secured future. However, the current state of organisation and membership at Madiba makes these goals appear farfetched. The salient aspect of the project is the extent to which it has effectively been captured by a small number of individuals, meaning the manager, assistant manager, and half a dozen members of the Board of Trustees.

Of course, this 'institutional' dysfunctionality has implications for the operational performance of the farm, but not to the extent that production has collapsed entirely. Indeed, this is perhaps the single most significant insight from the case study: in contrast to the many land reform projects that collapse entirely because of a lack of leadership or severe in-fighting, Madiba Trust is an example of a situation where, through undemocratic and unsavoury means, enough leadership is maintained to keep commercial production going, albeit at a reduced level. This reinforces the importance of looking beyond the strict economic performance of projects, which in this instance reflects what has gone wrong as much as what has gone right.

Possibly the most astonishing and offensive aspect of the project is the fact that it offers only casual employment, except of course to the manager and assistant manager. If the enterprise margins are even remotely correct, this cannot be for lack of project income. Whether it is ever advisable or desirable for project beneficiaries to assume the role of 'wage earners' (as opposed to co-owners and/or farmers) is its own debate; what seems less ambiguous is the fact that regular employment is preferable to casual employment, particularly on a farm that used to maintain such a large regular workforce.

What are the responsibilities of government in a context like this? Certainly it is understandable that Land Affairs officials do not perceive it to be their role to provide indefinite mediation in projects whose land was transferred some years ago (particularly given the urgency of progressing towards the '30% target'), and similarly one can understand why extension agents feel ill-equipped to resolve what are complex social problems. However, across Limpopo, the provincial department of agriculture did embark on something like an attempt to re-engineer redistribution projects such as Madiba Trust. The process of "de-registration" began two or three years ago and involved a systematic sweep through all of the older redistribution projects to encourage inactive project beneficiaries to agree to have their names removed as official beneficiaries. The thinking seemingly was that much of the problem with these first-generation redistribution projects was the large number of inactive members lingering on the farm boundaries and interfering with the efforts of the committed few to get operations onto a more solid footing. By de-registering, non-active beneficiaries would acknowledge that they had no right to expect anything from their (former) projects, and simultaneously would be eligible to apply for assistance all over again.

While there are instances where this type of interference of non-active beneficiaries is very real, it does not appear to be the norm, and moreover non-participation is not necessarily a choice. While the sequence of events around the

dramatic downsizing of Madiba Trust is murky, it seems clear that it was those who seized control of the project who left no space for the participation of the majority. Meanwhile, extension officers and land reform officials are waiting on the sidelines at Madiba to be provided with a revised list of official beneficiaries, i.e. now that the de-registration process being handled from Polokwane has run its course. On the other hand, it would appear that in reality the de-registration process has been quietly dropped, having failed to convince more than a fraction of non-active project members to sign away their membership.

## Gender, class and human dimensions

Little was learned through our research about the composition of the beneficiary group, but in a sense this is immaterial because most of these beneficiaries are such only in an official sense, while probably not deriving any actual benefits from the project at all. It was observed however during one of the fieldwork visits that most of the casual workers who happened to be there on that particular day were women; however is not possible to make assumptions about whether beneficiaries are exclusively or even mainly female.

Similarly, little was learned about the composition of the Board of Trustees, and whether the Board members belong to a different class stratum from the ordinary beneficiaries.

## Perceptions of performance

The Land Affairs official and the agricultural extension staff perceive production levels at Madiba as very low. The farm has high potential and a lot of money has been spent, including the R800 000 to enhance irrigation capacity. The management of the mango orchards is very poor and only a very small area is under horticultural crops. Even the managers acknowledge that the current levels of production are rather low. Some of the unused fields are currently rented out to a neighbour for cattle grazing. It is thought that production at the farm could be increased by diversifying the enterprises, for example by keeping cattle and adding avocado and macadamia to the fruit grown on the farm.

## Environmental aspects

There are no obvious threats to the environment from current farming activities at Madiba Trust Farm, or at least, those that exist are typical of commercial farming of orchard and horticultural crops in South Africa. The farm is generally flat, thus the risk of water erosion is low. One aspect that needs to be effected however is the neglect of making fireguards to protect the farm from external veld fires, as they are rampant in the area.

## Conclusion

Madiba Trust Farm is in some sense a product of its time, that is, one of the first-generation redistribution projects characterised by too large a group and too naïve a business plan. The particular grant mechanism that was used to create it has largely been superseded by other grant mechanisms, and generally there is awareness and wariness nowadays of group projects that was absent (or muted) in the period from 1994 to 2000. Perhaps we are not certain what to do about the projects like Madiba Trust that are already out there, but at least we are not creating new ones along the same lines. If the farm that was acquired on behalf of Madiba Trust in 2000 were instead to have been acquired today for redistribution, the project would look quite different, especially in light of the further increases in the redistribution grant that were introduced last year.

That might be consoling on the one hand, but also a cause of concern. With today's redistribution grant structure, it is perfectly conceivable that the farm which became Madiba Trust could have been acquired by three families. To put this in broader perspective, as a consequence of allocating more funding per beneficiary for land acquisition and other capital needs, in 2007/08 the Department of Land Affairs spent R1.3 billion on redistribution, of which the vast majority went to support a mere 2100 emerging farmer beneficiary households.

This type of assistance might have its role, but it clarifies that much of what falls under redistribution cannot be described as broad-based poverty reduction. Thus there remains a need to use agriculture somehow to benefit larger numbers of people, and almost inevitably

this returns us to the question of groups. Indeed, the impetus of government agencies to work with groups rather than individuals is still very much in evidence, even though it may take different forms. The compelling logic to working with groups is that it allows limited government resources to touch larger numbers of people. In agriculture, there is an added incentive in that many of the technologies are lumpy (e.g. tractors and irrigation systems), and it is difficult to justify giving them away to single individuals (though this is happening more frequently in light of the). Thus we might be clear that we will not create new projects like Madiba Trust, but to the extent we are committed to the use of agriculture to pursue large-scale poverty reduction, it is not altogether clear we have identified robust alternatives.

# 14 Nkuke Ketla Ema vegetable project, Limpopo: individual market-oriented vegetable production in the context of group-managed infrastructure

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## Introduction

This small vegetable project is located in Ga-Sebati village about 30 kilometres south-west of Mankweng (60 kilometres from Polokwane). The area is accessed through an all-weather gravel road. The project is located on the eastern edge of the village. The 3.2 hectare plot on which the project is located was given to the group by the chief according to an indefinite 'permission to operate'' arrangement. It is a typical community project whose main objectives were to fight hunger and poverty. The project was initiated by local villagers and continues to be run by them. All the members belong to the same chiefdom. Project membership is restricted to residents of the Ga-Sebati area only. Currently, there are twelve members, of whom ten are women and two are men.

## Historical evolution

The project was formed in 1992 by villagers from Ga-Sebati as a tool to fight poverty and hunger by providing vegetables for consumption by members and sale of excess produce. The project was conceptualised as a self-help project hence the name "Hold my hand I can stand," and its formation was the idea of the current 'manager' of the group. The project started with 72 farmers but over time this figure dwindled to 12. Some of the reasons advanced for that are: i) some members found better opportunities elsewhere for making money, ii) some stopped as soon as they qualified for social grants, iii) some had no time because they had to look after children or grandchildren in the village, and iv) others did not like periodic contributions to maintain the facilities and pay for electricity.

At the start of the project each farmer had only one bed, but now each has access to six beds because of the drop in active members. The remaining farmers now have much better potential to produce excess produce for sale. The remaining farmers feel they have invested much in the project and this coupled with better incomes from the sale of the vegetable crops perhaps made the 12 beneficiaries stay on the project.

Initially, the farmers had dug an open well outside the scheme and were pumping water into buckets and carrying them to the vegetable plots by hand or in wheelbarrows. This entailed lots of hard work and indicates the level of commitment of the farmers. Also, during these first four years the garden area was fenced off using Acacia brush and project ran without any external assistance, including extension advice.

In about the fifth year of the project's existence – by which time the group had already dwindled to its current size – the then Department of Agriculture of the Northern Province assisted the group with fencing, a borehole and an irrigation system. This group was very pleased with these developments, even though the Department provided little if any assistance subsequently by way of planning or technical advice.

The group is frequently approached by community members who wish to join it. However, the group refuses, saying that there is only enough land for their present number.

## Natural and physical resources

The project is located on well drained sandy loam soil. The area is fairly flat, with a depression in the South eastern corner. The Ga-Sebati area has scrub vegetation dominated by Acacia species, and is typical of Limpopo bushveld. The area is characterised by low and erratic rainfall estimated at about 400 mm per annum. The rain season extends from November to April. The rainfall is not adequate and hence all the crops require total or supplemental irrigation. The Ga-Sebati area is prone to frost from mid-June to early August.

The scheme plot is 210 metres long and 150 metres wide, giving an area of 3.2 hectares. The project has a brick under asbestos storeroom near the entrance. This is used to store tools, hose pipes and produce. It also serves as a rain shelter during the rainy season. There is a pit latrine in one corner of the scheme. There are only 3 small trees that can provide shade within the scheme. The scheme is fenced with barbed wire (8 strands and reaching about 2 metres high) but only half of the perimeter is reinforced with 2 metre high diamond mesh fencing. It is because of this that small animals such as rabbits and impala sometimes feed on the vegetables at night.

Adjacent to the eastern edge of the project area is a borehole. The capacity and depth specifications of the borehole are not known but it provides irrigation water throughout the year. The borehole is fitted with a submersible electric pump and an irrigation network of pipes and water outlets runs in the scheme. Irrigation is done using hose pipes (see Figure 14.1).

## Production systems

The scheme's 3.2 hectare garden is subdivided into small plots of 22 metres by 15 metres in extent. These are arranged in six rows each with 12 plots, making a total of 72 plots. Each farmer has two plots in each row. There are 18 irrigation points at which 30 metre long hose pipes are fitted to irrigate the individual plots.

The vegetable crops grown in the project are beetroot, spinach, onion, tomato, cabbage, sweet potato, butternut, groundnut, bambara groundnut, carrot, pea, sugar bean, chillies and green pepper. From the interaction with farmers, the main crops are sweet potato, butternut, spinach, beetroot, carrot, tomatoes, onion, and cabbage. The choice of crop is left to the individual farmers as well as when they want to grow it. Crops are grown throughout the year but

## Figure 14.1: Farmer irrigating spinach crop (see uneven stand)

there is little activity during the period of high frost probability, i.e. June to August.

Land preparation is mostly done by hired tractor, with the final seedbed prepared manually. Farmers use individually owned hand hoes and rakes, but these are mostly in poor condition. There are some project tools that are stored in the storeroom at the production site. These include seven hose pipes, a knapsack sprayer, a hand sprayer and 5 wheelbarrows.

At Nkuke Ketla Ema project, there is very limited use of agrochemicals. A few farmers occasionally apply LAN (limestone ammonium nitrate) (28% nitrogen) and pesticides, mostly insecticides. These are procured from the local shops. It appears there is no use of fungicides at the project despite growing fungal disease prone crops such as tomatoes and green pepper. Soil fertility is to a limited extent managed by applying decomposed leaf litter collected from nearby bushes or compost manure made from a mixture of grass and weeds from the scheme. A few farmers apply small amounts of chicken and goat manure.

Most of the farmers depend on family labour, which occasionally involves their children and grandchildren. The farmers stated that in Ga-Sebati very few youths willingly work on their parents' plots. The labour is mostly required to make irrigation furrows in the beds and to irrigate the vegetables.

The project has a borehole just outside the scheme. The borehole and the irrigation piping were installed with the assistance of the Provincial Department of Agriculture in the then Northern Province. The borehole is fitted with a submersible pump. The transformer was once stolen but of late theft is not a major concern for the project. The capacity of the borehole is not known but the project members indicated that water was not a limiting factor. The electricity used for pumping was the problem due to an escalating electricity bill. The crops are surface irrigated using hose pipes to put water into the shallow furrows or into basins. This form of irrigation demands formation of appropriate structures prior to planting the crop. The farmers indicated that this is challenging in terms of labour requirements. The crops are irrigated twice a week despite stage of growth. This suggests possibilities of inefficiency of either over or under-irrigation during some part of the crop's growth. Each member contributes R50 per month towards irrigation electricity costs.

