



A CASE OF SMALLHOLDER COTTON PRODUCERS IN SOUTH AFRICA

2022/23

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Smallholder Market Access Tracker

Smallholder Market Access Tracker (SMAT) is a tool that has been developed by the NAMC, with the help of a reference group, to measure the progress in the achievement of the market access goal for smallholder farmers in South Africa.

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LIST OF ACRONYMS

ABBREVIATION	DESCRIPTION
ARC	Agricultural Research Council
BATAT	Broadening Access to Agriculture Thrust
BCI	Better Cotton Initiative
CASP	Comprehensive Agricultural Support Programme
Cotton SA	Cotton South Africa
СРА	Common Property Association
DALRRD	Department of Agriculture, Land Reform and Rural Development
DTIC	Department of Trade, Industry and Competition
EU	European Union
ICAC	International Cotton Advisory Committee
IOL	Independent Online Newspaper
ITC	International Trade Centre
KZN	KwaZulu-Natal
LP	Limpopo
MAP Act	Marketing of Agricultural Products Act
MP	Mpumalanga
NAMC	National Agricultural Marketing Council
NEF	National Empowerment Fund
РТО	Permission to Occupy
RDP	Reconstruction and Development Programme
RSA	Republic of South Africa
SCC	Sustainable Cotton Cluster
SMAT	Smallholder Market Access Tracker
USA	United States of America
USDA	United States Department of Agriculture



The NAMC is leading a project to develop a dashboard tool as a measure of progress towards achieving market access for all participants in the agricultural sector and, in particular, market access for smallholder farmers in South Africa. The construction of the Smallholder Market Access Tracker (SMAT) tool commenced in April 2016 when the first pilot was conducted on potatoes. A second pilot was then conducted on beef in 2018. These pilots culminated in a citrus baseline in 2019, broiler baseline in 2020, raisins baseline in 2021, and wool baseline in 2022. In the initial stages – up to the broiler baseline – the process was overseen by a group of representatives selected from various South African agricultural stakeholders (referred to as reference group).

The SMAT tool is made up of indicators sourced primarily through a survey specifically designed to collect primary data on smallholder market access. The indicators were identified through using certain key market access variables gathered from empirical research, and constitute the 'heart' of the SMAT tool, and might have positive, negative, or neutral effects on the likelihood of smallholder farmers gaining access to the market. They are categorised into two groups, where the first group tracks the progress from the supply perspective (farmers' perspective), and the second group tracks the progress from the demand side (market's perspective). These indicators are meant to inform the policymakers of the situation per industry tracked, thereby enabling the formation and continuation of more effective programmes or interventions toward market access achievement. The information is presented in the form of dashboard analyses and will be updated at a two-year interval.

This is the fifth in a series of baseline studies, and it focuses on smallholder cotton farmers. The report is based on the results generated from a survey of 153 smallholder cotton farmers in the KwaZulu-Natal, Limpopo and Mpumalanga provinces.

In terms of the farmers' profile, the results indicate that a typical smallholder cotton farmer is a black female who has acquired (mainly) primary education or less, and relies mainly on farming as a source of livelihood. Although farming is her main source of livelihood, she has a diverse range of other sources of income, such as social grants, pensions, remittances, and small business activities. She prefers to work in a collective, as she farms mainly as a member of a cooperative. She produces an average of 2 055.44 kg of cotton per annum. Her farm income per annum is R12 332.63 and the total cost of production per annum is R7 471.90. She puts in a significant investment into her cotton production endeavours, as she buys several inputs, hires implements and labour, and conducts various activities such as harvesting, sorting and packing her cotton manually.

She has no alternatives in the marketing channel that she uses, as she sells her cotton only through the ginnery, which is some distance from Mpumalanga (260 km), which is more than double the distance travelled by a farmer in Limpopo and fourteen-fold the distance travelled by a farmer in KwaZulu-Natal. Perhaps owing to a lack of alternative marketing channels to compare with, she is generally satisfied with her relationship with the ginnery, although with minor concerns regarding fairness and convenience of the ginnery.

Access to services, facilities and equipment that could enhance market access is a challenge, with less than 50% of the farmers in many cases having access to these. In some cases, even those who have access share the machinery and implements, which makes it difficult to plan their production season properly. Furthermore, these facilities were rated as 'poor' or 'very poor' by the majority of the farmers, and this was attributed to lower adequacy.

Therefore, it was recommended that the farmers should organise themselves properly to share lessons and align their goals in the manner that optimises access to resources, machinery and equipment. It was also recommended that collaboration between Cotton SA, government and farmers should strive to bring the youth on board to enable access, analysis and use of marketing information, as well as the adoption of developmental initiatives in an optimum manner.

SECTION 1: INTRODUCTION

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1.1 Background

One of the founding objectives of the NAMC, as stipulated in the Marketing of Agricultural Products (MAP) Act (Act 47 of 1996), is to increase market access for all participants. In 2016/17, the NAMC initiated the creation of a SMAT tool to measure progress towards achievement of "market access for all participants, in particular, market access for smallholder farmers"¹ in South Africa. The rationale for creating such a tool stems from the general perception and, in some cases, study findings, of or indicating a lack of progress in addressing smallholder farmers' integration into South Africa's mainstream economy, with the majority of smallholders being black people. This is on the back of very well-articulated policies from as far back as 1994 when the Reconstruction and Development Programme (RDP) was published by the ruling African National Congress (ANC) to create a restructured agricultural sector that "spreads the ownership base, encourages small-scale agriculture, further develops the commercial sector and increases production and employment" (African National Congress, 1994). Following the RDP sentiments, the White Paper on Agriculture, published in 1995, advocated for the provision of support services to enable farmers to move into commercial farming, if so desired (Makhura et al., 1996).

The then National Department of Agriculture (NDA) developed the Broadening Access to Agriculture Thrust (BATAT) in 1995 as its RDP project, aimed at improving the access of small-scale farmers to agricultural services in five areas, namely financing, technology development, transfer systems, human resource development, and marketing. A component of this initiative known as the "BATAT Marketing Drive" sought to "improve small scale farmers' ability to seize marketing opportunities" (Van Renen, 1997). Over the past two decades, similar policies and programmes have been developed to support the development of smallholder farmers. The most prominent and significant of these is the Comprehensive Agricultural Support Programme (CASP), which was introduced in 2004 to provide support to smallholder farmers and land reform beneficiaries (NDA, 2004).

Recent findings suggest that CASP and other farmer support programmes have not been effective in achieving their intended goals (Vink et al., 2012). There is a need to measure and track the situation regarding market access for smallholders to assist with policy debate and the formulation of more effective programmes for the achievement of market access. It is against this background that the NAMC proposed that the Smallholder Market Access Tracker (SMAT) be developed as a measure of progress in the achievement of the market access goal for smallholders in South Africa. SMAT indicators were identified and were used as a basis for instrument design. Pilot surveys were undertaken to test the SMAT instrument on the following commodities – potatoes (2016/17) and beef (2017/18). The pilots culminated in a baseline on citrus smallholder producers, which was conducted in 2018/19. The second baseline was completed in the 2020/21 financial year on the smallholder broiler producers. The third baseline was completed in the 2020/21 financial year on the smallholder raisin producers. The fourth baseline, focusing on smallholder wool farmers, was completed in the 2021/22 financial year. The purpose of this report is to present the fifth baseline of SMAT conducted on smallholder cotton farmers. The baseline constitutes an endeavour to describe the status of smallholder cotton farmers in terms of production, marketing, and access to marketing services. The idea is to uncover barriers faced by these farmers when entering mainstream marketing channels and to recommend certain interventions that would enhance their market access and the value of their marketable product.

¹ A smallholder farmer in the context of this baseline is derived from the DAFF definition and refers to a new entrant who aspires to produce for the market and make a profit. It is used with the term 'communal farmers' interchangeably.

