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BFAP BASELINE

AGRICULTURAL OUTLOOK 2018 - 2027

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FOREWORD

THE BUREAU FOR FOOD and Agricultural Policy (BFAP), founded in 2004, is a non-profit organisation. BFAP exists with the distinct purpose to objectively inform and support decision-making by stakeholders in the agro-food, fibre and beverage sectors of Africa. It provides independent, rigorously tested, research-based market and policy analyses. BFAP consists of a network of 45 employees, including associates and researchers at universities spanning the African continent. BFAP has developed a firm reputation of delivering upon its commitment of informing and supporting decision makers in government, industry bodies, NGO's and private sector. We collaborate with various internationally recognised institutions including the Organization for Economic Cooperation and Development (OECD), the Food and Agricultural Organization (FAO), the Food and Agricultural Policy Research Institute (FAPRI) and the BER (Bureau for Economic Research). BFAP is also a founding partner in the Regional Network of Agricultural Policy Research Institutes (ReNAPRI) in Eastern and Southern Africa.

BFAP's vision and mission is to:

- undertake unbiased, scientifically rigorous and industry relevant research;
- generate research outputs and solutions guided by market based requirements and scenarios in order to drive sustainable commodity and food production and improve food security;
- support capacity development through postgraduate research at the associated Universities and other; and
- publish research outputs with the associated Universities in peer reviewed journals as well as respected valid popular media.

BFAP acknowledges and appreciates the tremendous insight of numerous industry specialists and collaborators over the past years. The financial support from the Western Cape Department of Agriculture and ABSA Agribusiness towards the development and publishing of this Baseline is also gratefully acknowledged.

Although all industry partners' comments and suggestions are taken into consideration, BFAP's own views are presented in this Baseline publication.

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CONTEXT AND PURPOSE OF THE BASELINE

THE 2018 EDITION of the BFAP South African Baseline presents an outlook of agricultural production, consumption, prices and trade in South Africa for the period 2018 to 2027, within the context of the current uncertainty regarding land reform policies. The information presented is based on assumptions about a range of economic, technological, environmental, political, institutional, and social factors. The outlook is generated by the BFAP system of models. A number of critical assumptions have to be made for baseline projections. One of the most important assumptions is that normal weather conditions will prevail in Southern Africa and around the world; therefore yields grow constantly over the baseline as technology improves. Assumptions regarding the outlook of macroeconomic conditions are based on a combination of projections developed by the International Monetary Fund (IMF), the World Bank and the Bureau for Economic Research (BER) at Stellenbosch University. Baseline projections for world commodity markets were generated by FAPRI at the University of Missouri. Once the critical assumptions are captured in the BFAP system of models, the Outlook for all commodities is simulated within a closed system of equations. This implies that, for example, any shocks in the grain sector are transmitted to the livestock sector and vice versa. Therefore, for each commodity, important components of supply and demand are identified, after which an equilibrium is established through balance sheet principles by equalling total demand to total supply.

This year's baseline takes the latest trends, policies and market information into consideration and is constructed in such a way that the decision maker can form a picture of equilibrium in agricultural markets given the assumptions made. However, keep in mind, markets are extremely volatile and the probability that future prices will not match baseline projections is therefore high. Given this uncertainty, the baseline projections should be interpreted as one possible scenario that could unfold, where temporary factors (e.g. weather issues) play out over the short run and permanent factors (e.g. biofuels policies) cause structural shifts in agricultural commodity markets over the long run. The baseline, therefore, serves as a benchmark against which alternative exogenous shocks can be tested and interpreted. In addition, the baseline serves as an early-warning system to inform role-players in the agricultural industry about the potential effects of long-term structural changes on agricultural commodity markets, such as the impact of a sharp increase in input prices or the impact of improvements in technology on the supply response.

To summarise, the baseline does NOT constitute a forecast, but rather represents a benchmark of what COULD happen under a particular set of assumptions. Inherent uncertainties, including policy changes, weather, and other market variations ensure that the future is highly unlikely to match baseline projections. Recognising this fact, BFAP incorporates scenario planning and risk analyses in the process of attempting to understand the underlying risks and uncertainties of agricultural markets. Some of the boxes in the publication present results of a number of specific or commissioned analyses through the past 18 months. Farm-level implications are included in the commodity specific sections and the scenarios and risk analyses illustrate the volatile outcome of future projections. Additional stochastic (risk) analyses are not published in the baseline, but prepared independently on request for clients. The BFAP Baseline 2018 should thus be regarded as only one of the tools in the decision-making process of the agricultural sector, and other sources of information, experience, and planning and decision-making techniques have to be taken into consideration.

EXECUTIVE SUMMARY AND IMPLICATIONS

RISKS AND UNCERTAINTY are inherent to agricultural markets, but following a period of prolonged growth, the combination of variable climatic conditions and macro-economic fluctuations created an exceptionally volatile environment for South African agriculture in recent years. While the baseline presents a single plausible future outcome for the sector, based on a set of macro-economic and policy assumptions, it acknowledges that the uncertainty of the past few years remains prevalent and is likely to even increase. This uncertainty influences the ability to project the future state of the sector as a result of a number of factors detailed below:

Macro-economic environment:

The inauguration of President Ramaphosa in 2018 led to a number of changes that improved confidence levels in the South African economy, yet the results of first quarter growth served as a stark reminder of the structural challenges that remain in the South African economy. These structural challenges constrain the outlook for growth and job creation and place the new found optimism at risk given the realities that is facing the country. After its initial rally, the Rand has started to show signs of depreciation, influenced strongly by global sentiment towards emerging markets. Globally, possible signals of a general slowdown in growth, as well as factors such as the trade war between the United States and China, have brought about significant pressure on many emerging market currencies. The emergence of more protectionist, as opposed to trade-promoting policies, also fuels concern for emerging markets

Global agricultural markets:

International agricultural markets have consolidated following a prolonged period of declining prices resulting in pressure on profit margins. In many industries, 2017 marked a reduction in stock levels for the first time in several years. The resulting short term recovery in some price levels was further supported by climatic concerns. Below average crops in South America supported a recovery in grain and oilseed prices in 2018, whilst warm, dry conditions in many Northern Hemisphere countries has resulted in a weaker outlook for 2019 production levels. Following the short term recovery, prices are however projected to trade largely sideways over the rest of the Outlook period, remaining well below the peaks of 2011-2013.

International livestock prices initially showed signs of recovery in 2017, with the FAO meat price index on average 9% higher relative to 2016. The increase was underpinned by various animal disease related impacts (for example Avian Influenza in China), significant import demand for beef and pork in the first half of the year, as well as constrained export supply for sheep meat. However, in light of increasing supply during the latter part of 2017, livestock prices started trending downwards and are expected to continue the decline in the short term, before recovering somewhat over the second half of the coming decade.

Policy uncertainty:

One of the greatest uncertainties facing South African agriculture at present relates to the implementation of land reform policies, in particular the possibility of expropriation without compensation. The general perception is that overall execution of strategies and programmes on land reform has been poor, resulting in various failures. Consequently, the view is that land reform has failed and there is an increased fixation on the issue of land ownership, but the equally important question of what happens with the land once ownership is transferred is not adequately addressed. These concerns are echoed by the findings of the recent High Level Panel report, led by Former President Kgalema Motlanthe, which clearly identifies the failures of delivery in the redistribution and restitution of land, the denial of land rights and the tenure security issues.

Without a focused land reform policy framework which supports growth and food security, and which is well-executed and supported by strong institutions, the inequalities that have been created in the past will only increase. It is important that land reform supports

the core of commercial agricultural sector, which is a key driving force of the economy and food security in the country, to avoid it collapsing. The current political rhetoric regarding land expropriation without compensation has already affected investment in the agricultural sector significantly. Based on initial information from various key stakeholders in the sector, suggestions are that without continued investment, the value of agricultural exports could decline by 40%, and that 30% of the jobs in high-value export orientated crops could be lost in the short term.

Key learnings from land reform experiences across the world and in South Africa clearly indicate that long-term solutions to land reform are extremely complex. Therefore, a holistic land reform programme has to be designed and implemented, taking all levels of land ownership, tenure security and farming systems and typologies, demographics and transformation in the food system into consideration. It needs to be specific, spatially targeted and take cognisance of the economic realities of farming in order to be sustainable. Despite the fact that success with land reform has been limited over the past twenty years, there are many lessons that have been learnt and with the majority of the successful models that are filtering to the top, the key principle of success remains strong public-private-partnerships (PPP), especially for the smaller scale producers.

The current land policy framework is contradictory in some instances, fragmented and not based on empirically sound analysis, largely because an accurate land ownership database does not exist. To solve this issue, a comprehensive and accurate agricultural census and land audit is urgently required. Without a comprehensive and accurate database, the planning, financing and implementation of a holistic land reform programme will remain futile.

South Africa has come to a cross-roads with land reform and, given the current realities of slow economic growth, high unemployment, weakened government institutions, and a wide-spread collapse of municipalities, the only sustainable option going forward will be to leverage all possible resources and capacity of all stakeholders. This implies public and private sector stakeholders urgently need to align on common key goals, ensure clear and focussed roles and responsibilities for all stakeholders that are supported by a well-structured and coherent policy framework, that clear incentives exist, and then for all stakeholders to jointly drive relentless execution to ensure goals are achieved.

Outlook for South African agriculture:

Within this realm of uncertainty, the 2018 Baseline projections for South African agriculture represents a single plausible future outcome, under the assumptions of a stable weather and policy environment. Importantly, the baseline therefore represents a plausible but single scenario where land reform is implemented successfully, with no negative impacts on investment and production, and on the assumption of strong property rights in a market-based economy, based on sound and globally accepted constitutional principles. This marks a positive change from the current status quo of little progress in terms of successful land reform. Other policies are assumed to remain in their current form.

In real terms, agricultural GDP peaked in 2017, supported by a myriad of factors. These include an all-time record crop for both maize and soybeans, favourable prices for horticultural exports arising from reduced production in the Northern hemisphere and a return to profitability for intensive livestock sectors due to the combination of sharply reduced feed grain prices and favourable meat prices, supported by international market conditions and continued rebuilding of the cattle herd.

In 2018, real agricultural GDP is expected to decline sharply owing to the impact of the Western Cape drought on fruit exports, a return to long term average summer grain production, high carryover stock levels which extend the lower price cycle, and the impact of diseases such as Avian Influenza and Listeriosis on livestock markets. Over the course of the 10 year projection period, a slow recovery is expected with agricultural GDP ultimately consolidating at levels similar to 2013 and 2014 in real terms. A number of factors influence this projection:

- While consumer spending power is expected to remain under pressure in the short term, rising income levels in the medium term supports the projection of growing demand of meat and dairy products, with significantly slower consumption growth for basic food staples. As a healthy, affordable source

of animal protein, chicken consumption is projected to expand by 27% by 2027 relative to the 2015 to 2017 base period. At the same time, diversification in meat consumption is also expected to support the demand for beef, which expands by 24% over the same period.

- In the short term, the supply response of products with a longer production cycle, such as beef and sheep meat, remains constrained by herd rebuilding efforts following the liquidation through the consecutive droughts of 2015 and 2016. Additional supply entering the market over the next 2 years will support the gross value of beef production, though some of this benefit is expected to be offset by declining real prices.
- At current lower feed grain prices, a return to profitability supports the expansion of intensive livestock production. In the short term, this expansion will be led by chicken, the largest animal product subsector, which also has the shortest production cycle allowing a faster supply response.
- Growing feed demand from the expanding livestock sectors, combined with a modest short term recovery in international grain prices and a depreciating exchange rate, supports some recovery in domestic grain and oilseed prices towards 2020. Over the second half of the Outlook, price gains in major field crop markets are attributed mainly to exchange rate depreciation and remain insufficient to outpace inflation, implying a decline in real terms.
- In the short term, producer incomes and particularly cash-flow of producers in the Western parts of the country remain under pressure, as the return to surplus production following the impact of consecutive droughts in 2015 and 2016 was accompanied by a sharp decline in prices.
- Longer term trends in the area cultivated to major field crops reflect both the current pressure on profitability levels of grain producers as well as the demand for animal feed grains. Total area cultivated to major field crops in the summer grain production regions declines somewhat in the short term, before consolidating post 2020 at levels similar to 2015. Significant changes are evident in the crop mix however, with yellow maize and particularly soybeans expanding, mostly at the expense of white maize, which is primarily a food staple.
- Despite representing one of the fastest growing subsectors in recent years, income from horticultural products is expected to be under pressure in the short term. The continued effect of the recent drought and consequent water shortages in the Western Cape, where a substantial share of export orientated horticultural products is produced, resulted in significant damage to orchards. The extent of damage implies that recovery to full production levels will be prolonged and water allocation towards agriculture could remain constrained.
- Though slower than in recent years, the expected continuous depreciation of the exchange rate will support the price competitiveness of South African products in the global market. At the same time however, it increases the cost of dollar based inputs.
- For the agricultural sector as a whole, the combination of rising oil prices and a depreciating exchange rate is projected to increase the cost of key inputs such as fuel and fertiliser consistently over the next 10 years. As such, producers will need to become increasingly efficient in utilising such inputs in order to counter the cost price squeeze.

To summarise, fast growth in the sector will not be simple to achieve and the true level of competitiveness and sustainability of the South African agro-food system on the global stage will be tested thoroughly. Innovation, productivity and investment in the best technology will be critical to position the sector for a prosperous future.

Food price implications:

In addition to influencing the prices of agricultural commodities and the inputs used to produce them, the exchange rate, as well as fuel price, also influence the food price inflation through their influence on processing and distribution costs. As such, food inflation is expected to increase modestly until the end of 2019, stabilising just below 5.5%. In line with commodity price movements, the largest contributors to food inflation in 2019 is expected to be "Meat", "Oils" and "Breads and Cereals".



There is a general fixation on the issue of land, but the real questions of what happens with the land and who the beneficiaries should be are not adequately addressed.

LAND REFORM IN SOUTH AFRICA: (UN)CERTAINTY, GROWTH AND JOBS

EXECUTIVE SUMMARY

- Investment in agriculture is widely recognised as a key precondition in achieving goals related to improving food security, creating jobs, creating wealth, and thereby reducing poverty. Through Apartheid, the privilege of accumulating wealth through investment in land was taken away from black people.
- Without a clear land reform policy framework that is well-executed by strong institutions, the inequalities that have been created will not only increase, but the core of the commercial agricultural sector, which is a key driving force of the economy and food security in the country, will collapse.
- The current political rhetoric regarding land expropriation without compensation has already affected investment in the agricultural sector significantly. Empirical evidence suggests that without continued investment, the value of agricultural exports could decline by 40% and 30% of the jobs in high-value export orientated crops could be lost.
- There is widespread concern in South Africa that land reform has not been successful. The overall execution of strategies and programmes has been poor. There is a general fixation on the issue of land, but the real questions of what happens with the land and who the beneficiaries should be are not adequately addressed. These concerns are echoed by the findings of the recent High Level Panel report, which clearly identifies the failures of delivery in the redistribution and restitution of land, the denial of land rights and the tenure security issues.

- The current land policy framework is contradictory and fragmented and not based on empirically sound data, largely because a sound land ownership database does not exist. A comprehensive agricultural census and land audit is of paramount importance. Without a comprehensive database, the planning, financing and implementation of a holistic land reform programme will remain haphazard and futile.
- Throughout history, basically every country in the world has passed land reform laws and implemented them with different levels of success. A review of land reform programmes and experiences in seven case study countries (Venezuela, China, India, Taiwan, Scotland, Brazil and Zimbabwe), presents some key lessons (BFAP, 2018):
  - As ideological economic and political system, neither pure capitalism nor pure socialism leads to an ideal outcome: for South Africa, rather, the solution lies in constitutionalism enacted correctly.
  - Collectivism don't pass the test: individual property rights balanced with public interest do.
  - A high concentration of ownership or a dismantling of large farms into smaller units is not socially or economically sustainable. Rather a balanced mix of farm types and sizes will provide a sustainable solution.
  - Government as an institution is not efficient enough to implement and manage land reform on its own nor to incentivise and manage food production and distribution – having the correct market mechanisms are more efficient.
  - Legislation, as a mechanism to drive change in itself, has its limitations.
  - Politics and social priorities matter, but the reality of global economics eventually dictates and drives change.
- Key learnings from international land reform experiences and in South Africa clearly indicate that long-term solutions to land reform are extremely complex. Therefore, a holistic land reform programme has to be designed and implemented, taking all levels of land ownership, tenure security and farming systems and typologies, demographics and transformation in the food system into consideration. It needs to be specific, spatially targeted and take cognisance of the economic realities of farming in order to be sustainable.
- A one-size-fits all approach to expropriation, resettlement and support will not succeed.
- The highest, and growing concentration of poor and vulnerable households are based in urban centres and they require efficient and internationally competitive commercialised value chains to secure a consistent supply of food at affordable prices. In parallel, rural economies, food markets and household food consumption and nutrition can be enhanced significantly by smaller sized, informal but productive farmers and value chains.
- Despite the fact that success with land reform has been limited over the past twenty years, there are many lessons that have been learnt and the key principle of success remains strong public-private-partnerships (PPP).
- South Africa has come to a cross-roads with land reform and given the current realities of slow economic growth, high unemployment, weak government institutions and a wide-spread collapse of municipalities, the only sustainable option going forward will be to leverage all possible resources and capacity from all stakeholders in the public and private sector to reach an alignment and execute on a well-structured policy framework with clear incentives and coordinated roles for each stakeholder in the market.

INTRODUCTION

Throughout history, land reform has taken place for different reasons, driven by political, economic or development ideologies, in order to correct historic wrongs that resulted in disproportional land ownership (especially in former colonised countries), to prevent uprisings and rebellions and in order to win elections. At one time or another, but especially since the 1960s, virtually every country in the world has passed land reform laws and implemented them with different levels of conviction and success. The failures vastly outnumber the success stories and a fundamental lesson derived from a long international history of the

'land question' is that, while reforming the pattern of access to and ownership of land is difficult to achieve, far more difficult is to make resettlement complete in the sense of securing the competitiveness of beneficiaries so that they are able to achieve income growth, poverty reduction, and sustainable use (De Janvry & Sadoulet, 2005). Often considerations of economic viability, profitability and longer term support took a back seat to social and political priorities of fast and visible redistribution and upliftment. In numerous countries, progressive gains brought about by land reform programmes have over time been eroded by economic forces and others purposefully cancelled due to political and policy change (De Janvry, 1981). Also evident is that governments are mostly good at acquiring land but rather poor in distributing land to its rightful beneficiaries. Land reform programmes have often became part of a system of political patronage.

Land reform also lies at the heart of dealing with the increasing levels of inequality in a dualistic agricultural system in South Africa. Although there are pockets of growth, it is clear that the rural economic transformation that is envisaged in the National Development Plan (NDP) has not materialised. The challenges of the growing demand for food and the increasing rate of urbanisation have to be addressed in conjunction with the massive unemployment rate, rural poverty and a major imbalance in land ownership and lack of transformation in the sector. The 2011 Green Paper on Land Reform already refers to this challenge as "land reform pursued with minimal disruption to food production based on agrarian transformation". Although the agricultural sector has a significant role to play, especially in rural economies, it is clear that it will not be able to solve the major economic transformation challenges facing the country on its own. There is widespread concern in South Africa that land reform has not been successful. However, there is little consensus on what actually constitutes successful land reform in our circumstances: by what metric would we be prepared to declare success, and over what period of time? These are important questions, because they influence the state of mind of prospective land reform beneficiaries and hence whether they will be willing to invest in and protect the long-term viability of the assets they obtain. The report of the High-Level Panel (HLP) on the Assessment of Key Legislation and the Acceleration of Fundamental Change that was recently published clearly identifies the failures of delivery in the redistribution and restitution of land, the denial of land rights and the tenure security issues.

With the passing of the Parliamentary Motion regarding the review of Section 25 of the Constitution to allow expropriation of land without compensation in February 2018, a new landmark was reached in the land reform debate that has been struggling to move forward for more than two decades. Despite the conditions of the ruling party that expropriation without compensation should be done in a manner that does not threaten productivity, economic growth, employment and food security, the perceived level of overall policy uncertainty has increased significantly, investors' confidence has declined, data on land ownership is incomplete and land reform debates and the media are fixated on the expropriation of land without compensation. Although any potential changes to the constitution will take

Table 1: Land size and ownership in South Africa

Land item	Hectares
South Africa total	**122 518 143**
State-owned land	**10 566 215**
Nature conservation, national parks, etc.	7 448 764
State forests	1 812 478
Department of Water Affairs	575 723
Department of Defence	688 127
Correctional Services	41 123
Urban areas, towns and villages	**11 357 935**
Farm land under traditional tenure	**18 036 773**
Land use change due to urban sprawl, mining, expansion of parks and forests since 1994	**4 143 993**
Total area of farm land under freehold	**78 413 227**

Source: Kirsten and Meyer, 2018 forthcoming.
Data: Agricultural Census, 1993 and Geo Terra Images (2015) – spatial land data in 2015.

more than two years to implement, the land debate has gained considerable political momentum, which is having a direct impact on the growth and investment environment of the agricultural and food industries.

The objective of this Section of this year's Baseline is to provide a high-level overview of realities related to the South African agricultural landscape that are fundamentally important for a sensible debate on land reform and to assist in reframing and redirecting and perhaps recast our existing land reform policy framework to be more holistic, progressive and realistic. The first part takes stock of land ownership and provides an understanding of current farming systems, the natural resource base and the overall competition for land. The second segment deals with growth, productivity, food security and jobs, all of which are seen as elements that cannot be compromised in the rollout of a radical land reform process. The third section provides a brief summary of case studies from a selection of countries across the world, which then leads to the final elements that presents draft concepts around the potential approach to a new land reform policy framework.

TAKING STOCK OF SA'S LAND-OWNERSHIP, LANDSCAPE AND NATURAL RESOURCES

The land reform debate has shown the limited extent of South Africans' understanding of the real facts about land, distribution of land ownership and the nature and quality of the land resource. It is well-known that South Africa has multiple land tenure systems but overwhelmingly most land (urban and rural) is owned privately (free hold tenure) by individuals, corporations, trusts, companies, and partnerships. The South African Government also owns substantial tracks of land and land under the custodianship of traditional leaders covers 18 million hectares. In 1993 it was estimated that the extent of farmland under free hold tenure was 82 million hectares but since then around 4 million ha of farm land was lost to mining, urban development and expansion of national parks and forests (Table 1). The question now is to establish with great certainty how much of the 78 million ha of farm land is still owned by white farmers and how much has been bought by the government for land reform purposes, or redistributed to beneficiaries or returned to land claimants who lost their land during the apartheid years. There have been various attempts to provide more accurate estimates of who owns what land, however the reality is that a comprehensive land audit has not been undertaken for the country as a whole.

Of the 78 million hectares of farmland, a total of 8 356 124 hectares (or 10.7%) has been allocated to beneficiaries via the redistribution or restitution programmes since 1994. We estimate through our own research and analysis of deed transfers, that black farmers acquired an additional 1.2 million hectares (1.5%) privately without the support of the government programmes. Many communities elected to receive financial compensation as part of the restitution process. To date, this accounts for a total of 2 920 385 hectares (3.7%). Due to the suspension of the LRAD and SLAG programmes in 2006 very little further redistribution to individual owners happened while the Government has acquired and still owns a total of 2.2 million hectares (or 2.8%) of farmland under the Agricultural Land Holding Account (DRDLR, May 2018). This means that by May 2018, compared to 1993 census data, white farmers held 66 593 128 hectares, that is 80.6% of the 1993 total area of freehold farm land.

Based on these numbers and the interpretation of what the definition of land reform really means, the country seems to be much closer to the target of 30% that was initially set for land reform with approximately 20% (18 mil ha out of 82 mil ha) of the farmland already transferred, financially compensated or purchased by the state. However, despite more than 20 years of land reform, land ownership is still concentrated with the majority of land being owned by white commercial farmers. The statistics used in these calculations however, present part of the biggest challenge - that is the fact that we do not have the accurate data or information to assess the current state of land reform nor to shape future land policies.

If we however, compare the redistribution and restitution numbers released by Minister Nkwinti in February 2017 and the numbers provided by DRDLR in May 2018, the slow progress is clearly evident. Only 10 800 hectares were redistributed to beneficiaries for the full 2017/18 year while only 105 000 hectares were returned to communities and beneficiaries under the restitution programme. Overall, the State's failure to

effectively redistribute the land acquired since 2007 has been one of the key factors contributing to the view that land reform has been slow. This is leading to growing frustration which has led to calls for 'expropriation without compensation' as an instrument to speed up the process. Whether this will in any way solve the plight of landless families is questionable, but so far, it appears that the process is not appropriately taking into account some key lessons from the past, which should serve as guiding principles for a more robust land reform process.

Evident from the arguments within the national land reform discourse is the lack of appreciation of the quality of South Africa's land resource and the diverse nature of natural biomes and climatic regions that all contribute to a very diverse agricultural sector.

It varies from the three very dry and extensive production zones the Nama-Karoo biome, Succulent Karoo biome and the desert biome to the grassland and savannah biomes to the more tropical Indian Ocean Coastal belt and the Mediterranean 'fynbos' biome in the Western Cape (SANBI, 2006). In terms of natural resource endowments, there exist substantial tracks of unutilised and underutilised land - the majority of which is situated in communal areas under traditional tenure as well as state-owned land. The natural resource potential of this land varies significantly from very productive farmland with high rainfall and production potential in the Eastern Cape and KwaZulu-Natal to very marginal production regions in the Limpopo province that are only suitable for extensive livestock production.

Technological improvements and access to advanced GIS information have significantly improved overall capability to gather, analyse and integrate geospatial information with economic information. Figure 1 was developed within the new Integrated Value Information System (IVIS) platform to provide an impression of the ability of spatial platforms as a tool for targeted interventions, and presents the natural resource base of South Africa. Poor land suitability evaluations and land use planning have resulted in numerous land use 'disasters' since the 1980s (Laker, 2004).

In the current environment of large scale and rapid urbanisation and the pressure to create employment opportunities that result in sustainable and dignified livelihoods, agricultural water is vital, but has not been sufficiently prioritised. As Figure 1 clearly shows, South Africa's agricultural land capability is generally low due to a lack of rainfall. With an increasing demand for water in industries such as mining and electricity

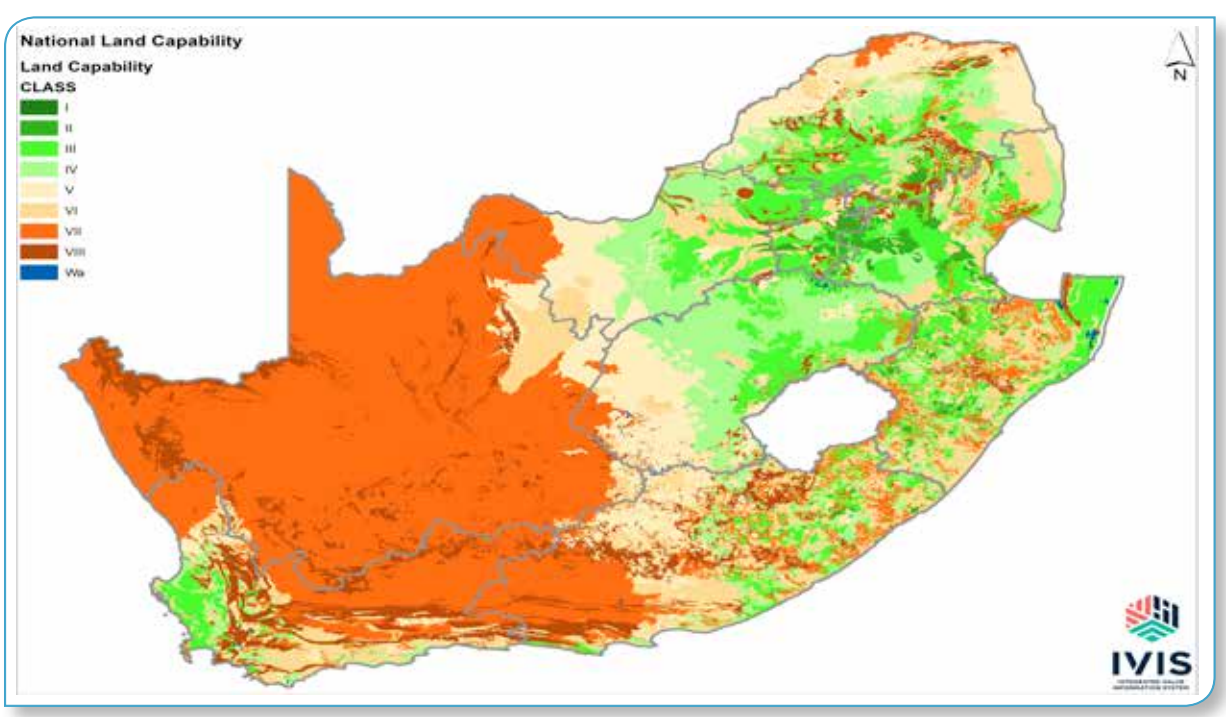


Figure 1: Agricultural land capability
Source: IVIS, 2018

generation, and the rapid growth in demand by domestic/urban growth, agriculture finds itself in a tight space within government's new National Water Resource Strategy 2 (NWRS-2) framework of water allocation, taxes and quotas. Additional research is vital to inform the current debate between conflicting parties competing for water in South Africa, and to fully evaluate the catalytic impact of water as a key component in development and transformation of the agricultural sector. In its initial research for the planning commission, BFAP showed that, under the assumption of a comprehensive implementation of the Water Administration System (WAS) and the associated water savings, the actual water required to expand the total area under irrigation by 142 000 ha in order to contribute to a million job opportunities by 2030 was manageable, despite the major challenges the country faced with respect to water resources.

GROWTH, JOBS, FOOD SECURITY AND INVESTMENT

In the 2012 National Development Plan 2030 (NDP), agriculture, forestry and fisheries were identified as key sectors to drive inclusive growth in rural economies with significant job creation opportunities. It follows then that when the ruling party, based on their December 2017 conference resolutions, indicated their intent to pursue expropriation of land without compensation, the condition / caveat remained that "This should be pursued without destabilising the agricultural sector, without endangering food security in our country and without undermining economic growth and job creation". Although the importance of an industry is typically measured according to its contribution to GDP, the principle that agriculture has a much broader footprint in the South African economy and society, and therefore plays a critical role in the future of the country, is generally accepted. A successful land reform programme forms part of this vision and despite of the fact that the NDP has set out a strategy for the transformation of land back to previously disadvantaged, the overall execution of these strategies and programmes has been poor.

On top of the considerable challenge of fast tracking land reform, the reality is that under the latest BFAP Baseline projections, fast growth in the sector will not be simple to achieve and the true level of competitiveness and sustainability of the South African agro-food system on the global stage will be tested thoroughly. Global and local economic growth rates are

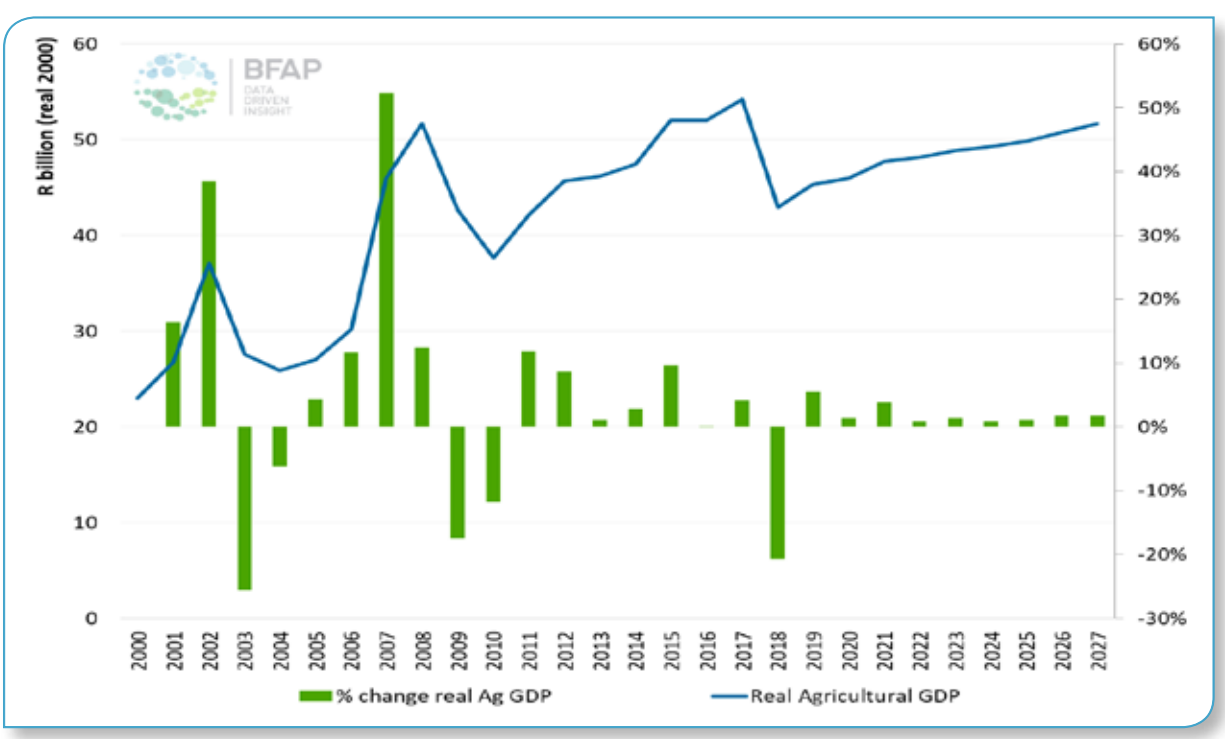


Figure 2: Real agricultural GDP: 2000 - 2027

slow, consumers' disposable income is under pressure, and commodity prices are low. Commodity cycles will eventually turn positive again but faster economic growth rates are generally required to fuel higher commodity prices.

Despite this subdued outlook (Figure 2) there are still opportunities where investment can unlock future growth in the South African agro food industry, but public and private sector investment ranging from infrastructure, research and development, to skills, training and extension services, are critical to ignite this growth. In short, the answer rests in investment in activities that will drive productivity growth for all farmers ranging from subsistence to commercial farmer, but also productivity growth throughout the value chain, both in terms of domestic value chains and export value chains. Most of these areas were already identified in the NDP where BFAP developed a matrix that maps a combination of commodities that have significant potential for growth and employment until 2030. In fact, following the level of policy certainty of the NDP, the agricultural sector went through a number of years of consistent positive growth in real terms, until growth was terminated by the severe impacts of consecutive droughts.

The debate on "land expropriation without compensation" has created considerable policy uncertainty and farmers and potential investors are concerned about the protection of private property rights, thus negatively impacting investor confidence. The importance of investor confidence and continued growth cannot be overemphasised, given the current realities the sector is facing. It is critical to realise that this growth, especially in high-valued export commodities has occurred only as a consequence of considerable and continuous investment at industry level. In a recent study for the South African Table Grape Industry (SATI), the BFAP sector model was applied to simulate the impact of a strategic disinvestment in the industry that could take place under a scenario lacking policy certainty. From surveys undertaken in recent months, it is clear that a number of producers are already reconsidering further investment until the land issue has been settled. This decision has a direct impact on future productivity of the farm with long term growth declining by 40% and 30% of farm jobs lost (Figure 3). The same phenomenon that is illustrated for the table grape industry can be applied to most of the sectors that require a high amount of capital investment.

Investment in agriculture is widely recognised as a key precondition in achieving goals related to improving food security, creating jobs, creating wealth, and thereby reducing poverty. The returns to agricultural investment not only depend on the scale of investment but also the quality of such investment. The decision to invest hinges on one basic tenet, namely the belief that there will be growth in the future. If growth occurs, it implies that there are positive income streams that can be used to pay off borrowed capital, pay the accumulated interest, as well as meet the opportunity cost of own capital invested in a venture. This is a very basic idea, but critically important for any debates regarding the future

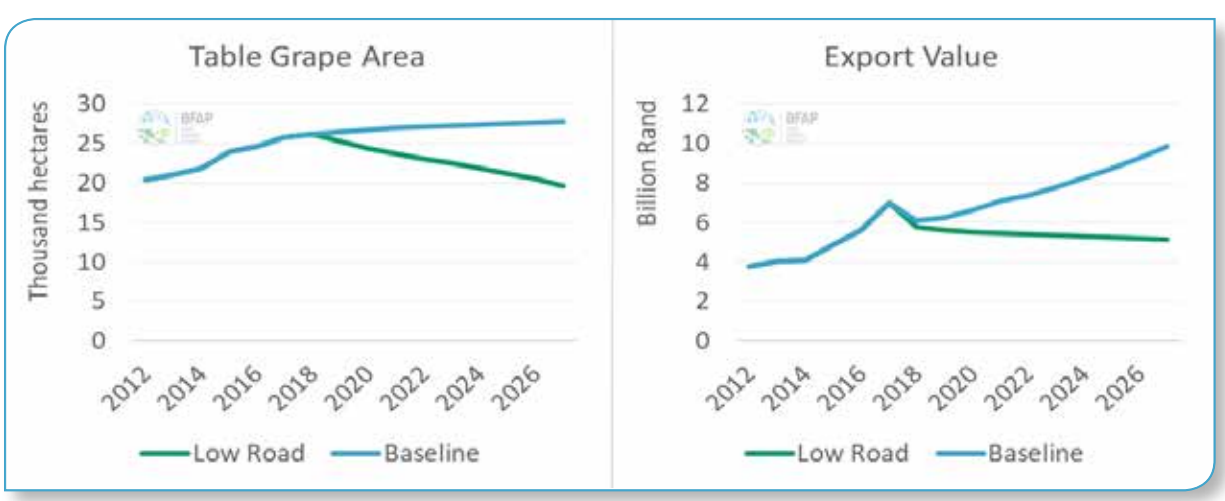


Figure 3: Potential impact of strategic disinvestment in the Table Grape industry
Source: BFAP & SATGI, 2018

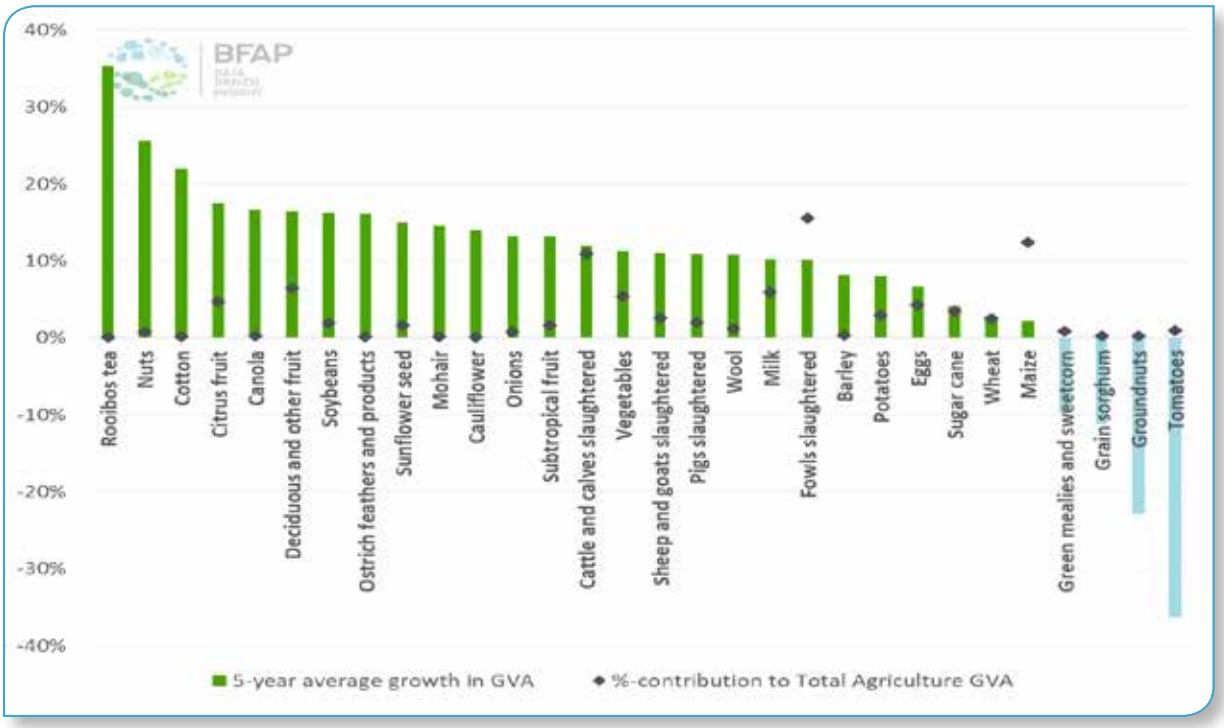


Figure 4: Agricultural performance: Growth in gross value added (GVA) and share in GVA of selected industries: 2011-2017

of the agricultural sector and the country.

Figure 4 provides an overview of the actual growth rates that have been achieved by a wide range of sectors over the past five years since the launch of the NDP. Although the oilseed and citrus industries have performed well, many of the larger industries have not grown sufficiently to outpace inflation over the past five years. Dryland crop production, especially white and yellow maize, has been affected negatively by the drought conditions that already started in the western parts of the summer rainfall areas in 2015 and then intensified through 2016. However, the tremendous resilience of the sector, to recover from the severe drought and produce an all-time record harvest, was proven in 2017. The strong growth rate in the beef industry over the past five years has to be interpreted with caution, since the national cow herd has been reduced by as much as 15% due to the drought, and therefore production will be negatively affected over the next two to three years. Despite growth in many of the large industries not being fast enough to generate the level of additional overall economic activity and jobs in rural areas, Figure 4 confirms that those industries identified in the NDP's growth and employment matrix have grown the fastest. The fact remains that more proactive interventions are required to accelerate the overall rate of growth in the sector. Key reasons that have been identified for the slower growth includes a lack of enhanced market access, a general lack of investment in water infrastructure, and an inefficient process in issuing of water licences (especially to new farmers who did not have access to irrigation water in the past).

Apart from its contribution to the economy and the trade balance of the country, agriculture's vital role in the overall food security status and therefore also political stability cannot be overstated. Food security is generally measured in terms of accessibility and affordability of food. The recent drought has had a major impact on the affordability of staple maize, with the cost of a single serving of maize meal increasing by 43%, while the cost of the staple food basket increased by 22% (Figure 5) from 2015 to 2016. The average year-on-year inflation rate from 2016 to 2017

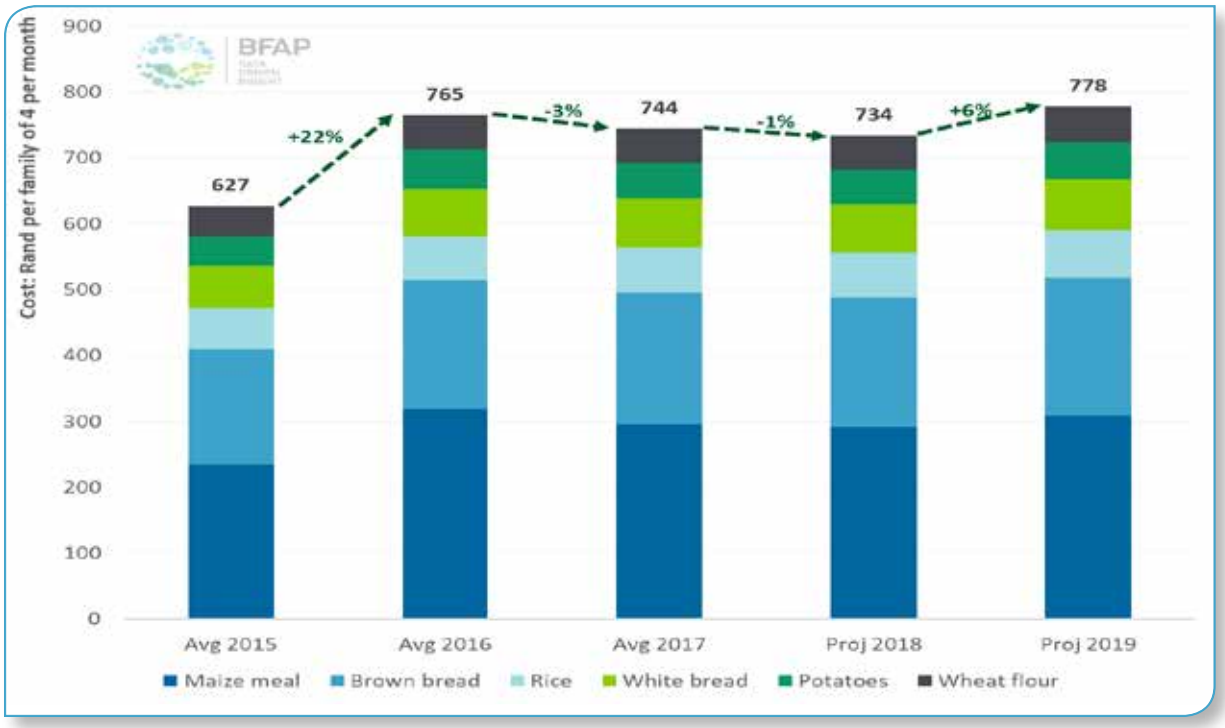


Figure 5: Staple component costs of the thrifty BFAP balanced food basket for a family of four

varied between about 7% and 18% and was the most significant for sugary foods (+17.7%), followed by fruit (+16.0%), bread & cereals (+14.3%), fats & oils (+12.4%), vegetables (+11.0%), dairy & eggs (+9.0%) and meat (7.2%). The good news is that the rate of food price inflation dropped significantly in 2017 on the back of the improved weather conditions and the appreciation of the exchange rate. Yet, this rate is measured from a higher base and therefore, in absolute terms, food prices remain high.

KEY LESSONS FROM INTERNATIONAL CASE STUDIES

Throughout history, basically every country in the world has passed land reform laws and implemented them with different levels of success. There are numerous case studies, limited success stories and horrific failures and the world media and even academia have presented and interpreted countries' experiences in a variety of ways. For example, if land redistribution to create equality, at any cost, is a government's objective, then Venezuela, Zimbabwe and China are case studies of great success. However, if one considers these programmes' unintended consequences, such as the massive human life, social, economic and environmental costs that will still be paid by many generations to come, increased equality in land ownership pales in significance.

A recent special land reform working paper by BFAP (2018) reviewed seven case studies, even though there are a plethora of others with their own insightful lessons. Despite warranting much more comprehensive discussion, some key lessons from land reform experiences in Venezuela, China, India, Taiwan, Scotland, Brazil and Zimbabwe are presented below:

1. **As ideological economic and political system, neither pure capitalism nor pure socialism leads to an ideal outcome: for South Africa, rather, the solution lies in constitutionalism enacted correctly**

   a. In China, where socialism reigned for many years,

it failed to incentivise economic development and food production in rural areas.

b. In Venezuela socialism seemed like a good idea as long as the oil money lasted, but when the oil price dropped, a fundamentally broken economy was exposed.

c. In Scotland, Brazil and Zimbabwe where capitalism coupled with colonialism reigned, too much land in a few individual's hands limited food production, economic development and equitable sharing of wealth.

d. Too much land in the hands of government and tribal leadership results in the same problem – entrepreneurial potential within the broader population is not unlocked.

2. Collectivism does not pass the test; individual property rights balanced with public interest do

a. The China example illustrates that "collective producing for the collective" is not sustainable. The incentives for one farmer to work harder than his neighbour simply does not exist. Eventually, it leads to stagnation and decline.

b. The opposite situation was also clear in Scotland, Brazil and Zimbabwe where land vested in the hands of a few. Again, incentives do not exist for individuals to develop and utilise entrepreneurial skills for the benefit of themselves and ultimately the public.

c. The solution appears to be in creating and supporting individual property rights, allowing these individuals to exercise entrepreneurial potential and skills, but to balance it with public interest through correctly structured and enacted constitutionalism.

d. The Venezuela and Zimbabwe case studies clearly show that the watering down of a country's constitution and the rule of law (private property rights), will likely result in considerable economy-wide uncertainty, a flight of foreign capital, hyperinflation and economical and humanitarian tragedies. In both countries, the negative unintended consequences of land grabs and nationalisation were considerably larger than just the impact on agricultural production and livelihood loss of large-scale farmers.

3. A high concentration of ownership or a dismantling of large farms into smaller units is not socially or economically sustainable. Rather a balanced mix of farm types and sizes will provide a sustainable solution

a. Even though Brazil's land reform experience has been less than exemplary, it does present a good case study of coexistence of a number of different farming systems. In Brazil, there currently exist at least three types of farming systems. Large-scale commercial farming, collective farming systems on claimed land (viewed as an interim solution while individual rights are confirmed) and independent small-scale family farms. While large-scale farmers and corporate agro companies focus on industrial crops and the export market, the collective and independent smallholder farmers produce the bulk of Brazil's food. Each group plays a specific and vital role and is linked to up and down stream value chains.

b. Taiwan's, 'small-scale farmer success', land reform experience (and those of the other three Asian Tigers, Singapore, South Korea and Hong Kong) should be seen in context.

i. Their agricultural land is very limited – Taiwan only has 800 thousand hectares of arable land, so all their farms are inherently relatively small

ii. When reform started, a high concentration of the population lived in rural areas and were already farming as tenants

iii. Irrigation and the climate allows for intensive production of two or three crops a year

iv. The fast-growing economy actively absorbed labour shed by agriculture (due to adoption of improved production technology)

v. More recent agricultural and land policies encourage consolidation of small farming units for increased competitiveness

4. **Government as an institution is not efficient enough to implement and manage land reform on its own nor to incentivise and manage food production and distribution – the correct market mechanisms are more efficient.**

   a. Across the world and throughout history, land reform programmes have been characterised by an element of corruption, political favouritism and nepotism.

   b. The India, China, Brazil and Venezuela case studies showed that government as an institution is well positioned to determine the 'rules of the game' via policies and legislation, to balance private versus public interest. But, the government in itself is not sufficiently efficient nor nimble enough as market player to actively manage food production and distribution, nor is it able to determine and actively manage land ownership patterns over a longer term. The government ultimately ends up short due to capacity limitations, leading to interest groups and individuals managing it themselves through secondary mechanisms, often with unintended consequences.

   c. More efficient and transparent would be to create and support open market mechanisms that will function within a set of policies and legal boundaries, allowing private, willing, individuals to determine the allocation and utilisation of resources, protected by individual property rights, but in balance with responsible social and national priorities.

5. **Legislation as a mechanism to drive change in itself, has limitations**

   a. As clearly illustrated in the case of India and Brazil, legislation in itself and on its own is never a complete mechanism, free of loopholes, and therefore cannot be fully utilised to enact change and ensure equitable wealth distribution. The solution is in correctly structured and implemented constitutionalism.

