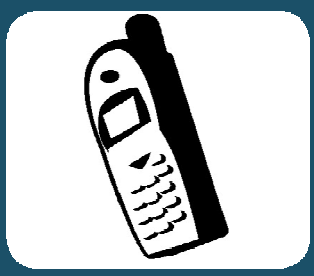

## INEQUALITY AND ECONOMIC MARGINALISATION

# Review of the Eastern Cape's Siyakhula/Massive maize project

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TRADE & INDUSTRIAL POLICY STRATEGIES

## ABOUT THIS RESEARCH

The 2007 Annual Report of the Accelerated Shared Growth Initiative of South Africa (AsgiSA) identified a need to focus on what was then called 'the second economy', and on mechanisms to ensure shared growth reaches the margins of the economy. The Second Economy Strategy Project was initiated in this context. It reported to the AsgiSA High Level Task Team in the Presidency, but was located outside government in TIPS.

A review of the performance of government programmes targeting the second economy was completed in early 2008. The project then commissioned research and engaged with practitioners and policymakers inside and outside government. A strategic framework and headline strategies arising from this process were approved by Cabinet in January 2009, and form part of the AsgiSA Annual Report tabled on 16 April 2009.

In South Africa, people with access to wealth experience the country as a developed modern economy, while the poorest still struggle to access even the most basic services. In this context of high inequality, the idea that South Africa has 'two economies' can seem intuitively correct, and has informed approaches that assume there is a structural disconnection between the two economies. The research and analysis conducted as part of the Second Economy Strategy Project highlighted instead the extent to which this high inequality is an outcome of common processes, with wealth and poverty in South Africa connected and interdependent in a range of complex ways. The different emphasis in this analysis leads to different strategic outcomes.

Instead of using the analytical prism of two economies, the strategy process placed the emphasis on the role of structural inequality in the South African economy, focused on three crucial legacies of history:

- The structure of the economy: its impacts on unemployment and local economic development, including competition issues, small enterprise, the informal sector, value chains and labour markets.
- Spatial inequality: the legacy of the 1913 Land Act, bantustans and apartheid cities, and the impacts of recent policies, looking at rural development, skewed agriculture patterns, and the scope for payment for environmental services to create rural employment.
- Inequality in the development of human capital: including education and health.

TIPS's work around inequality and economic marginalisation is built on the outcomes of this strategy process.

The research undertaken under the auspices of the Second Economy Strategy Project continues to be relevant today as government explores policy options to reduce inequality and bring people out of the margins of the economy. This report forms part of that research.

A list of the research completed is available at the end of this report. Copies are available on the TIPS website: www.tips.org.za.

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# INTRODUCTION

## Background

Agriculture plays a unique and multifaceted role in the South African economy. While it contributes less than three percent to the country's GDP, it provides almost 10 percent of the country's formal sector employment. The sector has, according to all measures, relatively large linkage effects with the rest of the economy, and is a major earner of foreign exchange: currently more than 8 percent of the country's merchandised non-gold exports are primary agricultural products. The sector also plays an important safety-net role in the lives of poor South Africans. A survey conducted in 2007 found that more than 14 percent of the labour force had participated in some form of agricultural production in the preceding year (General Household Survey 2007).

Despite this positive contribution, the general consensus amongst policy makers and development practioners is that the South African agricultural sector can, and should, play a bigger role in placing the economy on a higher growth trajectory, reducing poverty and halving unemployment by 2014. However, this pro-poor growth potential has been undermined by the dualistic structure of South Africa's agricultural economy that comprises both a commercial and a small-scale, subsistence sector.

The large-scale commercial sector is made up of an estimated 4 818 farming units, covers a production area of approximately 82 million hectares and is responsible for more than 99 percent of South Africa's marketed agricultural output (StatsSA 2002; StatsSA and NDA, 2002). The emerging or small-scale sector, in contrast, consists of 1,3 million farming households with access to an estimated 14 million hectares of agricultural land principally concentrated in the former homeland areas of the country (NDA 2006). Typically, these farmers achieve low levels of production efficiency and engage in agricultural production to supplement household food requirements.

Over the past 15 years, the post-apartheid South African government has struggled to narrow the development gap between the country's two agricultural systems. In part, this can be explained by the nature of the agriculture that relies on land as a core factor of production. Land represents a high capital barrier to entry and the agricultural investment cycle is long and beset with both market and production risk. This has been further exacerbated by the changing nature of agribusiness that is becoming increasingly competitive and complex in terms of product offering and management requirements. Climate change, supermarket procurement practices, biotechnology and commodity price volatility are just some of the issues farmers have to contend with and larger producers have been better placed to internalize these issues.

The number of policy levers that the South African government has been able to use to tackle this inequality has also been limited. The agricultural deregulation and liberalisation policies that were introduced in the 1990s abolished single channel marketing systems and price controls. While they strengthened the competitiveness of the commercial sector, they also transferred risk to all categories of agricultural producers and eliminated the policy space to shield smaller producers and new industry entrants from the vagaries of market forces.

Consequently, much of South African agricultural policy in the post-apartheid period has centred on land reform and strengthening small-holder development through project support. In the case of land reform, despite a well-formulated policy framework, slow

implementation has meant that less than five percent of commercial farm land has been transferred to Black South Africans since 1994. Furthermore, there is evidence to suggest that only 50 percent of these land reform beneficiaries have been able use the land productively (Bosman 2007).

In terms of project support for small-holder development, a broad range of ad-hoc initiatives has been implemented by the nine provincial departments of agriculture tasked with this responsibility. Business development support through the formation of cooperatives, on-farm infrastructure investment and niche-commodity schemes are examples of the types of projects that have been undertaken by government in an attempt to strengthen small-holder development. By and large these initiatives have not been successful: their narrow focus together with weak implementation and oversight have contributed to the high failure rate.

The case-study presented here – the Siyakhula/Massive Maize Production Programme – outlines the design and implementation of a government small-holder development project in the Eastern Cape Province. What makes this case study significant is that it was an attempt on the part of the provincial government to move beyond the narrow, project paradigm and restructure the way in which small-holders engage in crop production. From the outset, the Siyakhula/Massive programme was intended to form the foundation of the Province's agrarian reform strategy and strove to induce *systemic change* in the structure and performance of the Eastern Cape agricultural economy.

The aims of Siyakhula/Massive were ambitious. At the most basic level, the programme focused on strengthening food security in the Eastern Cape through increasing maize production. However, promoting black economic empowerment in the agricultural sector, stimulating private sector development and markets in rural areas, as well as promoting environmental sustainability through encouraging conservation farming were also core programme objectives. In addition, the Siyakhula/Massive programme was designed to have an immediate, tangible impact and therefore it required a large budget to implement the five-year programme to scale. The crop production component of the programme was allocated R250 million and a further R250 million was set aside for the mechanization component. This investment was expected to deliver significant results which the architects of the programme quantified as follows:

*"When fully implemented there will be 800 tractors with the associated equipment, which will yield 160 000 tonnes (40 000ha) of maize providing food for over 1,2 million people per annum, valued at R352 million."*

The objective of the case study presented here is, firstly, to describe the role-out and implementation of the Siyakhula/Massive programme and, secondly, to assess the extent to which this initiative was successful in achieving its stated aims and objectives. The impact of the programme on the macro, meso and micro level of the Eastern Cape economy will also be examined and special emphasis will be placed on the extent to which the Siyakhula/Massive programme as able to catalyse systemic changes in the broader Eastern Cape maize marketing and production system .The key lessons that can be distilled from the programme will also be presented. This analysis is especially timely in light of the ANC's Polokwane Manifesto that reaffirmed government's commitment "*to embark on an integrated programme of rural development, land reform and agrarian change*".

## Structure of the report

Section 2 of this report begins with an overview and introduction to the Eastern Cape and its agricultural sector. The reasons why land is under-utilised in the province despite high poverty levels will also be examined. Section 3 introduces the Siyakhula/Massive

programme and covers its essential design elements as well as its practical implementation. Section 4 assesses the impact of the Siyakhula/Massive programme and begins by presenting the macro, provincial-level impacts, and contrasts this with the micro-level, household impact. Section 5 looks at the impact the programme had on service markets supporting agriculture in the Eastern Cape and covers input markets, extension services, mechanization and land management systems. The final part of the report summarises the main conclusions that can be derived from the Siyakhula/Massive experience.

