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Sustainable Agriculture

MARKET INTELLIGENCE REPORT

2025

Western Cape Government
Agriculture
FOR YOU

GreenCape

Market Intelligence Report 2025

SUSTAINABLE AGRICULTURE

GREENCAPE

GreenCape is a not-for-profit company that drives the widespread adoption of economically viable green economy solutions from South Africa. We work with businesses, investors, academia, and government to help unlock the investment and employment potential of green technologies and services, and to support a transition to a resilient green economy.

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List of abbreviations and acronyms

ACI	Agribusiness confidence index
CEA	Controlled environment agriculture
CPI	Consumer price index
CS3D	Corporate Sustainability Due Diligence Directive
CSA	Climate smart agriculture
CSIR	Council for Scientific and Industrial Research
CSRD	Corporate Sustainability Reporting Directive
ENSO	El Niño-Southern Oscillation
EU	European Union
GVA	Gross value added
Ha	Hectare
IDC	Industrial Development Corporation
IoT	Internet of Things
LAN	Limestone Amonium Nitrate
MAP	Monoammonium phosphate
MIR	Market intelligence report
NDVI	Normalised difference vegetation index
NIR	Near infrared bands
UAS	Unmanned aircraft systems
UAV	Unmanned aerial vehicles
WC	Western Cape
WCDoA	Western Cape Department of Agriculture

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EXECUTIVE SUMMARY

This market intelligence report is compiled for investors and suppliers to the sustainable agriculture sector in the Western Cape. It highlights smart farming and undercover farming as areas that offer opportunities for investors, agricultural and green technology manufacturers, service providers, distributors and others in the value chain.

Over the past 5 and 10 years, the Western Cape's agricultural sector grew at an average annual rate of 2.5% and 2.7%, reaching R25.6 billion in 2023. The sector maintained its national share at 16% for agriculture and 21% for agri-processing. The Cape Winelands contributed the largest share of the province's agricultural income at 33.4%, followed by the West Coast (24.8%), City of Cape Town (18.1%), Garden Route (10.6%), Overberg (10.4%), and Central Karoo (2.8%).

There is considerable scope for agricultural production in the WC to expand. However, the viability of this expansion relies on the sector making substantial investments in technologies that can help reduce input costs and mitigate water scarcity, whilst improving yields. The rising price of inputs, typically higher than the consumer price index (CPI), continues to increase the cost of production and undermine profit margins for farmers.

Furthermore, there are a number of new regulations that will come into effect in the short term that aim to reduce the negative impacts of agricultural production that will impact on the agriculture sector in South Africa. For example, the European Union's (EU) Corporate Sustainability Reporting Directive (CSRD) and the Corporate Sustainability Due Diligence Directive (CS3D) will require enterprises to report on aspects such as climate change, pollution, water resources, biodiversity, ecosystems, the circular economy, and workers' and community rights across their supply chains. Because the EU is one of the WC's largest markets for agricultural exports, these regulations will have a significant impact on agricultural producers.

This MIR highlights investment opportunities linked to the need for more resource efficient, cost effective and productive and sustainable agricultural production. The opportunities highlighted in this MIR are summarised in Table 1.

TABLE 1: Summary of market opportunities in sustainable agriculture

OPPORTUNITY				
SMART FARMING: REMOTE SENSING AND VARIABLE-RATE TECHNOLOGIES				
HIGHLIGHTED TECHNOLOGIES	**WC MARKET SIZE**	**KEY DRIVERS**	**BARRIERS TO UPTAKE**	**TERM**
Precision-spraying via drones	R156 million (for grain)/season R50.9 million (for tree crops)/season	• Increased cost of key inputs resulting in farmers looking to invest in technologies that improve efficiency • Increased attention on worker safety	Low levels of digital literacy	S–M (1–5 years)
OPPORTUNITY				
UNDERCOVER FARMING				
HIGHLIGHTED TECHNOLOGIES	**WC MARKET SIZE**	**KEY DRIVERS**	**BARRIER TO UPTAKE**	**TERM**
Shade netting and tunnels	R 5.4–8.6 billion	• Pressures to remain cost competitive in global market • Increase in adverse weather events requiring protection to avoid losses • Water scarcity • Reduced allocation of water to the agriculture sector leading to a need for water savings/water efficiency	• High capital costs • Ongoing maintenance costs	S (1–3 years)

WHAT'S NEW

The 2024 Sustainable Agriculture Market Intelligence Report (MIR) highlighted investment opportunities in renewable energy applications, the electrification of agriculture and smart farming, specifically drone imaging and artificial intelligence diagnostics tools. These opportunities remain relevant. Although electricity supply security improved in 2024, with no loadshedding between March 2024 and early February 2025, the current and expected future increases in electricity tariffs, combined with pressures for low carbon production and an increasingly stronger business case for battery storage, means that the investment opportunity in renewable energy applications remains particularly relevant. Readers are thus encouraged to read the 2024 Sustainable Market Intelligence Report in addition to this 2025 edition.

This 2025 Sustainable Agriculture MIR provides updates on smart farming, and has a particular focus on precision-spraying using drones. It also provides an update on undercover farming, last featured in the 2021 Sustainable Agriculture MIR, as this market is particularly active due to strong market drivers.

Following the 2024 general elections, the Department of Agriculture, Land Reform and Rural Development was split into two separate ministries, with Minister John Steenhuisen heading the Department of Agriculture and Minister Mzwanele Nyhontso heading the Department of Land Reform. The Department of Agriculture will be responsible for the management of commercial production of agriculture and agriculture-related issues whilst the Department of Land Reform and Rural Development is responsible for land availability and the completion of land claims.

The split did not have an immediate impact on the sector, as the departmental budgets had already been signed in February 2024. However, the 2025 budget will provide a good indication of the primary focusses of the department which, based on statements to date by the minister are expected to be improving food security, farmer support, biosecurity, and market access.

There's also one big change to the MIR structure

The 2025 Sustainable Agriculture MIR is presented in a new hybrid format. To enable changes in the sector and changes to policies and regulations to be reflected when they occur, the sector overview and policy sections are now provided online. These sections will be updated regularly and can be accessed by clicking on the button below. The electronic reports and printed booklets have been shortened to focus more directly on the investment opportunities in the sector.

ACCESS ONLINE CONTENT

1

INTRODUCTION AND PURPOSE

GreenCape's Agriculture sector desk was established in 2014, in partnership with the Western Cape Department of Agriculture (WCDoA). The sector desk aims to support the development of a sustainable and competitive agricultural value chain through the uptake of agtech and sustainable production practices.

The development of the agricultural value chain is achieved by raising awareness of the benefits of agtech uptake (i.e., driving demand within agriculture) and highlighting opportunities for agtech investors, manufacturers and service producers (i.e. supporting supply). The Sustainable Agriculture MIR covers opportunities related to technologies and practices that:

- Increase input resource efficiency in primary production;
- benefit the environment, primarily by conserving resources and reducing negative impacts such as soil degradation and pollution;
- increase resilience to climate change; and
- have the potential to attract international investment.

This document covers key opportunities, and market insights for smart farming and undercover farming. These opportunities have been selected for consideration in the 2025 MIR due to being particularly active markets as evidenced by the substantial adoption of these technologies, especially in that last five years[1] and the expected further growth of these markets due to strong market drivers.