6. **Politics and social priorities matter, but the reality of global economics eventually dictates and drive change**

   a. In numerous countries, increased equality in land ownership brought about by land reform programmes, has over time been eroded by economic forces (economies of scale and competitive advantage) and others purposefully canceled due to political and policy change (China, India and Taiwan amongst many others).

   b. Therefore, any land reform solution for South Africa will only be sustainable in the long run if it is coupled with economic realities.

POSSIBLE ARCHITECTURE FOR LAND REFORM IN SOUTH AFRICA

South African agriculture is exceptionally diverse, and a one size fits all strategy is not an option. Farming enterprises across and within different subsectors require various levels of capital investment and operating expenditure and also poses vastly different revenue generating potential. Figure 6 presents a broad categorisation of alternative farming enterprises, highlighting total capital and operational expenses ranging from as low as R10 500/ha to R800 000/ha, consequently resulting in average gross margins from R1000/ha to more than R165 000/ha. Based on per hectare costs and potential, farm sizes also differ greatly.

Based on the key concepts, empirical evidence and the key learnings from the case studies presented in this document, Figure 7 provides a schematic representation of different farmer categories and farming systems coexisting in South Africa to the benefit of farmers, land owners, consumers and the economy. The farmers' categories are (loosely) paired against their target markets and the specific support services required for these farmers to thrive. While an increased number of smallholder farmers will be able to produce for local markets and ensure regional food security, and where possible and viable, link into formal or tailor-made value chains, South Africa's large urbanised population and economically important international trade balance will still depend on large scale commercial farming.

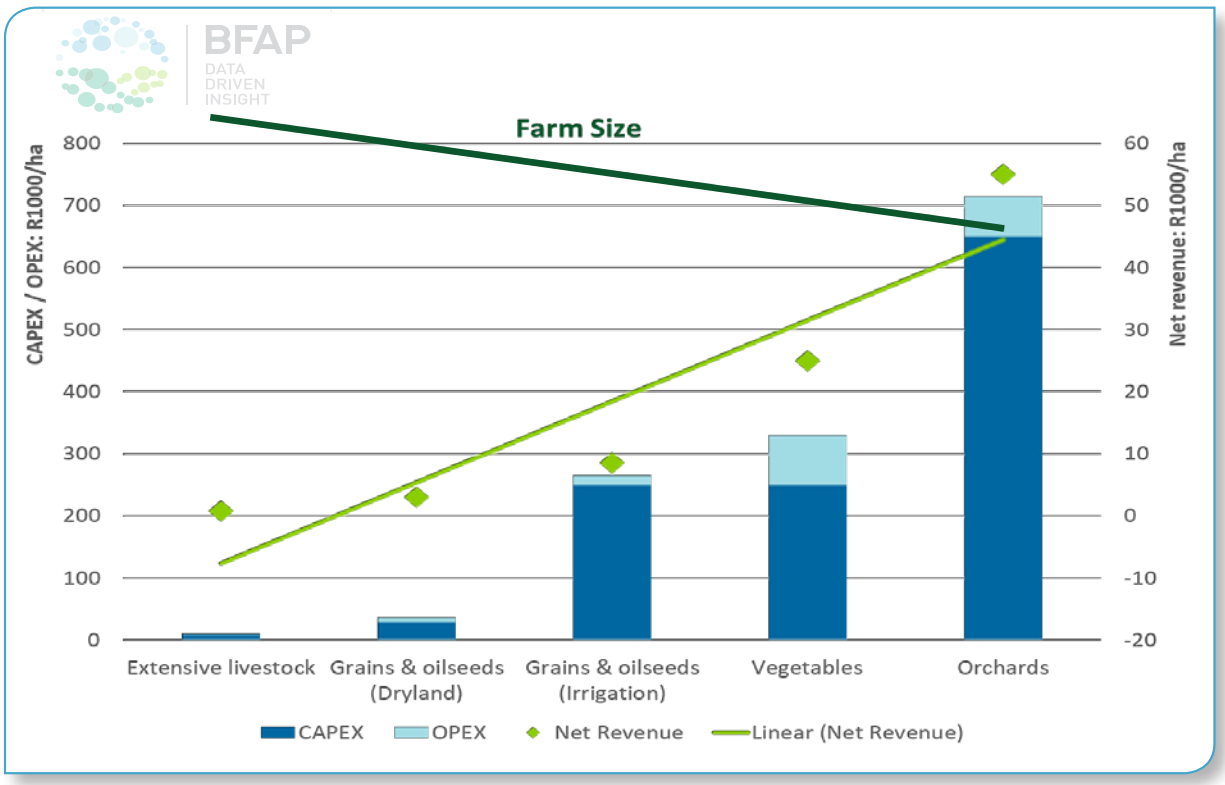


Figure 6: Principles of alternative farming systems in SA

This refers to both white and black commercial farmers and agribusiness. The sustainable existence of a strong and healthy commercial sector would also be vital for the bourgeoning smallholder sector as the commercial sector creates the critical mass of demand for research and technologies, input supply networks and value chains that will incorporate, expand and adjust to also better serve the smallholder sector. However, transformation of the commercial farming sector and the establishment and support of increased numbers of black commercial farmers would be key for the continued existence of the sector.

LEVELS AND NATURE OF SUPPORT REQUIRED

- Government has been providing inputs through a number of projects under the flag of agriculture and rural development, but with an actual food security, livelihood and welfare intent. This is not fair to the Department of Agriculture, and it can be argued to be these programmes, where the value of input costs often far outweighs the value of the produced crops, that gave (and is still giving) smallholder agriculture a bad name.
- There is a place for production focussed welfare handouts, but these should be targeted, proactively planned and their impacts assessed.
- Input provision in communal and smallholder regions that are far from commercial production areas, is problematic. The cost of selling 10kg bags of seed to 100 farmers is much higher than selling a tonne of seed to one commercial farmer. The mark-up at third party shops is usually massive and stocks limited. This results in a chicken-egg problem – limited inputs (and expensive) because the demand is not there, and the demand struggles to develop because the inputs are not there (and expensive). Government might consider investing in and supporting SMMEs in partnership with private agro-input companies to identify areas with input provision problems and set up container shops etc., to develop the market.
- Storage facilities – on farm and off and small local milling services should be supported.

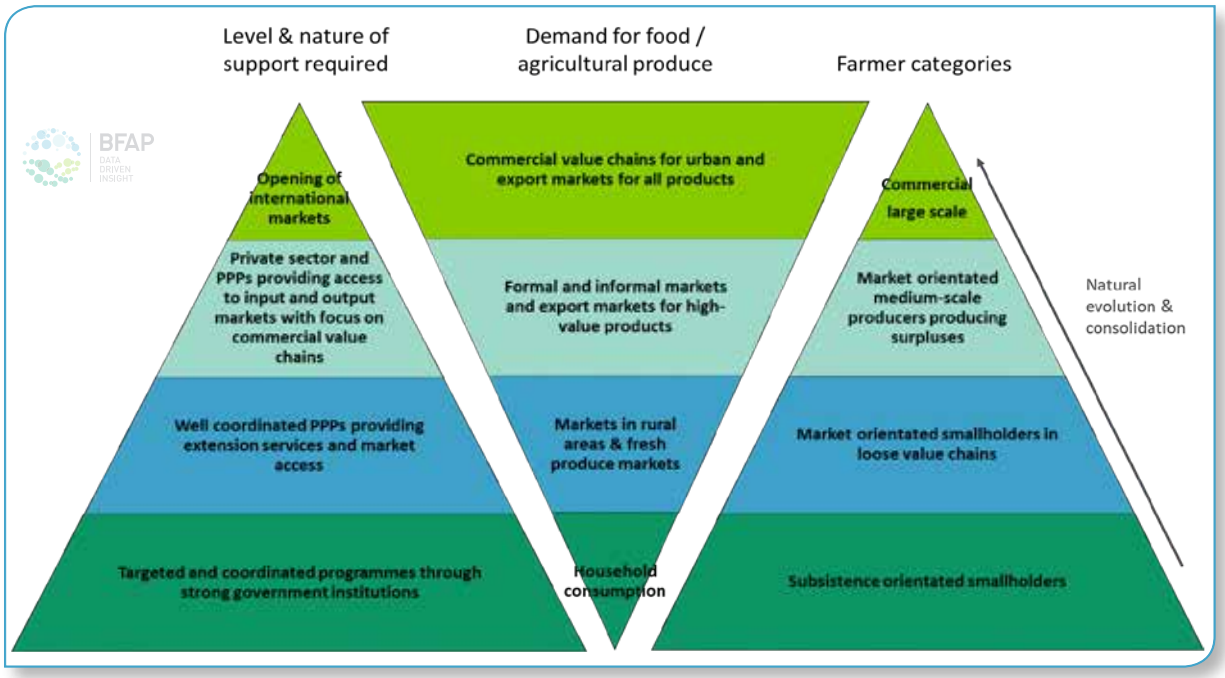


Figure 7: Potential architecture of a redesigned Land Reform and producer support framework

- For sustainable farming and diversification, substantially more should be done in training and support around alternative and complimentary crops. For example, more soybeans, sugar beans in rotation with maize.
- Commodity organisations can play a vital role in mentoring and support of new black commercial and emerging farmers.

DEMAND FOR FOOD / AGRICULTURAL PRODUCE

- The objective of land reform, besides the obvious social and 'correctional' issues, should be for land owners to make 'better' use of their land. Better in this context means more productive but sustainable. This means that:
  - Smallholder farmers and rural families need to be empowered to earn more income and produce more food from their land. This should be possible with more secure land tenure, training and mentoring, and functioning input and output markets. New technologies can remove the drudgery of agriculture and increase productivity.
  - Smallholders with commercial intent should be able to lease more land, source inputs at affordable and fair prices and have marketing choices based on price and information.
  - Medium and large scale farmers should be supported through conducive legislation, economic stability and government services (safety and quality assurance, animal health, sanitary and phytosanitary, plant variety registration, etc.) to produce for both domestic and international markets.
- Formal value chains will need to adapt, or develop niche / tailor made value chains for emerging farmers. Opportunities for BBBEE subsidiaries or new companies in possible government preferential procurement initiatives (schools, hospitals, correctional services) to buy from smallholder farmers.
- International markets are open for everyone but these markets come with strict requirements, rules and regulations. Government needs to proactively 'hunt' for new markets and negotiate better trade terms.

FARMER CATEGORIES

- If support services function and markets develop, there should be some natural evolution for more successful and commercially inclined producers.
- A free market system will allow for some consolidation with more successful farmers buying land or renting land from willing sellers and land owners.
- For rural households in communal areas, evolution into a more commercially inclined category is the theoretical development 'dream', but in reality not all people can or want to farm. The idea is not for all small-scale farmers to become commercial farmers, but for rural households to be able, if willing, to use their land asset better, to the benefit of the individual and household.
- Due to a history of failed development projects, poverty levels that tend to limit aspirations, 'graduation' / evolution percentages will likely be low, but with a long term commitment from Government and private sector, individuals will rise to the top. Not all (rural) people are, should be, or should want to be, farmers.

To conclude, Figure 8 and Figure 9 present the concept of spatial targeting by making use of a combination of databases, platforms and GIS information. Whereas Figure 8 presents the concentration of emerging farmers, Figure 9 presents a spatial view of the concentration of vulnerable households in the country. By layering this type of information and various others, strategic and spatially targeted comprehensive producer support programmes can be developed to improve the chances of success for land reform recipients.

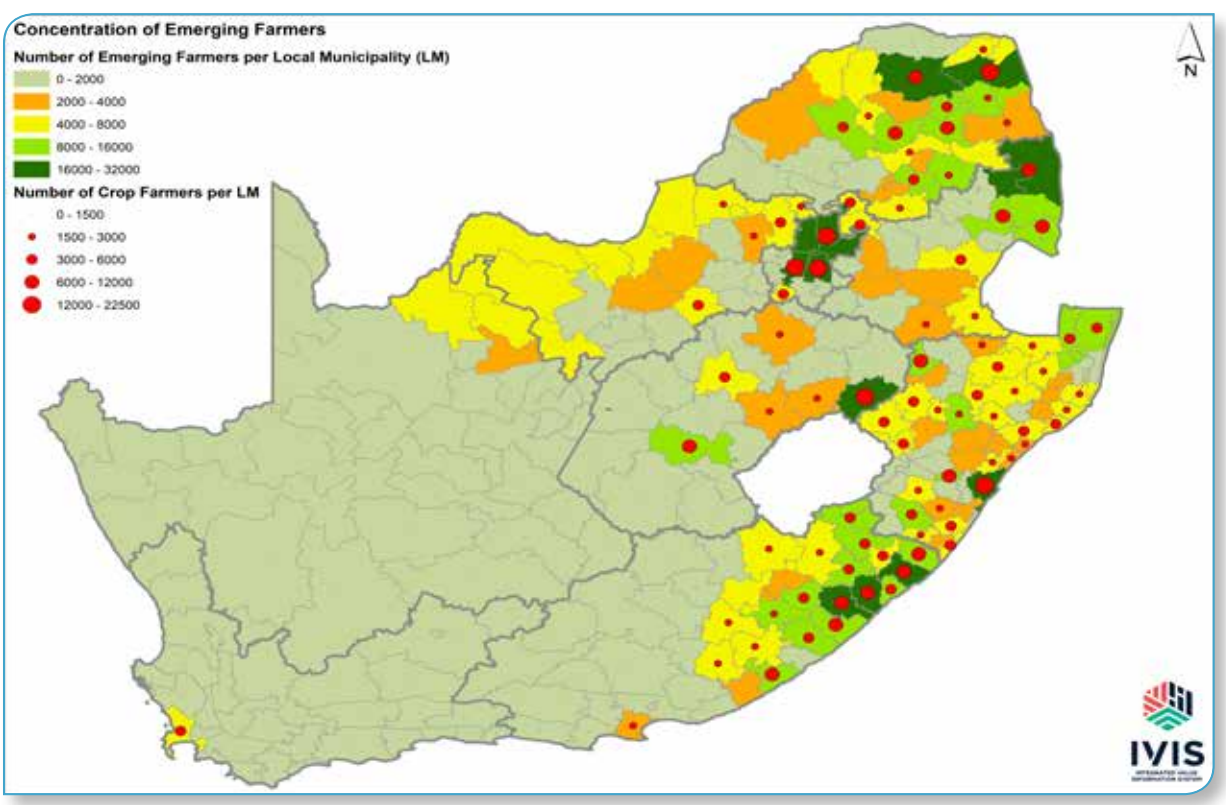


Figure 8: Spatial targeting of emerging farmers
Source: BFAP IVIS, 2016

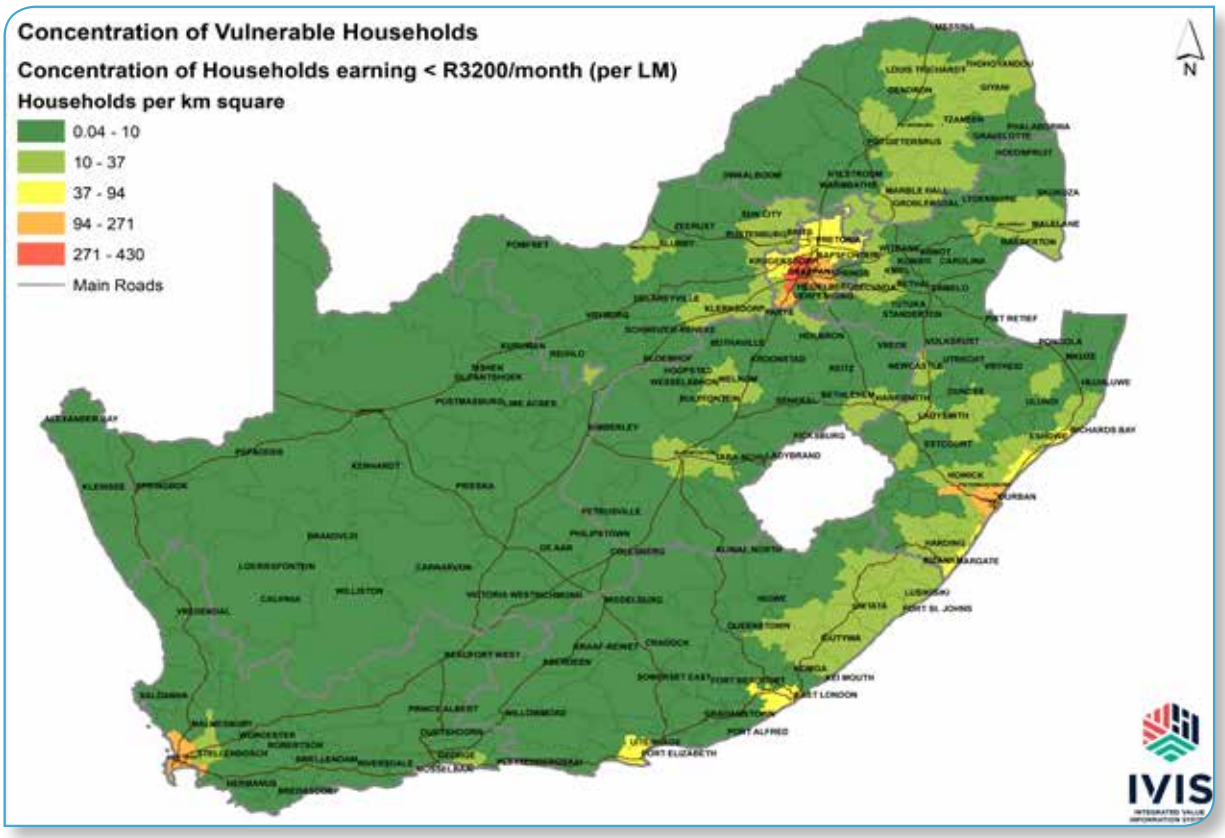


Figure 9: Concentration of Vulnerable households
Source: BFAP IVIS, 2016

KEY BASELINE ASSUMPTIONS

POLICIES

The baseline assumes that current international as well as domestic agricultural policies will be maintained throughout the period under review (2018 – 2027). In a global setting, this implies that all countries adhere to bilateral and multilateral trade obligations, including WTO commitments, as well as stated objectives related to biofuel blending mandates. On the domestic front, current policies are maintained. This implies that land reform occurs in a market based environment under stable property rights.

With the deregulation of agricultural markets in the mid-nineties, many non-tariff trade barriers and some direct trade subsidies to agriculture were replaced by tariff barriers. In the case of maize and wheat, variable import tariffs were introduced. The variable import tariff for wheat was replaced by a 2% ad valorem tariff in 2006. However, in December 2008 the original variable import levy system was re-introduced, and the reference price that triggers the variable import levy on wheat was adjusted upwards from $157/tonne to $215/tonne. Following the sharp increase in world price levels in 2012, the industry submitted a request for a further increase in the reference price, which was accepted in 2013, increasing the reference price to $294/tonne. Having initiated a review of the tariff structure in April 2016, ITAC adjusted the reference price downward to $279 in 2017. The annual quota of 300 thousand tonnes of wheat that can be imported duty free from the EU from 2017 onwards has also been incorporated into the Baseline.

Global maize prices have traded significantly higher than the reference price in recent years and international prices are not projected to fall below the reference price of $110 per tonne over the next decade. Consequently, no maize tariff is applied over the Outlook. In contrast, wheat prices have fallen well below the reference price and consequently the import duty on wheat was already triggered in 2015, remaining in place over the course of the Outlook as the projected world price for wheat remains below $279/tonne. Ad valorem tariffs are applied in the case of oilseeds. In the case of meat and dairy products, a combination of fixed rate tariffs and/or ad valorem tariffs are implemented. General duties on imported chicken were increased substantially in October 2013, however a significant share of total imports originate from the European Union and therefore carry no duty under the TDCA, which was recently replaced by the new EPA. Furthermore, South Africa applies anti-dumping duties of R9.40 per kilogram on bone-in chicken pieces originating from the United States. In June 2015, it was announced that this anti-dumping duty would be removed for a quota of 65 thousand tonnes of bone-in portions. The projected tariff levels, as derived from the FAPRI projections of world commodity prices, are presented in Table 2.

Table 2: Policy Assumptions

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
					R/tonne					
Maize tariff (Ref. price = US$ 110)	0	0	0	0	0	0	0	0	0	0
Wheat tariff (Ref price = US$ 279)	580	644	657	628	643	676	727	745	806	865
Wheat tariff (300 000 tonne quota: EU Origin)	0	0	0	0	0	0	0	0	0	0
Sunflower seed tariff: 9.4 % of fob	442	468	503	529	540	548	564	576	590	598
Sunflower cake tariff: 6.6 % of fob (4.95% for MERCUSOR origin)	122	129	150	157	161	162	164	166	169	167
Sorghum tariff: 3 % of fob	67	69	73	76	79	81	84	86	89	91
Soya bean tariff: 8 % of fob	394	404	436	457	468	476	486	499	509	516
Soya bean cake tariff: 6.6 % of fob (4.95% for MERCUSOR origin)	297	286	315	327	339	346	351	359	367	369
					Tonnes					
Cheese, TRQ quantity	1199	1199	1199	1199	1199	1199	1199	1199	1199	1199
Butter, TRQ quantity	1167	1167	1167	1167	1167	1167	1167	1167	1167	1167
SMP, TRQ quantity	4470	4470	4470	4470	4470	4470	4470	4470	4470	4470

Table 2: Policy Assumptions (continued)

WMP, TRQ quantity	213	213	213	213	213	213	213	213	213	213
Percentage										
Cheese, in-TRQ	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
Butter, in-TRQ	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8
SMP, in-TRQ	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2
WMP, in-TRQ	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2	19.2
c/kg										
Cheese, above TRQ rate	500	500	500	500	500	500	500	500	500	500
Butter, above TRQ rate	500	500	500	500	500	500	500	500	500	500
SMP, above TRQ rate	450	450	450	450	450	450	450	450	450	450
WMP, above TRQ rate	450	450	450	450	450	450	450	450	450	450
Beef tariff: max(40 %*fob,240c/kg)	1524	1520	1554	1641	1753	1884	2008	2121	2239	2346
Lamb tariff: max(40 %* fob,200c/kg)	1961	1947	2063	2164	2247	2341	2425	2489	2557	2627
Chicken tariff (Whole frozen): 82%	0	0	0	0	0	0	0	0	0	0
Chicken Tariff (Carcass): 31%	116	118	119	120	121	122	123	124	125	125
Chicken Tariff (Boneless Cuts): 12%	1617	1685	1775	1869	1949	2034	2111	2187	2264	2340
Chicken Tariff (Offal): 30%	271	282	298	313	327	341	354	366	379	392
Chicken Tariff (Bone in portions): 37%	160	166	175	184	192	201	208	216	223	231
Chicken tariff: EU Origin	0	0	0	0	0	0	0	0	0	0
Pork tariff: max (15 %* fob, 130c/kg)	199	200	209	224	238	254	266	272	276	283

MACRO-ECONOMIC ASSUMPTIONS

To some extent, the baseline simulations are driven by the outlook for a number of key macroeconomic indicators. Projections for these indicators are mostly but not exclusively based on information provided by the OECD, the IMF and the Bureau for Economic Research (BER). Following the inauguration of President Ramaphosa, as well as the initial changes to his cabinet and positive movements at several state owned enterprises, prospects for South Africa's macro-economic performance have improved compared to earlier projections. Nevertheless, the economy continues to face a number of structural concerns, which take time to turn around, and constrains this new found optimism to some extent. While confidence levels have improved, first quarter GDP performance was disappointing and, after its initial rally, the Rand has started to show signs of depreciation influenced strongly by global sentiment towards emerging markets. In the medium term, economic performance is expected to improve relative to the recent past, but not reach the levels achieved through the early 2000's (Table 3).

Table 3: Key Macro-Economic Assumptions

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Millions										
Total population of SA	56.8	57.2	57.6	58.0	58.4	58.7	59.1	59.4	59.8	60.1
SA cents per foreign currency										
Exchange rate (SA cents/US$)	1245	1270	1328	1387	1432	1482	1527	1572	1620	1668
Exchange rate (SA cents/Euro)	1410	1436	1496	1546	1568	1608	1649	1691	1735	1779
Percentage change										
Real GDP per capita	1.12	1.26	1.59	1.92	2.05	2.18	2.20	2.21	2.23	2.24
GDP deflator	4.90	4.70	5.20	5.70	5.50	5.00	5.00	5.00	5.00	5.00
Percentage										
Weighted prime interest rate	10.25	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Source: IMF (2018), World Bank (2018), OECD (2018), BER (2018) & BFAP (2018)

The exchange rate represents one of the most important assumptions affecting agricultural markets, both through the cost of inputs as well as the pricing of several outputs. It is also one of the macro-economic variables that has been exceptionally volatile in recent years, influenced by economic performance, political sentiment, perceived country risk, as well as a number of global factors, where the Rand remains one of the most traded emerging market currencies. Over the course of the next decade, the assumption on the value of the Rand is conservative, with consistent depreciation expected, to approach R17 per USD by 2027. A weaker exchange rate over the course of the Outlook would result in higher price levels, as well as an increase in the cost of major inputs relative to the baseline.

Another factor with significant influence on producer input cost structure is the price of Brent Crude oil. This typically influences the cost of both fuel and fertiliser but can also influence international commodity market prices through biofuel markets. Globally, oil prices have increased through 2018, as supply cuts by the Organisation of Petroleum Exporting Countries (OPEC) took effect in the market. With US producers expected to expand at current price levels, as well as recent announcements by OPEC to increase supply once more, oil prices are assumed to decrease over the next 2 years, before turning upwards once more post 2020. By 2027, it is expected to again exceed 80 USD per barrel of Brent Crude (Figure 10). Under this assumption, combined with consistent depreciation in the exchange rate, key inputs such as fuel and fertiliser prices are expected to increase consistently over the baseline period (Figure 10).

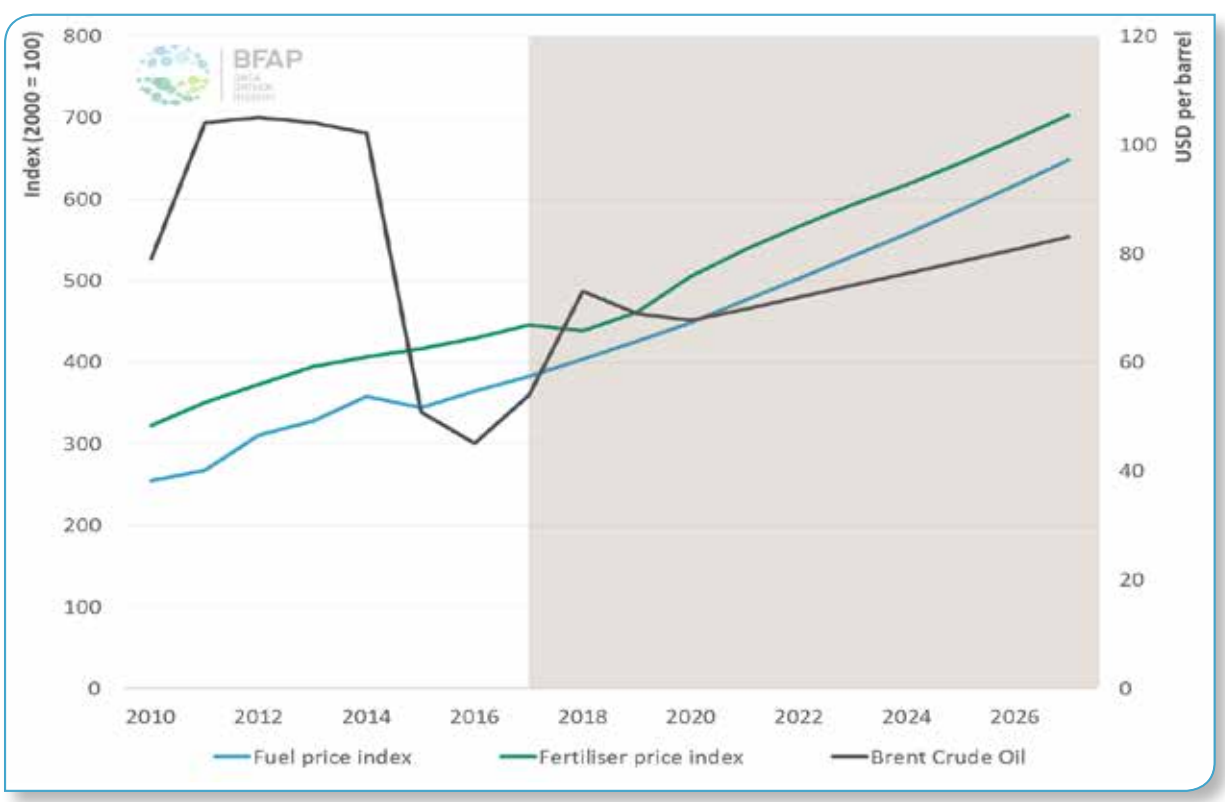


Figure 10: Oil price assumption and input cost implication
Source: OECD and BFAP (2018)

SOUTH AFRICAN CONSUMER PROFILE

THIS CHAPTER PRESENTS an overview of the dynamic South African consumer landscape which underpins the modelling projections presented in the 2018 edition of the BFAP Baseline. The chapter sheds light on the demographic characteristics of South African consumers, as well as the dynamic changes in the socio-economic environment.

PROFILE OF SOCIO-ECONOMIC SUB-SEGMENTS AMONGST SOUTH AFRICAN CONSUMERS

The Socio-Economic Measurement (SEM)™ segmentation tool is based on 14 variables obtained from the Establishment Survey (ES) (The Broadcast Research Council of South Africa (BRC), 2017). The SEM continuum has ten groups from SEM 1 (low socio-economic living) to SEM 10 (high socio-economic living). The SEM™ segmentation tool replaced the LSM segmentation instrument of the South African Audience Research Foundation, which was terminated in 2015. More information on the SEM classification is presented in Box 1.

Table 4 presents four main sub-segments amongst South African consumers. Figure 11 and Table 5 then presents more detailed characteristics pertaining to the population distribution, household income, urbanisation, unemployment, education levels, household size, food expenditure shares and provincial location.

BOX 1: MORE ON THE ESTABLISHMENT SURVEY AND THE SEM™ CLASSIFICATION…

The survey targets a nationally representative sample of people aged 15 years and older (n=25 000 per annum), with two survey cycles (January to June and July to December). Interviews are conducted in all area types and provinces over 49 weeks of the year. The main objectives are to measure multi-media behaviour among seven media categories: viewing (television), listening (radio), reading (newspapers, magazines), digital, cinema and out-of-home media. A secondary objective is to provide relevant data to construct the SEM socio-economic measure (TNS, 2017). In March 2017 the first data was released (presenting the results obtained in the July to December 2016 survey), with the second release in October 2017 (presenting the data obtained in the January to June 2017 survey). The 14 variables used to construct the SEM classification are: proximity to a post office, proximity to a police station, house characteristics (roof type, floor type, number of sleeping rooms, water source, toilet type, built-in kitchen sink), home security service and household assets (motor car, free standing deep freeze, microwave oven, floor polisher or vacuum cleaner and washing machine).

Table 4: Main socio-economic sub-groups in South Africa

Sub-group:	Expenditure deciles (ED's)[1]:	Estimated corresponding SEM™ segments:
Marginalised Consumers	ED 1 to ED 3 (Poorest ±30% of population)	SEM™ 1 & SEM™ 2
Lower middle-income consumers	ED 4 to ED 6 (±30% of population)	SEM™ 3 to SEM™ 5
Upper middle-income consumers	ED 7 to ED 8 (±20% of population)	SEM™ 6 & SEM™ 7
Affluent consumers	ED 9 to ED 10 (Wealthiest ±20% of population)	SEM™ 8 to SEM™ 10

[1] Expenditure deciles (ED's) are often applied by Statistics South Africa (StatsSA) in the context of household-level expenditure studies such as the Living Conditions Survey 2014/2015, where each ED represents 10% of the households in South Africa

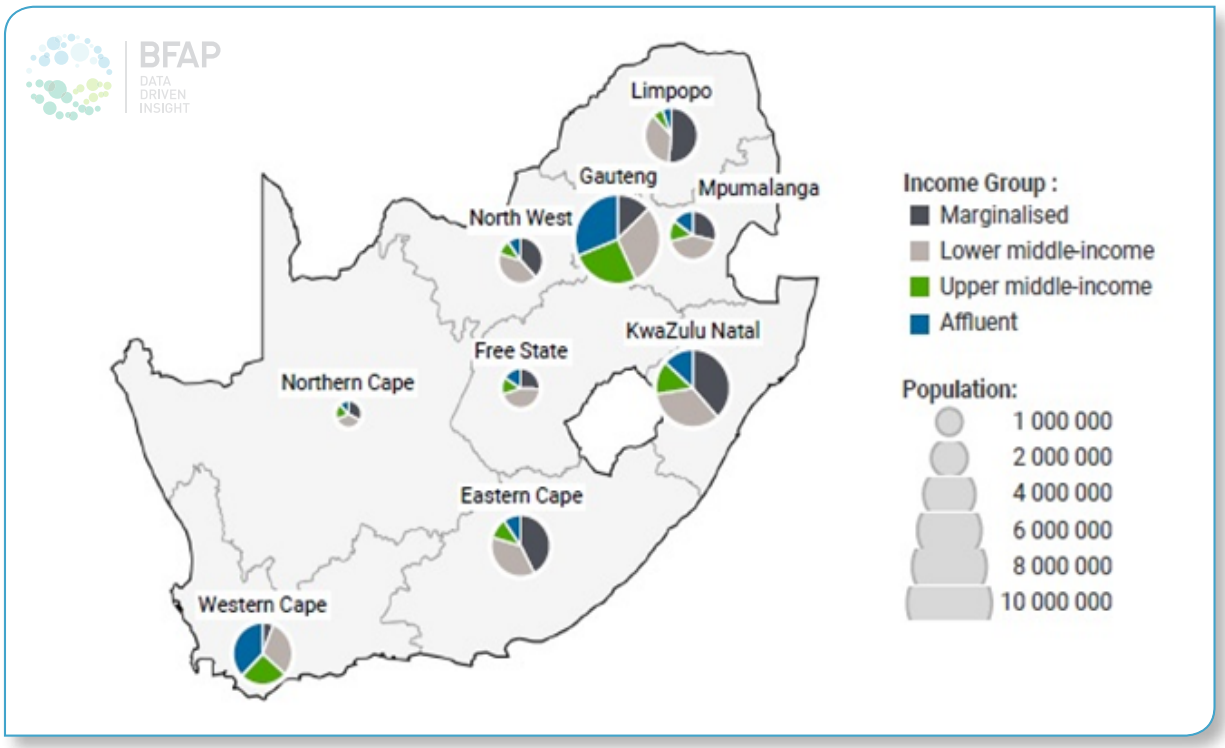


Figure 11: Provincial distribution of the main socio-economic sub-groups in South Africa
Source: Establishment Survey March 2018 release

Dynamics in the South African consumer environment: CLASS MOBILITY

Class mobility, defined as the movement of consumers towards higher socio-economic groups, has been a key feature of the South African consumer landscape for many years. Considering historical data for 2005 and 2015 from the SAARF LSM classification the movement of consumers to higher socio-economic groups is evident:

- LSM segments 1 to 3 (lower end of socio-economic spectrum) represented 32% of the adult population in 2005, decreasing to 10% in 2015;
- LSM segments 4 to 7 (middle section of socio-economic spectrum) represented 50% of the adult population in 2005, increasing to 66% in 2015;
- LSM segments 8 to 10 (upper end of socio-economic spectrum) represented 18% of the adult population in 2005, increasing to 25% in 2015.

The lack of LSM data for 2016 onwards inhibits calculation of further class mobility rates, until more time series data has developed within the new SEM classification.

Dynamics in the South African consumer environment: HOUSEHOLD INCOME

According to the South African Reserve Bank (2018) the disposable income of households per capita (disposable income refers to the amount of money available to a household after accounting for income taxes) increased by 70.5% in nominal terms and 6.9% in real terms over the last 10 years (from 2007 to 2017) (Figure 12). Most recently, from 2016 to 2017, the per capita disposable income of households increased by 5.9% in nominal terms, implying an increase of 1.4% in real terms. Following real increases of 2.5% and 3.4% in 2009/2010 and 2010/2011, growth in disposable income of households per capita slowed down towards 2013/2014 (negative growth of 0.2%), recovering somewhat to a real growth rate of 1.4% from 2016 to 2017.

An additional approach to investigate household income dynamics in South Africa involves the comparison of household-level expenditure values reported for food expenditure and total expenditure in the most recent Statistics South Africa (StatsSA) Living Conditions Survey (LCS) 2014/2015 (Stats SA, 2017) and the 2010/2011 Income and Expenditure Survey (IES)

Table 5: Typical characteristics of the main socio-economic sub-groups in South Africa

Variables:		Marginalised consumer segment:		Lower middle-income consumer segment:			Upper middle-income consumer segment:		Affluent consumer segment:		
Population Share	**StatsSA ED[1]'s**	ED 1 to ED 3 (30%)		ED 4 to ED 6 (30%)			ED 7 to ED 8 (20%)		ED 9 to ED 10 (20%)		
	SEM[2]'s	SEM 1 & SEM 2 (28%)		SEM 3 to SEM 5 (35%)			SEM 6 to SEM 7 (18%)		SEM 8 to SEM 10 (19%)		
Population size (SEM[2]'s)		11.1 million		13.7 million			6.8 million		7.7 million		
Average monthly household income	**SEM's** (ES October 2017 release)	SEM 1: R3 404 SEM 2: R4 275		SEM 3: R5 210 SEM 4: R6 434 SEM 5: R7 442			SEM 6: R9 432 SEM 7: R12 914		SEM 8: R18 464 SEM 9: R26 683 SEM 10: R34 574		
	StatsSA ED's[3] (Stats-SA LCS 2014/ 2015, inflation adjusted[3])	ED 1: R1 030 ED 2: R1 767 ED 3: R2 393		ED 4: R3 077 ED 5: R3 935 ED 6: R5 124			ED 7: R7 081 ED 8: R10 616		ED 9: R18 028 ED 10: R46 998		
Food expenditure share (StatsSA LCS 2014/2015)		33%		29%			20%		9%		
Average household size	**StatsSA LCS 2014/2015**	2.8 people		3.7 people			4.1 people		3.5 people		
	StatsSA IES 2010/2011	3.2 people		4.3 people			4.6 people		4.0 people		
Residential location	**Rural / Urban & metro** (ES March 2018 release)	SEM 1: 75%/25% SEM 2: 60%/40%		SEM 3: 48%/52% SEM 4: 24%/76% SEM 5: 13%/87%			SEM 6: 8%/92% SEM 7: 5%/95%		SEM 8: 2%/98% SEM 9: 1%/99% SEM 10: 1%/99%		
Education level (SEM[2]'s) (ES March 2018 release)		***SEM 1***	***SEM 2***	***SEM 3***	***SEM 4***	***SEM 5***	***SEM 6***	***SEM 7***	***SEM 8***	***SEM 9***	***SEM 10***
	Primary school	13%	12%	6%	6%	3%	3%	3%	2%	<1%	<1%
	High school	54%	47%	41%	38%	36%	33%	27%	21%	13%	12%
	Matric	31%	38%	48%	49%	50%	51%	49%	41%	40%	42%
	Post-matric	2%	3%	5%	7%	10%	13%	22%	35%	47%	46%
Work status (ES March 2018 release)	**Unemployed share**	32%	29%	30%	24%	20%	17%	15%	8%	5%	2%
Dominant provincial location: (ES March 2018 release)		KZN, EC, LP, GP		GP, KZN, EC, WC, LP			GP, WC, KZN		GP, WC, KZN		

Sources: Establishment Survey October 2017 release & March 2018 release; StatsSA IES 2010/2011; StatsSA LCS 2014/2015

[1] *ED = Expenditure decile: Each expenditure decile represents 10% of the households in South Africa (StatsSA, 2017)*

[2] *Share of population aged 15 years and older*

[3] *Values for total household expenditure per expenditure decile from StatsSA Living Conditions Survey 2014/2015 was adjusted with inflation (StatsSA Consumer Price Index – all items, total country)* (Sta tistics South Africa (StatsSA), 2018). [4] *Accounting for at least 70% of consumers in particular sub-group*

(Stats SA, 2012) – which represent the two most recent nationally representative household-level expenditure studies conducted by StatsSA. Further insights are gained by comparing the reported nominal and real changes to national accounts data. StatsSA IES 2010/11 reflected approximately 69.3% of the total expenditure reflected in the national account with a share of 71.0% of LCS 2014/2015 (Statistics South Africa, 2017) (Table 6). The nominal and real changes observed for both food expenditure and total expenditure in the household-level expenditure studies, align well with changes observed in the National accounts. Positive real growth in expenditure on food and non-alcoholic beverages were reported as 5.7% by Stats SA and as 6.4% in the national accounts, while positive real growth in total expenditure was reported as 10.4% by Stats SA and 7.9% in the National Accounts (Table 6).

Dynamics in the South African consumer environment: URBANISATION

The urban share of the South African population has increased from 58% in 2001 (StatsSA, 2001) to about 70% in 2018 (Establishment Survey March

Table 6: Real and nominal growth between the StatsSA IES 2010/2011 and LCS 2014/2015 for food and total expenditure, compared to National Accounts

Main expenditure group:	Source of comparison values:	Nominal Growth (%):	Real Growth[2] (%):
Expenditure on food and non-alcoholic beverages	IES 2010/2011 vs LCS 2014/2015	38.1%	5.7%
	National Accounts 2011 vs 2015	38.9%	6.4%
Total expenditure	IES 2010/2011 vs LCS 2014/2015	37.5%	10.4%
	National Accounts 2011 vs 2015	34.2%	7.9%

Source: StatsSA, 2017

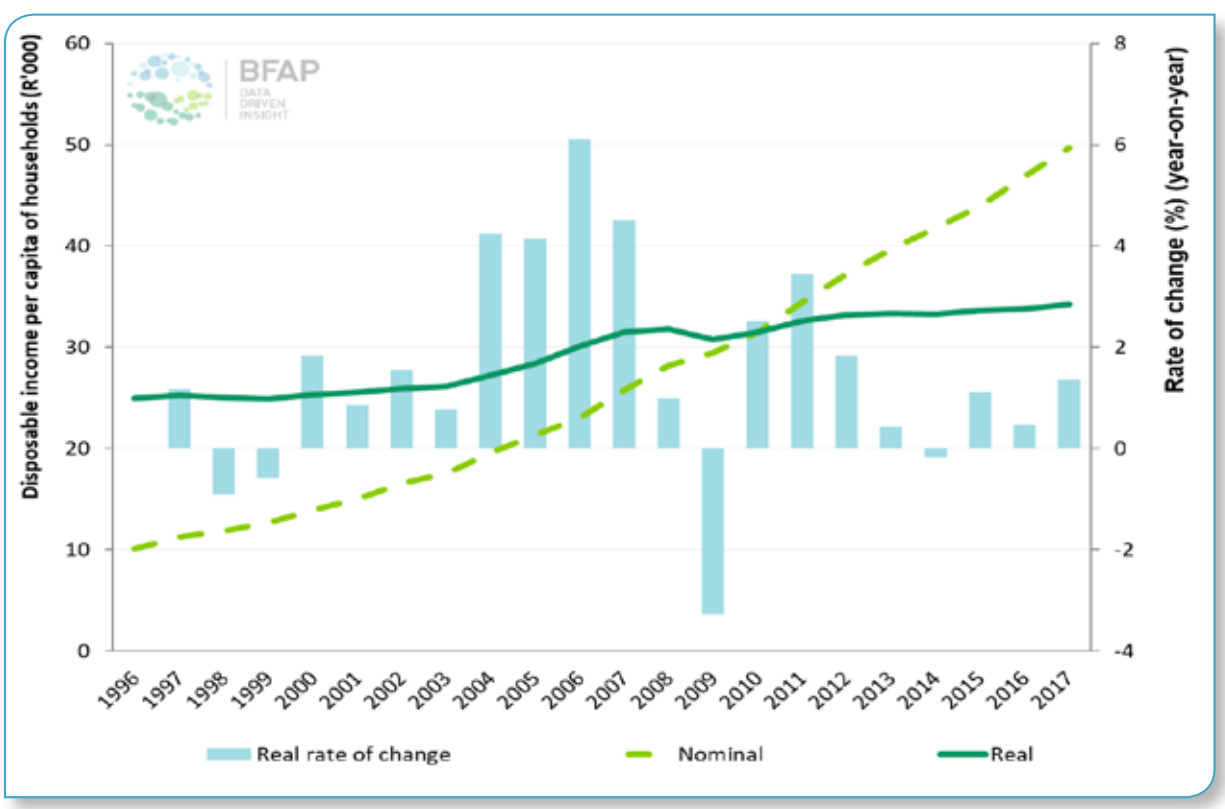


Figure 12: Disposable income per capita of household in South Africa from 1996 to 2017

[2] Obtained by adjusting nominal growth rates to remove general inflation

2018 release) (Figure 13). According to StatsSA LCS 2014/2015 households residing in urban formal-, urban informal-, traditional- and rural formal areas differed in terms of aspects such as share contribution to total expenditure, the gender of the head of the household and average household size:

- Households residing in urban formal areas contributed the dominant share (82.2%) to total expenditure in 2015, followed by households residing in traditional areas (11.2% contribution), urban informal areas (3.7% contribution) and rural formal areas (3.0% contribution).
- Considering the gender of the household head, the majority of household in rural formal-, urban formal- and urban informal areas was headed by males (68.6%, 62.2% and 60.4% respectively), while a majority share of 52.0% of households in traditional areas were headed by females (StatsSA LCS 2014/2015).
- The average size of households was the highest among households residing in traditional areas (4.16), followed by rural formal areas (3.16), urban formal areas (3.02), with the lowest average household size observed in urban informal areas (2.78).

Figure 14 presents a comparison of the food expenditure patterns of households residing in urban formal-, rural formal-, urban informal- and traditional areas according to StatsSA LCS 2014/2015:

- Expressed on a per capita basis, average household food expenditure in 2014/15 was highest for urban formal households. Relative to these urban formal households, household food expenditure was 19% lower for rural formal households, 31% lower for urban informal households and 46% lower in traditional areas. Households in traditional areas could potentially benefit from some small-scale agricultural food production for subsistence purposes, however, the available data from Stats SA LCS 2014/2015 does not allow the verification of this aspect. Low household income due to factors such as limited work opportunities in rural areas

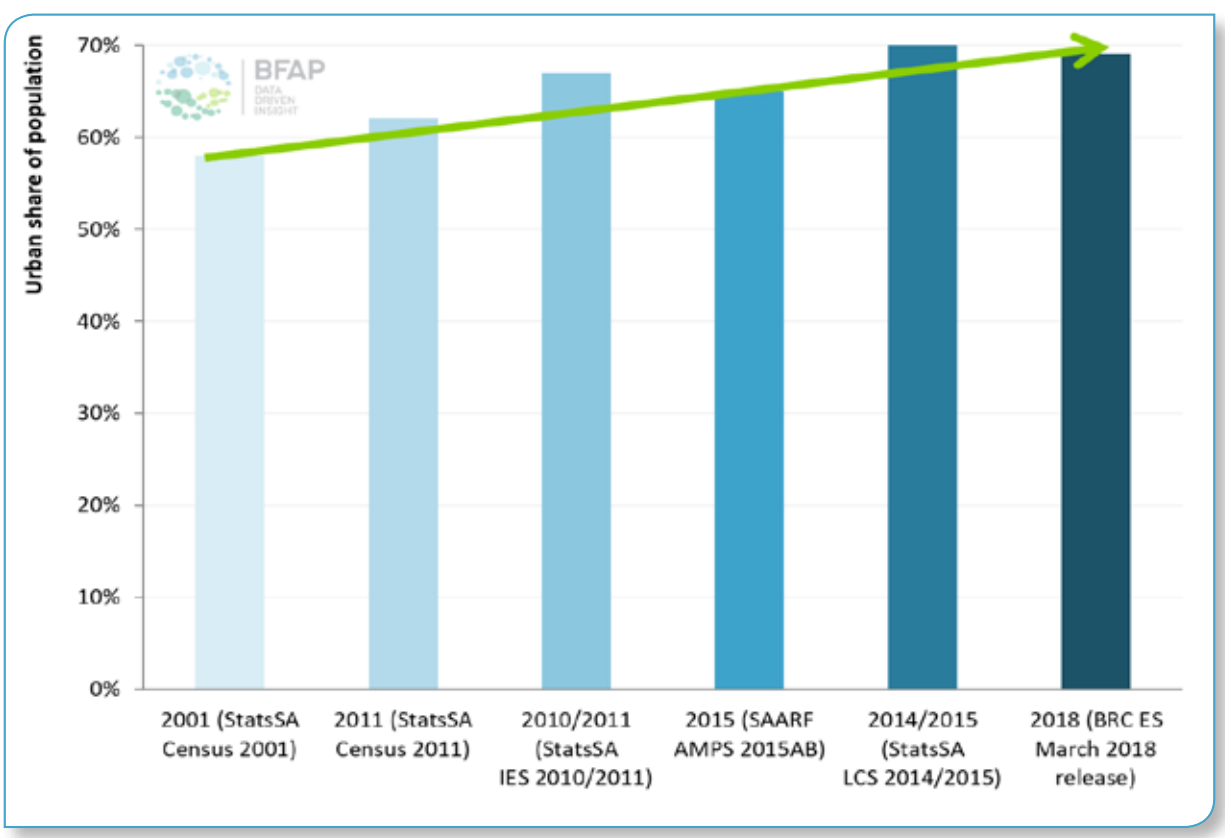


Figure 13: Urban population share in South Africa from 2001 to 2018
Source: Compiled from various sources as per x-axis

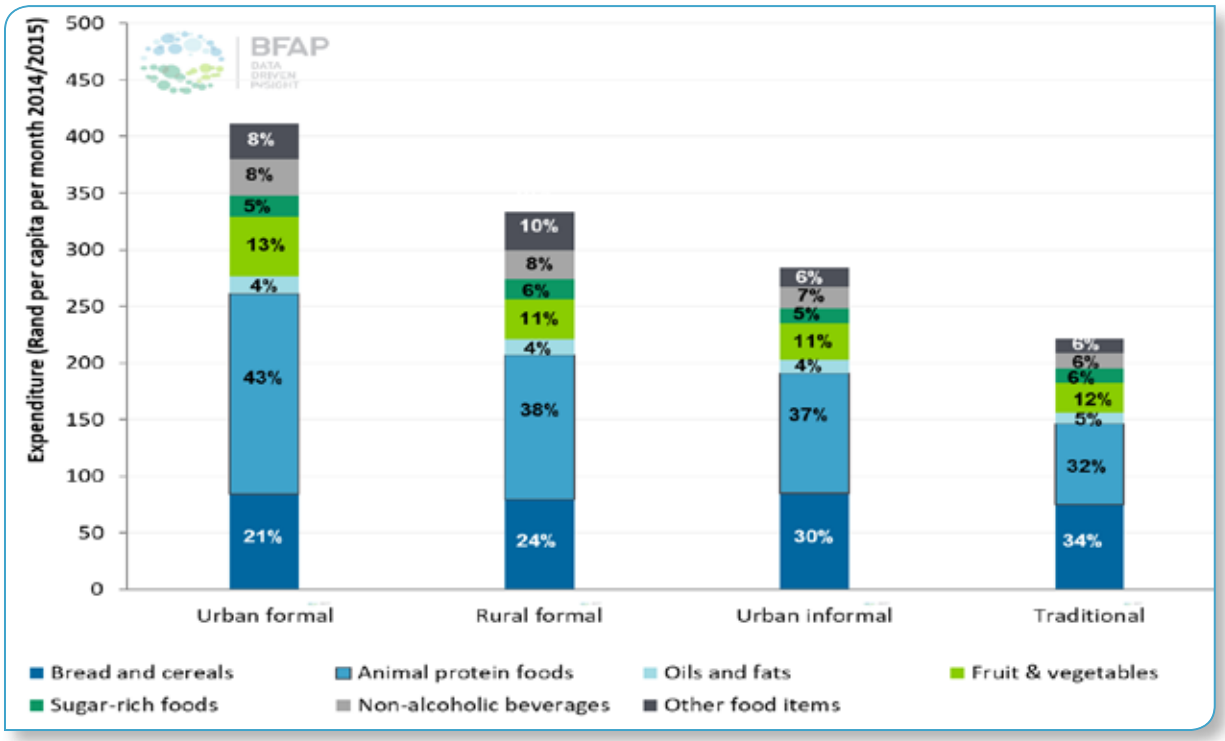


Figure 14: Comparing the food expenditure of households residing in different settings according to StatsSA LCS 2014/2015 – expressed on a Rand per capita per month basis
Source: Calculated based on data from StatsSA LCS 2014/2015

could also contribute significantly to low food expenditure levels.