As far as the project members are concerned, they do not have any marketing problems. They successfully sell all their produce at the farmgate or in the village. The crops mostly sold include sweet potato, beetroot, spinach, butternut, carrots, onion, tomatoes, and cabbage. The farmers estimated that they consume about a quarter of their production with the rest sold.

## Figure 14.2: A good stand of beetroot

Farmers stated that they fetch prices similar to those at the markets in Mankweng.

## Production constraints

The farmers indicated a number of production constraints and the following are the most important ones:

a) The farmers stressed their limited ability to procure inputs as the key limiting factor, particularly as it relates to fertilisers, pesticides and electricity for irrigation. In effect, low production levels mean that the money realised from vegetable sales is too little to be used for both household cash needs and purchase of inputs, thus they cannot afford inputs and the monthly electricity bill of R50 per farmer is on the high side. Some farmers indicated that sometimes they do use social grant money towards project obligations.

b) The project farmers lack technical advice. They stated that the government extension officer responsible for their area does not visit the scheme despite the assistance they rendered the group earlier by way of infrastructure. Another aspect that clearly underscored this problem was the poor crop stands in some plots. There were many gaps in some spinach and beetroot plantings, as well as too densely populated carrots.

c) Another production constraint was animal damage at night. The farmers indicated that rabbits, rodents and birds damaged their crops as half of the scheme is not fenced with diamond mesh fencing. There were no measures in place to control these pests.

d) The farmers stated that in Ga-Sebati very few youths willingly work on their parents' plots.

e) Sub-optimal pesticide and fertiliser use (both inorganic and organic) also adversely affects their vegetable crops. The farmers indicated heavy insect pressure among the production constraints.

f) The farmers also do not have any organised rotational system.

g) The Ga-Sebati area is prone to frost. This restricts plantings in the May to August period and farmers indicated that crops that tolerate frost also do grow slowly during that period. At the time of visits to the area in early August 2008, all the sweet potato vines had dried up to ground level from frost damage and very few beds had any plantings.

## Economic aspects: gross margin analysis

Gross margin analysis is undertaken of the vegetable crops in order to better understand the economic viability of the project. Fixed costs for some of the basic tools for the vegetable production as well as the enterprise budget for the different vegetable crops are presented below. It should be noted that numeracy among beneficiaries is low such that quantitative estimation of inputs and output was very difficult. Therefore, analysis of gross margins for the various vegetable crops is based on recall and assisted estimation of input costs and revenue from the sale of crops. Initially, the gross margin analysis was done on the basis of actual plots that the beneficiaries own and then the gross margins for all crops were converted to a 'per hectare' basis.

Most of the labour for harvesting and other activities is provided by the plot holders, however some additional labour is hired by some of those who grow sweet potatoes and beetroot.

Hand tools mainly include hand hoes (with a typical purchase cost of R30), garden forks (R85), spades (R60), and rakes (R40).

The vegetable enterprises show varied profit margins ranging from about R4000 to about R17 000 per hectare across the different vegetables. These margins are relatively high and thus make the vegetable enterprise very attractive, although of course the actual amounts of land in production are relatively small. Production of butternut, sweet potato and spinach are favoured by the project beneficiaries as these vegetable crops are easier to produce compared to a crop such as tomato.

An essential component of successful vegetable production is the availability of and easy access to market. Market channels for these crops are mostly the local community.

## Livelihoods significance

The project contributes to household nutrition and income. The precise extent of these benefits is difficult to establish, as the farmers do not keep production or sales records. However,

if we assume that the average number of plots farmed in a typical year is 9 (each farmer has six plots, roughly half of which they plant twice in a year), and from each planted plot one earns an average amount of R430 (this is averaging across the different enterprises captured in the previous tables), then the cash income per group member per year would be in the order of R3500 to R4000. In addition, since sales represent only about 75% of members' production, one would have to take into account the value of what is kept back for home consumption, a rough imputed value for which we would put at another R1000 to R1500.

These figures are not large, on the other hand this is not a full-time activity, and may also explain why some of the 12 group members regard the amount of land as too small. Some members indicated that there are times they use social grant money or other cash for project contributions for electricity or ploughing, implying that the cash earnings are generally not sufficient to allow accumulation of savings that can be drawn down to keep participation in the project going. In fact, the researchers observed an interesting relationship whereby better-off group members – generally meaning those with wage income from teaching or some other activity – tend to use less of their land than worse-off members, suggesting the 'compensatory' nature of the agricultural activities at the project.

## Social and institutional dimensions

The ages of the project farmers range from 44 to 75 years. One member is below 50 years of age, two are in the 50-59 age brackets, four between 60 and 69 years, and four are above 70 years.

## Table 14.1a: Gross margin analysis for selected vegetables, 2008

| | Tomato | Cabbage | Spinach | Butternut |
|---|---|---|---|---|
| Revenue (R/ha) | 7 576 | 16 674 | 21 212 | 18 182 |
| Variable inputs (R/ha) | | | | |
| Tractor operations (R/ha) | 1 212 | 1 000 | 1 051 | 910 |
| Seedlings (R/ha) | 910 | 910 | 1 516 | 859 |
| Irrigation (R/ha) | 1 300 | 1 500 | 1 334 | 1 364 |
| Hired labour (R/ha) | 0 | 0 | 0 | 0 |
| Total input costs (R/ha) | 3 422 | 3 410 | 3 901 | 3 133 |
| Net profit (R/ha) | 4 154 | 13 264 | 17 311 | 15 049 |
| Plot size (ha) | 0.033 | 0.0165 | 0.033 | 0.033 |
| Actual net profit (Rand) | 137 | 219 | 571 | 497 |

## Table 14.1b: Gross margin analysis for selected vegetables, 2008

| | Sweet potato | Onion | Carrots | Beetroot |
|---|---|---|---|---|
| **Revenue (R/ha)** | **24 242** | **21 212** | **15 152** | **16 667** |
| Variable inputs (R/ha) | | | | |
| Tractor operations (R/ha) | 1 455 | 2 121 | 910 | 910 |
| Seedlings (R/ha) | 2 424 | 1 516 | 1 212 | 1 136 |
| Irrigation (R/ha) | 3 030 | 3 030 | 1 516 | 1 515 |
| Hired labour (R/ha) | 1 000 | 0 | 0 | 500 |
| Total input costs (R/ha) | 7 909 | 6 667 | 3 638 | 4 061 |
| Net profit (R/ha) | 16 333 | 14 545 | 11 514 | 12 606 |
| Plot size (ha) | 0.0165 | 0.0165 | 0.033 | 0.033 |
| Actual net profit (Rand) | 269 | 240 | 380 | 416 |

Most of these farmers receive social grants. Project membership is restricted to residents of the Ga-Sebati area. This aspect may help to create cohesion in the group.

The small group of farmers is led by a committee comprising a manager, assistant manager, secretary, treasurer and assistant treasurer. The committee is selected every three years, mostly on the basis of interest and potential to lead. The project members meet every Monday morning. The secretary keeps records of meetings but there are no production-related records. The current manager is male while the secretary is female. The group is religious, all members are teetotallers, and meetings begin and end with prayers. All money contributed for project activities, such as payment for electricity and pump maintenance, is kept by the treasurer as the group has no bank account. The group does not have any security measurements for the project other than locking up the storeroom and the main gate. No deliberate effort is made to guard the project site.

## Gender, class and human dimensions

The group at Nkuke Ketla Ema vegetable project appears to operate in harmony. There appear to be no gender problems, and there is a dominance of women both in the project at large and on the current committee. Indeed, the manager is a man while all of the other committee members are women, a pattern that is surprisingly common among community projects of this sort. During discussions all farmers present were participating freely. In other African communities the tendency is for women to only endorse what their male leaders have stated. Although it became clear that there is some class differentiation among the group members – by which we mean that some are more educated and have secure employment – this does not appear to influence interpersonal interactions at the project. There are some farmers who own cattle and goats and can therefore access manure to fertilise their vegetable crops. Another factor which may contribute to the harmony in the group is that all members come from the same village under the same chief. The orderly nature of interactions and operations could also be due to the maturity of the farmers.

## Perceptions of performance

The project members are aware that their production levels are low, primarily because of poor agronomic practices such as little or no use of organic and chemical fertilisers and pesticides, poor spacing and other practices. They cited poor plant growth and insect damage as some of the reasons for their poor yields. They however emphasised their limited capacity to purchase the required fertilisers and insecticides.[23]

## Policy environment

Observations of the cropped plots and discussions with the farmers at Nkuke Ketla Ema project clearly suggest that small farmer-initiated projects cannot be sustainable without extension backup by local extension services or non-governmental organisations. The local traditional authority supported the farmer initiative by granting them the land to use but has no capacity for anything else. It seems the responsibility for support of such projects should primarily lie with the Department of Agriculture through their municipal managers. According to the farmers, the nearest extension office from Ga-Sebati is located 30 kilometres away at Mankweng. However, the extension supervisor for the area indicated that the extension officer who serves Ga-Sebati area is located at Makate village, 12 kilometres from the project. The same supervisor strongly indicated that it is the policy of the Department to provide technical advice to projects such as the Nkuke Ketla Ema vegetable project and was surprised at the claim that this was not the case. He indicated that only recently they held a road show at Ga-Sebati focusing on control of fruit fly in mangoes. The Department has planned several activities to revive agriculture in Capricorn District. The supervisor also indicated that the Department encourages small projects to link up with relevant NGOs for additional support. If the project was big, it could also attract agro-chemical salespeople who also provide technical back-up.

## Environmental aspects

The vegetable garden for the Nkuke Ketla Ema project is well planned in that soil erosion is unlikely to be a major problem. There were no visible signs of soil loss at the time of the visits to the project. The only activity that farmers

23 This accords well with the argument in Tim Hart's chapter on "African vegetables and food security for poor agrarian households in Limpopo Province" in this volume, which contrasts community gardens along the lines of Nkuke Ketla Ema with household's use of traditional African vegetables in their home plots.

embark on which can impact the environment negatively is the use of Acacia brush to reinforce the two sides of the perimeter fence which do not have diamond mesh fencing. The farmers seemed to be aware of the need to conserve the soil for the long-term sustainability of their project.

## The future

There are positive and negative prospects for this project, briefly summarised below.

On the positive side:

- The spirit of self-reliance is very strong in the group as seen by their ability to pay for electricity, pump maintenance and the tractor.
- The project has a reliable water source.
- The tenure for the plot seems almost guaranteed.
- There is land for possible expansion of the project.
- The large population in Ga-Sebati and other neighbouring villages almost guarantees them a market.
- The current garden contributes to meeting the households' food and income needs of participants, albeit in a supplementary manner. Indeed the extent of their success in this regard has led to other community members expressing an interest in joining the project.

On the negative side are the following points:

- Most of the farmers are elderly and hence the future continuity of the project is in doubt, not least since the farmers indicated that only very few young people are interested in assisting them.
- The farmers' lack technical ability to farm efficiently.
- The farmers' lack adequate inputs, including those that can be sourced locally such as forest tree leaf litter, compost manure and animal manure.
- The project is not being supported with extension advice.

## Conclusion

There are a number of interesting lessons from this project:

- Self-reliance is possible even among fairly poor communities.
- There is need to involve the local youths in agriculture. This is a big challenge but it needs to be addressed urgently if agriculture is to contribute to rural livelihoods in future.
- Smallholder farming projects require technical support, otherwise performance levels will remain at unsustainably low levels.
- There may be need for more stringent supervision of agricultural extension officers.
- Erection of a shed by the roadside next to the vegetable garden will assist in marketing the fresh produce on a regular basis.

