



# Agricultural Outlook

## *Autumn Edition*

### 2019



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## #Africanacity

Africans are remarkable.  
The distinctly African ability to always  
find ways to get things done.

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# Foreword

## Jacobus Wells, head of Absa AgriBusiness Africa



The 2019 Absa AgriBusiness Autumn Edition Outlook focuses on the latest trends and developments in the agriculture sector that may affect the future of the grains, oilseeds and game industries. In this edition, Absa's economic agriculturalists, as well as external experts in the field, examine the potential impact that the global economy, trade disputes between the US and China, the outcome of Brexit, and the renewed scramble for Africa may have on the South African agricultural economy. We also examine the agricultural conditions in Zambia. In addition the outlook offers a short-term weather forecast, as well as market outlooks for the grains, oilseeds and game industries.

The recent outbreak of foot-and-mouth disease, as well as previous outbreaks of avian influenza, mean that the proper implementation of biosecurity is more important than ever before. In this regard, the importance of biosecurity in the livestock sector is discussed,

as well as how issues of biosecurity ultimately affect the demand for grains and oilseeds by the livestock sector.

The importance of the renewable energy sector is also discussed, and the outlook argues that primary producers must increase their capacity to become increasingly self-reliant on on-site energy production. Investment in off-the-grid renewable energy production capacity is critical to safeguard the country's food security. Farmers must also adopt the latest affordable technologies and conservation agricultural principles to optimise the productivity of scarce resources. This is necessary to sustain profitability, lower risk profiles and lower the cost of financing. The outlook also examines the threat of climate change.

Absa is a leading player in the agribusiness sector, and remains abreast of market trends and the imminent challenges our clients face. We will continue to offer our clients holistic solutions that add value to their operations and ensure that they remain competitive.

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South African Poultry Association  
South African Reserve Bank  
South African Revenue Service  
South African Weather Service  
Statistics South Africa  
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United States Department of Agriculture  
Wheat Forum  
World Bank



# Global Economy Overview

Wessel Lemmer

The global economy performed marginally better in 2018 with an estimated growth of 3.7%, compared with the 3.1% growth achieved in 2017. Europe and Asia performed weaker than previously expected. According to the International Monetary Fund (IMF), the global economy is projected to grow 3.5% in 2019 and 3.6% in 2020. The current trade war between the US and China is the main reason for the lower growth forecast in 2019. Trade tensions between these two countries contributed to the decline in export prices for US pork, maize and soya bean. Should trade tensions between the US and China continue to escalate, the global economic growth forecast may further decline. Moreover, should economic growth in China decrease more than expected, global economic growth will decline.

The introduction of new automobile fuel emission standards in Germany has weighed on demand for motor vehicles. This resulted in a significant decline in

demand for South African leather, leading to a drop in leather prices.

Similarly, concerns about sovereign and financial risks in Italy also contributed to lower global economic growth and the demand for fashionable garments, and thus the products needed to manufacture them.

The geopolitical concerns in Turkey have led to a contraction in economic growth as investor confidence in emerging markets is challenged. This has resulted in an increase in currency volatility in emerging market countries, including South Africa. Compared with the same period last year, the rand has significantly weakened.

## A scramble for Africa

China's terms of engagement with African countries are changing, and the country seems less motivated to establish economic ties than in the past, and more interested in establishing political and military connections. Other foreign investors have also shown interest in sub-Saharan Africa, which has

Table 1: Sub-Saharan Africa's largest trading partners

| Country      | Trade \$billion | Number of embassies |
|--------------|-----------------|---------------------|
| EU           | 156             | n/a                 |
| China        | 120             | 52                  |
| India        | 58              | n/a                 |
| US           | 36              | 49                  |
| UAE          | 20              | n/a                 |
| Japan        | 14              | 35                  |
| Saudi Arabia | 14              | n/a                 |
| Indonesia    | 9               | n/a                 |

Source: IMF & The Economist

Table 2: Growing trading partners with sub-Saharan Africa

| Country   | 2006-18 % change | Trade \$billion |
|-----------|------------------|-----------------|
| India     | 292              | 58              |
| China     | 226              | 120             |
| Indonesia | 224              | 9               |
| UAE       | 221              | 20              |
| Turkey    | 215              | 5               |
| Thailand  | 128              | 8               |
| EU        | 45               | 156             |
| US        | -45              | 36              |

Source: IMF & The Economist

an average economic growth rate of 2.6%. As the second-most populous continent in the world, Africa's stature is growing globally, and the population of the region is more than one billion. The African Continental Free Trade Agreement only needs ratification by three more countries to enter in force

and give the continent a single voice in negotiations.

The University of Denver in Colorado in the US reports that 320 embassies or consulates were opened in Africa between 2010 and 2016.

This trend is expected to continue as foreign leaders support the diplomatic push. However, it will be up to African leaders to ensure that these relationships work in the best interest of their citizens.

In 2006, the US, China and France were Africa's largest trading partners. However, according to the UN, sources of direct foreign investment into Africa have become more diversified since then, with China's stock of foreign direct investment growing to US\$40 billion (about R559 billion) in 2016, which was only slightly less than France's stock of direct foreign investment of US\$49 billion (R685 million).

The IMF expects that one third of the countries in sub-Saharan Africa will achieve a GDP growth of more

than 5% this year compared with the 2.6% achieved in 2017. The number of cell phone subscriptions is expected to increase almost 5% over the next five years, which is double the global average. On average, 32% of African countries' external public debt is owed to private lenders, while 35% is owed to the World Bank and 20% to China.

## Agricultural trade

Countries in the Gulf import 80% to 90% of their food. Some of these countries recently reached an agreement with Mozambique. However, African countries imported around 781 000t of rice from China in 2017, with the Ivory Coast becoming the biggest regional importer of rice from China.

## Outlook

While China's and Russia's involvement in Africa does not aim to increase transparency and democracy, it is expected that infrastructure development will

benefit South Africa's agricultural trade with the rest of Africa.

## Brexit

UK Prime Minister Theresa May and her government were granted a Brexit extension until 31 October. A no-deal Brexit will likely result in large-scale economic damage for the UK and EU, disrupting supply chains between the UK and EU and causing chaos at ports, airports and on roads.

In the case of a no-deal Brexit, Britain will lower its import tariffs to zero, with the exception of certain goods and products. This will be necessary to minimise the negative effect that Brexit will have on businesses and consumers. It is likely that South Africa's agricultural exports to the EU will not be disrupted in the case of a no-deal Brexit. However, exports to Britain may be temporarily delayed due to the expected chaos at ports and airports.

However, after Brexit, South Africa will lose a close ally in the

EU. Britain previously backed South African agricultural exports to the EU when other EU members tried to prevent certain imports from the country. The Southern African Customs Union (SACU) and Mozambique are preparing to ratify and sign a bilateral trade agreement with post-Brexit Britain. The UK is pushing for closer economic ties, and wants to replace the US as one of Africa's largest investors by 2022. With a deal or no-deal Brexit, a new agreement will likely replicate the existing economic partnership agreement with the EU; hopefully with some improvements.

A no-deal Brexit will likely lead to a slowdown in global economic growth.

## US-China trade war

At the time of writing, China was pushing the US to lift all the tariffs imposed by US President Donald Trump and his administration. In order to understand the trade war, it is important to look at its escalation. On 22 January 2018, the

US imposed safeguard tariffs on solar panels imported from China. This was followed by a tariff on steel in March. China responded at the end of March 2018 by imposing tariffs on goods imported from the US, totalling \$3 billion (R42 billion). This included tariffs on fruit, nuts, wine and pork. In retaliation, the US imposed tariffs on high-tech industrial goods from China totalling \$50 billion (R701 billion). On 4 April, China introduced an additional 25% tariff on imports from the US, including soya bean. Trump followed by threatening to increase tariffs on imported goods from China, totalling \$100 billion (R1,4 trillion). In May 2018, Trump demanded a cut in the trade deficit with China of \$200 billion (R2,8 trillion). This was followed by the US announcing another tariff on China, totalling \$50 billion (R719 billion), on 29 May, and another tariff totalling \$50 billion on 15 June. China retaliated in kind. On 19 June, the US announced plans to impose further tariffs of \$200 billion

(R2,81 trillion) on Chinese imports, threatening to increase this to \$400 billion (R5,6 trillion) if China retaliated.

On 17 September, the US announced another 10% tariff on \$200 billion-worth of goods from China, which would be effective from 24 September until the end of 2018, and would then be increased to 25%. A day later, China retaliated by imposing tariffs totalling \$60 billion (R842 billion) on US goods.

In December 2018, China and the US agreed to halt new trade tariffs to allow a 90-day period for negotiations. On 1 March 2019, the tariffs were further delayed.

According to the US, the aim of the negotiations is to lower the trade deficit with China by \$200 billion, and to rectify the seemingly unfair and sometimes discriminatory treatment US businesses have received on the Chinese market, including in the handing over of valuable technology.

However, even if China and the

US reach consensus, Trump may still decide to keep some of the new tariffs in place. According to the US Chamber of Commerce, the US's GDP will reduce by \$1 trillion (R14,2 trillion) over a period of 10 years should the tariffs stay in place. The US GDP was \$20,5 trillion (R288 trillion) in 2018.

Due to China's 25% tariff on soya bean, soya bean exports from the US declined 12% in 2018, leading to a 106% increase in ending stocks by the end of September.

The average farm price for soya bean in the US declined 8%.

As South Africa is a net importer of vegetable oils and oilcake, and local soya bean prices are underpinned by import price levels and the value of the rand, the trade war between the US and China has not negatively affected on local soya bean prices.