This MIR is accompanied by an online sector overview which can be found here. This includes a regularly updated provincial economic overview of agriculture, with a focus on macroeconomic trends, and an overview of the relevant policies, regulations and trade instruments that may affect investment in the agriculture sector.

For any assistance or questions after reading this MIR, please contact the GreenCape Sustainable Agriculture sector desk at agri@green-cape.co.za

1 Undercover farming, shade netting in particular, has expanded significantly in the province – agricultural land under shade netting increased 329% between 2018 and 2023.

2

INVESTMENT OPPORTUNITIES AND MARKET INSIGHTS

The opportunities, drivers, and barriers highlighted in this section fall under the category of climate smart agriculture (CSA). CSA is "a framework for an integrated approach to managing landscapes (cropland, livestock, forests, and fisheries) that address the interlinked challenges of food security and climate change" (World Bank, 2021).

The intended outcomes of CSA are as follows:

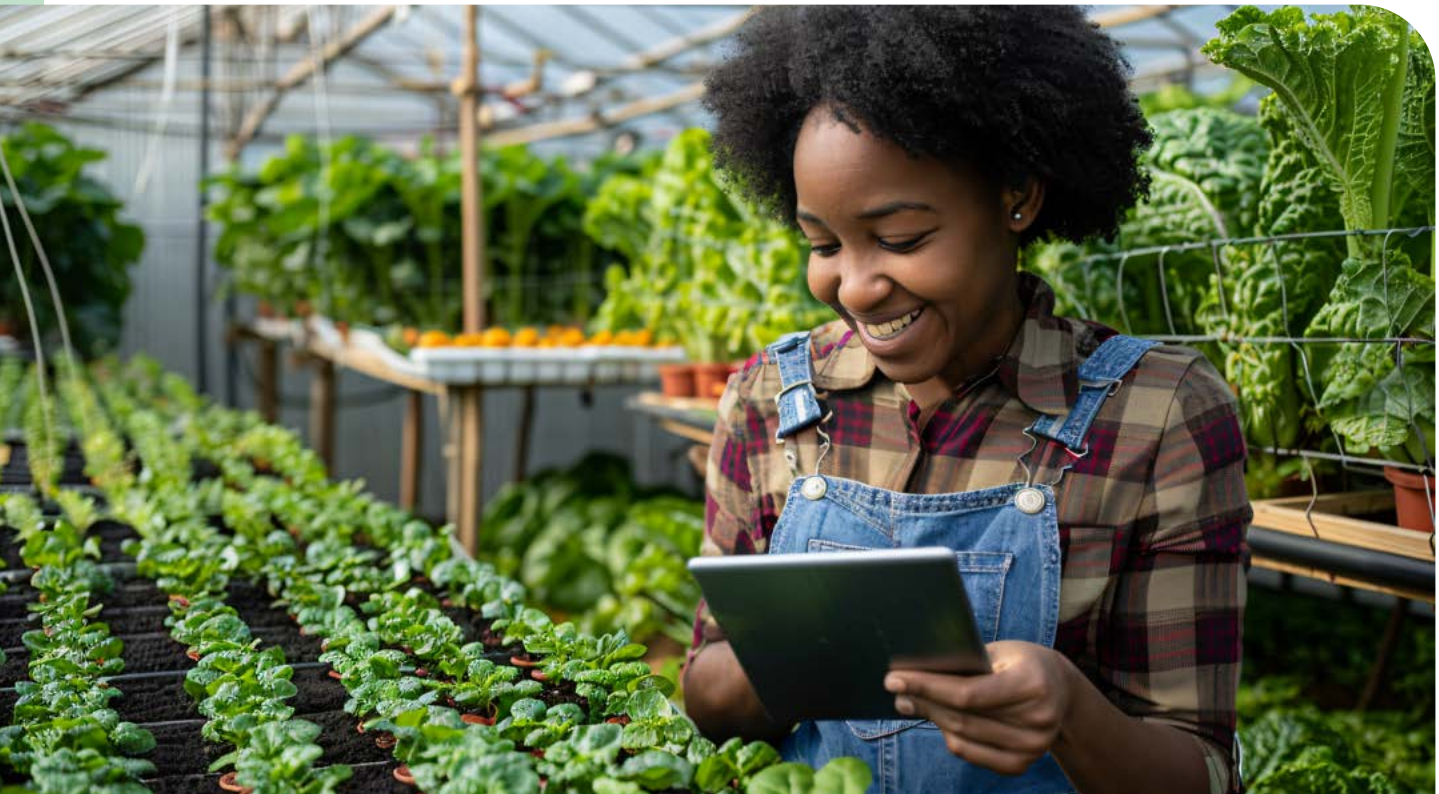
Increased productivity: intensifying food production and nutritional diversity in order to meet the demands of the global population, whilst providing a livelihood for those who live in rural areas and rely on agriculture as a source of food and income.

Enhanced resilience: improving the ability of agricultural production to mitigate production losses due to climate-related risks and shocks, and enhancing its capacity to rebound from prolonged stresses such as inconsistent weather patterns.

Reduced emissions and environmental impacts: transitioning to production systems that emit fewer greenhouse gases whilst maintaining productivity, avoiding deforestation and biodiversity loss from agriculture, and absorbing carbon from the atmosphere. This also includes the reduction in use of synthetic inputs whilst improving soil health.

2.1 Smart Farming

Smart farming is the use of technology to better inform where and how resources are dispensed on a farm, specifically "to monitor and adapt the relationship between farming inputs and outputs to, among other things, combat climate change, reduce the use of pesticides and fertilisers, improve food quality, reduce the cost of production, and make optimal use of resources while maintaining or increasing expected yields" (Pienaar, et al., 2021). The aspects of smart farming, as depicted in Figure 1, range broadly from software solutions and the Internet of Things (IoT) technologies to hardware such as robotics and sensor technology. Moreover, solution providers have increasingly been integrating several aspects of smart farming to support data-driven decision-making on farms.