- The expenditure share contribution of bread and cereals was most significant for households in traditional and urban informal areas. In terms of absolute food expenditure per capita, similar values were observed for households in urban formal- and urban informal areas, with lower values observed for rural formal households (6% less) and traditional areas (11% less).
- Animal protein foods (meat, fish, eggs and dairy) represented the dominant food expenditure category for urban formal-, rural formal and urban informal households from an expenditure share contribution perspective. In terms of absolute expenditure on animal protein foods per capita, the highest value was observed for urban formal households, with lower values observed for rural formal households (28% less), urban informal households (40% less) and traditional area households (60% less).

Dynamics in the South African consumer environment: AGE DISTRIBUTION

South Africa has a large young population group, with 47% of the population younger than 25 years in 2017 (30% in the 0-14 age bracket and 17% aged 15 to 24 - Figure 15 and Table 7). A large young population group, coupled with poverty generates substantial pressure on government financial resources in terms of social grants. The active working age population (25 to 64 years) represented 48% of the total population in 2017 and grew by 6.72 million individuals (or 32.9%) from 2007 to 2017 - the highest growth among all the various age categories. A growing working age population could present an opportunity of economic growth if job creation is accelerated and unemployment reduced. The population of individuals aged 65 years and older remained at 5% of total population, but increased by 0.52 million individuals (or 20.9%) from 2007 to 2017.

South Africa's population is aging gradually, as the median population age has increased from 23 years in 2001 (StatsSA, 2001) to 25 years in 2011 (StatsSA,

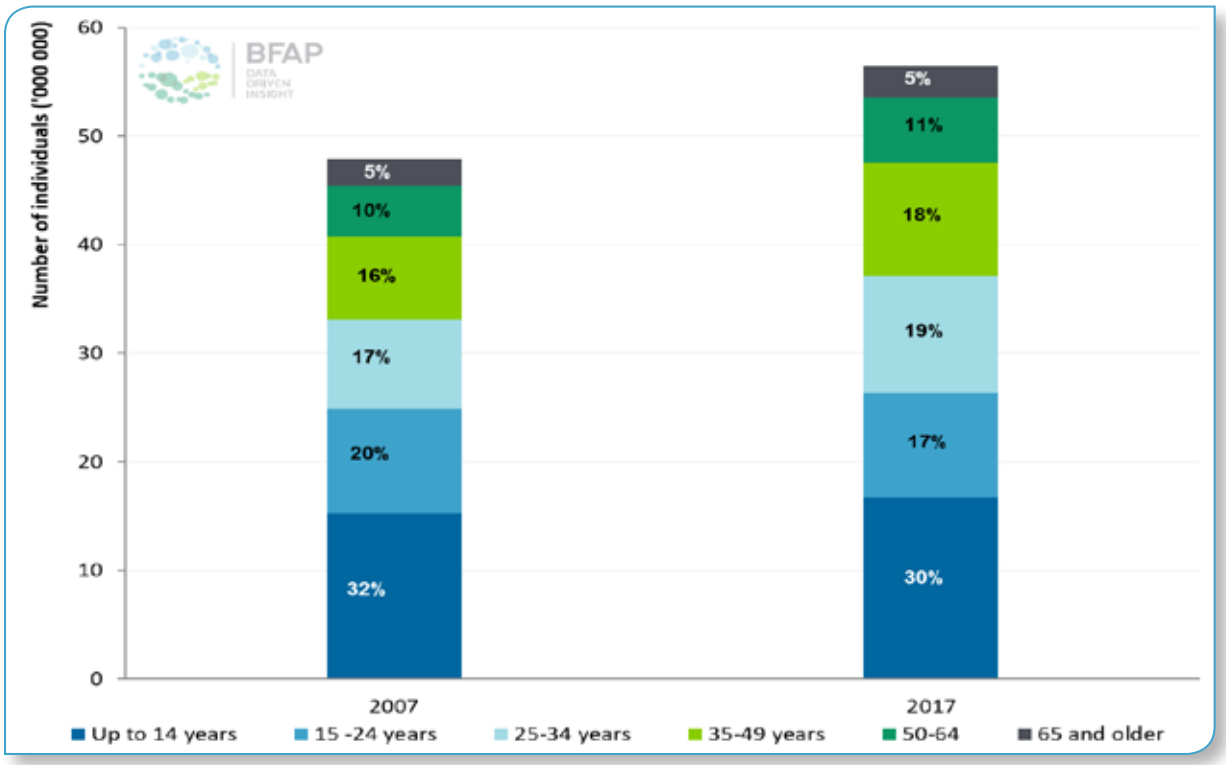


Figure 15: Age structure dynamics in South Africa – comparing 2007 to 2017
Source: StatsSA Mid-year Population Estimates, 2007 & 2017

Table 7: Age structure dynamics in South Africa – 2017 vs. 2007

Age group:	Population share:		Change from 2007:	
	2017	2007	Number of individuals	% change in number of individuals
0-14 years	30%	32%	+1.46 million	+9.6%
15-24 years	17%	20%	-0.028 million	-0.3%
25-64 years	48%	43%	+6.72 million	+32.9%
65+ years	5%	5%	+0.516 million	+20.9%

Source: StatsSA Mid-year Population Estimates, 2007 & 2017

2011). The StatsSA mid-year population estimated data presented in Figure 15 also confirms the gradually ageing population, with the share of the total population aged 35 years and older increasing from 31% in 2007 to 34% in 2017.

Dynamics in the South African consumer environment: UNEMPLOYMENT

From the first quarter of 2008 to the first quarter of 2018 the South African labour force increased by 3.55 million individuals, while the number of employed individuals increased by 1.94 million. The unemployment rate for South Africa reported by StatsSA in the first Quarterly Labour Force Survey of 2018 was 26.7%, decreasing from a high point of 27.7% in the first two quarters of 2017. Considering the active working age population (25 to 64 years), the highest unemployment in the first quarter of 2018 occurred among people aged 25 to 34 years (33.0% unemployment rate) followed by the age group 35 to 44 years (20.9% unemployment rate). At a provincial level, the lowest unemployment in quarter one of 2018 was in the Western Cape (19.7%), Limpopo (19.9%) and KwaZulu-Natal (22.3%). The relatively low unemployment rate in the Limpopo province seems unlikely, but could possibly be attributed to most of the working age population migrating to more urbanised provinces (e.g. Gauteng), leaving only those younger

than 16 and older than 65 years behind. The highest unemployment rates were observed in the Eastern Cape (35.6%), Free State (32.8%), Mpumalanga (32.4%) and the Northern Cape (29.5%).

Dynamics in the South African consumer environment: DEBT

South African consumers have consistently been increasing debt levels toward the fourth quarter of 2017, with the following changes occurring from the first quarter of 2009 to the fourth quarter of 2017 (National Credit Regulator, 2018):

The value of the gross debtor book increased by 53.9% from 2009 to 2017, to reach R1 756 billion. This represents the highest value since the first quarter of 2009 (Figure 16).

The number of accounts in the gross debtor book increased by 9.2% to 38 million, representing a lower level than the highest level of 41.6 million in the first quarter of 2015 (Figure 16).

The number of credit applications received increased by 83.9% to 10.5 million - lower than the high level of 12.1 million reported for the second quarter of 2015.

The credit application rejection rate increased from 43.9% to 49.7%, being lower than the high level of 59.0% reported for the first quarter of 2014.

In the fourth quarter of 2017, credit granted to consumers with less than R5500 income per month made up about 11% of total credit granted in value terms but about 41% in terms of total number of credit facilities granted.

Dynamics in the South African consumer environment: FOOD SECURITY, NUTRITION & HEALTH

Food security is a strategic priority for the South African government. South Africa is considered food secure from a national perspective, as there is enough food available for the whole population estimated at more than 3000 kcal/capita/day. This amount is more than the average daily dietary energy requirements specified in the Guidelines for Healthy Eating of the National Department of Health, which is specified as 2032kcal/capita/day for adult women and 2510 kcal/

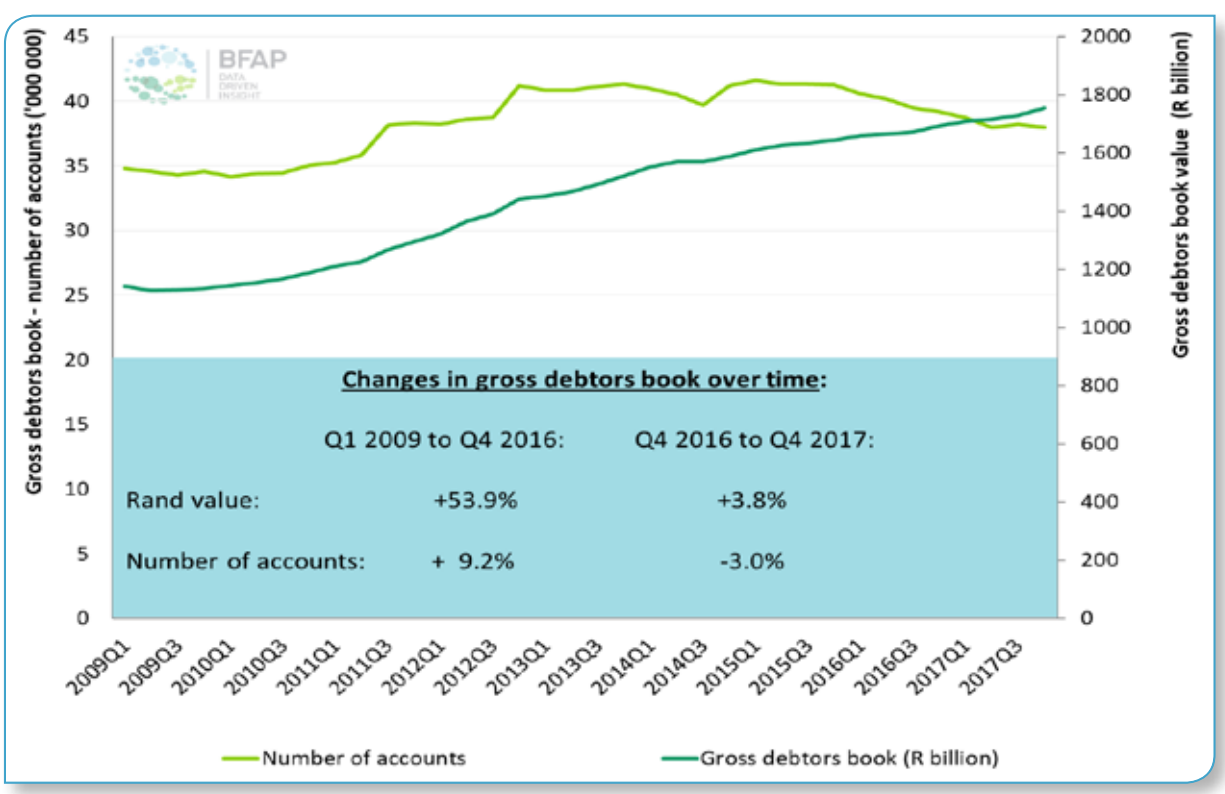


Figure 16: Consumer debt in South Africa from a gross debtors book perspective
Source: National Credit Regulator Statistics

capita/day for adult men. High food prices are one of the key drivers of food insecurity in the country as it reduces consumer purchasing power and can leave the nutritionally vulnerable powerless when it comes to acquiring healthier foods. Food prices in rural areas remain higher than in urban areas, partly due to higher distribution costs.

Increasing numbers of households are moving out of rural areas into urban centres. This allows them to make use of supermarkets and also results in diversification of their diets, with both positive and negative consequences. In the higher income brackets, consumer tastes and preferences are leaning towards a more diverse diet, creating demand for industries such as intensive livestock, dairy, fruit, wine, beverages, and other value added products.

Exclusively monitoring the amount of energy per person per day is however not an effective indicator to ensure nourished communities. High intakes of low cost, low nutrient, higher energy staple foods have inevitably contributed to the prevailing scenario of malnutrition. Furthermore, a growing body of evidence indicates that a combination of dietary patterns and inadequate physical activity levels contribute to the development of non-communicable diseases.

South Africa is characterised by declining levels of mortality, declining but still high prevalence of communicable diseases (such as Tuberculosis, pneumonia, diarrhoea, malaria, measles) and a growing tide of non-communicable diseases (such as cancer, diabetes, heart disease and asthma), which accounted for 57.4% of deaths in 2016 (Stats SA, 2018). NCD's can be prevented through maintaining a healthy weight, consuming a healthy diet, being physically active and avoiding exposure to occupational carcinogens, environmental pollution and certain long-term infections.



OUTLOOK FOR FIELD CROPS

In 2017 South Africa finally caught up with the global cycle as a record domestic maize harvest resulted in a 57% and 41% year on year decline in white maize and yellow maize prices respectively.

SUMMER GRAINS

GLOBAL MAIZE SITUATION AND TRENDS

In 2017, global maize prices reached levels last observed in 2010. This decline follows seven years of consistent stock accumulation after the drought induced shortages of 2011 to 2013. In 2018, a contraction in planted area, combined with a year on year decline in yield levels arising from below average crops in South America, is expected to cause a 4% year on year decline in global output volumes. Combined with firm demand for both animal feed and industrial use, which is set to support a modest rise in consumption, this is expected to induce a turnaround in global markets, with stock levels expected to decline by 9% year on year in 2018. In 2019, the International Grains Council expects a further decline in US maize production to be offset by a recovery in South America under the assumption of normalised weather conditions. This results in marginally higher expected production in 2019 at global level. Prices are projected to continue the recovery in the short term on the back of favourable demand and a drawdown of stocks in China, before trading largely sideways post 2020 (Figure 17).

DOMESTIC MARKET SITUATION

Despite the declining trend in international prices since 2013, the combination of drought induced production shortfalls and a depreciating exchange rate resulted in sharp increases in South African prices in 2015 and 2016. In 2017 however, South Africa finally caught up with the global cycle as a record domestic maize harvest resulted in a 57% and 41% year on year decline in white maize and yellow maize prices respectively. The surplus comprised a substantial share of white maize, as production almost trebled from a mere 3.5 million tonnes in 2016 to 10.4 million tonnes in 2017. This increase resulted from area expansion following an all-time record premium for white maize over yellow maize that exceeded R1000 per tonne, as well as record yield levels following favourable weather conditions and the benefits of planting crops on large fallow areas carried over from 2016, when insufficient rainfall did not allow the intended hectares to be planted. Figure 18 presents the historic yield performance, as well as early expectations from the Crop Estimates Committee (CEC) for the 2018 season on BFAP's network of prototype farms in key summer rainfall regions. The record yields attained in 2017 are evident, with the

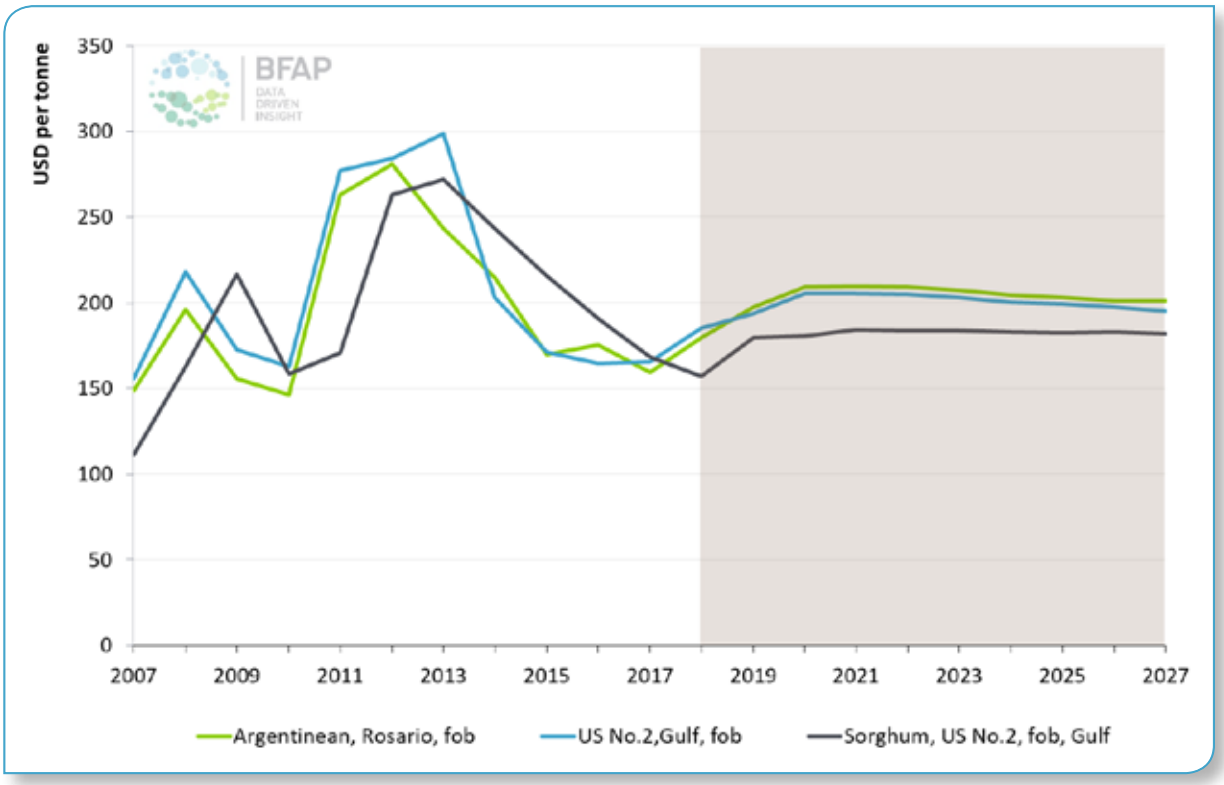


Figure 17: Yellow maize and sorghum world prices: 2007 - 2027
Source: FAPRI & BFAP, 2018

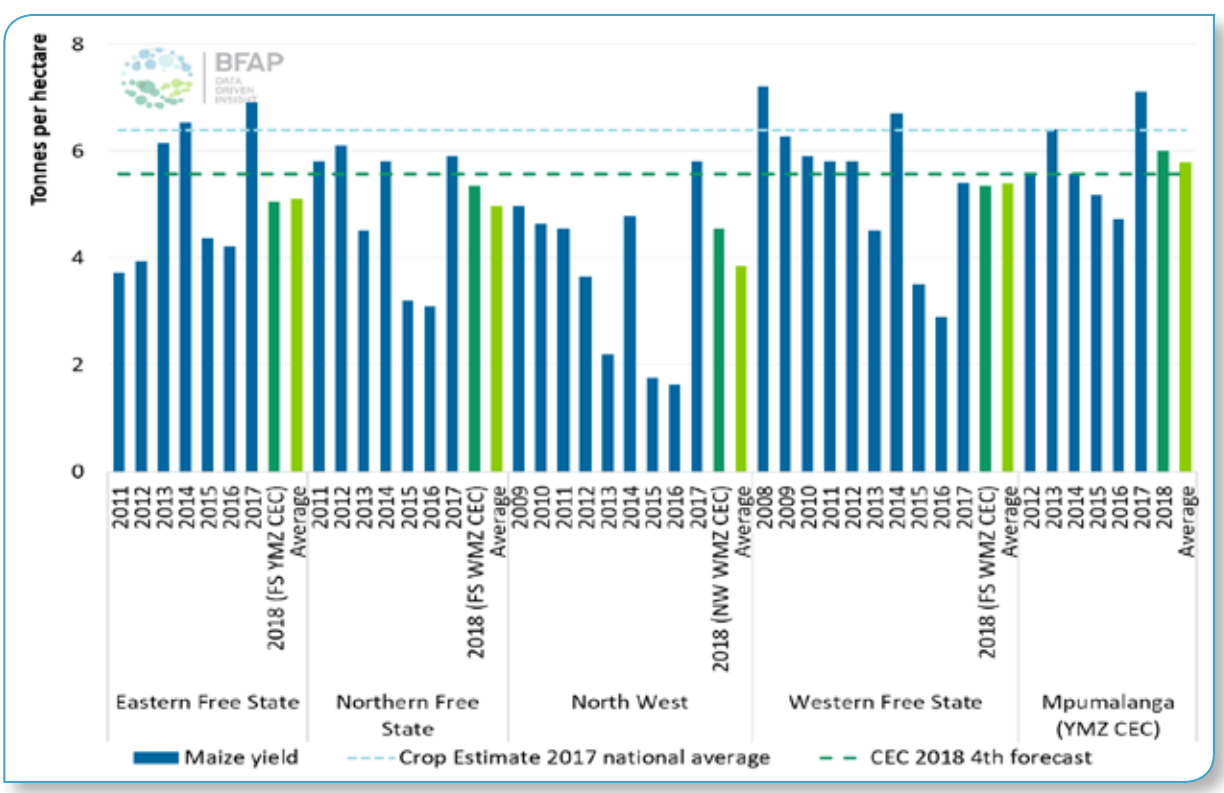


Figure 18: BFAP proto-type maize farms: Yield trends
Source: BFAP & CEC, 2017

farm in the North West achieving almost 2 tonnes per hectare more than its long-term average. Despite these gains, South African maize yields remain below major international producers such as the USA, Argentina and Brazil. The international sample average for six countries (Argentina, Brazil, China, Russia, Ukraine and USA) amounts to 8.4 tonnes per hectare, more than 30% higher than what South Africa achieved nationally in 2017.

The strong yields attained in South Africa in 2017 were also replicated in multiple other countries across Southern Africa, inducing a large regional surplus that limited export opportunities for white maize, which is less frequently traded in the global market than yellow maize. Slow progress with white maize exports prompted significant substitution into the animal feed market, with yellow maize being exported instead (Figure 19). Nonetheless, prices did not drop sufficiently below export parity for export volumes to reach the levels required to rebalance the market, resulting in carryover stocks still reaching record highs at the end of the 2017 marketing season. Consequently, white maize prices are expected to continue trading closer to export parity levels in 2018, despite the 31% year on year reduction in white maize production, which brings it closer to long-term average levels. With a significant year on year reduction also expected in Zambia's maize crop in 2018, white maize exports into the rest of Southern Africa could be easier to attain in 2018.

DOMESTIC MARKET OUTLOOK: MAIZE

Over the course of the next decade, demand growth prospects for white maize differs significantly from yellow maize, due to differences in the underlying consumption trends. White maize is predominantly consumed as food, representing a basic staple for South African consumers. By contrast, the bulk of yellow maize consumption accrues to the animal feed industry, where it provides the primary energy source in most feed rations. Dietary diversification associated with improved income levels and living standards over the past decade has resulted in a trend of declining white maize consumption in per capita terms, with modest gains in total food use attributed to population growth instead. In the coming decade, in the midst of slower income growth, the trend of declining per capita maize consumption slows down from the past decade, but is offset by population growth to result in a total increase of 7% in total food use by 2027 relative to a base period of 2015-2017. In the short term, growth in animal feed demand remains slow following drought induced liquidation of the beef herd in 2016 and avian influenza induced culling in the layer industry in 2017. From 2020 onwards, growth in livestock production accelerates, resulting in an increase of 21% in maize consumed as animal feed by 2027 relative to the 2015-2017 base period. Consequently, the demand for yellow maize grows much faster over the next decade than that of white maize (Figure 20).

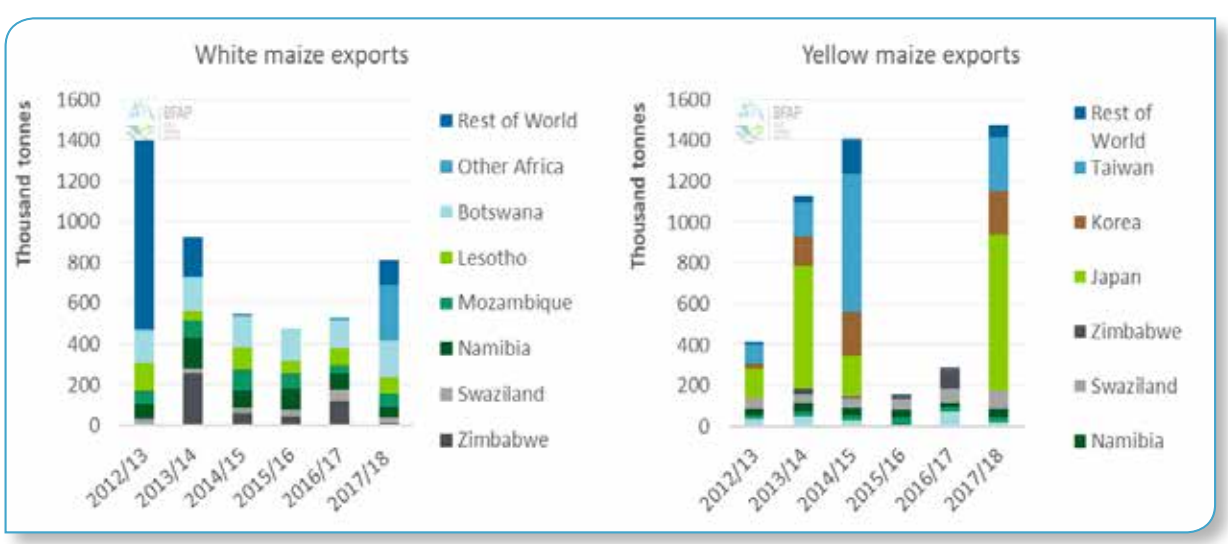


Figure 19: South African maize exports
Source: SAGIS, 2018

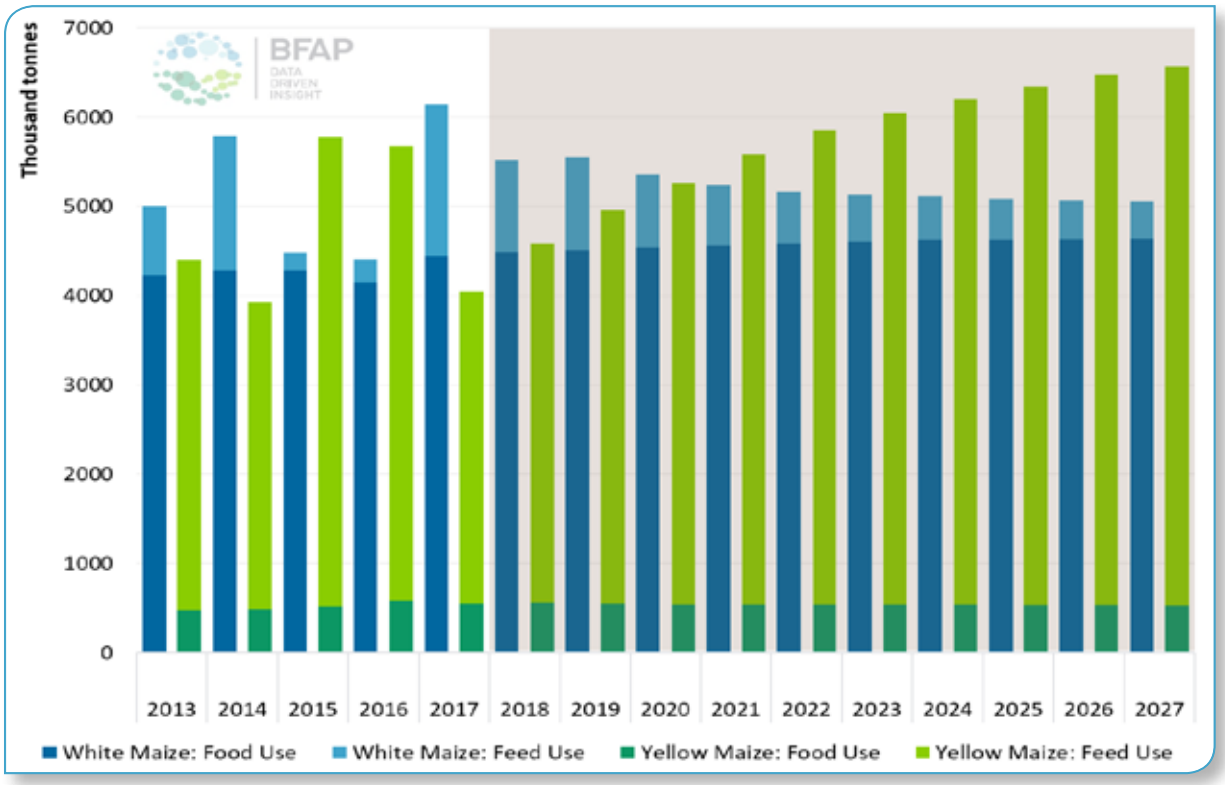


Figure 20: Maize consumption in South Africa: 2013 – 2027

Long-term trends in South African crop area also reflect the factors that underpin demand for feed related crops. The area under yellow maize, as well as soybeans has increased over the past decade in response to demand from the animal feed sector. This expansion has however come at the expense of white maize, which has trended downwards for a number of years. Going forward, yellow maize area continues to expand and is projected to surpass that of white maize by 2020 (Figure 21), with sufficient yield gains in white maize production to supply fairly stagnant demand. White maize exports are also expected to slow (Figure 22), with South Africa facing increased competition from Zambia in many of the importing countries across Southern Africa. Zambia produces non-GM maize and faces a favourable transport differential relative to South African maize in key importing markets such as Zimbabwe. Some exports into the rest of Southern Africa however remain favourable to South African maize, for instance Maputo in the South of Mozambique. With production growth slowing over the latter half of the Outlook and a smaller surplus available for export over time, white maize prices also rise further above export parity levels.

Apart from differences in demand growth, white maize prices have tended to be more volatile in recent years, due to the changing weather conditions. Being less frequently traded in the global market, white maize prices tend to trade below those of yellow maize in surplus years and above those of yellow maize in deficit years. This has been particularly evident in the recent past, as the 2016 drought was more severe in the Western parts of the country and the subsequent increase in white maize area boosted output volumes to record levels, exacerbating the price declines in 2017. The extent of price declines in 2017 prolonged the recovery from the drought particularly in the North West, where farmers have seen below average rainfall conditions for 4 production seasons since 2012, causing severe pressure on producers' cash flow. In 2014, 2017 and 2018, yield levels improved, but the crop was marketed at lower prices and exchange rate depreciation accelerated input cost inflation. This combination of factors left producers with limited options for financial recovery after the drought. Figure 23 encapsulates different possible scenarios on the BFAP North West prototype farm, based on the ability to restructure carryover debt into medium and long-

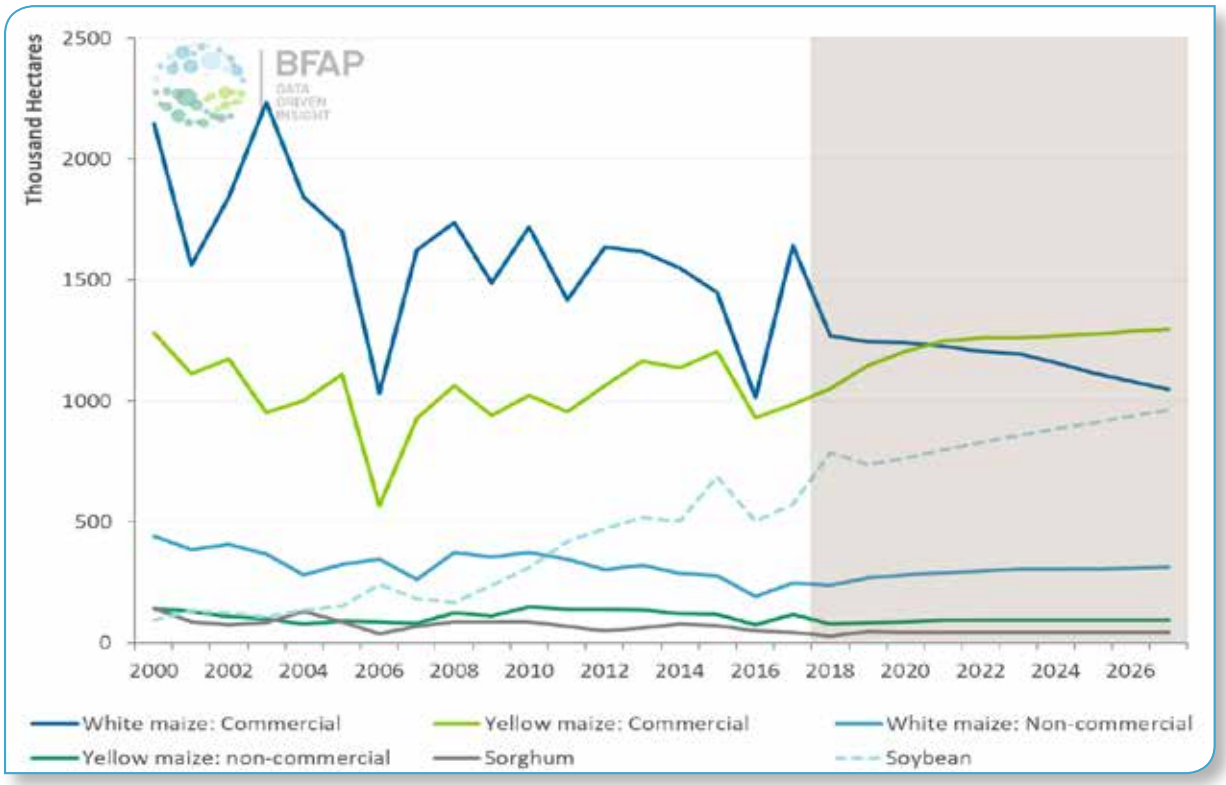


Figure 21: Summer grain area harvested

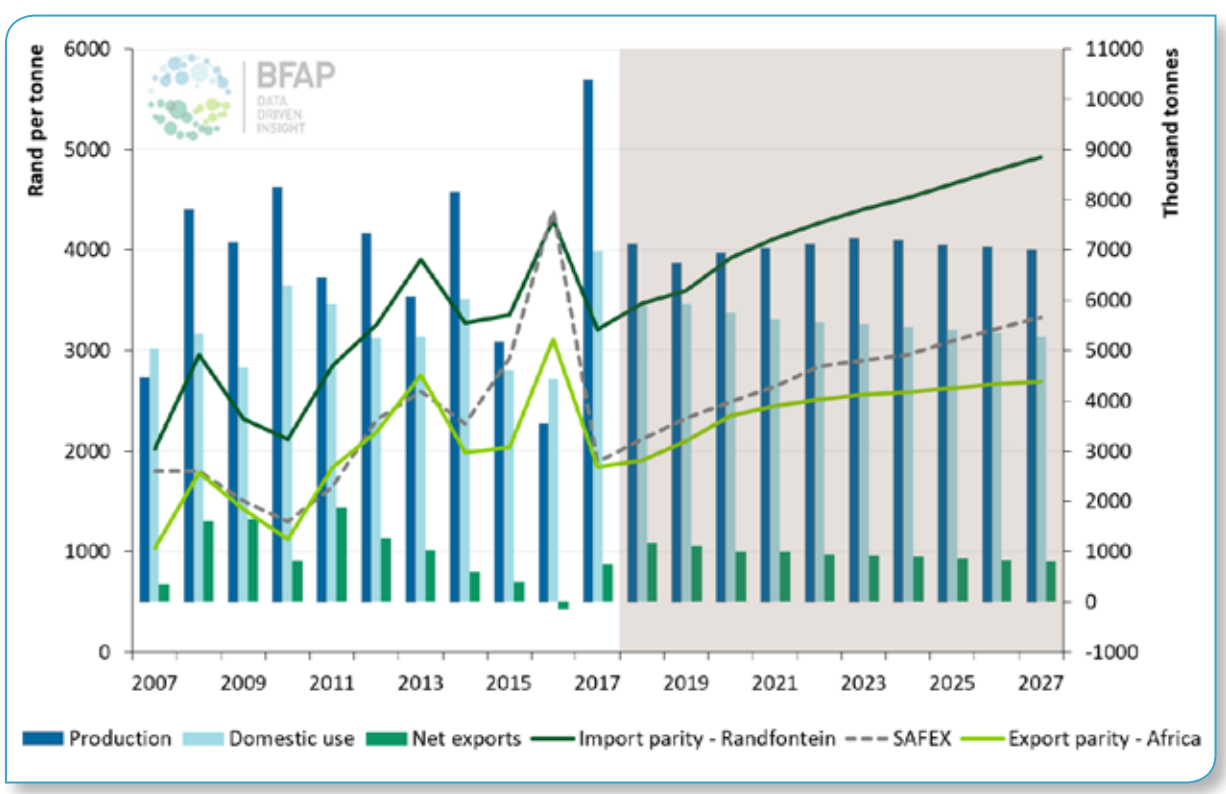


Figure 22: White maize production, consumption, trade and prices in South Africa: 2007 – 2027

term loans. Outcomes will differ drastically amongst producers, based on their individual underlying finance structure, drought impact and carry over debt levels. Figure 23 presents the cash flow projection on the North West prototype farm under the following scenarios:

- Baseline: No restructuring of carry-over debt into medium or long-term loans. The scenario assumes that debt was carried over to the 2017 production season as a cash deficit in the opening balance.
- Scenario 1: All debt restructured into a four-year loan which entails that the producer was able to restructure all carry-over debt over a longer period, which is subject to annual interest and principal payments. The ability to restructure carry-over debt will provide short-term relief and ensure continuous production.
- Scenario 2: Partial debt restructuring into a three-year loan agreement. 60% of outstanding debt was restructured into a medium term loan and 40% was regarded as carry-over debt in 2017.
- Scenario 3: Partial debt restructuring into a four-year loan agreement. 60% of outstanding debt was restructured into a medium term loan and 40% was regarded as carry-over debt in 2017.
- Scenario 4: Partial debt restructuring into a five-year loan agreement. 60% of outstanding debt was restructured into a medium term loan and 40% was regarded as carry-over debt in 2017.

The results indicate that the ability to restructure debt arising from the 2015 and 2016 droughts has provided short-term relief for many producers. However, under the baseline assumptions, cash flow for the North West prototype farm will only turn positive in 2020. Due to annual principal and interest payment commitments, recovery is at a slower pace relative to baseline projections. In 2020, a cash surplus position under the baseline assumptions and a partial restructuring option over a five-year period is plausible. This however assumes normal production conditions.

The subdued recovery outlook for North West and other regions is mainly driven by low crop margins, a consequence of an extended lower price cycle.

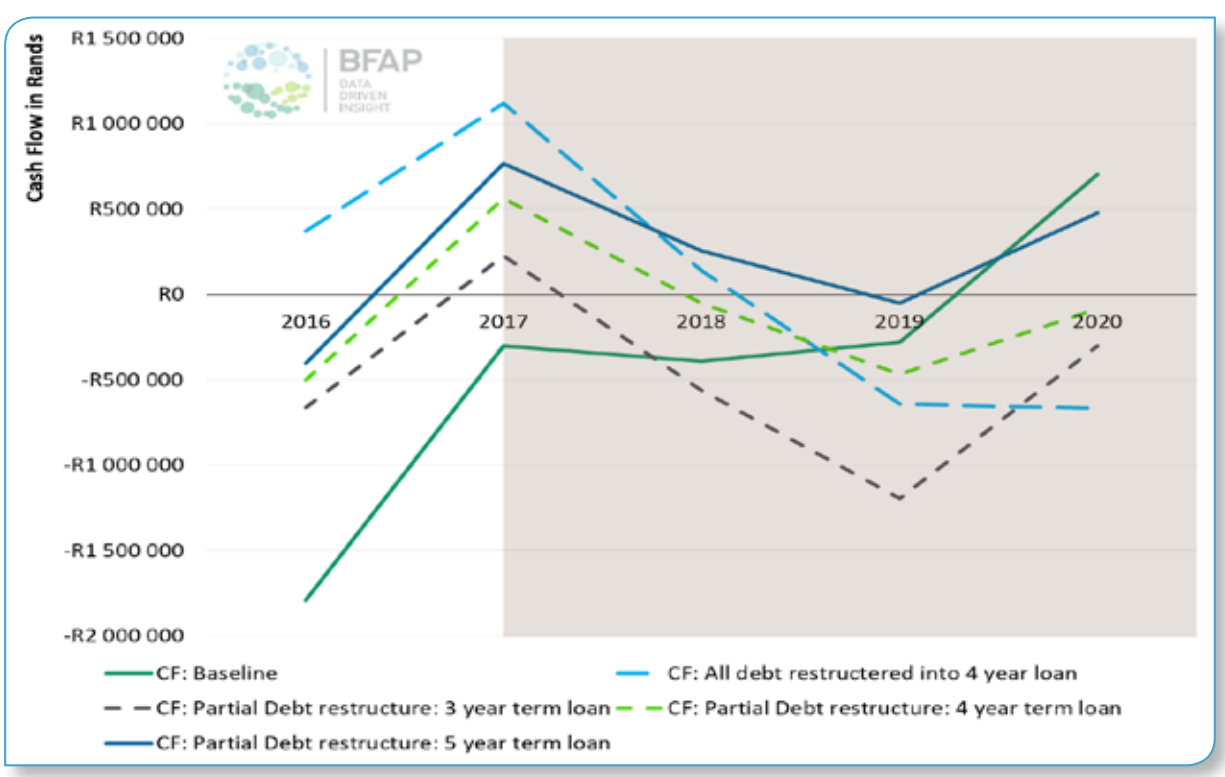


Figure 23: Projected cash flow on the North West prototype farms under different debt restructuring scenarios

Figure 24 highlights various gross margin levels for maize and soybeans across key summer producing regions for 2018 and 2019. The gross margin reflects gross production value minus direct expenditure per hectare. Since overhead expenditure will vary from farm to farm, an overhead cost threshold is provided to indicate the likely net position of the crops stipulated. For the purpose of this exercise, a low fixed cost threshold assumes a cost of R1 400 per hectare where a high fixed cost threshold assumes R2 200 per hectare. In order to provide context in terms of crop performance, an investment benchmark indicator is provided to illustrate the gross margin requirement that will stimulate farm investment. It is key to note that the investment benchmark indicator is somewhat arbitrary and will differ from farm to farm.

Figure 24 suggests that, in many production regions, 2018 maize margins will not be sufficient to cover full overhead expenditure. Under stable weather conditions, soybean margins are projected to outperform maize by R1 900 per hectare. Towards 2019, maize margins recover, driven mainly by price improvements. The average gross margin for maize in 2019 is projected at R3 927 per hectare where soybean margins are projected at R3 574. Under the baseline assumptions, farm investment is likely to accelerate in 2019. The annual differences in crop specific margins also illustrate the benefits of a diversified production mix.

In most instances, maize margins in Eastern regions, where yellow maize dominates, are expected to be larger than that of white maize in the Western regions. This lends further support to changes in crop area, where the long-term decline in white maize area also implies that the total gross income from national white maize production increases only marginally over the next 10 years; being expected 25% higher in 2027 than in 2017. By contrast, in expanding industries such as yellow maize and soybeans, the gross value of production is projected to increase by 133% and 123% respectively over the same 10-year period (Figure 25).