# 15 Small-scale broiler production in the Thohoyandou area: an enterprise that can be conducted successfully at different scales but with contrasts between individual-based and group-based enterprises

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## Introduction

There is general agreement that small-scale poultry production can stimulate local economic development and improve human nutrition in rural areas (Wynne and Lyne, 2004). In South African rural settlements, poultry, primarily chickens, are raised by means of different production systems of which the scavenging system is the most the common. In this system, a small number of birds, typically about six in total, roam freely around the homestead during the day, scavenging for food. At night they are usually locked up for security reasons (Smith, 1990). Also common is the improved scavenging system in which poultry keepers supplement the food intake of the birds from scavenging with leftovers from homestead meals and stored grain that is no longer fit for human consumption. The general objective of these two systems is to obtain a modest supply of eggs and meat whilst maintaining the bird population through natural processes of reproduction.

There are also rural households that operate small- or medium-scale broiler or egg production units (Sonandi, 1996; Lent and Van Averbeke, 1998; Wynne and Lyne, 2004). The objective of the poultry unit system is to generate income from sales. Producers operating the unit system have to invest in production inputs. Typically these inputs consist of high-performance chicks, energy for heating during the brooding period (which lasts for the first three weeks), vaccines and medicines to prevent or control diseases, and high-protein feeds, vitamins and minerals to ensure the birds' optimum growth and/or laying (Sonandi, 1996). The birds are reared in dedicated structures to protect them against the elements.

Small- and medium-scale poultry units tend to specialise in either broilers or eggs, and broiler units are especially common. Broilers grow very rapidly and typically reach a live weight of about two kilograms in just under 40 days. The market for small poultry units consists mainly of the neighbourhood. Medium-scale units have to access additional markets to ensure that the birds are sold as soon as possible after reaching their target weight. Delay in the sale of market-ready birds reduces gross margins. Access to markets, both input and output, tends to be the most important constraint to the financial sustainability of poultry unit enterprises.

In 2004, a survey of household consumption of poultry products was conducted in the area around Thohoyandou (Ralivhesa and Van Averbeke, 2005). Broadly speaking, the boundary of the study area was located at a distance of 10 kilometres from the centre of Thohoyandou, but minor adjustments were made to take into account spatial features of the physical landscape that were thought to limit (e.g. mountain range) or facilitate (presence of a tarred road) access to Thohoyandou. The instrument used in the household consumption survey took into account household income and sampling was stratified into urban and rural.

The results of the 2004 household consumption survey showed that on average, rural households consumed five dozen eggs per month and 11.6 kilograms of chicken, of which 5.6 kilograms was purchased in the form of live birds. Urban households also consumed five dozen eggs on average and 14.2 kilograms of chicken, of which 6.0 kilograms was purchased as live birds. It was estimated that the 67 231 households residing in the study area annually consumed 4.6 million chickens, of which 2.1 million were purchased as live birds. Annually, they also consumed about 48.4 million eggs.

In 2005, an audit was done of small-scale poultry enterprises that used the unit system in the area around Thohoyandou. The results of the audit are presented in Table 15.1.

Following the audit, a survey of a sample of poultry production enterprises was done (Ralivhesa et al., 2006). The survey showed that broiler enterprises more or less used the same production system across the different size categories. In terms of production costs, there was no real evidence of economies of scale except for heating, where costs were proportionately lower for larger units. The mortality rate was also inversely related to scale. On average, the mortality rate was 17% in small enterprises, 10% in medium enterprises and 1% in large enterprises. Marketing practices and prices differed among the size categories. Small enterprises marketed directly to consumers at an average price of R29 per bird. Medium enterprises marketed to both consumers (R25 per bird) and to traders who purchased in bulk at R23 per bird. Sales directly to consumers at R25 per bird represented a minor proportion of the sales of large enterprises. The bulk of their sales were to fairly large traders at R20 per bird. As a result, enterprise size did not really affect financial sustainability of broiler enterprises, because while larger units enjoyed modestly lower unit costs, they were also compelled to sell on average at modestly lower prices.

As with broiler units, layer units also more or less practised the same production system across the different size categories. There was evidence of economies of scale because production costs increased as scale was reduced. An inverse relationship with scale also applied to mortality rates and productivity. The average mortality rate was 5% in micro enterprises, 2% in small enterprises and less than 1% in medium enterprises, and on average hens produced 25 dozen eggs per year in micro enterprises and 29 dozen in small and medium enterprises. Micro enterprises charged slightly less for a dozen of eggs (R7.80) than small and medium enterprises (R8.40) but slightly more for a cull (R27.50 per cull in micro enterprises versus R25 per cull in small and medium enterprises). Micro and small enterprises also derived income from the sale of manure (about R8.50 for a 50 kilogram grain bag filled with manure), whilst owners of the medium enterprises that were sampled all used the layer manure in their own cropping enterprises. In terms of financial sustainability, micro layer enterprises were by far the most vulnerable of the three size categories of layer enterprises.

Using the information in Table 15.1 and the results of the household consumption survey, it was estimated that smallholder poultry units within the study area annually produced 300 000 birds (6.5% of total household consumption) and 112 120 dozen eggs (2.7% of total household consumption).

## Table 15.1: Number of poultry enterprises in the various size categories in the Thohoyandou area (n=71; 2005)

| Number of birds per production cycle | Broiler production enterprises (number) | Layer production enterprises (number) |
|---|---|---|
| Micro (< 50) | * | 11 |
| Small (50-199) | 10 | 5 |
| Medium (200-1 999) | 42 | 2 |
| Large (>2 000) | 1 | 0 |
| Total | 53 | 18 |

Source: Ralivhesa et al., 2006.

*Information on micro broiler enterprises was not available. Consequently, even though this category of broiler units may have been present in the study area, they were not included in the audit.

On the whole, the results of the 2005 survey suggested that these poultry unit enterprises were financially viable, successful ventures, but before such a conclusion could be reached there was need for a longitudinal study. This warranted the conduct of a case study in the same study area. The sharp increases in the cost of feed, energy and chicks during 2008 presented an interesting change in the circumstances of production, which offered an ideal opportunity to assess the sustainability of these enterprises and to identify the strategies they had adopted to cope with the changes.

### Methods

The common methodology developed for the case studies was such as to preclude the conduct of a simple follow-up visit to the enterprises that were surveyed in 2005, i.e. using the same survey instrument to collect data. To some extent, this was fortunate, because one of the methodological weaknesses of the 2005 poultry unit survey was that enterprise budgets were compiled by means of interviews with owners or managers. When analysing the data, anomalies were identified for some of the enterprises and these cast doubt on the trustworthiness of the entire body of data. Consequently, the decision was made to limit the study to broiler enterprises only and to survey a smaller number of elements.

For the purposes of the current case study, 16 broiler enterprises were selected purposively so as to represent the full spectrum of enterprises in the same study area as for the 2005 enterprise survey. Enterprise budget information was obtained by combining interviews with owners, managers or representatives of the enterprises with the inspection of enterprise records. In addition, data were not collected for a single (average, normal, typical) production cycle as was the case in 2005, but for an entire production year (1 July 2007 to 30 June 2008). Several enterprises kept full records for each cycle (batch), which assisted application of the new method of data collection greatly. In other cases, the enterprise budgets were constructed painstakingly in collaboration with producers, primarily by sorting through boxes of receipts.

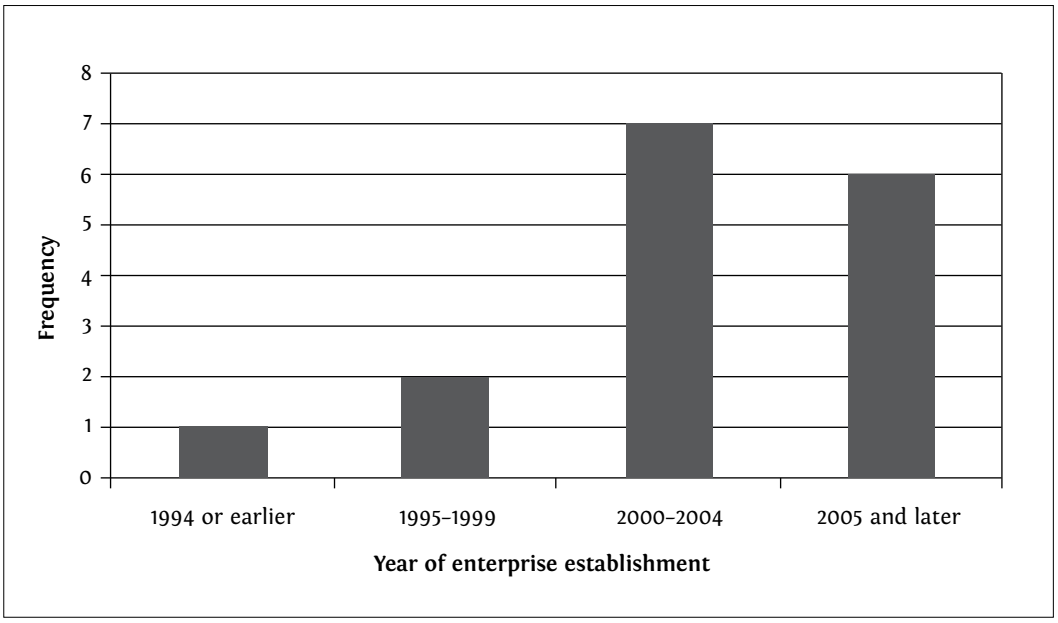
## Historical perspective

Smallholder broiler enterprises in Vhembe are mostly new-millennium developments. Only three of the 16 enterprises included in the sample were established before 2000 (Fig. 1).

The broiler projects consisted of both individually-owned and group projects. Table 15.2 summarises the ownership and origin information of the 16 enterprises that were sampled.

The origin of nearly all 16 enterprises was unemployment and the need to generate income.

**Figure 15.1: Year of establishment of smallholder broiler enterprises (n=16; 2008)**



# Table 15.2: Origin of smallholder broiler enterprises in Vhembe (n=16; 2008)

| Case | Type of project | Gender and class of owner(s)* | Name and origin of the enterprises |
|---|---|---|---|
| 1 | Individual | Female, single mother, 2 children, very poor | The Nephulu Broiler Farm started as a micro-layer project that was established with public funds (Limpopo Department of Agriculture). Proceeds from asset disposal (culls) were invested in a broiler unit. |
| 2 | Individual | Male, married policeman, not poor | The Tshitimbi Broiler Farm was started in 1993 by the father of the owner. After returning from Gauteng, the owner first worked in his father's broiler enterprise, was then handed the business and developed it. Has since joined the police. His spouse now runs the broiler enterprise. |
| 3 | Individual | Female, married mother, 4 children, poor | The Netshikulwe Broiler Farm was started by the female spouse to add to husband's wage income. |
| 6 | Individual | Male, single who lives with parents, not poor | The Dzivhani Poultry Farm was started by a university graduate who after failing to find work started to sell live cull hens and produced eggs on a small scale to generate income. Later on he switched to broiler production. |
| 9 | Individual | Male, married, 3 children, poor | The Nyadenga Broiler Farm was started by a migrant worker who returned home and ultimately found work in a broiler project. He subsequently started his own business by renting the facility of another individual who discontinued production following a disastrous batch. |
| 11 | Individual | Male, not poor | The Tamisani Poultry Farm is run by a man who rents the facility from a collapsed group project. Nothing is known about the man's status. |
| 12 | Individual | Female, not poor | The Mulondi Poultry Farm was started by a young educated female who, after failing to find work, started her own broiler enterprise using a Land Bank loan. |
| 13 | Individual | Male, poor | The Mamilasigidi Poultry Farm was started by an uneducated female migrant worker who following her return home engaged in various small-scale rural business ventures, including broiler production. |
| 15 | Individual | Female, widow, 6 children, poor | The Netshiongolwe Poultry Farm was started by a widow who combined motherhood with small income generation projects and ventured into broiler production. Her brother, a medical doctor in Gauteng, financed the infrastructure on her new farm. |
| 4 | Group | 9 females, poor | The Iyaphanda Co-operative started as a self-help initiative by 27 participants that obtained funding from Department of Health and Welfare to establish a broiler enterprise. |
| 5 | Group | 1 male, 1 female, poor | The Mega Poultry Project was to be the show-case of the Department of Health and Welfare. It started with 14 members, collapsed and was then revived by two members of the group. |
| 7 | Group | 7 females, very poor | The Tshamutilikwa Poultry Project was a poverty alleviation project initiated by 15 women. It remained very small until it obtained modest funding from the Department of Health and Welfare. |
| 8 | Group | 12 females, very poor | The Kondelela Poultry Project was started by 33 women to alleviate poverty. It obtained funding from the Department of Health and Welfare. |
| 10 | Group | 9 females, poor | Vhuawelo started as a home-care initiative that added broiler production to its activities to raise the income of members. |
| 14 | Group | 4 males, 6 females, very poor and poor | The Lwamondo Farmer and Service Project was started by 10 people to create employment. It rents its poultry house. It has not been funded. |
| 16 | Group | 6 females, poor | The Thusashulaka Poultry Farm was started by 13 people to alleviate poverty. It received modest funding from the National Development Agency and the Department of Agriculture. |

* Categorisation of class in "very poor", "poor" and "not poor" refers – somewhat impressionistically – to the time when the broiler enterprise was started and may not reflect the current status.