Table 3: No-deal Brexit tariffs

| Product  | UK imports <sup>1</sup> | UK exports <sup>2</sup> |
|----------|-------------------------|-------------------------|
| Lamb     | 48%                     | 48%                     |
| Cheddar  | 7%                      | 57%                     |
| Butter   | 15%                     | 48%                     |
| Potatoes | 0%                      | 11.5%                   |
| Poultry  | 22%                     | 37%                     |
| Eggs     | 0%                      | 19%                     |
| Pork     | 4%                      | 30%                     |
| Wheat    | 0%                      | 53%                     |
| Beef     | 45%                     | 84%                     |

1: UK tariffs to be imposed on imports  
2: EU tariffs to be imposed on UK imports  
Source: NFU

Table 4: UK imports from South Africa

| Products                          | US\$'000  |
|-----------------------------------|-----------|
| Animals                           | 98        |
| Meat                              | 24 752    |
| Fish                              | 7 143     |
| Dairy                             | -         |
| Plants                            | 16 204    |
| Vegetables                        | 12 730    |
| Fruit                             | 645 546   |
| Coffee, tea & spices              | 7 591     |
| Cereals                           | 673       |
| Milled products                   | 1 393     |
| Oilseed products                  | 2 577     |
| Luc, gums & resins                | 96        |
| Vegetable planting materials      | 69        |
| Animal & vegetable fats           | 3 685     |
| Prep of meat & fish               | 2 084     |
| Sugar & sugar products            | 26 397    |
| Prepared cereals & flour          | 2 240     |
| Prepared vegetables, fruit & nuts | 32 860    |
| Beverages & spirits               | 14 839    |
| Tobacco & tobacco products        | 11 429    |
| Wool                              | 3 222     |
| Agricultural imports              | 943 628   |
| Other imports                     | 7 441 158 |
| All imports                       | 8 384 786 |
| Agriculture as % of imports       | 11,3%     |

# Climate Change

Hamlet Hlomendlini

Climate change continues to be the subject of much research and debate, but extensive meteorological data in recent reports shows that average temperatures are rising across the country, and annual rainfall is declining significantly. These reports also show a rise in the number of days per year with extremely high temperatures, as well as a corresponding decline in the number of days per year with low temperatures. South Africa has a highly diversified, market-oriented agricultural economy that includes the production of major commodities such as grains, oilseeds, deciduous and subtropical fruits, sugar, citrus, wine, vegetables and livestock.

Changes in temperature, atmospheric carbon dioxide, and the frequency and intensity of extreme weather could have a significant impact on the production of these commodities. Due to its world-class commercial component and resilience, agriculture has always been central

to the South African economy. The sector is expected to remain one of the key drivers for the country's economic recovery and growth.

Although primary agriculture contributes around 2.5% to the country's economy, the whole value chain, including agro-processing, accounts for around 10% of the country's employment, and between 12% and 15% of its GDP. Furthermore, the agriculture sector contributes around 10% to South Africa's total export earnings, with citrus, wine, table grapes, apples and pears accounting for the largest exports by value. South Africa is also a major exporter of other commodities such as maize, nuts, wool, sugar and mohair.

However, South African farmers must unfortunately contend with a number of risks. These include policy uncertainty, and competition from international farmers, many of whom enjoy heavy subsidies from their respective governments. But the most devastating risk, deserving of urgent mitigating innovative and sustainable tools,

is climate change and adverse weather conditions.

Three consecutive years of drought has had a severe impact on the summer grain and livestock producing regions. The horticulture industry in the Western Cape has also suffered, resulting in severe social, market and economic pressures.

Overall, the sector has experienced extremely volatile conditions over the past five years, and it is expected that some of these erratic movements can create possible systemic risk in the sector.

## Rainfall trends

The rainfall trends in North West at planting over the past few years have shown diversion from the expected norm. Since 2010, rainfall up to the end of November has been the lowest ever on average. As such, the data for November and December rainfall is showing a clear downward trend. There are also indications of rainfall occurring as late as January, which

is later than the expected norm. According to the Bureau for Food and Agriculture Policy (BFAP), the estimated rainfall density suggests that, for rainfall up to the end of November, the probability for lower rainfall has increased post-1980 relative to pre-1980 levels.

Recent data from BFAP suggests that rainfall in the Free State during October and November has trended downwards post-1980 and was the lowest ever, on average, in the past decade.

Similar to the Mpumalanga scenario, rainfall occurring as late as December indicates that rain has been occurring later than normal in recent years.

In Mpumalanga, rainfall up until the end of November has been declining since 1980, but the trend is much weaker than observed in the Free State and North West.

However, the common trend in all three these provinces, which are South Africa's major maize-producing regions, is that post-1980, November rainfall has been declining, and rain has been

occurring later than normal.

While this analysis has not been conducted on the rainfall patterns in other provinces, there is a good indication that similar shifts are also occurring in these provinces.

This analysis, however, presents only a preliminary analysis that BFAP is currently expanding on in order to answer the following important questions:

- Is the decline in November rainfall cyclical, or evidence of a more structural shift?
- What did the accompanying movements in temperature look like?
- Are colder temperatures starting later, or is the window for production getting shorter?

## Adapting to climate change

Based on the above analysis, it is clear that South Africa is experiencing shifts in weather patterns because of climate change. South Africa is a water-scarce country with a warm and dry climate, but based on

climate change models, such as the ones developed by the Intergovernmental Panel on Climate Change, it is expected to become even warmer and drier. Should this occur, the probability of multiyear droughts is more likely as the country moves into a warmer climate system. How well prepared agriculture is for these imminent dry weather conditions is a pressing concern.

These predictions imply that in the absence of any adaptation mechanism by farmers and other industry role players, including financiers, and any changes in policy, such as irrigation policy, the change in agricultural productivity as a result of climate change could reduce annual agricultural incomes in the coming years, with dryland areas most affected. This thus calls for urgent coordinated efforts to strengthen research to assess the impact of climate change on agriculture, and to come up with innovative and sustainable solutions to mitigate the risks associated with it.

# Weather

Johan van den Berg

The 2018/19 season was one of the most unpredictable weather seasons South Africa has experienced in a long time. This manifested in a wide range of climate events that occurred over short, spatial intervals. This can be largely attributed to a weak El Niño event, the effects of climate change, the cumulative effect of below-average rainfall, and the status of sea surface temperatures over the Indian Ocean.

Southern Africa sits between the Atlantic and Indian oceans, which have different sea surface temperatures. As weather and climate are driven by energy, the energy status of these oceans is one of the most important driving factors of climate and weather in Southern Africa.

External factors such as variable energy levels from the sun can also contribute towards varying energy levels on Earth. Most of the summer rainfall region has been in a below-average rainfall or drought cycle since 2012.

The winter rainfall region has been experiencing dry conditions since 2015, but received some relief in 2018. Consecutive below-average rainfall seasons is a characteristic of the climate of Southern Africa.

## Weather trends

El Niño, La Niña or other factors like the sea surface temperatures of the Indian Ocean, can have seasonal effects, but there is a semi-cyclic trend towards consecutive seasons with below- or above-average rainfall, interrupted by seasonal effects. These semi-cycles can vary from between two to 10 years or even longer, depending on rainfall zones. The shorter the long-term average rainfall period, the longer the periods of below-average rainfall, and the shorter the periods of above-average rainfall.

Long-term trends indicate that most of the summer rainfall region is nearing the end of the below-average rainfall cycle with a spatial shift to improved rainfall conditions towards the central to

western parts of the country, with possible drier conditions towards the north-eastern parts. The winter rainfall region experiences below-average rainfall in semi-cycles of between three to eight years, but this normally does not correlate with the rainfall trends over the summer rainfall region.

## Outlook

In the medium term, the summer rainfall region is expected to experience wetter conditions.

While El Niño did begin to redevelop in February/March 2019, a high level of uncertainty remains regarding the further development of El Niño for winter and the 2019/20 summer season. Current El Niño trends may thus favour rainfall for the early part of winter over the Western Cape and even adjacent parts of other provinces.

Should the development of El Niño intensify in winter and spring, the summer rainfall region may again experience below-average rainfall, delaying the start of the wetter semi-cycle.

# Foot-and-mouth Disease

Dr Langa Simela

Less than 50 cattle in the Sundani village in the Vhembe district, probably worth less than R300 000, tested positive for foot-and-mouth disease (FMD) earlier this year. As a result, a R6 billion export industry of stud and commercial cattle, sheep, goats and pigs, as well as wool, hides and skins and high-value meat cuts and animal feed, collapsed when the Organisation for Animal Health (OIE) suspended South Africa's FMD-free status.

Most of these livestock and products originate from areas over 1 500km away from the affected village, and are highly unlikely to ever cross paths with any animal from Sundani. This raises questions: why is an outbreak in one small area allowed to affect livestock and related industries countrywide?; and, why has South Africa not learnt to deal with the fact that FMD is part of the country's reality?

It is highly unlikely that the FMD virus will be eradicated in Southern Africa, as it is endemic

in the wildlife carrier population, specifically African buffalo. For this reason, Southern African governments and role players must invest in ways to prevent and control the spread of FMD.

## Geographic trade standards

The OIE is mandated by the World Trade Organization to set standards for trade in animals and animal commodities, and FMD is one of seven diseases for which the OIE provides official recognition of 'free' countries or zones. In South Africa, FMD is endemic in a narrow region on the north-eastern border, which includes the Kruger National Park and surrounding areas.

The country has a 350km long and 10km to 20km wide protection zone around the infected area, as well as a narrow high surveillance area along the northern and north-eastern borders. The rest of the country is an FMD-free zone without vaccination.

However, when an outbreak occurs in any part of the free zone,

the entire country's cloven-hoof livestock industry is affected.

## Containment

As a result of the recent outbreak, South Africa initiated steps to establish a containment zone around the infected area so that the rest of the country could continue to trade animals and animal by-products.

A containment zone is an infected area that should be managed in such a way that commodities for export can be proven to have originated from outside or inside the containment zone. It is considered effective once no new cases are reported within the containment zone or the protection zone around it for at least 28 days (two incubation periods for FMD). The containment zone may regain free status once the disease outbreak has been resolved.

The OIE also provides for international standards of FMD control that are independent of geographic distribution

of the virus. These are (a) compartmentalisation; (b) processing of beef to inactivate the FMD virus; and (c) management of the FMD risk along the value chain.

### Compartmentalisation

According to the OIE, a compartment is defined as “an animal subpopulation contained in one or more establishments under a common biosecurity management system with a distinct health status with respect to a specific disease or specific diseases for which required surveillance, control and biosecurity measures have been applied for the purpose of international trade.”

The compartments may be from diverse geographic locations, but share a common disease control programme that is based on farm management, sanitation, biosecurity measures, surveillance and disease control to enhance animal health. These measures should be developed through active co-operation between industry and veterinary services in order to inspire confidence in the control measure.

The compartments should serve to guarantee the health status of an animal drawn from the subpopulation and to avoid disruptions to export in the event of an outbreak. Exporters would have to reach an agreement with importing countries on the defined compartment before livestock and related products could be exported.

The advantage of compartmentalisation is that it bypasses the need for zonal or country freedom, but places emphasis on maintaining FMD control in the market chain. However, the current limitation to using compartmentalisation in FMD endemic areas is that vaccination within the compartments is prohibited, and hence the compartments must be FMD-free without vaccination.