## Research methodology

The Siyakhula/Massive programme has attracted much international research attention and has been the subject of three post-graduate research projects[1], two of which carried out detailed field work. This primary research has been collated and supplemented by a large volume of project documentation and records that were made available by the Eastern Cape Department of Agriculture. A number of key stakeholder interviews were also conducted with programme management staff, input suppliers and service providers, and this helped further contextualise and refine the analysis.

# PROGRAMME CONTEXT

## Eastern Cape: An overview

The Eastern Cape Province is home to an estimated 6,5 million South Africans: approximately 13,5 percent of South Africa's total population (Stats SA 2008). In per capita income terms, it is one of the poorest of South Africa's nine provinces with 48,9 percent of the population living below the country's poverty line (Provide 2005). The provincial rate of unemployment is high: more than 50 percent of the labour force is unemployed compared with the national average of 32 percent (Labour Force Survey 2009). The former homelands of Transkei and Ciskei make up a large part of the Eastern Cape, and the high levels of poverty and unemployment found in the province can be traced back to the economic marginalisation of these areas during the apartheid era (Provide 2005).

The province has a strong rural character: with a large proportion of the population living in rural areas with only a third living in towns. In contrast to the rest of South Africa, a significant percentage of Eastern Cape households are involved in agriculture: more than 37 percent of the population reside in households that engage in some form of economic activity related to farming[2]. In most cases, this activity is not an important source of income for these households; rather, they engage in farm production to supplement income from other sources (Provide 2005).

With respect to land access, 28 percent of the province's households have access to land. Plot sizes are relatively small and tenure is derived from tribal authority allocation (General Household Survey 2007). Households that engage in farming tend to be poorer than non-farming households in income terms (Provide 2005). Furthermore, data from the most recent General Household Survey (2007) found that Eastern Cape households that have access to land reported a higher incidence of adults and children going hungry when compared with households that do not have access to land.

The agro-ecological base of the Eastern Cape, while prone to degradation, is fairly robust. In 2003, the Eastern Cape Department of Agriculture estimated that the province had

[1] These include: Damgaard Hansen (2006); Lange (2006), Nilsson and Karlsson (2008)

[2] Agricultural households includes any household that earns income from either formal employment in the agricultural industry or as a skilled agricultural worker, or from sales or consumption of home produce or livestock.

approximately 500 000 hectares of moderate to high potential, rain-fed cropland available for development while only 15 000 hectares was under production. Figure 1 shows how a large percentage of this high potential land is concentrated in the eastern parts of the province and corresponds closely with the boundaries of the former Transkei and Ciskei homeland areas. This confirms the findings of a 1995 Land and Agriculture Policy Centre report that found that 80 percent of the high potential agricultural land of the present Eastern Cape Province was already in the hands of black small-scale farmers prior to the advent of democracy in 1994 (Laker 2006).

It is estimated that the Eastern Cape has the potential to produce 1,2 million tonnes of maize per annum. In a typical year, Eastern Cape-based maize millers purchase 15 000 tonnes of maize grain and 80 to 90 percent of this is sourced outside the province. If maize grain could be produced in the Eastern Cape and delivered to local millers at below the cost of intra-provincial imports, maize meal prices for local consumers may be reduced. This could have a strong impact on reducing poverty since the ultra-poor in South Africa spend more than 50 percent of their monthly income on food. Of this amount, approximately 20 percent is spent on maize meal (Traub and Jayne, 2006).

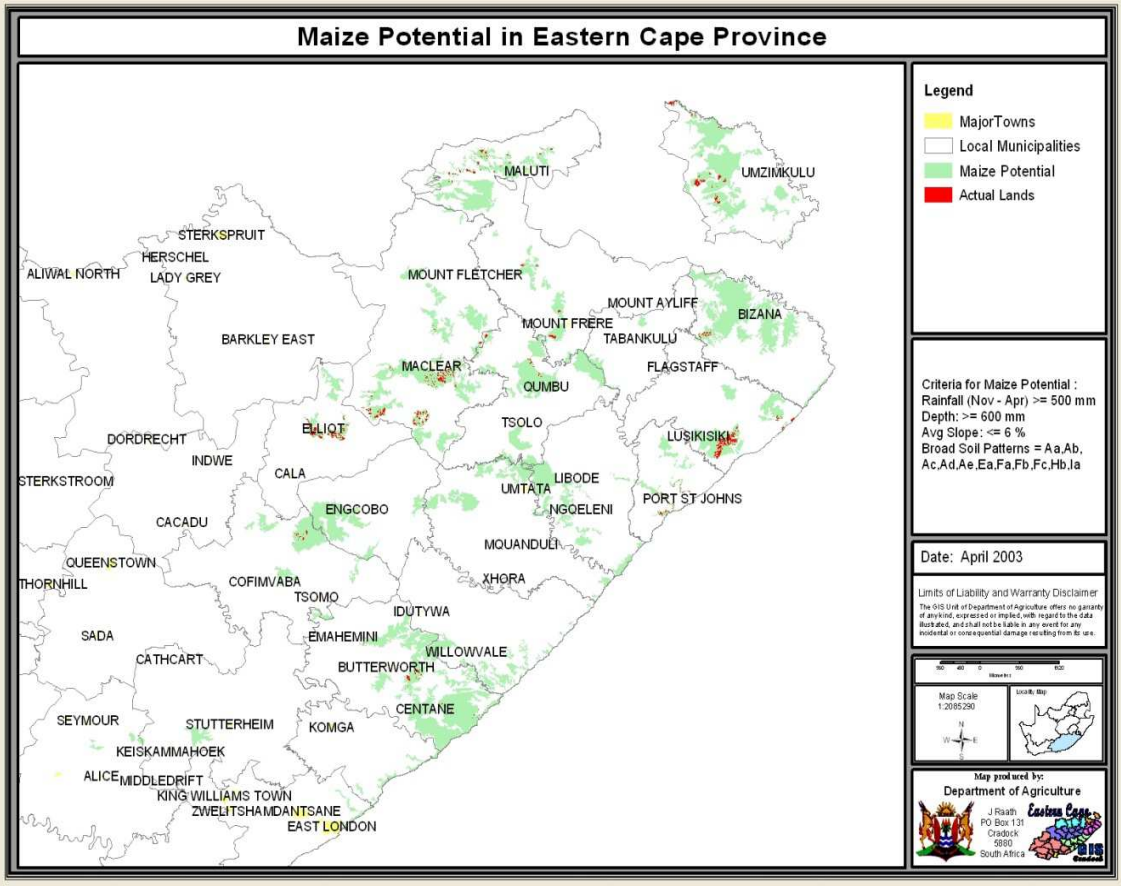


Figure 1: Maize Potential in Eastern Cape Province

## UNDER-UTILISATION OF CROP LAND IN THE EASTERN CAPE

Despite high poverty levels among small scale farmers in the Eastern Cape, crop farming activities undertaken by rural households in the former Transkei and Ciskei areas of the province have declined steadily since the 1960s. The reasons for this are complex and relate to a number of interwoven historical, economic and social factors. These are discussed below:

## Past government interventions

Government intervention in the rural areas of the Eastern Cape began with the introduction of "Betterment Schemes" in the 1930s and 1940s. Essentially, these schemes forced the rural population into villages and promoted a rigid division between pasture, cropland and homestead areas. This land settlement pattern undermined traditional cropping systems. In the 1980s, farming activities on the "Betterment" fields were taken over by the Transkei and Ciskei departments of agriculture, which implemented cropping schemes through providing inputs and services such as mechanization (Damgaard Hansen 2006). When these schemes collapsed with the demise of apartheid, it is estimated that in some areas of the Eastern Cape between 50 and 80 percent of arable land was abandoned. The majority of farmers who abandoned their land gave lack of means for land preparation as the cause (Laker 2006).