1.2 What is the Smallholder Market Access Tracker (SMAT)?

The SMAT is a tool that acts as a measure of progress in achieving the market access goal for smallholders in South Africa. The tool aims to generate information to address the strategic objective of increasing market access for smallholder farmers in South Africa. The SMAT is helpful for the following targeted stakeholders, among others, for advisory services:

- Government;
- > Farmers and farmer organisations;
- > Fresh produce markets; and
- > Market institutions.

The SMAT is composed of indicators identified through using certain key market access variables gathered from empirical research. The indicators comprise the 'heart' of the SMAT tool. Following a rigorous discussion under the SMAT Reference Group's oversight,² it was decided that the SMAT indicators would be sourced primarily through a survey that is specifically designed to collect primary data on smallholder market access. Additional data, when required, would be obtained from secondary sources as well as from expert or critical informant opinions. The indicators were selected based on the theoretical economic premise hypothesised to either positively or negatively or neutrally affect the smallholder's likelihood of gaining access to the market. The indicators are further categorised into two groups, the A Indicators (indicators from the farmer's perspective) and the B Indicators (indicators from the market's perspective). **Table 1** below presents the selected indicators for the SMAT, with their definitions, and the nature of their effect on smallholder market access.

² The NAMC defines the Reference Group as a group of experts in certain fields, but with a degree of diversity among them (experience, demographics, regional spread, areas of specialisation, academic inclination, sector, affiliation, etc.).

Name	Definition and expected nature of the relationship with market access (in parentheses)
Farmer (Supply or "Push") indicators ³	
A1. Farmer profile:	
A1.1 Gender	The gender of the farmer (NA)
A1.2 Age	Age of the farmer (NA)
A1.3 Education	Highest education level attained by the farmer (+)
A1.4 Location	Town and province where the farmer is located (NA)
A1.5 Legal entity	Type of entity that the farmer belongs to (if any) (NA)
A2. Supply:	
A2.1 Selling of produce	Whether the farmer sells any of his or her produce (+)
A2.2 Type of market supplied	Type of market supplied by the farmer (NA)
A2.3 Quantity supplied	Quantity (quantities) supplied by the farmer (+)
A2.4 Value supplied	Value (in Rands) supplied by the farmer (+)
A2.5 Selling arrangements	Whether farmer sells through spot selling, contract, etc. (NA)
A2.6 Selling price arrangements	Whether a farmer negotiates to set price or whether he/she is a price taker (NA)
A2.7 Payment arrangements	The length of time it takes for payment to be effected (NA)
A2.8 Distance to market	Distance to the market supplied by the farmer (-)

³ The farmer (supply or "push") indicators denote the perspective of the farmer (the supplier).

A3. Market services Whether the farmer has access to any source of market information (+) A3.1 Access to market information Whether the farmer has access to any form of storage (+) A3.2 Access to storage A3.3 Access to packaging facilities Whether the farmer has access to any packaging facilities (+) A3.4 Access to credit Whether the farmer has access to a credit facility (+) A3.5 Access to training/extension Whether the farmer has access to any training or extension service (+) A3.6 Access to transport Whether the farmer has access to any transport service (+) A3.7 Rating of quality of market information Farmer's rating of the quality of market information (1 = poor; 5 = excellent) (+)A3.8 Rating of quality of storage Farmer's rating of the quality of storage (1 = poor; 5 = excellent) (+)A3.9 Rating of quality of packaging facilities Farmer's rating of the quality of packaging facilities (1 = poor; 5 = excellent) (+) Farmer's rating of the quality of credit service (1 = poor; 5 = excellent)(+)A3.10 Rating of quality of credit A3.11 Rating of quality of training/extension Farmer's rating of the quality of training/extension (1 = poor; 5 = excellent) (+)A3.12 Rating of quality of transport Farmer's rating of the quality of transport (1 = poor; 5 = excellent) (+) A4. Market requirements A4.1 Awareness of market requirements Where applicable, whether the farmer is aware of market requirements (+) Where applicable, the extent to which farmer complies with market requirements (1 = no compli-A4.2 Compliance with market requirements

ance; 5 = excellent compliance (+)

B. Market (Demand or "Pull") perspective⁴

B1. Market Profile

Type of market supplied by the smallholder (NA) Town and province where the market is located (NA)
Town and province where the market is located (NA)
Where applicable, the total turnover of the market supplied by smallholder farmers (NA)
Where applicable, the market's turnover on the specified commodity supplied by smallholder farmers (NA)
The total market tonnage of the specified commodity sourced from smallholder farmers (NA)
Number of smallholders supplying the market with the specified commodity (+)
The total tonnage of the specified commodity supplied by smallholder farmers (+)
The total value of the specified commodity supplied by the smallholder farmers (+)
The total smallholder farmers' market share for all commodities supplied (+)
The smallholder farmers' market share of a specified commodity (+)
Whether the market provides market information services to smallholders (+)
Whether the market provides storage services to smallholders (+)
Whether the market provides packaging facilities to smallholders (+)
Whether the market provides credit facilities to smallholders (+)

⁴ The market (demand or "pull") indicators denote the perspective of the market (the buyer)

Whether the market provides training or extension services to smallholders (+)
Whether the market provides transport services to smallholders (+)
Whether business registration is a minimum requirement for smallholders (NA)
Whether business packaging is a minimum requirement for smallholders (NA)
Whether business product standards are a minimum requirement for smallholders (NA)
The length of time that the market takes to pay smallholders for their produce (NA)
The market's rating of the quality of products supplied by smallholders (1=poor; 5=excellent) (+)
The market's rating of the quantities of produce supplied by smallholders (1=poor; 5=excellent) (+)
The market's rating of the consistency of supply of produce supplied by smallholders (1=poor; 5=ex-cellent) (+)
The market's rating of the logistics for the products supplied by smallholders (1=poor; 5=excellent) (+)

Note: It is expected that the sourcing of data from both the supplier and the buyer perspectives will assist in the counter-checking of results, such that the data from the one side is checked against data from the other side to improve overall quality and usability, NA = Not applicable

1.3 Methodological approach to the development of SMAT

The development of the SMAT commenced in April 2016. The NAMC put together an internal research team to implement the SMAT project. Furthermore, a group of experts, representing a wide range of agricultural stakeholders (academia, government, private sector, and non-governmental organisations) – the "Reference Group", was appointed to oversee and advise the process and its outputs. **Figure 1** depicts the process of the development of the SMAT. It is noteworthy that the involvement of the Reference Group ended in 2020, during the broiler baseline formulation. This was attributable to structural changes within the NAMC.

As explained earlier, two pilots were conducted to test the tool that culminated in the five baselines. Both the pilots and the baselines form part of the output. Subsequently, there is an outcomes phase. It is believed that the real worth of SMAT lies in this phase because the outcomes should provide action plans and commitments by relevant stakeholders, as guided by the recommendations of the baseline. This should further form the basis for tracking the progress from the baseline. This means that, beyond generating information on the status of smallholder market access, the SMAT must stimulate meaningful discussions that drive inclusive growth and break barriers faced by smallholder farmers in entering into the mainstream value chains.

The baselines serve as outputs and provide recommendations based on the assessment of the industry. However, the report's relevance as a measure of progress and any impact it should make in developing smallholder farmers will largely depend on the industry, government, farmers, and other relevant stakeholders' actions. Hence, the outcomes stage catalyses the actual report and the desired broader impact.



Figure 1: The SMAT process Source: Adapted from the SMAT report (2019)

1.4 Cotton baseline: sampling and data collection procedure

Cotton was identified as a commodity of interest in 2021 and the engagement with Cotton South Africa (Cotton SA) began soon after. The databases collected from KwaZulu-Natal and Limpopo provinces indicated that there are about 683 smallholder cotton producers in these provinces alone, structured into 37 and 18 cooperatives, respectively. However, only a few farmers were actively producing; hence, we used the Cotton SA's database that contained farmers in Mpumalanga (142), Limpopo (19), KwaZulu-Natal (105) and Gauteng (1), who added up to 267 farmers. Using the study of Singh & Masuku (2014), it was determined that the required sample size, at 95% confidence level, comprises 158 farmers. However, 153 responses were recorded, leaving the margin for error at 5.19%.