Over the course of the next decade, the combination of area expansion and yield improvements support yellow maize production growth of 3.4% per annum. This is sufficient to supply the growing demand from livestock production, whilst also leaving an exportable surplus of approximately 1.3 million tonnes by 2027. This is approximately 14% of domestic production,

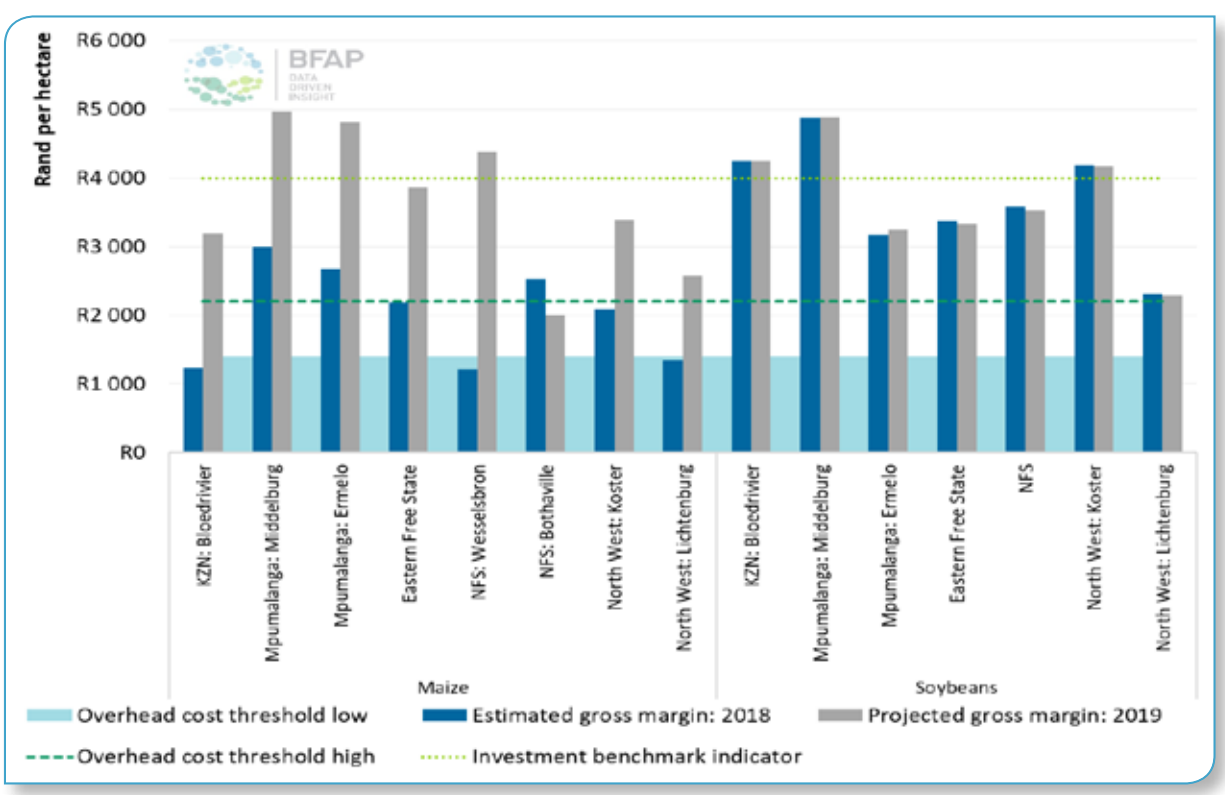


Figure 24: Gross margin outlook for various production regions: Maize and soybeans

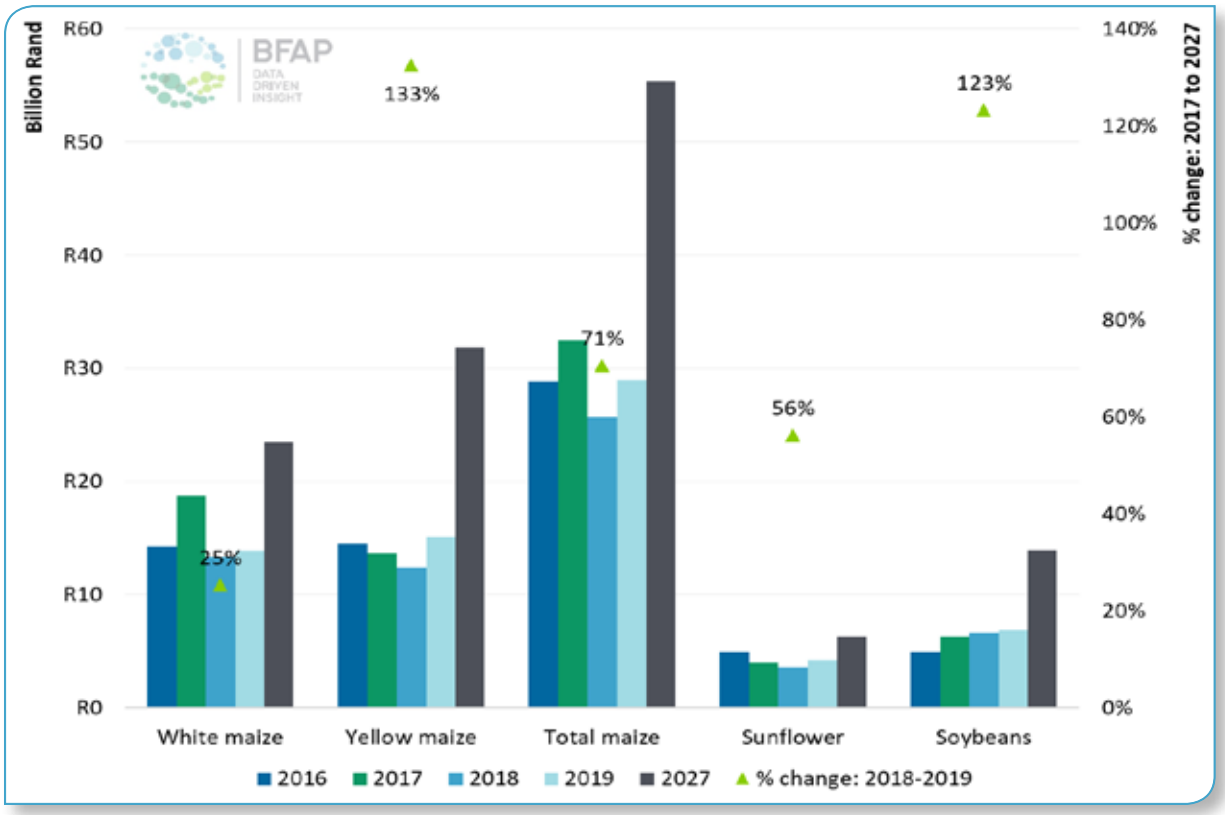


Figure 25: Gross revenue projections for different summer crops: 2016 - 2027

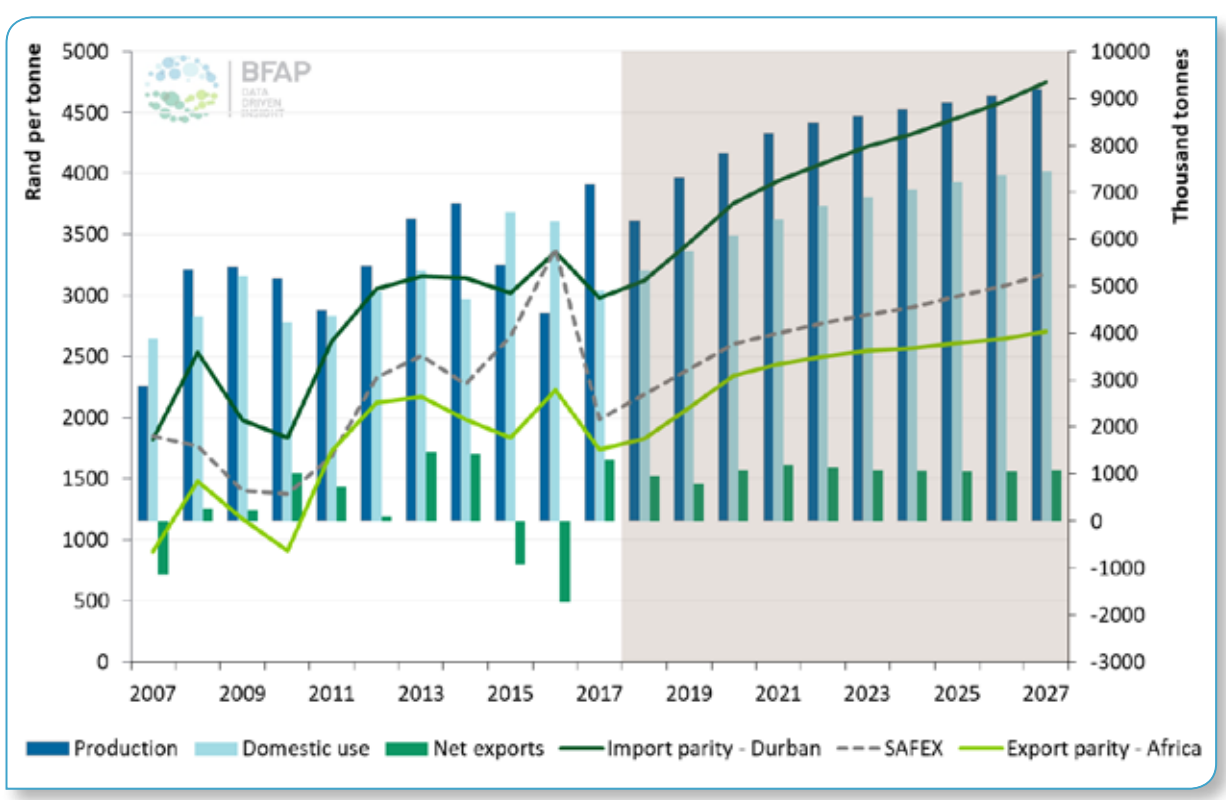


Figure 26: Yellow maize production, consumption, trade and prices in South Africa: 2007 – 2027

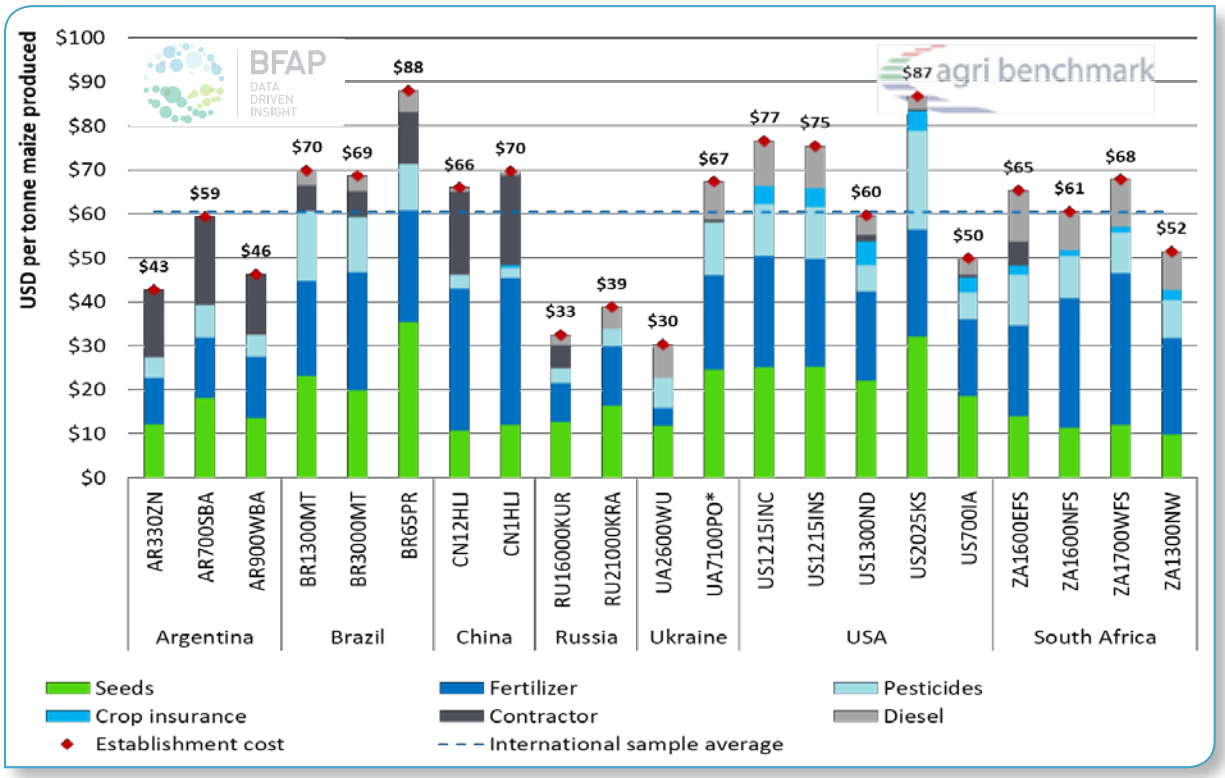


Figure 27: Direct expenditure on maize in selected countries: 2017
Source: agribenchmark, 2018

down from almost 22% in 2017. The exportable surplus is not expected to be sufficient to keep prices at export parity levels for the entire year. As the share of exports in domestic consumption reduces, annual average prices are projected to move further away from export parity levels, but to remain well below import parity and will continue to be influenced by domestic supply and demand conditions (Figure 26).

Surplus production of yellow maize in particular, which is traded in the global market, implies that the international competitiveness of South African producers will remain paramount. In order to provide an indication of relative competitiveness, Figure 27 presents direct costs to produce a tonne of maize for various prototype farms across the globe for the 2017 production season. The farm name is denoted by the country code, farm size and the region where the farm is located. For instance, the US700IA farm is located in Iowa, United States of America (USA) and consists of 700 hectares of arable land.

Similar analysis in the past indicated that South African farms are less competitive on a cost of production basis, mainly due to lower yields and the high cost of selected inputs. In 2017, higher yields improved the competitiveness of South African farms. On average, South African producers spent between US$52 to US$68 to produce a tonne of maize; well in line with the international sample average of US$61 per tonne maize produced. By contrast, the fertiliser component of production cost (US$ to produce a tonne of maize) is on average 34% higher on South African farms relative to the global average.

DOMESTIC MARKET OUTLOOK: SORGHUM

Sorghum production peaked in the mid-eighties, when more than 300 thousand hectares was cultivated, but it has lost significant ground mainly to maize over the past decade. Since 2010, the average area planted to sorghum has declined to a mere 65 thousand hectares and reached an all-time low of 29 thousand hectares in 2017/18. One of the reasons for the decline is the fact that yield levels have failed to increase at the same rate as yellow maize in particular, resulting in less competitive gross margins. This gap continues to widen and whereas sorghum yields have remained fairly stagnant over the past decade, yellow maize

yields have increased by an annual average of more than 3%, benefitting from an increasing share of irrigated production, improved cropping practices and genetically modified (GM) technology traits.

Sorghum represents a basic staple, characterised by inelastic demand preferences and historically, prices have been exceptionally volatile, often oscillating between import and export parity based on the size of the domestic crop. In 2017 and 2018, sorghum prices achieved a significant premium to yellow maize, which is expected to induce some area recovery. South Africa however is expected to remain a net importer over the outlook period (Figure 28). As a result, prices continue to trade closer to import party levels, maintaining the premium on yellow maize prices and allowing area to stabilise at around 42 thousand hectares. Demand remains stagnant, with limited gains as a result of population growth rather than per capita consumption growth. Sorghum has been considered as a possible feedstock for bio-ethanol production, which could induce a shift in demand, impacting production and trade volumes. Furthermore, the relative affordability of sorghum, and the impact of a possible zero VAT rating is presented in Box 2.

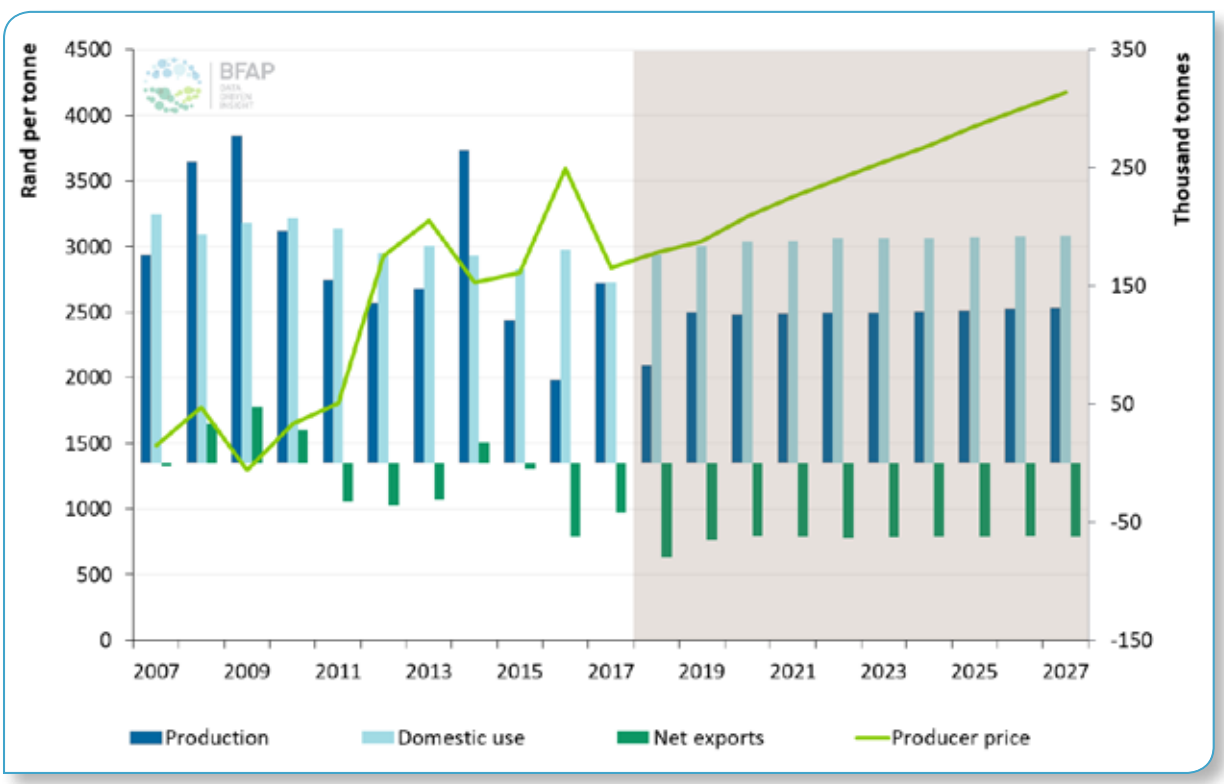


Figure 28: Sorghum production, domestic use, net trade and prices: 2007 - 2027

BOX 2: EXPLORING THE IMPACT OF A ZERO-VAT RATING ON SORGHUM

Indigenous cereals such as sorghum make only a small contribution to the starch-rich staple food complex in South Africa. The average estimated annual per capita intake (2014 to 2016) remains dominated by maize (74kg/capita) and wheat (48kg/capita), followed by potatoes (35kg/capita) and rice (18kg/capita), while sorghum intake was significantly lower at merely 2kg/capita. Considering climate change and cycles of severe drought becoming more prominent, there is a renewed interest in enhancing food security through agro-biodiversity, including indigenous African cereals with drought resistance attributes, such as sorghum.

Figure 29 explores the implications of a potential zero-VAT rating on sorghum from a food affordability perspective compared to maize meal: In 2015, a single serving unit (SSU) of sorghum porridge was on average 25% more expensive than a SSU of maize porridge. However, if sorghum was zero-VAT rated in 2015, it would only have been 10% more expensive than maize meal.

Due to the severe drought in the summer rainfall areas of South African during 2015/16 maize meal prices increased significantly and from January 2016 to April 2017 a SSU of sorghum was on average only 6% more expensive than a SSU of maize. With zero-VAT on sorghum a SSU of sorghum could have been 7% less expensive than maize meal during the drought impact period.

Thus, removing VAT from the price of sorghum meal could improve the affordability of sorghum meal significantly and enable consumers to diversify their staple intake by including more traditional cereals. Furthermore, in times of price pressure on maize, sorghum could present an affordable staple alternative to consumers from an affordability perspective.

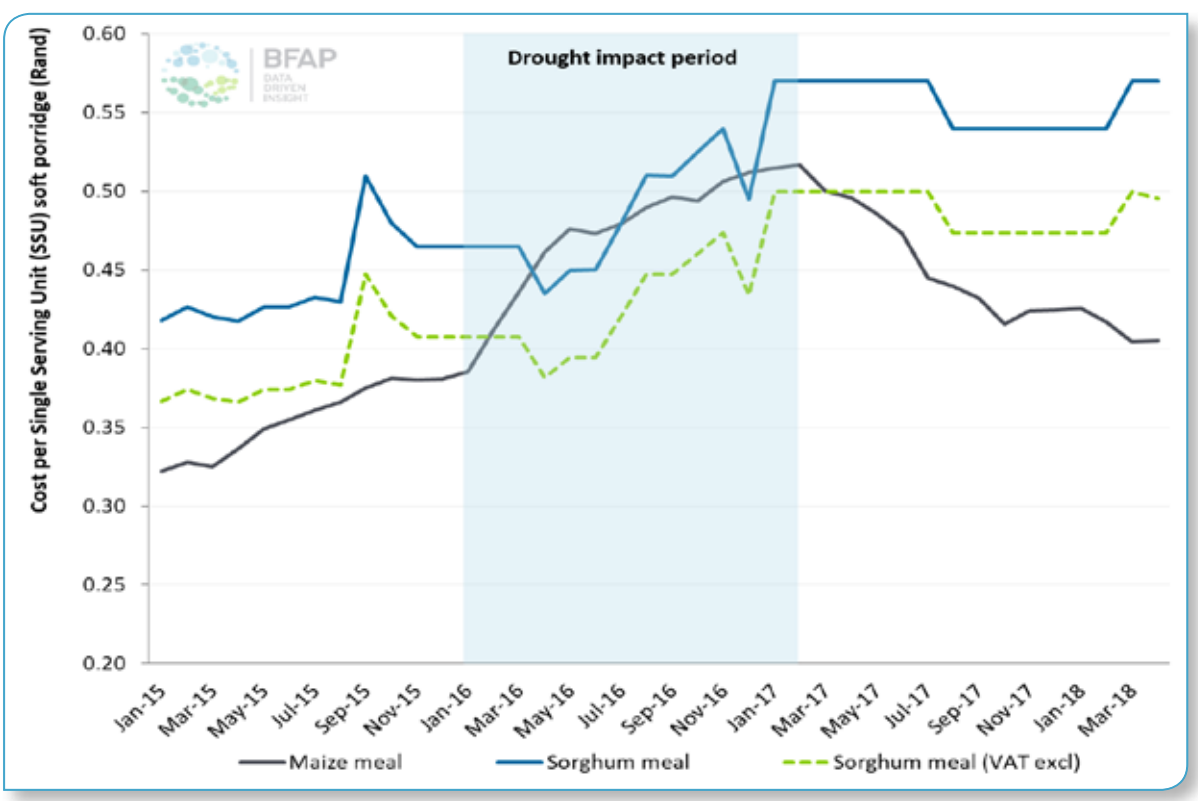


Figure 29: The relative affordability of maize meal and sorghum on a single serving units (SSU) basis
Source: BFAP calculations based on StatsSA monitored retail prices



OUTLOOK FOR FIELD CROPS

The reduction in world prices, combined with an exchange rate appreciation, supported a 5% year on year decline in domestic wheat prices. This combination of lower yields at reduced prices caused a substantial reduction in producer revenue.

WINTER GRAINS

GLOBAL CEREAL SITUATION AND TRENDS

Despite a second successive decline in area harvested, global wheat production reached a record high of 758 million tonnes in 2017/18. Russia, North Africa and India all recorded significant increases in total harvest, more than offsetting the multi-year lows from Australia and the USA. Despite record consumption levels, stocks continued to build, reaching an all-time high. In line with record stock levels, the price of Hard Red Winter (HRW) wheat reached its lowest level since 2005.

However, current estimates for the 2018/19 season point to a contraction in area and weaker yields, resulting in declining global production for the first time in 6 years. This reduction in production is expected in all major exporting countries, with a particularly pronounced decline in Russia due to warm, dry weather. Consequently, stock levels are also expected to decline for the first time in 6 years, with reductions in most major exporters, as well as India. China however is expected to build some stock due to better than expected production levels. In line with the reduction in global harvest, as well as firm demand, prices have recovered somewhat in 2018. In May 2018, US HRW wheat was trading above USD 240 per tonne, the highest since March 2015. Despite the recent decline, markets remain well stocked relative to historical norms and in the absence of major weather shocks, the global wheat price is expected to fluctuate around average levels of around USD 230 per tonne under the baseline.

Global barley production declined by 2% year on year in 2017/18, but remained above long term average levels. On the back of strong feed demand from China, Iran and Turkey, stocks are expected to decline to a 3 year low. In 2018/19, global production is expected to increase, based mainly on an expansion in area, but also favourable weather in major production regions to date. Demand is projected to remain strong however, leading to a second successive year of stock drawdown. In light of this decline, prices are expected to increase for the second consecutive year in 2018. The price of malting barley reached USD 245 per tonne in March 2018 and in the medium term, is expected to trade at an historic premium to wheat, whilst following wheat prices in terms of its general trend (Figure 30).

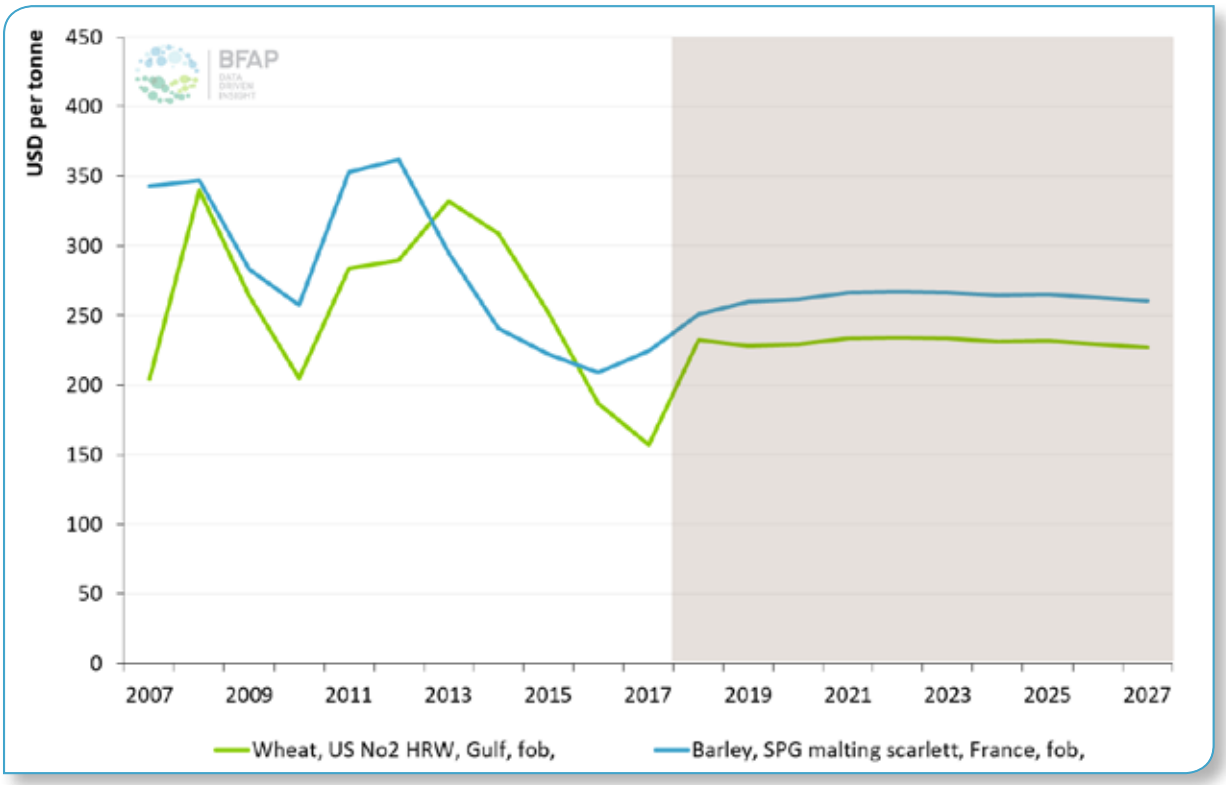


Figure 30: World winter grain prices: 2007 - 2027
Source: FAPRI & BFAP, 2018

DOMESTIC MARKET SITUATION: WINTER GRAINS

Whereas global winter grain production reached record levels during the 2017/18 season, 2017 represented a challenging year for winter grain producers in South Africa. This is mainly ascribed to the drought conditions that intensified in the Western Cape, reducing yield levels for wheat and barley. Prior to 2017, the average wheat yield for the Southern Cape (Overberg) region amounted 3.26 tonnes per hectare. Late precipitation and dry conditions led to wheat yields decreasing to 2.90 tonnes per hectare in 2017. In the same geographic region, barley yields declined by 0.40 tonnes per hectare from 2016 levels to average 3.20 tonnes per hectare. The Swartland region north of Cape Town was affected more severely, as reflected by a Western Cape average yield of 1.80 tonnes per hectare in 2017 (Figure 31). Reductions in performance were also evident in the Eastern Free State dryland region, where wheat yields declined by nearly a tonne per hectare compared to the 2016 season yields. Lower yields in the Eastern Free State were mainly driven by dry periods during critical growth stages, in particular September and October, and sub optimal pre-plant moisture which reduced optimal seed germination.

As a net importer of wheat, South African prices are well integrated into global markets, typically trading at, or close to import parity levels. Contrary to summer grains, where a severe reduction in output volumes typically result in higher prices that offset some revenue loss, production volumes have little impact on wheat prices. Consequently, the reduction in world prices, combined with an exchange rate appreciation, supported a 5% year on year decline in domestic wheat prices. This combination of lower yields at reduced prices caused a substantial reduction in producer revenue. At national level, the gross value of wheat production declined by 24% year on year, whereas in the Western Cape, the reduction was almost 50%. Given that barley prices have historically been linked to wheat prices, barley producers face similar concerns, which were exacerbated in 2018 by an adjustment in the barley price link factor. The combination of factors described has raised concern as to the financial position

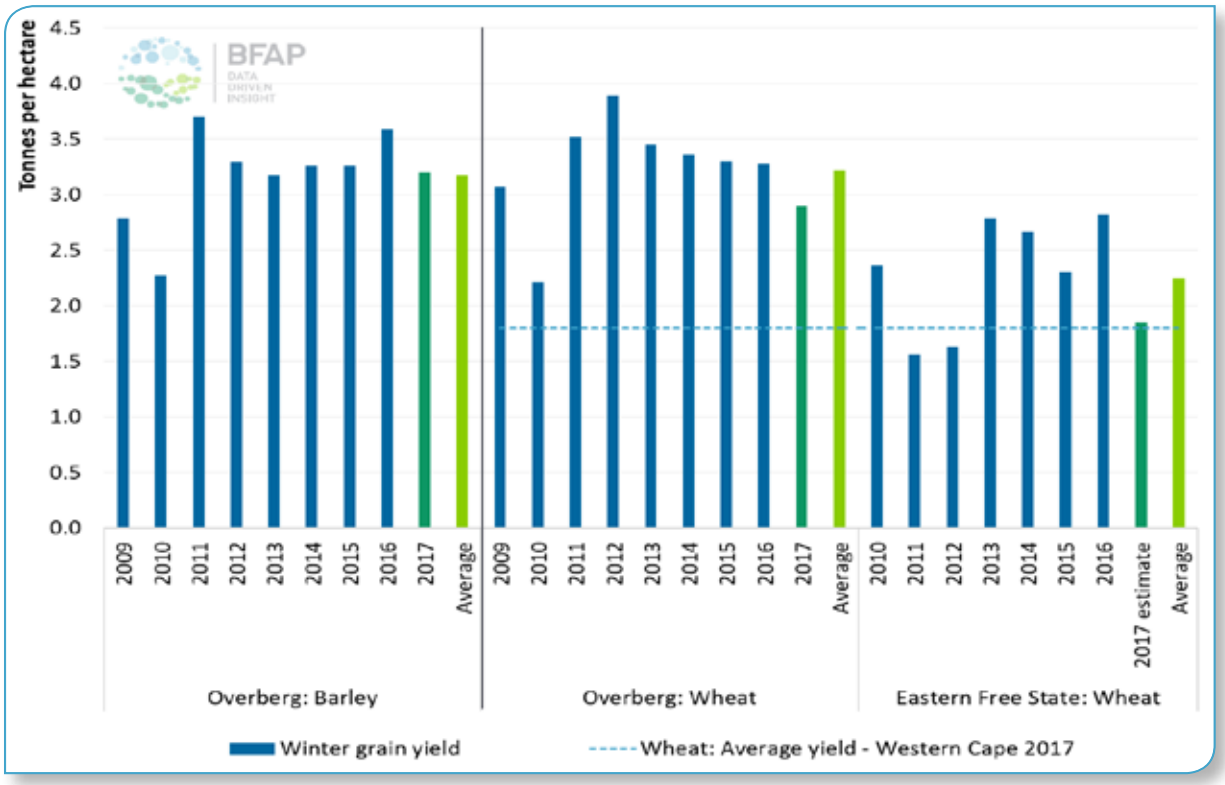


Figure 31: Winter grain yield performance

of winter grain producers in some areas where the drought's impact was most severe.

Similar to the summer grain area, a subdued recovery is anticipated for winter grain producers located in drought-stricken regions. Figure 32 presents an outlook for gross margins in 2018 for both Western- and Southern Cape producers. Despite a favourable start to the season in terms of precipitation, water remains a concern in the Western Cape, hence an alternative scenario of a further drought impact in 2018, is also included. This scenario assumes a reduction of 30% in yields from the long-term trend yield depicted in the baseline outlook. The outlook reflects a substantial decline in gross margins from 2017.

On average, a 17% or R631 per hectare decrease is projected for 2018 across the region. In the event of a consecutive drought, margins reduce further, in some cases by as much as 100% from 2017 levels and in most cases not sufficient to cover overhead expenditure (Figure 32). Current projections point to break-even (net) price ranges of between R2 600 – R2 800 per tonne for Western Cape producers. In irrigated regions, it can easily approach R3 100 per tonne given higher input costs. Under the baseline assumptions, a wheat price below R3 200 per tonne at farm gate in 2018 is plausible for Western, Southern and Northern Cape producers, which is reflective of a low margin environment for the coming season. Previous margin analysis in 2018 has indicated that several dryland producers located in the Western Cape will require at least 0.76 tonnes per hectare of wheat to cover overhead expenditure. For irrigated regions, it can easily exceed one tonne per hectare.

DOMESTIC MARKET OUTLOOK: WINTER GRAINS

The total area cultivated to wheat in South Africa has stabilised over the past 5 years, having declined consistently for a long period up to 2012. The bulk of the decline is attributed to the Free State, where wheat lost competitiveness and is perceived as a more risky crop to produce relative to alternatives such as maize and soybeans. As a result of the loss in Free State wheat area, the share of wheat area situated in the Western Cape's winter rainfall areas relative to the total South

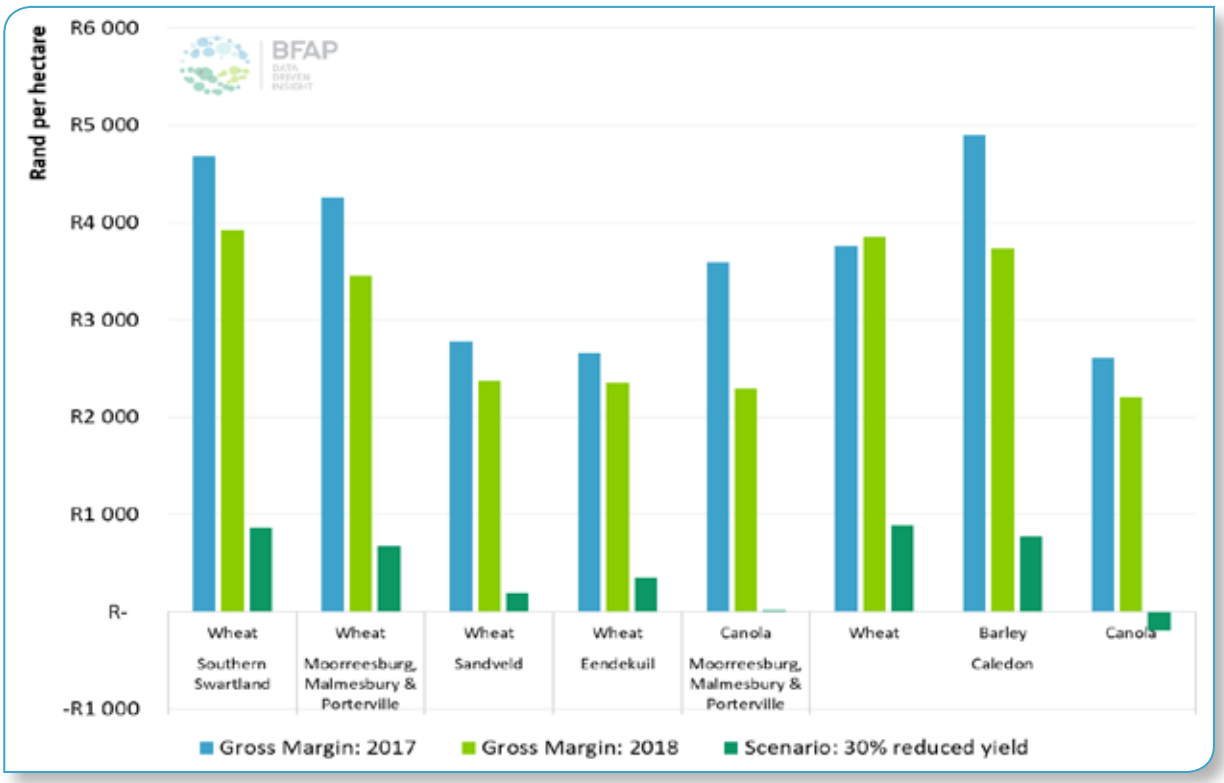


Figure 32: Gross margin performance of Western Cape producers

African wheat area increased over time, reaching 66% by 2017 when 326 thousand hectares were planted to wheat in the Western Cape. In light of poor profitability through the recent drought, intentions released by the CEC reflect a marginal decline, with 320 thousand hectares expected to be planted in 2018. An expansion of almost 15 thousand hectares in the area under wheat is expected in the Free State in 2018. Combined with little change year on year in the wheat area under irrigation, a modest expansion is expected in national wheat area in 2018. A small expansion is expected in the area cultivated to barley in 2018. Analysis is indicative of area possibly exceeding 95 thousand hectares as domestic buyers of barley strive to ensure barley supply for optimal utilisation of barley malting facilities.

In the long term, wheat area in the Western Cape is expected to decline further in 2019, before consolidating at around 300 thousand hectares. In the Western Cape, wheat will continue to face competition from barley and canola, as well as pasture based crops for livestock production. Wheat area in the Free State has reached an equilibrium and is expected to fluctuate around 85 thousand hectares over the course of the Baseline period. Area under irrigated wheat is also expected to remain fairly constant, facing continued competition from long term crops for scarce resources, especially water. The area planted to barley in the Western Cape has increased from just over 70 thousand hectares in 2014, to 85 thousand hectares in 2017. With irrigated barley also facing continued competition from longer-term crops, beer companies buying domestically produced barley are increasingly looking toward the Western Cape for supply requirements. Recently, production started extending into the Swartland region and over the course of the Outlook, the area cultivated to barley in the Western Cape is expected increase by an annual average of 2%. Irrigated production in the summer rainfall regions has declined sharply in the past 2 years, but following the introduction of improved cultivars over the next few years as well as an adjusted barley price linkage to wheat, some recovery is expected from 2019 onwards, before stabilising at around 9.5 thousand hectares in the longer term (Figure 33).

Growth in demand for wheat products slowed in recent years, as consumer income growth came under pressure from poor macro-economic conditions. Going

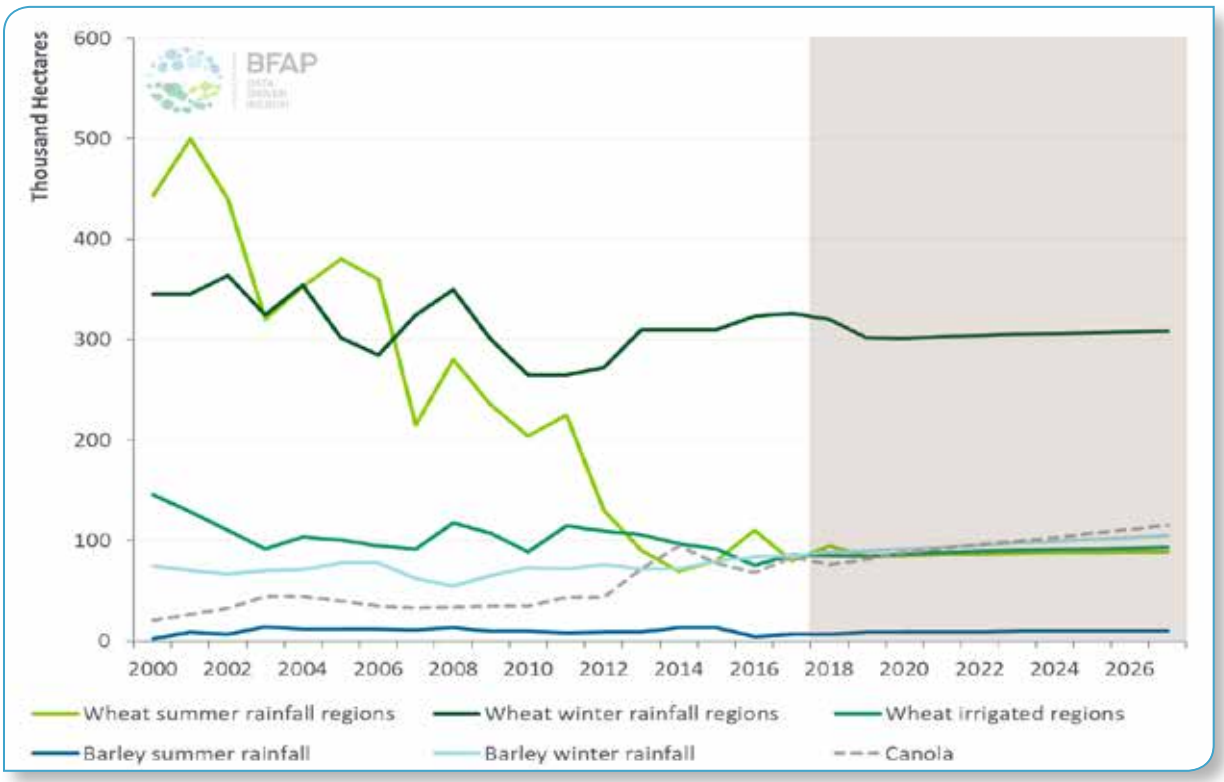


Figure 33: Winter grain area harvested: 2000 - 2027

forward, the renewed, if somewhat cautious optimism regarding economic and income growth combined with an expanding population, is expected to support wheat consumption growth of 1.2% per annum over the next decade. With little change in the national wheat area projected for 2027 relative to 2017, continuous yield gains are expected to support production growth of 1.8% per annum. This growth is recorded from a reduced base, as the 2017 crop declined 20% year on year as a result of the drought. This is expected to recover in 2018 based on a normalisation of rainfall in the Western Cape. By 2027, wheat production is expected to approach 2 million tonnes, suggesting that South Africa will require imports of approximately 1.85 million tonnes to fulfil domestic demand in 2027 (Figure 34).

Following a 5% year on year decline in wheat prices in 2017, a further decline of 6.5% is expected in 2018 as a result of further appreciation in the exchange rate. This appreciation of the Rand against other currencies affects the wheat price in two ways: Firstly, it reduces the cost of wheat procured in the international market, and secondly it reduces the level of the dollar based variable import tariff, which has declined from more than R1000 for most of 2016 to R437 in March 2018.

The 300 thousand tonnes of wheat that can be imported duty free from the European Union under the new Economic Partnership Agreement (EPA) further exacerbates the decline in producer protection. Despite the recovery in 2018, international wheat prices are expected to remain below the reference price of 279 USD per tonne, suggesting that the variable import tariff will remain active over the course of the Outlook period. As such, the expected price increase of almost 4% per annum over the course of the Outlook results mostly from a return to the long-term trend of exchange rate depreciation. The increase however is insufficient to outpace general inflation and in real terms, wheat prices are expected to decline marginally.

The need for a continued import tariff is justified by South African producers' inability to compete with international, particularly Northern Hemisphere counterparts, from a yield and production cost perspective. A sample of prototype farms across the globe reflects an average yield of 5.1 tonnes per hectare. Argentine farms averaged at 3.90 tonnes per hectare and South Coast farms in Australia at 3.20 tonnes

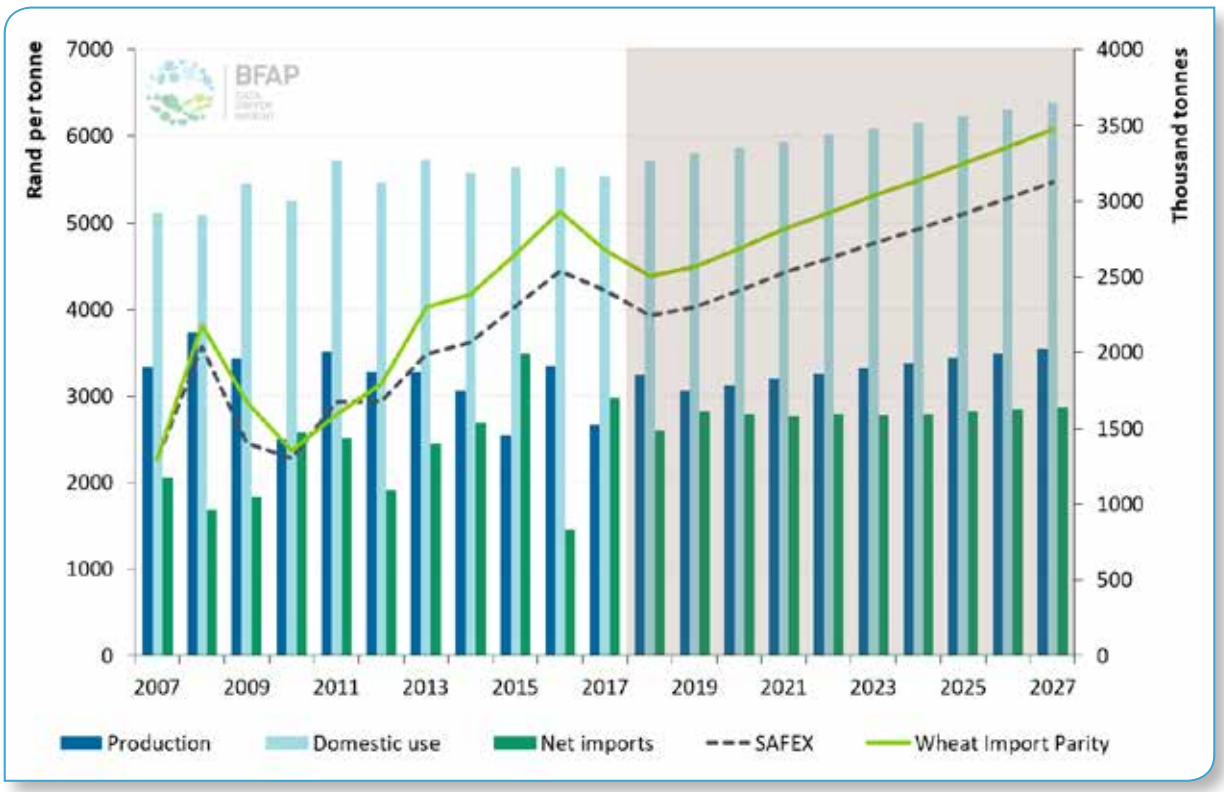


Figure 34: Wheat production, consumption, trade and price: 2007 - 2027

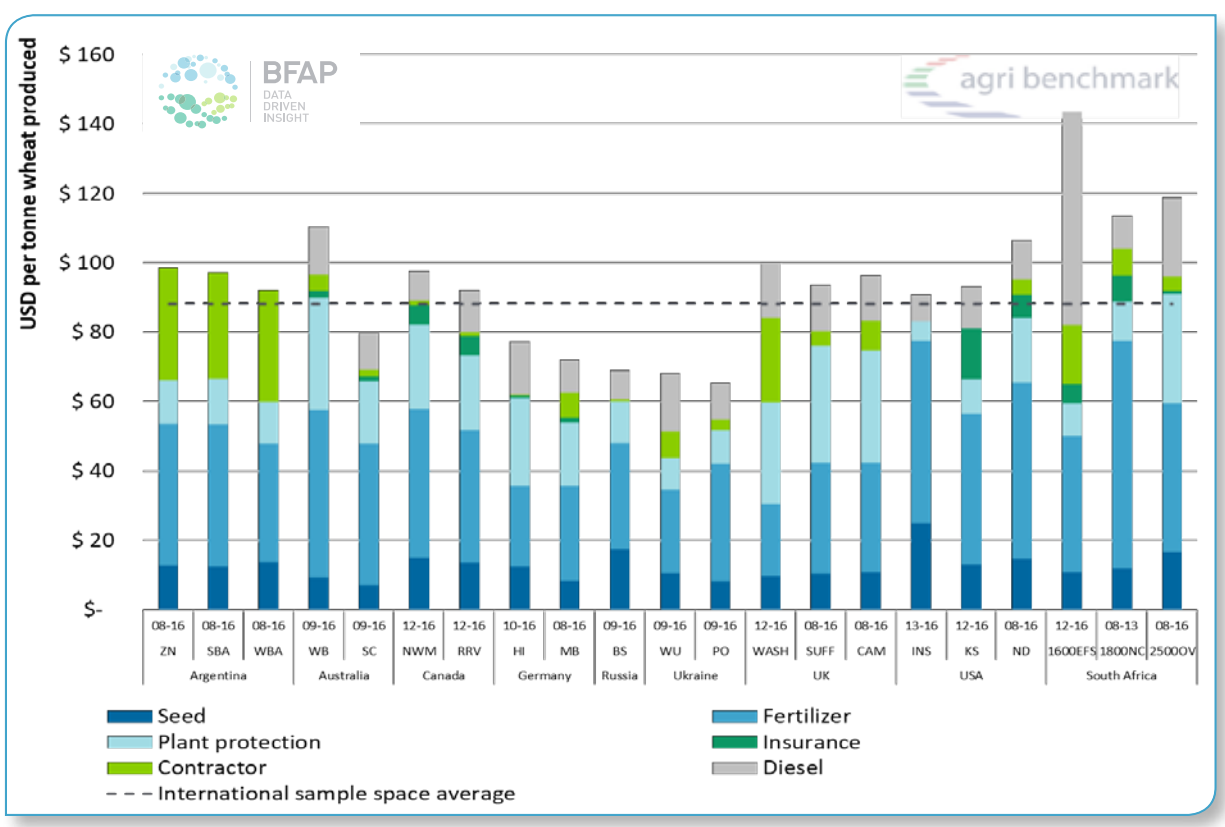


Figure 35: Wheat production costs in selected countries

per hectare. In Germany and the United Kingdom, producers attained an average yield of 8.80 tonnes per hectare in recent years. Figure 35 illustrates the cost to produce a tonne of wheat across key production regions globally. The international sample average across 18 regions in 8 countries amounted to a cost of US$88 per tonne wheat produced. Farms located in the Eastern Free State, Southern- and Northern Cape costs varied between US$113 (Northern Cape irrigation) and US$144 (Eastern Free State dryland) per tonne wheat produced. The competitive nature of Black Sea wheat is clearly observable from the graph. The average cost of production for Russia and the Ukraine amounted to US$68 per tonne wheat produced over the period from 2009 to 2016.

One option to mitigate the relatively high domestic cost of production is to increase yield levels through improved genetics. In the short run this however can only be done if less stringent quality requirements are set for domestic wheat, which is not necessarily desirable in terms of longer term demand and hence viability. The ideal is to produce both higher yields per hectare as well as high quality wheat. Despite trending in line with the import parity prices, domestic prices have traded at a discount to the import parity price for Hard Red Winter wheat since 2012. Domestic price levels have been more in line with Black Sea imports, which is typically of lower quality than South African wheat. This suggests that South African wheat trades at a discount to similar quality imported wheat. Figure 36 presents gross margins attained from wheat production under different scenarios, relative to the baseline. The scenarios are based on the production of a B2 quality wheat, which contains 1% less protein than grade B1 wheat, with higher yielding seed varieties. On average across regions, a 20% increase in yield at B2 quality, provides a margin improvement of more than 50%. The reduction in barley production emanating from the drought conditions in the Western Cape in 2017 was less pronounced than in the wheat market. This is due partly to the geographic location of barley production within the Western Cape with the Overberg area as the main area of production, and partly to the 3% increase in barley area relative to the 2016 barley area. Assuming normalised rainfall in the Western Cape in 2018, barley production is expected to increase by 12% year on year. In the longer term, the introduction of new cultivars in irrigated regions is expected to

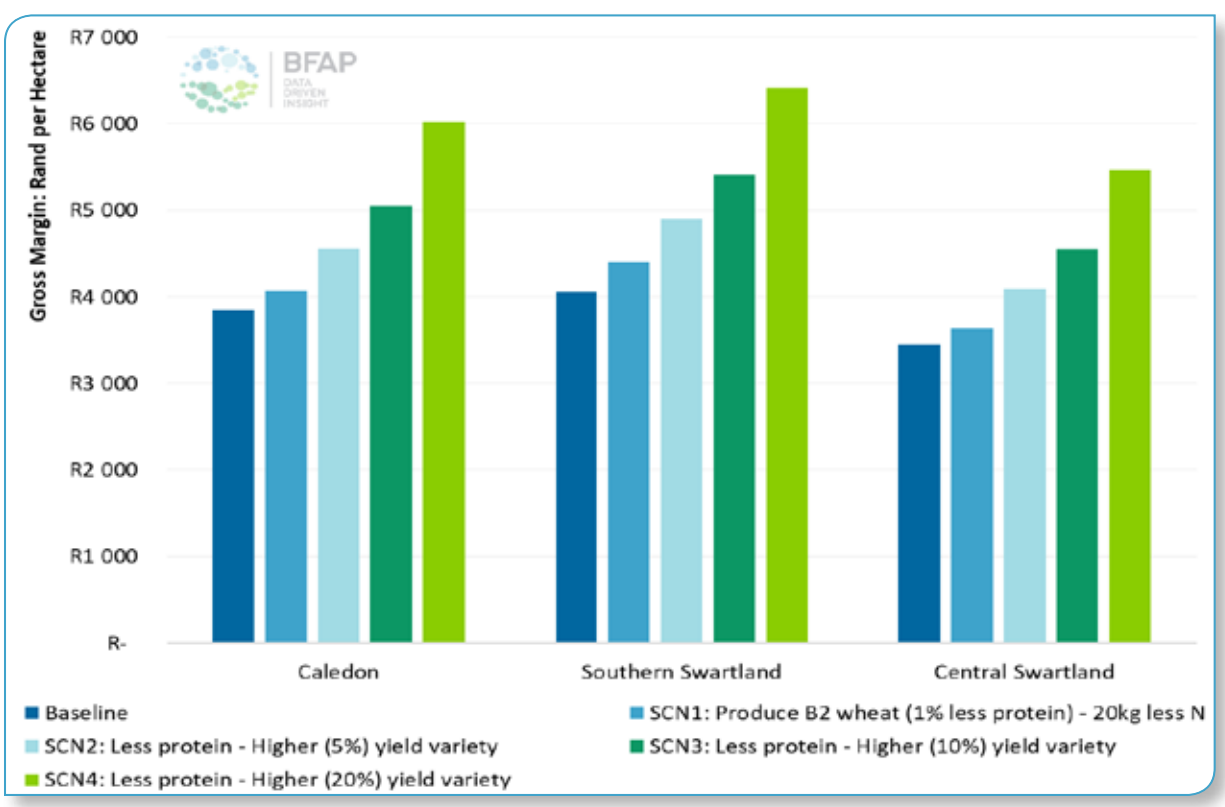


Figure 36: Gross margins from wheat production under different yield and quality scenarios

result in some area expansion, mainly at the expense of irrigated wheat. Combined with the area expansion in the Western Cape and continuous yield gains, this is set to support a production expansion of more than 3.5% per annum. The projections assume that the current pricing and contracting mechanisms historically employed is maintained and that cultivar research and development in the sector will be continued.

With expanded malting facilities south of Johannesburg operational, the demand for barley increased significantly in 2017, as domestically produced malt replaced previously imported volumes. Following this initial step change, the demand for malting barley is expected to slow significantly relative to the past decade, increasing by less than 1% per annum over the 10-year projection period. In the short term, the barley import requirement is expected to increase, due to the combination of reduced supply from the irrigation area, stock drawdown, and increased processing requirement. In the medium term however, the import requirement is expected to decline with South Africa reaching self-sufficiency in the latter years of the Outlook (Figure 37). Of the initial import requirement, 10 thousand tonnes can be imported duty free from the EU under the new EPA.