Generally, people who started broiler projects were poor or very poor, but several of the owners of individual projects have since improved their financial status and are no longer poor.

Four of the nine individually-owned projects were started by migrant workers who returned from Gauteng, following retrenchment or dissatisfaction with the kind of work they were able to find. Six of the nine individually-owned projects started as small enterprises that were expanded over time. Gender appeared not to be a factor in starting individually-owned broiler enterprises as both men and women had started such projects. Two of the nine individually-owned projects were started by obtaining access to disused facilities through renting.

Five of the seven group projects were started as community-based poverty alleviation and employment creation initiatives that succeeded in obtaining funds, mostly from public agencies, to acquire infrastructure and in some instances even the necessary working capital for the first production cycle. Group projects were dominated by women.

## Natural and physical resources

Central to broiler production is the broiler house, which needs to provide the desired environment for the growth of the broiler chicks. During the first three weeks of growth, called the brooding period, conditions need to be warm, which means that heating is necessary, especially during the winter period. Thereafter ventilation becomes very important to maintain fresh air and avoid excessively high temperatures, which cause heat stress. The provision of water and feed are also critical for optimum growth. The provision of sufficient drinkers and feeders ensures that these are available to all the birds all of the time. Lastly, there is a need to provide artificial light, because darkness slows growth. Usually this is achieved by means of electric light bulbs. Table 15.3 provides a summary of the main attributes of the broiler houses that were found in the 16 projects.

The terminology used to categorise the broiler houses in Table 15.3 was as follows:

- "Rudimentary" refers to a house that was constructed using home-made, waste or second-hand materials (Figure 15.2, upper left). Functionally rudimentary houses tend to be sub-standard because of poor ventilation or insulation.
- "Elementary" refers to a house that is functionally more or less adequate but the materials used tend to be of fairly low quality (Figure 15.2, upper right).
- "Comprehensive" refers to a house that is functionally adequate but it differs from the sophisticated house in terms of durability and cost of the materials used (Figure 15.2, lower left).
- "Sophisticated" refers to a house that is built using durable and expensive materials and that enables high levels of environmental control (Figure 15.2, lower right).

Broilers are space-efficient and can be housed at densities of up to 15 birds/m$^2$. Practically, this means that a 3 metre by 3 metre room can accommodate 100 chickens from day-old to market readiness. The space efficiency of the production system enables rural people to site small-scale production units on their residential plots, but typically as they grow their enterprises the use of residential land becomes problematic, not only from the perspective of available space but also from an environmental perspective. Broiler units are smelly, especially during summer, and this upsets neighbours (see Case 2).

There were important differences between individually-owned and group-owned projects in terms of average capacity and average cost of the broiler infrastructure. Individually-owned projects tended to have a greater capacity (2561 birds on average) than group-owned projects (1586 birds on average), but the average cost of the infrastructure in group projects (R187 783) was 5.6 times higher than that in individually-owned projects (R33 393). Expressed as a cost to capacity ratio (cost of infrastructure per bird), the contrast between the two types of projects was even greater. In the case of individually-owned projects, the average cost of infrastructure was R13.04 per bird, whilst in group projects it was R118.40. The difference can be largely attributed to the fact that a number of the group-owned projects had received relatively copious material support from public agencies.

## Production system

Across the 16 enterprises the production system being used was highly standardised. Day-old

## Table 15.3: Summary attributes of the broiler houses used in smallholder broiler production in Vhembe (n=16; 2008)

| Case | Number of houses | Total capacity (batch size) | Estimated total cost (Rand) | Categorisation |
|---|---|---|---|---|
| Individually-owned enterprises | | | | |
| 1 | 1 | 200 | 3 000 | Rudimentary |
| 2 | 3 | 3 000 | 72 000 | Elementary |
| 3 | 2 | 1 600 | 30 000 | Elementary |
| 6 | 1 | 400 | 2 250 | Rudimentary |
| 9 | 1 | 1 500 | Rented | Elementary |
| 11 | 4 | 10 000 | Rented | Sophisticated |
| 12 | 2 | 900 | 22 000 | Elementary |
| 13 | 1 | 450 | 4 500 | Rudimentary |
| 15 | 3 | 5 000 | 100 000 | 1 elementary and 2 comprehensive |
| Mean | 2 | 2 561 | 33 393 | |
| Group-owned enterprises | | | | |
| 4 | 2 | 2 700 | 160 000 | Comprehensive |
| 5 | 2 | 5 000 | 880 000 | Sophisticated |
| 7 | 1 | 700 | 27 500 | Elementary |
| 8 | 3 | 1 800 | 127 000 | 1 rudimentary and 2 elementary |
| 10 | 1 | 500 | 75 000 | Sophisticated |
| 14 | 1 | 100 | 1 200 | Rudimentary |
| 16 | 1 | 300 | 43 780 | Comprehensive with three partitions |
| Mean | 1.5 | 1 586 | 187 783 | |

## Figure 15.2: Categories of smallholder broiler houses found in Vhembe

Rudimentary broiler house

Elementary broiler house

Comprehensive broiler house

Sophisticated broiler house

broiler chicks, usually of the Ross breed, are purchased from commercial hatcheries and are supplied to the units in boxes of 100 chicks, either directly or through intermediation by the Vhembe District office of the Limpopo Department of Agriculture in Thohoyandou.

The Ross breed was developed to grow very rapidly. When conditions are optimal, day-old Ross broilers can attain a live weight of 2 kilograms after 38 to 40 days. They have been bred to eat much more than other chickens and this trait has certain negative side effects, such as susceptibility to leg problems and the sudden death syndrome. Leg problems are expressed as struggling to get up and move around. The sudden death syndrome, also called 'flip over', is essentially the result of birds eating themselves to death.

To achieve optimum growth rates the birds are subjected to ad libitum, phased feeding. This means that the birds are allowed to eat as much as they want and that the composition of the feed is modified as the birds grow. Normally, the birds are fed a high (22%) protein diet called the 'starter' diet, which may be offered in mash or pellet form, during the initial three weeks of growth. During the fourth and fifth weeks, the birds are then put on a medium (20%) protein diet called 'grower' diet and during the last week they are fed a low (19%) protein diet called 'finisher' diet. All producers applied phased feeding but they all tended to have their own schedule, with some only using two phases, namely starter and finisher. Without exception the 16 enterprises sourced their feeds from commercial suppliers.

To minimise the effects of stress, the birds are sometimes provided with extra vitamins after arrival in the units. Health management is essential because the birds are very susceptible to diseases. Day-old chicks arrive inoculated against important poultry diseases, such as the infamous Newcastle disease, and during production in the units their immunity is boosted by providing vaccines through the drinking water. The provision of medicines becomes necessary when the birds get ill. Health management also involves the prevention of infections by means of disinfecting shoe-baths at the entrance to the units and the cleaning, disinfection and resting of the facility between batches.

## Economic aspects

Average budgets for the two types of broiler projects are presented in Table 15.4. Budgets for the individual enterprises appear in Table 15.5.

### Production costs

Total production cost per chicken ranged between R19.28 and R31.22 in individually-owned projects and between R19.62 and R30.71 in group-owned projects (Table 15.5). The average total production cost was R23.49 per broiler in individually-owned projects and R23.10 in group-owned projects. Table 15.4 shows the purchase of day-old chicks (about 21% of the total cost of production) and feed (about 69% of the total cost of production) to be the two major production costs. The interviews revealed that owners made limited use of the discount opportunities that arise from bulk purchases. Some of the enterprises that had a capacity that exceeded 1000 chickens operated contracts with a Gauteng-based hatchery. This contract stipulated that chicks had to be purchased in quantities of 1000 or more and in return the client received a discount of R10 per box of 100 chicks purchased. Collaboration among small enterprises to make up the numbers to take advantage of this discount appeared rare and inconsistent, possibly because of difficulty in synchronising timing of re-stocking. There were also opportunities to negotiate discounts on bulk feed purchases (5 tons or more), but only one instance was identified in which this opportunity was exploited, even though the discount was substantial (R30 per 50 kilograms of feed).

During the interviews, two factors that affected variability in production costs were identified, namely mortality rate and the period the chickens remained in the house after reaching market readiness. Both factors deserve attention as they appear to affect the economic sustainability of smallholder broiler enterprises in the study area.

### Mortality rate

A chicken that dies before it is sold represents a financial loss because the costs of the inputs the chicken had consumed until the time of its death, as well as of the chick itself, cannot be recovered. In commercial broiler production the mortality rate is considered too high when it exceeds 10%. Table 15.5 shows that during the July 07 to June 08 production year, the average

## Table 15.4: Average farm budget for individually-owned and group-owned broiler enterprises (July 07-June 08)

| Input per chicken | Individual (n = 9) | | Group (n = 7) | |
|---|---|---|---|---|
| | Rand | % | Rand | % |
| Day-old chick | 5.09 | 21.67 | 4.74 | 20.52 |
| Feed | 16.04 | 68.28 | 15.86 | 68.66 |
| Transport | 0.53 | 2.26 | 0.69 | 2.99 |
| Sawdust | 0.45 | 1.92 | 0.61 | 2.64 |
| Energy | 0.41 | 1.75 | 0.38 | 1.65 |
| Medicines and disinfectants | 0.34 | 1.45 | 0.67 | 2.90 |
| Labour | 0.60 | 2.55 | 0.00 | 0.00 |
| Rent | 0.22 | 0.94 | 0.00 | 0.00 |
| Maintenance | 0.00 | 0.00 | 0.15 | 0.65 |
| Total production cost | 23.49 | 100.00 | 23.10 | 20.52 |
| Gross income | 29.20 | | 27.35 | |
| Gross margin | 5.71 | | 3.76 | |
| Total number of birds produced | 9 533 | | 4 114 | |
| Mortalities (%) | 6.8 | | 14.5 | |
| Net income (July 07-June 08) (Rand) | 43 484 | | 13 528 | |

mortality rate in individually-owned broiler enterprises ranged between 2.7% and 9.5%, with an overall average of 6.8%. In group-owned projects the average mortality rate ranged between 4.2% and 38.0%. Three of the seven group-owned projects recorded average mortality rates in excess of 10% and the overall average of 14.5% was also well above the industrial tolerance limit. Scrutiny of the full enterprise budgets of the individual projects shows that high mortality rates were characteristic of some of these projects, such as the Khondelela Project (Case 8), but not of all. Take for example, the group-owned enterprise called the Lyapandha Co-operative (Case 4). It produced 11 batches of chickens during the July 07 to June 08 production year. In 10 of these 11 batches the mortality rate varied between 1.75% and 6.25% and the average was 3.6%, which was excellent. However, the November 2007 batch was a disaster with a mortality rate of 41.7%. Some of the individually-owned projects experienced similar events. For example, the Tshitimbi Broiler Farm (Case 2), the oldest of all 16 enterprises with an average mortality rate of 7.2%, experienced a mortality rate of 30% in its November 2007 batch of 3000 chickens. By comparison, the average mortality rate in the other 11 batches was only 2.4%, indicating the excellent performance of this farm. Indications were that group projects found it more difficult to recover from setbacks than individual projects. High mortality rates are expected to reduce the average cost of feed per chicken as fewer chickens have to be raised to market readiness. This could possibly explain why the average feed cost of group-projects was 18c lower than that of individually-owned projects (Table 15.5). The higher overall average mortality rate experienced by group projects was mostly reflected in the lower gross income per chicken because this parameter was calculated using the batch sizes as reference. Overall average gross income per chicken in individually-owned projects was R1.85 more than in group projects.