SECTION 2: OVERVIEW OF THE COTTON INDUSTRY

SECTION 2: OVERVIEW OF THE WOOL INDUSTRY

2.1 Introduction

While cotton is mostly utilised in the textile sector for manufacturing products like apparel, it is also offered for other uses, such as in making furniture, tyres, and automobile interiors, to name a few. Cotton is one of the most important of all natural fibre crops in the African textile industry. It is considered one of the world's greatest poverty-alleviating crops, with 150 million people worldwide relying on it for income. According to the International Cotton Advisory Committee (ICAC) (2011), this drought-resistant crop creates five jobs for every ton produced, thus having massive potential in South Africa and the rest of the continent. There has been a significant rise in smallholder farmers who are engaging in cotton farming, more especially in rural communities of developing countries (Statista, 2022). However, smallholder cotton growers often lack access to productivity-enhancing inputs such as improved seed, fertilisers, water and information. The credit needed to finance investment in these inputs is also a major constraint. According to ICAC (2011), cotton production faces crucial challenges, such as escalating costs of production, low cotton lint prices, inefficient pest management, stickiness, yield variability within the same location, late cotton picking, subsidies in the developed countries, diminishing production capital, and competition from other crops.

2.2 Global production

According to the ICAC (2022), the global cotton production was just over 25.7 million tons in the 2021/22 season. **Figure 2** presents the top 10 cotton-producing countries in the 2021/22 production season. India is the largest cotton producer in the world, at 5.9 million tons. It is followed by China (5.7 million tons), the United States of America (USA) (3.9 million tons), Brazil (2.6 million tons), Pakistan (981 000 tons), Uzbekistan (940 000 tons), Turkey (833 000 tons), Australia (608 000 tons), Argentina (349 000 tons) and Mali (340 000 tons) to complete the top 10. The top 10 countries together contribute 85% to the global cotton production. South Africa is a small player in terms of global production, contributing less than 1%.

The global cotton supply is still surrounded by uncertainty for 2022. Floods have wreaked havoc in Pakistan, which provides about 3% of the cotton used globally. Pakistan is now anticipated to import 1.2 million tons of cotton for the upcoming season as a result. During critical growth seasons, India and the USA experienced certain unfavourable weather conditions that are likely to have an impact on the quality and maybe the quantity of cotton. The following are a few of the difficulties that the global cotton value chain has typically faced:

- > Supply chain bottlenecks;
- > Falling consumer demand;
- Factory closures;
- > Cancellations of orders by buyers;
- > The collapse of some garment trades; and lately
- > Macroeconomic uncertainty globally



Figure 2: Top ten producers of cotton in the 2021/22 season Source: ICAC (2022)

2.3 Domestic markets

Cotton-related challenges in large producing countries tend to have an impact on all countries that deal with the textile or associated industries. Asia, the European Union (EU), and the USA are the three major players in the textile market, and as a result, they have a large influence on the global cotton market. Garment imports from the USA fell by 26% between 2019 and 2020, while imports from the EU and Japan fell by 25% and 17%, respectively (IOL, 2020). In 2018, imports into the EU decreased by US\$17.5 billion, US\$17 billion into the USA, and US\$2.6 billion into Japan in value terms (IOL, 2020).

Although India, China, and Pakistan are among the world's top producers of cotton, they do not rank among the top exporters. The USA held a 33.2% market share, globally, in the 2021/22 season, followed by Brazil (20.3%), India (8.0%), Australia (7.4%), Benin (3.2%), and Greece (2.9%) (ICAC, 2022). South Africa was the 28th largest exporter in the world, at 19 000 tons exported, or 0.2% of the global market share. Leading cotton exporters from around the world are shown in **Figure 3** for the 2019–2021 marketing year. South Africa is included for comparison purposes, otherwise it is quite a small player compared with the top global cotton exporters.

⁵ DAFF used to be the Department of Agriculture, Forestry, and Fisheries. In June 2019, the name was changed to "Department of Agriculture, Land Reform, and Rural Development (DALRRD)" following the merger of the DAFF and the Department of Rural Development and Land Reform (DRDLR).



Figure 3: Top 10 cotton exporters between 2019/20 and 2021/22 marketing years Source: ICAC (2022)

2.4 Retail prices

Of the predicted global demand for 25.3 million tons of cotton as of August 2022, it was estimated that the global market would be close to 600 000 tons short. However, the world market is currently facing several difficulties, including drought, inflation, and the conflict in Ukraine, which has had a variety of effects on different nations, as well as the ambiguity surrounding cotton demand in the upcoming season.

Along with the COVID-19 epidemic, the aforementioned problems also had an impact on the local market. Despite the numerous obstacles, cotton prices during the 2021/22 marketing season were noticeably high, both internationally and domestically (Cotton SA, 2021). They averaged 126.95 US cents per pound. According to ICAC (2022), the highest price paid internationally was 157 US cents per pound in the 2021/22 marketing year. Based on details provided by Cotton SA (2022), international cotton prices increased by 53% year-on-year from the 2020/21 to the 2021/22 season, with production, weather, consumption, and price uncertainty all having an impact. The high price volatility observed in recent months is likely to continue throughout the 2022/23 marketing season primarily because of macroeconomic challenges in the major export markets for South Africa and the rest of the world. However, global supply remains short of the global demand and that may boost prices, if everything stays the same.

Figure 4 compares the average cotton price in South Africa (RSA cents per kg) with the price in other countries (US cents per pound). Generally, domestic prices have moved concurrently with the global prices. For the observed period, the cotton seed price has increased by 67%, from 530 cents per kg in 2012/13 to 886 cents kg in 2021/22. The cotton lint price has increased by 68%, from 1508 cents per kg in 2012/13 season to 2537 cents in 2021/22. On a year-on-year basis, cotton seed prices increased by 15%, from 772 cents per kg to 886 cents per kg, while cotton lint increased by 18%, from 2156 cents per kg in the 2020/21 season to 2537 cents per kg in 2021/22.



Figure 4: South African average cotton lint and seed prices (RSA cents vs international lint prices (US cents) Source: Cotton SA (2022)

2.5 Domestic production

According to the Agricultural Research Council (ARC) (2019), cotton is believed to have been planted in South Africa as early as 1690 and was planted on a large scale by 1870, owing to high demand for the fibre. It has since become a prominent crop for planting because of its hardiness and profitability. Today, cotton is grown in five provinces, namely KwaZulu-Natal, Limpopo, Mpumalanga, Northern Cape and North West. Approximately 150 commercial farmers and 1 300 smallholder farmers are involved in cotton production (ARC, 2019). The wide-scale introduction of Genetically Modified (GM) cotton varieties by both commercial and developing farmers has contributed significantly to improving the yields and profitability of cotton. By July 2019, Cotton SA reported that the industry had produced 29 672 tons of seed cotton and 6 494 tons of cotton lint in the 2018/19 season.

According to the eighth estimate out of twelve for production in 2021/22, South Africa's output was predicted to be 23 000 tons (ICAC, 2022). The country was ranked 41 in 2021/22 production by the ICAC, tied with Mozambique. Given the increased input costs, globally, farmers in regions like the North West may switch from conventional field crops such as maize and oilseeds to cotton. Cotton is grown as a summer crop in South Africa from October through to November, and it is typically harvested from May through to June in the winter. Cotton prices are rather good, which would encourage farmers to switch to cotton. South Africa's cotton production over the indicated time period is shown in **Figure 5**. After hitting its peak during the production season for 2018/19, production had decreased by 9% over the preceding ten years. This might be explained by the fact that the planting area has sharply decreased since 2018.