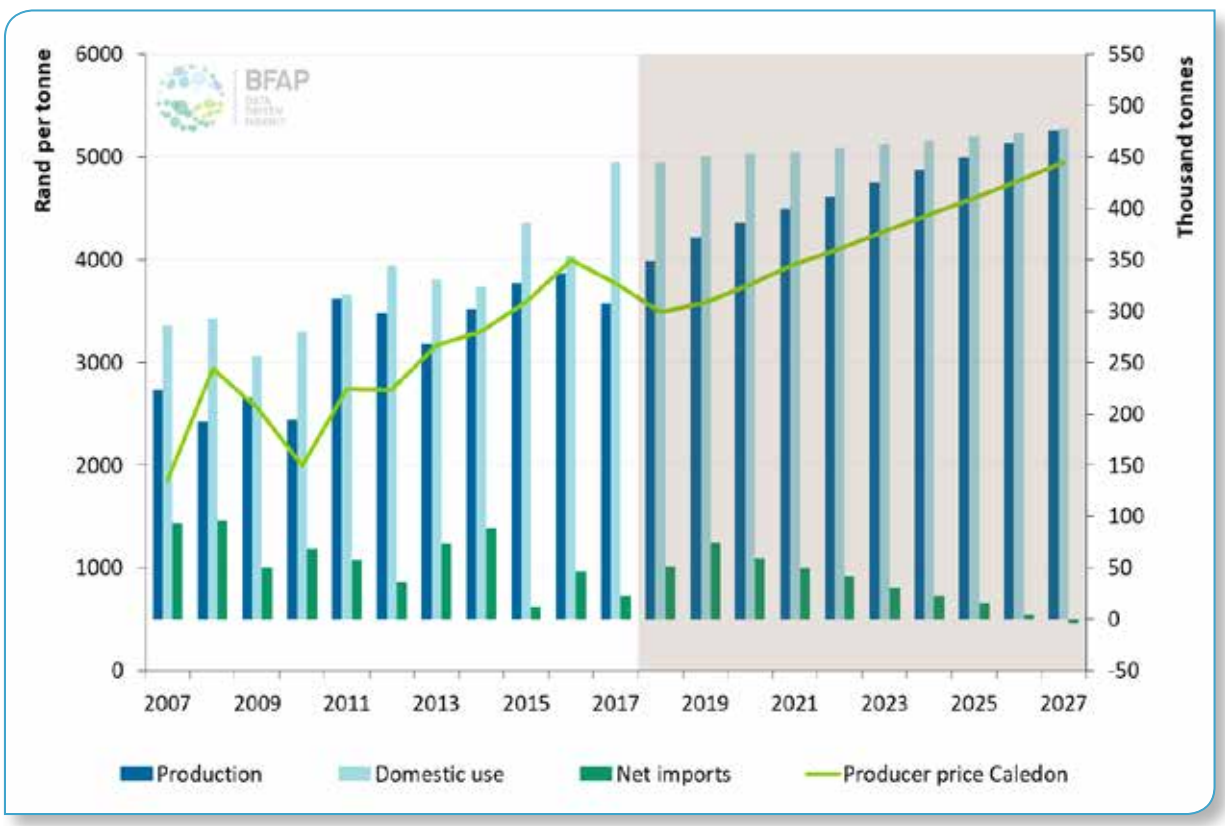


Figure 37: Barley production, consumption, trade and producer price: 2007 – 2027



OUTLOOK FOR FIELD CROPS

Soybeans have been the fastest growing field crop industry in South Africa over the past decade; area and production respectively increased by an average of 15% and 20% per annum.

OILSEEDS AND OILSEED PRODUCTS

GLOBAL OILSEED SITUATION AND TRENDS

After five years of relatively stable global grain and oilseed production, prices in 2017 declined to levels last observed in 2010. During the 2018/19 and 2019/20 seasons, nominal prices are projected to increase only marginally, supported by increased global demand (particularly in China) and ongoing livestock intensification in many emerging economies. Over the course of the next 10 years, prices trend largely sideways, with soybean, sunflower seed and canola prices all increasing by an average of less than 0.5% per annum over the ten year period.

Global soybean production is expected to increase on average by 0.7% per annum, significantly slower than the 2.1% per annum over the past decade (Figure 38). The slowdown in production is mainly driven by a deceleration in area expansion as general profitability in grains and oilseeds are under pressure due to lower prices. Over the past decade, the average CIF price for Argentinian soybeans in Rotterdam was US$470 per tonne, with existing prices trading around US$430 per tonne, expected to increase only marginally to 2027. Other oilseeds' production (canola, sunflower and groundnuts) are projected to grow by 1.6% per annum over the outlook period, also slower than the 3.1% of the previous decade. Production growth in all oilseeds is mainly driven by yield gains, though area expansion makes a larger contribution to soybean production growth than in the case of other oilseeds.

In the current production season, soybean area in the USA is expected to exceed maize area for the first time in history. The three leading soybean exporters – Brazil, United States and Argentina – are projected to account for 87% of world soybean trade over the next decade.

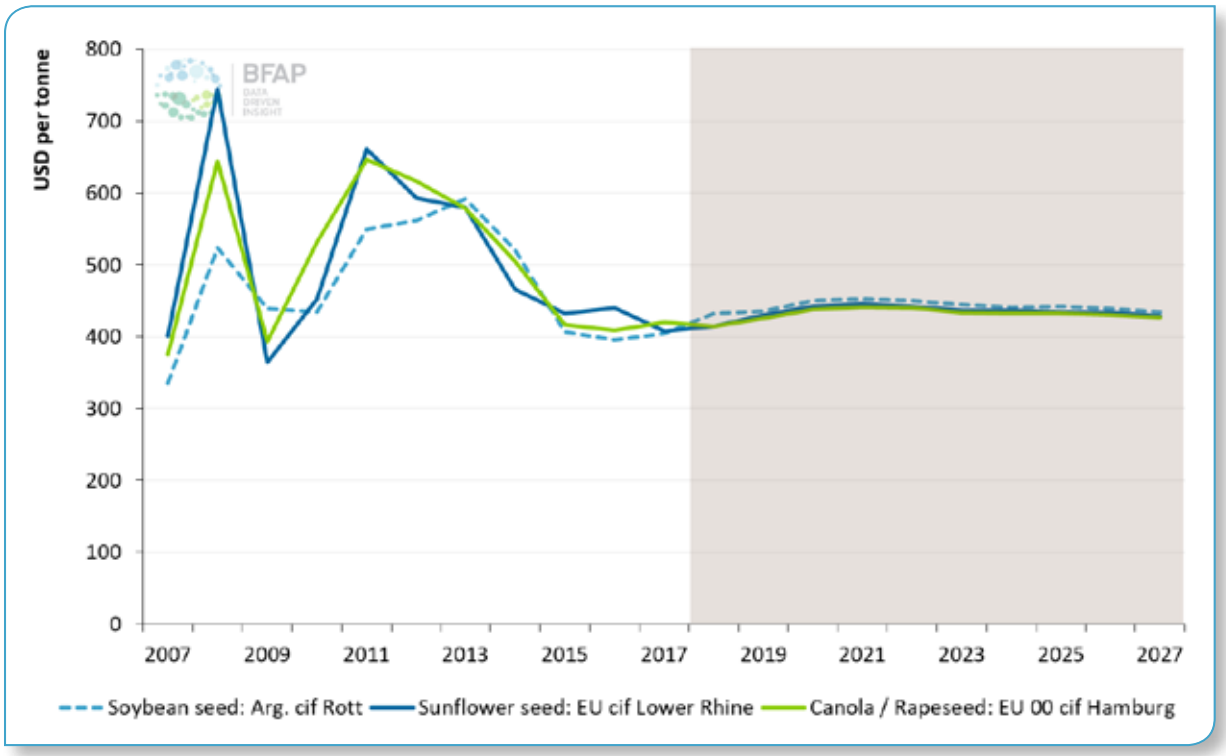


Figure 38: International oilseed prices: 2007 - 2027
Source: FAPRI & BFAP, 2018

Brazil's soybean exports are projected to rise to 96.4 million tonnes over the period 2018/19 to 2027/28. Possible changes to the tariff structure faced by US producers in China does however have the potential to alter trade patterns, as well as relative prices in North and South America going forward.

DOMESTIC OILSEED SITUATION AND TRENDS

In 2017, South Africa produced 1.3 million tonnes of soybeans on 574 thousand hectares. The substantial year on year increase in yield levels brought the national average to 2.29 tonnes per hectare; the highest on record. The Crop Estimates Committee reports that in 2018, the area planted to soybeans expanded to an all-time high of 787 thousand hectares, a 37% year-on-year increase. A return to longer term trend yields implies that production is expected at 1.55 million tonnes. This makes soybeans the fastest growing field crop industry in South Africa over the past decade; area and production respectively increased by an average of 15% and 20% per annum. Over the outlook period, the area cultivated to soybeans is projected to continue expanding by an annual average of 2.9%, to reach 962 thousand hectares by 2027. In 2017, the average soybean price fluctuated around R4600 per tonne, a year on year decline of 29% on the back of lower international prices and a strengthening of the Rand. Over the course of the Outlook, the SAFEX price is projected to trade between import and export parity, with the derived price for the cake and the oil determining a relative benchmark for the local price.

In addition to expanding area, projected production growth (Figure 39) is underpinned by an average annual yield gain of 2% per annum over the outlook, which is faster than the yield improvements observed over the past decade. There are a number of trends to consider with regards to projecting future soybean yields. Firstly, there is a rapid increase in the number of soybean varieties available for planting. Secondly, the area under soybean production has increased rapidly and western production regions that have traditionally been regarded as marginal areas for soybean production are gradually coming into production. Thirdly, producers have continued adapting production techniques, resulting in more stable and improved yields.

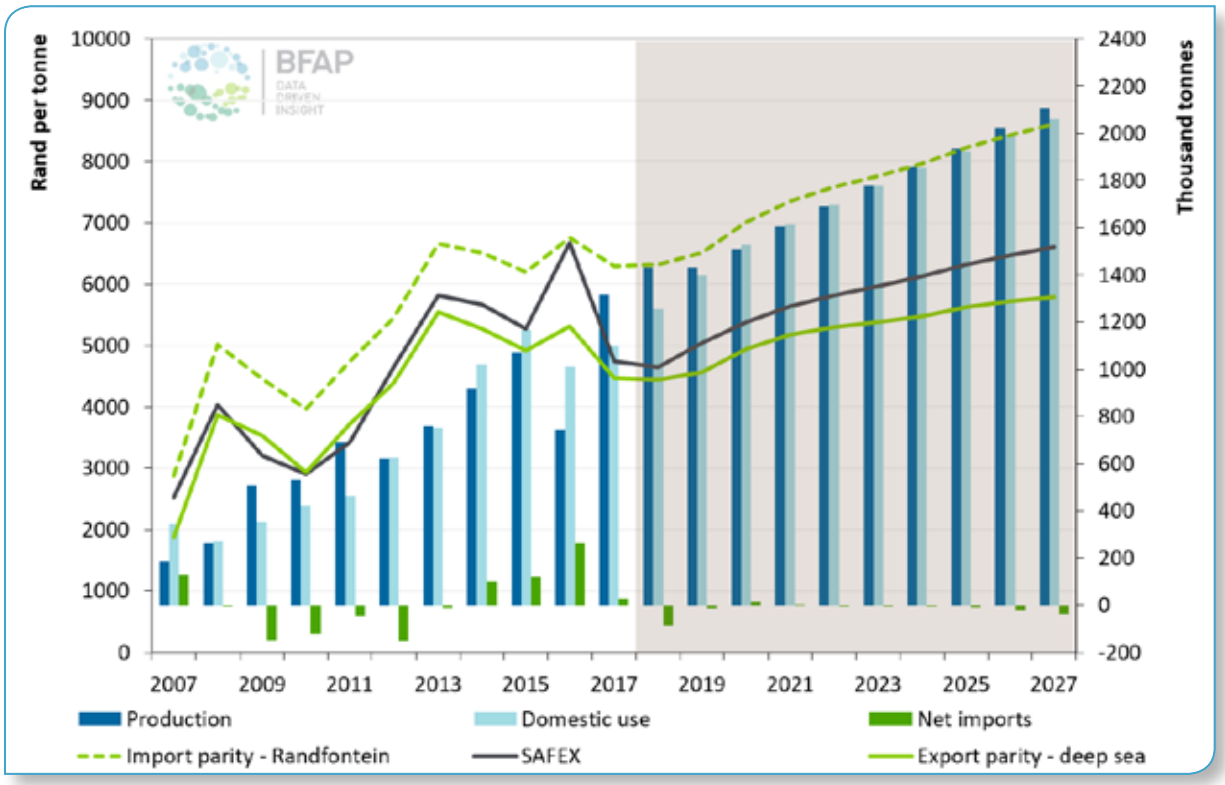


Figure 39: Soybean production, consumption, trade and prices: 2007 - 2027

Therefore, combining these three trends and despite the significant variation in yields in recent years, South Africa managed to produce a soybean crop with an average yield of 2.29t/ha on 574 000 ha in 2017. It must however be said that the 2017 crop was grown under favourable climatic conditions with some soybeans also planted on fallow areas carried over from 2016 due to the drought. In the current season, average yields have fallen back to an estimated 1.97t/ha due to less conducive climatic conditions. The view is therefore, although volatile weather conditions have not allowed average yields in recent years to reflect the full potential of improved seed varieties, improved farming practices and investment in suitable mechanisation, these investments are expected to start paying off in the next few years. This assumption rests on the premise that the investment will be maintained and the End Point Royalty system introduced successfully.

Although seed companies have over the last number of years invested in bringing an increased number of soybean varieties (with a wider range of climatic adaptability) to the market, current market information indicates that companies are not willing to introduce the latest seed technology in South Africa without an End Point Royalty system. This could have a significant impact on the competitiveness of South African soybean farmers, who are facing very stiff competition from the major international soybean producers not only from a yield perspective, but also from the ability to produce a consistent bean quality. Considering a 20-year period, the average annual yield increase for soybeans in the United States was 1.46%, while yields increased by 1.33% in Brazil and 0.64% in Argentina (Table 8). Despite the influence of recent droughts on average yields in the short term, South African soybean yields increased marginally at 0.43% per annum. On average over the 20-year period, South Africa's average soybean yield was 40% lower than the average achieved in the three leading soybean-producing countries (Figure 40).

As was the case with maize, the exceptional soybean crop in the 2017 production season is also visible in other farm-level competitiveness indicators such as the cost of production. Figure 41 illustrates the cost to produce a tonne of soybeans across the globe with South African farms located on the right. Previous

analysis indicated that local farms are less competitive compared to international counterparts such as Brazil, Argentina and the United States of America.

This is driven mainly by lower yields and higher cost for selected input items. Figure 41 indicates that the Eastern Free State prototype farm has spent US$140 on average to produce a tonne of soybeans whereas the Northern Free State farm, newly introduced into the BFAP network of prototype farms[3], spent an average US$97 per tonne soybeans produced. The international sample spent an average US$116 per tonne soybeans produced, with an average yield of 3.16 tonnes per hectare. Argentine farms located in Zona Nucleo and Western Buenos Aires have spent between US$68 and US$79 to produce a tonn to produce a tonne of soybeans with average yields of 4.1 and 3.5 tonnes per hectare respectively.

Domestically, it will remain key to pursue higher yields, in a more productive manner in order to enhance the competitiveness of producers. More importantly, and in particularly for the Western production regions, it is essential to reduce annual yield volatility in order to reduce the relative production risk of soybeans against its alternatives. In Figure 24, it was illustrated that soybean gross margins are projected to outperform maize in 2018 and for several regions in 2019. However, the resilience of maize and sunflower in less favourable growing conditions reduces their production and financial risk at farm-level relative to that of soybeans, emphasising the need to also reduce soybean yield volatility.

The area under sunflower production decreased by 12% in 2017 to 635 thousand hectares, which resulted in 874 thousand tonnes of sunflower seed produced at an average yield of 1.38 tonnes per hectare. Over the outlook, the area under sunflowers is expected to decline marginally, yet additional demand will be comfortably met by increasing yields. Sunflower yields are projected to increase by an average of 2.2% per annum over the outlook period, reaching 1.65 tonnes per hectare by

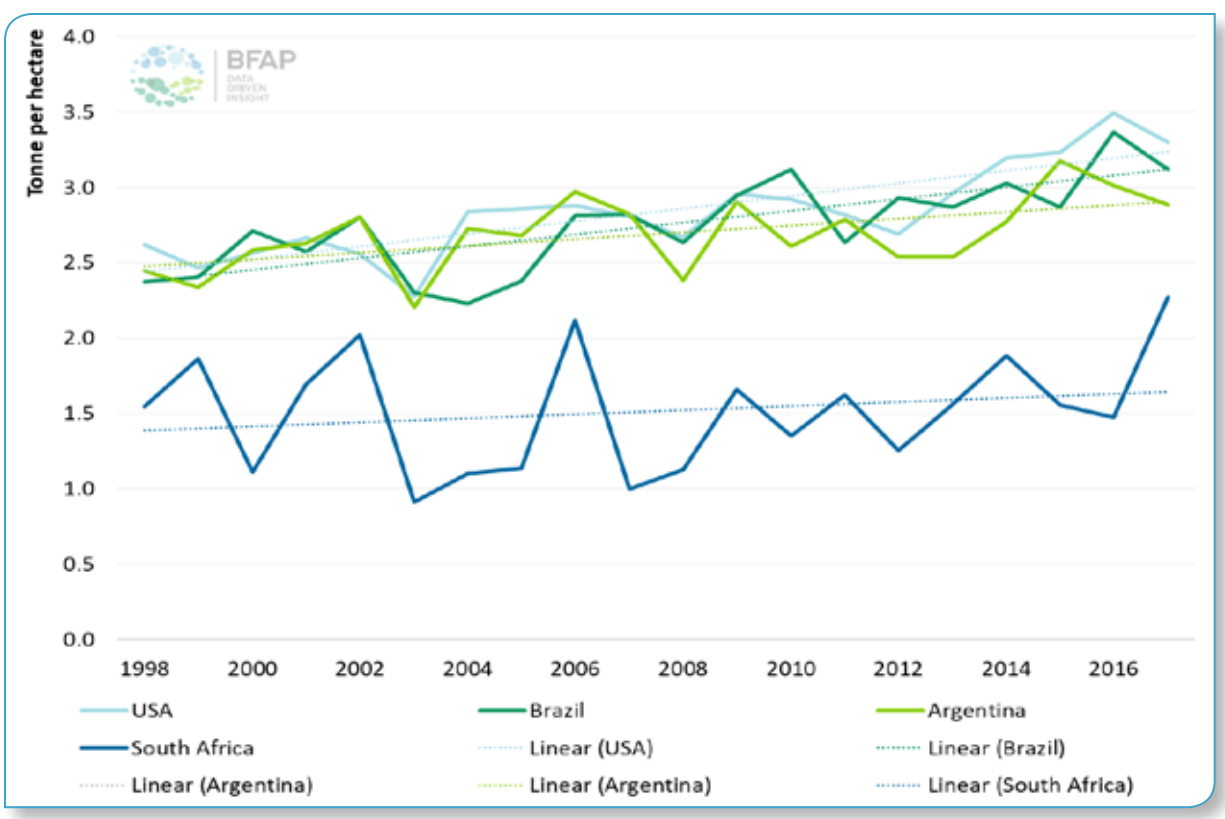


Figure 40: 20-year historic soybean yields

[3] Due to limited farm-level data availability for soybean production in the Northern Free State region, the results only denote a specific farm scenario for the 2017 production season and is not necessarily a representation for the region. Continuous collection of data will allow for more accurate trends.

Table 8 - Annual average soybean yield increase between 1998 and 2017

Country	Percentage
USA	1.46%
Brazil	1.33%
Argentina	0.64%
South Africa	0.43%

2027 (Figure 42). This projected yield growth is based on the assumption of stable rainfall and continuously improved cultivars. Over the past 5 years, average yields have not reflected the potential of current varieties, due to adverse weather conditions in the form of extreme droughts and temperatures in four out of the five seasons. Furthermore, the adoption of the latest release of high-yielding cultivars with Clearfield® technology that significantly reduces weed pressure and increases yields is rapidly gaining ground, which is expected to improve average yields going forward.

Sunflower supply and demand is expected to remain finely balanced over the next decade and consequently prices are projected to trade between export parity and the derived price for oil and cake (Figure 42). When the local market moves into a temporary surplus, prices tend to decline to export parity levels, which increases crushing margins and therefore crushing levels. In 2017, the average sunflower SAFEX price decreased by 30% to R4607 per tonne, trading very close to export parity levels due to high stock levels following a bumper crop. Responding to the reduction in production levels, the sunflower price is expected to trade above export parity in 2018, at an annual average of approximately R4700 per tonne. The long run equilibrium price over the projection period remains above export parity.

After doubling the area under canola production from 44 thousand hectares in 2012 to 95 thousand hectares in 2014, the industry has consolidated somewhat with the area under production in the Western Cape fluctuating between 70 and 85 thousand hectares in recent years. Although concrete gains in yields (2.6% average annual increase) have been achieved due to the introduction of improved cultivars, effective technology transfer and improved farming practices, gains have been achieved from a small base and canola still faces stiff competition from wheat and barley on a gross margin per hectare basis. The real economic value of canola only comes into play when it is incorporated in a rotational cropping system (Figure 32). Sensitivity analysis around gross margins revealed that canola production has vast potential, but under higher yield assumptions.

In 2018, canola area is expected to decrease by approximately 10%, as late rains in the Southern Cape are affecting plantings. Industry specialists also suggest that there seems to be a concern around sufficient access to the higher yielding cultivars that have proven to be effective in the past few seasons. Figure 43 illustrates that canola yields in the Southern Cape production region are lagging behind Northern Hemisphere producers. The international sample average amounts to 3 tonnes per hectare whereas the average yield for the Overberg farm over the period from 2008 to 2016 equals 1.5 tonnes per hectare. When it is compared to other Southern Hemisphere countries such as Australia, the Southern Cape prototype farm performed relatively well. However, when the cost of production is considered, the Southern Cape farm lags well behind Australia. In the 2016 production season, the average cost to produce a tonne of canola in the wheat belt and South Coast area of Australia ranged between US$128 and US$148 per tonne whereas the Southern Cape farm spent US$174 per tonne canola produced. The higher cost on the Southern Cape farm was mainly driven by the cost of seed and fertilisers.

Going forward, canola area is projected to increase by an average 3.2% per annum to 115 thousand hectares by 2027. The average yield is projected to increase to 1.67 tonnes per hectare, resulting in a projected harvest of 192 thousand tonnes in 2027 (Figure 44). Under the current projections, total current crushing capacity of 175 thousand tonnes will be reached by 2024. The average canola price decreased by 13% in 2017 to R5 600 per tonne and is projected to continue trading between import and export parity over the outlook period, reaching R7025 per tonne by 2027. This implies an average annual increase of 3%, less than general inflation and hence a modest decline in real terms.

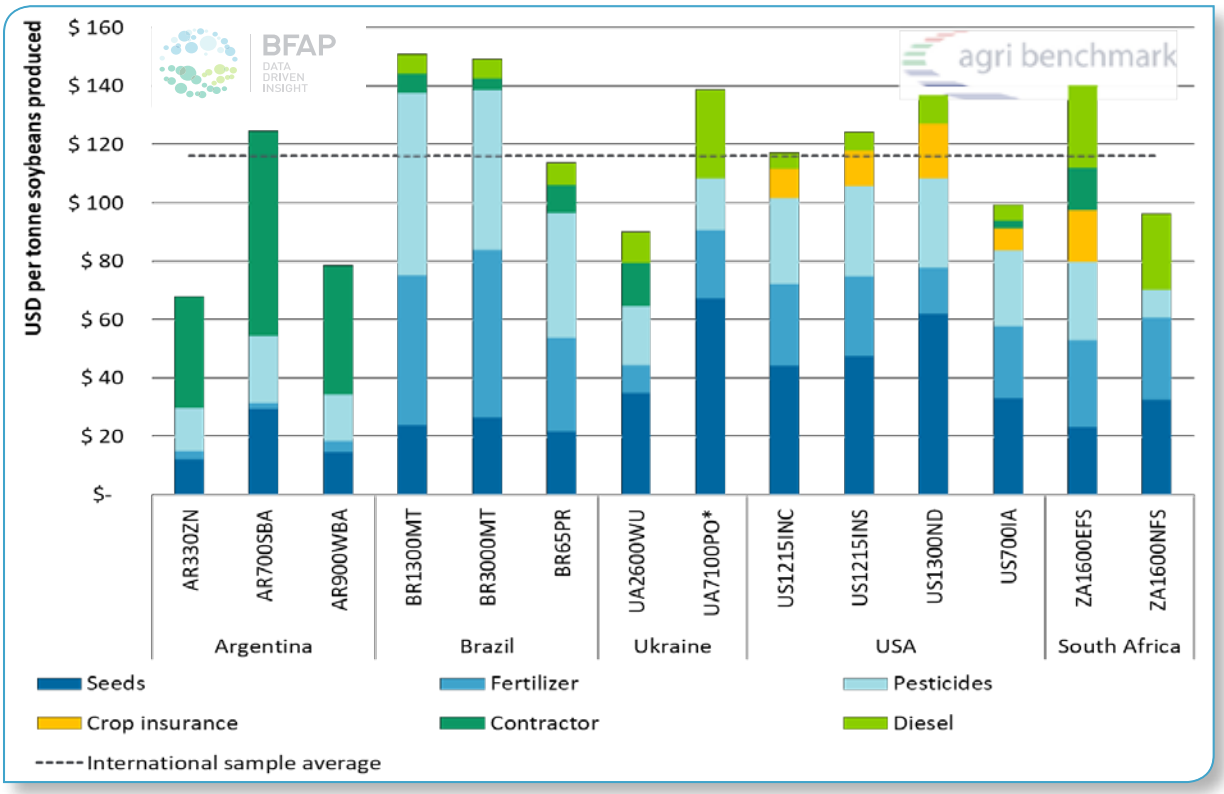


Figure 41: Soybean direct expenditure for the 2017 production season
Source: agri benchmark & BFAP 2018.

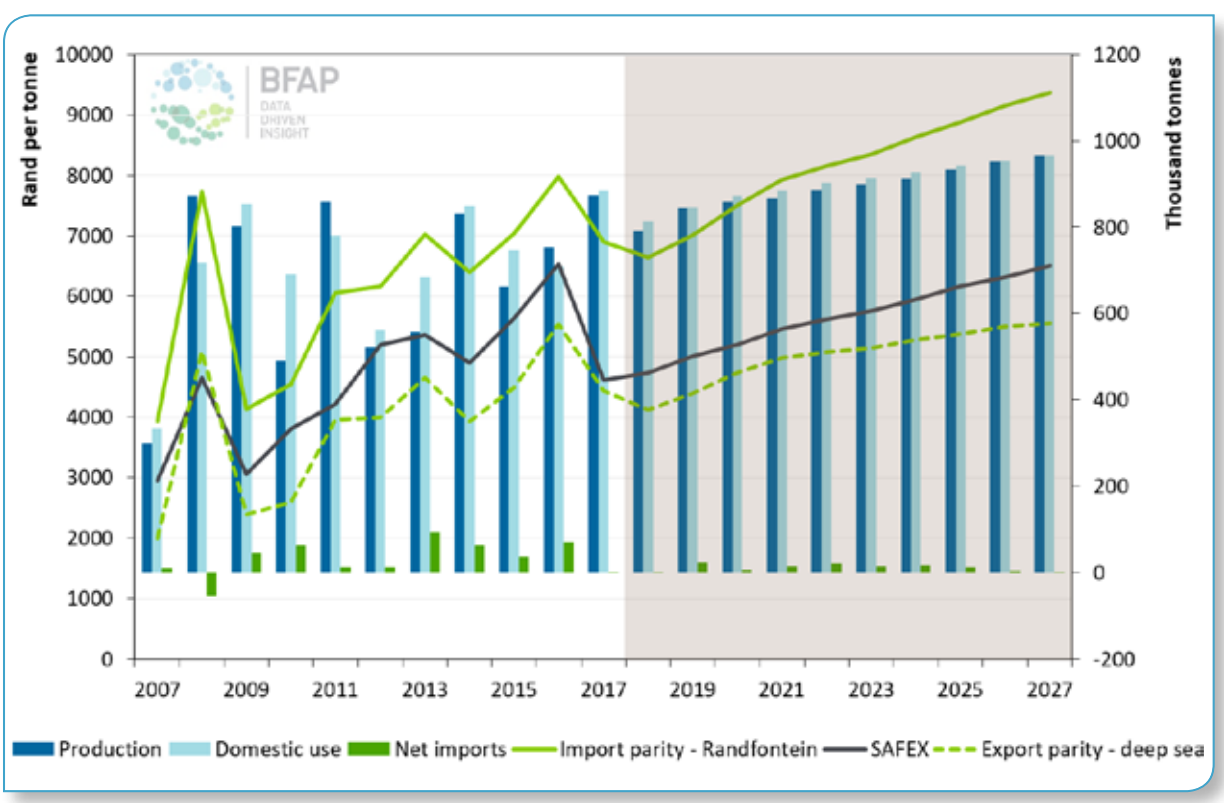


Figure 42: Sunflower production, consumption, trade and prices: 2007 – 2027

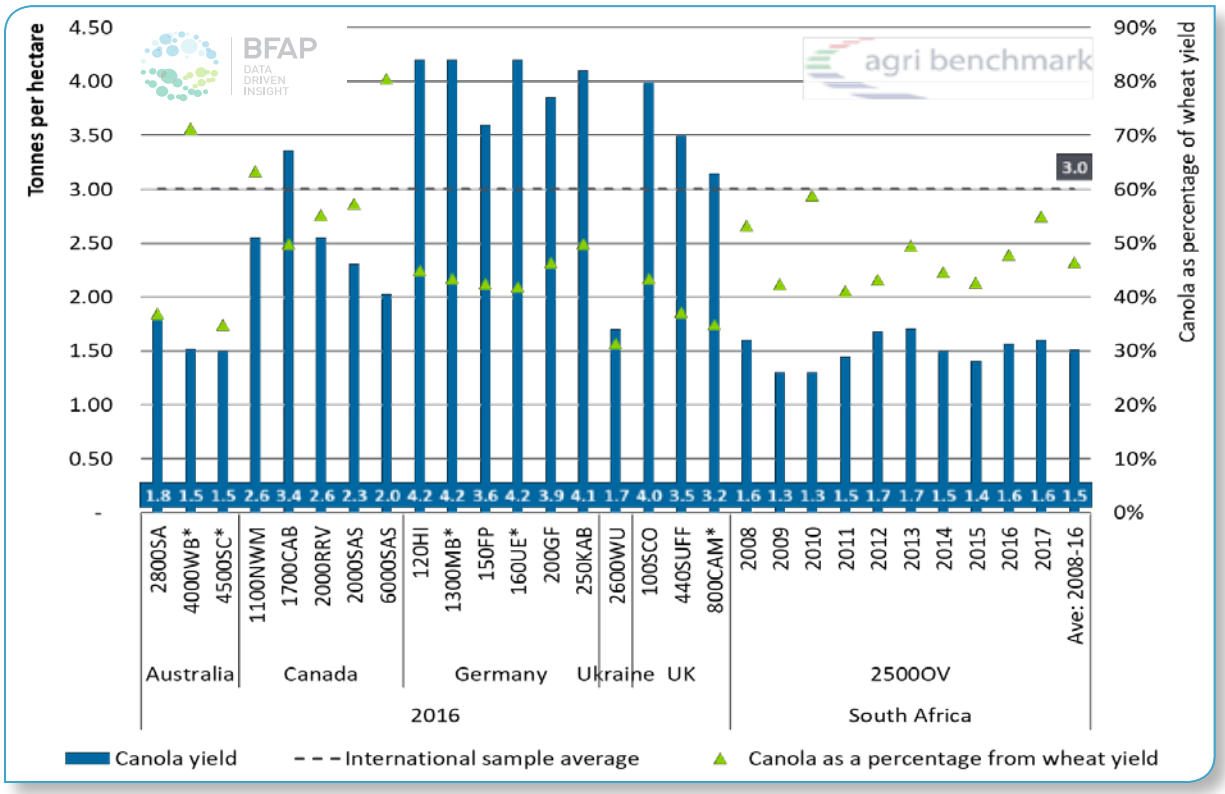


Figure 43: Canola yield trends across the globe
Source: agri benchmark, BFAP & Overberg Agri, 2018

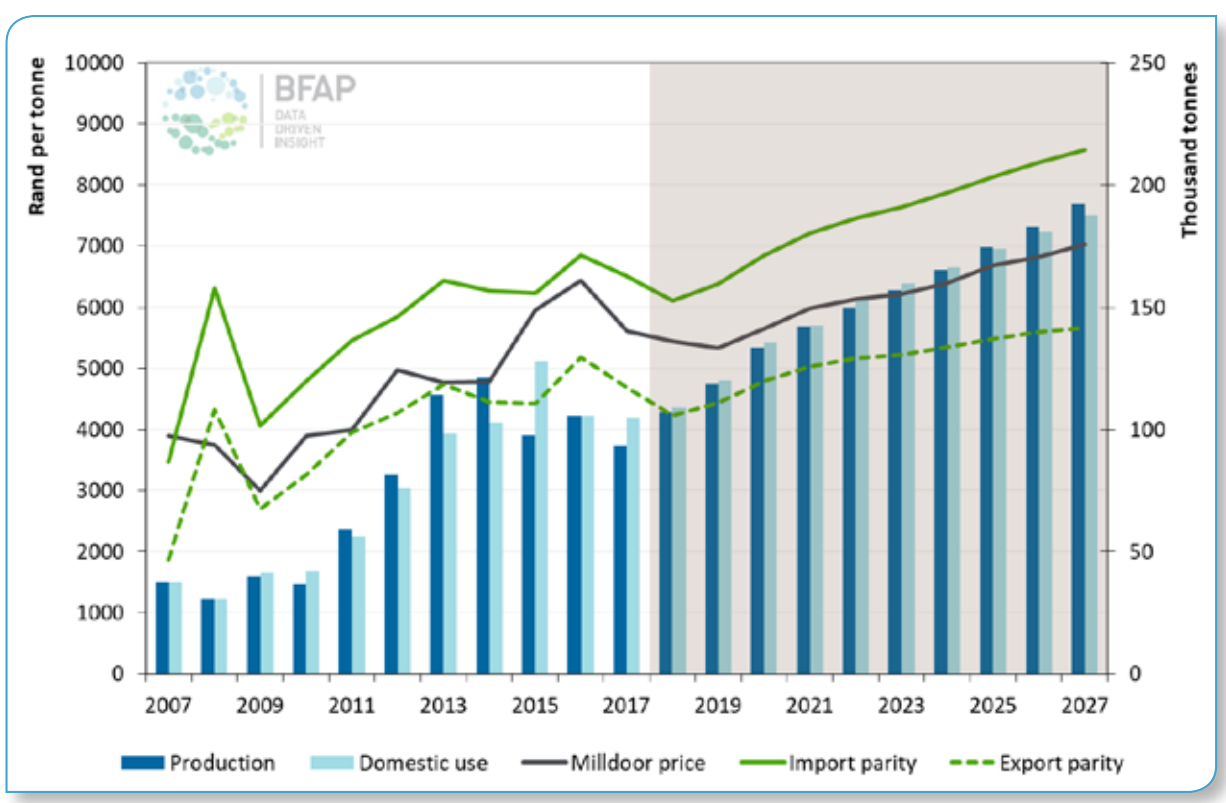


Figure 44: Canola production, consumption and prices: 2007 - 2027

OILCAKE

GLOBAL OILCAKE SITUATION AND TRENDS

In 2017, soybean, canola and sunflower oilcake prices all decreased – soybean and canola oilcake prices only marginally at 4% and 3% respectively, but sunflower oilcake quite significantly by 23%. Soybeans constitute the largest share of the global oilcake market, owing to its high protein content that make it popular in animal feed rations. Over the past decade, growing demand from China's expanding livestock sector, which has also intensified and therefore increased the share of protein meal in total feed rations, has been the primary driver of expansion in the global oilseed market. Whereas China's oilcake consumption expanded by an annual average of 7.1% per annum, the OECD-FAO projects a slowdown to 1.7% per annum over the next 10 years.

In light of the projected slowdown in livestock production growth globally compared to the past decade, combined with the protein meal share in Chinese feed rations reaching a plateau, global oilcake consumption is also projected to slow to an annual average of 1.6%, compared to 4.2% over the past decade. At lower price levels since 2015, supply has consolidated somewhat, with the 2018 season also influenced by adverse weather conditions in South America. Following an initial short-term recovery, soybean prices are projected to stabilise at just under US$400 per tonne post 2020. Sunflower and canola oilcake prices are projected to follow a similar trend, but to remain well below soybean oilcake prices due to the lower protein content and some limitations in the extent of their use for non-ruminant feed rations.

Domestic oilcake situation and trends

Since 2012, 1.75 million tonnes of dedicated soybean crushing capacity has been established in South Africa, which represents a total capital investment of approximately R2 billion. Figure 46 presents the current and future utilisation rate of this crushing

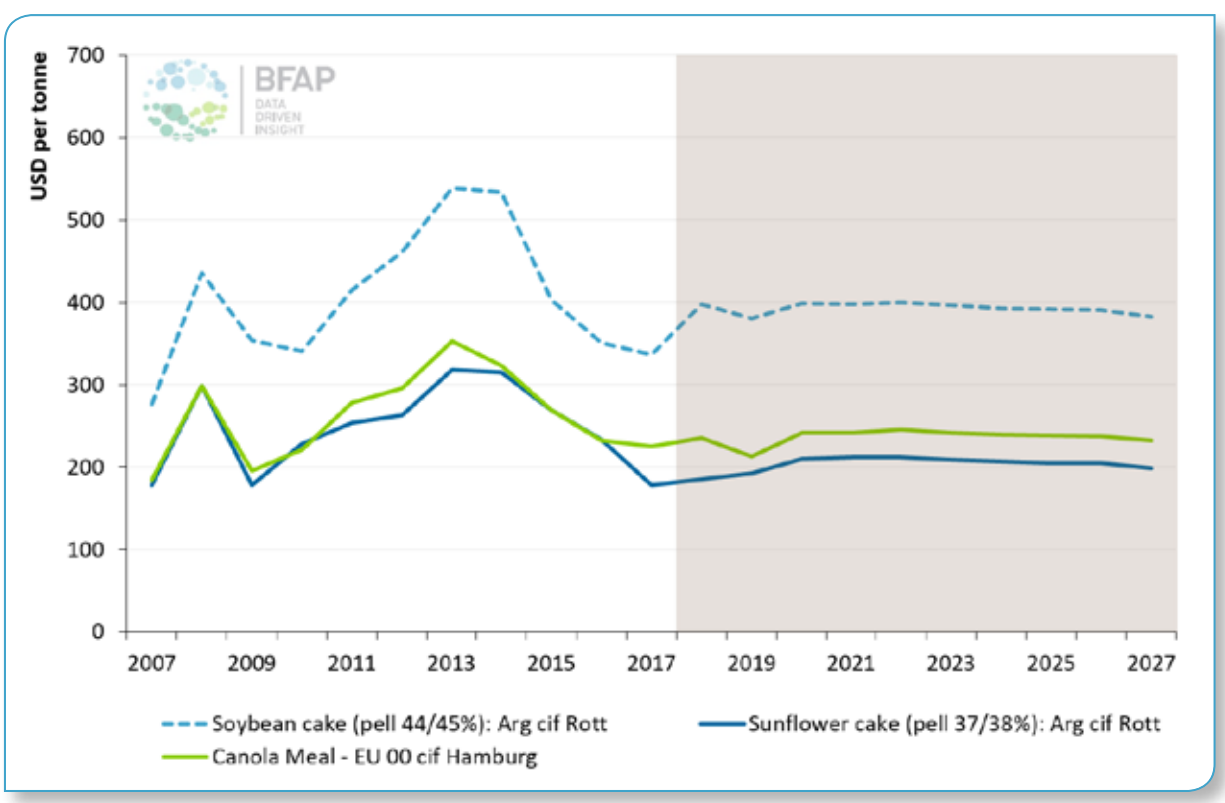


Figure 45: International oilcake prices: 2007 - 2027

capacity based on the projected production levels under the Baseline. In 2017, 891 thousand tonnes of soybeans (68% of South Africa's soybean crop) were crushed, which is projected to increase to 75% in 2018 (1.06 million tonnes). Currently, the local demand for soybean cake exceeds the local levels of production, and despite the fact that the development of the new crushing plants has resulted in progressive replacement of imports by local production, there is still a significant amount of soybean cake that is being imported.

The combined effect of local oilcake production and concurrent imports of soybean oilcake from alternative sources at competitive prices, is creating a situation whereby the domestic market at times finds a surplus of oilcake available. The net result is that the price formation of soybean seed is starting to change to reflect a derived price from cake and oil, rather than soybeans simply trading on its own fundamentals. It also implies domestic crushing plants have to compete against imported oilcake produced mostly in mega plants in Argentina, where soybeans are sourced at export parity prices. This is putting significant pressure on domestic crushers to continuously improve efficiencies, capacity utilization, and to beat the quality of imported oilcake.

Despite its noted importance, prices are not the only driver in the evolution of the South African soybean cake market. The current (2017/18) marketing year is a case in point, with soybean prices trading closer to export parity levels following an estimated crop of 1.55 million tonnes and positive crushing margins that should boost the uptake of soybeans in the crushing market. However, the demand for locally produced soybeans remains subdued, firstly due to a crushing plant on the Reef having to close down following an explosion and fire damage, which reduced the available crushing capacity by 150 thousand tonnes and secondly because some chicken producers in SA still prefers imported soybean cake above the locally produced cake. The result is that around 450 thousand tonnes of soybean cake will likely be imported in the current season despite the fact that South Africa can supply a significant share of this volume locally.

There are many debates around the local quality of the domestic soybean cake versus that of the imported

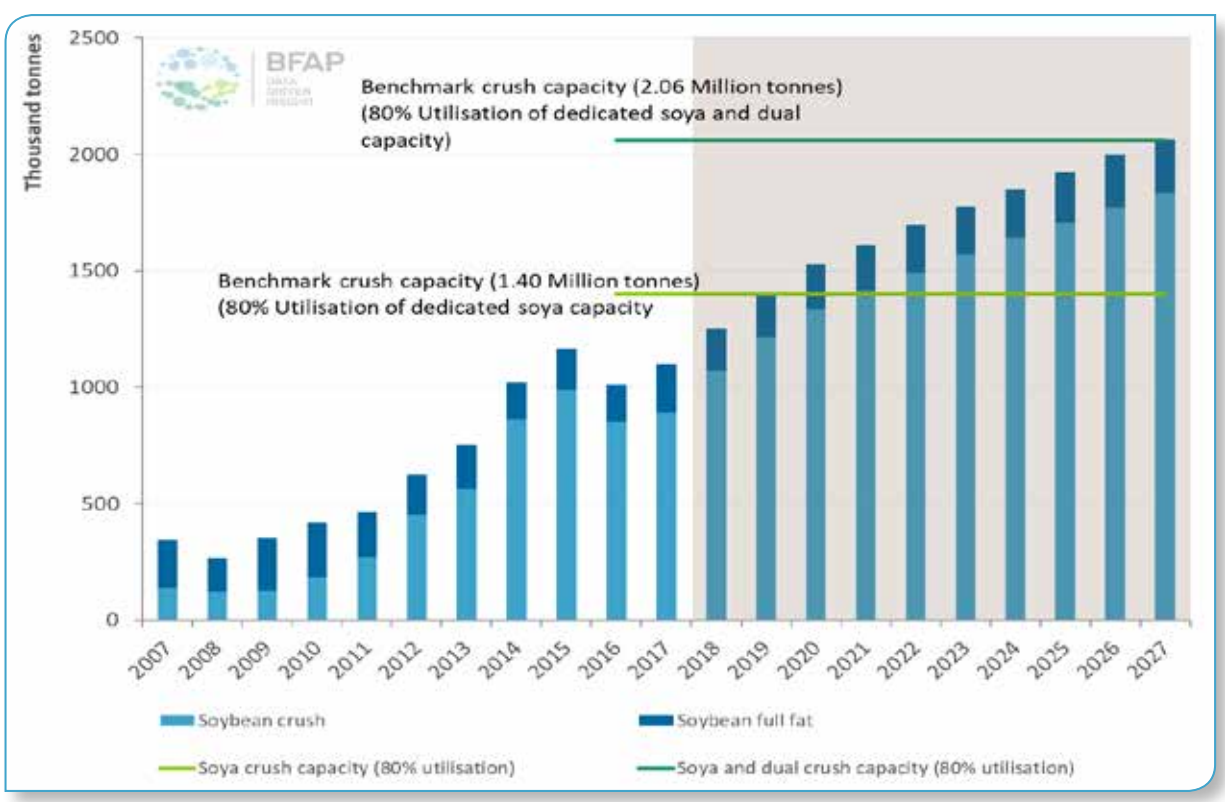


Figure 46: Soybean crush demand in South Africa: 2007 – 2027

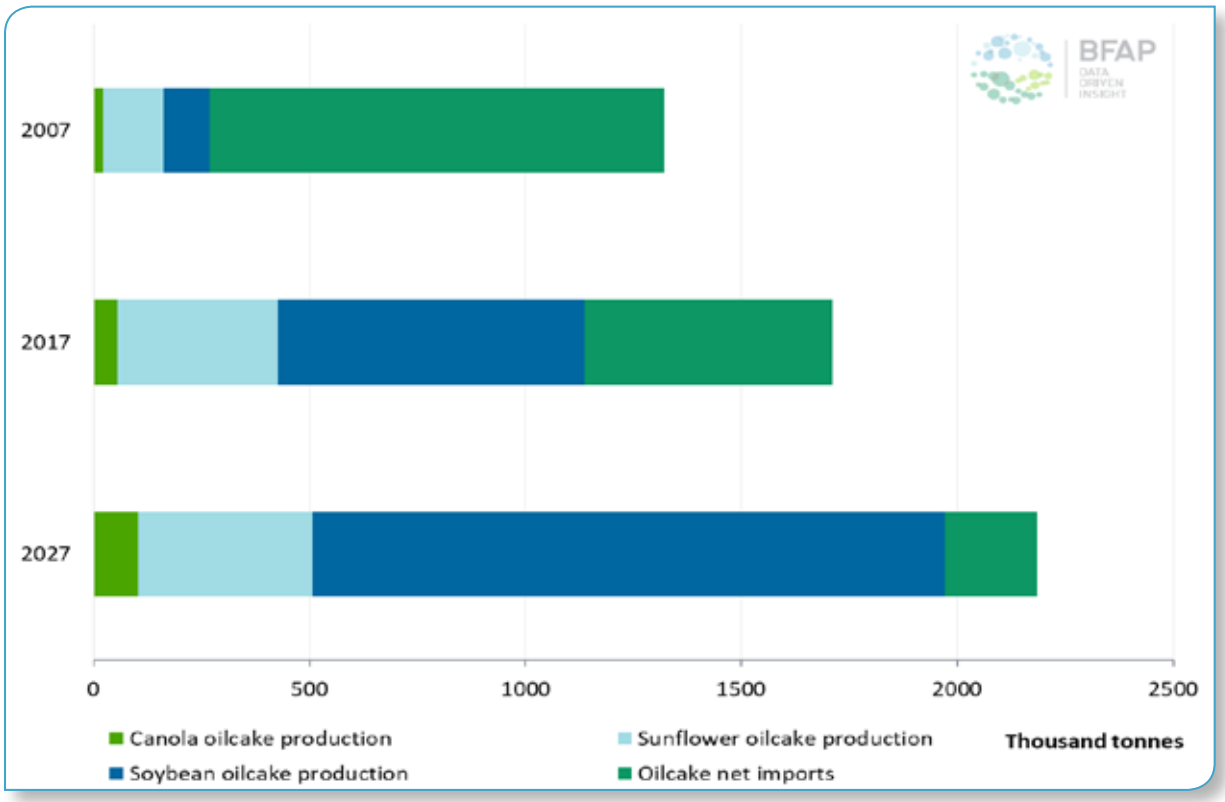


Figure 47: Oilcake supply and demand in South Africa

cake. Results from comparative studies are becoming increasingly available and typically illustrate that South African soybean cake is on par with imported cake. It is therefore anticipated that the current question around quality will be resolved and it is only a matter of time before uptake of locally produced oilcake relative to imported oilcake will increase. The sensitivity around the quality of the soybean cake underlines the fact that the quality and consistency of oilseed that is delivered to the crushing plant also plays a significant role in the economics of the soybean value chain.

Figure 47 provides an oilcake supply and demand summary: the sum of domestic production and net imports accounts for the total South African oilcake demand. Total oilcake demand increased by nearly 30% over the past decade to 1.7 million tonnes in 2017 and is projected to increase by a further 28% to 2.18 million tonnes by 2027. Oilcake import replacement by local production is clear from Figure 47: Merely 20% of total oilcake demand was supplied locally in 2007, which increased to 67% by 2017. It is projected that 90% of total oilcake demand will be supplied by local facilities by 2027. Dominant in the oilcake complex, soybean oilcake consumption reached 1.2 million tonnes by 2017, and is projected to rise further to 1.56 million tonnes by 2027. Besides soybeans, canola oilcake consumption has grown by a rapid 14% per annum during the past decade, which is projected to slow to 6% per annum over the next 10 years, in line with the slowdown in canola production expansion. On average, canola oilcake has the lowest protein content amongst the major oilcakes at 34% and hence soybean meal (up to 48% protein) is generally preferred for intensive livestock production. The high fibre content and lower level of bypass protein, which is important in many ruminant feeds, constrains the utilisation of canola oilcake and therefore substitution of soybean oilcakes only occurs at exceptionally low prices. It has however been used successfully in the dairy industry and with production projected to expand by approximately 46 thousand tonnes over the next decade, dairy farms in the Western Cape will represent the bulk of the canola oilcake market.

GLOBAL VEGETABLE OIL SITUATION AND TRENDS

Per capita food use of vegetable oils continued to grow in both developed and developing countries, though at a much faster rate in the developing world. Palm oil contributes 35% of the world's vegetable oil production whereas soybean and other oilseeds (canola, sunflower seed and groundnuts) contribute 55%; the rest is palm kernel, coconut and cottonseed oils. The OECD-FAO (2018) projects further palm oil production growth in Indonesia (1.9% per annum) and Malaysia (1.5% per annum) over the next decade.

Globally, 41% of total vegetable oil production is traded, with Indonesia and Malaysia dominant in the market. Over the course of the Outlook period, the OECD-FAO expects this share to remain fairly stable. At current policies, the uptake of vegetable oil as feedstock for biodiesel will remain virtually unchanged over the next decade (0.4% per annum growth) compared to 8.6% per annum growth over the past decade. While the global canola and soybean oil prices increased by an average 9% in 2017, the average sunflower oil price decreased by 7.3% (Figure 48). Over the course of the next decade, vegetable oil prices are projected to trade largely sideways in nominal terms, hence declining in real terms. In light of its recent decline, the price of sunflower oil is projected to increase marginally by an average of 1% per annum over the projection period.