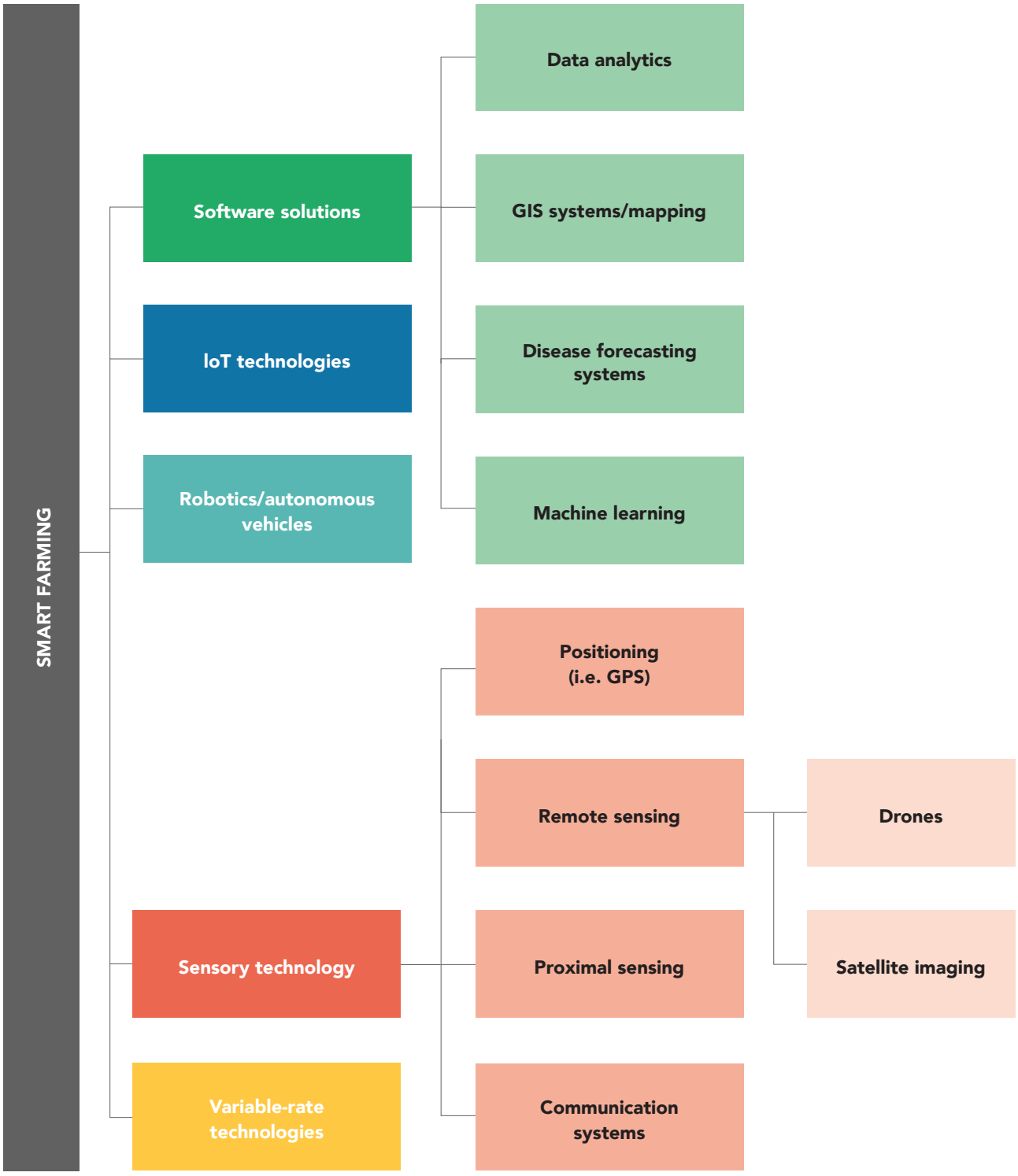


FIGURE 1: Aspects of smart farming

The agricultural sector in South Africa has faced a number of challenges during 2024. The higher commodity prices experienced in 2021 and 2022 have decreased, whilst key agricultural inputs such as energy, and labour, have increased by more than the CPI, as illustrated in Figure 2.

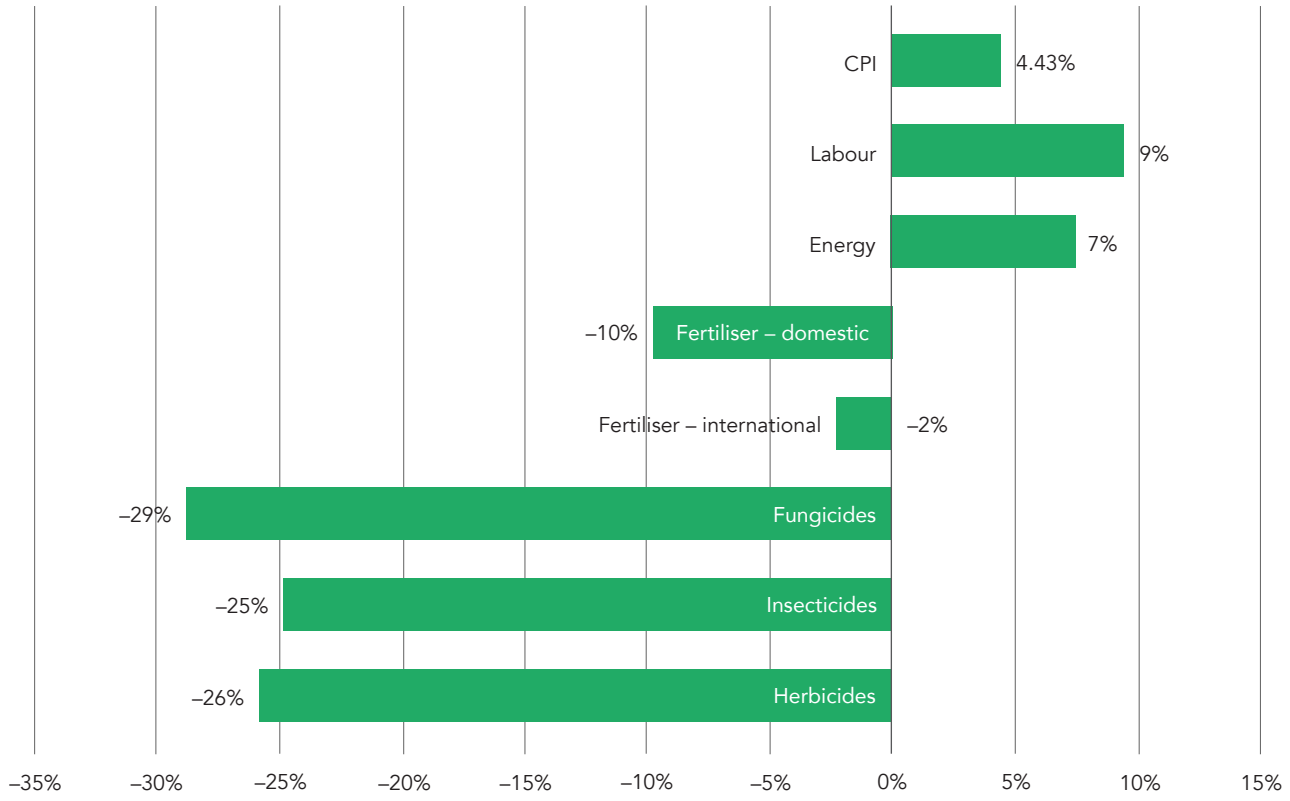


FIGURE 2: Percentage change in prices of key agricultural inputs: Comparison between prices in 2023 and 2024

Sources: (StatsSA, 2024), (SAGov, 2024), (Eskom, 2024), (Eskom, 2023), (GrainSA, 2024)

While the cost of agrochemicals such as fertiliser, herbicides and pesticides decreased in 2024, in comparison to 2023, they remain higher than historical prices (as can be seen for the case of fertilisers in Figure 3). Together with lower commodity prices this suggests that there are reduced margins for agricultural producers. In order to improve these margins, producers need to either increase their revenue through higher yields and/or prices for their produce, or decrease their expenses through improved efficiency of resource usage.