### Processing beef

Products that have been processed to ensure inactivation of the FMD virus may be traded freely regardless of the status of the area of production. Measures that are acceptable to the OIE include canning, cooking the meat at an internal core temperature of 70°C for 30 minutes, and curing by complete drying and salting.

In line with Article 8.8.22 of the Animal Health Code, trade risks associated with FMD can be managed along the value chain. The Animal Health Code recommends that fresh beef can be imported from FMD-infected countries or zones where an official control programme exists, provided that the veterinary authorities present an international veterinary certificate attesting that the entire consignment of meat:

1. Comes from animals that (a) have remained, for at least three months prior to slaughter, in a zone of the exporting country where cattle and water buffalo are regularly vaccinated against FMD and where an official control

- programme is in operation; (b) have been vaccinated at least twice, with the last vaccination not more than six months, unless protective immunity has been demonstrated for more than six months, and not less than one month prior to slaughter; (c) were kept for the past 30 days in an establishment, and that FMD has not occurred within a 10km radius of the establishment during that period, or the establishment is a quarantine station; (d) have been transported in a vehicle that was cleansed and disinfected before the cattle and water buffalo were loaded, directly from the establishment of origin or quarantine station to the approved abattoir without coming into contact with other animals that do not fulfil the required conditions for export; (e) have been slaughtered in an approved slaughterhouse/abattoir, which is officially designated for export and in which no FMD has been detected during the period between the last disinfection carried out before slaughter and the shipment for export has been dispatched; and (f) have been subjected to ante- and post-mortem inspections within 24 hours before and after slaughter with no evidence of FMD;
2. Comes from deboned carcasses (a) from which the major lymphatic nodes have been removed; and (b) which, prior to deboning, have been submitted to maturation at a temperature greater than +2°C for a minimum period of 24 hours following slaughter and in which the pH

value was less than 6 when tested in the middle of both the longissimus dorsi muscles.

The article implies that if proper controls are implemented at the specified steps along the beef production and processing value chain, it is possible to eliminate the FMD virus from beef products, or at least reduce the risk of infection to an acceptable level, even if the product originated from an FMD-infected area. To provide additional reassurance, risk mitigation along the value chain has been proposed, in the same manner that the hazard analysis and critical control point (HACCP) system is implemented, and including a prerequisite programme to be followed by farmers.

Implementation of this FMD control measure has not yet been done in any country, but in principle has been endorsed by countries in the Southern African Development Community. It is certainly worth implementing in Southern Africa, where FMD is endemic.

### Markets for smallholder farmers in infected and protection zones

Part of the cause of outbreak of FMD is said to be illegal movement of animals from the high-risk zones to the FMD-free zones, possibly by smallholder producers in pursuit of better market prices. For many years, the smallholder producers in the FMD-infected and protection zones have been met with the challenge of poor access to markets. While their cattle may be vaccinated regularly,

many smallholder farmers have not experienced FMD, or been properly educated about the illness, and so do not fully understand the implications of an outbreak.

Moreover, because of their limitations, an outbreak may have minimal impact on the smallholder farmers, unless there is stamping out of infected animals.

The words of UK veterinary medicine consultant Guy Freeland in a 2002 e-discussion on FMD control probably still hold true: “In practice, smallholder farmers tend to co-operate through cohesion rather than a sense of major benefit, and seek to avoid the controls whenever the perceived penalty/risk/inconvenience of observing the rules exceeds that of breaking them.”

Therefore, it is advisable to provide more information to smallholder farmers in high-risk areas about the impact of FMD and hence the risks of moving cattle out of the control zones into the free area. In some communities, albeit in Asia, it has been demonstrated that farmer education activities conducted around vaccination times improved the smallholder farmers’ attitudes to biosecurity measures. Conversely, vaccination without farmer training did not improve the farmers’ biosecurity practices.

Smallholder farmers should be assisted to access fodder, more grazing and water for their livestock, particularly where there are recurrent long dry spells, otherwise they are likely to allow their animals to move to better

pastures and water sources, even if these are outside their high-risk zones. Moreover, these farmers should be assisted to access assured livestock markets, which enable and incentivise them to trade their cattle in a bio-secure manner.

### Conclusion

South Africa has heavily relied on geographic measures to control FMD. Much discussion has been held and research conducted on non-geographic measures, but very little has been done to implement them. Given that the FMD virus is endemic in Southern Africa, and the prospects for its eradication are slim if not non-existent, the onus of developing and implementing non-geographic measures that are acceptable to trading partners lies with the region. Given the cost implications, strong dependence on biosecurity and surveillance, and effective public-private partnerships are key elements for progress in the development and implementation of non-geographic FMD control measures in South Africa and the sub-region.

# Renewable Energy

Justin Schmidt

There is renewed interest in renewable energy alternatives around the world, as advances in technology and growing resistance to 'dirty' energy resources fuel momentum towards 'green' energy.

Investment by businesses in renewable energy, as well as water solutions, will grow exponentially over the next 12 months and beyond. The primary and secondary agriculture sectors in South Africa are expected to increasingly invest in renewable energy, not only because of the enabling regulatory developments of the last 12 months, but also because the irrigating of crops and sustaining the cold chain rely on the uninterrupted provision of sufficient energy.

## Using solar power in South Africa

The increase in energy costs and the reintroduction of load-shedding at the end of 2018 and in early 2019 put sustainability and investment into energy production on the top of many farmers',

agribusinesses' and household agendas. There is already strong growth in demand for the installation of solar panels in primary and secondary agriculture sectors, particularly in operations that use a lot of energy during the day. These include cellars, fruit packhouses, irrigation and intensive livestock operations.

The drivers of the trend to become less reliant on the national grid include:

- improved regulatory support;
- increased electricity tariffs;
- awareness and acceptance of the technologies;
- decreasing costs of the hardware and installing;
- South Africa's strong renewable resources for energy production; and
- increasingly unreliable sources of supply from the national utility.

## Financing

On 7 March 2019, the National Energy Regulator of South Africa (NERSA) announced its decision to allow Eskom to implement tariff

increases for the next three years. These increases are 9.41%, 8.41% and 5.22% respectively. There is also the 4.41% clawback, which meant that from 1 April 2019, electricity prices increased 13.82%.

These tariff increases lower the break-even point (the time that the system takes to pay itself off), viability and therefore the cost competitiveness of alternate supplies of energy.

South Africa has reached the tipping point in moving from dependence on fossil-based energy to renewable energy, and this trend will escalate further in the near future.

As such, funding solutions need to be structured in a way that makes the impact on a farm's cash flow as minimal as possible.

In this regard, Absa assists farmers in structuring their funding to implement renewable energy installations that meet their energy and cash flow needs, optimising the benefits of the investment. Once the loan on the solar installation is repaid, the

farmer has an asset that generates a portion of his/her energy needs at a very low cost.

Absa is excited by the energy solutions the renewable energy sector holds for agricultural production. However, farmers must ensure that they are following the correct procedures from a regulatory perspective.

The savings from solar may look good, but if the team dealing with the installation has not followed the correct steps and procedures, it is likely to be switched off by Eskom and those savings won't be realised.

The following changes in legislation and related processes indicate increasing government and regulatory support for renewable energy:

- The proposed allocations to renewable energy in the integrated resource plan;
- Small-scale embedded generators (SSEGs) or installations less than one 1MW do not need generation licences;
- SSEGs, and therefore farmers,

producing renewable energy need to register with NERSA and their utility;

- The announcement by NERSA of the proposed fees for registration of an SSEG. The cost will be R200 and the process for registering will likely soon follow;
- Businesses installing SSEGs can write 100% of their investment off in the first year of their investment.

## Legal installations

Once NERSA has defined its registration process, it is likely that all installations will need to be registered with the regulator. It may be that the registration requirement applies only to installations over the 100KW peak; however, this has not been officially confirmed.

Renewable energy producers, also known as independent power producers, will always have to register with Eskom.

The grid access unit at Eskom facilitates grid access or

connections, and information on this process is available on the Eskom website.

Absa has funded numerous solar installations to date and seen many customers registered with NERSA, as well as seeing indications that some farmers are getting credit back for energy that they push back onto the national grid.

The latest developments at the Department of Energy and NERSA will enable many more farmers to install solar with the support of their banks.

# Production Challenges

Wessel Lemmer

To remain profitable and sustainable, producers of grains, oilseeds and livestock in the summer rainfall region need to adapt to the changing conditions in the marketing and production environments. In order to adapt effectively, they thus need to think strategically. The devaluation of the rand protects producers against the imports of competitive products on the local market.

While the rand is undervalued, there is too little certainty in terms of policy for the currency to strengthen over the long term; policy certainty in terms of land ownership, as well as sufficient electricity and water provision, labour productivity and maintenance of key infrastructure, including port facilities, are lacking, and thus cannot support higher economic growth levels. These facts, as well as South Africa's increasing debt levels, are some of the numerous issues spooking credit ratings agencies and global investors analysing credit reports, as they indicate how South Africa

compares with other countries as an investment destination. As the rand continues to devalue, and global maize prices increase, export parity price levels also increase.

Except for the increase in volatile weather, as well as anecdotal evidence of a shorter production season, indications are that the summer crop rainfall region is entering a wet cycle for the next couple of production seasons.

## Livestock

The potential increase in the export price levels for maize will have a significant impact on the profitability of the intensive livestock sector. As the price of animal feed increases year-on-year, the livestock sectors that utilise the majority of the local soya bean and sunflower seed crop will experience increased strain on profit margins. Due to macro-economic woes such as low economic growth, poor employment and relatively high inflation, local consumers are under strain and not in a position

to consume more or pay higher prices for food. In order to continue growing agricultural businesses, producers therefore cannot solely rely on the economic growth of South Africa. The export markets of those countries with higher expected GDP-growth, including countries in the Middle East, Asia and Africa, should be continuously targeted by South African producers. Equally important are those countries in which South Africa can successfully compete with other major competitors.

## Biosecurity

It is critically important that the agricultural supply chain, including primary grain and oilseeds producers, animal feed manufacturers, red meat producers, auction houses, feedlots, abattoirs and exporters inclusively, and in collaboration with government, find solutions to protect and improve the integrity of the livestock sector. The suspension of South Africa's foot-and-mouth disease-free

status earlier this year led to the suspension of red meat exports, which resulted in a sharp decline in beef prices. Together with the increase in maize prices due to the late rainfall during planting, the price of weaner cattle crashed.