DOMESTIC VEGETABLE OIL SITUATION AND TRENDS

Total vegetable oil demand (including palm oil) increased by an average 3% per annum over the past 10

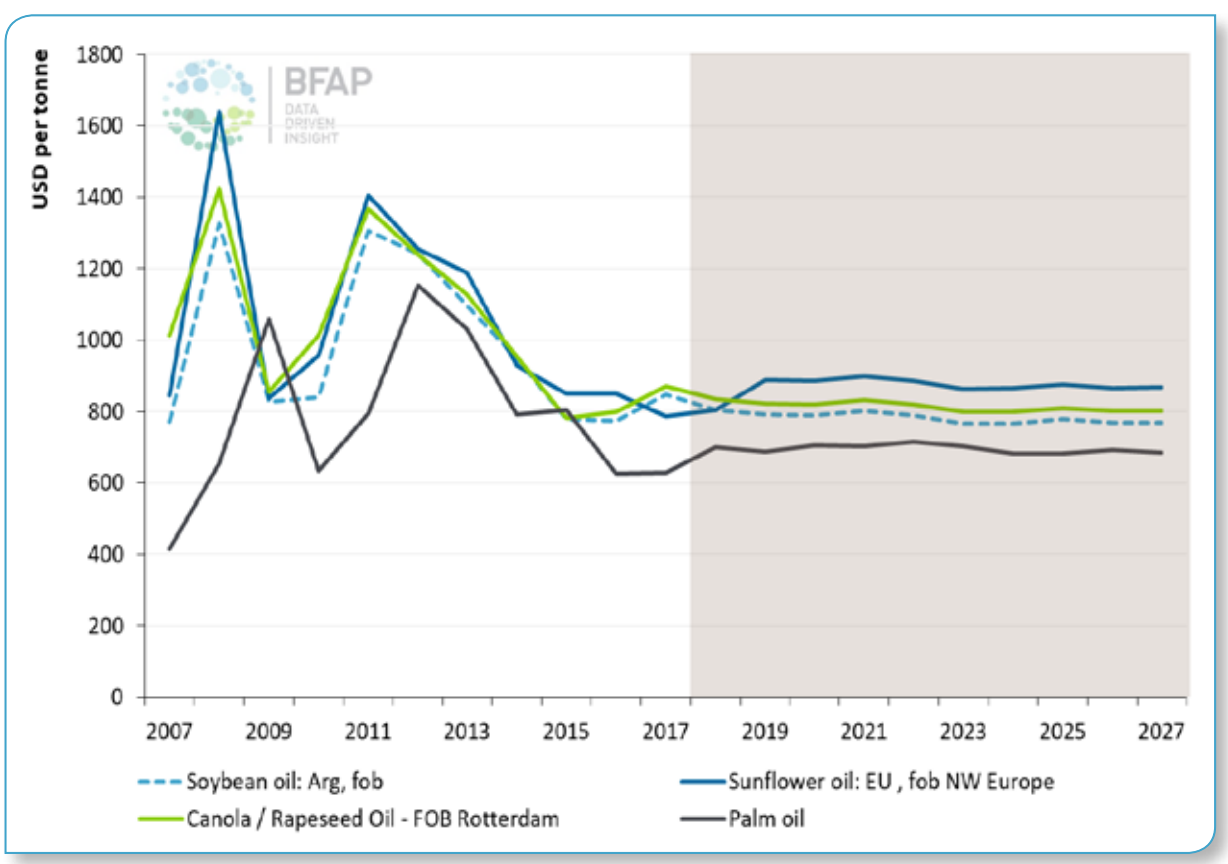


Figure 48: International vegetable oil prices: 2007 - 2027

years. Of this consumption, 41% was produced locally in 2017. Palm oil imports rose from 300 thousand tonnes in 2007 to 468 thousand tonnes in 2017 (a 57% increase) however, the palm oil share of total vegetable oil consumption increased only marginally from 33% in 2007 to 35% in 2017. Canola oil consumption on the other hand increased by an annual average of 10% over the same period, albeit from a very low base. Sunflower and soybean oil consumption increased by an average 2% per annum. Over the Outlook period sunflower oil consumption is projected to increase by an annual average of 1.3%, whereas canola and soybean oil consumption is projected to expand by 3.7% and 1.7% respectively.

Over the coming decade, sunflower oil production is expected to expand by an annual average of 1.8%, in line with the slowdown in sunflower seed production. Canola and soybean oil production on the other hand are expected to grow much faster at an annual average of 5.9% and 5.6% respectively, over the same period. By implication, the share of imports in terms of total domestic consumption continues to decline (Figure 49).

Given that imports remain a significant share of total consumption, vegetable oil prices have traditionally been well integrated in international markets. Consequently, the domestic sunflower oil price followed international markets lower and decreased by 15% in 2017. Canola and soybean oil prices remained largely unchanged, as the rise in international prices was offset by a strengthening of the Rand – Dollar exchange rate. Going forward, sunflower, soybean and canola oil prices are projected to increase by an average 3.7%, 3% and 3.1% per annum respectively. These increases remain below general inflation, implying a slight decline in real terms.

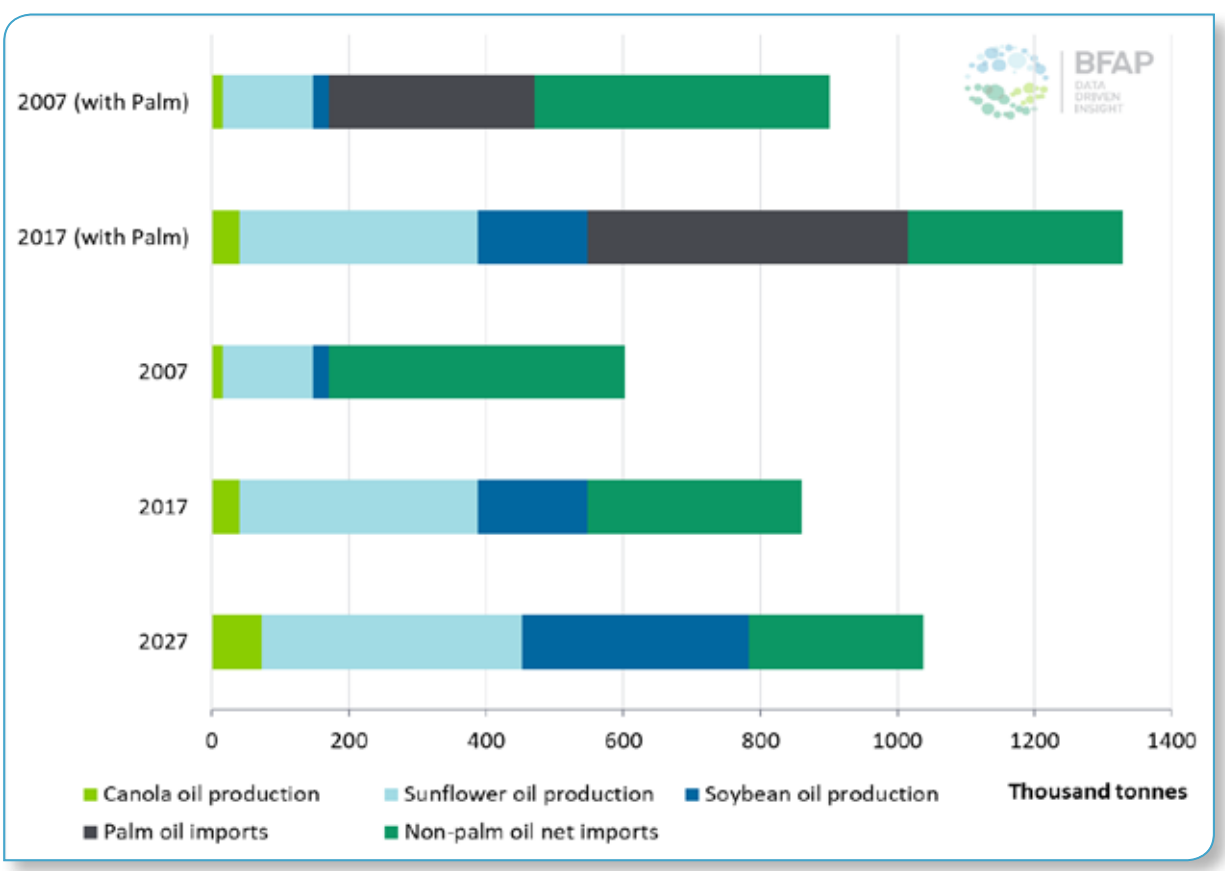
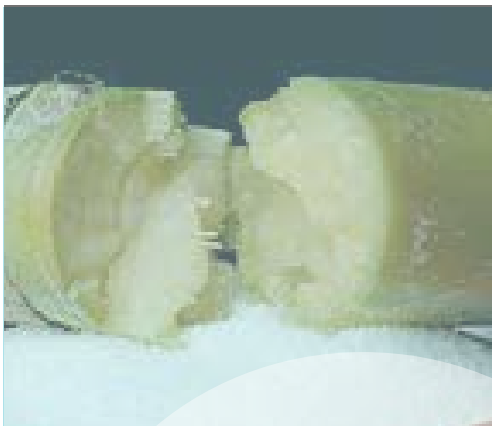


Figure 49: Vegetable oil supply and demand in South Africa





OUTLOOK FOR FIELD CROPS

Domestic production just about equalled domestic consumption and under the single export desk legislation, a volume equal to imports was also exported, in order to maintain local prices.

SUGARCANE AND SUGAR

THE 2017 SEASON saw the return to normal yields, following dry seasons in 2015 and 2016. Domestic production just about equalled domestic consumption and under the single export desk legislation, a volume equal to imports was also exported, in order to maintain local prices. Imports were substantially higher due to the extremely low world price, higher local market price, a low level of tariff protection for a large part of the year, and for seven weeks, from August to September 2017, there was no import tariff in place at all. Importers benefitted during this period, when just over a 160 thousand tonnes of sugar was imported duty free into South Africa. In total, 795 thousand tonnes of sugar had to be exported at the low world price level, with the effect that the average price payable to farmers decreased by 16%. This average price effect is likely to carry over into 2018 (Figure 50).

In 2017, the amount of sugar used domestically in South Africa was slightly lower than the previous three years and industry suggests a possible slight under-reporting due to the high level of imports and stocks, as well as some initial reformulation away from sugar by major beverage producers in anticipation of the Health Promotion Levy (sugar tax - HPL). The 'success' of the HPL is not apparent yet, but over the short to medium term it is likely that the tax could have a negative impact on the local sugar industry, as sugar that was used in the beverage sector will now have to be exported at a price level that is below the cost of production. However, due to the growing middle class, as well as a growing population, domestic consumption is expected to remain relatively stagnant over the outlook period (Figure 50).

New and improved chemical control of the African

sugarcane borer Eldana saccharina has over the last year or two enabled, especially coastal farmers, to harvest more mature cane, resulting in higher cane and sugar yields. However, at the current 566 US$ dollar based reference price and an average RV price of around R4000/tonne for the next couple of years, reinvestment in new ratoons and improved production practises will not make economic sense in a number of production regions. In June 2018, the sugar industry was in advanced talks with Government regarding a higher import tariff and due to the industry's considerable socio-economic footprint in some of the poorest rural areas of South Africa, the industry is likely to receive further protection. However, due to the dwindling profit margins over the last number of years, several farmers are moving away from sugarcane and it is expected that the sector will lose another 50 thousand hectares over the outlook period with less reestablishment of cane on marginal lands and farmers turning to alternative crops, where possible (Figure 51). A higher import tariff will stem the loss of cane area, but farmers diversifying into long term crops (macadamias, avocadoes, citrus etc.) will not switch back to cane, as establishment of these crops is extremely capital intensive. On the other hand, an import tariff that could result in higher local market prices could lead to industrial sugar users increasing the rate at which alternatives to sugar are being considered and used. Reduced cane production, due to low returns and diversification, results in reduced cane throughput at mills, reducing mills' economic viability. Mill closures have devastating consequences due to the additional transport cost, to the next closest mill. Cane transport at a distance of more than 80 kilometres becomes unviable unless subsidised by the miller and this will ultimately result in the cane area decreasing at a faster rate, shedding more jobs and destroying livelihoods. The increase in the fuel price, due to the weaker exchange rate and higher oil price are also not assisting the economics of cane farming.

It is likely that if this economic climate continues, role-players in the South African sugar industry will have to make a number of tough decisions in the near future.

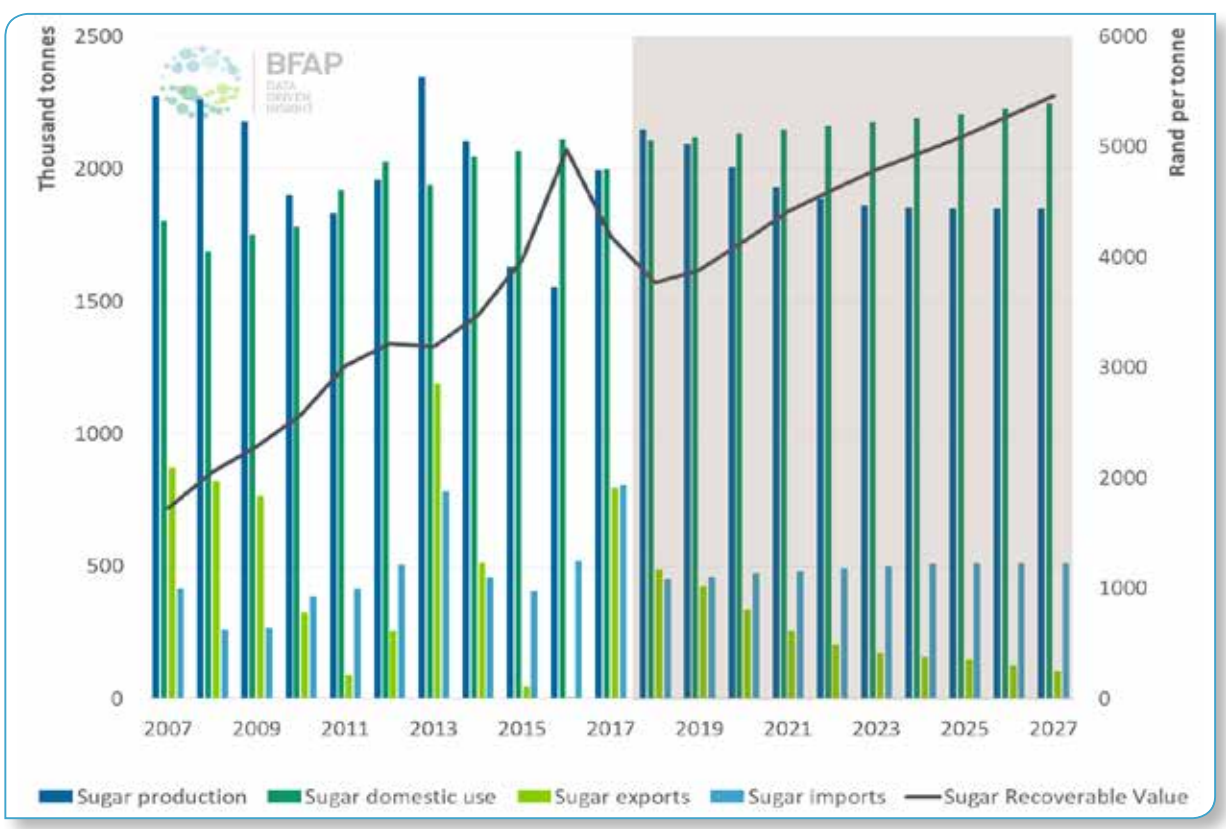


Figure 50: Sugar production, consumption, trade and prices: 2007 – 2027

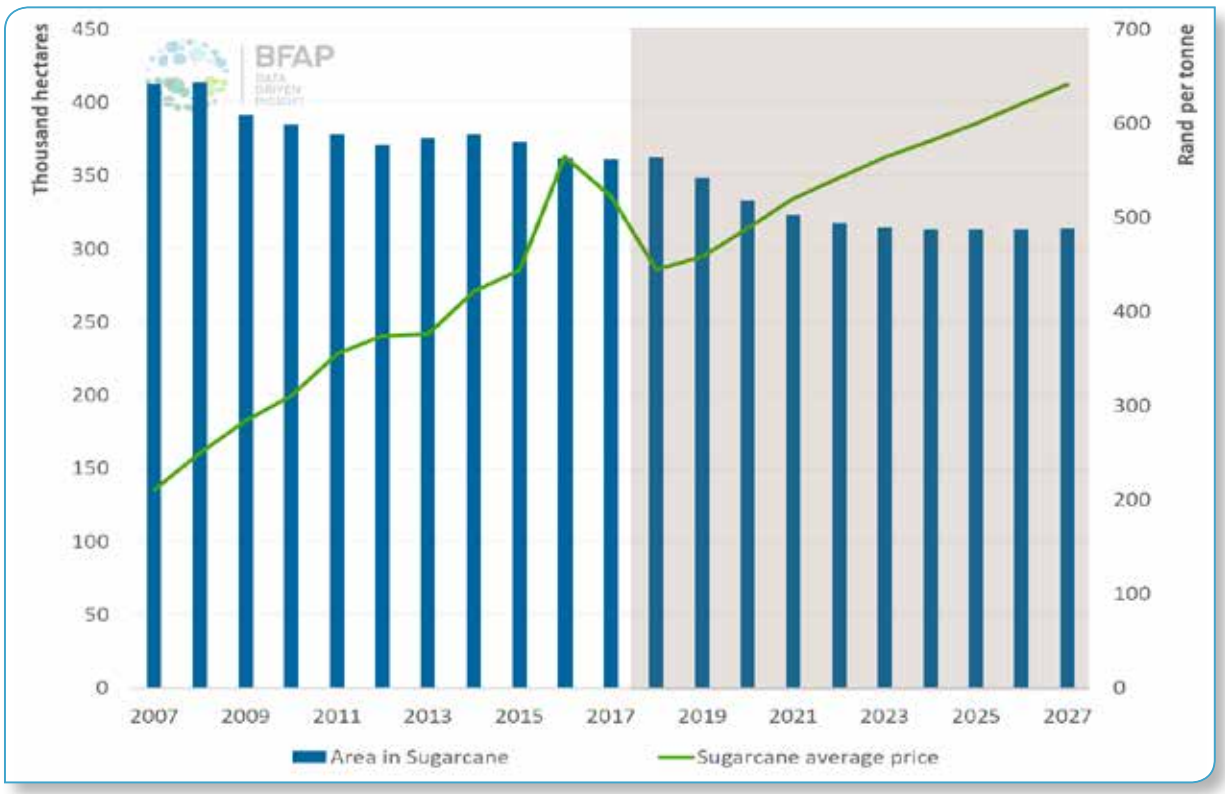
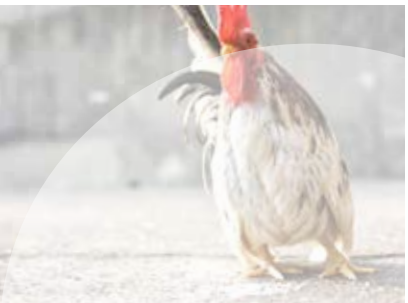


Figure 51: Sugarcane area and price in South Africa



OUTLOOK FOR ANIMAL PRODUCTS

In China, the world's largest meat producer, meat production increased very little overall in 2017, mainly because poultry production was constrained by several outbreaks of Avian Influenza.

MEAT

MEAT: GLOBAL MARKET OVERVIEW

In 2017, global meat production increased by 1.25%. The bulk of the expansion originated in the USA, with smaller contributions from Argentina, India, Mexico, the Russian Federation and Turkey. In China, the world's largest meat producer, meat production increased very little, mainly because poultry production was constrained by several outbreaks of Avian Influenza (AI). Given limited production growth, prices increased and the FAO meat price index was, on average, 9% higher in 2017 relative to 2016. The increase was underpinned by significant import demand for both beef and pork meat over the first half of the year, as well as constrained export supply of sheep meat. Through the middle of the year, prices stagnated and declined somewhat in the face of rising export supplies.

The OECD-FAO outlook projects rising meat supply in 2018, resulting in declining prices in the short term. As additional supply from an ongoing herd rebuilding cycle enters the market, beef prices are expected to bottom out in 2020, before increasing once more over the second half of the coming decade (Figure 52), supported by growing per capita consumption globally, as well as expanding populations in regions such as Asia and Africa. Other meat prices also trend marginally upwards, though the cycle is shorter for meats such as chicken, where the shorter production cycle allows a faster supply response (Figure 52). The continued cycle of lower feed grain prices will support meat production growth of 15% by 2027 relative to the 2015-2017 base period. Poultry remains the major contributor to additional production. As evidenced by the impact of numerous AI outbreaks in 2017, disease remains a key risk that can impact livestock markets going forward.

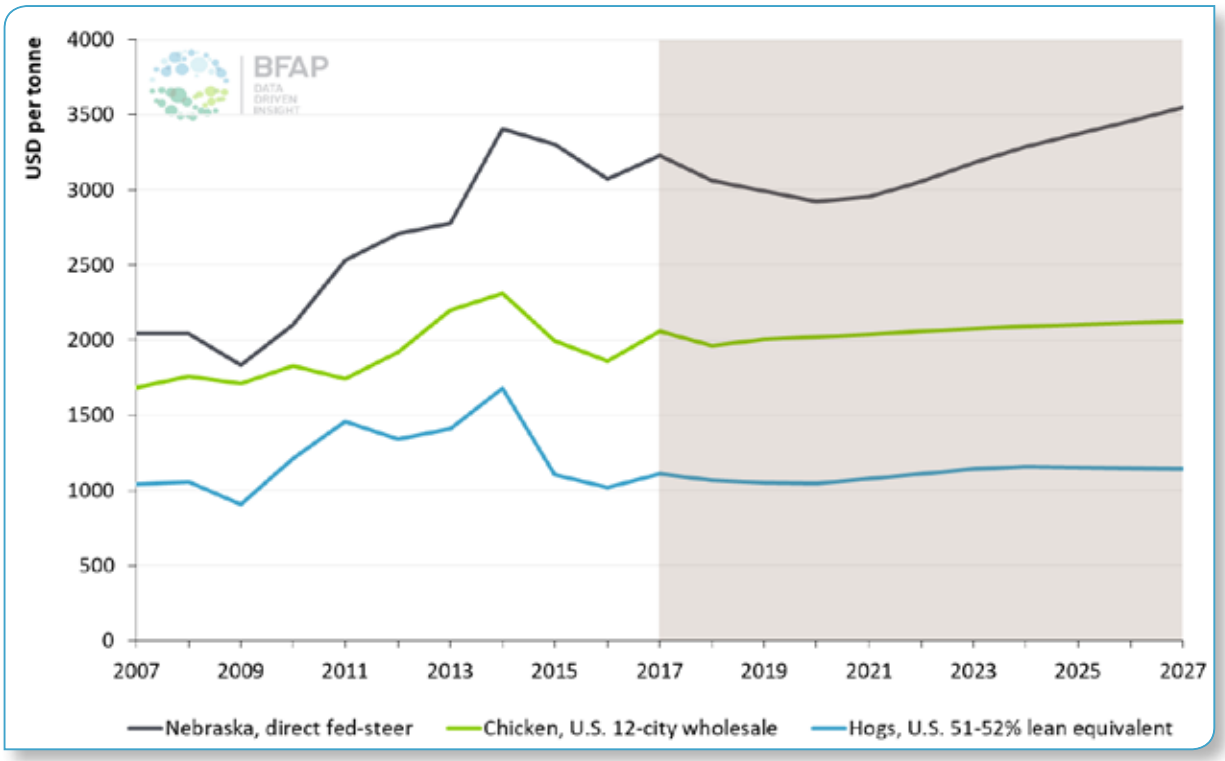


Figure 52: World meat prices: 2007 - 2027
Source: FAPRI & BFAP updates

DOMESTIC MARKET SITUATION: MEAT AND EGGS

Following numerous challenging years, 2017 represented a return to profitability for most of South Africa's livestock sectors. Having peaked in 2016, feed grain prices declined substantially, with yellow maize and soybean oilcake prices reflecting a decline of 41% and 19% respectively in 2017. At the same time, a confluence of factors supported meat prices: The impact of the 2016 drought, which caused significant herd liquidation in the beef sector, remains evident in slaughter numbers which have declined to pre-2014 levels in the first four months of 2018 (Figure 53). This constrained availability pushed prices higher, particularly as producers strive to retain market share in lucrative export destinations. Beef prices increased by 20% relative to 2016 levels, which had already increased by 10% from 2015. Relative substitutability between meat types implies that other meat prices also found support from higher beef prices. At the same time, the increase in international prices lent support to domestic pork and poultry prices. In the poultry sector, the impact was exacerbated by the outbreak of AI in Europe, which limited duty-free imports of poultry products from the EU to South Africa. Though imports did still accrue from other markets, these are subject to an import tariff, thereby increasing the import cost. The combined effect was an increase of 15% year on year in the price of frozen poultry products in 2017, which was accompanied by an 11% increase in pork prices.

Despite the improvements in profitability, the sector has not remained free of challenges. Early in 2018, the outbreak of listeriosis resulted in the recall of several processed meats and a number of meat processing facilities halted production. The resultant decline in demand caused a sharp decline in pork prices, which plummeted by 34% from January 2018 to May 2018. In the egg industry, the outbreak of Avian Influenza in the latter half of 2017 caused significant losses. South Africa's strategy to contain the disease entailed culling of birds at affected sites. A study conducted by BFAP estimated that, by December 2017, total cull numbers in the layer industry reached around 4.7 million birds. An additional 700 thousand breeding birds were also culled in the broiler industry, bringing the estimated total to 5.4 million birds. The total biological loss

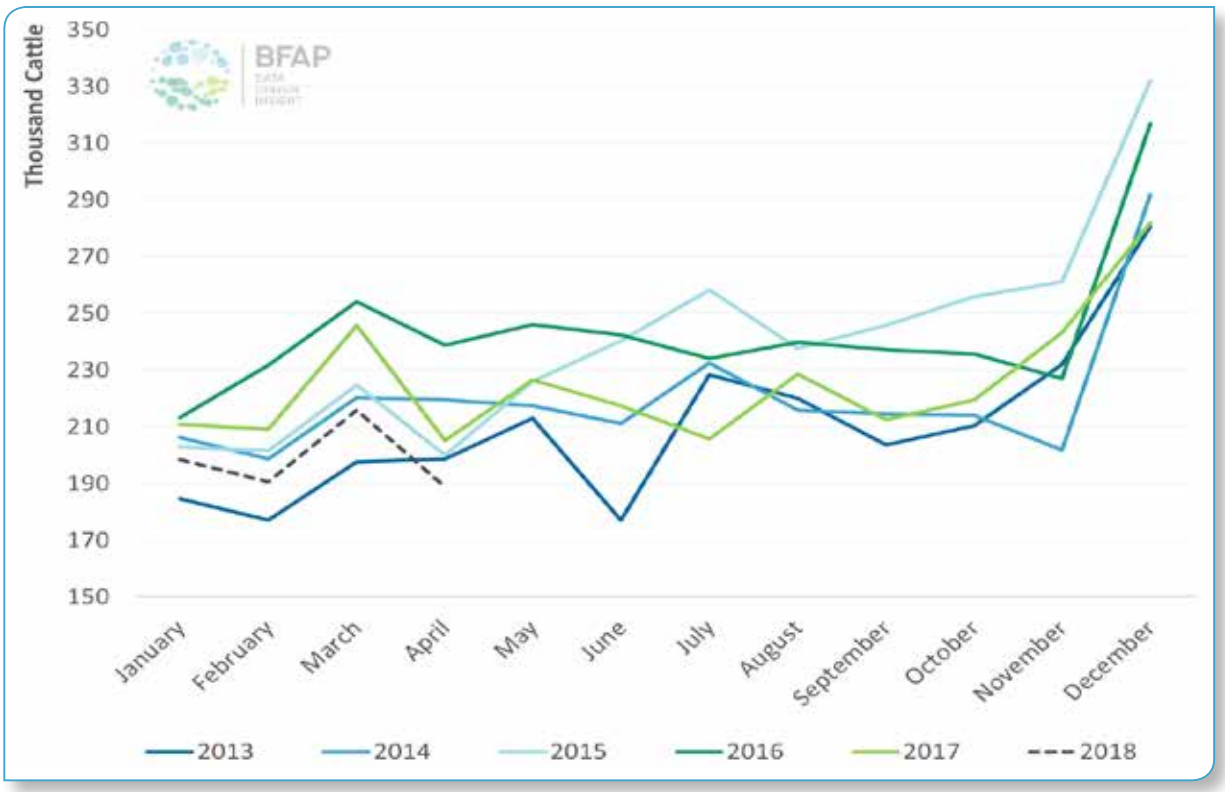


Figure 53: Beef slaughter volumes: 2013 - 2018
Source: South African levy administrator, 2018

(Value of culled birds) associated with these numbers amounts to just over R317 million rand. If one adds the direct costs associated with the outbreak, as well as income foregone as a result of quarantine and limitations in restocking rates arising from typical production systems, the total value lost as a result of the outbreak over the next 18 to 24 months was estimated at R1.87 billion. This represents 18% of the total gross value of egg production in 2016 or 1.6% of the total gross value of animal products in 2016. In the international context, a strategy of culling has typically been associated with compensation, but to date no compensation or vaccination strategies have been formalised. The extent to which the disease can be contained going forward will be a critical factor influencing the outlook for the egg industry.

DOMESTIC MARKET OUTLOOK: MEAT AND EGGS

In the early 2000's, growing income levels, sustained trends of urbanisation and improved living standards supported dietary diversification in South Africa, resulting in the inclusion of more protein in typical diets and rapid growth in meat consumption. From 2000 to 2009 rapid consumption growth was evident in all meat types, but as the most affordable option, chicken (7% p.a.) was the clear winner, followed by pork (3.9% p.a.), beef (1.5% p.a.) and sheep meat (0.3% p.a.). As an affordable alternative protein source to meat, egg consumption also expanded by 2% per annum over the same period. In more recent years however, economic performance has dwindled and in real terms, consumer incomes have come under pressure, resulting in slower overall growth in meat consumption. At the same time however, some diversification across meat types has become evident. Since 2009, consumption growth for chicken, beef and pork slowed to 1.9% per annum, 1.2% per annum and 0.1% per annum respectively. Affordability remains critical, but it cannot simply be measured ex abattoir, as a wide range of products of different value is sold at retail level. For instance, some beef cuts provide affordable alternatives to chicken when meat consumption starts to diversify, whereas higher value cuts compete more directly with lamb.

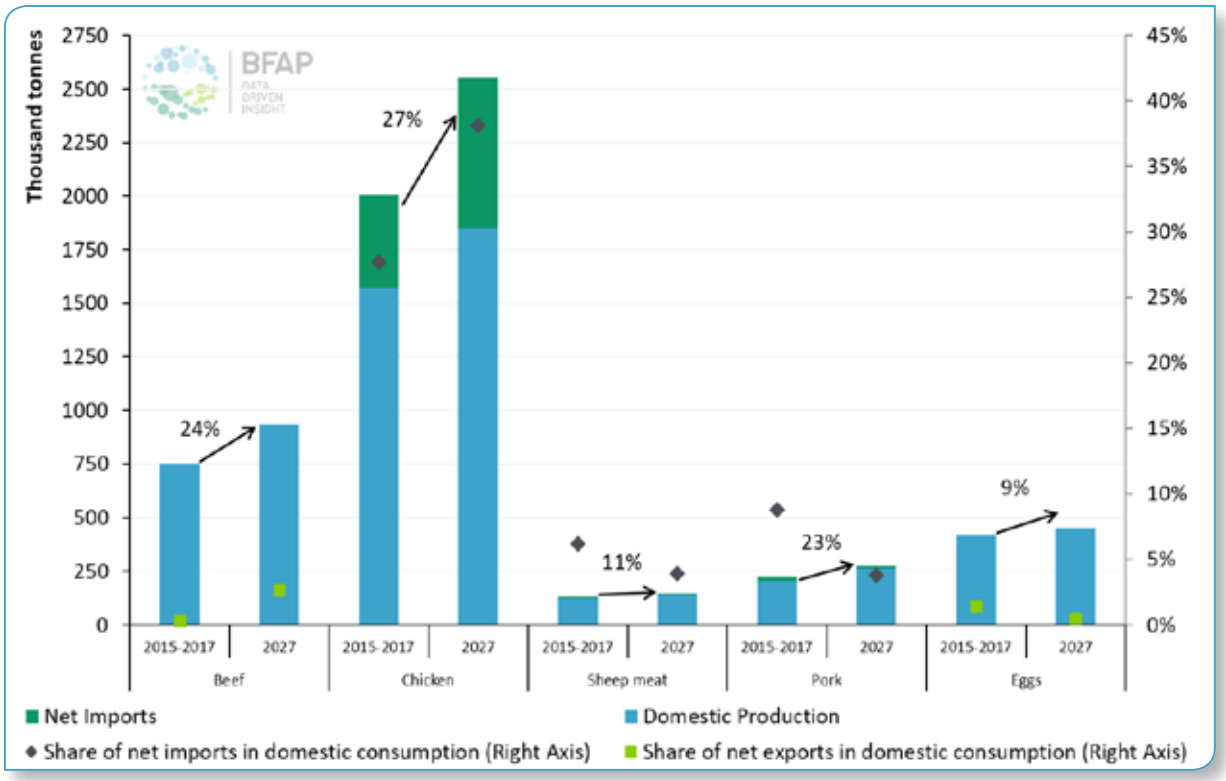


Figure 54: Meat consumption in South Africa: 2027 vs. 2015-2017

Similarly, the pork products at retail level range from affordable alternatives to beef when consumed fresh, to higher value processed products such as bacon, which is consumed by more affluent consumers.

In light of expected income growth over the coming decade, meat consumption is projected to continue on an expanding path. As an affordable and healthy option, chicken consumption is projected to accelerate again compared to the recent past, expanding by 27% over the next 10 years. The trend in diversification is also expected to continue, with beef and pork consumption projected to expand by 24% and 23% respectively over the same period (Figure 54). As the most expensive option, sheep meat consumption is only projected to expand by 11% by 2027 relative to the 2015-2017 base period, whereas egg consumption growth is also slow at 9% for the 10-year period. Much of this is attributed to an initial decline due to high prices arising from the recent AI outbreak, with consumption growth accelerating over the second half of the coming decade in line with improved economic performance.

Particularly within feed-intensive livestock sectors such as pork and poultry, an extended period of spiralling feed prices placed profitability under severe pressure in the recent past. Maize provides the single largest feed ingredient in intensive livestock production, and hence meat to maize price ratios provide a basic indication of profitability within these sectors. In 2016, the chicken to maize price ratio, as well as the pork to maize price ratio, fell to record lows. In 2017 however, these ratios swung from record lows, to the highest level since 2005. The sharp decline in feed grain prices that contributed to this improvement will also support profitability going forward, as maize prices are expected to trade close to export parity.

Within the chicken industry, the shorter production cycle allows for a fairly quick response to improved profitability and hence domestic production is expected to increase in 2018, having contracted somewhat in 2017. As maize prices recover in the next few years, the chicken to maize price ratio is expected to decline, before bottoming out at levels similar to 2014 by 2020. It is expected to then start improving again marginally over the latter half of the Outlook. Over the course of the next decade, production is expected to increase by an annual average of 1.7%, implying that an additional

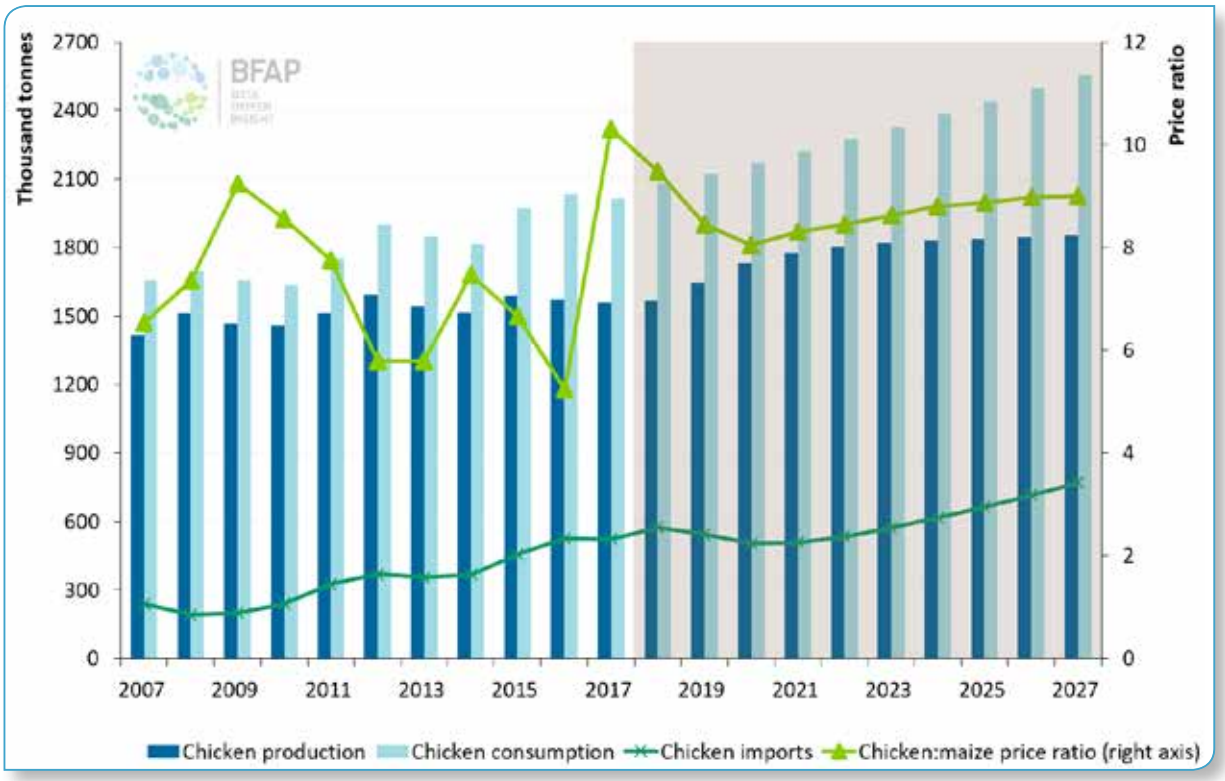


Figure 55: Chicken production, consumption, imports and profitability: 2007 – 2027

270 thousand tonnes of chicken meat will be produced in South Africa by 2027 relative to the 2015-2017 base period (Figure 55). While AI is less of a concern to commercial broiler producers due to the shorter production cycle and typical use of climate-controlled housing, this projection is based on the premise that AI is sufficiently controlled so as not to impact on day old chick availability.

Having increased significantly in 2017, chicken prices are expected to trade largely sideways in 2018, as a modest increase in international prices is offset by a stronger exchange rate. A small decline is projected in 2019, in line with weaker beef prices arising from increased supply, before returning to an increasing trend over the rest of the projection period. Over the 10 year period, prices are expected to increase by an annual average of just over 4%, marginally below general inflation and therefore reflecting a modest decline in real terms.

Chicken imports into South Africa increased rapidly in recent years owing to differences in feed cost cycles in South Africa relative to the global market (due to variable climatic conditions), as well as differences in consumer preference and spending power in the EU relative to South Africa. The bulk of imports comprise bone-in portions, which are imported duty free from the EU and are delivered into the South African market at very competitive prices. Consequently, imports are expected to remain a factor in the domestic market, particularly once the AI outbreak in the EU is sufficiently under control. After declining in the initial years of the Outlook in line with expanding production, chicken imports are expected to increase again from 2022 onwards following some consolidation in the current high profitability cycle. Over the longer term, the share of imports in total consumption is expected to continue increasing (Figure 54), albeit at a much slower rate than the recent past.

South African producers' ability to compete with imported cuts will depend on the extent to which they are able to maximise carcass value going forward. Individually Quick Frozen (IQF) pieces represent the bulk of the domestic market, but the continuation of bone-in portion imports implies it will require strategies that reduce exposure in the IQF market going forward. The industry is also exploring the

possibility of growing exports, a strategy that has been very successful for beef producers in recent years. In order to do so, competitiveness in the global context is critical. A successful export strategy will also rely on the containment of the AI outbreak.

A review of South Africa's technical and economic efficiency relative to other global producers, by BFAP, in collaboration with Wageningen University in the Netherlands, suggests that South African producers compete well on a technical basis, but are challenged when costs are included. Figure 56 compares total broiler production costs in South Africa to a number of leading producers globally. It highlights the deviation in total production costs per country relative to South Africa in 2013 and 2015. It suggests that South African producers are able to compete with EU producers on the cost of producing a whole bird, but production costs in the USA, Brazil, Argentina and Ukraine remain below that of South Africa. These countries are net exporters of key feed materials such as maize and protein meal and therefore have a significant advantage in the cost of feed as well as day old chicks. It suggests however that successful exports will require a favourable transport differential or preferential trade access relative to these producers. Presently, the industry is exploring opportunities in the Middle East.

While the chicken industry has been challenged by imports, the South African beef industry has successfully moved into a net exporting position since being declared free of Foot and Mouth Disease (FMD) in 2014. Producers have been very successful in optimising carcass value through exports of high value cuts into premium markets, and in the coming decade, a rising share of domestic consumption is expected to be exported (Figure 54), assuming that SA's FMD free status remains intact. This could be improved further if animal health standards comply with standards to allow exports to currently embargoed markets in the USA and EU. In the short term however, exports are expected to moderate in the face of reduced availability, and high domestic prices and against a backdrop of declining world beef prices.

Reduced slaughters emanating from herd liquidation through the 2016 drought (Figure 53) were somewhat offset by higher carcass weights in a lower feed cost environment in 2017, but beef production still declined by 8% year on year. The effects of herd rebuilding are expected to remain evident in 2018, with only a small

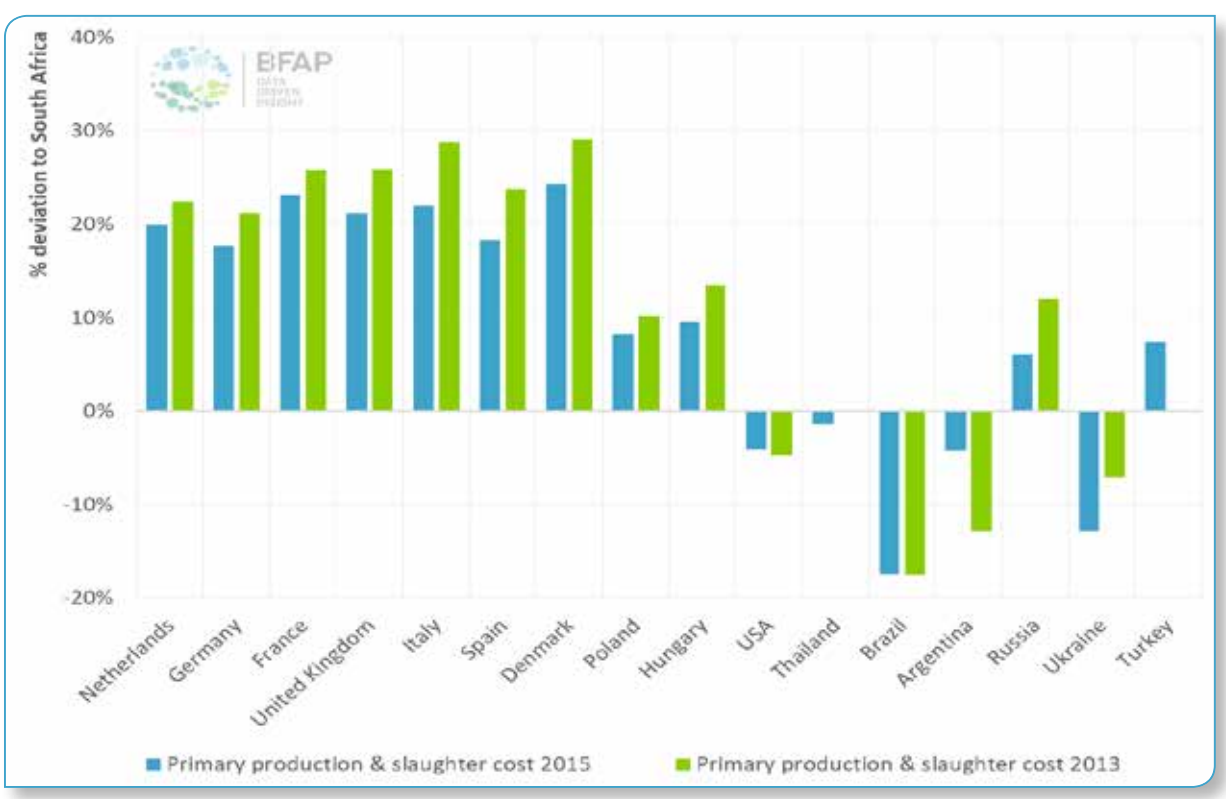


Figure 56: Deviation in total chicken production costs of selected global producers relative to South Africa

increase of 3% in production volumes, before a more substantial increase of 8% in 2019. By 2027, beef production is expected to expand by 25% relative to the base period of 2015-2017, to exceed 930 thousand tonnes.

The rapid growth in exports in recent years has resulted in South African markets trading closer to global trends than has been the case historically. South African producers will therefore also be exposed to the decline in global beef prices over the next 3 years through greater competition in the export market. Combined with the effect of increasing supply in the domestic market, this causes prices to enter a moderately downward cycle from 2018, before increasing again post 2021. Over the course of the projection period, beef prices are expected to increase by an annual average of 4.5%, marginally less than general inflation and therefore declining marginally in real terms.

The 2016 drought, as well as the decline in maize prices in 2017, affected the weaner calf market in a number of ways. Firstly, the extent of herd liquidation has limited the supply of weaner calves resulting in higher prices. Secondly, through periods of weak maize prices, producers operating a mixed system with cattle and crops often opt to realise a higher value for their maize by feeding it to calves instead, thus not marketing them immediately. They thereby remove additional weaner calf supply from the market. Thirdly, low feed prices, combined with strong beef prices, supported feedlot profitability temporarily and therefore also the demand for weaner calves. Combined, these factors supported an increase of almost 50% year on year in weaner calf prices in 2017. Growth in exports are supporting a new norm in terms of higher beef to maize price ratios, allowing calf prices to increase as well. The beef to calf price ratio is expected to trade at a low level relative to historic norms (Figure 58), owing to firm demand for calves as feedlots strive to keep stocking rates high to supply firm demand from both domestic and export markets.