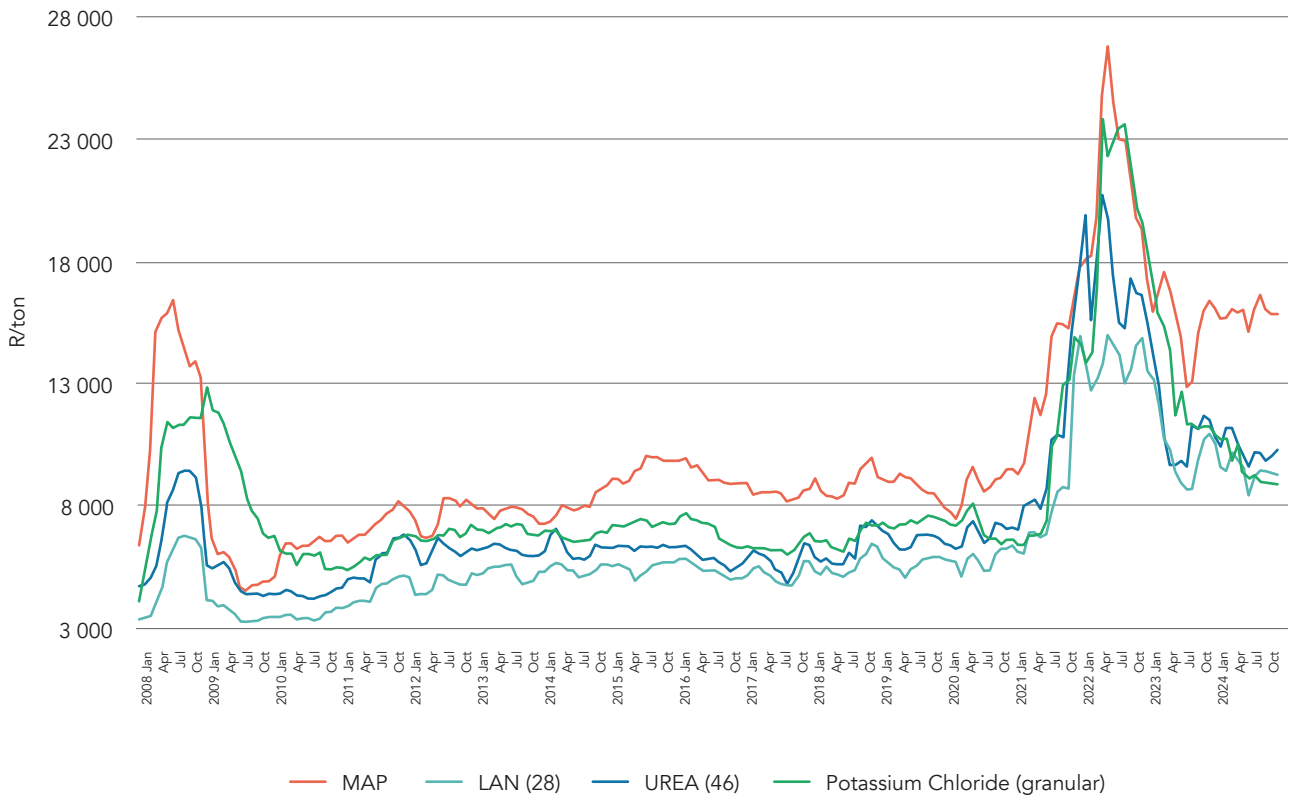
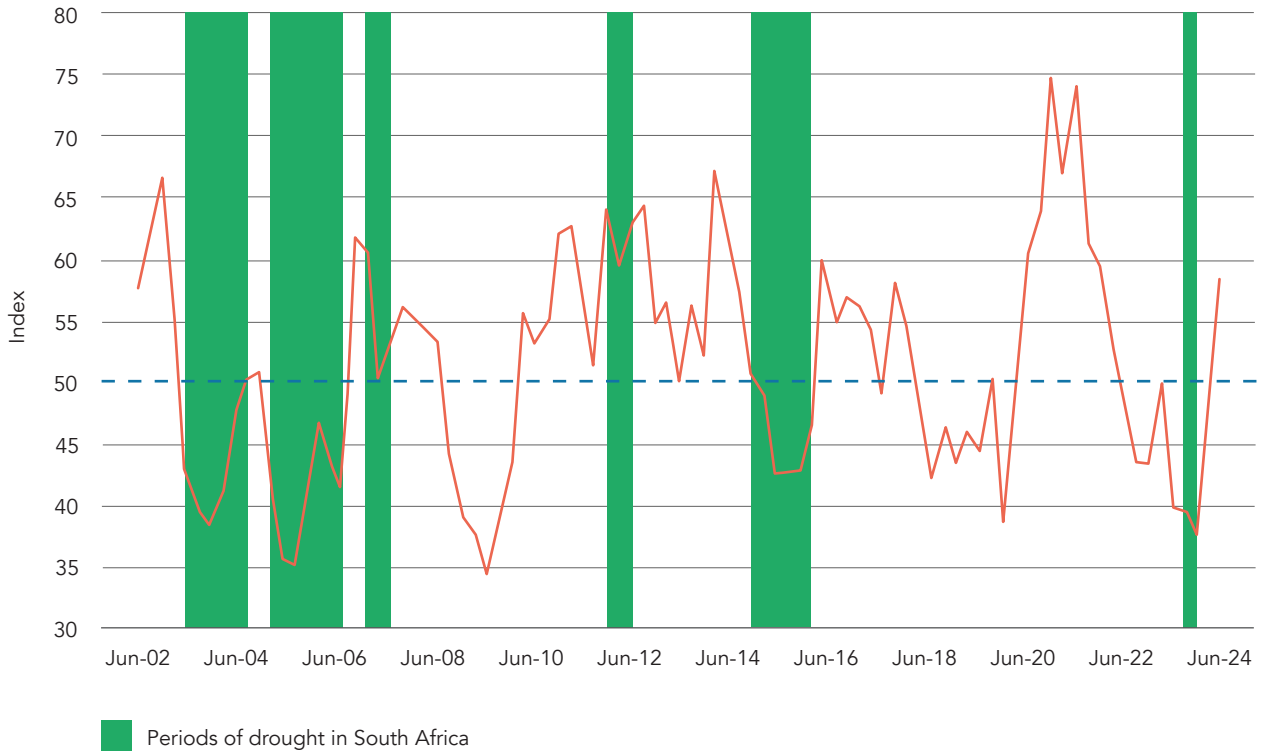


FIGURE 3: Historical prices of fertiliser[2]

Source: (GrainSA, 2025)

The AgBiz/IDC Agribusiness Confidence Index (ACI) improved by 10 points in Q4 2024 which was the second quarter in which the index rose and the highest level since Q2 2022 (AgBiz, 2024). The level reflects improved sentiments in South Africa's agricultural sector, particularly in response to easing concerns about possible political tensions after the 2024 general elections (AgBiz, 2024). The ACI "reflects the perceptions of at least 25 agribusiness decision-makers on the 10 most important aspects influencing a business in the agricultural sector *(i.e., turnover, net operating income, market share, employment, capital investment, export volumes, economic growth, general agricultural conditions, debtor provision for bad debt and financing cost).* It is used by agribusiness executives, policymakers, and economists to understand the perceptions of the agribusiness sector and also serves as a leading indicator of the value of agricultural output, while providing a basis for agribusinesses to support their business decisions." (AgBiz, 2024)

2 MAP: monoammonium phosphate LAN: limestone ammonium nitrate.



The Agbiz/IDC Agribusiness Confidence Index reflects the perceptions of at least 25 agribusiness decision-makers on the 10 most important aspects influencing a business in the agricultural sector *(i.e. turnover, net operating income, market share, employment, capital investment, export volumes, economic growth, general agricultural conditions, debtor provision for bad debt and financing cost).* It is used by agribusiness executives, policymakers and economists to understand the perceptions of the agribusiness sector, and also serves as a leading indicator of the value of the agricultural output while providing a basis for agribusinesses to support their business decisions.