Figure 5: South African cotton production Source: Cotton SA (2022)

South Africa's cotton production takes place under both irrigation and dryland conditions (Cotton SA, 2022). **Figure 6** compares the yield of cotton seed under irrigation and dryland production. From the 2012/2013 season to the 2021/22 season, the yield under irrigation increased by 8.9%, while the yield under dryland production increased by 35.1%. Despite the yield under dryland production seeming to have increased by a larger percentage over the observed period, the gap between the two production systems has remained wide over the same period. For example, in the 2012/13 season, the yield under irrigation was 70.6% higher than the yield realised under dryland production was. In the 2021/22 season, the gap was 61%. Furthermore, production under dryland tends to be more responsive to dry years, as observed by the decline in dry seasons such as the 2015/16, 2017/18 and 2018/19 seasons.



Figure 6: South African yield comparison under the irrigation production system vs dryland production Source: Cotton SA (2022) In an endeavour to improve capacity and competitiveness and to create jobs in the cotton, textile and clothing industry, the industry formed the Sustainable Cotton Cluster (SCC) in May 2014. The cluster brings together the entire cotton supply chain under one umbrella. The stakeholders are working together to improve the economic, social and environmental sustainability of the cotton industry. Noteworthy, cotton production in South Africa is faced with numerous challenges, such as competition from other countries where their governments support programmes that sustain their local farming communities, and the relative returns that can be made from competing crops such as maize and sunflower in the South African markets.

2.6 Domestic market

According to Cotton SA, the norm is that cotton is produced based on agreements signed by farmers and contractors who buy cotton. Contractors supply the farmers with inputs as a loan, from which deductions are made when the product is delivered. This system is known as marketing pools and it is intended to benefit farmers and ginners through marketing economies of scale, as it provides the ability to negotiate the price. Farmers who sell individually typically receive prices below market. In addition to price negotiation, the marketing pools typically result in an upfront financial reward, which can occasionally benefit smallholder farmers by allowing them to solve their immediate financial problems. The domestic cotton market has recently seen its fair share of challenges. However, this is not exclusive to the local market, as the global market also faced difficulties, such as COVID-19 (IOL, 2020).

In comparison with the global market, the South African cotton industry is very tiny, as are the gins and mills. Owing to the limited capacity of local cotton spinning, weaving and knitting, 80% of the cotton lint produced is exported for processing and is then imported as various processed products (Cotton SA, 2022). **Figure 7** shows the destinations for South Africa's cotton lint exports. Taipei (Chinese), Bangladesh and China were the largest export markets in 2021. These three countries accounted for more than half of South African cotton lint exports. South Africa exported a share of 24% cotton lint to Taipei (Chinese) and Bangladesh. The third largest market destination was China, with a share value of 23%, followed by Mauritius (11%), Indonesia (10%), Viet Nam (6%) and Angola (2%), respectively.



Figure 7: South Africa's cotton lint exports destinations Source: ITC (2022)

2.7 Statutory measures and development initiatives in the cotton industry

The South African cotton industry and all the role players in the cotton value chain are represented by Cotton South Africa (Cotton SA), a body that was established in 1998. Cotton SA provides valuable information on production, trade, consumption stocks, and prices to the industry players. It also raises awareness of critical issues and facilitates cooperation on matters of shared interest. Furthermore, the cotton industry is supported by the Cotton SA Trust. This and other trusts within different commodity groups had inherited the funds from the former control boards after the latter had been phased out following the deregulation of markets in 1996. The Cotton SA Trust inherited assets to a value of close to R8.3 million. The objectives of the Cotton SA Trust, according to the Trust Deed, include financing, stimulating, and promoting cotton production, demand, consumption, and research. The Trust's activities are guided by the relevant Deed of Trust, which was approved by the Minister responsible for agriculture (henceforth referred to as the Minister) when the funds were transferred from the former control boards.

2.7.1 Statutory Measures of Cotton SA

Cotton SA also acts as an industry forum and an advisory body to various government departments, applying appropriate statutory measures in terms of the MAP Act and administering them accordingly. Statutory measures refer to compulsory registrations, records and returns, payment of statutory levies, and the control of exports of agricultural products (NAMC, 2021). These measures constitute certain interventions in the agricultural marketing environment. Since 1997, statutory measures, namely levies, records and returns, and registration, were approved by the Minister and promulgated in the Government Gazette, for specific agricultural products and for specific periods of time.

Regarding levies, in terms of Government Notice No. 736 of 20 July 2018, ginners must pay a cotton levy to Cotton SA, based on the lint produced. The records and returns are to be provided in terms of Government Notice No. 734 of 20 July 2018, which requires purchasers, processors, importers and exporters of cotton fibre (lint) to keep records and submit monthly returns to Cotton SA. Lastly, the registration is required in terms of Government Notice No. 735 of 20 July 2018, which necessitates all producers, purchasers, processors, importers and exporters of cotton fibre (lint) to register with Cotton SA. Since 2008, the NAMC has conducted an annual review of all statutory measures implemented in terms of the MAP Act. The mandate of this survey is to report to the Minister a summary of all statutory measures disseminated to make information available on the amount collected through statutory levies. These are confirmed by referring to the audited financial statements of the relevant levy administrators, and in this case, it will be Cotton SA.

The statutory levies collected by Cotton SA from the 2017 – 2022 survey are shown in **Table 2**. It shows that the total levy income collected for cotton lint between 2017 and 2022 amounted to close to R31 million, at an average of about R5.2 million per annum for this period. However, the total levy income collected decreased by 63.6%, from close to R12 million in 2021 to R7.3 million in 2022. This decline is attributable to several factors, including unfavourable weather conditions, a lack of access to new cultivars, and several cotton producers turning to food crops because of more favourable prices. These factors led to a decline in the production of cotton and consequently resulted in a smaller levy income.

Years	Levy income
2017	4 037 710
2018	2 524 884
2019	4 164 108
2020	8 281 436
2021	11 991 781
2022	7 330 439
Total	30 999 919

Table 2: Levies collected by Cotton SA between 2017 and 2022

Source: NAMC (2021)

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2.7.2 Transformation expenditure and Cotton SA's development initiatives

The impact of statutory measures is that they enable each agricultural sector, which has obtained approval from the Minister, to collect levies to finance generic functions, register certain identified role players, and to collect and disseminate information. It also constitutes a powerful mechanism for each agricultural sector to organise the industry, grow the industry, obtain funds to pay for important functions, and to increase the competitiveness of the industry. In addition, the statutory measures enable the industry to fund transformation activities as set out in the NAMC Transformation Guidelines of 2018. According to the guidelines, Cotton SA must spend 20% of its levies on transformation activities. This 20% is further broken down to 60% of funding allocated to enterprise development, 18% allocated to skills development, 17% allocated to management control and 5% allocated to ownership and socio-economic development.

2.7.3 The transformation expenditure of Cotton SA projects for 2020/21

Table 3 shows the transformation expenditure of Cotton SA for 2020/21. Approximately R212 000 was spent on enterprise development, R1 162 409 was spent on skills development and mentorship in addition to Better Cotton Initiative (BCI) compliance training, and approximately R120 000 was spent on ownership of the two demonstration sites in Makhathini, KZN. Overall, Cotton SA spent R1 547 759 on 1 937 beneficiaries countrywide, at an average of R799.05 per beneficiary. The NAMC's statutory report captured a success story out of this expenditure. *"Cotton SA has mentored and managed the Nkomazi Cotton Project to be a successful BCI-approved project. The Better Cotton Initiative (BCI), or just Better Cotton for short, is the largest cotton sustainability programme in the world. In order to become BCI licensed, the participants had to comply with international standards. In local terms, they had to comply with 90% of RSA national agricultural legislation. The National Empowerment Fund (NEF) is investigating the possibility of constructing a new cotton gin in Nkomazi, working with the farmers. Large portions of land are still available for future production in the Nkomazi area. The aim of Cotton SA is to develop black farmers in Nkomazi to their full potential" (NAMC, 2021: 22).*

Table 3: Transformation expenditure in the cotton industry in 2021/22 financial year levy period

Pillar	Amount spent
Enterprise development	R212 805
Skills development	R1 162 409
Management control, ownership equity, and socio-economic development	R172 543
Total	R1 547 759

Source: NAMC (2021)

2.7.4 The Better Cotton Initiative (BCI)

The Better Cotton Initiative (BCI) is the world's largest non-profit cotton sustainability programme. The programme aims to produce cotton sustainably by solving issues related to cotton production and processing, and promotes continuous improvements that are measurable for the environment, farming communities and the economies of cotton-producing areas. The BCI has four objectives, which are:

- > To decrease the impact of cotton production on the environment;
- > To improve the economic development and the livelihoods in cotton-producing areas;
- > To improve commitment to and flow of Better Cotton throughout the supply chain; and
- > To sustain the BCI.