## Over population, communal tenure and land size

A further consequence of the Betterment Schemes was that the rural population was concentrated into a much smaller land area. The apartheid policy of confining the black rural population to the homelands resulted in the over-population of these areas and reduced the amount of land available per household. The system of communal land tenure further limited the establishment of viable land sizes and, as such, the lack of free-hold represents a real disincentive to cropping (Damgaard Hansen 2006).

## Dominance of livestock farming

It is estimated that there are more than three million head of cattle in the Eastern Cape, the bulk of which (66 percent) is owned by communal farmers. This large stockholding increases the pressure on land-use for grazing; moreover, much of the cropping land in the Eastern Cape is unfenced and this increases the risk of crop loss due to uncontrolled animal movement.

## High cost of input supplies and the availability of marketing infrastructure

The profitability of small-holder agriculture in the Eastern Cape is severely undermined by the high cost of input supplies. Poor road infrastructure increases the cost of transport and concomitantly increases the delivered price of inputs. Bulk inputs such as fertilizer – a key crop production input – are particularly affected by the cost of transport. Profitability is further undermined by the lack of crop marketing infrastructure available in the rural areas of the Eastern Cape. The limited availability of grain storage and handling facilities in the province is particularly problematic.

## Migration and the availability of labour

Younger women have traditionally been responsible for cropping activities in the Eastern Cape. Migration patterns due to work opportunities elsewhere in the country have resulted in an absence of younger people, including women, in the rural areas of the Eastern Cape and have reduced the availability of labour. Figure 2 below illustrates how the Eastern Cape as a whole has a significantly larger number of children and older residents when compared with the national average.

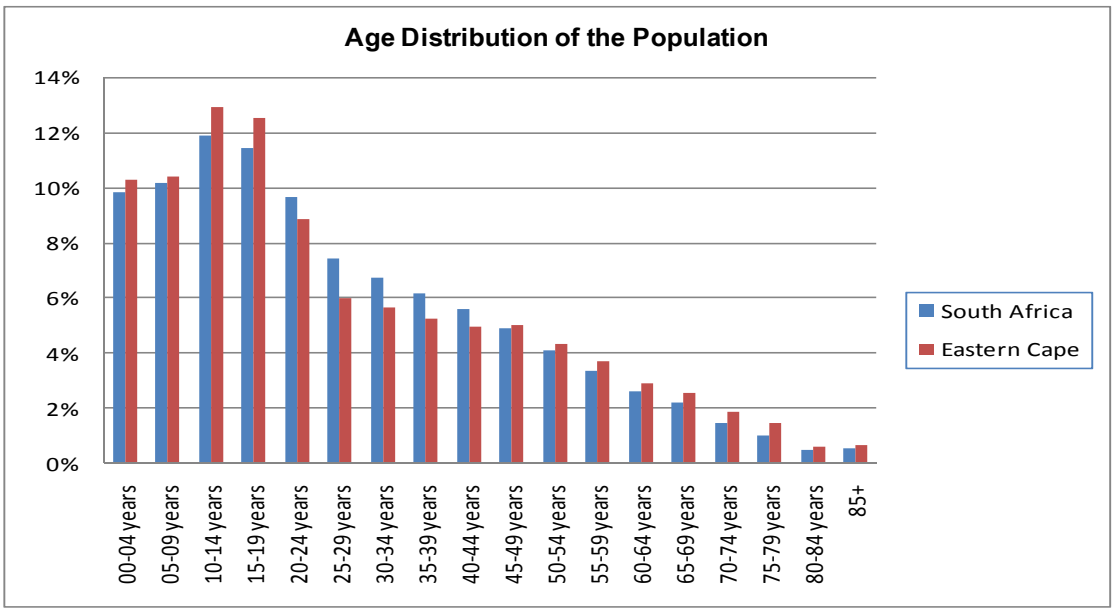


**Figure 2: Age Distribution of the Population**

## Negative perceptions of agriculture

Damgaard Hansen (2006) cites negative perceptions about agriculture as being another important cause of under-cultivation.

*"It is simply not considered 'modern' to farm, that farming has a (deserved?) reputation of being too much hard labour and very little pay, causing the young people, who have less ties, to take to the city and its opportunities."*

## Culture of dependency

The high dependency of the Eastern Cape rural population on external grant assistance has also been suggested as one of the reasons why land is under-utilised. In 2003, 48 percent of all households in the Eastern Cape received some form of social grant compared with the national average of 32,8 percent. It has been contended that this has created a "culture of dependency", which has manifested itself as a psychological "dependency" barrier as well as an erosion of the skills base due to many years of passive income earning (Damgaard Hansen 2006).

While no single factor explains the under-utilisation of land in the Eastern Cape, when viewed collectively, all the above described factors have contributed to decreasing the returns and/or increasing the risks associated with crop farming. It is against this background, that the Siyakhula/Massive programme was developed and implemented.

# THE DESIGN AND IMPLEMENTATION OF THE SIYAKHULA/MASSIVE MAIZE PRODUCTION PROGRAMME

## Overview

In 2001, South Africa was affected by a localised drought that reduced the availability of maize. This, coupled with a depreciation in the exchange rate, led to a sharp increase in the price of food. As a short term response measure, food parcels were distributed to households in need. However, government soon realised that this approach was not sustainable and the strategy shifted focus towards supporting households and communities

growing their own food. Provincial departments of agriculture were encouraged to work with households that had access to land and ensure the transfer of suitable inputs, technologies and information as well as training and capacity building to promote sustainable food production.

The Eastern Cape Department of Agriculture responded to this challenge by designing a stratified and graduated approach to food security. At the one end of the spectrum was the Siyazondla Programme. This was designed to encourage homestead production to promote food security and, as such, was a crisis intervention which offered support in the form of starter packs (eg seedlings and fertilizer), infrastructure (eg irrigation systems, land fertility) and training and skills development .The Siyakhula/Massive Maize Production Programme, in contrast, was designed for those households that had the potential to produce surplus output for sale. These households were provided with a conditional grant to help cover their input and mechanization costs and it was promoted as a step-up programme that would allow small-scale farmers to expand production and gain entry into commercial cropping. The "Siyakhula" component refers to projects that covered an area of less than 50 hectares while "Massive" refers to areas that were greater than 50 hectares.

Aside from promoting food security, the Siyakhula/Massive programme also strove to promote black economic empowerment in the Eastern Cape agricultural sector. Through creating a cadre of successful, commercially-orientated black farmers it was anticipated that inequality in the sector would decline. A further aim of the programme was to stimulate private sector development and bolster agricultural service markets in rural areas. The high cost of inputs, mechanization and credit in Eastern Cape rural areas was expected to decline in the wake of increased competition and to have a positive spillover benefit for the broader rural economy as a whole. Finally, given the rate at which the agricultural resource base was being degraded in the Eastern Cape[3], the promotion of conservation agriculture was also a stated programme objective. Briefly, conservation agriculture aims to conserve, improve and make better use of natural resources through integrated management of available soil, water and biological resources combined with external inputs. Three management principles underscore conservation agriculture, namely: minimal soil disturbance (no-till or low till), permanent soil cover, and crop rotations. While it is a low cost production system, it requires a high level of managerial expertise to implement.

## Conditionality aspects of the Siyakhila/Massive maize production programme

A key distinguishing feature of the Siyakhula/Massive programme was that it was a conditional grant scheme. This conditionality not only prescribed who could participate in the programme but also laid out the terms and conditions for continued participation. These include the following:

### High agronomic potential

The scheme only supported production on land that had high agronomic potential for maize production. To be eligible for inclusion, participants had to be located in an area with: a mean, long term rainfall of at least 500mm falling between 1 November and 30 April; reliable

[3] High population and livestock densities, together with steeply sloping terrain have resulted in the soils in the eastern part of the Eastern Cape being extensively eroded. In the former Transkei area it is estimated 80 to 120 tonnes of soil per hectare is annually lost as a result erosion. This far exceeds acceptable limits (Damgaard Hansen 2006).

adequate irrigation for this period; soils with an effective rooting depth of at least 600 mm; and a slope not exceeding eight percent.