Lack of sufficient biosecurity controls compromise the diversification strategies and total profitability of diversified primary producers in the summer rainfall production region, as well as the profitability of the secondary market.

## Food security

A strong local secondary market is important for the profitability of primary producers in South Africa. But it is also critical for South Africa to improve its food security by growing its production capacity and its ability to export. A country that is able to export agricultural commodities and food do not need to import those commodities and food at high cost. South Africa does and can continue to provide sufficient and safe

food for a growing population at affordable prices.

## Exports

The competition between countries in the Southern Hemisphere to grow food for export to the Northern Hemisphere is increasing. As cold chain technologies and cultivars continue to be developed, producers are increasingly starting to compete with each other, regardless of their hemisphere's location in traditional marketing windows.

Global preferential market access is key to unlocking new markets and improving profitable access to existing markets. Currently, South Africa's bilateral and preferential market access is in a poor state, and its market access and infrastructure to support the growing supply of agricultural exports is insufficient. This will limit the country's best efforts to grow the economy. South Africa must act now to prevent a future food security crisis. The following suggests ways in which this can

be achieved:

- Restore policy and regulatory certainty that encourage investment;
  - Build sufficient infrastructure to facilitate trade, water and energy supply;
  - Successfully negotiate improved market access globally;
  - Enforce biosecurity tracking and trace ability throughout the entire agriculture sector;
  - Continue to invest in the latest technologies to increase profitability;
  - Farmers must limit their future production and marketing risks, which will improve their risk profiles and lower financial costs;
  - Develop and keep to a discipline that optimises longer-term returns;
  - Do not deviate from proven and sustainable production routines to cash in on short-term opportunities that compromise longer-term sustainability.
- In collaboration with each other, all stakeholders need to design and implement the industry's future business environment.

# Zambia

Thapelo Moleleki

Zambia's main economic drivers are mining and agriculture. The economy is expected to grow steadily over the next five years, with real GDP set to average around 5,6% over this period. This growth will be export-driven, as copper prices are expected to improve and as new investment projects continue. Agriculture contributes 10% to the GDP and 9% to the export revenue, which is well in line with the nation's development phase. Zambia remains a prime supplier of maize and sugar to Southern and Western Africa. Demand from its neighbouring countries is set to support these commodity prices.

## Maize

The 2017/18 maize harvest recovered well after the country experienced better weather conditions than expected. It is expected that there will be further recovery in the 2020/21 season, although this will be hampered somewhat by high input costs such as seed, fertiliser and fuel, most

of which are imported. Total maize production is currently 2,39 million tons.

Zambia remains a net exporter and key supplier of maize in the Sahara Desert. Export volumes will continue to increase steadily and will eventually reach the record level of 700 000t as experienced in the 2015/16 season. Exports are currently estimated at 400 000t.

Domestic consumption will remain stable over the short term. Over the medium to long term, local maize consumption is expected to rise due to a growth in population. However, the growth in consumption will be hampered by an increase in prices due to demand. An annual increase in consumption of between 5% and 7% over the next three years is expected. Better seed varieties will continue to drive up production.

## Soya bean

Soya bean production is one of the fastest-growing markets in the country. Over the past two decades, total production has

soared from a few thousand tons in the 2000/01 season, to over an estimated 300 000t in the 2018/19 season. Zambia recorded its biggest crop in history in 2017, which resulted in downward pressure on prices. As local demand continues to rise rapidly, production is set to continue expanding over the next five years.

The area planted to soya bean has risen exponentially over the past 20 years, going from 3 000ha in 2000 to over 225 000ha in 2018. Yields have been moving sideways over the past two decades, but it is expected that they will gradually improve as experienced farmers from South Africa migrate to the country. As farming practices improve, yields will also start to increase. The soya bean market is mainly dominated by large commercial farmers. Many farmers switched from maize to soya bean as a result of market conditions and government intervention in maize production during the latter part of the last two decades. Zambia is expected to remain a

surplus producer of soya bean over the next five years as farmers continue to favour soya bean over maize. Exports of the commodity are expected to grow moderately over the next two decades.

## Sugar

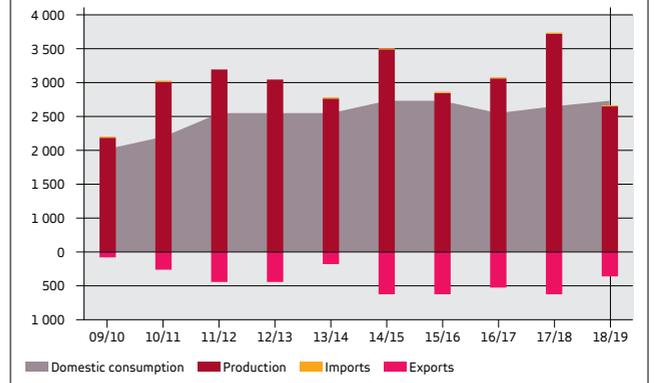
Sugar production in Zambia has more than doubled over the last two decades, with the majority of the growth taking place in the last decade. Government has introduced a fortification policy on sugar, which requires that vitamin-A be added to processed sugar sold on the local market. This is expected to limit production over the short term as this increases production costs and discourages new entrants. Consumption has increased significantly over the past decade as the population and income levels increase. Consumption is expected to increase moderately over the short term. Zambia is a net exporter of sugar, and its sugar remains very competitive in the Southern Africa region. Exports are expected to continue on the current sideways trend.

## Other markets

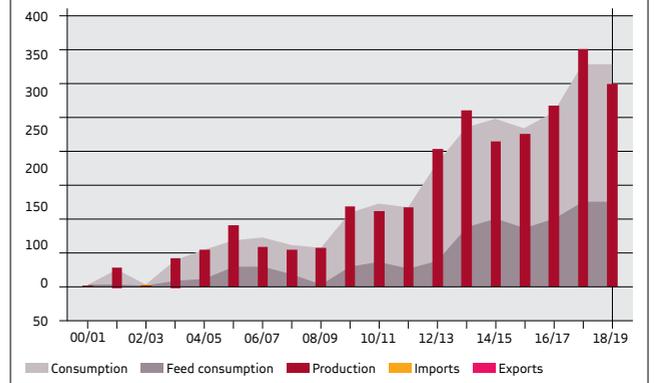
The macadamia industry is still in its infancy in Zambia, but the area of production is expected to continue increasing as farmers look to diversify their crop enterprises.

The avocado and passion fruit industries have taken off on a commercial scale. Farmers have ventured into these crops to target the export market.

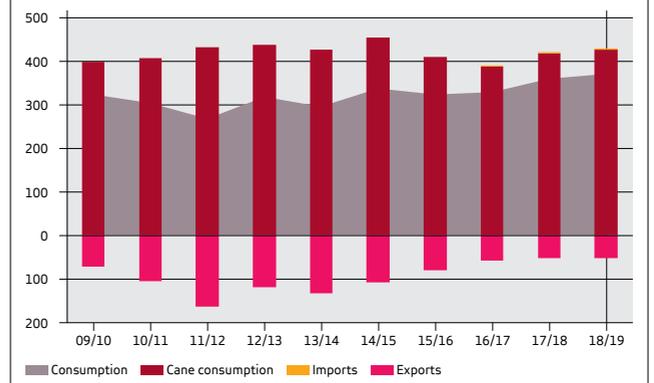
Graph 1: Zambia maize production & trade trends (t)



Graph 2: Zambia soya bean production & trade trends (t)



Graph 3: Zambia sugar production & trade trends (t)



# Wheat

Wessel Lemmer & Paige Bowen

Weather permitting, the world should produce 730 million tons of wheat in 2019. This is expected to increase 1% every year until 2022, with wheat costing \$8/t (about R115/t) more than in 2019. South Africa will produce 1,77 million tons of wheat and import 1,8 million tons of wheat in 2019. Due to the weakening rand, local producers can expect prices to increase by 2022. By the end of 2022, South Africa's annual average wheat production for the period 2019 to 2022 will average 1,78 million tons, or perhaps even less. The current cost and risks associated with wheat production outweighs farmers' returns on investment. By the end of 2022, South Africa's imports will average 1,85 million tons.

This may be higher if the dryland production of barley in the Swartland region of the Western Cape increases.

It is expected that wheat production will be replaced by 200 000t of increased barley production by 2022.

## Imports

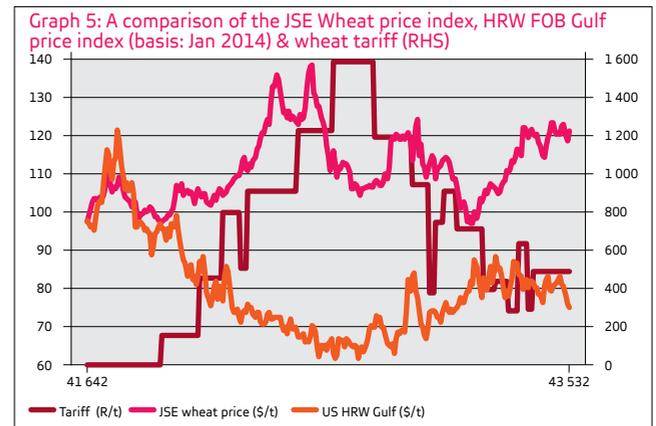
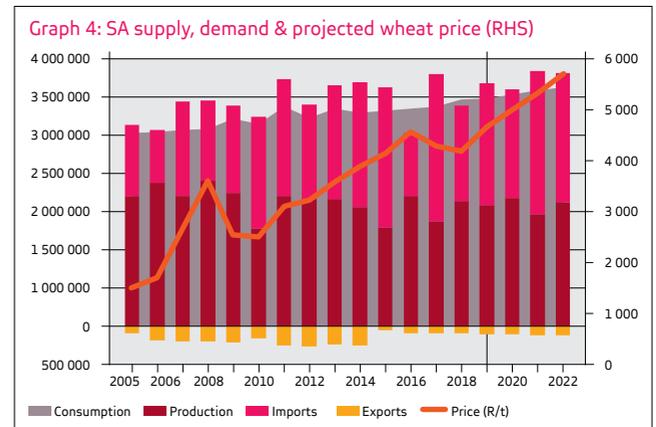
Local consumption is expected to increase from 3,34 million tons in 2019 to 3,51 million tons in 2022. By 2022, South African producers will produce, on average, 52% of the country's annual consumption. However, should barley production replace 200 000t of wheat by 2022, as expected, South Africa's self-sufficiency in wheat will drop to an average of 45%. This will limit producers' ability to meet demand. In this case, South Africa will have to increasingly rely on the surplus wheat produced overseas. These surpluses can diminish quickly due to climate change or geopolitical disasters, thus putting the country's food security at risk.