FIGURE 4: AgBiz/IDC Agribusiness Confidence Index (ACI)

Source: (AgBiz, 2024)

Figure 4 shows the ACI over the years, with the shaded areas indicating periods of drought in South Africa. While seven of the 10 sub-indices of the ACI improved in Q4, the sub-indices measuring the turnover confidence, employment and financing costs declined. Experts believe that these are linked to the recent droughts experienced at the end of the El Niño[3] season in South Africa that have negatively impacted businesses' financial standing and predicted export volumes.

As sentiments within the agricultural sector improve, agribusinesses are focussing on making investments in technologies during positive times that can enhance the resilience of businesses during economic downturns. Smart farming technologies that assist in monitoring crop health and soil quality to improve the quality and quantity of yields whilst deploying resources, such as fertiliser and water, with greater efficiency are gaining popularity within South Africa's agricultural sector.

3 "El Niño is the 'warm' phase of a larger climate phenomenon called the El Niño-Southern Oscillation (ENSO)" (National Geographic, 2024). In Southern Africa, El Niño is predicted to result in below-normal rainfall and hotter temperature.

2.1.1 KEY OPPORTUNITY: REMOTE SENSING AND VARIABLE-RATE TECHNOLOGIES

Remote sensing technologies are one of a set of smart farming sensor technologies (see Figure 1) which include drones and satellite imaging. The use of drones, in particular, rose as the cost of the technology decreased and technological advancements, such as lightweight cameras and sensors, collectively helped to improve the business case for their use in agriculture (Kumar & Sriram, 2024).

Variable rate technologies are a series of precision agriculture technologies that use data and automation to enable the application of inputs like fertilisers, pesticides, seeds, and/or irrigation water at varying rates in a particular location, rather than at a uniform rate.

In the past few years, remote sensing and variable-rate technologies have been used in combination. In South Africa, in particular, the use of drones in the agricultural sector has expanded from imaging to precision-spraying.

Drone technology involves the use of drone hardware (unmanned aerial vehicles (UAVs) that are piloted remotely) and data analytics software to perform tasks depending on the operator's needs (Kumar & Sriram, 2024). Drone technology has become increasingly popular in South Africa's agricultural sector, particularly due to the granularity of insights provided by the services that use drones. This micro-analysis can allow for greater precision in application of resources on farm.

The two main applications of drone technology in agriculture are imaging and precision spraying. In imaging, drones can be used for:

- Farm asset surveying;
- Crop health analytics;
- Early pest and disease detection.

The data provided by drone imaging can be doubly useful for generating index maps that can be used as a guide for precision application of fertiliser, herbicides, pesticides, and more recently, beneficial insects and cover crop seeds. Precision spraying via drones can be used for spot spraying (spraying intermittently in selected areas of concern) and variable-rate spraying (spraying continuously but at varying rates according to need).

Of the 106 registered UAS operators in South Africa, 34 provide imaging services in the agricultural sector, and 14 offer precision spraying services (SACAA, 2024).

Table 2 presents a summary of the investment opportunity in remote sensing and variable rate technologies, and specifically of precision spraying via drones.

TABLE 2: Investment opportunities within smart farming: Remote sensing and variable-rate technologies

OPPORTUNITY	KEY DRIVERS	BARRIER TO UPTAKE	HIGHLIGHTED TECHNOLOGIES	WC MARKET SIZE	TERM
Remote sensing and variable-rate technologies	• Increased cost of key inputs resulting in farmers looking to invest in technologies that improve efficiency • Increased attention on worker safety	• Low levels of digital literacy	Precision-spraying via drones	R156 million (for grain)/season • Area of planted grain in WC = 781 000 ha • Cost of service for grain = R400/ha • Assuming 50% market share R50.9 million (for tree crops)/season • Area of orchards in WC = 203 500 ha • Cost of service for orchards = R500/ha • Assuming 50% market share	S–M (1–5 years)

2.1.2 MARKET INSIGHTS

2.1.2.1 Competitive advantage of precision spraying in comparison to alternatives

Precision spraying via drones offers more targeted application of chemicals on farm, compared to other technologies, such as manned aircraft, tractors, and manual spraying, as spatial mapping is used to develop a flight plan that directs the drone to adjust its height and rate of application. It is also applicable across different commodities; however, the technology struggles with spraying some invasive species, where the height of individual trees might vary substantially.

TABLE 3: Technology comparison for spraying applications

TECHNOLOGY	AVE. COST (R/Ha)	AVE. COVERAGE (Ha/Shift)	GRAIN	SUGAR	HORTICULTURE	HORTICULTURE UNDER NETTING	FIELD CROPS	FORESTRY
Precision spraying via drones	400–800	70	●	●	●	●	●	●
Manned aircraft	320–500	100	●	●	●		●	●
Tractors	60–180		●		●		●	
Manual spraying	220	1.5	●	●	●	●	●	●

Table 3 indicates the applicability of different technologies for spraying across various commodities, as well as the average cost of the service per hectare. This does not take into account the cost of the chemicals applied. Crop spraying via drones is not the most cost-competitive, particularly in comparison to manned aircraft, which are able to cover the larger areas of land in a similar time. However, the cost advantage shifts towards precision spraying via drones when producers consider the savings associated with the improved and targeted application of chemicals. In one instance, the precision application of fertiliser resulted in a 20% reduction in fertiliser and ameliorant inputs and a 9% increase in yield (Aerobotics, 2024).

Drones are also 75% more fuel-efficient compared to manned aircraft and result in less chemical drift, which is advantageous in contexts where fields are close to waterways and sensitive areas. Additionally, drones can be operational after rainfall, whereas manned aircraft may be unable to take off or land due to wet dirt runways, and tractors may have difficulty navigating muddy fields (Integrated Aerial Systems, 2024). Delays in applying pesticides and/or herbicides can be particularly detrimental, as they put crops at risk of infestation and/or disease.

Industry experts estimate that currently between 5–10% of spraying operations are conducted using drones. However, the increased awareness within the agricultural sector about the efficacy of precision spraying via drones and cost pressures related to resource usage on farms could result in this market share increasing to 50% within the next 5 years.

2.1.2.2

International sustainability policy and directives

The European Union introduced the CSRD, requiring large companies and listed companies to publish reports on social and environmental risks of their activities and their supply chain starting from 1 January 2025 (European Commission, 2023). Complementing the CSRD is the CS3D, which would compel companies to conduct due diligence on their supply chains and provide a plan for risk mitigation, starting from July 2026.