Pork represents a relatively small industry in the South African meat complex, accounting for merely 7% of total meat consumption in South Africa from 2015 to 2017. Being a smaller industry, prices tend to be led by substitute meat types such as beef and poultry. However, given the feed intensive nature of production, profitability is particularly sensitive to rising feed costs. Similar to the poultry sector, 2017 represented a return to profitability. This is illustrated by the pork to maize

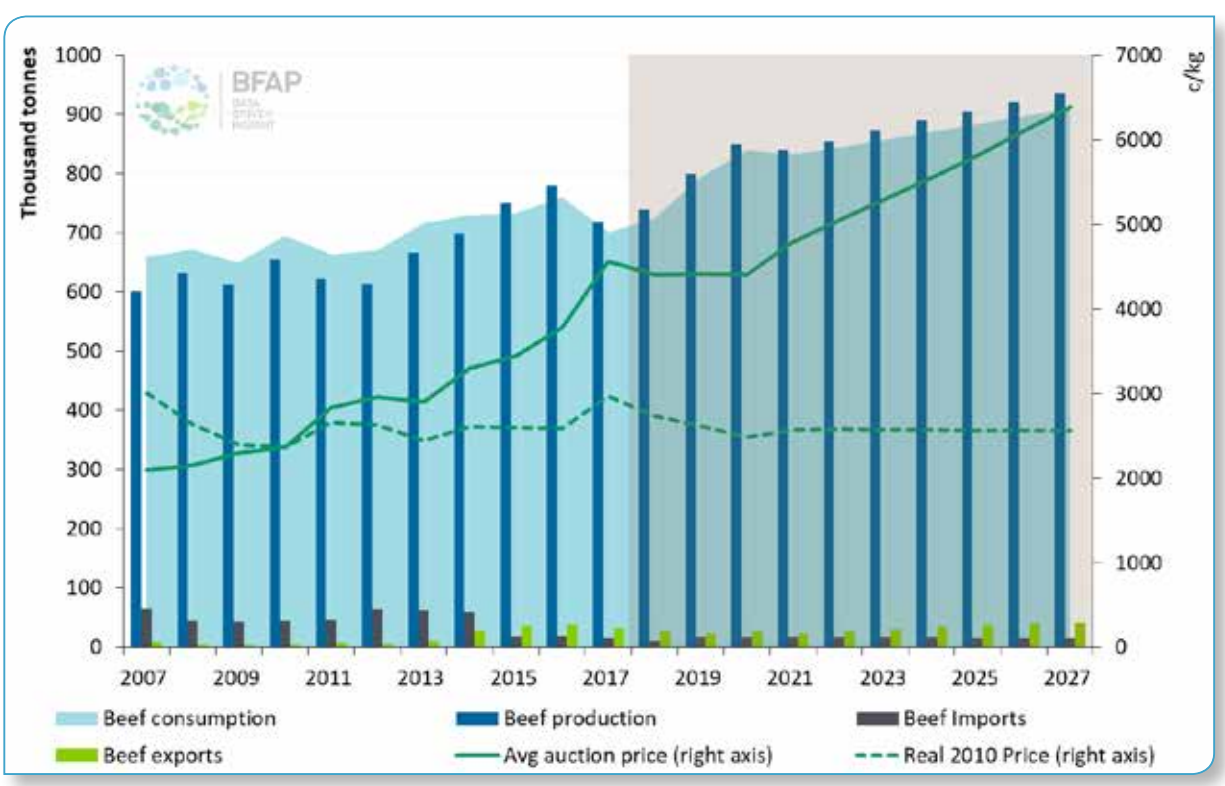


Figure 57: SA beef production, consumption, trade and prices: 2007 - 2027

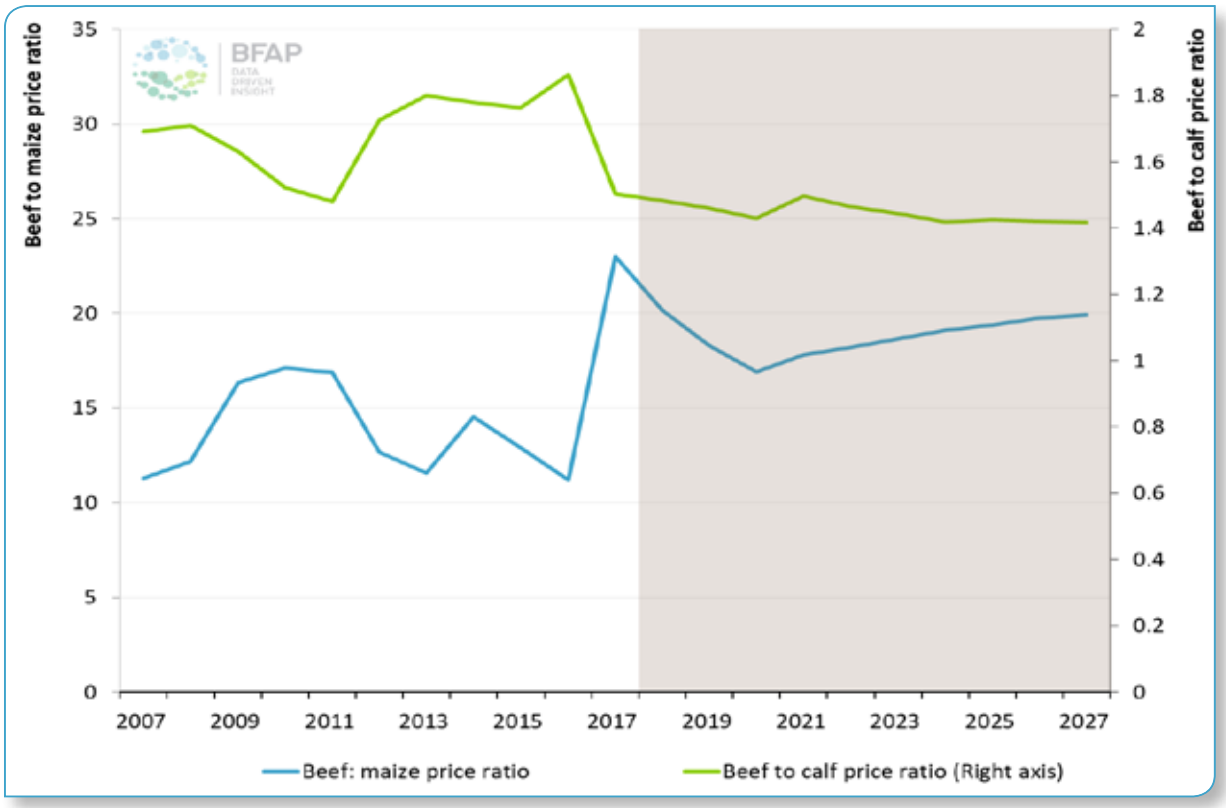


Figure 58: Profitability ratios for intensive beef production: 2007 - 2027

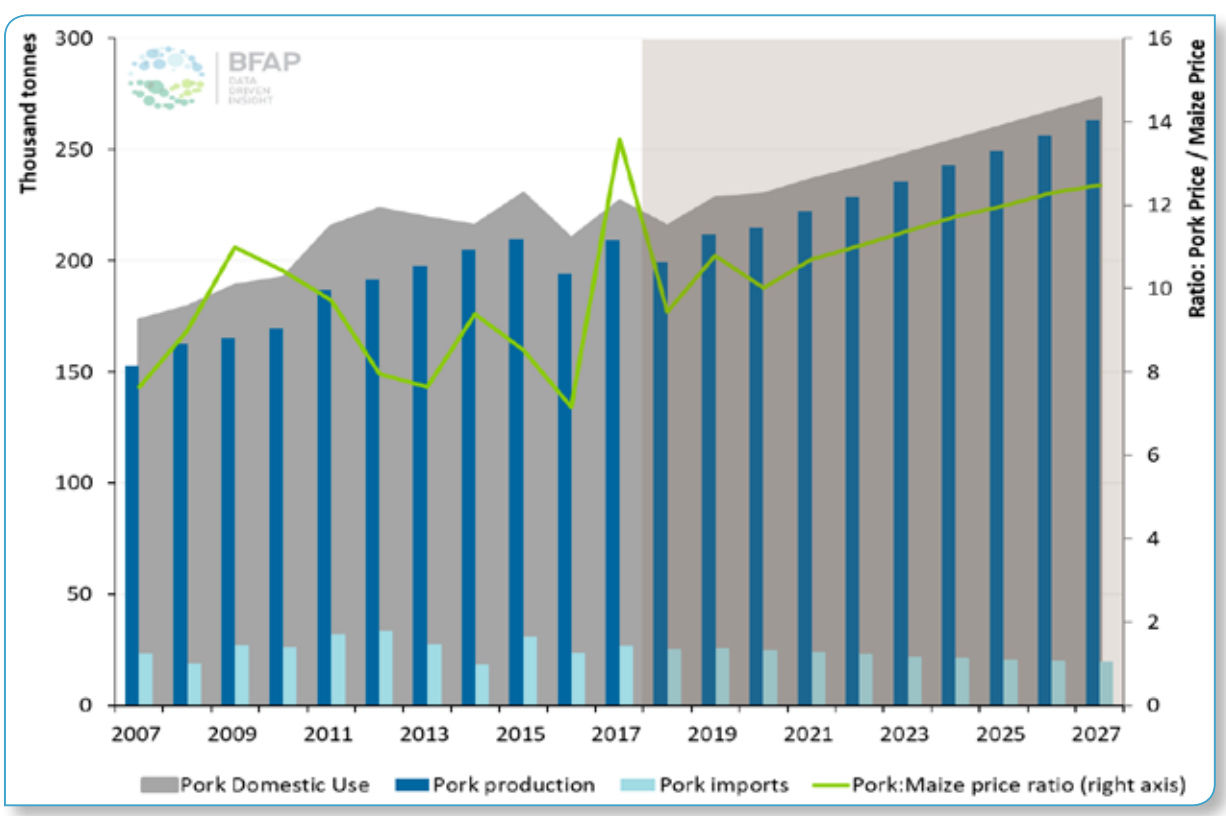


Figure 59: SA pork production, consumption, imports and profitability: 2007 - 2027

price ratio, as basic profitability indicator, increasing to the highest level since 1995. In 2018, the industry was hit by a different challenge as the outbreak of listeria at some of the major pork processing facilities resulted in these facilities temporarily shutting down, hence reducing the total slaughter capacity of the industry in recent months. The resultant decline in demand for pork carcasses caused prices to plummet and pork to maize price ratios to decline by almost 30% for 2018. Further implications of the Listeriosis outbreak, particularly as related to consumer perceptions, are highlighted in Box 3. Based on the assumption that affected processing facilities will return to production in the medium term, the pork to maize price ratio is expected to stabilise at a level well above the recent past, supporting production growth of almost 3% per annum over the next 10 years (Figure 59). This is sufficient to supply rising demand and over the course of the Outlook, the share of imports in domestic consumption continues to decline, reaching 7% by 2027 from 12% in 2017. Most of these imports tend to originate from Europe and comprise mainly ribs and ham.

In light of the extensive, pasture-based production system, lamb and mutton production are also sensitive to weather impacts and, as was the case in the beef market, significant flock reductions occurred through the 2016 drought. Rebuilding takes time, even when conditions have improved. In the case of sheep, the rebuilding process has also been constrained by the fact that approximately 20% of national production comes from the Western Cape, where continued drought conditions have not allowed significant flock rebuilding due to poor pasture conditions. Consequently, despite its shorter production cycle than beef, sheep meat production is expected to trade largely sideways through 2018 and 2019, reflecting the first significant increase in 2020. Over the course of the 10-year period, production is expected to expand by an annual average of 1.4% (Figure 60).

Historically a net importer of sheep meat, South African prices tend to be well integrated in the global market, reacting to changes in supply and demand conditions in major exporting countries such as Australia and New Zealand. The share of imports in domestic production has however declined significantly in recent years to reach merely 5% in 2017. Going forward, domestic

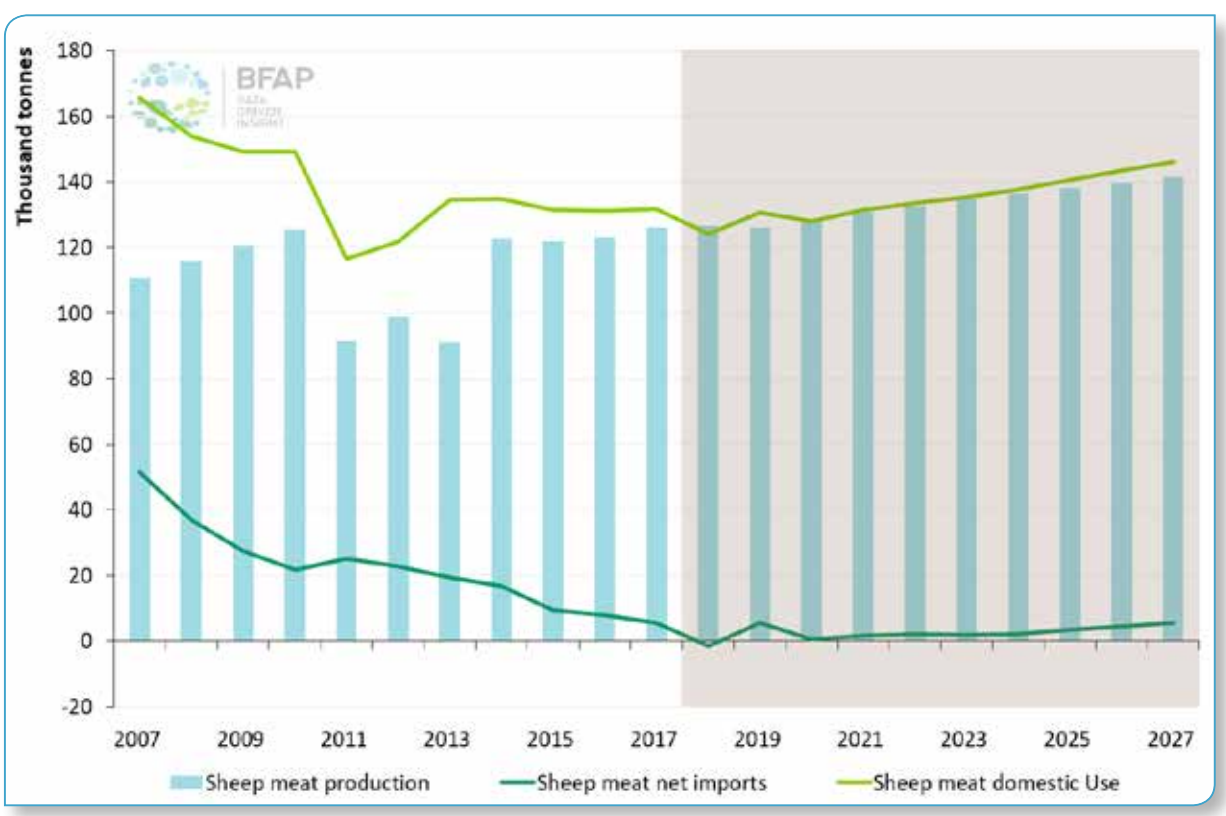


Figure 60: Sheep meat production, consumption and imports: 2007 to 2027

BOX 3: IMPLICATIONS OF THE 2018 OUTBREAK OF LISTERIOSIS: CONSUMERS PERCEPTIONS

On 4 March 2018, the South African Minister of Health reported that 948 cases of Listeriosis have been confirmed by laboratories, with a 27% fatality rate. A number of processed meat production facilities in Polokwane and Gauteng were subsequently identified as the source of contamination.

How did South African consumers feel about meat safety BEFORE the Listeriosis food scare?

Consumer research4 conducted by the University of Pretoria and BFAP, with funding from RMRD SA, indicated that consumers across the socio-economic spectrum attach significant importance to food safety when purchasing red meat. Product attributes such as 'food safety' and 'expiry date', were considered important factors in the purchasing decision by the majority (more than 76%) of interviewed consumers. In general, consumers did not reveal high levels of concern regarding the safety of red meat, with less than 15% of low-income consumers and about a third of middle- and high-income consumers having some red meat food safety concerns.

How did South African consumers feel about meat safety AFTER the Listeriosis food scare?

In the week after the announcement by the minister of health, two surveys were conducted in order to evaluate the effect of the outbreak on consumers' perceptions on food safety in general5. The first survey was conducted in townships around Johannesburg, whereas the second was an online survey amongst affluent consumers. The levels of concern was consistent with pre-listeriosis food safety perceptions, with only 20% of affluent consumers noting that they did not perceive food purchased from formal retail outlets, such as supermarkets and butcheries, as safe. In the case of low income respondents, only 10% did not perceive food from formal retail as safe. Informal retailing outlets such as spaza shops and street vendors were, however, perceived as unsafe with approximately 66% of respondents indicating that they did not agree with the statement that these outlets sell safe food. It is however, unclear if these negative perceptions were induced by the listeriosis outbreak. Further questioning revealed that only 44% of the low income respondents answered "Yes" on the question "Do you know what Listeriosis is?" and were also only able to identify an average of 2 out of 7 symptoms generally associated with Listeriosis. Conversely, 75% of the total sample were aware that polony and viennas should be avoided. This somewhat inconsistent results suggest that lower income consumers received incomplete food safety information with regards to liseriosis.

Examples of consumer implications pertaining to the Listeriosis food scare:

- Processed meat (in particular polony) is one of the most affordable and convenient (ready-to-eat) animal protein food options available to consumers. Consumer distrust in the safety of polony could reduce dietary diversity among low-income consumers in particular with limited means to substitute with alternative animal protein food options.
- Survey results suggest that income and asset endowment seem to play a key role in access to food safety information. This should be addressed by tailor-made messages specifically aimed at vulnerable groups, where vulnerability is based on level of exposure to the hazard and income level.
- Actions by government and industry to improve the food safety systems within fresh meat and processed meat supply chains could eventually translate into a more expensive retail price at consumer level.

[4] This research was conducted in 2011/12 in Gauteng and in 2016/17 in the Western Cape.

[5] These surveys forms part of broader collaborative research, on Asymmetry of Information in Food Chains in South Africa, between BFAP and Dr. Melissa van der Merwe.

supply and demand conditions are expected to have an increasing impact on price levels. Nominal lamb prices are expected to increase by an annual average of 4.7% over the next 10 years, only marginally less than general inflation and therefore declining somewhat in real terms.

WOOL

Despite being a net importer of sheep meat, more than 90% of the wool produced in South Africa is exported, allowing it to be the third largest exporter of wool (by value) in the world in 2017. Globally, the demand for wool has expanded by just under 2% per year since 2007 and as in many other agricultural commodities, growth was underpinned by a rapid expansion of 4.5% per annum in China. Impressive economic growth in China supported growing affluence in the general population, underpinning the demand for wool products, which is perceived as luxury products. While growth in the Chinese economy has slowed in recent years and is projected to slow down more in the coming decade relative to the past, the conscious shift to a more consumer-based economy is expected to support the demand for wool going forward.

China also represents the biggest market for South African wool exports. After Australia, South Africa represents the second largest exporter into China. Over the past decade, South Africa has also managed to increase its market share in China, supplying 10.4% of the total value of Chinese imports in 2017, from merely 4% in 2007. Although the volume of South African exports have increased by almost 2% per annum over the past decade, the average price attained for its exports has also improved (Figure 61). As a result, the value of South African exports has increased by more than 12% per year between 2007 and 2017, a true success story within South African agriculture. Furthermore, the industry has been successful in achieving inclusivity, with a significant share of the production growth underpinning rising exports attributed to smaller producers, particularly in the Eastern Cape. In 1997/98, these farmers produced wool to the value of R1.5 million, but through genetic improvement and other support services, these farmers' wool production had expanded to an estimated R130 million by 2014/15.

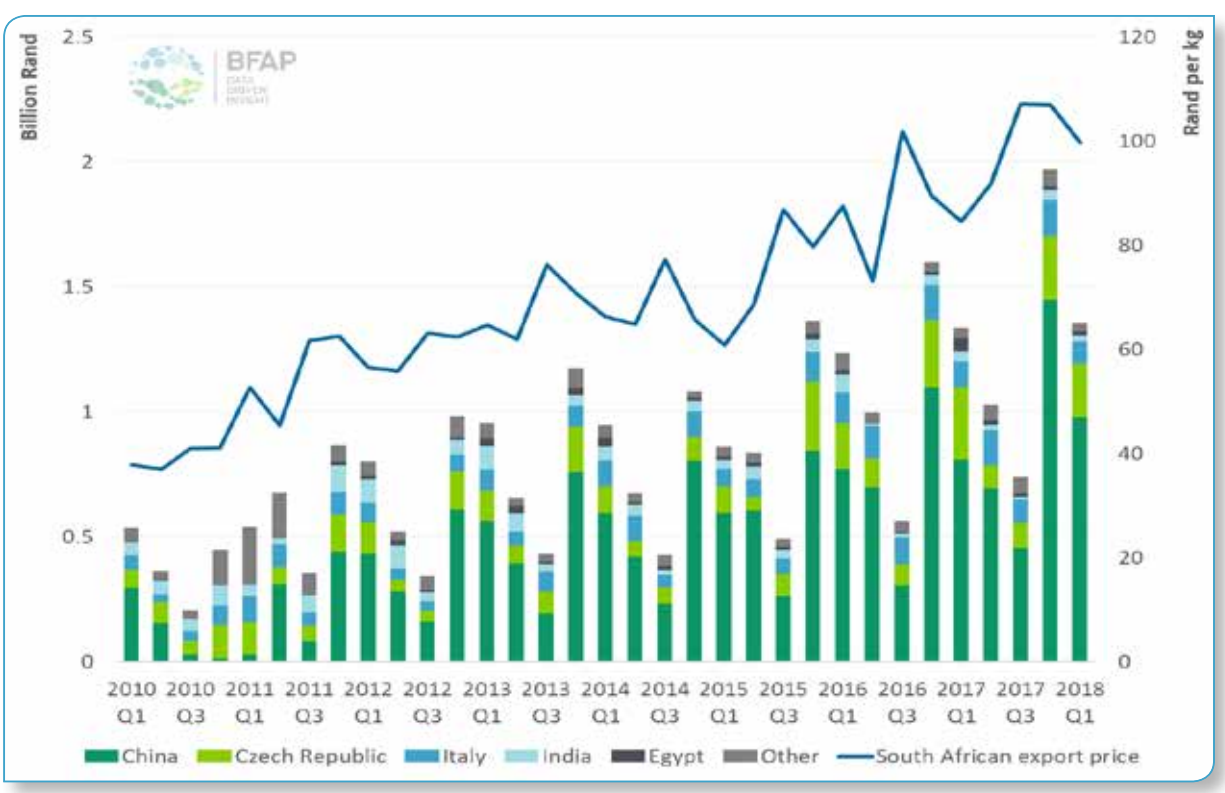


Figure 61: Value of South African wool exports and trade weighted average export price

EGGS

Contrary to the major meat sectors, international price movements have very little impact in egg prices in South Africa due to the small share of trade in the total market. The fact that eggs are not frequently traded in the global market also implies that prices are very sensitive to exogenous shocks in production. This was clearly evident in 2017 when the AI outbreak in the second half of the year decimated the South African layer flock. In the Western Cape, where the outbreak was most severe, more than 70% of the layer flock was culled and at aggregate national level, almost 20%. The producer price of eggs already increased by 17% year on year in 2017, but the biggest price impact was through the first quarter of 2018. The annual average price is therefore expected to increase by a further 13% from the already elevated 2017 levels. As such, egg to maize price ratios are expected to reach an all-time high in 2018, suggesting that those producers that were not affected by AI will do exceptionally well. At the same time, producers that were affected by the disease suffered severe losses. Compensation of such losses is critical when a culling strategy is followed to contain the disease.

Though the baseline is derived from the assumption that AI is contained going forward, the impact of the 2017 outbreak, as well as the associated strategy to contain it, is evident in the projections. Following culling of an affected site, 18-24 months are required to return to full production if quarantine is followed by restocking within the confines of typical production systems. Multiple producers, particularly in the Western Cape where production is highly concentrated, are reluctant to restock in the absence of a vaccination strategy. Given that no such strategy has been formalised to date, the baseline assumes that culling remains the preferred method of containment and hence, production growth over the Outlook is derived from expansion in other areas, in response to the current economic signals. In this event, production is projected to expand by an annual average of 2% per year from currently reduced levels. Once this increased supply enters the market, egg to maize price ratios are

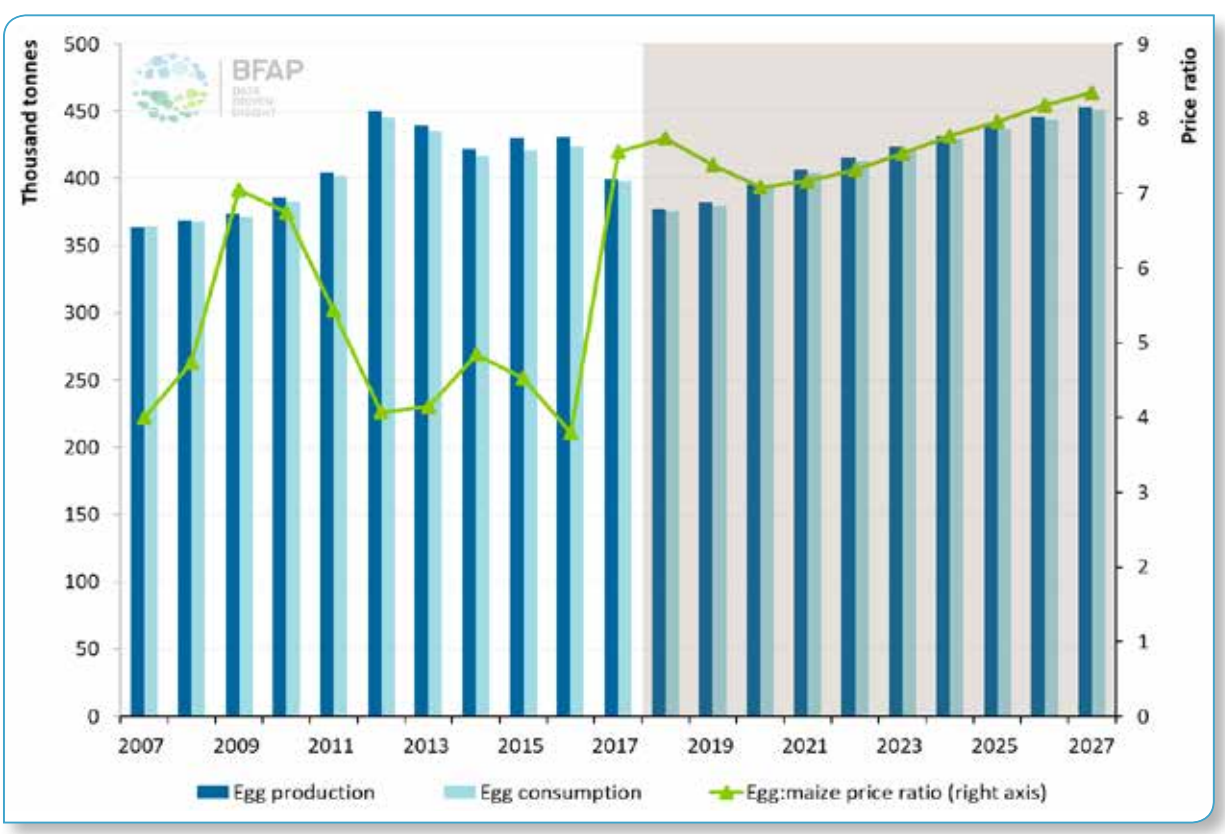


Figure 62: SA egg production, consumption and profitability

expected to decline towards 2020, before trending upwards once more over the latter years of the projection period. Egg prices are projected to increase at an annual average of 5.1% over the 10-year period and to remain high relative to historic levels. In the event that a vaccination strategy is approved, the risk associated with restocking will decline markedly and hence production will expand at an accelerated rate relative to the baseline. In this event, prices will also decline further, resulting in egg to maize price ratios more in line with historic norms (Figure 62).

The outlook presented in this chapter reflects the assumption of stable weather conditions, but remains subject to a number of uncertainties and unexpected events. The impact of extreme volatility in weather conditions, as well as changes to macro-economic factors such as the exchange rate on profitability, and the resultant investment decisions, was clear in 2016 and 2017. However, in livestock markets, food safety and disease management adds an additional extremely important risk to manage. The benefit gained by the beef sector from being able to export since being declared free of FMD in 2014 presents a clear example of the benefits attainable if the country's disease status is managed well. The outlook presented in the Baseline rests on the premise that the country's disease status will be maintained to ensure that exports are possible. The ban of livestock imports by the UAE in the wake of a single occurrence of rift valley fever in the Northern Cape is a reminder of how quickly this can change. Apart from international market access issues in the event of disease outbreaks, the devastating outbreak of AI in the layer industry serves to illustrate the loss that diseases can cause in livestock production. In this regard, the need for successful management of South Africa's animal health status and the associated biosecurity measures cannot be overemphasised.



OUTLOOK FOR ANIMAL PRODUCTS

Butter prices in particular rose spectacularly by 65% over the first half of 2017, before declining somewhat towards the end of the year.

MILK AND DAIRY PRODUCTS

MILK AND DAIRY – GLOBAL OVERVIEW

Dairy product prices increased through 2017, supported by the combination of declining milk production in the last quarter of 2016 as well as the first quarter of 2017, and firm demand for fat solids. Butter prices in particular rose spectacularly by 65% over the first half of 2017, before declining somewhat towards the end of the year. As the supply of milk fat solids continues to grow, butter, as well as cheese prices are expected to decline in 2018 (Figure 63).

After expanding by an annual average of 2.1% over the past decade, global milk production increased by a mere 0.5% in 2017 on the back of declining production levels in major exporting countries such as France and Germany in the European Union, the United States, New Zealand, Australia and Argentina. In New Zealand, production was expected to rebound in 2017, but this was delayed by cold, wet spring weather. As a result, dairy exports from Oceania declined from 2016 levels. Over the medium term however, production is projected to return to an expanding trend, with the OECD-FAO expecting growth of 26% by 2027 relative to a 2015-2017 base period. The majority of the increase is projected to originate in developing countries such as Pakistan and India, implying that much of it won't be traded internationally, but consumed as fresh dairy products in these countries instead. In the developed world, demand has been shifting towards butter and dairy fat, away from vegetable oil based substitutes for some years. This trend is generally attributed to a more positive health assessment for dairy fat, as well as changing tastes. This was a contributing factor that combined with contracting production to support substantial price gains in 2017. Whilst the supply of milk fat solids is expected to catch up in the long term to normalise relative prices, the demand for dairy products is expected to continue trending upwards over the next 10 years.

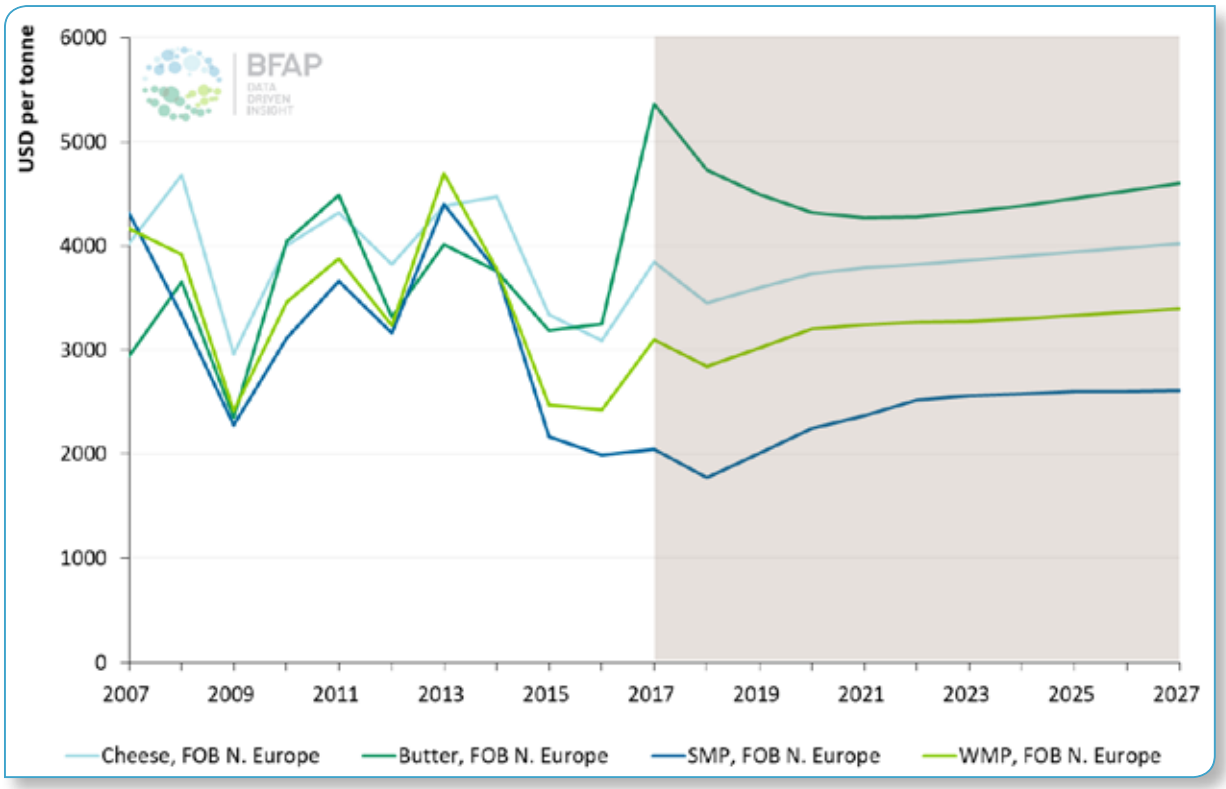


Figure 63: Global dairy prices
Source: FAPRI, OECD-FAO and BFAP (2018)

MILK AND DAIRY – SOUTH AFRICA

Similar to the rest of the world, only a small share of South African milk production is traded in the international market, mainly due to the perishable nature of the product. At the same time, production is sensitive to climatic changes, which influence production volumes directly through productivity, as well as indirectly through the price of feed. This in turn influences feed use intensity. Combined, these factors result in a volatile market which has been particularly prominent over the past 3 years, when the drought affected 2015 and 2016 were followed by exceptional weather and consequently the largest maize crop on record in 2017. The large changes in maize production also had a substantial influence on prices, causing a 17% and 27% increase in yellow maize prices in 2015 and 2016 respectively, followed by a year on year reduction of 41% in 2017. Milk price movements were far less severe than maize, given that world dairy markets moved counter cyclical to South African markets, reflecting declining prices in 2016, followed by sharp increases in 2017. Consequently, milk to feed price ratios in 2016 declined to the lowest level since 2001, before rising in 2017 to the highest level since 1994. Having declined in 2016 for the first time since 2009, milk production increased by 3% in 2017 to well above 3.1 billion litres.

The expected recovery in feed grain prices, combined with a minor decline in milk prices in 2018, implies that milk to feed price ratios will deteriorate somewhat over the short term, before stabilising post 2020 at levels well above the lows of the period 2012 to 2016. The level of this stabilisation, which is above the average for the past decade, is projected to support milk production growth of 1.9% per annum over the next 10 years, to reach 3.75 billion litres; 21% more than the base period of 2015 to 2017 (Figure 64).

The South African milk market can be disaggregated into 2 segments: Liquid milk products (including pasteurised milk, UHT milk, yoghurt and buttermilk) account for just over 60% of total dairy consumption, while concentrated products (including cheese, butter, milk powders and condensed milk) make up the remaining 40%. The share of liquid milk products has increased consistently over

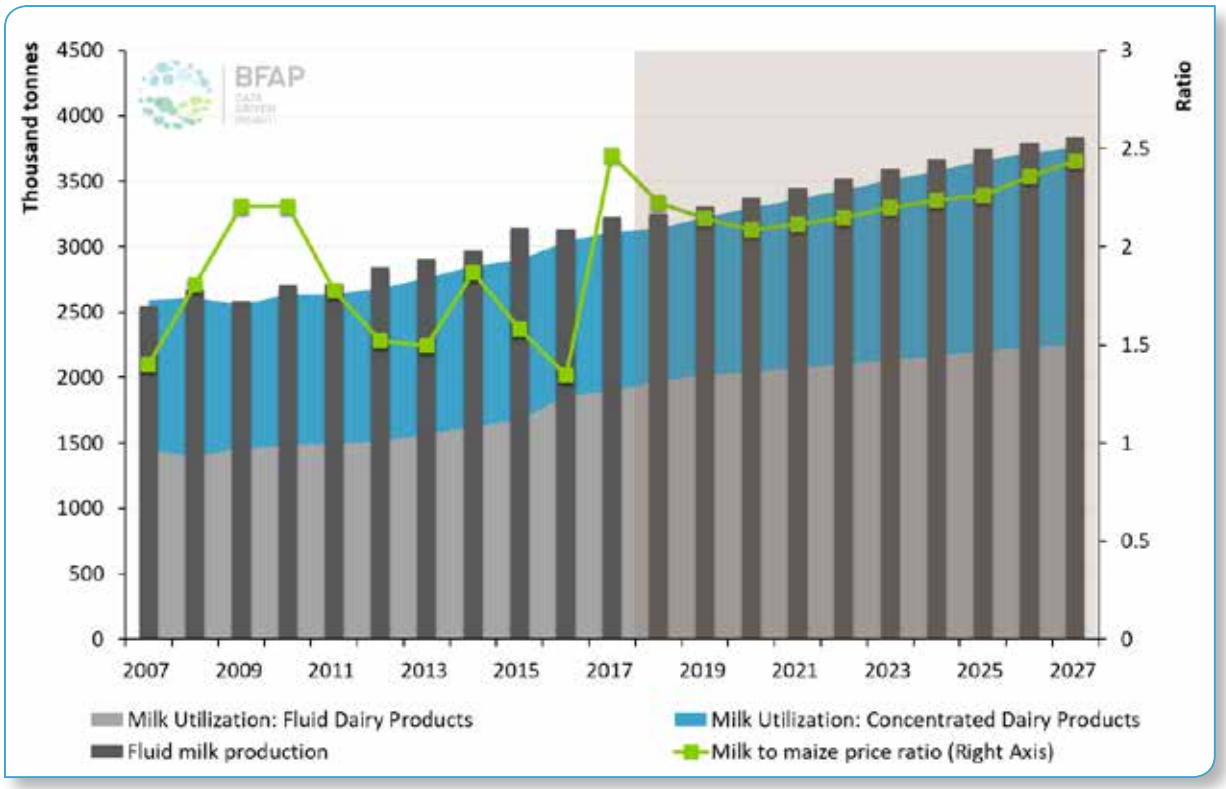


Figure 64: SA milk production, utilisation and profitability: 2007 - 2027

the past decade, from 55% in 2007, to 61% in 2017. While increasing further in the short term, this trend is expected to stabilise and then reduce somewhat in the latter half of the coming decade. This view is based on the projection of strong demand for concentrated products as consumer-spending power improves once more. Over the course of the next 10 years, the consumption of liquid milk products is expected to increase by an annual average of 1.4%, compared to a more than 2% per annum expansion in the demand for concentrated products. Total milk consumption is projected to increase by an annual average of 1.9%, a rate very similar to production growth. By implication, the market will continue to trade in a fine balance between supply and demand. Therefore, given the high sensitivity to climate and macroeconomic factors that influence demand, prices are likely to remain volatile going forward.

Within the concentrated dairy product market, the nature of the products involved allows trade to play a larger role in balancing domestic supply and demand fluctuations. This was evident in 2016, with sharp increases in import volumes for cheese, butter and whole milk powder (WMP). Consequently, prices tend to exhibit a greater influence from international markets, as well as relevant exchange rate volatility. In 2017, a strengthening exchange rate offset part of the increase in international dairy product prices, thus cheese and WMP prices increased by only 4.4% and 5.4% respectively. International skimmed milk power (SMP) prices did not increase and hence domestic prices declined by 14% year on year due to exchange rate appreciation. By contrast, domestic butter prices increased by 28% year on year, following the spectacular increase of 65% in international markets. In 2018, butter and SMP prices are expected to follow international markets lower, while cheese prices are expected to increase. Over the course of the Outlook period, cheese and SMP prices are projected to increase at rates similar to general inflation, moving largely sideways in real terms, whereas a modest real decline is projected for butter and WMP prices. In the case of butter, this trend is also influenced by high current prices.

Led by cheese, the demand for dairy products expanded rapidly over the past decade. Supported by rising income levels and swift urbanisation, cheese consumption increased by 81% over the past 10 years. Off this higher

BOX 4: AFFORDABILITY OF MILK AS SOURCE OF PROTEIN

Milk represents an affordable source of protein relative to alternatives such as meat. On a cost per single serving unit basis, milk is comparable to eggs, representing the two most affordable animal protein options for South African consumers (Figure 65). Despite this affordability, data from Stats SA's Living Conditions Survey (LCS) in 2014/15 suggests that marginalised consumers (the poorest 30% of the population) account for a mere 9% of total expenditure on liquid milk. Lower and upper middle-class consumers constitute 20% and 25% of total expenditure on liquid milk, whereas 46% of total expenditure on liquid milk is attributed to the wealthiest 20% of the population (Stats SA, 2016).

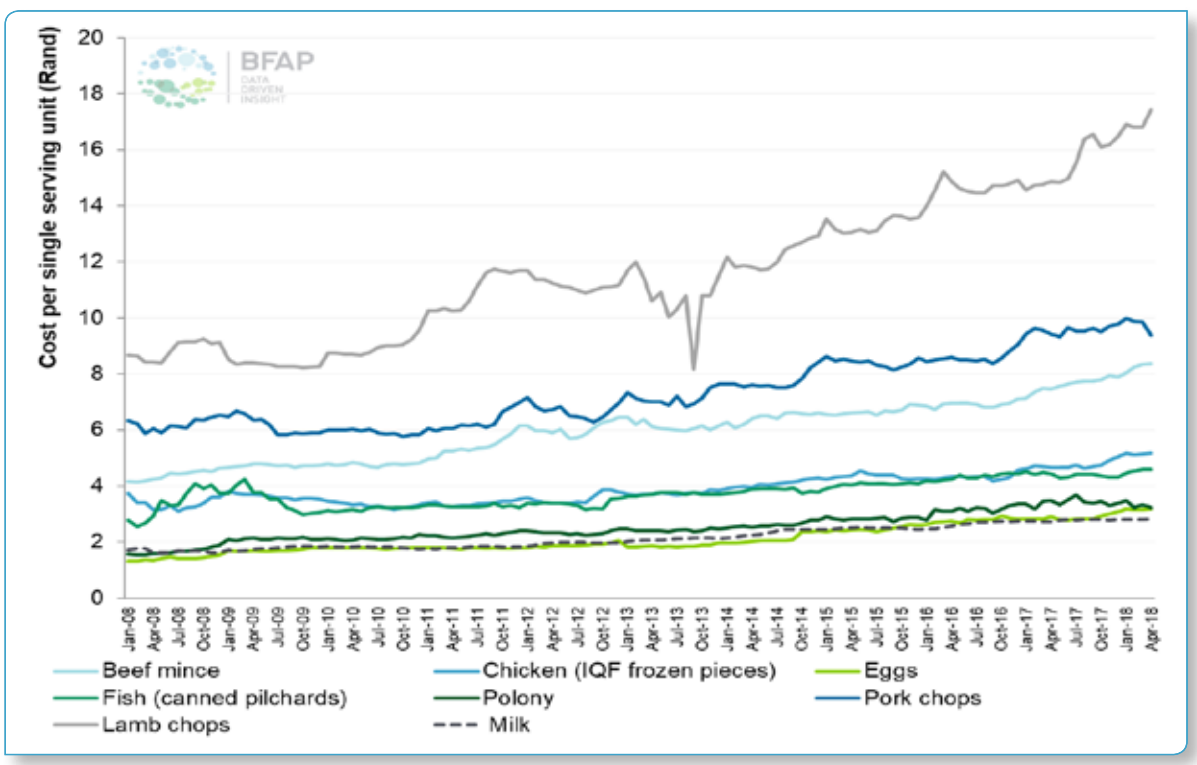


Figure 65: Relative affordability of liquid milk and other protein products

base, growth is expected to slow in the coming decade, but is still expected to expand by 42%. This amounts to more than 40 thousand tons of additional cheese consumption by 2027 relative to the 2015-2017 base period. In recent years, butter has become an increasingly popular alternative to vegetable oil based spreads and its consumption is projected to expand by 27% over the next 10 years. It is however a much smaller market than cheese, and growth amounts to almost 6 thousand tons of additional butter consumption by 2027 relative to the 2015-2017 base period (Figure 66). Some of the growth in total consumption can also be attributed to population growth, but even in per capita terms, cheese and butter consumption is expected to increase by an annual average of almost 3% and 1.5% respectively over the 10-year period.

The nature of the production process means that the market for milk powders is strongly influenced by the price and production levels of other dairy products that are produced simultaneously. Consequently, consumption of milk powders has been characterised by exceptional volatility over the past decade. Powders also remain a small share of the concentrated dairy market, with consumption of SMP reaching 0.14 kg/capita by

2017, compared to 0.25 kg of WMP consumed per capita in the same year. Over the course of the next decade, SMP and WMP consumption is expected to grow by an annual average of approximately 2% per annum. This is still only sufficient to reach per capita consumption levels of 0.17 and 0.30 kilograms of SMP and WMP respectively by 2027.

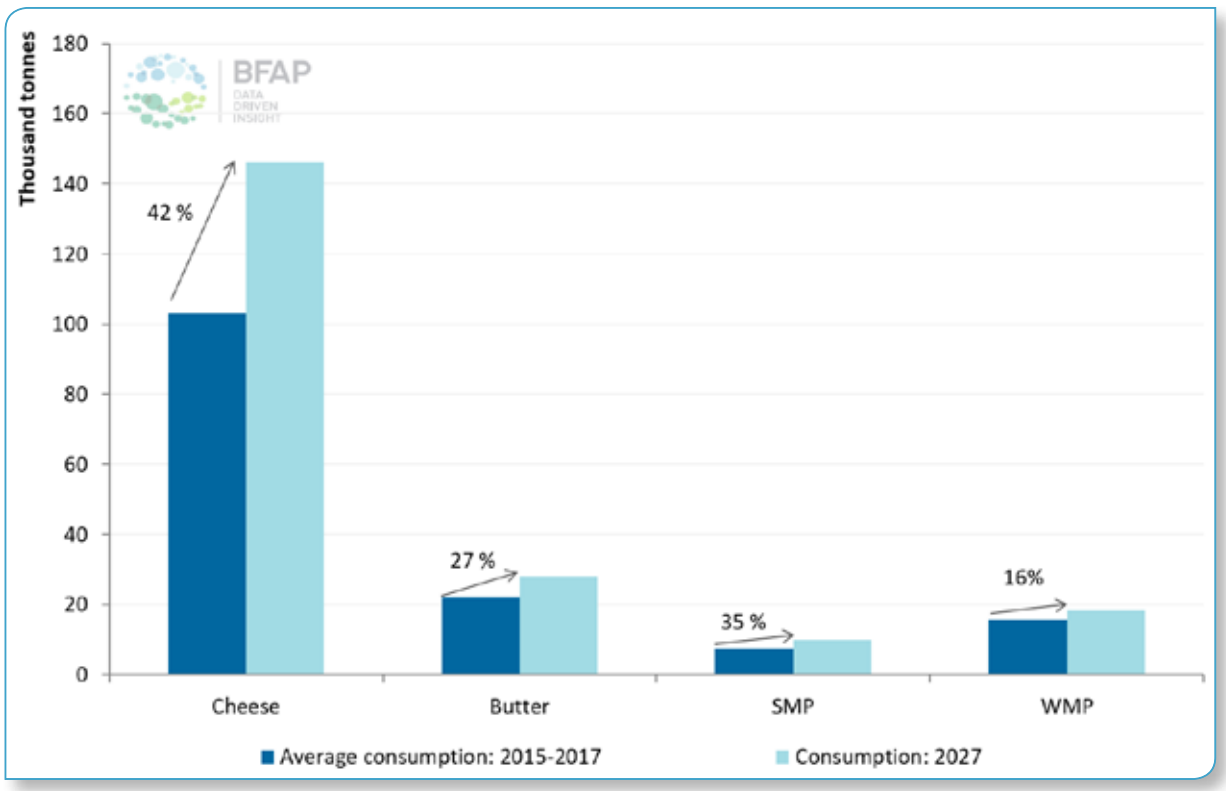


Figure 66: SA consumption of dairy products: 2015-2017 vs. 2027



OUTLOOK FOR HORTICULTURAL PRODUCTS

Potato prices are driven predominantly by domestic supply and demand dynamics as international and cross border trade is fairly limited due to the perishable nature of the product.

POTATOES

POTATO PRODUCTION IN South Africa has increased by an average 2.3% per annum over the past 20 years; mainly driven by yield improvements (Figure 67). The total potato area planted has remained largely constant around 51 thousand hectares, with only a marginal decrease of 0.3% per annum observed over the long-term. On the other hand, the average national potato yield has increased by an average 2.35% per annum over the past 20 years. These statistics illustrate a success story where yield improvements (driven by technological advancements and improved agricultural practices) have driven production increases despite area under potato production remaining stagnant.

For 2018, potato production is projected to increase by 3% to a record harvest of 2.53 million tonnes after a near-record harvest in 2017 (2.45 million tonnes). Some large regions have yet to start harvesting, implying that external factors such as frost can potentially reduce yields. The area planted is projected to increase by 800 hectares in 2018 and the national average yield is also projected to increase by 1.6% in 2018. Potato production is projected to increase gradually over the next 10 years to just over 2.7 million tons (primarily driven by average annual yield increases of 1% per annum).

Potato prices are driven predominantly by domestic supply and demand dynamics as international and cross border trade is fairly limited due to the perishable nature of the product. During the 2016 drought, production decreased by 14% inducing a 56% increase in the nominal potato price (Figure 68). In 2017, prices decreased to an average R34.50/10kg bag. In the short term, another 8% decline in real prices is expected in 2018 given record production levels.

Due to a decline in real potato price, total domestic use is projected to increase by 7.6% in 2018. Fresh formal consumption (at fresh produce markets and retailers) makes up 39% of the total domestic use, 31% of the potato market goes to informal fresh consumption,

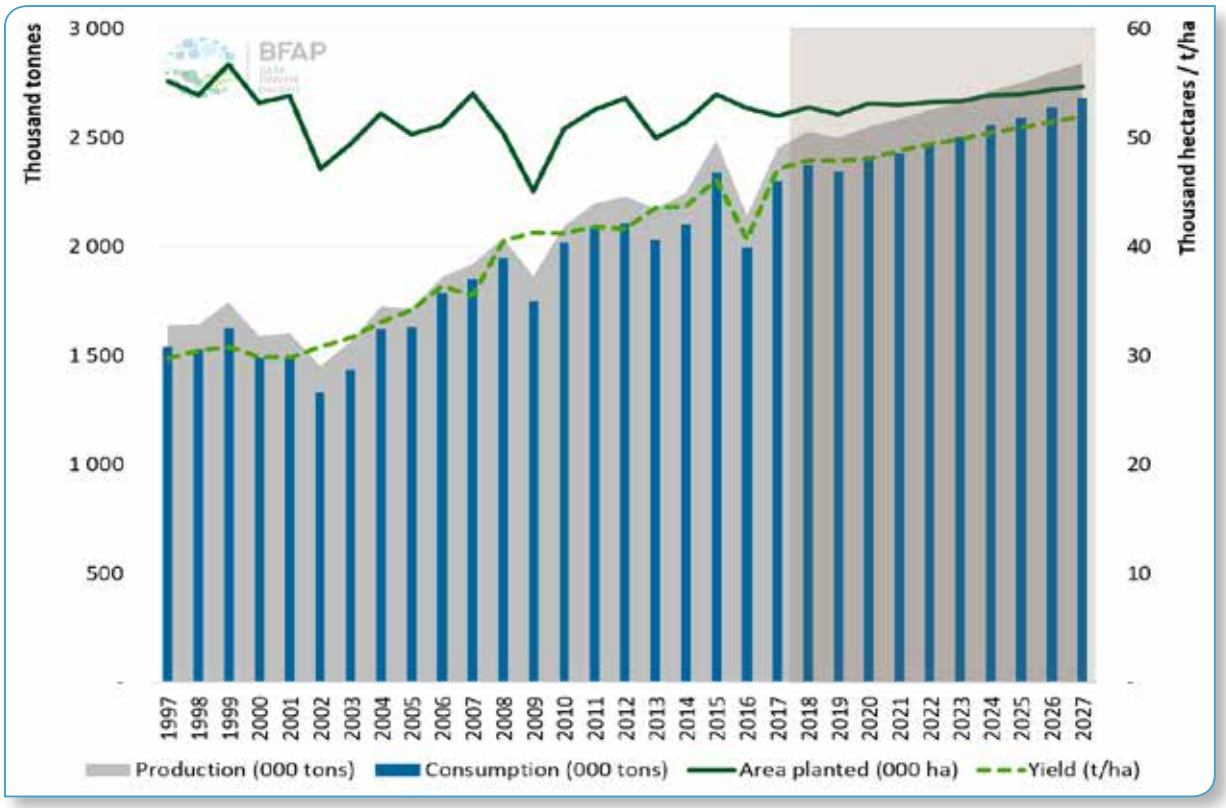


Figure 67: Potato production, consumption, area and yield: 1997 - 2027

21% of potatoes produced in a given year are processed locally, with the balance of production used for seed. Since 2008, the formal to informal consumption ratio has declined by an average 1.3% per annum. A similar trend is projected for the outlook period albeit at a slower rate – formal potato consumption is projected to increase by 12% while informal potato consumption is projected to increase by 22% from 2017 to 2027. Even though the total growth rate for the informal potato market is projected to be almost double that of the formal potato market, it is from a lower base and the informal market is not projected to outpace formal potato consumption in absolute terms by 2027.

A number of factors have had a significant impact on the potato sector in recent years and will continue to do so over the Outlook period. The first is the continuous drought in the Western Cape, which has raised major concerns in urban and rural areas as a result of water availability and water allocation towards agriculture. For the primary potato industry, decreased water availability will force producers to reduce potato area planted. In 2017 the Sandveld saw a reduction of 600 hectares, while Ceres could only manage to plant a third of their normal hectares. The resulting total loss in production is estimated between 6 to 8 million 10kg bags, decreasing the real gross production value[6] from potatoes in the province by about R45 million.

The area reduction in the Western Cape will affect farming businesses in various ways and the ability to service fixed costs (e.g. banking and accounting fees, interest paid, cost of labour) will be challenging. In a scenario where the total area under production deviates from business-as-usual practices, total farm production and gross returns will decrease which entails that the fixed costs will be spread over a smaller area relative to a normal production season.

Table 9 illustrates the implication of potato area reductions on net farm income for a typical Sandveld producer located in the Western Cape. In a normal production season, a typical farm will plant 214

[6] Product of production volumes and estimated average real price.