It is unlikely that wheat production in the dryland production regions of the summer rainfall region will expand. However, if prices become more favourable, production under irrigation may increase. Despite this, it is expected that only 1,58 million tons of wheat will be produced in 2022, which is far

below demand. As soon as an industry's output of a particular commodity decreases to less than 50% self-sufficiency, it is a clear indication that that industry is no longer able or capable of producing that commodity.

## Tariff protection

Compared with earlier years, the timeliness in the announcement of the wheat tariff to strategically protect South Africa's self-sufficiency in wheat production against imports has improved. The largest beneficiary of the tariff is the regimes of the SACU member countries. Local importers will pay an estimated R765 million in tariffs for the 2018/19 marketing year. This equals about R415/t of locally produced wheat.

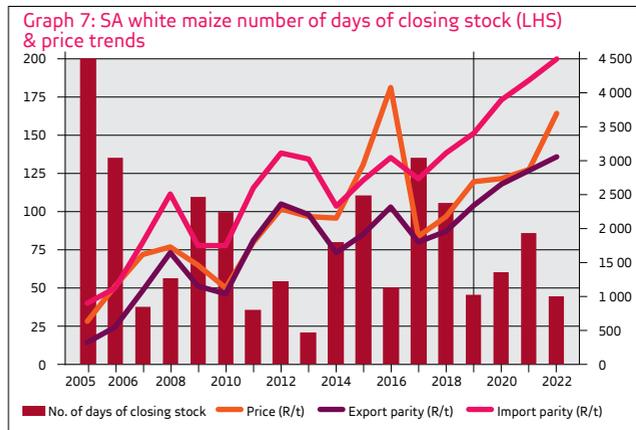
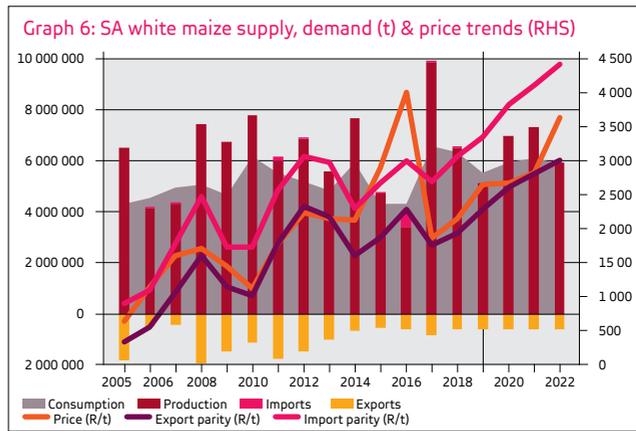


# Maize

Wessel Lemmer & Paige Bowen

## White maize

White maize is currently trading at price levels between import and export parity. As production recovers and the number of days of closing stock, which is an indicator of available ending stocks, increase year-on-year (y/y) to 86 days in 2021, the average price of white maize is likely to decline to an average of R2 800/t in 2020 and 2021. Lower prices will be limited by the increase in export parity price levels, which is likely to equal R2 800/t in 2021. While consumer demand will be met in South Africa, there will be less available maize for export in future. World production of maize is expected to increase from the current 1,1 billion tons to 1,23 billion tons in 2022. As world consumption and trade increase, ending stocks will decline, thus supporting a gradual increase in maize prices until 2022. The US accounts for 37% of all global maize exports, and exports are expected to grow consistently until 2022. The US\$867 billion (about R1,25 trillion) farm bill,



passed by the US congress at the end of 2018 provides a strong safety net for farmers and ranchers in the country.

## Yellow maize

The World Bank forecasts that yellow maize prices will increase steadily from US\$166/t (R2 382) (FOB Gulf) to US\$177/t (R2 539/t) in 2022. Yellow maize is currently trading at an average price of R2 782/t. It is expected that the rand will decrease from an average of R14,36/US\$ to R16,93/US\$ in

2022. This will lead to an increase in the export parity price levels of South African yellow maize from R2 450/t in 2019 to R3 220/t in 2022. The production of yellow maize in South Africa is expected to increase from the current 5,4 million tons to 6,3 million tons in 2021.

However, the consumption of yellow maize by the livestock sector is expected to be negatively affected by biosecurity issues limiting the local demand and export of value-added meat

products. Imports of cheaper poultry meat will increasingly substitute the demand for locally produced frozen poultry meat products. This will have a negative impact on the demand for yellow maize and soya bean.

## Exports

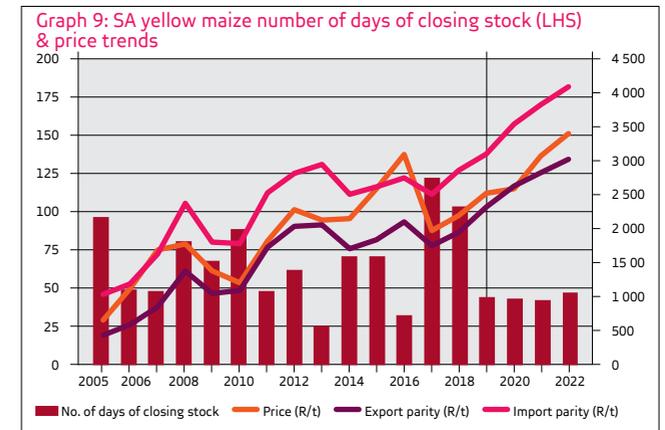
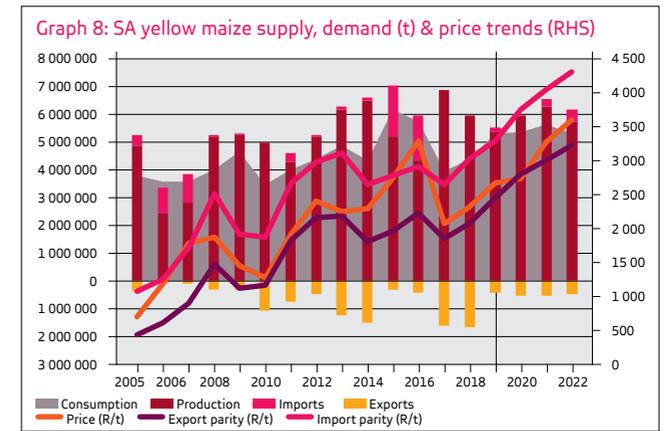
Exports for both white and yellow maize will be limited to the Southern African Customs Union member countries, including Botswana, Lesotho, Namibia, South Africa and eSwatini, as sub-Saharan Africa increasingly becomes more food secure and increases regional trade in maize, soya bean and wheat.

As production recovers and the number of days of closing stock levels out y/y at an average of 45 days until 2022, the average price of yellow maize will increase to R3 600/t in 2022. Lower prices will be limited by the increase in export parity price levels, which are expected to equal R3 320/t in 2022.

## Lowering risk

Farmers should adopt conservation tillage practices as this makes more economic sense. This is particularly true for those producers who have access to natural resources, such as certain soil types and suitable climate. Conservation tillage also improves the long-term sustainability of crop and livestock production.

It is also important that farmers combat changing weather patterns, climate change and soil



loss through erosion to ensure that their operations remain sustainable. Conservation tillage not only assists farmers with facing these challenges, but also adds value to crop production systems through the more efficient utilisation of on-farm livestock enterprises. Ultimately, a farmer's objective is to lower the farm's production risk profile and improve his/her credit risk profile. An improved credit risk profile lowers the cost of capital and improves prospects for investment.

## Outlook

The combination of a wet multi-season weather pattern, increased production levels, sustained prices at higher levels as supported by higher global maize prices, and a weakening rand will lead to an unprecedented increase in the gross producer value (GPV) of maize production over the next three years. The GPV will increase from an estimated R30 billion in 2019 to almost R44 billion in 2022. This will allow producers to decrease their levels of debt.

# Soya Bean

Wessel Lemmer & Paige Bowen

The price ratio to balance production between yellow maize and soya bean is 2:1. As soon as the price ratio increases above 2 in favour of soya bean, producers increase the planting of soya bean and decrease the planting of yellow maize. Given the current exchange rate, the price of yellow maize is enjoying underlying support, and current forecasts indicate that the soya bean price will be too low compared with future export parity prices to encourage the additional production of soya bean in the future.

The crushing margin for soya bean is currently favourable, but in order to increase the local supply of soya bean, consumers must provide producers with incentive to increase production of sufficient soya bean. Higher soya bean prices will impact negatively on the crushing margin.

The derived soya bean price, based on the predicted landed price of oilcake and soya bean oil, indicates that locally produced soya bean are undervalued. For

2019, the average soya bean price is expected to be R4 890/t. To import soya bean will cost around R6 857/t. Thus, local soya bean is around 28% cheaper than imported soya bean. The local soya bean price as derived from imported oilcake and soya bean oil is R6 158/t. Local soya bean is thus 20% cheaper than these landed products. The average price of yellow maize for 2019 is expected to be R2 782/t, compared with the price of soya bean at R4 890/t. This is a price ratio of 1.75:1 compared with a favourable price ratio of 2.2:1 to ensure increased soya bean plantings. In order to meet this price ration, soya bean will have to trade at R6 147/t. The soya bean price to break even with the cost of crushing is R6 158/t. While crushers are securing positive crushing margins, the local soya bean price is simply too low to encourage an increase in production.