South African producers exporting into the European market will be impacted by the directives as their suppliers require them to provide data on their social and environmental risks to be included in the EU supplier's report and, at a later stage, provide evidence of efforts to minimise these risks. It is anticipated that this will act as an additional driver for agricultural producers to invest in smart farming technologies such as precision spraying via drones, which improve efficiencies on farm whilst providing co-benefits of reducing over spraying that can cause environmental harm.

2.2 Undercover farming

Undercover farming is the production of plants and animals in an environment where growing conditions are controlled. Undercover farming systems can lead to greater efficiencies in the use of resources compared to conventional agricultural production systems.

Undercover farming systems have several advantages. They enable:

- Resilience to adverse climate events;
- Decreased risk of production losses;
- Improved resource usage (particularly water);
- Increased productivity (either due to higher production volume per square metre and/or increased number of growing cycles per annum);
- Ability to produce high-value and 'out-of-season' crops.

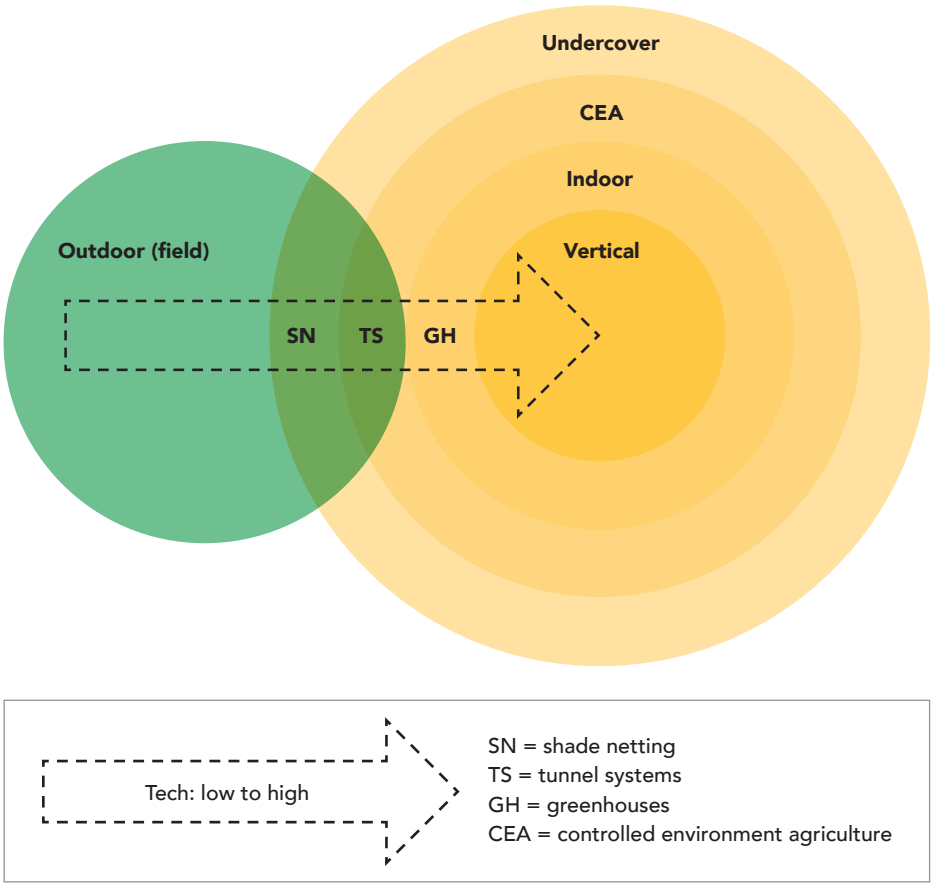


FIGURE 5: Undercover farming and its various forms

As illustrated in Figure 5, undercover farming systems can range from low-tech (undercover, tunnel systems) to high-tech (computerised, automated systems), depending on the level of control over environmental factors a producer requires:

- **Shade netting:** Commonly constructed with a wooden frame and a polyethylene netting cover. Shade netting is predominantly used for plant protection against sunburn as well as in the reduction of crop evapotranspiration[4]. The installation of shade netting can result in a substantial decrease in temperature (up to 7°C).
- **Tunnel systems:** Commonly constructed with a steel frame and a plastic film. Tunnel systems allow for greater climate control – compared to shade netting – through ventilation design (in open, soil-based systems), and ventilation control (in closed, hydroponic systems).
- **Greenhouses:** Commonly constructed with a steel frame and a plastic film or glass. Greenhouses offer the greatest control on environmental conditions and are often coupled with automated systems for fertigation[5], lighting, temperature, humidity etc.

4 Evapotranspiration is the loss of water from the earth's surface into the atmosphere, through the combination of transpiration and evaporation processes.
5 Fertigation is the application of water-soluble fertilisers onto a farm via its irrigation network.

2.2.1 KEY OPPORTUNITY: UNDERCOVER FARMING

In South Africa, the two most common types of structures that fall under undercover farming are tunnel systems and shade netting (Botha, 2020). Greenhouses, constructed with glass, are less common, mainly due to their vulnerability to harsh weather events like hail and wind, which are prevalent throughout the country.

The most common shapes for overhead structure are flat-top, dome-shaped, and pitched. Most shade netting structures are flat-topped, and this design is advantageous because it is the most cost-effective and has a faster construction time. Dome-shaped structures provide better resistance to heavy wind and rainfall, as well as more efficient air circulation. Tunnel systems are commonly built as dome-shaped structures. The least common are pitched structures, which are ideal for taller plants, since it provides greater head room and more effective space utilisation.

Whilst the initial driver for the adoption of undercover systems was the water savings, the proven increase in quantity and quality of yield has attracted more farmers to adopt the technology.

Table 4 presents a summary of the investment opportunity in undercover farming, and specifically of shade netting and tunnels.

TABLE 4: Investment opportunities within undercover farming: Overhead structures

OPPORTUNITY	Undercover farming
KEY DRIVERS	• Pressures to remain cost competitive in global market • Increase in adverse weather events requiring protection to avoid losses • Water scarcity • Reduced allocation of water to agriculture sector leading to a need for water savings/water efficiency
BARRIER TO UPTAKE	• High capital costs • Ongoing maintenance costs
HIGHLIGHTED TECHNOLOGIES	Shade netting and tunnels
WC MARKET SIZE	R5.4–8.6 billion • Area under shade netting in WC = 12 000 ha • Cost of shade netting R220–350 000/ha • Area under tunnels in WC = 77 ha • Cost of tunnels = R2 million/ha • Assuming 200% expansion of area undercover
TERM	S (1–3 years)

CASE STUDY

A study conducted by Haygrove, a provider of growing systems, for a tomato farmer, aimed to determine the benefits of growing produce undercover and hydroponically. Over a one-year period, the study observed the outputs from three trial blocks under different conditions:

- Produce grown open field conditions;
- Produce grown under a Haygrove trellis tunnel;
- Produce grown under a Haygrove trellis tunnel and grown hydroponically.

All the plants received the same irrigation, fertilisation and pest control treatment.