## Cooperation to ensure a contiguous land area

The cropland area proposed for inclusion as a project had to be a contiguous block of land. Initially, minimum land size for both individual and group applicants was set at 50 hectares – this was considered the minimum size threshold to unlock economies of scale. For communal areas, this size requirement implied the need to cooperate at village level to ensure that all households with access to land supported participation. These collective households had to constitute a legal entity (either a cooperative or trust) or provide evidence that they intended to form such an entity. From 2005/2006, this minimum size requirement was relaxed and this reduced the need for forced, village-level cooperation.

## Security of tenure

Participants had to submit documentary evidence that the cropland for inclusion in the scheme was either privately owned by the applicant or that a lease agreement, valid for at least five years, was in place. In the case of communally owned land, the local traditional authority had to place on record that they supported the application.

## Controlled livestock access

All cropland had to be enclosed by a stock-proof fence or the participant had to ensure that the area would be adequately protected from livestock access until secure protection from livestock access was put in place.

## Introduction of conservation agricultural techniques

The Eastern Cape Department of Agriculture reserved the right to prescribe the inclusion of practices in the production plan that would ensure a progression to conservation agriculture.

## Located close to access roads

Cropping areas had to be located close to access roads that could, under normal conditions, accommodate a 10-tonne truck. This condition was necessary to enable inputs to be transported into the production area and maize grain to be transported out.

## Economic viability

The Siyakhula/Massive programme essentially provided funding to participants to cover their input and mechanization costs. Prior to funds being released for input purchases, participants in the scheme had to submit a production and marketing plan that illustrated that the cropping area would deliver a viable return and that a marketing strategy was in place. This plan had to be endorsed by the Department of Agriculture. With respect to what constituted a viable return, the production and marketing plan needed to indicate that the gross margin (gross income minus the directly allocatable costs) would, at a minimum, equal 10 percent of the production costs.

## Increasing producer contributions

The Siyakhula/Massive programme was designed in such a way that after the end of the first cropping season, the beneficiaries of the scheme were required to pay back a sum of money to the programme; receipt of this payment would trigger the release of funds to purchase inputs for the new planting season. Initially, this amount was set at 25 percent of the production costs for Year 1, 50 percent of the production costs for Year 2 and 75 percent of the production costs for Year 3. The rationale behind this payment scheme was to assist

project participants to build up the necessary production capital and credit history to eventually farm independently without the support of government. As will be shown later, there were numerous problems associated with this approach and halfway into the programme the basis of the repayment moved from a percentage of production costs to a percentage of the market value of the crop.

## Programme implementation

The Siyakhula/Massive programme was approved in October 2002, and in April 2003 the first announcements inviting the participation of farmers, mechanization providers and input suppliers went out. In August 2003, the Eastern Cape Department of Agriculture outsourced the financial administration of the programme to Uvimba Bank (Eastern Cape Rural Finance Corporation), who appointed a consulting company, PricewaterhouseCoopers Inc. (PWC), to oversee the financial administration. With respect to implementation location, it was decided to confine the programme to five district municipalities concentrated in the eastern part of the province and these included Amatole, Alfred Nzo, Chris Hani, Ukhlamba and OR Tambo. Local extension officers assisted in marketing the scheme in these areas and helped identify potential sites for inclusion.

The late transfers of the funds from Treasury, together with the late submission of farmer production plans, saw the first plantings only take place from November 2003 onwards. The late planting together with adverse weather conditions resulted in low yields being achieved. The average yield for the 9 000 hectares that entered production under the scheme in 2003/2004[4], was only one tonne per hectare.

As a result of administrative difficulties, together with the low yields achieved in 2003/2004, a very small percentage of farmers paid the first "deposit" of 25 percent which was a condition for continued participation in the programme. After intensive negotiation with all stakeholders, the Eastern Cape Minister of Agriculture requested that farmers be granted a six month deferral and orders were released to allow planting to commence in October 2004. The programme area was extended to approximately 12 000ha with a significant number of new participants entering the scheme. However, bottleneck problems arose at input supplier level due to issues related to the transfer funds and as a result the average yields achieved for the 2004/2005 season again were low, averaging one tonne per hectare.

In March 2005, Uvimba commissioned an independent audit of the Siyakhula/Massive programme. The purpose of this audit was to assess the extent to which all stakeholders participating in the programme were able to meet their obligations. In addition, the extent to which the conditionality aspects of the programme were being adhered to was reviewed.

Damgaard-Hansen (2006) summarised the findings of the 2005 Audit as follows:

A significant proportion of the project sites did not meet the agronomic conditions set for the programme with respect to land size, rainfall and soil-depth.

Communal farmers are unwilling to give up their individual plot rights and this hindered management at the project level and negatively affected yields.

Production plans were insufficiently completed and followed.

Planting had been done unacceptably late and should have been stopped.

The quality of mechanization work that was contracted in was unacceptably poor.

There are problems with fraud, eg, resale of inputs.

[4] The maize production year runs from 1 May to 31 April. The 2003/2004 year thus refers to the period 1 May 2003 to 31 April 2004.

Lack of understanding of agricultural chemicals (i.e. calibration and application) on the part of all parties involved, ie, extension officers, contractors, farmers and even suppliers.

Conservation agricultural techniques had been implemented only in a few cases and were poorly understood and managed.

On the basis of these findings the Audit concluded that ***"with no major changes [the programme] is doomed for failure"***(Damgaard-Hansen 2006).

In response to these findings, the management of the Siyakhula/Massive programme substantially redesigned the scheme. The first major change was that grant contracts were amended to make provision for areas of participation between one and 50 hectares. This enabled participant households under communal tenure systems to be accountable for their own allotment and not depend on a large number of other households.

The obligation for projects to make a "deposit' with respect to the first two seasons (ie, 2003/04 and 2004/05) also fell away and the scheme was essentially restarted from 2005/2006. Rather than basing the deposits on production costs, from 2005/2006 the market value of the maize harvest was used as a base given that the maize price had been below the costs of production for both the 2003/2004 and 2004/2005 season.

The programme was also expanded to include a mentoring component. Initially, it was anticipated that the existing extension corps of the Department of Agriculture would provide project participants with the required technical and managerial support to farm commercially. However, the vast majority of agricultural extension officers supporting the programme had limited practical experience of commercial agriculture. Furthermore, agricultural extension staff had responsibilities in addition to the Siyakhula/Massive projects and were often not present at critical times in the production cycle. A lack of transport exacerbated this situation. Given the urgent need to ensure all projects adhered to good agricultural practice, a dedicated mentoring component was introduced as part of the scheme in September 2005.

With regards to implementation of conservation agricultural techniques, this requirement effectively fell away, *"due to the lack of experience within the Eastern Cape Department of Agriculture with these practices."*

As can be seen from Table 1 below, these changes had a positive impact on yield achievements from 2005/2006 onwards. However, the payment of the "deposits" by farmers remained a continuing problem. As a result of the non-payment of the required deposit, 4 133 hectares was excluded from the scheme at the start of the 2007/2008 season. While the Siyakhula/Massive programme continued into the 2008/2009 season, limited available data for this period resulted in it being excluded from the analysis.

**Table 1: Siyakhula/Massive Implementation Results 2003-2008**

| Year | Number of Projects | Area (hectares) | Average Yield Achieved per hectare (tonnes) |
|---|---|---|---|
| 2003/2004 | 192 | 9 000 | 1 |
| 2004/2005 | 247 | 12 000 | 1 |
| 2005/2006 | 413 | 15 000 | 3 |
| 2006/2007 | 424 | 15 000 | 3,5 |
| 2007/2008 | 350 | 13 133 | 3,7 |

Source: Siyakhula/Massive (2008)

# ECONOMIC ASSESSMENT OF THE SIYAKHULA/MASSIVE PROJECT

## Macroeconomic impacts of the Siyakhula/Massive programme

The results presented in Table 1 above indicate how the Siyakhula/Massive programme, despite not achieving its stated objective of bringing 40 000 hectares of maize into production, was nevertheless successful in increasing the supply of maize in the Eastern Cape. In terms of population reach, in 2005 it was estimated that 14 000 land users participated in this initiative (Audit 2005 data) and, given a programme budget of R270 million for the period under review, the cost per direct beneficiary was estimated at R19 286.