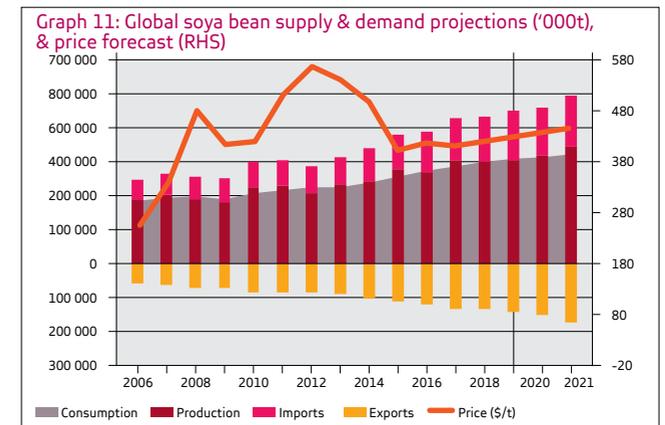
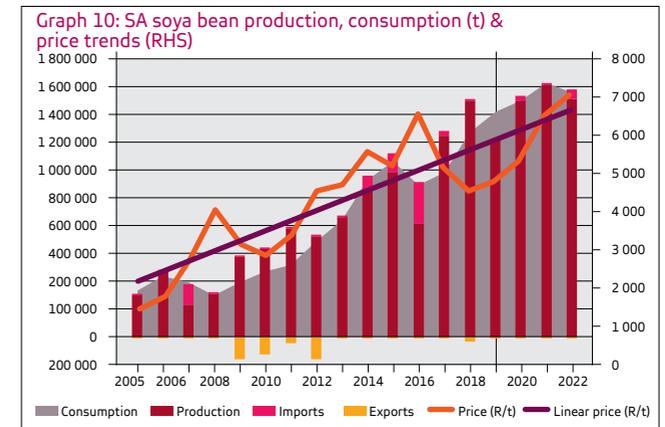
At the landed oilcake and oil derived price of R6 158/t, crushers break even with cost. To import

soya bean for crushing purposes would lead to losses. As a net importer of oilcake and vegetable oils, the South African soya bean supply chain is not impacted negatively by the US-China trade war or Brexit.

## Imports

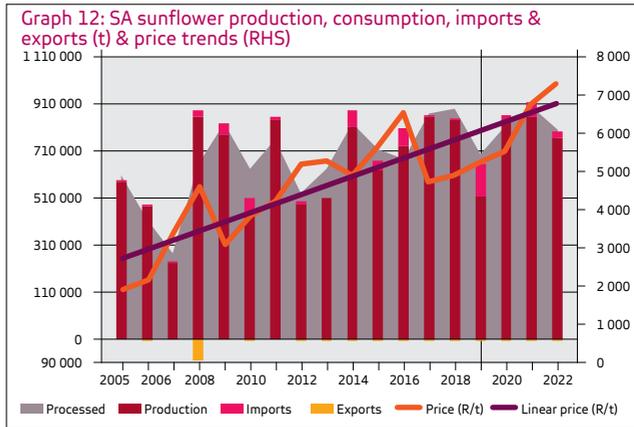
The rand has weakened 20% year-on-year. Moreover, late rainfall and dry conditions also supported local soya bean prices. The price of soya bean increased 2,9% from an average of R4 630/t to R4 766/t in 2019.

Due to the drought, South Africa is expected to import 125 000t of soya bean to meet demand by the end of February 2020.



# Sunflower

Wessel Lemmer & Paige Bowen



The long-term average price ratio between sunflower seed and white maize is 2:1. During 2014, 2017 and 2018, the price ratio exceeded 2:1. During these years, the production of sunflower seed reached above-average production levels at 7,7 million tons, 9,9 million tons and 6,5 million tons respectively. During 2016, the price ratio declined to 1,52:1, and production thus decreased from 7,7 million tons in 2014 to 3,4 million tons. South Africa imported 644 144t of sunflower seed in 2014.

In order to sustain higher production levels, consumers need to incentivise producers to plant more sunflower to meet domestic crushing needs. The current price levels of sunflower seed compared with white maize suggest that sunflower seed is undervalued.

The current price ratio is 1.66:1. At a price ratio of 2.14:1, the production or producer deliveries of sunflower seed will start to increase. At the time of writing, the average price of sunflower seed

for 2019 was R5 209/t, while the price of white maize was R3 132/t. In order to encourage farmers to produce more sunflower seed, the price of the commodity should be at R6 715/t. This is close to the import parity price of soya bean at R6 857/t.

It is expected that global production of sunflower seed will increase, which will likely result in sunflower seed trading sideways to marginally lower. Despite this, the local supply and price of sunflower seed will be largely impacted by the price of white maize, which is expected to increase due to higher global prices and a weakening rand. In order to ensure the sufficient production of sunflower seed, local sunflower seed prices must continue to correlate with local white maize prices. If this is not the case, crushers will need to increase the imports of sunflower seed, sunflower seed oil and oilcake.

## Outlook

It is expected that South Africa will produce 563 590t of sunflower

seed in 2019. This is lower than the annual average of 780 000t, and is due to the drought and poor growing conditions. Annual consumption is around 823 000t. The deficit of 43 000t must thus be imported.

As South Africa is a net importer of vegetable oils and oilcake, the price of sunflower seed will likely not be affected by the US-China trade war and Brexit. Local prices are expected to firm in 2019 and beyond.



# Game

Dr Flippie Cloete, Ernst Janovsky & Wessel Lemmer

The prices of most game species are likely to remain under pressure due to relatively bleak market sentiment, which is the result of an uncertain political and policy environment, weak economic and financial performance, relatively low profitability, and the financial adversity experienced by many in the agriculture sector. The negative price trends of the past couple of years provided the impetus for several investors, and in some instances, game ranchers, to sell most, if not all, of their game animals. This disinvestment tendency will most likely continue in the foreseeable future. Many game ranchers are required to sell more animals to meet their financial responsibilities, which contributes towards the supply pressure on the market.

While this may seem negative from a live game breeding perspective, farmers and ranchers should guard against interpreting this as negative for the entire industry. The developments in the live game trade sector over the

past couple of years had negative financial implications for many game ranchers, and encouraged them to broaden their focus. This is evident from the renewed energy in the hunting and game meat market.

## Price and volume forecast

It is expected that the volume and average price of small game animals will move sideways. This is a result of current price levels, especially for female animals, with game ranchers likely to explore alternative marketing channels such as direct sales, hunting or game meat.

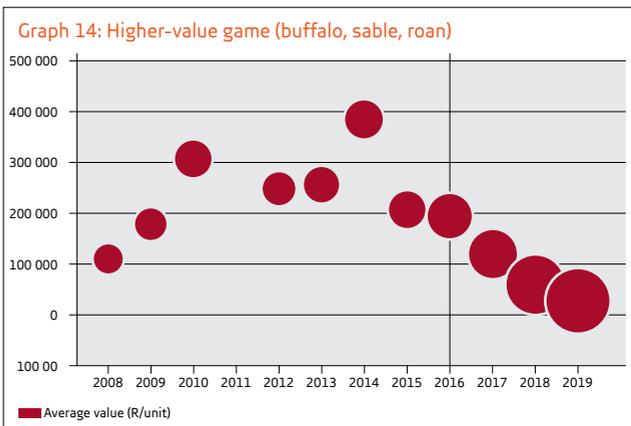
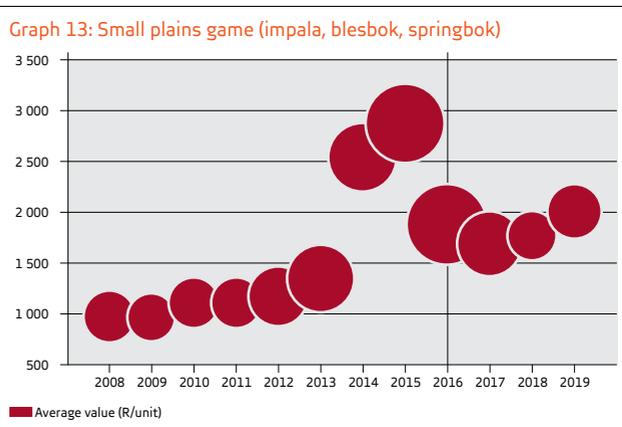
The demand for larger plains game species tends to be higher amongst local and international hunters. As a result, the prices of these animals tend to be more resilient when compared with those of smaller plains game species.

The prices of higher-value species lost significant ground over the past year on the back of weak market sentiment.

As this is likely to continue, prices will remain under pressure. The number of animals offered on auction will continue to trend upward as a result of breeding success over the past decade or so.

A similar trend is expected in terms of colour and/or morphological variants with prices that will remain under pressure. The number of colour-variant animals offered on auction is also expected to increase. The development of a consumptive market remains a priority for many colour-variant breeders. The extent to which these markets will be developed will largely determine whether colour variants will continue to fetch a premium over their natural counterparts.

It is expected that many role players in the industry will continue to consolidate following the developments of the past year or two. Many game ranchers are also likely to revert back to other marketing channels such as selling out of hand, hunting or the game meat market. This is mainly as a

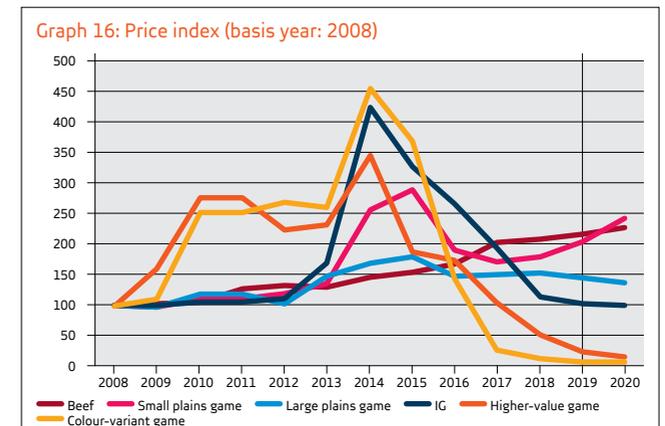
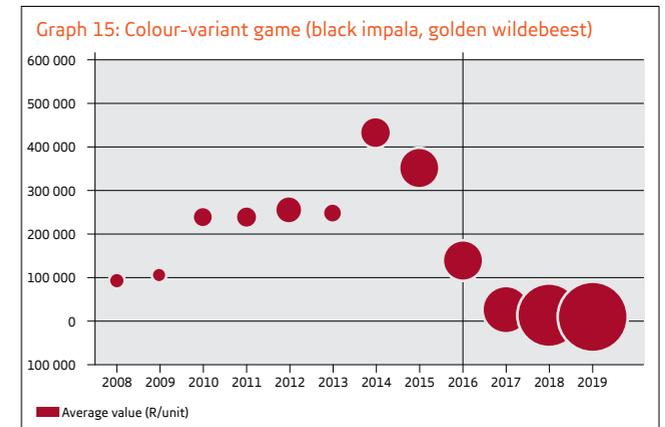


result of the cost-price squeeze currently being experienced.

### Outlook

Prices are expected to remain under pressure as a result of both supply and demand side pressures. The relatively low profitability in other agricultural segments, weak economic outlook and low investment confidence are all factors that will contribute towards the demand side pressure with the general increase in game animal numbers that will fuel supply.