The BCI has given over 2.4 million farmers in 25 countries a licence to sell their cotton as Better Cotton. It receives funding from income earned for services delivered, grants and donations.

Another initiative that the cotton industry is involved in is the Sustainable Cotton Cluster (SCC), which is funded by the Department of Trade, Industry and Competition (DTIC).

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SECTION 3: COTTON BASELINE SURVEY RESULTS

SECTION 3: COTTON BASELINE SURVEY RESULTS

This section provides the results of the key SMAT indicators that relate to aspects of the farmers' profile, production, marketing, and insurance. As mentioned in Section 1, 153 smallholder cotton farmers were interviewed in the KwaZulu-Natal (94), Mpumalanga (54) and Limpopo (5) provinces, respectively. This represents the number of responses that remained after cleaning the data. The analysis in this section is based on this number (153 smallholder cotton producers).

3.1 Demographic information

Table 4 presents the demographic information of smallholder cotton farmers regarding gender, education, race, the main source of livelihood, and the legal status of the farm business. The results indicate that a typical smallholder cotton farmer is a black female who is likely to have received primary education or less, as the majority (53%) of farmers on aggregate have received primary education or less. This might have implications for the farmers' capabilities to search for, acquire, process, comprehend, and analyse the necessary information for their farming endeavours, as suggested by Ellis (1998).

The majority of the sampled farmers (41%) indicated that farming is their main source of livelihood, with social grants (37%) and pensions (10%) being identified as the second and third main sources of livelihood. Other business was identified as the main source of livelihood for 7% of the sampled farmers, while remittances were identified by the minority (5%).

The majority (68%) of farmers indicated that they farm as a cooperative, followed by those who farm as individuals (31%), while only 2% of farmers .

Table 4: Summary of demographic characteristics presented in percentages

Variable	Category	n = 153	Total %
Conder	Male	75	49
Gender	Female	78	51
	Primary or less	81	53
Education	Secondary School	64	42
	Tertiary education	8	5
Race	Black	153	100
	Farming	63	41
	Social grants	57	37
The main source of livelihood	Pension	15	10
	Remittances	7	5
	Other business	11	7
Legal status	Individual	47	31
	Common Property Association (CPA)	2	1
	Cooperative	104	68

Source: Survey data

3.2 Farming profile

Table 5 presents the aggregate summary of production indicators recorded as the average over the past three years. The results show that all farmers were able to respond to all the indicators. Their production was up to 50 000 kg per annum, at an average of 2 055.44 kg. On average, a farmer's income was R12 332.63 per annum. One of the main underlying causes of the differences, among others, is own farm size, where farmers have access to a minimum of 0.5 hectares, while some farmers use up to 150 hectares. A larger standard deviation indicates that the data was more spread out, thereby signifying a disparity between the minimum and maximum numbers. The farmers used either family labour (zero hired labour) or hired a maximum of 6 workers to assist, mainly during harvesting. On average, the cost of production was R7 471.90 per annum, and again, a larger standard deviation indicates that there was a huge disparity between the minimum values. Noteworthy, the maximum cost of production (R40 000) is higher than the maximum income (R30 000). This shows the disparities between individual farm activities on the two indicators. However, the results also show that, on average, the income at R12 332.63 is higher than the cost of production at R7 471.90, which justifies the effort of the farmers to stay in business. Farmers were asked about their experience in terms of their involvement in cotton production. The results show that the farmers have been involved in cotton production for an average of 12 years.

Variables	Units	Mean	Std. dev.	Min	Max
Production	kg/year	2 055.44	5 114.99	100	50 000
Farm income	R/year	12 332.63	30 689.97	600.00	30 000.00
Farm size	На	11.90	24.12	0.5	150
Labour	Ν	6	9.05	0	70
Cost of production	R/year	7 471.90	8 360.96	550	40 000
Experience in cotton production	Years	12	9.25	1	52

Table 5: Summary statistics of production indicators (n=153)

Source: Survey data

Table 6 expands on the cost of production that is presented in **Table 5** by showing the main contributing cost items. The results show that the majority (43) of farmers identified pesticides as the major cost driver in their cotton production endeavours. On average, farmers were spending R5 268.60 per annum on pesticides. The seed was identified by 42 farmers as the main cost driver, where farmers were spending R8 775.98 per annum. Labour was identified by 34 farmers and these farmers were spending R8 408.82 per annum, while 22 farmers identified hiring implements as a major cost driver, at an average of R7 168.18 per annum. Only 8 farmers identified fertiliser as a main cost driver, although fertiliser was the largest cost driver in terms of the Rand value, at R11 937.50. This could indicate that fertiliser is mainly used by farmers who have access to a larger portion of land than the rest of the farmers do. In all, except two cases, the standard deviation was large, indicating that the data was more spread out. The standard deviation was zero for farmers who identified loan repayment and other as the main cost drivers. This was attributed to the fact that there was a single data point. 'Other' in this case resulted from one farmer who indicated that he hires transport to bring water to the field to mix the pesticides. The combination of these variables provides a good indication of the level of investment that goes into the production of cotton for the sampled smallholder farmers.

Table 6: Main cost items

Variables	Mean (R/year)	Std. dev.	Frequency
Pesticides	5 268.60	6 751.47	43
Seeds	8 775.00	9 750.39	42
Labour	8 408.00	9 366.48	34
Hiring implements Fertilisers Transport Loan repayment Other	7 168.18 11 937.50 2 250 2 000.00 2500.00	4 835.92 10 968.91 2 050.61 0	22 8 2 1 1
Total	7 471.90	8 360.96	153

Source: Survey data

Table 7 presents a summary of the smallholder farming profile, comparing the three provinces under consideration (KwaZulu-Natal, Mpumalanga and Limpopo). Furthermore, the majority of farmers indicated that they farm as cooperatives (104), followed by those who indicated that they farm as individuals (47). Therefore, **Table 7** also compares the two categories of farmers between the three provinces. Of the 94 farmers who were interviewed in KwaZulu-Natal, 53 farm as individuals and 41 farm as cooperatives. All the farmers interviewed in Limpopo were farming as cooperatives, while Mpumalanga had 46 farmers in cooperatives, 6 farmers farming as individuals, and 2 farmers who were in a Common Property Association (CPA). However, **Table 7** is based on the 151 farmers who either are in cooperatives or who farm individually.

The results show that, on average, the farmers in Limpopo are relatively older (68 years) than the farmers in the other provinces are, with their average age being 12 years and 8 years higher than that of the farmers in KwaZulu-Natal and Mpumalanga, respectively. Despite this, farmers in the KwaZulu-Natal province have 2 more years and 4 more years of involvement in cotton production than the farmers in Limpopo and Mpumalanga, respectively. This implies that, although the farmers in Limpopo are older, their involvement in cotton production came later, while the farmers in KwaZulu-Natal and Mpumalanga got involved in cotton production at a relatively younger age.