A simple margin analysis of the overall efficiency of the programme in narrow economic terms is set out in Table 2 below. This shows how the value of the crop produced by Siyakhula/Massive participants was R250 million while the cost of the intervention was R270 million. This suggests that the costs of the programme exceeded the benefits by R20 million.

The results presented in Table 2 may be overstated for two reasons. The first pertains to the total volume of maize produced: a lack of suitable grain storage facilities in the province resulted in a large percentage of the harvested crop being lost. These storage losses were estimated to be in the region of 20 percent of the crop volume and only occurred from 2005/2006 when the size of the crop increased substantially. Secondly, the total costs of the programme do not make provision for the opportunity cost of land and labour applied in the production process. The programme costs listed in Table 2 would be significantly higher if these factors taken into account.

Similarly, it could also be argued that the results in Table 2 might be understated (especially in terms of the benefits the programme produced via the multiplier effect) with respect to the increased income from maize sales on the broader economy.

**Table 2: Economic Costs and Benefits of the Siyakhula/Massive Programme**

| Year | Total Volume of Maize Produced (tonnes) | Randfontein Spot Price per tonne – end April (Rand) | Value of Crop (Rand) | Total Siyakhula/Massive Management and Input Costs (Rand) | Gross Margin (Rand) |
|---|---|---|---|---|---|
| 2003/04 | 9 000 | 1 144 | 10 296 000 | 41 000 000 | -30 704 000 |
| 2004/05 | 12 000 | 587,5 | 7 050 000 | 50 000 000 | -42 950 000 |
| 2005/06 | 48 000 | 1 063 | 51 024 000 | 69 000 000 | -17 976 000 |
| 2006/07 | 54 000 | 1 653,5 | 89 289 000 | 70 000 000 | 19 289 000 |
| 2007/08 | 51 087 | 1 805 | 92 212 035 | 40 000 000 | 52 212 035 |
| **Total** | **174 087** | | **249 871 035** | **270 000 000** | **-20 128 965** |

Source: Own calculations based on SAFEX (2009) and Siyakhula/Massive (2008)

An alternative method of evaluating the impact of the scheme is to compare what Siyakhula/Massive delivered in terms of food security versus what the Eastern Cape Department of Agriculture could have provided if it had elected to go the food parcel route. Tables 3, 4 and 5 provide the data and the results of this analysis.

**Table 3: The Costs of Siyakhula/Massive expressed in terms of the food parcel option**

| Year | Total Siyakhula/Massive Management and Input Costs (Rand) | Retail Price of Special Maize Meal (Rand per tonne) | Tonnes of Maize Meal that could have been purchased |
|---|---|---|---|
| 2003/04 | 41 000 000 | 2 268 | 18 078 |
| 2004/05 | 50 000 000 | 2 118 | 23 605 |
| 2005/06 | 69 000 000 | 2 238 | 30 833 |
| 2006/07 | 70 000 000 | 2 747 | 25 479 |
| 2007/08 | 40 000 000 | 3 516 | 11 377 |
| **Total** | **270 000 000** | **-** | **109 371** |

Source: Own calculations, data used from Siyakhula/Massive (2008) and NAMC (2008)

With reference to Table 3 above, note the following:

The total cost of the intervention (production costs plus management costs) over the five year period under review amounted to R270 million.

The retail price of a 5kg bag of super maize meal during the January of the year in question was converted to a per tonne price for maize meal. The number of tonnes of maize meal that could have been purchased in a given year at the ruling retail price with the available budget is listed in the final column of the table. With a total budget of R270 million, 109 371 tonnes of maize theoretically could have been provided to food insecure Eastern Cape households. Note that this calculation does not make provision for the distribution costs associated with the food parcel option.

**Table 4: Impact of Siyakhula/Massive on Food Security**

| Year | Total Volume of Maize Produced (tonnes) | Total Volume available for Milling after Taking Storage Losses into Account (tonnes) | Maize to Maize Meal Conversion 0.63 (tonnes) | Value of a 9% Profit Margin on Inputs Supplied (Rand) | Additional Tonnage of Maize Meal that could have been Purchased with Supplier Profits (tonnes) | Additional Jobs in the Value Chain | Additional Tonnage of Maize Meal that could have been Purchased as a result of Jobs Created (tonnes) | Total Siyakhula/ Massive Volume of Maize Meal that was effectively Produced (tonnes) |
|---|---|---|---|---|---|---|---|---|
| 2003/04 | 9 000 | 9 000 | 5 670 | 3 561 579 | 1 570 | 256 | 1 356 | 8 596 |
| 2004/05 | 12 000 | 12 000 | 7 560 | 4 343 389 | 2 051 | 313 | 1 894 | 11 505 |
| 2005/06 | 48 000 | 38 400 | 24 192 | 5 993 877 | 2 678 | 431 | 2 647 | 29 517 |
| 2006/07 | 54 000 | 43 200 | 27 216 | 6 080 745 | 2 213 | 438 | 2 341 | 31 770 |
| 2007/08 | 51 087 | 40 870 | 25 748 | 3 474 711 | 988 | 250 | 1 118 | 27 854 |
| **Total** | **174 087** | **143 470** | **90 386** | **23 454 301** | **9 500** | **1 688** | **9 357** | **109 243** |

Source: Own Calculations

Table 4 outlines the extent to which the Siyakhula/Massive option contributed to increasing household food security. With respect to the calculation methodology, note the following:

The total volume of maize that Siyakhula/Massive participants produced is listed in the first column of the table. As already noted, a lack of suitable grain storage facilities in the province resulted in a large percentage of the harvested crop being lost. These storage losses were estimated at 20 percent and only occurred from 2005/2006 when the crop increased substantially.

The standard maize grain to maize meal conversion factor of 0,63 was applied to the crop available for consumption and what the Siyakhula/Massive programme's crop production component delivered in terms of maize meal was estimated to be 90 386 tonnes.

The profit margin that the programme service providers realised was also brought into consideration and this was assumed to be nine percent of the total funds paid out. This profit was translated into the potential maize meal volume that could have been purchased at the reigning retail price.

In addition, the number of additional jobs created in the value chain as a result of the scheme was also brought into account. It was assumed that for every R160 000 spent by the programme, one value chain job was created. It was assumed that this job yielded a net wage of R12 000 per annum in 2003/2004, and this income inflated by seven percent per year would have allowed a further 9 358 tonnes of maize meal purchased during the period under review.

The results of Table 3 and Table 4 are compared in Table 5 below and this shows that over the five year period Siyakhula/Massive was found to be marginally less cost effective at delivering food security than the food parcel option. However, the analysis also shows how the programme's "food security efficiency" increased over time.

**Table 5: Relative food security efficiency of the food parcel option versus Siyakhula/Massive**

| Year | Food Parcel Option<br>Volume of Maize Meal that could have been Purchased<br>(tonnes) | Siyakhula/Massive<br>Volume of Maize Meal that was effectively Produced<br>(tonnes) | Relative Efficiency of the Siyakhula/Massive Programme in Delivering Food Security<br>(percentage) |
|---|---|---|---|
| 2003/04 | 18 078 | 8 596 | 48 |
| 2004/05 | 23 605 | 11 505 | 49 |
| 2005/06 | 30 833 | 29 517 | 96 |
| 2006/07 | 25 479 | 31 770 | 125 |
| 2007/08 | 11 377 | 27 854 | 245 |
| **Total** | **109 371** | **109 243** | **100** |

Source: Own calculations

## Microeconomic Aspects of the Programme

For the 14 000 land users who participated in the programme, there is evidence to suggest that the programme contributed positively to both the expansion and intensification their farming activities. Results from a 2005 survey of 33 projects that participated in the programme found that a large percent of the projects surveyed indicated that Siyakhula/Massive had allowed them to crop more land and/or resume cropping activities. Furthermore, they were able to use the land more intensively. Table 6 below shows the average yields that farmers achieved prior to the scheme.