Since 2008, beef prices recovered steadily. Over time, they will outperform game prices, with extensive livestock production growing steadily while the game industry consolidates. Established game breeders and livestock producers will dominate in future. The extensive production of livestock and weaner cattle will continue to compete with game for scarce resources such as natural grazing.



**Table 1: Global maize supply & demand projections ('000t), & price forecasts**

| Year | Country   | Production | Imports | Consumption | Exports | Ending stock | Price (\$/t) | Calculated white maize premium (\$/t) |
|------|-----------|------------|---------|-------------|---------|--------------|--------------|---------------------------------------|
| 2014 | US        | 361 136    | 804     | 301 837     | 47 421  | 43 974       |              |                                       |
|      | Argentina | 29 750     | 3       | 9 300       | 18 963  | 2 898        |              |                                       |
|      | Brazil    | 85 000     | 331     | 57 000      | 34 461  | 7 842        |              |                                       |
|      | World     | 1 056 877  | 125 068 | 974 716     | 142 341 | 279 237      | 193          |                                       |
| 2015 | US        | 345 506    | 1 716   | 298 844     | 48 229  | 44 123       |              |                                       |
|      | Argentina | 29 500     | 3       | 9 300       | 21 653  | 1 448        |              |                                       |
|      | Brazil    | 67 000     | 3 423   | 57 500      | 13 996  | 6 769        |              |                                       |
|      | World     | 1 013 251  | 139 172 | 1 000 414   | 119 806 | 311 440      | 170          |                                       |
| 2016 | US        | 384 778    | 1 450   | 313 828     | 58 270  | 58 253       |              |                                       |
|      | Argentina | 41 000     | 11      | 11 200      | 25 986  | 5 273        |              |                                       |
|      | Brazil    | 98 500     | 854     | 60 500      | 31 604  | 14 019       |              |                                       |
|      | World     | 1 123 304  | 135 585 | 1 059 647   | 160 054 | 350 628      | 159          | 14.43                                 |
| 2017 | US        | 371 096    | 923     | 313 970     | 61 935  | 54 367       |              |                                       |
|      | Argentina | 32 000     | 5       | 12 400      | 20 300  | 4 578        |              |                                       |
|      | Brazil    | 82 000     | 1 000   | 64 500      | 25 400  | 7 119        |              |                                       |
|      | World     | 1 076 233  | 149 993 | 1 089 108   | 146 590 | 341 156      | 155          | 2.66                                  |
| 2018 | US        | 366 287    | 1 016   | 315 355     | 62 233  | 44 082       |              |                                       |
|      | Argentina | 46 000     | 5       | 13 800      | 29 000  | 7 083        |              |                                       |
|      | Brazil    | 94 500     | 1 000   | 66 500      | 29 000  | 8 019        |              |                                       |
|      | World     | 1 099 611  | 159 711 | 1 122 993   | 167 360 | 309 778      | 163          | 2.19                                  |
| 2019 | World     | 1 101 161  | 160 811 | 1 127 645   | 166 955 | 308 528      | 166          | 7.74                                  |
| 2020 | World     | 1 157 993  | 162 638 | 1 183 490   | 168 855 | 300 000      | 170          | N/A                                   |
| 2021 | World     | 1 192 674  | 164 465 | 1 217 242   | 170 756 | 292 000      | 174          | N/A                                   |
| 2022 | World     | 1 226 776  | 166 293 | 1 250 993   | 172 656 | 289 300      | 177          | N/A                                   |

**Table 2: SA white maize supply & demand projections (t), & price forecasts**

| Year | Production | Imports | Consumption | Exports | Ending stock | Price (R/t) |
|------|------------|---------|-------------|---------|--------------|-------------|
| 2014 | 7 710 000  | 0       | 5 952 631   | 640 807 | 1 282 581    | 2 273       |
| 2015 | 4 735 000  | 100 803 | 4 344 207   | 557 063 | 1 307 867    | 3 087       |
| 2016 | 3 408 500  | 644 144 | 4 350 567   | 587 423 | 597 837      | 4 278       |
| 2017 | 9 916 000  | 0       | 6 607 559   | 851 969 | 2 428 653    | 2 002       |
| 2018 | 6 540 000  | 0       | 6 356 700   | 593 000 | 1 825 084    | 2 293       |
| 2019 | 5 152 900  | 0       | 5 551 000   | 620 000 | 681 984      | 3 132       |
| 2020 | 7 021 546  | 0       | 5 959 977   | 618 000 | 970 553      | 2 963       |
| 2021 | 7 393 011  | 0       | 6 140 633   | 632 636 | 1 435 297    | 3 020       |
| 2022 | 5 961 908  | 0       | 5 901 000   | 633 930 | 707 276      | 3 900       |

**Table 3: SA yellow maize supply & demand projections (t), & price forecasts**

| Year | Production | Imports   | Consumption | Exports   | Ending Stock | Price (R/t) |
|------|------------|-----------|-------------|-----------|--------------|-------------|
| 2014 | 6 540 000  | 65 250    | 4 326 073   | 1 5149 17 | 791 054      | 2 286       |
| 2015 | 5 220 000  | 1 862 807 | 6 189 422   | 322 748   | 1 163 200    | 2 745       |
| 2016 | 4 370 000  | 1 592 599 | 5 750 320   | 438 879   | 496 801      | 3 286       |
| 2017 | 6 904 000  | 0         | 3 991 234   | 1 629 739 | 1 260 823    | 2 078       |
| 2018 | 5 970 000  | 0         | 4 387 000   | 1 665 000 | 1 193 275    | 2 315       |
| 2019 | 5 357 120  | 175 000   | 5 311 500   | 450 000   | 623 895      | 2 782       |
| 2020 | 5 996 282  | 0         | 5 359 321   | 545 000   | 616 203.85   | 2 843       |
| 2021 | 6 282 387  | 300 000   | 5 661 120   | 545 000   | 642 791.66   | 3 268       |
| 2022 | 5 740 317  | 480 000   | 5 347 673   | 495 000   | 666 740.95   | 3 600       |

**Table 4: Global wheat supply & demand projections ('000t), & price forecasts**

| Year | Country | Production | Imports | Consumption | Exports | Ending stock | HRW Gulf price (\$/t) |
|------|---------|------------|---------|-------------|---------|--------------|-----------------------|
| 2014 | US      | 55 147     | 4 116   | 31 328      | 23 523  | 20 477       |                       |
|      | China   | 128 321    | 1 926   | 117 500     | 803     | 79 110       |                       |
|      | EU-28   | 156 912    | 5 979   | 124 677     | 35 455  | 12 697       |                       |
|      | World   | 730 411    | 159 500 | 700 417     | 164 229 | 222 314      | 285                   |
| 2015 | US      | 56 117     | 3 070   | 31 944      | 21 168  | 26 552       |                       |
|      | China   | 132 639    | 3 476   | 117 500     | 729     | 96 996       |                       |
|      | EU-28   | 160 480    | 6 928   | 129 850     | 34 763  | 15 492       |                       |
|      | World   | 738 417    | 170 114 | 713 675     | 172 787 | 244 383      | 204                   |
| 2016 | US      | 62 832     | 3 212   | 31 863      | 28 602  | 32 131       |                       |
|      | China   | 133 271    | 4 410   | 119 000     | 748     | 114 929      |                       |
|      | EU-28   | 145 369    | 5 299   | 128 000     | 27 426  | 10 734       |                       |
|      | World   | 756 408    | 178 924 | 735 420     | 183 346 | 260 949      | 167                   |
| 2017 | US      | 47 380     | 4 284   | 29 364      | 24 524  | 29 907       |                       |
|      | China   | 134 334    | 4 000   | 121 000     | 1 000   | 131 263      |                       |
|      | EU-28   | 151 264    | 5 824   | 130 400     | 23 290  | 14 132       |                       |
|      | World   | 763 069    | 179 142 | 742 316     | 181 230 | 279 614      | 174                   |
| 2018 | US      | 51 287     | 3 810   | 30 291      | 27 216  | 27 497       |                       |
|      | China   | 131 430    | 3 500   | 125 000     | 1 200   | 139 993      |                       |
|      | EU-28   | 137 600    | 6 500   | 125 000     | 22 000  | 11 232       |                       |
|      | World   | 734 745    | 176 236 | 744 799     | 178 669 | 267 534      | 210                   |
| 2019 | World   | 729 717    | 176 532 | 739 713     | 178 911 | 265 000      | 212                   |
| 2020 | World   | 735 382    | 181 885 | 745 376     | 184 106 | 261 600      | 215                   |
| 2021 | World   | 740 930    | 184 797 | 751 010     | 186 857 | 260 000      | 217                   |
| 2022 | World   | 746 634    | 187 708 | 756 645     | 189 607 | 255 097      | 220                   |

**Table 5: SA wheat supply & demand projections (t), & price forecasts**

| Year | Production | Imports   | Consumption | Exports | Ending stock | Price (R/t) |
|------|------------|-----------|-------------|---------|--------------|-------------|
| 2014 | 1 750 000  | 1 832 441 | 3 139 545   | 291 828 | 596 823      | 3 787       |
| 2015 | 1 440 000  | 2 062 765 | 3 166 955   | 68 525  | 827 232      | 4 058       |
| 2016 | 1 909 540  | 934 765   | 3 190 399   | 104 847 | 336 323      | 4 461       |
| 2017 | 1 535 000  | 2 175 086 | 3 232 086   | 112 697 | 712 961      | 4 191       |
| 2018 | 1 841 050  | 1 400 000 | 3 325 500   | 115 000 | 476 511      | 4 081       |
| 2019 | 1 774 787  | 1 800 000 | 3 343 610   | 119 971 | 551 968      | 4 574       |
| 2020 | 1 886 097  | 1 600 000 | 3 399 733   | 125 048 | 474 939      | 4 913       |
| 2021 | 1 644 662  | 2 100 000 | 3 459 597   | 130 124 | 591 268      | 5 219       |
| 2022 | 1 818 760  | 1 900 000 | 3 510 789   | 135 201 | 624 225      | 5 596       |