### Duration of stock clearance

Once chickens have reached market readiness they need to be sold as soon as possible. After six weeks the growth rate of the birds declines but the birds' feed intake remains high as their maintenance requirement increases with growth. Keeping the birds longer than necessary erodes the gross margin even though the cost of their extended stay is partially recovered by charging higher prices. There was no evidence that individually-owned projects cleared their stock faster than group projects as both identified this to be a major challenge.

## Table 15.5: Production costs, gross income and gross margin per bird in 16 smallholder broiler enterprises in Vhembe (n=16; 2008)

| Input per chicken (Rand) | Individually-owned broiler enterprises | | | | | | | | | | Group-owned broiler enterprises | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 6 | 9 | 11 | 12 | 13 | 15 | Mean | 4 | 5 | 7 | 8 | 10 | 14 | 16 | Mean |
| Chicks | 5.09 | 5.03 | 5.71 | 4.70 | 5.30 | 5.15 | 4.98 | 4.98 | 4.90 | 5.09 | 5.01 | 4.78 | 4.73 | 4.79 | 4.50 | 4.74 | 4.60 | 4.74 |
| Starter feed | 2.11 | 4.32 | 4.13 | 2.36 | 4.64 | 3.74 | 2.09 | 3.55 | 3.44 | 3.38 | 3.85 | 5.83 | 4.20 | 4.15 | 2.08 | 4.19 | 3.57 | 3.98 |
| Grower feed | 2.01 | 9.30 | 8.07 | 2.01 | 5.59 | 6.31 | 6.87 | 4.89 | 1.43 | 5.16 | 0.00 | 1.10 | 3.80 | 4.88 | 3.91 | 4.40 | 4.36 | 3.21 |
| Finisher feed | 18.62 | 0.00 | 3.85 | 17.45 | 4.97 | 4.87 | 4.62 | 4.09 | 8.99 | 7.50 | 19.58 | 9.30 | 6.50 | 5.13 | 6.75 | 3.92 | 9.49 | 8.67 |
| Transport | 1.22 | 0.23 | 0.24 | 0.62 | 0.15 | 0.22 | 0.72 | 0.93 | 0.43 | 0.53 | 0.37 | 0.27 | 1.05 | 0.16 | 0.56 | 1.76 | 0.65 | 0.69 |
| Sawdust | 0.97 | 0.08 | 0.30 | 0.48 | 0.31 | 0.47 | 0.36 | 0.93 | 0.18 | 0.45 | 0.22 | 0.55 | 0.38 | 0.25 | 0.94 | 0.96 | 0.95 | 0.61 |
| Energy | 0.64 | 0.20 | 0.13 | 0.53 | 0.44 | 0.40 | 0.17 | 0.46 | 0.74 | 0.41 | 0.52 | 0.29 | 0.68 | 0.03 | 0.56 | 0.26 | 0.30 | 0.38 |
| Medicines and disinfectants | 0.56 | 0.13 | 0.32 | 0.54 | 0.34 | 0.13 | 0.28 | 0.59 | 0.19 | 0.34 | 0.17 | 0.30 | 0.57 | 0.22 | 1.68 | 1.14 | 0.63 | 0.67 |
| Labour | 0.00 | 0.00 | 0.00 | 0.00 | 1.54 | 1.00 | 1.79 | 0.00 | 1.10 | 0.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rent | 0.00 | 0.00 | 0.00 | 0.00 | 1.10 | 0.90 | 0.00 | 0.00 | 0.00 | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Maintenance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.04 | 0.00 | 0.15 |
| Total prodn cost | 31.22 | 19.28 | 22.76 | 28.68 | 24.39 | 23.19 | 20.08 | 20.42 | 21.41 | 23.49 | 30.71 | 23.42 | 21.90 | 19.62 | 20.99 | 23.91 | 24.55 | 23.10 |
| Gross income | 35.03 | 23.77 | 28.53 | 36.87 | 30.34 | 26.41 | 27.90 | 28.45 | 25.52 | 29.20 | 30.91 | 29.92 | 30.13 | 21.27 | 29.08 | 23.22 | 26.94 | 27.35 |
| Gross margin | 3.80 | 4.49 | 5.77 | 8.19 | 5.95 | 3.22 | 7.82 | 8.03 | 4.11 | 5.71 | 0.20 | 6.50 | 8.23 | 1.65 | 8.09 | -1.14 | 2.39 | 3.76 |
| Total birds produced (no) | 1400 | 21500 | 9700 | 1900 | 3400 | 31500 | 5600 | 2100 | 8700 | 9533 | 8400 | 9600 | 1200 | 7100 | 900 | 600 | 1000 | 4114 |
| Mortalities (%) | 7.4 | 7.3 | 5.8 | 2.7 | 8.1 | 8.9 | 4.6 | 7.2 | 9.5 | 6.8 | 9.2 | 5.9 | 10.2 | 22.1 | 11.9 | 38.0 | 4.2 | 14.5 |
| Net income for the year (Rand) | 5321 | 96436 | 55955 | 15560 | 20222 | 101434 | 43769 | 16865 | 35790 | 43484 | 1685 | 62425 | 9873 | 11733 | 7280 | -686 | 2389 | 13528 |

### Marketing and sales

Smallholder broiler enterprises sell their birds in two ways, namely to individual customers and to hawkers. Selling to individual customers has the advantage of being able to charge high prices, but sales tend to move slowly. Selling to hawkers has the advantage of being able to sell large numbers of birds at once, but hawkers demand substantial discounts. Typically hawkers operate bakkies that are equipped with cages for the transportation of chickens. They move around daily and target places of likely sales, such as pension pay-out points.

Marketing of the birds is done by word of mouth, by advertising availability of chickens using posters at the entrance of the enterprise, by informing hawkers and by phoning to a weekly radio programme on a local radio station that allows smallholders to advertise their produce free of charge.

The prices enterprises charged for their chickens varied from R21 to R45 per bird. Price was affected by the type of customer (individual consumers or hawkers), the size of the bird and the presence of competition (remoteness tended to increase the price).

Broiler litter was another source of income for some of the enterprises. Empty feed bags were filled with litter and sold to gardeners and crop farmers. For example, during the July 07 to June 08 production year, the Tshamutilikwa Poultry Project (Case 7) produced 1400 chickens and generated R294 from the sale of broiler litter at R7.00 per bag. Income from the sale of litter contributed 0.8% of the total gross income of this enterprise.

### Overall economic performance

The information that was collected on the economic performance of the 16 enterprises indicated that smallholder broiler projects in Vhembe are economically viable enterprises. Those cases that were not performing particularly well had experienced one or more batches in which the mortality rate was exceptionally high. There were reasons to believe that the quality of the day-old chicks delivered to projects during October and November 2007 was suspect. Individually-owned enterprises appeared to be more resilient to setbacks caused by exceptionally high mortality rates than group projects.

## Livelihood significance

From a livelihood outcome perspective, the difference between individually-owned and group-owned broiler enterprises was striking. Without exception individual owners obtained considerable financial benefit from their enterprises, with several relying entirely on their enterprises for their livelihood (Cases 1, 6, 9 and 12). In four of the nine cases, the enterprises even provided livelihoods for others through employment (Cases 9, 11, 12 and 15). Group projects, on the other hand, stood out for the absence of livelihood benefits to participants. With the exception of the Tshamutilikwa Poultry Project, where members received a single payment of R400 each during the production year under consideration and also received up to five birds each for both Easter and Christmas, responding members of the other group projects were adamant that so far they had not received any material benefit from participating in their broiler projects. The total gross margin data for the production year under consideration (Table 15.5) show that in three enterprises (Cases 4, 14 and 16) there was nothing or very little to distribute among members. Another three enterprises (Cases 7, 8 and 10) recorded gross margins ranging between R7280 and R11 730 for the year, which would have allowed for the payment of at least one modest dividend, but this did not occur. One group enterprise (Case 5), achieved a gross margin of R62 245, but this was a project that had been revived recently and the two members running it were probably building up a financial reserve.

The exact reasons for the sharp contrast between individually-owned and group-owned enterprises in terms of livelihood impact can only partially explained by differences in the economic performance, including differences in capacity and productivity. Further research is needed to pinpoint the constraints that limit the livelihood benefits participants in group projects obtain. In some cases participants claimed to have been engaged in broiler production for seven years without obtaining any material reward for their labour and this begs for an explanation.

## Social and institutional dimensions

Socially, smallholder broiler projects appeared to be well embedded in their local settings even though residents complained about the smell of enterprises that were located on residential

sites in their midst. Important to group-owned projects were internal social relationships, but only limited attention was awarded to the investigation of the social arrangements that guided collaboration and management of the enterprise. Considering the public and private investments that have been made in these projects and the lack of material benefits accruing to members of these projects from participation in the enterprise (in one case no benefits after seven years of production), this aspect begs for additional research. Only in one group enterprise (Case 5) was corruption mentioned as a factor that had affected performance.

The support system being provided by the Department of Agriculture and other public and private institutions in Vhembe was considerable and seemingly quite effective. The Department facilitates the purchase of quality day-old chicks using a system of bank deposits and bulk ordering. People interested in purchasing chicks deposit the purchase price in the bank account of the hatchery and present the deposit slips to a dedicated staff member of the Department of Agriculture in Thohoyandou. Here orders are communicated to the hatchery and within one week the order is delivered to the Departmental Officer, who informs clients of the date and time of arrival of their orders. Clients collect the chicks from the Office in Thohoyandou. The Department claims to ensure quality of the chicks being delivered. The dedicated staff member is also the District expert in poultry production, whose sole responsibility is to provide producers with technical advice and to organise training and special occasions (farmers' days) at which national experts present lectures on poultry production. Training, which is offered free of charge, is done through the Madzivahdila College of Agriculture, which is located about 10 kilometres from Thohoyandou. The six-week training programmes combine theory and practice, with trainees being guided through a complete broiler production cycle. At the local level, producers can also obtain information from the village extension officer. As indicated, a local radio station, Phalaphala FM, has a weekly programme at 5:30 am on which smallholders can advertise their produce.

Several donors, both public and private, have funded smallholder broiler development in the District, but donations are limited to group projects. The interviews indicated that individuals who have sought financial assistance to establish or expand their broiler infrastructure depended on the Land Bank or family members. Groups on the other hand have been supported by a wide range of donors. The interviews indicated that the Department of Health and Welfare was the main public agency that rendered financial support for the objective of poverty alleviation. Other public funding agencies included the Department of Economic Development and the Department of Agriculture. The Department of Agriculture was claimed to fund about three applications per year. Selection of the projects was said to be primarily based on evidence of commitment to succeed among the applicants. Private and parastatal donors included Eskom, the National Development Agency and Old Mutual.

Tenure arrangements that applied to the land on which broiler enterprises were established were entirely traditional. Tribal leadership in the form of the village headman were responsible for the allocation of residential sites on which most of the individually-owned projects were located. Group projects were mostly located on tribal farmland with the headman responsible for initial allocation and in some cases the chief and the municipality endorsing the allocation.

## Gender, class and human dimensions

There was no evidence of gender bias in broiler production because both men and women were found to have started such enterprises. However, it needs pointing out that group-owned projects had a membership that was dominated by women, not only from the start, but increasingly so over time. Men who joined group projects at the start tended to withdraw more readily from the projects when material benefits were not forthcoming.

The evidence that was collected suggested that individually-owned broiler enterprises were started by people from different walks of life, including very poor, poor and not so poor, educated and uneducated, young and old. Group-owned project, on the other hand, were dominated by poor and very poor women of variable age, usually married, who had not received much education. The reason for the dominance of this particular class in group-owned enterprises was that nearly all of these projects arose as poverty alleviation interventions. It needs pointing out that broiler production is a rather 'simple' activ-

ity because the system is applied following well-developed guidelines. Even without education it is still quite easy to learn the recipe of good practices that need to be applied to be successful.