**Table 6: Land Use Efficiency Prior to Siyakhula/Massive**

| Average Yields Prior to Siyakhula/Massive ► | Yields ≥ 2 tonnes per hectare | Yields < 2 tonnes ≥1 tonne per hectare | Yields < 1 tonne ≥ 0.5 tonne per hectare | Yields < 0.5 tonne per | % of Total |
|---|---|---|---|---|---|
| Amount of land cropped | | | | | |

| ▼ | | | | hectare | |
|---|---|---|---|---|---|
| Current land area or more land already cropped prior to Siyakhula/Massive | 9,09 | 9,09 | 15,15 | 6,06 | **39,39** |
| Less land area cropped prior to Siyakhula/Massive | | 9,09 | 21,21 | 18,18 | **48,48** |
| Cropping ceased prior to Siyakhula/Massive | 3,03 | | 3,06 | 6,06 | **12,15** |
| **% Total** | **12,12** | **18,18** | **39,42** | **30,3** | **100** |

Source: Damgaard Hansen (2006)

The relative production efficiency of the Siyakhula/Massive programme at farm level is assessed here by using disaggregated production cost data derived from the programme as a whole, and comparing this with maize production budgets for the eastern Free State region, an established commercial maize area. This area was selected as a comparator due to the fact that the average yield per hectare potential of this area is similar to that of the Eastern Cape – four tonnes per hectare.

As can be seen from the data in Table 7, a number of cost items such as crop insurance, labour, interest on production credit, etc, was not available and/or applicable to participants in the Siyakhula/Massive programme. Nevertheless, some broad conclusions can be drawn from the comparison. These include:

Siyakhula/Massive participants spent significantly more on primary production inputs such as fertilizer and seed. As will be shown in Section 5, this was due to:

- high transport costs associated with supplying the rural areas of the Eastern Cape with inputs.
- inclusion of VAT in the cost price of inputs.
- thin input supply markets.

Labour costs in the eastern Free State were in the region of R450 per hectare per annum and this can be used to calculate what programme participants effectively contributed in-kind to production costs.

The data presented in Table 7 underscores the high risk nature of maize farming. This risk stems from the year-on-year variability in yields (as seen in the case of the eastern Free State) and the year-on-year volatility in the maize price.

**Table 7: Production costs per hectare (Rands)– Eastern Cape Siyakhula/Massive project and Eastern Free State**

| | **Eastern Cape** | **Eastern Free State** | **Eastern Cape** | **Eastern Free State** | **Eastern Cape** | **Eastern Free State** | **Eastern Cape** | **Eastern Free State** | **Eastern Cape** | **Eastern Free State** |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2003/2004 | 2003/2004 | 2004/2005 | 2004/2005 | 2005/2006 | 2005/2006 | 2006/2007 | 2006/2007 | 2007/2008 | 2007/2008 |
| **1. Directly Allocatable Primary Input Cost** | | | | | | | | | | |
| Seed | 527,26 | 244,00 | 489,17 | 287,00 | 515,97 | 270,00 | 471,16 | 388,00 | 539,21 | 358,00 |
| Fertilizer & Lime | 1 075,73 | 545,00 | 919,89 | 559,00 | 1144,23 | 738,00 | 1 257,93 | 735,00 | 1 340,19 | 729,00 |
| Weed control | 307,95 | 136,00 | 261,39 | 117,00 | 206,69 | 187,00 | 365,67 | 174,00 | 361,51 | 176,00 |
| Pest control | 93,89 | 78,00 | 81,45 | 149,00 | 45,40 | 146,00 | 24,71 | 112,00 | 1,52 | 114,00 |
| Total: Directly Allocatable Primary Input Costs | **2 004,83** | **1 003,00** | **1 751,89** | **1 112,00** | **1 912,30** | **1 341,00** | **2 119,47** | **1 409,00** | **2 242,43** | **1 377,00** |
| **2. Other Variable Input Cost** | | | | | | | | | | |
| Crop insurance | n.a | 152,00 | n.a | 75,00 | n.a | 137,00 | n.a | 126,00 | n.a | 127,00 |
| Casual labour | n.a | 7,00 | n.a | 16,00 | n.a | 18,00 | n.a | 18,00 | n.a | 18,00 |
| Permanent labour | n.a | 336,00 | n.a | 294,00 | n.a | 416,00 | n.a | 395,00 | n.a | 386,00 |
| Marketing cost | n.a | 41,00 | n.a | 0,00 | n.a | 0,00 | n.a | 0,00 | n.a | 61,00 |
| Drying & cleaning cost | n.a | 75,00 | n.a | 203,00 | n.a | 43,00 | n.a | 75,00 | n.a | 42,00 |
| Interest on production credit | n.a | 251,19 | n.a | 231,13 | n.a | 262,00 | n.a | 288,77 | n.a | 271,88 |
| Contract work | n.a | 55,00 | n.a | 51,00 | n.a | 63,00 | n.a | 77,00 | n.a | 68,00 |
| Other cost | n.a | 106,00 | n.a | 110,00 | n.a | 110,00 | n.a | 135,00 | n.a | 333,00 |
| Total: Other Variable Input | **n.a** | **1 023,19** | **n.a** | **980,13** | **n.a** | **1 049,00** | **n.a** | **1 114** | **n.a** | **1 306,88** |

| | Eastern Cape | Eastern Free State | Eastern Cape | Eastern Free State | Eastern Cape | Eastern Free State | Eastern Cape | Eastern Free State | Eastern Cape | Eastern Free State |
|---|---|---|---|---|---|---|---|---|---|---|
| Costs | | | | | | | | **,77** | | |
| **3. Mechanization** | | | | | | | | | | |
| Fuel | n.a | 406,00 | n.a | 394,00 | n.a | 480,00 | n.a | 484,00 | n.a | 754,00 |
| Repairs & parts | n.a | 571,00 | n.a | 436,00 | n.a | 396,00 | n.a | 472,00 | n.a | 459,00 |
| License & insurance | n.a | 39,00 | n.a | 52,00 | n.a | 71,00 | n.a | 49,00 | n.a | 0,00 |
| Machinery & equipment: | | | | | | | | | | |
| Depreciation | n.a | 172,60 | n.a | 172,60 | n.a | 172,60 | n.a | 172,60 | n.a | 189,86 |
| Interest | n.a | 258,90 | n.a | 258,90 | n.a | 258,90 | n.a | 258,90 | n.a | 284,79 |
| Total: Mechanization | **1 422,61** | **1 447,50** | **1 744,41** | **1 313,50** | **1 695,34** | **1 378,50** | **1 527,33** | **1 436,50** | **1 495,69** | **1 687,65** |
| | | | | | | | | | | |
| **Capital cost** | | | | | | | | | | |
| Fixed improvements: | | | | | | | | | | |
| Repairs & maintenance | n.a | 34,00 | n.a | 24,00 | n.a | 24,00 | n.a | 36,00 | n.a | 39,60 |
| **Total: capital cost** | **n.a** | **34,00** | **n.a** | **24,00** | **n.a** | **24,00** | **n.a** | **36,00** | **n.a** | **39,60** |
| | | | | | | | | | | |
| **Total production cost per hectare** | **3 427,44** | **3 507,69** | **3 496,30** | **3 429,63** | **3 607,65** | **3 792,50** | **3 646,80** | **3 996,27** | **3 738,12** | **4 411,13** |
| | | | | | | | | | | |
| **Yield (tonne/ha)** | 1,00 | 3,30 | 1,00 | 4,00 | 3,00 | 4,50 | 3,50 | 2,70 | 3,70 | 4,10 |
| | | | | | | | | | | |
| **Cost (R/tonne)** | 3 427,44 | 1 062,94 | 3 496,30 | 857,41 | 1 202,55 | 842,78 | 1 041,94 | 1 480,10 | 1 010,30 | 1 075,89 |
| | | | | | | | | | | |
| **Income** | | | | | | | | | | |
| Producer price (R/tonne) | 1 144,00[5] | 919,00 | 587,50 | 597,00 | 1 063,0 | 979,38 | 1 653,0 | 1 306 | 1 80 | 1 713,00 |