**Table 6: Global soya bean supply & demand projections ('000t), & price forecasts**

| Year | Country   | Production | Imports | Consumption | Exports | Ending stock | Price (FOB Gulf) (\$/t) |
|------|-----------|------------|---------|-------------|---------|--------------|-------------------------|
| 2014 | US        | 106 905    | 904     | 54 989      | 50 136  | 5 188        |                         |
|      | Argentina | 61 450     | 2       | 36 332      | 10 575  | 27 069       |                         |
|      | Brazil    | 97 200     | 305     | 43 085      | 50 612  | 24 428       |                         |
|      | World     | 320 718    | 124 362 | 303 856     | 126 226 | 79 307       | 492                     |
| 2015 | US        | 106 869    | 641     | 54 474      | 52 870  | 5 354        |                         |
|      | Argentina | 58 800     | 676     | 33 093      | 9 922   | 27 156       |                         |
|      | Brazil    | 96 500     | 410     | 42 397      | 54 383  | 24 558       |                         |
|      | World     | 316 565    | 133 346 | 316 240     | 132 572 | 80 406       | 402                     |
| 2016 | US        | 116 931    | 606     | 55 723      | 58 960  | 8 208        |                         |
|      | Argentina | 55 000     | 1 674   | 36 427      | 7 026   | 27 295       |                         |
|      | Brazil    | 114 600    | 252     | 43 061      | 63 137  | 33 212       |                         |
|      | World     | 349 309    | 144 216 | 330 611     | 147 503 | 95 817       | 415                     |
| 2017 | US        | 120 065    | 594     | 58 999      | 57 945  | 11 923       |                         |
|      | Argentina | 37 800     | 5 050   | 39 994      | 2 112   | 24 900       |                         |
|      | Brazil    | 120 800    | 175     | 46 485      | 76 175  | 31 527       |                         |
|      | World     | 340 472    | 153 279 | 338 047     | 152 959 | 98 562       | 400                     |
| 2018 | US        | 123 664    | 544     | 60 611      | 51 029  | 24 491       |                         |
|      | Argentina | 55 000     | 5 350   | 38 636      | 6 300   | 29 750       |                         |
|      | Brazil    | 116 500    | 250     | 45 050      | 79 500  | 23 727       |                         |
|      | World     | 360 076    | 151 215 | 348 488     | 154 200 | 107 165      | 410                     |
| 2019 | World     | 367 635    | 161 243 | 356 687     | 163 761 | 105 000      | 419                     |
| 2020 | World     | 388 819    | 164 223 | 371 003     | 173 786 | 102 800      | 428                     |
| 2021 | World     | 410 008    | 167 203 | 385 319     | 183 812 | 100 600      | 437                     |
| 2022 | World     | 431 207    | 170 183 | 399 635     | 193 837 | 98 600       | 447                     |

**Table 7: SA soya bean supply & demand projections (t), & and price forecasts**

| Year | Production | Imports | Consumption | Exports | Ending stock | Price (R/t) |
|------|------------|---------|-------------|---------|--------------|-------------|
| 2014 | 948 000    | 102 977 | 1 020 226   | 576     | 63 704       | 5 672       |
| 2015 | 1 070 000  | 124 981 | 1 147 535   | 4 677   | 89 128       | 5 274       |
| 2016 | 742 000    | 271 098 | 983 471     | 6 745   | 84 792       | 6 667       |
| 2017 | 1 316 000  | 27 508  | 1 074 088   | 414     | 330 535      | 5 242       |
| 2018 | 1 540 000  | 6 700   | 1 336 900   | 33 000  | 481 835      | 4 604       |
| 2019 | 1 276 035  | 7 000   | 1 468 050   | 3 000   | 273 820      | 4 875       |
| 2020 | 1 545 000  | 30 000  | 1 542 288   | 4 326   | 251 405      | 5 400       |
| 2021 | 1 648 000  | 6 850   | 1 653 156   | 6 239   | 192 938      | 6 600       |
| 2022 | 1 547 100  | 64 000  | 1 591 924   | 4 290   | 155 939      | 7 138       |

**Table 8: Comparison of soya bean prices, crushing margins, and price with break-even and import parity**

| Year | JSE soya bean price (R/t) | Soya bean oilcake (R/t) | Soya bean oil (R/t) | Calculated crushing margin profit/loss before tax | Break-even price for soya bean (R/t) | Import parity |
|------|---------------------------|-------------------------|---------------------|---|--------------------------------------|---------------|
| 2014 | 5 672.69                  | 6 146                   | 10 192              | 270   | 5 836                                | 6 661         |
| 2015 | 5 274.48                  | 5 695                   | 10 085              | 14  | 5 293                                | 5 605         |
| 2016 | 6 667.84                  | 6 283                   | 11 838              | -650  | 6 255                                | 6 585         |
| 2017 | 5 242.20                  | 5 421                   | 11 576              | 288   | 5 353                                | 6 230         |
| 2018 | 4 604.09                  | 5 914                   | 10 725              | 983   | 5 583                                | 6 185         |
| 2019 | 4 875.80                  | 6 477                   | 11 986              | 600   | 6 158                                | 6 857         |
| 2020 | 5 400                     | 6 911                   | 13 085              | 580   | 6 659                                | 7 419         |
| 2021 | 6 600                     | 7 345                   | 14 203              | 564   | 7 164                                | 7 973         |
| 2022 | 7 138                     | 7 823                   | 15 493              | 590   | 7 729                                | 8 624         |

**Table 9: Global soya bean oilcake supply & demand projections ('000t), & price forecasts**

| Year | Country   | Production | Imports | Consumption | Exports | Ending stock | Price (FOB Gulf) (\$/t) |
|------|-----------|------------|---------|-------------|---------|--------------|-------------------------|
| 2014 | US        | 40 880     | 302     | 29 282      | 11 891  | 236          |                         |
|      | China     | 59 004     | 58      | 57 467      | 1 595   | 0            |                         |
|      | Argentina | 30 928     | 1       | 2 402       | 28 575  | 4 025        |                         |
|      | Brazil    | 31 300     | 18      | 15 700      | 14 290  | 3 812        |                         |
|      | World     | 208 482    | 60 706  | 201 592     | 64 405  | 14 050       | 528                     |
| 2015 | US        | 40 525     | 366     | 30 044      | 10 844  | 239          |                         |
|      | China     | 64 548     | 24      | 62 663      | 1 909   | 0            |                         |
|      | Argentina | 33 211     | 0       | 2 672       | 30 333  | 4 231        |                         |
|      | Brazil    | 30 750     | 25      | 16 470      | 15 407  | 2 710        |                         |
|      | World     | 215 971    | 62 095  | 213 148     | 65 526  | 13 442       | 399                     |
| 2016 | US        | 40 630     | 317     | 30 318      | 10 505  | 363          |                         |
|      | China     | 69 696     | 61      | 68 646      | 1 111   | 0            |                         |
|      | Argentina | 33 280     | 0       | 2 853       | 31 323  | 3 335        |                         |
|      | Brazil    | 31 280     | 35      | 16 943      | 13 762  | 3 320        |                         |
|      | World     | 225 549    | 60 400  | 221 663     | 64 551  | 13 177       | 381                     |
| 2017 | US        | 44 648     | 449     | 32 206      | 12 752  | 502          |                         |
|      | China     | 71 280     | 23      | 70 105      | 1 198   | 0            |                         |
|      | Argentina | 27 930     | 0       | 2 995       | 25 350  | 2 920        |                         |
|      | Brazil    | 34 500     | 19      | 17 711      | 16 064  | 4 064        |                         |
|      | World     | 232 331    | 59 992  | 229 404     | 63 817  | 12 279       | 359                     |
| 2018 | US        | 44 586     | 408     | 32 614      | 12 474  | 408          |                         |
|      | China     | 69 696     | 30      | 68 826      | 900     | 0            |                         |
|      | Argentina | 32 800     | 0       | 3 185       | 29 300  | 3 235        |                         |
|      | Brazil    | 33 100     | 26      | 18 131      | 15 700  | 3 359        |                         |
|      | World     | 238 196    | 62 677  | 234 546     | 66 791  | 11 815       | 405                     |
| 2019 | World     | 249 992    | 63 751  | 246 430     | 67 773  | 11 700       | 409                     |
| 2020 | World     | 258 914    | 64 913  | 255 254     | 69 028  | 11 590       | 412                     |
| 2021 | World     | 267 838    | 66 074  | 264 079     | 70 283  | 11 450       | 416                     |
| 2022 | World     | 276 758    | 67 236  | 272 904     | 71 538  | 11 390       | 419                     |

**Table 10: Historic sunflower seed oil supply & demand ('000t), & prices**

| Year | Country | Production | Imports | Consumption | Exports | Ending stock | Price (\$/t) |
|------|---------|------------|---------|-------------|---------|--------------|--------------|
| 2014 | Ukraine | 4 429      | 2       | 600         | 3 872   | 294          |              |
|      | World   | 14 967     | 6 179   | 14 116      | 7 384   | 2 607        | 920          |
| 2015 | Ukraine | 5 010      | 1       | 600         | 4 500   | 205          |              |
|      | World   | 15 376     | 7 021   | 15 224      | 8 101   | 1 679        | 888          |
| 2016 | Ukraine | 6 351      | 0       | 580         | 5 851   | 125          |              |
|      | World   | 18 177     | 8 897   | 16 593      | 10 406  | 1 754        | 867          |
| 2017 | Ukraine | 5 891      | 1       | 585         | 5 341   | 91           |              |
|      | World   | 18 229     | 8 496   | 17 547      | 9 735   | 1 197        | 817          |
| 2018 | Ukraine | 6 235      | 2       | 590         | 5 600   | 138          |              |
|      | World   | 19 449     | 8 459   | 17 724      | 9 959   | 1 422        | 765          |

**Table 11: SA sunflower seed supply & demand projections (t), & price forecasts**

| Year | Production | Imports | Consumption | Exports | Ending stock | Price (R/t) |
|------|------------|---------|-------------|---------|--------------|-------------|
| 2014 | 832 000    | 63 180  | 847 682     | 48      | 92 927       | 4 894       |
| 2015 | 663 000    | 36 064  | 747 808     | 256     | 45 867       | 5 636       |
| 2016 | 755 000    | 70 643  | 707 327     | 205     | 163 086      | 6 536       |
| 2017 | 874 000    | 554     | 885 039     | 274     | 154 841      | 4 736       |
| 2018 | 862 000    | 1 350   | 906 720     | 450     | 110 806      | 4 900       |
| 2019 | 563 590    | 125 000 | 727 600     | 500     | 70 596       | 5 208       |
| 2020 | 851 665    | 30 000  | 843 703     | 325     | 101 887      | 5 527       |
| 2021 | 870 069    | 60 000  | 913 919     | 330     | 110 234      | 6 755       |
| 2022 | 787 174    | 30 000  | 823 028     | 330     | 96 445       | 7 307       |



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