## Perceptions of performance

Perceptions of performance reflected the economic performance of the different enterprises, and therefore also the contrast between individually-owned and group projects. Whereas not all owners considered themselves as entirely successful, most were conscious of the positive contribution their enterprises had made to their livelihood outcomes. Group projects mostly proceeded in the hope that circumstances and performance would improve in future.

## Policy environment

The current policy environment is particularly supportive of group projects, especially financially, but individuals do benefit from access to training, information and inputs in the form of day-old chicks. To what extent growth in smallholder broiler production can be sustained in Vhembe is not certain, but the Department of Agriculture believes that there is still considerable potential. Spatial analysis of the distribution of small-scale broiler enterprises with a view of avoiding high levels of competition could be added to the institutional support services on offer. One reason for believing potential still exists overall is the evidence provided above to the effect that smallholder broiler units within in the Thohoyandou area account for less than 7% of the area's total household consumption of birds.

## Environmental aspects

Air pollution was identified as a problem for enterprises that were located within residential environments. Facilitating the translocation of growing enterprises onto farmland was identified as a possible way to alleviate this problem.

## The future

The study of 16 smallholder broiler enterprises indicated that this type of enterprise has the potential of being economically viable. The developmental approach that is being used in Vhembe, particularly in terms of training and technical support, has a lot of merit and could be considered as a model for other Districts where human population densities are high. The problems identified with group-enterprises need additional research to identify why such projects fail to provide sustainable benefit streams to participants.

Individually-owned enterprises held realistic views of the future, seeking to improve the efficiency of their enterprises and associated activities. Group projects, on the other hand, had less realistic visions, with many identifying further expansion in capacity combined with the establishment of an abattoir as the way forward to sustainability and improved returns.

## Conclusions

The case study of a selection of 16 smallholder broiler enterprises in Vhembe served the objectives of the overall study into 'strategies to support South African smallholders as a contribution to government's second economy strategy' because it provided several examples of enterprises that had been established successfully in rural areas by people who had experienced difficulties becoming usefully integrated into the first economy. Broiler production, as it is applied by the enterprises that were included in the study, follows a well established production system that can easily be learnt, even by people with little or no education. It is the opinion of the authors that modification of the system to reduce economic leakages could further enhance the impact of these enterprises on village economies. At this stage, all the inputs are sourced externally. System modification could internalise most inputs, but this would require major change in terms of breed selection and also the adoption of crop production and processing systems that would enable local manufacturing of poultry feed.

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# 16 Munzhedzi restitution project, Limpopo: a restitution project that went wrong in a good way?

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## Introduction

Munzhedzi is a land restitution project located in Limpopo about 30 minutes east of Makhado town. Munzhedzi is one of the few land reform projects encountered in which the absence of deliberate planning or attempts to devise and adhere to a business plan are so extreme, that in a sense it is a model of land reform that is obvious but also uncommon. Because of its 'open access' aspect, Munzhedzi therefore reveals something about the strong demand for land for homestead purposes, whereas official policy tends to recognise housing on the one hand, and land for agricultural purposes on the other. How precisely to characterise this land demand is not altogether clear; it would appear that a large share of the residents are younger households whose heads saw the relatively cheap, well-located land as a good opportunity to move out of their parents' households. However, other people clearly seized the opportunity to move away from land that is inferior in terms of soil quality and rainfall predictability, e.g. the area south of the Soutpansberg ridge and west of the N1 (Kutama, Sentamule, etc.).

## Historical evolution

In July 1998, a chief by the name of T. J. Rambau lodged a claim with the Restitution Commission on behalf of the Munzhedzi community. The land had been dispossessed from the Munzhedzi people through various mechanisms between the mid-1930s and the mid-1960s. In 2000, while waiting for word on the fate of the community's claim, Chief Rambau learned that the local municipality intended to use some of the claimed land to enable the extension of Vleifontein Township. He then organised an 'occupation' by claimant and other households so as to prevent this. The occupiers immediately set about demarcating residential plots and constructing shacks.

In 2002, the Commission formalised the return of the land to the Munzhedzi claimants, who numbered 486 beneficiary households. The land is situated on the west of Vleifontein Township, about 5-10 minutes southeast of Elim along the Elim-Bandelierkop (R578) road. Prior to its settlement by the Munzhedzi claimants, it was vacant state land, though some of the Vleifontein residents grew crops there and residents of various neighbouring communities grazed their livestock there.

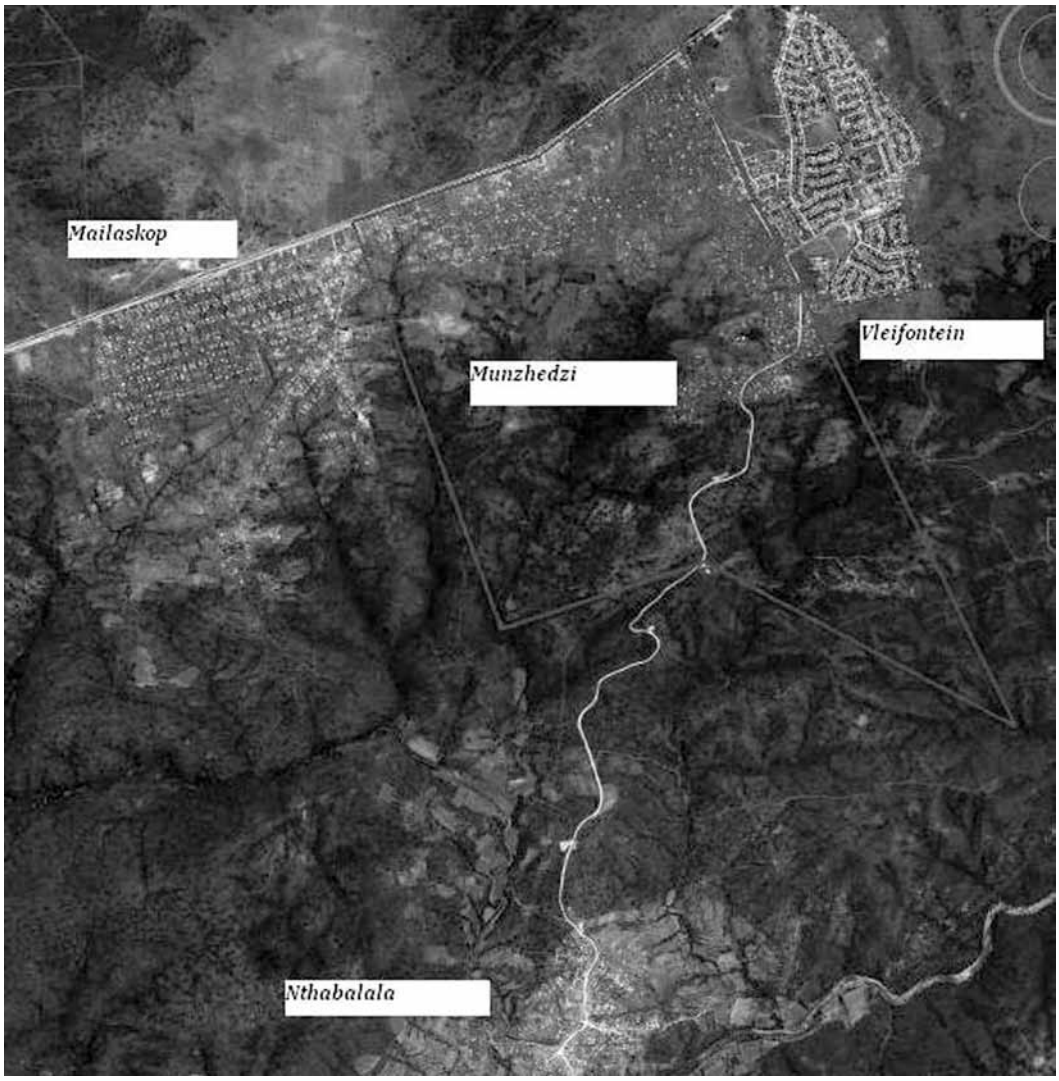
Although a communal property association (CPA) was formed in order to accept the property title and to manage the land, the CPA committee has never had any effectively meaningful function. When Chief Rambau died shortly after the restoration of the land, one of his sons took over as chief, and quickly set about demarcating plots to anyone who wanted one and could pay a modest fee (about R220 for claimant households and R320 for non-claimants). As of early 2008, there were 1160 demarcated residential plots. Of these, a total of 931 were occupied, of which 178 were occupied by claimant households and the others by non-claimant households. The vast majority (88%) of claimant households who settled at Munzhedzi relocated from Nthabalala, which is about 10 minutes' drive away over a hilly gravel road. While about a third of the non-claimant households also came from Nthabalala, another third came from other adjacent communities, and another third came from elsewhere, including some from other provinces and indeed other countries.

Why did people re-settle at Munzhedzi in such numbers? The fact that the chief allowed people to acquire plots at Munzhedzi merely explains what made it possible, but why did so many people choose to, despite the absence of services or any credible development plan? In answer to this question, people's responses fall into two categories, namely those who praise the fact that agricultural conditions are better at Munzhedzi than where they came from (in terms of being flatter and having better soil and rains), but roughly as many cite the fact that they are now closer to transport routes through which they have better access to piece jobs in Makhado. In essence, in terms of its settlement pattern and style of land use, Munzhedzi is a recreation of a communal area, but more favourably located and with better agricultural conditions than many. Communal water taps were only installed in 2007 (but frequently do not work), and neither electricity nor schools have been forthcoming.

## Natural and physical resources

The extent of the land is 1204 hectares. For roughly two decades prior to the settlement of the claim, the land had been unoccupied and largely unused. Rainfall averages 660 mm per year (versus e.g. 440 mm for Mara Research Station, located 56 kilometres to the west). Commercial farms in the immediate area are either cattle farms or irrigated orchards; grain farming has not taken place on a commercial scale in the area for several decades (*South African Weather Service, 2009)*.

## Figure 16.1: Satellite image showing location of Munzhedzi relative to other settlements



Within Munzhedzi, plots average 30x50 metres. In general, 60% of stands have homestead gardens, however about 15% of non-inhabited stands also have gardens. (The percentage of stands with gardens is highest for those parts of Munzhedzi which were settled earliest, possibly indicating that there tends to be a lag between settlement and using land for gardening; this in turn would imply that the overall percentage is likely to have risen and continue rising from the 60% figure estimate from earlier 2008.) Only a fraction of the land has been demarcated for residential use (see figure below), while an additional modest amount is being used by about 20 households on smallholdings outside/beyond their homesteads (mostly in the order of 0.5 to 1 hectare in size). The rest of the land is not being used for farming, though it is extensively used for the collection of firewood, thatch, wild foods, etc. The extent to which the 'excess' land at Munzhedzi is used for grazing livestock is not entirely clear, however the grazing is classified as sourveld and thus is not ideal for large stock husbandry.

The allocation of residential plots appears to have slowed, owing to the perception that the land is now full. In a recent interview with the chief, he indicated that he is no longer allocating plots, though other key informants imply that in fact the chief has been reallocating plots that had been allocated earlier but never settled, but not actually demarcating and allocating new plots.

The contradiction between the obvious fact that the land remains largely unoccupied, with the perception of community members that it is full, can be resolved by understanding that people have fairly strict ideas as to what parts of the land are desirable for settlement, and the key issue is proximity to a good road. The primary road is the Elim-Bandelierkop road (which is the more or less straight road that runs diagonally across the top of Figures 16.1 and 16.2), and secondly the road that passes Vleifontein township towards Nthabalala to the south. In other words, the road is the most significant physical resource next to the land itself, or perhaps one could say

## Figure 16.2: Satellite image showing pattern of settlement at Munzhedzi

that a plot is of value to the extent it is close to the road. Indeed, it is worth pointing out that there is no electricity, and communal water taps were installed a few years ago but function poorly. In choosing to move to Munzhedzi, many people effectively decided to sacrifice access to some of these services, in favour of being closer to a good road, but also to have a plot on relatively good land, however small.