TABLE 5: Results from comparative study between open field and undercover farming for tomato production

	OPEN FIELD	HAYGROVE TRELLIS TUNNEL SOIL	HAYGROVE TRELLIS TUNNEL HYDROPONIC
Total yield	60 tonne/year	236 tonne/year	392 tonne/year
Proportion class one fruit per harvest	60%	90%	90%

The results, as shown in Table 5, demonstrated an increase in yield of nearly 300% with just a Haygrove Trellis tunnel and almost 560% under a Haygrove Trellis tunnel with a hydroponic system. Additionally, the percentage of class one (export quality) produce was 1.5 times higher in both cases and the growing season for the produce extended far longer than the growing season in open fields.

The study demonstrated that despite the high capital outlay required for undercover structures, the increased quality and quantity of the yields could result in a payback period of approximately 2 years.

Generally, the capital costs of shade netting range between R220 000–350 000 per hectare and around R2 million per hectare for plastic tunnels. Depending on the commodity grown under the structure and the markets into which those products enter, payback periods typically range between 3–5 years.

However, it is important take into account that both shade netting and tunnel structures require regular maintenance. For example, on average, the material for netting requires replacement every 10–12 years at the cost of R70 000–80 000 per hectare. The frame of the structure has a longer replacement time of 25–30 years.

2.2.2 MARKET INSIGHTS

2.2.2.1 Market growth

There has been a steady increase in the uptake of undercover farming in the WC. Since 2018, the number of shade netting and tunnel systems has grown by 329%, to a total of 12 083 hectares in 2023, as shown in the latest flyover data (WCDoA, 2023) summarised in Figure 6.

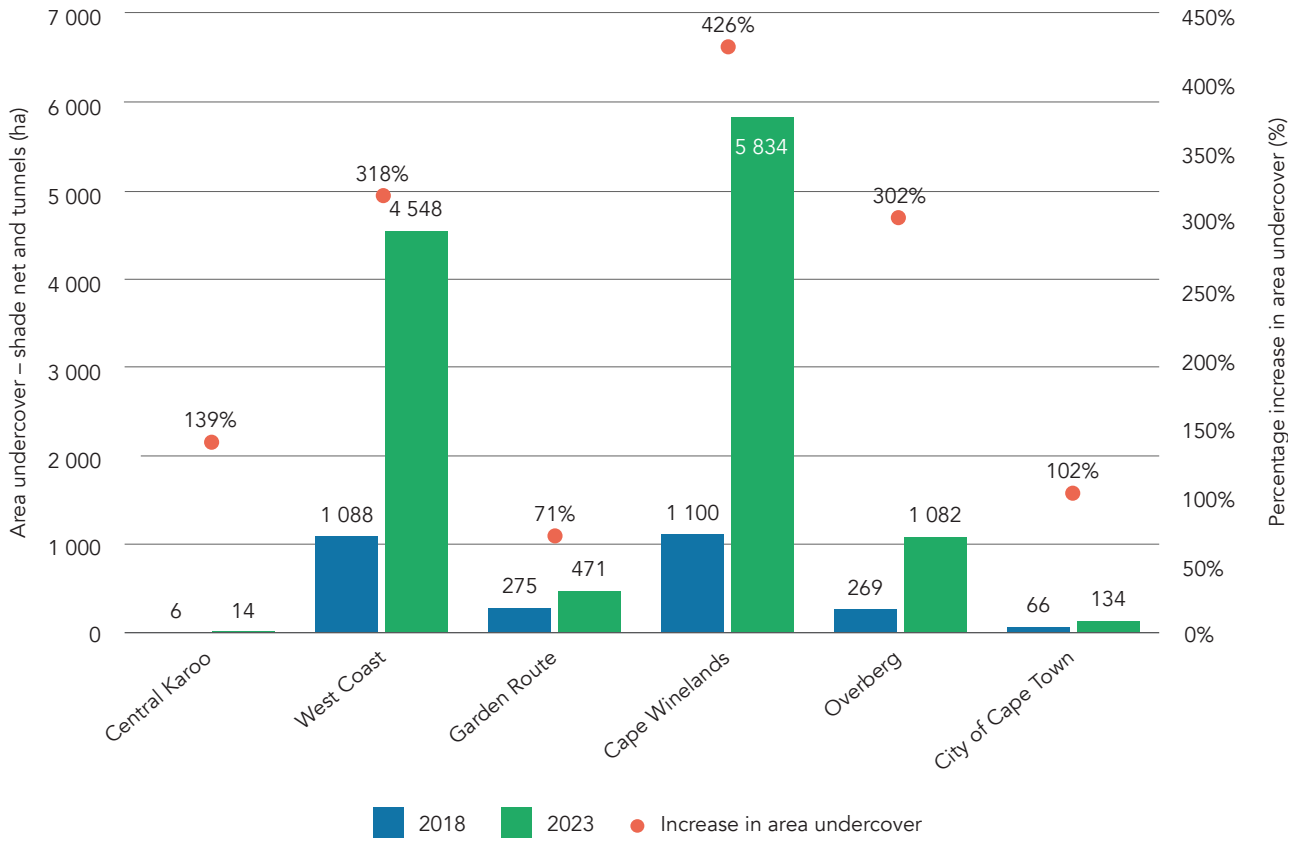


FIGURE 6: Area undercover per district in the WC
Source: (WCDoA, 2023)

Figure 6 illustrates the growth of production area undercover in the WC by district. All the districts in the WC saw an expansion of area undercover, with the West Coast, Cape Winelands, and Overberg experiencing the largest increase in terms of percentage. Shade netting accounts for 99% of the area covered, mostly in the form of flat-top installations, although there are some dome and pitched installations.

2.2.2.2

Key commodities

Most of the agricultural produce grown undercover is fruit, with some vegetables and hops, as shown in Figure 7 below.