When comparing the farmers who farm individually in KwaZulu-Natal and Mpumalanga, the results show that the farmers in KwaZulu-Natal produce more than the farmers in Mpumalanga do, on average. On average, farmers in KwaZulu-Natal produce 593 kg/ha of cotton seed, compared with 108 kg/ha produced by farmers in Mpumalanga. Similarly, the farm income and the money spent on production (production cost) are higher for KwaZulu-Natal farmers, on a per hectare basis. The reason, in addition to different soils and climatic conditions and access to water, could be that these farmers invest more on production activities than their counterparts do, as shown by their higher production costs. However, farmers in KwaZulu-Natal face a higher transport cost than their counterparts do. The extent of this will further be revealed when analysing the distance to the marker in the subsequent subsection.

When comparing the farmers who are in cooperatives between the three provinces, the results show that, on a per hectare basis, the KwaZulu-Natal farmers seem to be doing better than their Mpumalanga and Limpopo counterparts are, regarding both production and income. Again, the logic is that, in addition to the climatic conditions and access to water, farmers in KwaZulu-Natal also invest more on production activities than their counterparts do, as shown by a higher production cost per hectare. In this instance, farmers in Mpumalanga face a higher transport cost than their counterparts do. Among farmers in KwaZulu-Natal, those who are in cooperatives are doing relatively well compared with those who farm individually. However, this could be attributable to the average farm size, which is 0.48 hectares higher in favour of the farmers who are in cooperatives. In the case of Mpumalanga, the farmers who

farm as individuals have access to 0.65 hectares less in area, as compared with those who are in cooperatives. However, they are doing relatively well in terms of production and containing the transport cost, for some reason, than those who are in cooperatives. There is nothing to compare in Limpopo, as all the farmers who were interviewed were in cooperatives

 Table 7: A summary of smallholder cotton farming profile by province (n=151)

(ey variables		KwaZulu-Natal		Mpumalanga		Limpopo	
		Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
	Age of the farmer (Years)	50	11.70	65	11.48	0	0
	Farming experience (Years) -specific to cotton	10	6.32	7	4.7	0	0
als	Production in the past 3 years (kg/year)	1 305.93	985.33	2 703.67	3 362.23	0	0
dividua	Farm income (R/year)	7 835.56	5 911.97	16 222	20 173.37	0	0
Inc	Farm size (Hectares)	2.20	1.56	25	36.90	0	0
	Cost of production (R/year)	3 441.46	3 328.00	10 750	11 626.48	0	0
	Cost of transport (R/year)	481.46	415.46	478.33	280.74	0	0
	Age of the farmer (Years)	56	12.99	60	16.61	68	4.09
	Farming experience (Years) -specific to cotton	15	10.82	11	8.74	13	14.20
ives	Production in the past 3 years (kg/year)	1 714.64	3 178.73	1 968.28	4 637.79	12 020.00	21 558.60
Cooperati	Farm income (R/year)	10 287	19 072.36	11 809.70	27 826.77	72 120.00	129 351.60
	Farm size (Hectares)	2.68	2.30	25.65	33.37	50.20	37.10
	Cost of production (R/year)	5 906.60	3 804.81	11 777.17	11 945.151	14 400.00	9 071.93
	Cost of transport (R/year)	610.38	336.22	627.17	425.75	456.00	459.00

Source: Survey data

3.2.1 Access to land and ownership

Land is one of the fundamental resources in agricultural production. **Figure 8** presents details of land ownership status. The farmers were asked about the ownership of the land they use. The results show that the ownership status of 73.86% of the sampled farmers is held under a permission to occupy (PTO). These are the farmers who rely mainly on the allocation of land by a traditional council. Some of the farmers have secured land rights such as under a title deed (9.15%), leasehold (3.92%), and other (13.07%). Here, 'other' refers to other forms of acquisition such as borrowing from friends, family and neighbours, as well as inheriting land. Such farmers often have access to more land than those who have access through the PTO and inheritance alone, depending on how far they can obtain pieces of land from friends, family and neighbours, and the size of the land they manage to get.



Figure 8: Summary of land ownership Source: Survey data

3.2.2 Access to credit

There is some correlation between land ownership and access to credit, in the sense that land legally owned by a farmer could be used as collateral security to gain access to credit, particularly from commercial banks. For instance, farmers whose access to land is backed by strong tenure security (such as under title deed) are more likely to obtain credit because the banks can easily use their land as collateral. There are 26 (20.47%) farmers who indicated that they had borrowed money to use for their cotton production activities. Figure 9 presents the share of these farmers from each province. The results show that the majority of farmers who have borrowed money to use in cotton production were in Mpumalanga (46%), followed by those in KwaZulu-Natal (42%). Although not presented here, only 11.54% of these farmers have borrowed money from the bank. The rest borrowed from fellow farmers or families and friends, and probably in smaller amounts that are borrowed largely for the purpose of minor emergencies.



Figure 9: Status of access to credit Source: Survey data

3.2.3 Crop rotation

Bullock (1992) has indicated the pros and cons of rotating cotton with other field crops. Most importantly, Bullock highlighted the point that rotation helps to maintain soil productivity, and reduces the incidence of various cotton pests and diseases, among others. Therefore, farmers were asked if they conduct crop rotation, and 66% of the farmers indicated that they do. Of the 66%, the majority (63%) were farmers in KwaZulu-Natal, followed by Mpumalanga (33%), while only 4% of the farmers in Limpopo do so, as presented in **Figure 10**. The crops that were used for rotation included mainly sunflower, maize, dry beans, cassava, potatoes and other vegetables.



Figure 10: The percentage of farmers that do crop rotation Source: Survey data

3.3 Market access

This subsection focuses on the marketing channels supplied by the farmers. There appears to be a single main channel for smallholder cotton producers, which is a ginner, except for one farmer in KwaZulu-Natal who indicated that he sells to other farmers. This is seen as a strategy to cut down on the transport costs required to get the product to the market, which, as we saw earlier, tends to be higher for farmers in KwaZulu-Natal than for their counterparts in other provinces. The analysis compares these markets, based on their usage, selling arrangement, and payment arrangement.

Table 8 presents the summary of the markets used. The results show that the majority of farmers use a ginner to sell their cotton. Approximately 39% of these farmers use their own transport to take their cotton to the market, while the rest hire the transport. Only 8.33% of the farmers in Mpumalanga use their own transport. All the farmers were price takers. Farmers in Mpumalanga and Limpopo sell their cotton to the Loskop cotton ginnery, while farmers in KwaZulu-Natal sell theirs to the Ubongwa cotton ginnery in Makhathini, Jozini. Based on the average distance from the farmers' localities to these ginners, farmers in Mpumalanga must travel about 260 km to the market, followed by Limpopo (79 km) and KwaZulu-Natal (18 km). However, the results discussed earlier showed that farmers in KwaZulu-Natal pay more for transport than their counterparts do. The reason for this could be induced by the dynamics of supply and demand. Alternatively, it could reflect a pricing mechanism that is used by transport service providers, where some might charge by distance, regardless of the load, while others might charge by the load transported (i.e., price per bag loaded). This needs to be investigated further.

Table 8: Marketing channels by province

Markating channels	KZN	МР	LP	
	Percentage	Percentage	Percentage	
Ginner	99.35	100	100	
Other farmers	0.65	100	100	
Do you use your own transport to the market? (Number of	farmers who said y	/es; n=60)		
Ginner	33.33	8.33	58.33	
Other farmers	0	0	0	
Payment arrangement; price taker or negotiate (Number of farmers who said they are price takers)				
Ginner	99.35	100	100	
Other farmers	0.65	0	0	
Average distance to the market (km)				
Ginner	18	260	79	
Other farmers	1	0	0	
Source: Survey data				

The payment arrangement relates to the time it takes before farmers are paid after delivering their cotton to the market. **Figure 11** presents the payment arrangements with the marketing channels that farmers supply. The results show that the majority (75%) of the farmers are paid after a week, followed by those who wait between 2 weeks to 1 month (18%), a month to 3 months (5%), while 1% each of the farmers indicated that they are paid immediately or after 3 months and more.