## Production systems

Virtually all of the households who engage in gardening or farming at Munzhedzi grow maize on a rain-fed basis. Just under half of these households also grow other crops and vegetables, including sweet potatoes, tomatoes, beans, groundnuts, sugar cane; and some also maintain fruit trees such as mango and pawpaw.

Of 135 'agriculturally active' households interviewed in mid-2008, just over half hired tractor services for soil preparation (mainly from an adjacent land redistribution project), while the others relied exclusively on hand hoes. Of the latter, about a sixth hired labour to undertake (or assist with) land preparation. Most households who hire tractor services spend about R140 for this, however those with larger or multiple plots, or those with extra land outside the demarcated area, spend more. One individual hired donkey services, on which he spent R300. In terms of other inputs, 44% of households use at least some hired labour, virtually all purchase at least some of their seeds, 11% use chemical fertilisers, and only 2% use pesticides. It is worth noting that only five of these 135 households also practised agriculture on land outside of Munzhedzi.

A smaller number of households keep livestock at Munzhedzi, and these primarily within their homesteads. Altogether about one sixth keep chickens (overwhelmingly for home consumption), and a handful keep goats, pigs and cattle. Among the few households who keep cattle, the main reason however is for income-earning purposes, but the largest 'herd' observed is 20 (with the second largest being 5). There is a relationship between arable production and keeping of livestock, for example while 41% of those with gardens or fields keep livestock, only 14% of those without gardens do so. Only eight households incurred cash costs associated with livestock, generally for parasite control among those few with cattle. Only two households, being cattle owners, spent money on hired labour for livestock.

## Economic aspects

While all of the 135 'agriculturally active households' interviewed in mid-2008 incur some cash costs for inputs related to garden or crop production, only 6 (about 4%) had any cash income. This was by design rather than, say, because 2007/08 was a poor growing season (three quarters of respondents reported that it was a relatively good season). As mentioned above, by contrast only 8 households incurred cash costs associated with keeping livestock, versus the 5 who had cash income from livestock sales.

One way in which the economic significance of own production can be appreciated – especially in light of the emphasis placed on growing mealies – is by considering the extent to which households satisfy their own mealie meal needs. The figure below summarises, by looking at the percentage of households from the sample of 135 'agriculturally active' households. The figure shows that for 60% of households, own-produced maize in the 2007/08 season was sufficient to satisfy only 1 to 2 months' worth of mealie meal needs, while only about 5% actually produced a surplus. However, given that mealie meal accounts for about 9% of total household expenditure (i.e. despite some own production), it can be argued that own production of maize is potentially meaningful for marginal households.

As a more comprehensive measure of the economic significance of agricultural production at Munzhedzi (including garden/crop production as well as livestock production), we have estimated net farm income for the 2007/08 season. The calculation is incomplete in the sense that it does not seek to place a value on own (i.e. non-hired) labour, whereas it does seek to impute a value for production for own consumption, using market prices as proxies for 'value'. The figure below summarises the findings, distinguishing between those who hired tractor services for land preparation versus those who did not.

What the figure shows is that almost 15% of 'agriculturally active' households derived a negative net farm income in the 2007/08 season. Notably, however, almost all of these were those who hired tractor services, reflecting the fact that these services constitute one of the main cash costs among those who employ them. For another 20% of households, net farm income was less than R250, and again, these were dominated by those who hired tractor services. At the

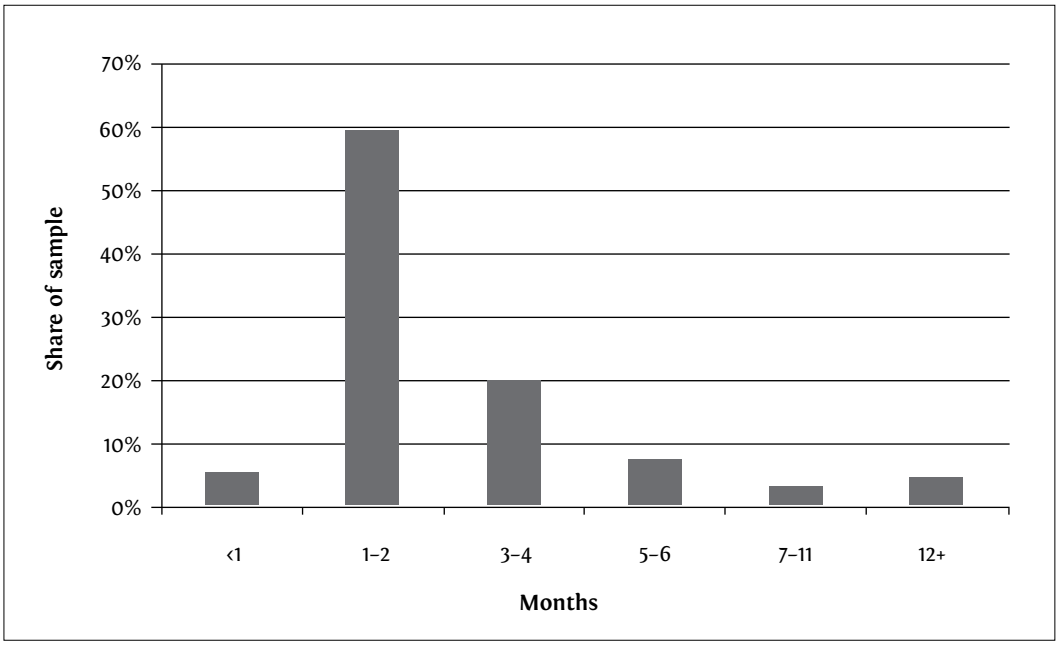
same time, however, those who hired tractor services predominate among the relatively few whose net farm income exceeded R1500.

## Livelihoods significance

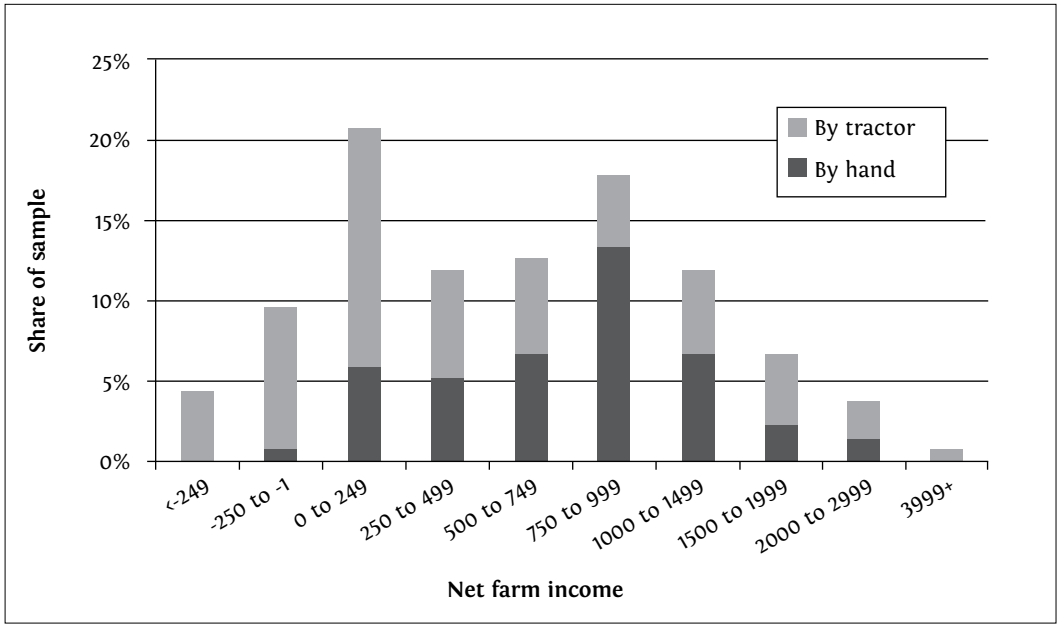
Agriculture is clearly not the most important component of people's livelihood strategies at Munzhedzi. In fact, according to the census of all households conducted in early 2008, only one household (representing 0.1% of all settled households), identified agriculture as its main source of (cash) income.

However, as noted above, generating cash income is not most residents' purpose in 'farming', particularly those who are gardening within their homestead stands. Thus 'imputed income'

## Figure 16.3: Distribution of estimated own-produced mealie meal expressed in terms of months of need



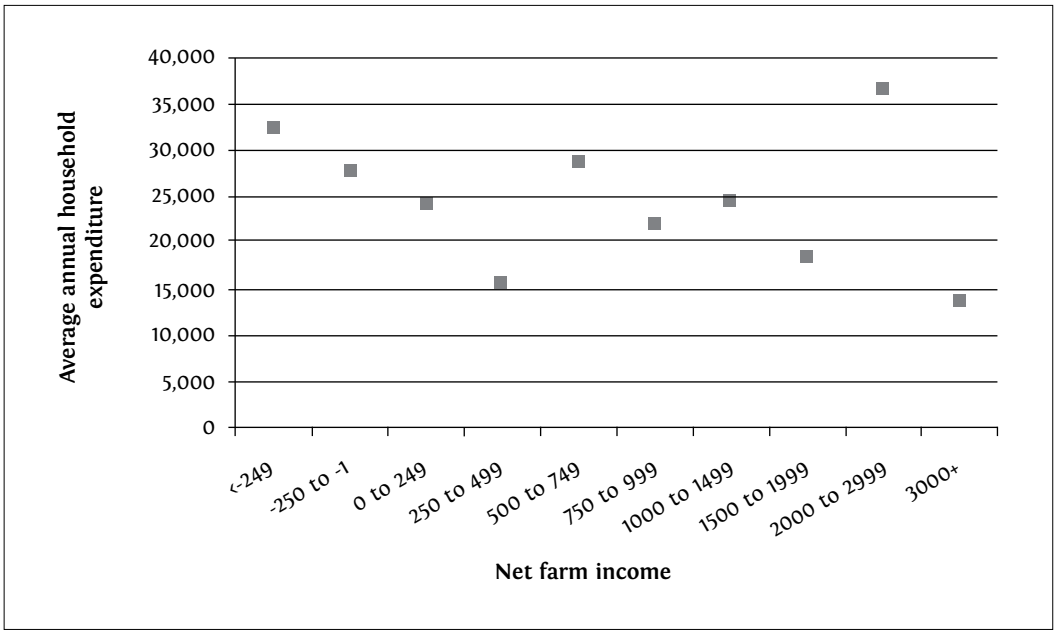

## Figure 16.4: Distribution of estimated net farm income, 2007/08



is of more interest. The figure below seeks to give an idea of the relationship between net farm income and average annual household expenditure, where the latter is a proxy for total household income. While the pattern is not very well defined, there appears to be a general negative relationship, i.e. higher economic benefits from agriculture are associated with lower total household expenditure/income. This runs counter to the often-told story that households derive more benefit from agriculture the better off they are in the first place, simply because it is easier for them to invest in inputs. Rather, with the exception of an outlier point for those households with net farm income in the R2000 to R2999 range, it seems that poorer households get more out of agriculture, presumably because they *need to*. It is not that the other logic does not also play a role, however it may be the case that Munzhedzi simply does not offer much opportunity for investing in agriculture, so agricultural participation is driven more by need than by opportunity.

An obvious reason for the fairly modest pay-off from gardening is the limited size of most of the gardens. Indeed, 60% of the 135 'agriculturally active' survey respondents indicated a need or desire for more land. The explanations captured in the survey for this desire to have more land tend to be opaque ("Because I am not satisfied by what I harvest"), however some give a clearer indication that the purpose of having more land would be to be able to pursue subsistence production on a (somewhat?) larger scale: "If I get more land I can farm and harvest better and stop buying food for a long time as it is expensive"; "Because what we harvest cannot support us for long time"; "Because if I have a big field, I can farm and get good harvest and stop buying

## Figure 16.4: Relationship between net farm income and average annual household expenditure




## Table 16.1: Main source of household 'cash' income (2008)

| | |
|---|---|
| Grants | 30% |
| Wages | 51% |
| Business/enterprise | 2% |
| Agriculture | 0.1% |
| Other | 9% |
| Combination | 8% |
| Total | 100% |

maize meal;" etc. What are absent are unambiguous declarations to the effect that the respondent wants more land to enable production on a commercial basis.