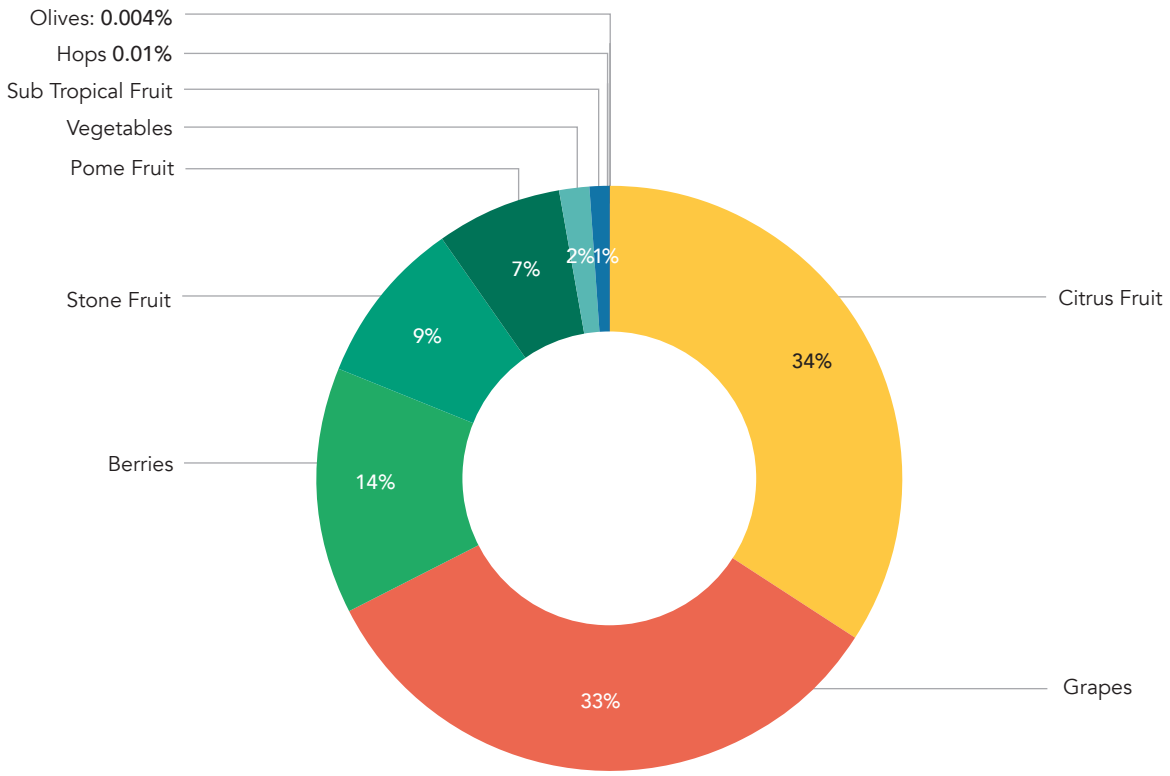


FIGURE 7: Main commodities grown undercover
Source: (WCDoA, 2023)

In the WC, just under 6% of commodities suited for undercover farming are grown under shade net or tunnel structures. However, there are significant differences in adoption rates across different commodities, as shown in Figure 8.

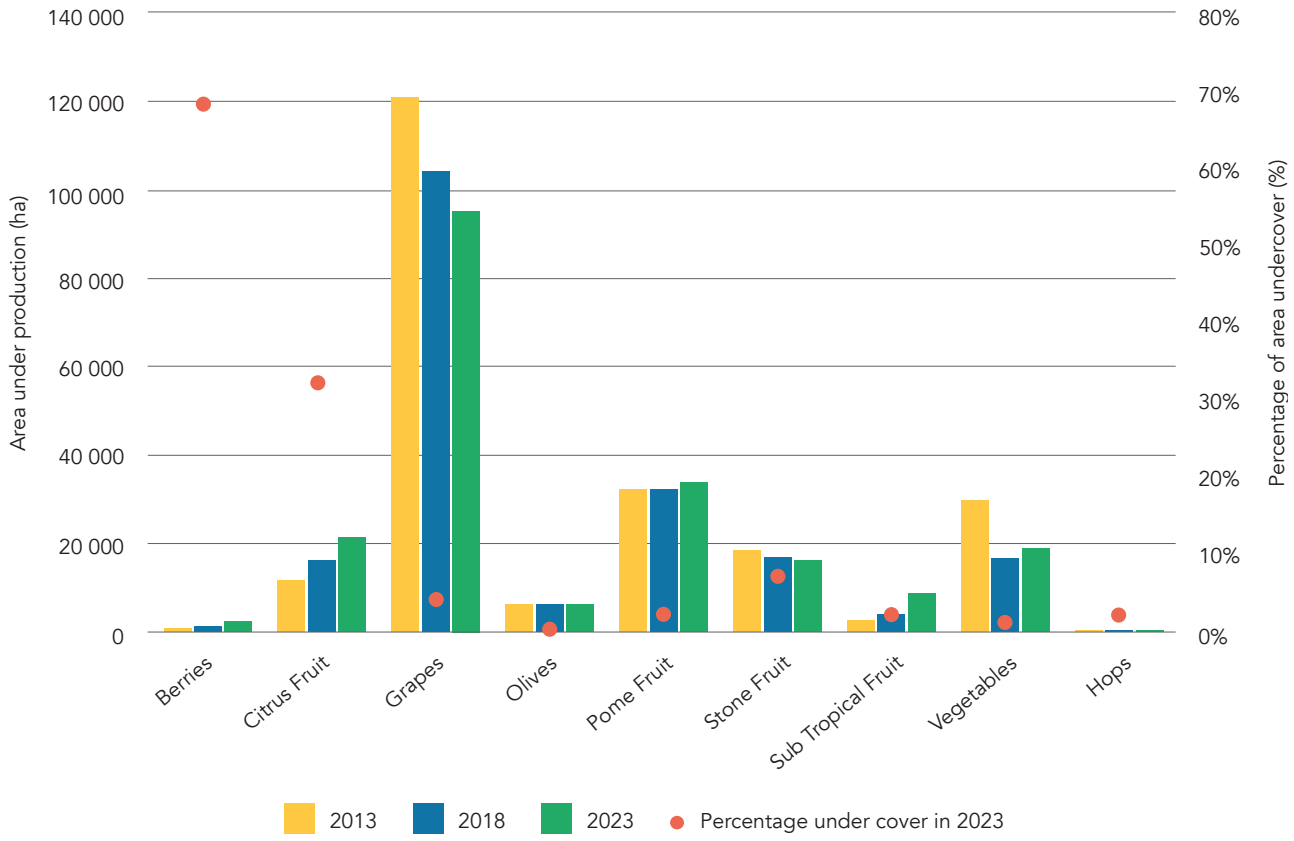


FIGURE 8: Adoption rates of undercover farming of different commodities
Source: (WCDoA, 2023)

The commodity with the highest adoption rate of undercover farming is berries (68%), followed by citrus fruit (32%) and stone fruit (7%). The market opportunity within the berry and citrus fruit sectors is particularly attractive, as there is still scope for increased adoption of existing production areas as well as new expansions. Both sectors expanded considerably between 2013 and 2023 (e.g. 41% and 39% for berries and citrus, respectively by 2018 compared to 2013 and 101% and 32% for berries and citrus, respectively in 2023 compared to 2018), supported by increasing exports to both the EU and Asian markets.

Shade netting is most commonly used for tree crops while vegetables are best-suited for tunnel structures, particularly tomatoes, cucumber, peppers and eggplants. Currently, the percentage of vegetables grown in tunnels is 96% for cucumbers, 61% for eggplant, 15% for peppers, and 10% for tomatoes, albeit that only 1% vegetables in the WC are grown undercover.

This rate of adoption is thought to be driven by consumer preferences. Major retailers are increasingly concentrating on quality of produce as well as incorporating new varieties into their product lines. In order to compete, some retailers have focussed on positioning the quality of their produce as a market advantage and set stringent requirements for the farmers contracted to them. As such, many farmers have invested in undercover structures to ensure they can produce at the quality specified by their market. Additionally, product lines at major retailers have increasingly expanded from common varieties to more niche produce. For example, the tomato product line has grown from more common varieties like Rosa and Cherry to include Beefsteak, Heirloom, and Cherokee.

2.2.2.3

Local manufacturing

The growth of the area under shade netting or tunnels in the WC presents a market opportunity not only for project developers or installers, but also manufacturers of the materials used in these structures. According to industry experts, all the plastic for tunnel systems is imported, primarily from the Netherlands and China, and it is assumed that South African companies do not currently have the capacity to manufacture the materials to the technical specifications required for the tunnel systems.

There are a few local manufacturers of shade netting in South Africa, but this is supplemented by imports, particularly from China. Further investment in expanding the capacity of shade netting manufacturing could lead to import replacement of shade netting material in South Africa.

3

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