Figure 11: The time it takes for farmers to get paid Source: Survey data

3.3.1 Perceptions of the marketing channel

The study used four indicators to rate farmers' perceptions and experiences of the market. These comprise fairness,⁵ accessibility,⁶ safety,⁷ and convenience⁸. The ratings were based on a scale of 1 - 4 for each of the indicators, where 1 = very poor, 2 = poor, 3 = good, and 4 = excellent. **Table 9** shows that the ginnery used was rated above average in all indicators by all the provinces under study. Overall, fairness received the lowest rating compared with the other indicators, while accessibility received the highest rating. The farmers in KZN gave the highest ratings ('good') for all the indicators, with safety rated the highest. Farmers in Limpopo gave a constant rating of above average ('good') for all the indicators. These farmers did not seem to be particularly happy or unhappy with any of the indicators. Their attitude seems to indicate that "it's fine...". Farmers in Mpumalanga rated fairness and convenience as 'poor', although fairness received the lowest rating. Accessibility and safety were rated as 'good'.

Province	Fairness	Accessibility	Safety	Convenience
KZN	3	3.1	3.2	3.1
LP	2.6	2.6	2.6	2.6
MP	2.2	2.7	2.6	2.5
Total	2.7	3.0	2.9	2.9

Table 9: Farmers' perceptions of the ginnery

Source: Survey data

⁵ Fairness refers to the transparency of the market, particularly with regard to grading and standards, followed by the price received by the producer.

⁶ Accessibility refers to ease of participation in the market and is based on barriers to entry that often hinder smallholder farmers from participating in high-value markets. Some of the barriers considered in the context of this baseline include the stringent market requirements, such as certification, good farm practices, and so on.

⁷ Safety refers to the conditions under which the produce is moved and the incidents of robbery or theft. It takes into account the suitability of the modes of transport and the extent of security of the produce as it moves from the producer to the buyer.

⁸ Convenience refers to the extent to which farmers are able to get their produce to the market on time. This takes into account issues such as transport, distance, roads, and so on.

3.4 Access to marketing services and facilities

This subsection provides an indication of the facilities and services that farmers may have access to, which may enhance their ability to access markets for their produce. In this context, 'transport' refers to a truck and/or a bakkie, and 'farmer entity facility' refers to the office, office equipment and the ablution facilities. The results in **Figure 12** show that all farmers in the three provinces had access to the ginning facility, a tractor, a planter, a crop sprayer and an access road. It is noteworthy that the ginning facility does not provide the processing service to the farmers, but rather serves as a market. In other words, farmers lose ownership of their cotton at the ginnery. The largest proportion of farmers in Limpopo had access to almost all the services and facilities, except that they did not have access to the farmer entity facility and harvesting equipment. However, this exception was not limited to Limpopo, as the majority or all the farmers in the other provinces also did not have access to these facilities. In KwaZulu-Natal, less than 50% of the farmers had access to extension services, training, support from Cotton SA, and a farmer entity facility, among others. The situation was almost similar in Mpumalanga, with less than 50% of farmers having access to certain services and facilities. It is worth noting that access to the facilities and equipment was obtained in various ways, such as through owning, borrowing, sharing, renting, and hiring.



Figure 12: Summary of access to marketing services, facilities, and equipment Source: Survey data

Furthermore, farmers were requested to rate the marketing services, facilities, and equipment they had access to. The rating was measured on a scale of 1 to 4, where 1 = very poor, 2 = poor, 3 = good, and 4 = excellent. The rating was based on the number of farmers who had access to a particular service or facility or equipment. The farmers who did not have such access were not permitted to provide a rating. The results in **Table 10** show that, in general, farmers in KwaZulu-Natal gave a 'very poor' rating for extension services, training, support from Cotton SA, and farmer entity facility, among others. They gave a 'poor' rating for the rest of the services or facilities or equipment, except for the ginnery which received a 'good' and the highest rating. In general, farmers in Limpopo gave higher ratings for most of the services or facilities or equipment than those in the other two provinces did. Services, facilities and equipment, such as training, access road, and tractors, received higher ratings ('good'), while the rest were rated as 'poor'. Moreover, the support from government and Cotton SA was also rated as 'poor'. Unlike the KwaZulu-Natal and Mpumalanga provinces, none of the ratings were 'very poor' in Limpopo. All the ratings from Mpumalanga were either

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'very poor' or 'poor'. Overall, the ginnery was the only facility that was rated as 'good'. This could largely be influenced by the fact that farmers are not particularly involved in running the facility. They only supply their produce to the facility in exchange for payment. The access road, tractors, ground engaging equipment, planters, and sprayers were rated as 'poor', while the rest of the services or facilities or equipment were rated 'very poor'. The reasons for this low satisfaction were mainly indicated to be inadequacy and poor condition.

Table 10: A summar	y of the	ratings	of	market	services	and	facilities
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Variable	KZN	LP	МР	Total
Market information	1.6	2.0	1.0	1.4
Extension services	1.0	2.6	1.3	1.0
Ginning facility	2.8	2.2	2.5	2.7
Training	1.0	3.2	1.3	1.2
Support from government	1.7	2.2	1.1	1.5
Support from Cotton SA	1.0	2.4	1.1	1.0
Access road	1.9	3.0	2.4	2.1
Farmer entity facility	1.0	0	1.0	1.0
Leyland DAF Van or similar	1.0	2.6	1.2	1.0
Tractor	2.5	3.2	2.4	2.5
Ground engaging equipment	1.7	2.2	2.3	1.9
Planter	2.3	2.0	2.3	2.3
Crop sprayer	2.3	2.4	2.5	2.3
Farm trailer	1.0	2.6	2.0	1.4
Harvesting equipment	0	0	0	0
Weighing equipment	1.0	2.2	1.3	1.0

3.5 Access to insurance

Table 11 shows farmers' perceptions on having insurance. The farmers were entitled to pick more than one option if they felt there was a combination of reasons for them not to have insurance. The majority of the farmers perceive insurance to be important for their farming endeavours, although none of them had insurance. The farmers were requested to provide reasons for not having insurance. The results show that affordability was the main issue in Limpopo, as indicated by 100% of the farmers, followed by 83% in Mpumalanga and 69% in KwaZulu-Natal. This was followed by those farmers who indicated that they do not need insurance, as indicated by 78%, 74% and 60% of the farmers in Mpumalanga, KwaZulu-Natal and Limpopo, respectively. Others indicated that they do not have information about insurance and the majority (70%) was in Mpumalanga, followed by Limpopo (60%) and KwaZulu-Natal (1%).

Table 11: Access to agriculture insurance

Question	KZN	LP	МР
Do you perceive insurance to be important in your farming?	68%	80%	80%
What are the reasons for not having insurance?			
Expensive premiums	69%	100%	83%
I do not need it	74%	60%	78%
I do not have information about it	1%	60%	70%
Source: Survey data			

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SECTION 4: CONCLUSION AND RECOMMENDATIONS

SECTION 4: CONCLUSION & RECOMMENDATIONS

4.1 Conclusions

The baseline results indicated that a typical smallholder cotton farmer is a black female who has acquired (mainly) primary education or less, and relies mainly on farming as a source of livelihood. Although farming is her main source of livelihood, she has a diverse range of other sources of income, such as social grants, pensions, remittances, and small business activities. She prefers to work in a collective, as she farms mainly as a member of a cooperative. On average, if she is in the Limpopo province, she is likely to be older than the farmers in the KwaZulu-Natal and Mpumalanga provinces are. However, the age differences between the farmers in different provinces does not have impact on the experience in cotton production.

She produces an average of 2 055.44 kg of cotton per annum. Her farm income per annum is R12 332.63 and the total cost of production per annum is R7 471.90. She hires a maximum of 6 workers to assist her, mainly with spraying and harvesting, as she does these activities by hand. She identifies pesticides as the main cost driver, although she spends more on other production inputs such as seeds, labour, hiring implements and fertilisers. For example, on average, she spends more than double the amount of money on fertilisers than she spends on pesticides, per annum. Overall, she puts a substantial investment into her cotton production endeavours, as she buys several inputs, hires implements and labour, and conducts activities, such as harvesting, sorting and packing her cotton, manually.