However, there is seemingly a contradiction between this predilection for having more land, and maintaining the sort of convenient 'peri-urban' lifestyle people have opted for. Many people at Munzhedzi would appear to be interested in accessing more land there so as to garden on a larger scale, which would imply larger homesteads, i.e. so that the land would be close. (The chair of the CPA Committee indicated that, had the chief not usurped the Committee's function of land allocation, then larger plots might have been created.) But this would imply either that many of the homesteads would end up further away from the main roads, or that there would be fewer homesteads, i.e. fewer households and people.

One other livelihood issue bears mentioning, namely that gardeners/farmers at Munzhedzi hire casual workers to undertake tasks related to crop or garden production. Our rough estimate is that the total amount spent on labour in the 2007/08 season was around R57 000; while this is not much in the greater scheme of things (it represents less than 1% of aggregate household expenditure/income among Munzhedzi's residents), it does equate to about 1600 person-days of work (at R35/day), which is not trivial.

## Social and institutional dimensions

Residents of Munzhedzi who garden or farm, do so on an individual household basis. The exceptions are two projects which were initiated by a local NGO (which also organised donor funding to cover start-up costs, e.g. for structures), of which one is a piggery and the other a broiler project. The piggery closed down within the first two years, while the broiler project is still carrying on, albeit with only a handful of households remaining active. While neither project was closely examined for the purposes of developing this case study, the impression generated is that they are typical of group agricultural projects, in which quality of management and ability to operate 'entrepreneurially' are weak. There is no sign of support from the provincial department of agriculture at Munzhedzi. Thus the vast majority of those involved in agriculture at Munzhedzi do so independently, and without outside support apart from informal support from neighbours, which is fairly common and mainly involves borrowing of hand tools. Neither is there evidence of residents cooperating in order to purchase inputs in bulk. As for milling services to turn maize grains into meal, virtually all maize growers at Munzhedzi rely on Hluvukani Mills, a business north of Elim which has an elaborate and efficient system of collecting maize from many of the villages in the area at specified points on pre-arranged days, after which it mills the grain (according to individuals' preferences) and returns the meal for a fee. Larger maize producers may however make other arrangements, for example with mills in Makhado town.

Arguably the biggest institutional issue at Munzhedzi is the discord between the current chief and the CPA committee. There are two consequences of the discord; first, as mentioned, the chief[24] feels free to allocate plots regardless of the CPA's (legally-based) objectives; and second, it is unclear who represents the community, for example to coordinate appeals to the municipality for improved services. Beyond this, there is another problem at Munzhedzi, in the form of a power struggle between the 'chief' and a headman who claims that part of Munzhedzi falls under his governance. This confuses the inhabitants of Munzhedzi, since some of them don't know if they fall under Nthabalala or under Munzhedzi.

Notwithstanding the fact that these are real issues, the discord does not flare up into nasty conflict, and most importantly there are no discernible simmering tensions between claimant and non-claimant households. Indeed, the degree to which people resettled at Munzhedzi from different places and for different reasons, and over such a brief period of time, and yet seemed to create a harmonious community, is almost uncanny. Neither focus group discussions with Munzhedzi claimants and non-claimants (which were conducted separated), nor the focus group discussion with claimants who had not re-located to Munzhedzi, nor discussions with the police stationed across the road in Vleifontein, turned up deep divisions or pervasive social problems within the community. However, there are indications that the one or two Zimbabwean households residing at Munzhedzi are victimised, though they refused to be interviewed so that we could hear their first-person accounts.

24 Another dimension of this story is that the chief's legitimacy is regarded by many as questionable. It is not doubted that he is the son of the late Chief Rambau, but he did not grow up in the chief's household and appeared to show up mainly in order to reap the benefits of allocating/selling plots. However, his legitimacy is not openly challenged by anyone.

## Gender, class and human dimensions

Thirty-eight percent of 'agriculturally active' households are women-headed. The average age of women household heads is 59 versus 46 for male household heads, a discrepancy which is usual given that a high proportion of women household heads tend to be widows. It is further interesting to note however that 61% of women-headed households hired tractor service versus 51% of male-headed households.

Respondents were asked to describe who were the 'rich' and who were the 'poor' at Munzhedzi. The most common answers referred to housing quality or employment or both.

The 'rich' are:

- "Those with big houses"
- "Those who are working so they can build big houses"
- "Those who have better houses and eat well".

And the 'poor' are:

- "Those who live in small houses"
- "Those who are not working"
- "Those who stay in shacks and sometimes go to bed with empty stomachs".

To the extent quality of housing is a good indicator, the wealth-differentiation at Munzhedzi is quite visible, with scatterings of shacks interspersed with three-bedroom brick houses sporting tile roofs. As implied by some of the quotes above, there is seemingly a close correspondence between employment status (and taking into account the nature of the employment), and household wealth. Moreover, using our own crude classification of housing quality ('below-average', 'average', and 'above-average'), we observe that the 'rich' are well-represented by women headed households: of the 13% of agriculturally active households residing in 'above-average' dwellings, almost two-thirds belong to women-headed households, even though women-headed households represent the minority of all households.

One other implication of the fact that some households build very nice homes at Munzhedzi, is that they must therefore perceive there to be little tenure insecurity, despite the fact that their actual tenure status (especially among non-claimants) is highly ambiguous. The most salient aspect of land tenure in Munzhedzi is the lack of clarity regarding land tenure, which is closely related to the general crisis in respect of governance mentioned above. Since Munzhedzi is part of a restitution project, in principle Munzhedzi's main authority in respect of land matters is the CPA, which in fact is the 'legal person' in whose name the land is titled, i.e. in the form of freehold tenure. However, whereas in principle a CPA holds land on behalf of the CPA's members, at Munzhedzi the CPA has become eclipsed by the chief, not least by allocating plots to households, including to households who are not technically members of the CPA or even notionally part of the claimant community. The CPA committee has decided to be cooperative rather than combative, but in effect the result is that there is no authority at Munzhedzi that is widely regarded as legitimate, which also calls into question the security of tenure of the plots allocated by the 'chief'. One particular problem is that the 'chief' appears to have sold some stands more than once, i.e. to different people. In the words of one respondent, "It can happen that one stand is sold to 5 different people at the same time, without them knowing it; the problem is that people don't always receive receipt, so they often cannot prove they paid the money for the stand." This may be true, but it does not appear to happen with developed plots, and perhaps it is the case that tenure security is established by building structures, rather than the building of structures having to wait for some kind of formal indication of tenure security.

As for who are the biggest producers at Munzhedzi, it appears to be neither the poorest nor the wealthiest households, but rather from among those who are intermediate in wealth and income. Our inference is that the poor do not have the means to produce much (e.g. to pay for the tractor services), while the well-off lack either the interest or the time to farm on a larger scale.

## Perceptions of performance

When agricultural extension officers and local councillors see Munzhedzi, they see two things: a land reform project that went wrong, and a style of settlement that has precluded meaningful agricultural development. As an opportunity

for agricultural land reform, Munzhedzi has now been ruined by the fact that probably the best part of the property has been taken over by residential plots.

The level of satisfaction among Munzhedzi's residents, however, is very high. Of the 135 agriculturally active households interviewed, only three regretted having moved there, identifying the lack of service delivery as their reason. The vast majority, by contrast, are happy that they have moved, indicating a mix of reasons as indicated earlier:[25]

- "We are glad because we farm and harvest better than before."
- "I am able to farm, the soil is more fertile here than where I was staying."
- "I'm feeling much better when I am here and I can do my business of selling sorghum beer."
- "Beautiful land, we can have maize and vegetables and we harvest better."
- "We are free now without relatives."
- "We are next to town and there is lots of transport."
- "I am next to the bus stop."
- "I was [previously] far away from town and there were no jobs."
- "We are happy in our forefathers' land."

It is no coincidence that similar tensions are playing themselves out in the adjacent land reform projects of Mavungeni and Shimange, where the desire of many to establish homesteads and farm on a small scale, is pitted against visions of establishing modern, large-scale commercial agricultural enterprises.

## Policy environment

Munzhedzi points to an abandonment of the 'official' line of thinking about agricultural land reform projects, which is rather focused on commercial farming and land use plans that prioritise land for farming purposes rather than settlement. On the other hand, even if Munzhedzi has not been embraced, it has been tolerated. There are no efforts to remove people from the land, for instance. The real question is whether any government officials might begin to regard Munzhedzi as a model, not necessarily to be replicated, but at least to be borrowed from. There is no indication at present that this is happening. And yet, in other respects, settlements like Munzhedzi are congruent with government's thinking about socio-economic development of the broader Elim area, whose population has grown dramatically over the past 30 years. This thinking is that the growing population density of Elim presents opportunities to make Elim a more self-sufficient shopping and services centre, i.e. rather than being a mere satellite of Makhado town or Thohoyandou. To that end, Trade and Investment Limpopo, which is a parastatal subordinate to Limpopo's Department of Economic Development, Environment and Tourism, commissioned a series of "nodal scoping reports", in essence market studies meant to inform investors of the potential for building malls in rural towns. One such study was commissioned for Elim, and in 2006 Hubyeni Mall was built at Elim's main intersection.

Anomalous as it may seem, Munzhedzi is part of the 'peri-urban' development of which Hubyeni Mall forms part of the overall logic. The beauty of Munzhedzi – as with many peri-urban settlement options – is that it combines the advantages of residing close to a town with being able to pursue agriculture on a small scale while maintaining a more or less typical rural lifestyle. However, while this might implicitly be the thinking behind the spatial development initiatives being pushed by Trade and Investment Limpopo, it has not until very recently been part of the thinking within the agriculture and land portfolios.[26]

## The future

Munzhedzi is here to stay. What remains uncertain is whether the large portion of land that is presently unoccupied will eventually be settled or used more extensively for agriculture. Another question is whether the good soil that many recent arrivals cite as one of the main advantages of living Munzhedzi, will remain good. In terms of interventions to improve the quality of life of those already residing at Munzhedzi, is eagerly awaited electricity, improved water access, and other services. And yet, there is much that in principle could be done to support agriculture, however modest it may be. This could include for example technical support to gardeners, promotion of household water harvesting techniques, etc. It could also involve im-

25 Presumably if we had posed the same question to those households who are not agriculturally active, we would have heard more unhappy voices.

26 The recent development of note is the passing mention by the newly established Department for Rural Development and Land Reform (which subsumes the former Department of Land Affairs) that it see the development of malls as one aspect of rural development. The pronouncement has been met with a stunned silence from most academics working on rural development.

proving investment in fencing so that the unoccupied and unfarmed parts of Munzhedzi could be used as a controlled commonage.

## Conclusion

Munzhedzi represents a kind of land demand that is presently not catered for through land reform, and a style of small-scale agriculture that is not sufficiently valued by agricultural extension officers and agricultural policy. In fact, Munzhedzi represents a peri-urban livelihood strategy that is widely recognised in policy circles as an 'opportunity', but which is not clearly accommodated in the policies of some of the relevant departments, e.g. Land Affairs.

One reason for believing that Munzhedzi represents something of wider significance is the findings from other research that demonstrates that the type of land demand manifested at Munzhedzi is in fact common. A survey conducted in Limpopo, Free State and Eastern Cape in 2004-05 (HSRC, 2005), which among other things sought to understand the nature of land demand among rural blacks, revealed that the majority of those who want land, want relatively small plots (i.e. 5 hectares or less). Further inspection revealed that those who want small pieces of land are primarily interested in subsistence production and tenure security, as opposed to farming for income-generating purposes.

However, this is not to suggest that Munzhedzi serves as a model in terms of *process*. The uncontrolled, even chaotic manner in which Munzhedzi came about is not to be romanticised, and there is reason to suppose that better outcomes could have been achieved had it evolved as a deliberate and properly planned project.

## References

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