[5] The Randfontein spot price per tonne was used as a proxy for producer prices achieved by Siyakhula/Massive project participants

| | Eastern Cape | Eastern Free State | Eastern Cape | Eastern Free State | Eastern Cape | Eastern Free State | Eastern Cape | Eastern Free State | Eastern Cape | Eastern Free State |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 0 | | 0 | ,00 | 5,00 | |
| Per ha: | 1 144,00 | 3 032,70 | 587,50 | 2 388,00 | 3 189,00 | 4 407,21 | 5 785,50 | 3 526,20 | 6 678,50 | 7 023,30 |
| | | | | | | | | | | |
| **Profit/Loss** | | | | | | | | | | |
| Per ha: | -2 283,44 | -474,99 | -2 908,80 | -1 041,63 | -418,65 | 614,71 | 2 138,70 | -470,07 | 2 940,38 | 2 612,17 |
| Per tonne: | -2 283,44 | -143,94 | -2 908,80 | -260,41 | -139,55 | 136,60 | 611,06 | -174,10 | 794,70 | 637,11 |

Source: Grain South Africa (2009), own calculations based on project records

## IMPACT OF SIYAKHULA/MASSIVE ON THE STRUCTURE AND PERFORMANCE OF AGRICULTURAL SERVICE MARKETS

As noted earlier, one of the objectives of the Siyakhula/Massive programme was to stimulate private sector development and bolster agricultural service markets in the rural areas of the Eastern Cape. Through activating the demand for these services at farm level – by allowing projects to independently select service providers and products – it was anticipated that these markets would "thicken" and become more efficient. This process of market development was seen as necessary to ensure the long-term sustainability of intervention. This section of the report examines the extent to which this happened in practice.

### Maize output markets

The first two years of the Siyakhula/Massive programme did not contribute to increasing the supply of maize grain to any great extent and producers relied on existing, established marketing channels. Data from the 2005 Audit found that producers typically allocated 25 percent of the maize they produced for household consumption, 36 percent was traded informally with other households, while 38 percent was commercially traded. However, when the maize supply increased significantly from 2005/2006 onwards, storing and marketing the excess supply became problematic.

Traditionally in the Eastern Cape, maize is harvested at a stage where the moisture content is still too high to be sold to millers and the cobs are left to dry in and around the homestead. When the maize yield increased so did the supply of maize, and a lack of adequate drying and storage facilities both on-farm as well as in the region resulted in a significant portion of the crop being lost. Figure 3 below shows that this is estimated to be in the region of 20 percent.

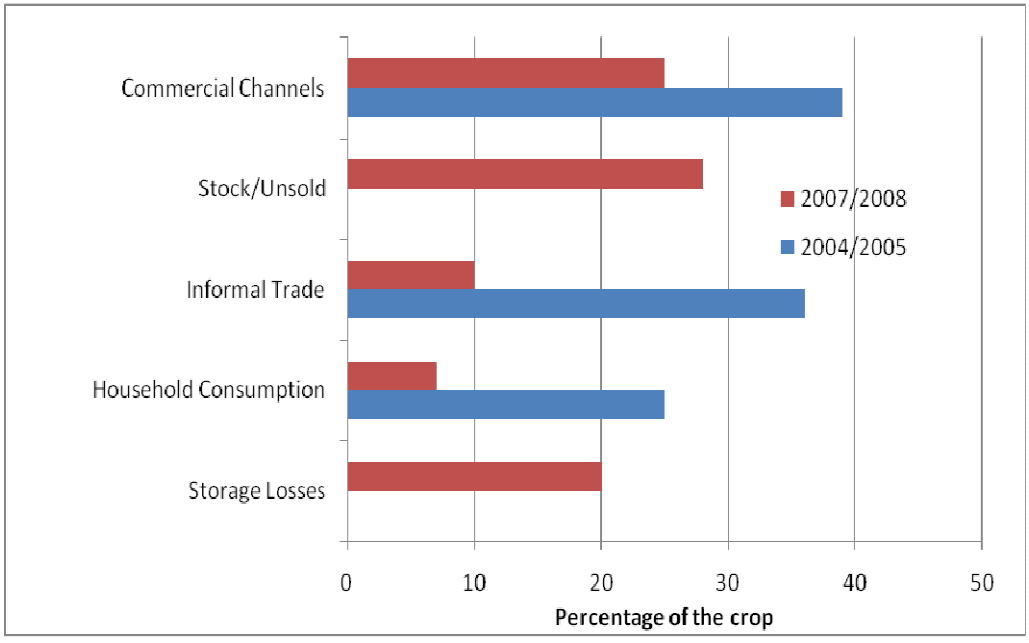


**Figure 3: Marketing channels used**

The high percentage of maize stocks that producers held suggests that the marketing of surplus production was a problem. This was confirmed by a number of the programme

stakeholders who were interviewed. They further explained that while there were plans to establish a number of commercial maize mills in and around the high volume Siyakhula/Massive production areas this had not happened as investors were adopting a wait-and-see attitude with respect to government's long-term commitment to the programme.

The lack and/or absence of commercial marketing channels in the Siyakhula/Massive production area meant the crop could not be converted into cash and this largely explains why programme participants failed to make the required cash "deposit" at the end of the production season.

## Land rental markets

It was hoped that the initial minimum size requirement of 50 hectares would encourage the aggregation of small land parcels under communal tenure and thus allow land to be more effectively used. It was envisaged that households that chose to exit from a project could lease out their land to other land users who wanted to expand their crop production activities. This process did not progress far, principally due to a lack of demand for land: while Siyakhula/Massive produced food, it did not produce significant amounts of cash and thus failed to stimulate entrepreneurial development at the producer level.

The decision to include land parcels smaller than 50 hectares was an admission on the part of the Eastern Cape Department of Agriculture that collective farming models on communal land were problematic. Damgaard Hansen (2006) identified the main problems related to this as being:

The large numbers of farmers required to cooperate.

The fact that the community or village was not a homogeneous group of people with respect to commitment to farming, combined with.

Very few communities having any sanctioning arrangements for those who did not comply with pre-agreed rules.

These problems had a material effect on the efficiency of projects carried out collectively versus projects carried out by a single entrepreneur. Figure 4 shows the average yield per hectare for collectively farmed land achieved in 2007/2008 in the Alfred Nzo area and compares it with the average yields achieved by individual entrepreneurs.