The farmer in KwaZulu-Natal is likely to farm as an individual, and produce more, generates higher income and investment in her farming endeavours than her counterparts in the other provinces under consideration do, on a per hectare basis. However, within her province, farmers who are members in a cooperative have access to 0.48 hectares of land more than she does. As such, they tend to invest more, produce more and earn a higher income than her in their cotton production endeavours. A farmer in Mpumalanga, is likely to farm as a member of a cooperative and to have access to 0.65 hectares of land more than the counterparts within the province do. Her access to land is in the form of permission to occupy, which often means having limited access to land and limited production rights. However, she makes a plan to consolidate land by borrowing idle pieces of land from family, friends and neighbours. Due to lack of land as a form of collateral, access to credit from the commercial banks is limited/constrained. She borrows smaller amounts of money from family, friends and fellow farmers.

Concerning the marketing channels, the smallholder cotton farmers sell their cotton mainly through the ginnery, which is a considerable distance from a farmer who is in Mpumalanga (260 km), which is more than double the distance travelled by a farmer in Limpopo, and fourteen-fold the distance travelled by a farmer in KwaZulu-Natal. However, possibly due to the pricing mechanisms used by the service providers, or to the dynamics of supply and demand these farmers are able to keep their transportation costs down. Farmers in KwaZulu-Natal pay more for transport, despite being the closest to the market. This may need further investigation to ascertain lessons to be learned from the farmers in Mpumalanga. Only a few farmers have their own transport for delivering their produce to the market.

The farmers were satisfied with their relationship with the ginnery, and the farmers in KwaZulu-Natal were particularly happy with the accessibility and safety of their ginnery, although they did have concerns with fairness. The farmers in Limpopo were not particularly happy or unhappy with any of the indicators, as they gave a consistent, mild rating between 'poor' and 'good'. Farmers in Mpumalanga were not satisfied with fairness and convenience, but were satisfied with the accessibility and safety of their ginnery.

The farmers in the three provinces under survey indicated that they had access to the ginning facility, tractor, planter, a crop sprayer and an access road. The largest proportion of farmers in Limpopo had access to almost all the services and facilities, except that they did not have access to the farmer entity facility and harvesting equipment. However, this exception was not limited to Limpopo province, as the majority or all the farmers in the other provinces also did not have access to these facilities. In many cases, it was a lesser proportion (less than 50%) of the farmers who indicated

having access to the services, facilities and equipment. Furthermore, these were rated as 'poor' or 'very poor' by the majority of the farmers, and this was attributed to low adequacy.

While farmers perceived insurance to be important for their farm businesses, they highlighted the affordability and lack of information about agriculture insurance as impediments to gaining access to insurance. Some farmers stated not needing insurance as one of the reasons why they do not have insurance.

4.2 Challenges

- Lack of fairness by the ginneries (as this relates to prices and grading of the product). For example, farmers sell seed cotton to the ginner and are paid a certain price (approximately R7 as per kilogram) for the quantity delivered to the ginner. From this stage, the farmer losses ownership of the produce, while the ginner goes on to process the seed cotton into lint and seed for further processing the lint being sold at around R25 per kilogram based on 2021/22 prices;
- Inconvenience to supply the ginnery (particularly for farmers in Mpumalanga and Limpopo province). These farmers are situated far from the ginner, which is as far as 260 kilometres from Mpumalanga;
- Lack of access to land;
- Poor record keeping;
- > Lack of adequate infrastructure; machinery, implements and office space and equipment; and
- Selfish conduct within the cooperatives. For example, farmers who share machinery and implements in a form of a cooperative were faced with poor and uncoordinated production planning which result in inefficient and unproductive use of the machinery and equipment.

4.3 Recommendations

The recommendations are categorised based on the key findings and are directed to the relevant bodies, based on their roles in the sector.

4.3.1 Recommendations to the smallholder cotton producers

- Farmers in KwaZulu-Natal may experience favourable climatic conditions and have access to water, but they also invest more in their cotton production endeavours; hence, they do relatively better than their counterparts in other provinces. However, they tend to work in silos and do not take advantage of the bargaining power at their disposal; hence, they incur higher transportation costs than farmers in the other provinces. The solution to this situation could be achieved through the marketing of produce and the procurement of inputs by all the involved farmers in KwaZulu-Natal, combined, and even with farmers in other provinces. In this way, they might cut down on costs, while utilising the same, or a greater, value of inputs.
- There are lessons to be learnt from Mpumalanga and Limpopo in terms of the containment of transport costs. Farmers in Mpumalanga and Limpopo provinces are located far from the ginnery compared to farmers in KwaZulu-Natal, yet they pay less for transport than their KwaZulu-Natal counterparts. Therefore, farmers could find a way to communicate amongst each other in various provinces to share experiences and lessons from each other.
- Cooperatives do not perform well in Mpumalanga, as compared with the farmers who do not farm as members of cooperatives. There is a need for farmers to re-visit their purpose, mission and vision as cooperatives, and to strengthen their relationship in order to improve their capabilities in the future.
- Farmers must strive to keep records of their business transactions and activities in order to identify their profits and losses, and also to determine the effect of sharing, hiring and renting equipment, as this affects the timing of production activities and the resulting yields.
- > The sharing of equipment in a cooperative setting must be properly managed to service as many farmers as

possible. Selfish conduct may disadvantage a majority of the members, thereby inhibiting productivity and growth.

> Young people should be encouraged to take part in the farming activities and farmers could begin by assigning them the recordkeeping roles and supply chain-related duties.

4.3.2 Recommendations to Cotton SA and the government

- A typical smallholder cotton farmer has acquired primary education or less. This might have implications for the farmer's capability to search for, acquire, process, comprehend, and analyse the necessary information for his or her farming endeavours. As such, development programmes, training sessions, workshops and information days may not yield the best results. Therefore, these must be tailored to bring in the youth to participate and be gradually integrated into the industry.
- Although the farmers have no other marketing channel to compare their situation with, they nevertheless did not give the highest rating for all the indicators under survey, and they were particularly concerned about fairness of their ginnery. This is likely to be related to prices, as market information was rated as being 'poor'. Therefore, there is a need to share market information with the farmers in order to manage their expectations. This could be best achieved when the youth is brought on board.
- Farmers gave a 'poor' rating for the industry and government support. This may be attributable to limited visibility of this support on the ground. Therefore, improved visibility is to be encouraged. This could include improvement of the channels of communication with the farmers. Furthermore, the adequacy and the quality of the support services provided to farmers might also have influenced their rating. Therefore, it is recommended that support provided should be comprehensive so as to ensure that the productivity of the farmers is optimised. Although much has been done in providing support, much still needs to be done to ensure that the existing facilities, machinery and equipment are optimal, adequate and functional, while the delivery of their replacements, where necessary, continues.
- > There is a need for collaboration with government to link the transformation targets with the developmental goals of government to improve access to infrastructure, machinery and equipment.
- Monitoring of the support provided is also key to ensuring that the intended developmental goals are achieved.
- > The extension services received from government was also rated as 'poor'. This is influenced mainly by the visibility/the presence of extension officials rather than the quality of the service. Therefore, the extension officers should strive to improve their means of communication with the farmers.
- Some of the recommendations are interlinked, and this implies that collaboration between various players is one of the catalysts to addressing some of the issues.

4.4 Further study

The NAMC will conduct a follow-up study from this baseline to track whether or not progress has been made in terms of improved market access. The proposition has been made that the follow-up studies would be done after a 2-year interval, but this could be adjusted, based on the action plans put forward by the relevant stakeholders in accordance with the recommendations of this baseline. Before the follow-up study is undertaken, the NAMC will also be involved in various platforms and direct stakeholder engagements regarding market access issues and interventions, in accordance with the recommendations of this baseline and/or as may be required by the mandate of the NAMC.



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