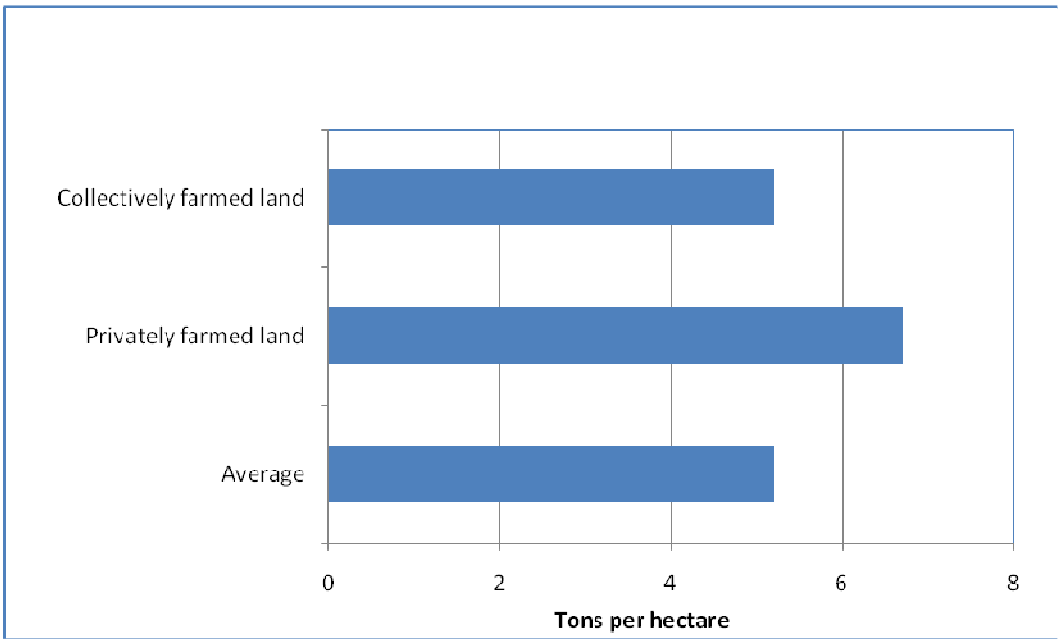

**Figure 4: Alfred Nzo projects – yield difference**

## Mechanization services

Mechanization equipment is a large investment that commercial maize producers can justify on the basis of off-setting this investment over a relatively large number of hectares. For cropping areas less than 200 hectares, this investment cannot easily be recovered.The need, therefore, to assist in the development of a sound mechanization contractor market as part of the programme was identified in the design phase and resulted in a mechanization scheme being built into the initiative. Briefly, would-be contractors were provided with interest free loans to purchase equipment and, in order to become a Siyakhula/Massive service provider, they had to complete a three-week preparatory course presented by the Eastern Cape Department of Agriculture that covered the handling of machinery, crop establishment, mixing, and use of herbicides and minimum tillage practices.

A survey of mechanization service providers was conducted in 2005 and this survey found the following:

There were 400 tractors in use, owned and operated by 76 service providers covering 15 000 hectares. Furthermore, a significant percentage of these service providers were black-owned SMMEs.

These service providers were operating at full capacity.

The survey concluded that the quality of mechanization contracting services delivered to Siyakhula/Massive projects was very poor. Not only was contractors' knowledge of herbicides limited but also basic knowledge on plant establishment and fertilization was lacking. In addition, the equipment contractors were using (eg tractors, boom-sprayers and planters) was inadequate due to age and neglect.

This conclusion was supported by a range of programme stakeholder who stressed that mechanization services remained a problem throughout the programme as a result of classic principal : agent problems. Briefly, the "principal" – in this case the farmer – has an incentive to ensure that all mechanization activities are carried out as thoroughly as possible in order to achieve maximum yield. In contrast, the incentive for the agent – the contractor – is to service as many hectares as possible in a given day.

Damgaard-Hansen (2006) concluded that the incentives for contractors to do a proper job were generally low. She noted that relatively few contractors had borrowed money to invest in new implements. The majority were, however, owners of old tractors, seemingly driven by the chance to earn as much as possible through the programme with little care for quality. These ill-equipped and unqualified contractors essentially enjoyed a monopoly on mechanization services and this hindered the effectiveness of the programme.

## Input supply markets

As already indicated, the input purchase decision and selection of input supplier rested with programme participants. Once an order had been place with a supplier and signed off by the programme participant, Uvimba Bank was responsible for settling the account on behalf of the project. The cost of primary inputs, ie seed, fertilizer, herbicides and pesticides, amounted to approximately R2 000 per hectare and of this amount, fertilizer was the single biggest item constituting 50 to 60 percent of the total.

Briefly, there are two common marketing channels that South African farmers use to access inputs. The first channel involves developing a direct relationship between the manufacturer

/ blender and the farmer. Typically, input manufacturers employ their own sales representatives and technical support staff (eg agronomists) and contact is usually established by sales representatives. In this arrangement, technical advice and evaluation of crop performance is a team effort between the supplier and the farmer.

The second channel involves farmers purchasing inputs from an agent or dealer. Input manufacturers enter into agreements with agents and dealers who act on behalf of a number of agro-input suppliers and supply a broad range of input types and brands. The type of embedded service provided by input dealers tends to be less focused on technical support and more focused on embedded business services such as access to credit.

For the 2007/08 year, a total of 48 different input suppliers provided input products and the five biggest suppliers in terms of value (10 percent of the total) were responsible for 56 percent of all inputs supplied. The bulk of this supply was sourced from Eastern Cape based agro-input dealers as opposed to national input manufactures. The implication of this is that technical support as part of the overall input package was not provided to any meaningful extent. This is illustrated by the fact that blanket fertilizer recommendations were made for most projects based on general norms for the Eastern Cape and not on the basis of soil analyses or detailed technical input.

The relationship between agro-dealers and projects was not always strictly an arms length transaction. In a number of cases, the dealer assisted projects to complete their production plan and thus effectively selected the volume and product for projects participating in the programme. Farmers' limited experience with high value inputs meant that they lacked information and knowledge to sufficiently interrogate what was being proposed. The introduction of project mentors in 2006 helped address this information imbalance to some extent.

The concentrated nature of the input supply sector in the Eastern Cape together with the limited ability of farmers to provide the necessary checks and balances on the supplier recommendations may be one reason why the input costs for Siyakhula/Massive participants were significantly higher than those for their eastern Free State counterparts. Another reason for the discrepancy cited by a major input supplier was the high transport costs associated with input delivery due to the poor road infrastructure in the Eastern Cape rural areas given that the price of inputs is the delivered price. The price of inputs per hectare for the Eastern Cape as reflected in Table 7 includes 14 percent value added tax (VAT). The reluctance of farmers to register for tax purposes and claim this back also explains the discrepancy. Finally, in the case of agricultural inputs, volume discounts often apply and, given the relatively small size of orders placed, programme participants were not in a position to attract such savings.

Following from this point it has been argued that rather than establish a commercial relationship between programme participants and input suppliers, the Eastern Cape Department of Agriculture should have put out a tender for the bulk supply of farm inputs and distributed these directly to projects. While this strategy no doubt would have lowered the input costs for the programme as a whole, the market development benefits and thus long term sustainability of the intervention would have been severely compromised.

From the perspective of the input suppliers themselves, while they carried out activities to strengthen their reach into areas where Siyakhula/Massive projects were concentrated, they were reluctant to incur any significant investment to service this market segment.
Uncertainty about the size of the programme, its medium term continuity and timing created too much risk to justify this investment.

## CONCLUSIONS

The analysis presented suggests that the Siyakhula/Massive programme, despite not achieving its stated objectives, was relatively successful in strengthening food security in the Eastern Cape. An estimated 14 000 households per year benefited from the programme and it helped increase the supply of maize in the Eastern Cape by 50 000 tonnes. With respect to promoting black economic empowerment within the South African agricultural sector as a whole, the success of the programme was muted by the fact that the increased maize production it encouraged could not be converted into cash. In terms of strengthening private sector markets in rural areas, Siyakhula/Massive did promote some market thickening; however, there are still some genuine gaps that undermine the commercialisation of agriculture. Output markets are still missing in parts of the Eastern Cape and the land rental market still need to be developed. In the case of input supply markets and mechanization services, these require urgent attention to make them more competitive.

Given the outputs that the Siyakhula/Massive programme delivered, the ability of the South African government to move beyond a narrow project paradigm and achieve genuine reach in the rural areas of the country, deserves to be interrogated. The urgency of addressing rural transformation demands a big push approach. What Siyakhula/Massive shows is that if the natural resource endowments are present and if there is a willingness to adjust programme design as lessons are learnt, some progress can be made. This suggests that not all the objectives of rural transformation such as improved production, incomes, employment, private sector support markets, conservation and household food security can be met simultaneously.

What Siyakhula/Massive also illustrates is that doing agricultural development programmes to scale is very expensive in terms of beneficiary unit cost and this raises concerns about the ability to replicate the model. The economic justification, therefore, depends on adopting a long term investment horizon which provides sufficient time to achieve sustainable production increases for relatively large numbers of producers. It is early days, but there is some evidence that Siyakhula/Massive has achieved genuine transformation and, if sustained, this would make the initial investment seem relatively modest and worth considering in other provinces of South Africa where there are areas of unexploited agricultural potential within or adjacent to the former homelands.

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