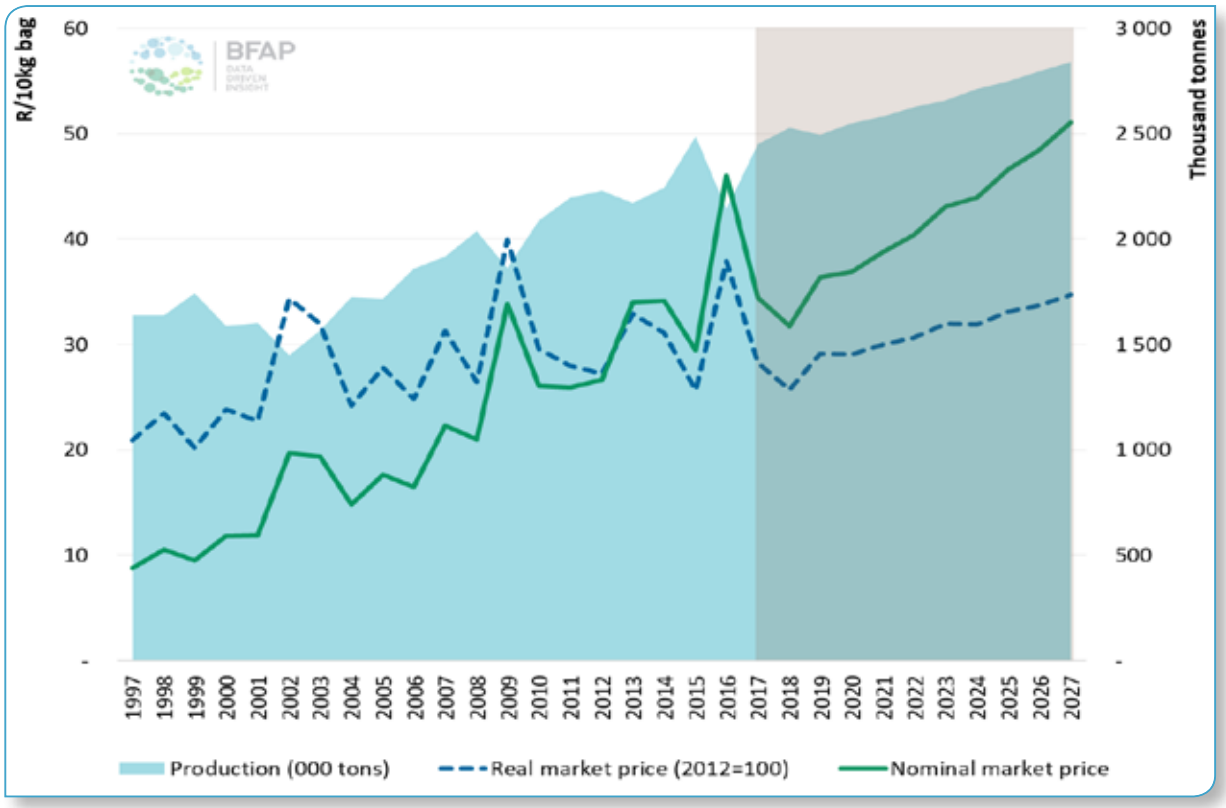


Figure 68: Potato price vs. production: 1997 - 2027

Table 9: Drought implication on a typical producer in the Sandveld region

Scenario:	Effect on Net Farm Income	Effect on Net Farm Income: Absolute Rand terms *(deviation from a normal season)*	Total overhead cost per hectare
Baseline: Total area under potato production amounts to 214 hectares	-	-	+/- R7 000
Area under potato production decrease by 20% (43 ha)	- 30%	- R1.1 million	+/- R8 700
Area under potato production decrease by 40% (86 ha)	- 60%	- R2.2 million	+/- R11 600
Area under potato production decrease by 60% (128 ha)	- 90%	- R3.3 million	+/- R17 200

hectares under potatoes. Depending on the allocation of expenditure, overhead costs for the region can vary between 5-10% of total farm expenses.

The second factor with significant influence on the industry due to its labour-intensive nature is the impact of a national minimum wage.[7] The increase in real production costs and side-ways movement in real market prices (Figure 68) has resulted in a typical cost-price squeeze in recent years. In addition to increases in cost items such as fertilisers, seed, chemicals and various capital items, administered cost inflation such as tariffs for electricity and the minimum wage (Figure 69) further contribute to the consolidated cost inflation at farm-level. In order to ensure the sustainability of agricultural industries, producers have to either increase output (through improved productivity) or cut back

[7] See also: "A national minimum wage and the potato industry", CHIPS, January/February 2017.

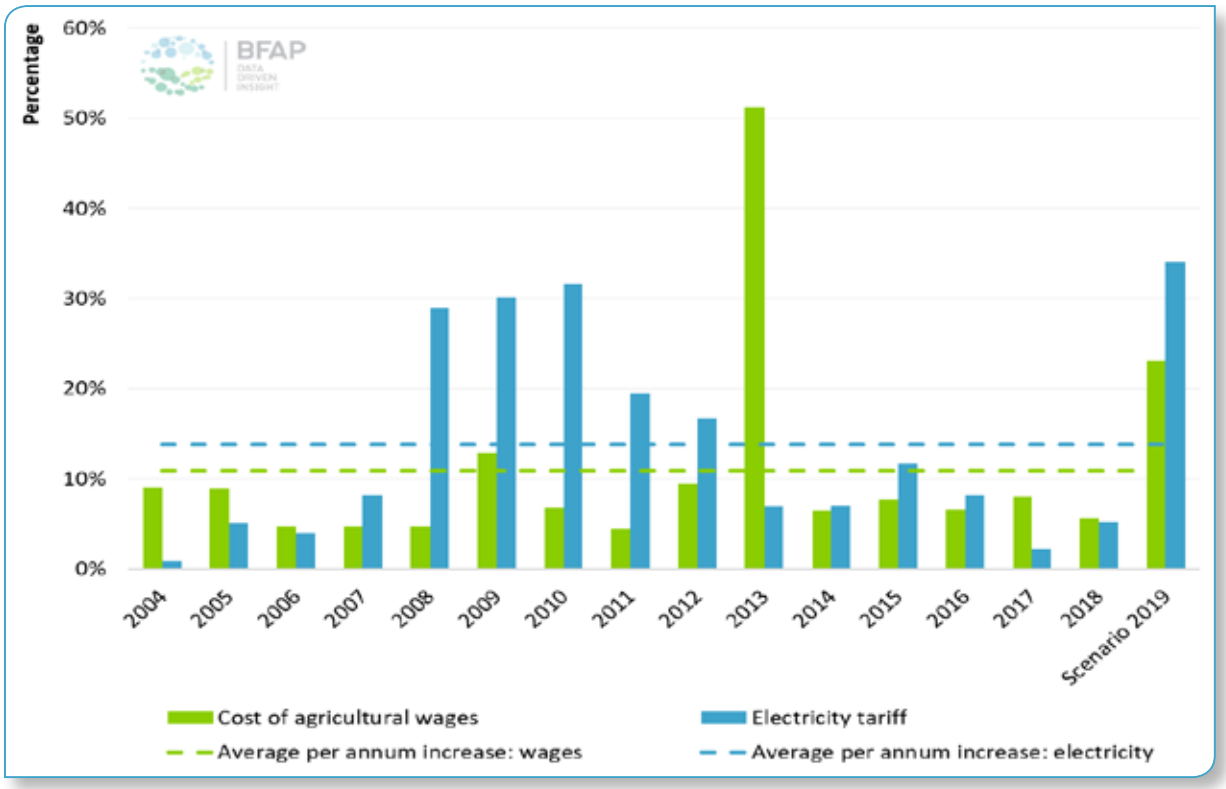


Figure 69: Annual percentage change in the cost of labour & electricity
Source: Eskom & Potatoes SA, 2018

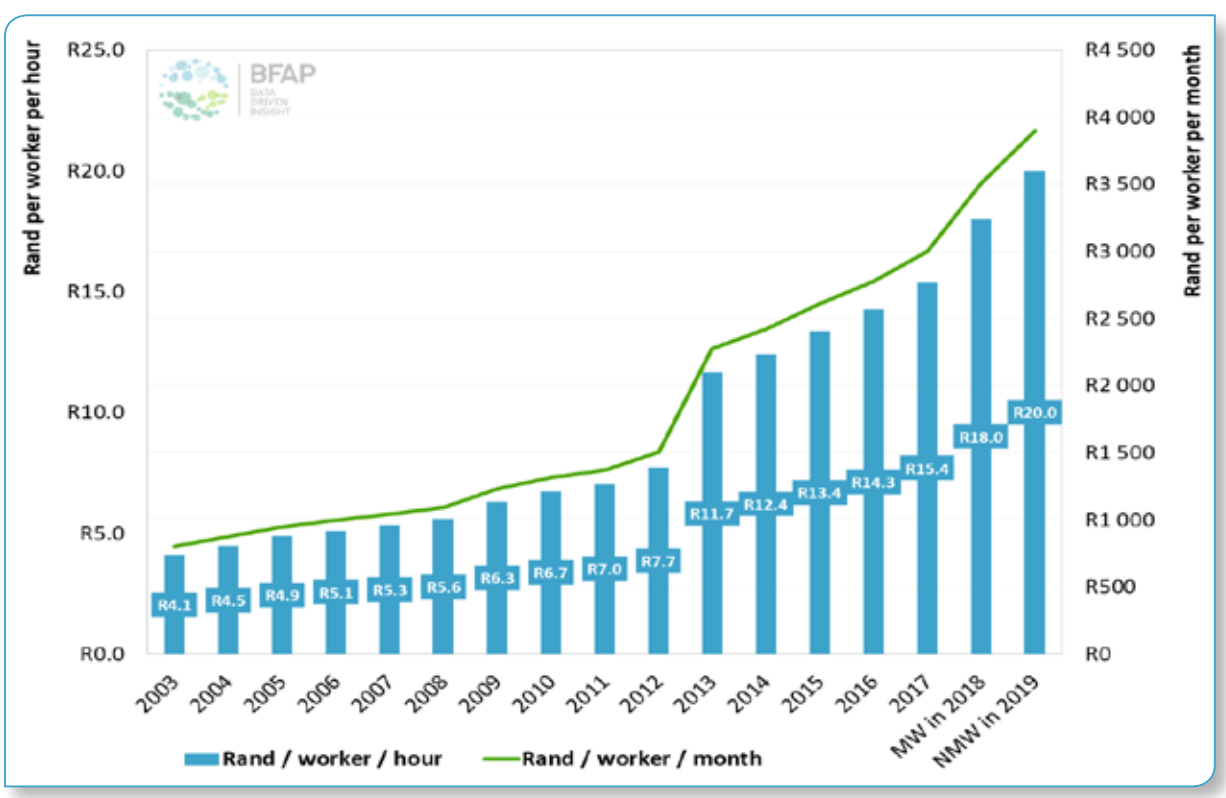


Figure 70: Minimum wage: 2003 - 2019
Source: BFAP & Potatoes SA, 2018

on expenses. For labour-intensive industries such as potatoes, the cost implication of a national minimum wage will be substantial and various producers will face severe financial challenges.

Figure 70 illustrates the wage rate trend since 2003. The introduction and phasing in of the proposed national minimum wage in 2018 and 2019 indicates that the cost of labour could increase by nearly 400% since 2003 (CPI inflation over the same period totalled 180%). In 2013, the adjustment caused an immediate increase of 51.2% with a potential increase of 17% in 2018 and 11.1% in 2019. The average per annum labour cost inflation over the period equals 10.9%, which is 4.7% per annum higher than CPI inflation.

In order to illustrate the cost implication of the new national minimum wage in 2018 and 2019, where agriculture is exempted from the proposed 2018 national minimum wage at this stage, four prototype potato farms across South Africa were analysed to determine the additional cost resulting from the proposed national minimum wage should it be implemented in agriculture as well (Table 10). Across the different farms, labour cost varied from R8 548 to R20 475 per hectare in 2017. The respective increase, as a result of the national minimum wage, will lead to this range increasing by between R2 561 and R6 133 per

Table 10: Labour cost: The reality of increasing labour costs at farm-level

	Eastern Free State	KwaZulu-Natal	Limpopo	Sandveld
Per hectare				
Labour cost / ha in 2012	R5 487	R11 750	R10 504	R5 818
Labour cost / ha in 2017	R8 548	R20 475	R17 187	R8 635
Labour cost / ha in 2018 (90% of NMW)	R9 998	R23 947	R20 102	R10 099
Labour cost / ha in 2019 (100% of NMW)	R11 109	R26 608	R22 335	R11 222
Difference in labour cost: 2017 – 2019	R2 561	R6 133	R5 148	R2 587
Labour contribution to direct cost: 2012	8%	11%	6%	4%
Labour contribution to direct cost: 2017	13%	17%	12%	6%
Labour contribution to direct cost: 2019	14%	19%	13%	7%
Ranking: Labour cost i.t.o single largest direct cost: 2012 vs. 2019	6th / 3rd	2nd / 2nd	5th / 4th	6th / 5th
Per prototype farm				
Total farm labour bill: 2012	R1 009 608	R1 175 000	R1 733 160	R1 245 052
Total farm labour bill: 2017	R1 572 832	R2 047 500	R2 835 855	R1 847 890
Total farm labour bill: 2018	R1 839 570	R2 394 737	R3 316 789	R2 161 275
Total farm labour bill: 2019	R2 043 966	R2 660 819	R3 685 322	R2 401 417
Difference in labour cost: 2012 – 2019 (p.a)	R1 034 358	R1 485 819	R1 952 162	R1 156 365
Difference in labour cost: 2017 – 2019 (p.a)	R471 134	R613 319	R849 467	R553 527

Assumptions:

1) Permanent & seasonal worker's rates have been adjusted according to percentage change in NMW in 2018 & 2019.
2) Farm managers remuneration not included in labour bill.
3) No job shedding and/or additional mechanisation have occurred on farms and therefore the assumption is made that producers kept the same amount of workers and maintained the same level of mechanisation.
4) Area per farm remained constant over the period from 2012 to 2019.
5) Annual production cost inflation for other inputs have been accounted for.

hectare. For the total farm labour bill on a prototype potato farm, the Eastern Free State will pay R471 134 more in 2019, KwaZulu-Natal R613 319 more, Limpopo an additional cost of R849 467 and the Sandveld region, R553 527. Reflecting back to 2012, the additional cost for labour for Limpopo totals nearly R2 000 000. For the farm considered, labour cost will rank between the 2nd most expensive input for KwaZulu-Natal to the 5th most expensive for the Sandveld region. For the Eastern Free State region, labour will increase from 6th most expensive in 2012 to 3rd in 2019.

In light of current farm-level realities, the decision-making of both small- and commercial producers becomes even more important in order to remain profitable and sustainable in the long term. Producers need to adapt on a continuous basis, allowing for volatility and external factors influencing their farming operations. Given the diversity of agriculture not only at national level, but also across various climatic regions, there does not exist a blue print or a one size fits all approach to define decision-making and more importantly, profitability and sustainability over the medium and long term. Strategies will depend on the location and nature of farming operations as well as the climatic conditions and natural resource endowments in the respective areas. Likewise, the ability to absorb the increase in minimum wages will differ significantly across industries and enterprises.

Several scenarios could materialize following the implementation of the minimum wage. Given the financial position of the farm, a producer could decide to cut back on production, shift towards alternative crops, mechanise certain labour-intensive operations, invest in labour-savings technology that might improve efficiency, or simply absorb the cost if margins allow it. In many of these scenarios, labour shedding will occur which will have a negative effect in particularly rural areas and will most likely impact seasonal labourers the most. The results indicated that the impact of the legislative minimum wage will result in total cost of production increasing significantly; in many cases shifting the net farm income to a deficit.



OUTLOOK FOR HORTICULTURAL PRODUCTS

The industry is capital intensive, with returns of a longer term nature, hence it requires stable and transparent policies, with a high degree of confidence in the economic and political system to ensure sustained investment.

FRUITS

THE DYNAMIC FRUIT subsector in South Africa is typically characterised by a combination of crop types, produced within a system as a diversified, risk-mitigating strategy. Producers are spread over different geographical regions and are frequently confronted with adverse weather conditions. The fluctuating exchange rate is a major risk factor for this export oriented industry.

The industry is capital intensive, with returns of a longer term nature, hence it requires stable and transparent policies, with a high degree of confidence in the economic and political system to ensure sustained investment. Sustained investment is crucial for the industry by remaining competitive and relevant in export markets. Investment in fruit production activities is a long-term decision, which must be underpinned by access to lucrative markets at favourable tariff rates. Innovation is paramount to remain competitive in the global market and to supply quality produce on a consistent basis.

Price competitiveness, or lack thereof, directs decision-makers to either invest, or dis-invest in a certain set of opportunities. Table 11 highlights year-on-year price volatility by comparing a particular production season with the previous season for different horticultural produce. Citrus markets reflect steady price increases from 2011 onwards following declines in 2006 and 2009. Table grapes, pome and stone fruit (with the exception of apricots), also reflect steady nominal price increases.

Table 11: Nominal year on year price change comparison: 2005/06 – 2016/17

Year-on-year price* change % Compared with previous year	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015	2015/ 2016	2016/ 2017
APPLES	7%	13%	34%	2%	-1%	17%	1%	24%	11%	6%	4%	-10%
PEARS	3%	21%	25%	10%	-4%	11%	2%	27%	12%	3%	12%	-8%
PEACHES & NECTARINES	15%	8%	8%	24%	-14%	6%	12%	16%	17%	19%	14%	-8%
APRICOTS	11%	-17%	34%	16%	0%	-6%	33%	-17%	26%	46%	3%	-3%
PLUMS	11%	-2%	6%	27%	2%	18%	6%	3%	40%	-7%	34%	-11%
ORANGES	-32%	13%	55%	21%	-6%	24%	16%	-3%	13%	16%	15%	31%
SOFT CITRUS	3%	16%	-13%	33%	-7%	22%	18%	9%	18%	13%	13%	26%
LEMON AND LIMES	-52%	62%	31%	23%	-43%	135%	6%	-3%	29%	55%	12%	32%
GRAPEFRUIT	-56%	68%	54%	37%	-50%	108%	6%	7%	16%	4%	16%	29%
TABLE GRAPES	-19%	27%	22%	16%	6%	5%	8%	14%	20%	3%	19%	-7%
WINE	-4%	0%	-1%	1%	16%	9%	4%	2%	12%	-6%	3%	12%

Source: DAFF, 2017

*Fresh weighted average

The increasing nominal prices supported investment in crop types with higher expected profitability margins. For instance, prices of the lemon & lime grouping increased by 135% from 2009/10 to 2010/11. Table 12 illustrates that, for the same lemon and lime product grouping, merely 1% of total plantings were younger than three years in 2010. By 2016, this share had increased to 26%, with an increase of 122% in total lemon and lime hectares between 2007 and 2016, as farmers reacted to the strong market signal. Significant establishment also occurred in the soft citrus and table grape industries, with substantial plantings younger than three years. A gradual retraction in the wine industry is also visible. Within the stone fruit industry, plums are directing the growth trajectory, whilst apples have been outgrowing pears in the pome fruit segment.

Table 12: Non-bearing establishments as % of total production area in South Africa

TYPE	0-3 Year (Non-bearing) %										Total Hectares 2016	% Change in total ha 2007-2016
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		
APPLES	7%	7%	9%	10%	7%	10%	13%	9%	9%	8%	24 214	18%
PEARS	9%	8%	17%	7%	7%	10%	11%	8%	8%	6%	12 277	8%
PEACHES & NECTARINES	18%	18%	16%	14%	14%	11%	7%	6%	4%	6%	9 473	-9%
APRICOTS	12%	12%	9%	6%	6%	5%	4%	2%	1%	3%	2 842	-28%
PLUMS	15%	14%	17%	20%	3%	14%	10%	8%	9%	9%	5 092	27%
ORANGES	2%	3%	3%	3%	5%	7%	7%	9%	11%	13%	43 758	16%
SOFT CITRUS	2%	6%	6%	6%	5%	19%	19%	21%	27%	31%	11 514	146%
LEMON AND LIMES	7%	2%	1%	1%	12%	18%	16%	17%	25%	26%	9 781	122%
GRAPEFRUIT	3%	9%	9%	9%	10%	7%	3%	3%	3%	2%	7 658	-11%
TABLE GRAPES	13%	9%	9%	9%	12%	20%	20%	20%	28%	28%	19 674	41%

Source: SAWIS (2018), HORTGRO (2018), SATGI (2018) AND CGA (2018)

FOCUS ON THE WESTERN CAPE

Following a second fly-over census recently completed by SIQ in the Western Cape, Table 13, presents a change detection framework, which compares production hectares of horticultural crops in the Western Cape in 2013 and 2017. While Table 13 only shows selected regions, all were included in the sensus. It is clear that the lion's share of citrus industry expansion occurred in the Cederberg, Bergrivier and Langeberg areas, followed by the Swartland, Swellendam and Drakenstein districts for soft citrus, lemons and limes. The area under wine grapes decreased by 15.6% with significant production area retractions in the Swartland, Stellenbosch, Witzenberg, Langeberg, Matzikama, Drakenstein and Breede Valley districts. Theewaterskloof area is shifting toward the cultivation of pears, with a lower chilling requirement than apples, whilst the opposite is evident in the Witzenberg area.

The severity of the drought in the Western Cape was mitigated to some extent by a healthy share of young establishments, which reached full-bearing and therefore started contributing to production. However certain areas were faced with significant decreases of water availability for irrigation purposes, which influenced production capabilities. Apart from the financial quantification by the Western Cape Department of Agriculture and BFAP (2018), a Geographic Information Systems (GIS) application was used to estimate the impact of limited available water on biological crop growth. The calculation was done with the Normalised Difference Vegetation Index (NDVI) for major crops produced during key vegetative growth periods through the season.

Using remote sensing satellite imagery, the average NDVI indices were calculated comparing 2017/18 against 2016/17 (current drought impact) and to 2015, which was considered a normal rainfall year. The results illustrate remarkable consistency with the average decrease in production (Table 14).

POME FRUIT

In 2017, pome fruit production in the Northern hemisphere was severely affected by frost damage and

Table 13: Change detection of major fruit and wine crops in the Western Cape (2013 - 2017)

Change detection of major fruit and wine crops - Selected municipalties in the Western Cape														
CROP	AREA (HA) 2017	Bergrivier	Breede Valley	Cederberg	City of Cape Town	Drakenstein	Kannaland	Langeberg	Matzikama	Stellenbosch	Swartland	Swellendam	Theewaterskloof	Witzenberg
APPLES	21512	63	3	0	88	6	3	-70	0	0	1	19	-120	565
PEARS	10711	40	71	8	-25	-21	2	98	0	-30	-9	24	114	-877
PEACHES	6848	-138	67	82	0	-25	11	-96	26	-2	-5	-105	-50	-687
APRICOTS	2729	10	-6	0	0	-6	-109	-139	-24	0	0	11	-5	-84
NECTARINES	1515	-11	-46	-6	0	-53	0	6	-4	-3	8	9	22	-89
CHERRIES	157	0	39	0	0	0	0	0	0	0	0	0	0	118
PLUMS	5644	-14	91	-6	-8	-131	14	417	0	-13	-59	-42	-332	-89
ORANGES	7704	96	-37	-13	0	1	0	26	19	6	37	-19	0	-9
SOFT CITRUS	6315	561	341	1354	10	87	1	615	2	26	113	166	-54	3
LEMONS	2042	104	30	222	54	31	10	599	2	13	117	64	-20	-13
LIMES	202	-2	0	18	-3	9	0	25	0	-4	3	1	0	0
GRAPEFRUIT	17	3	0	-10	0	0	0	0	0	0	0	0	0	-1
TABLE GRAPES	13095	-182	168	105	28	-59	-12	30	106	-18	75	0	1	33
WINE GRAPES	91221	-147	-1396	-161	-715	-3163	-108	-2547	-1075	-3244	-2499	-30	-380	-1226

Table 14: NDVI averages during vegetative growth periods in the Western Cape

Crop	Average NDVI_2015	Average NDVI 2016/17	Average NDVI 2017/18	Change 2016/17 to 2017/18	Change 2015 to 2017/18
Apples	78601	74834	70953	-5.2%	-9.7%
Pear	92550	89174	83376	-6.5%	-9.9%
Peach & Nectarines	97029	93628	84010	-10.3%	-13.4%
Apricots	80250	75264	62954	-16.4%	-21.6%
Plums & Prunes	95877	92166	85473	-7.3%	-10.9%
Oranges	78165	79543	76001	-4.5%	-2.8%
Soft citrus	69225	68499	68605	0.2%	-0.9%
Lemons & Lime	66574	67076	65141	-2.9%	-2.2%
Table grapes	95156	89246	78878	-11.6%	-17.1%
Wine grapes	106545	100787	91952	-8.8%	-13.7%

Source: WCDoA & BFAP (2018)

excessive precipitation, which impacted on production and stock levels. This in turn supported higher prices for South African produce, despite the appreciation in the exchange rate. Spain exploited the market shortages in Europe, whilst Scandinavian countries opted for new suppliers as a result of the poor production season.

Argentina faced rapidly increasing costs over the past few years, due to the severe depreciation of the Argentine Peso. New Zealand commenced the season with exceptional prospects, whilst local climatic conditions resulted in decreased volumes, smaller fruit size and somewhat delayed ripening due to a cool spring and late flowering periods.

Pome fruit industry outlook

The South African pome fruit industry supplied approximately 16.9% of total Southern Hemisphere apple production and 33.3% of total Southern Hemisphere pear production in 2017. This represents a marginal increase of 0.2% for apples and 5.9% for pears relative to 2016 figures (WAPA, 2018). Over the past decade, pome fruit bearing hectares increased consistently; apples increased from 18 582 hectares in 2007 to 22 434 hectares in 2017, an expansion of 20.72%, whilst pears increased by 10.3% from 10 296 hectares in 2007 to 11 356 hectares in 2017. Over the 10-year projection period, apple production is set to expand by 5.3% from 940 thousand tonnes in 2017, to 990 thousand tonnes by 2027. This represents a significant reduction in the growth of 32.4% over the past decade. Pear production in turn increased by 26.1% since 2007 and is projected to expand by a further 1.9% towards 2027 to reach 444 thousand tonnes (Figure 71).

Further expansion of pome fruit area remains constrained by the availability of water for irrigation purposes, chilling requirements and climatic conditions during developmental periods. The impact of the drought in the Western Cape and south-western parts of the Eastern Cape, where more than 95% of pome fruit production occurs, is evident in the significant production decreases in 2017. Despite the underlying assumption of rainfall patterns returning to normal in the medium term, the severity of the drought's impact entails that multiple years will be required for a full recovery. Hence the apple bearing area is projected to increase by only 0.21% over the outlook period. The pear bearing area is projected to decrease marginally by 0.26% over the same period, to reach 11 326 hectares by 2027, as apple re-establishment is favoured in key production areas as opposed to pears. Within the broader pome fruit industry, pear production remains a vital constituent given farming and marketing system dynamics.

The 2013 season will be remembered for its marvellous crop, associated with notable export volumes at lucrative prices, followed by the sharp depreciation

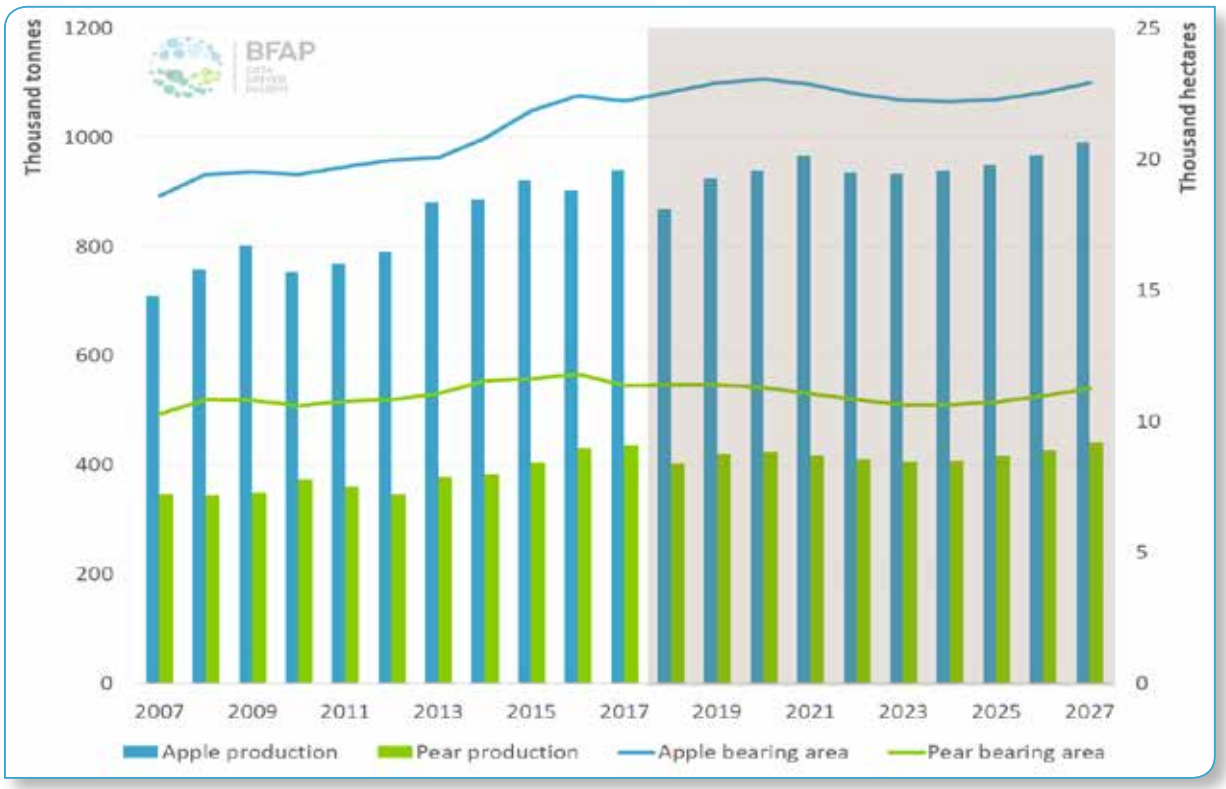


Figure 71: Production and area outlook for the South African pome fruit industry: 2007 – 2027

of the exchange rate towards the end of 2015. Unfortunately, the subsequent seasons saw extreme drought conditions, though the significant depreciation in the exchange rate in 2016 supported price levels and enhanced export opportunities. On the back of the lower pome fruit stock in the northern hemisphere due to the hefty impact of frost, lucrative pome fruit prices were realised in 2017, however the reduced fruit size arising from drought conditions are not in high demand with major importers, thereby limiting export demand for South African produce.

The outlook points to largely sideways real price movements, with export volumes recovering from the initial drought as newly established orchards reach full bearing capacity. Given that fruit tree bearing units were affected, complete recovery from the drought is expected to take a number of years. Apple exports however are still expected to increase by 15.8% by 2027 relative to 2017 levels. Pear exports are projected to increase by 7.8% over the same period (Figure 72).

The export orientation of the pome fruit industry implies that it faces competition from a large number of international producers, hence quality, consistency and continuity are paramount. Exports currently constitutes 44% of domestic apple production, with domestic fresh and processing accounting for 23% and 33% respectively. Pear production is even more export orientated, with exports accounting for 49% of production, whilst the domestic fresh market and processing components constitute 11% and 40% respectively. The domestic fresh and processing market segments are vital in accommodating volumes of suboptimal quality fruit following adverse weather conditions.

The domestic market for apples is typically more elastic than the pear market and a larger share of produce not fit for exports can be absorbed by the growing domestic market (Figure 73). Such produce must however still adhere to domestic quality standards to be acceptable to South African consumers. Domestic apple consumption is expected to grow by 9.1% over the next 10 years, to surpass 221 thousand tonnes by 2027. Pear consumption growth is expected to be slower, increasing by almost 2% to more than 45 thousand tonnes by 2027 (Figure 73). Growth is partly driven by an expanding population, as per capita consumption of apples is projected to increase by

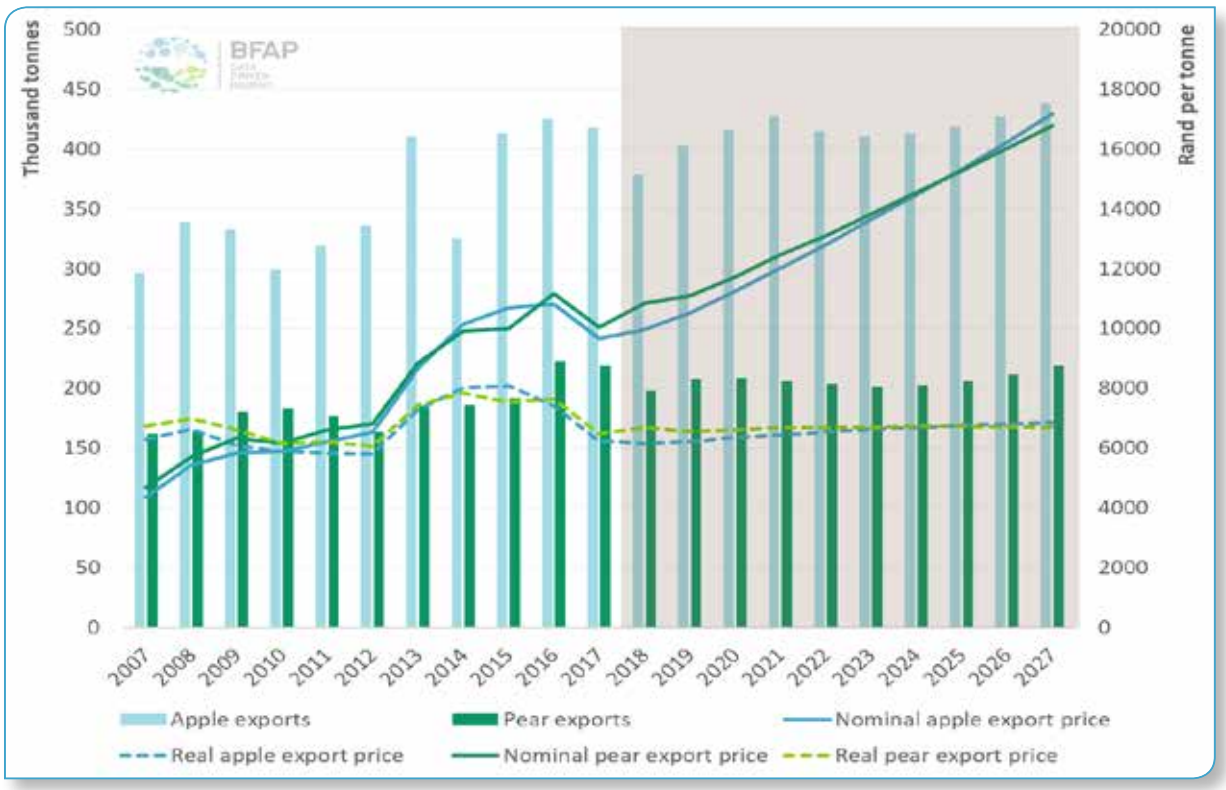


Figure 72: Export market outlook for the South African pome fruit industry: 2007 - 2027

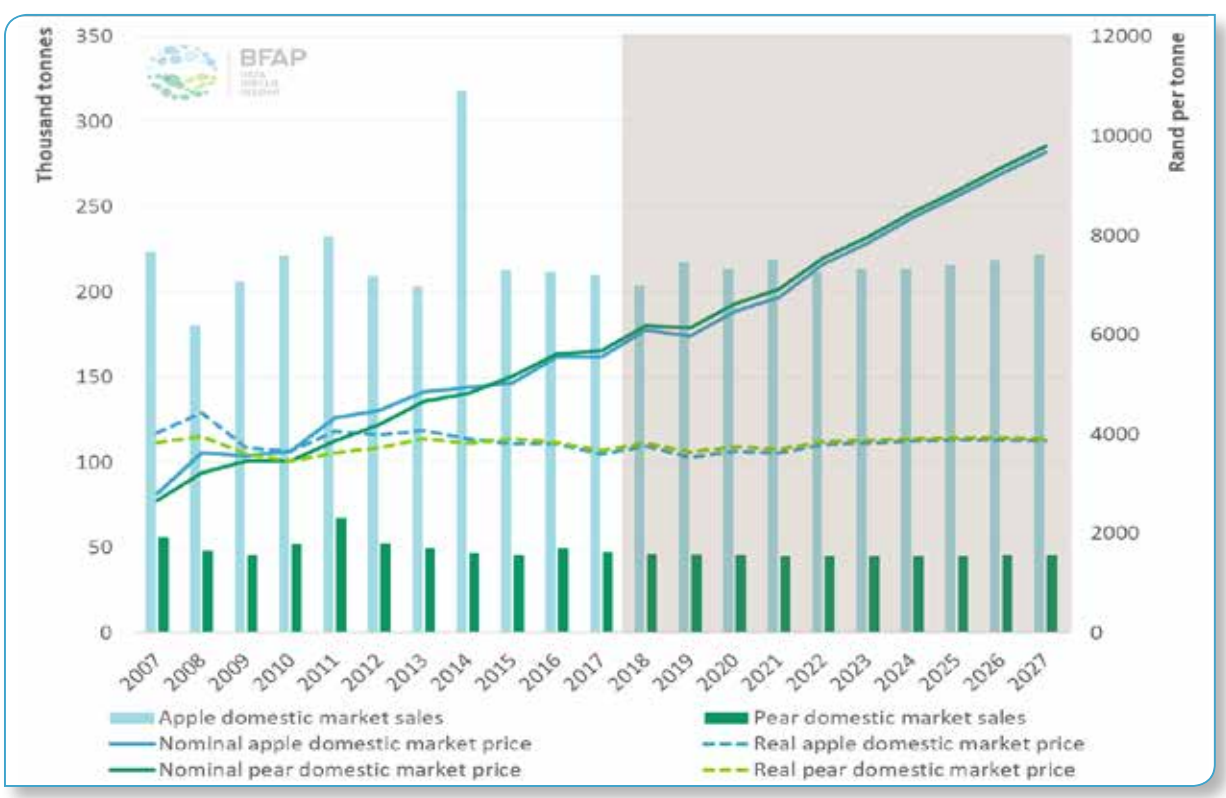


Figure 73: Domestic market outlook for the South African Pome fruit industry: 2007 – 2027

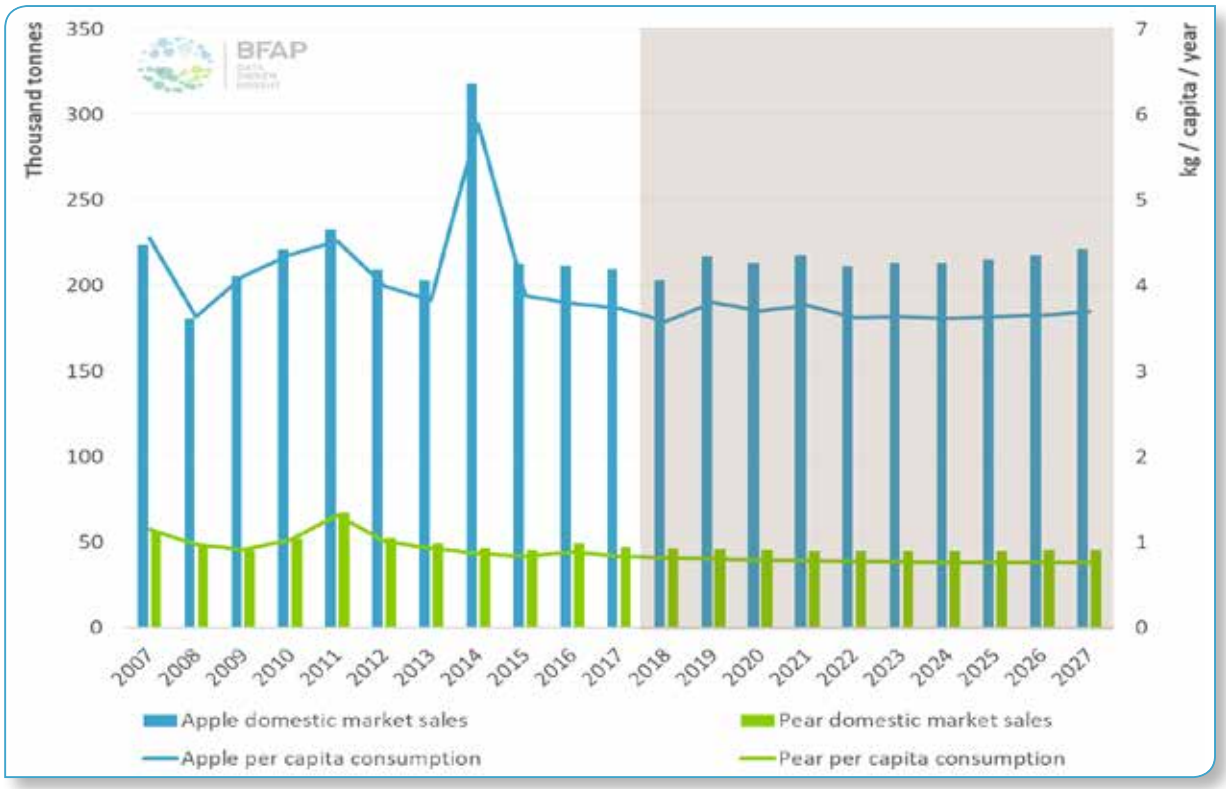


Figure 74: Domestic consumption outlook for the South African Pome fruit industry: 2007 - 2027

3.1% over the same period, whilst pear consumption decreases marginally on a per capita basis (Figure 74).

The outlook for domestic market prices presents some relief for producers who are currently facing an enduring cost-price squeeze, as real prices are projected to increase marginally by 2.96% for apples and 2.31% for pears. Exchange rate volatility can however impact negatively on US Dollar derived inputs and specialised technology, which are crucial in the efforts to enhance the competitive performance of the industry.

POME FRUIT: OUTLOOK FOR FARM LEVEL PROFITABILITY

The BFAP FinSim farm level model is capable of analysing a given farm business's financial data and then projecting performance for the future. The pome fruit FinSim model is based on specific assumptions regarding various controllable parameters such as farm size, enterprise composition, up to 36 orchard blocks for apples and for pears, each orchard with a variable replacement period, age of first bearing and full bearing, as well as variable annual yields, variable production practices, and variable input and product prices. Various categories or classes of output for apples and pears can be accounted for in the model to accommodate the various cultivar prices in the respective market segments.

In this section, the FinSim model is applied to evaluate profitability and sustainability of a prototype pome fruit farm based on the 2016/17 production statistics and market information, as well as the projected price movements under the Baseline assumptions. Projections are also simulated stochastically to account for risk. The description and characteristics of this prototype farm is based on Hortgro Services (2018) data, which is adjusted by means of focus group discussions with producers. This typical farm consists of 150 hectares, split between 120 hectares of apples and 30 hectares of pears (Table 15).

Note that this prototype farm is not considered representative of the entire apple and pear industry in South Africa. The results and projections should be viewed in the context of certain "what if" scenarios given a set of assumptions, and not as forecasts. The decision maker should be creative and pro-active

Table 15: Cultivar distribution on the prototype pome fruit production unit

POME FRUIT PRODUCTION UNIT					
VARIETY	Ha	% Share	VARIETY	Ha	% Share
BRAEBURN	2.4	2%	FORELLE	12	40%
CRIPPS PINK	0	0%	BON CHRETIEN	1.8	6%
FUJI	14.4	12%	ABATE FETEL	3	10%
GALA	21.6	18%	BEURRE BOSC	0.9	3%
GOLDEN DELICIOUS	27.6	23%	CHEEKY / ROSEMARIE	0.9	3%
GRANNY SMITH	12	10%	PACKHAM'S TRIUMPH	10.5	35%
PINK LADY / ROSY GLOW	18	15%	DOYENNE DU COMICE	0.9	3%
SUNDWONER / CRIPPS RED	3.6	3%			
TOP RED / STARKING	18	15%			
JAZZ / KANZI	2.4	2%			
TOTAL	**120**	**100%**		**30**	**100%**

in evaluating the effect of alternative actions and implement those actions to utilise opportunities and follow practices that contribute to a financial and economically competitive farming system.

Performance of the prototype pome fruit farm over the projection period is illustrated by various measures. For each year, nominal values are simulated stochastically over 1 000 iterations, allowing for the calculation of maximum, mean and minimum values, as well as the probability distributions of these performance measures for two scenarios, namely Drought scenario and Recovering yield scenario.

The drought scenario resembles a situation where yields decline by 3% in 2017, 8% in 2018, 4% in 2019 and 2% in 2020. The yield recovery scenario presents a situation of more favourable production conditions, inducing a yield recovery which can be considered as the farm-level situational Baseline. Both of these farming scenarios operate with an overhead costing structure of R 8 604 200 per annum and direct allocated production costs per hectare of R 136 538 for apples and R 124 601 per hectare for pears. Pricing per tonne of product follows the same trend as simulated in the BFAP Sector level model for pome fruit.

When comparing the output in terms of Net Farming Income (NFI) per hectare, Figure 75 and Figure 76 indicate that production levels remain the financial foundation of farming operations. The probability that this production unit will yield a NFI per hectare of more than R33 000 (25% of weighted average production cost per hectare) is severely negative under the drought scenario presenting a yield decline (Figure 75). It should be noted that the production unit follows a replacement strategy of 30 years (productive life cycle per orchard) where the orchards established in 1993 to 1997 will have to be replaced, hence the impact on probability to the end of the simulation period for both scenarios in Figure 75 and Figure 76.

Prices and production levels are crucial to the economic sustainability and feasibility of agricultural operations. The amplified negative impact on yields due to insufficient available water for irrigation is stressed by the two simulated scenarios. Nevertheless, on-farm production practices with regard to water management have to be prioritised due to the stiff competition for this scare resource.

Competitiveness of farming systems: agribenchmark Horticulture

Part of the BFAP farm level network is the agri benchmark initiative where agricultural enterprises are compared globally. Agribenchmark is an international network of agriculturists, economists, advisors and farmers aiming to create a better understanding of global farming by analysing sustainable, comparable and quantitative information on production systems in different parts of the world. More than 30 countries are already part of this network and their typical farms are updated and analysed annually, based on a standard operating procedure as defined by the agribenchmark methodology. The latter ensures credible comparisons across countries.

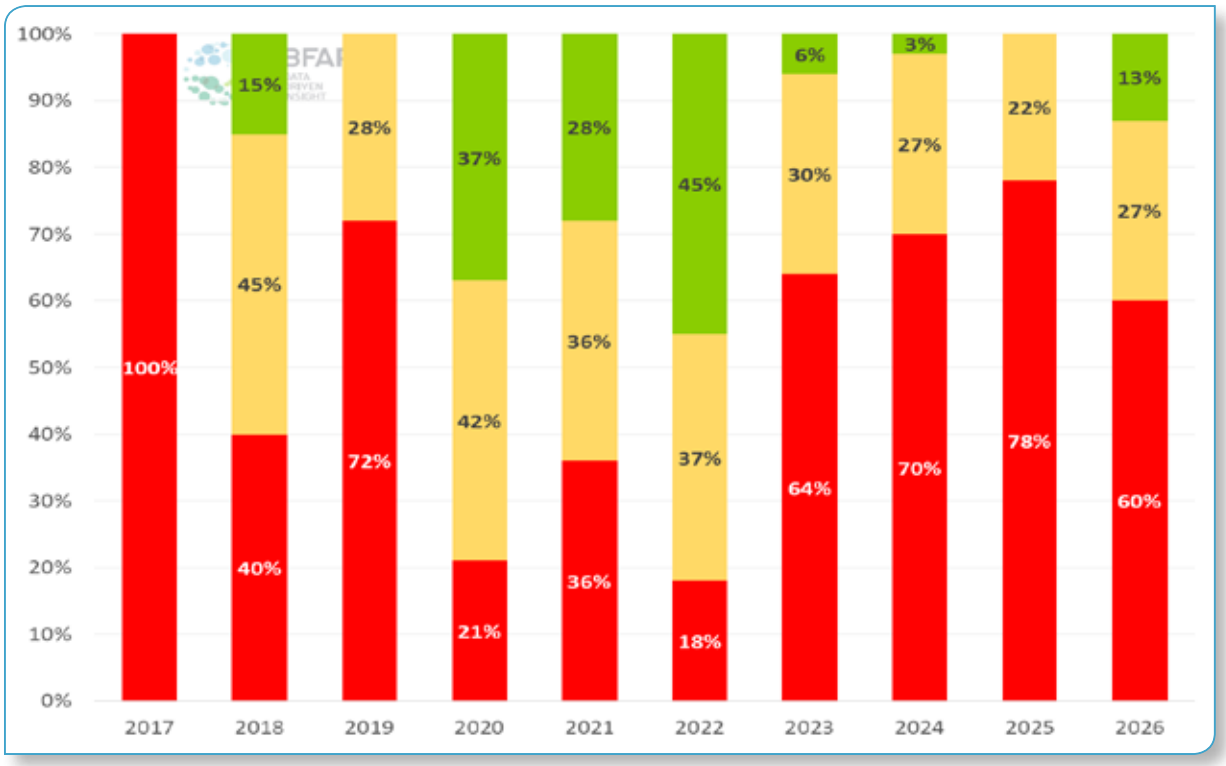


Figure 75: Stoplight chart illustrating the probability of achieving a NFI per hectare of less than R13 000 (red) and greater than R33 000 (green) or in between (yellow) under a continued drought scenario

Figure 76: Stoplight chart illustrating the probability of achieving a NFI per hectare of less than R13 000 (red) and greater than R33 000 (green) or in between (yellow) under a recovering yield scenario

Two apple farms in South Africa, in Ceres (120 ha) and in the EGVV (Elgin, Grabouw, Vyeboom and Villiersdorp) (80 ha) regions, form part of the agribenchmark horticulture network. The area, full bearing yield and export price per cultivar for each farm are presented in Table 16.

Some of the agribenchmark horticulture results for participating countries are presented in Figure 77 and Figure 78. The average yield per hectare and gross revenue per tonne for apples on the typical farms of Germany (DE), Italy (IT) and South Africa (ZA) are presented in Figure 77. The size of the respective typical farms is also listed in the figure and differs widely, with only one of the German and the two South African typical farms that are relatively large. The yields for the South African typical farms are higher than those of the German typical farms and more comparable to the yields of the Italian typical farm.

The gross revenue per tonne of the South African typical farms was considerably lower than those of the European countries over the period 2010-2017. This can

Table 16: Area, yield and prices for two RSA apple farms included in agribenchmark Horticulture in 2018

Production region	Area (%)		Yield (full bearing)		Price (export)	
	Ceres	EGVV	Ceres	EGVV	Ceres	EGVV
Cultivar/Variety:	**%**	**%**	**(tonne/ha)**	**(tonne/ha)**	**(R/tonne)**	**(R/tonne)**
Granny Smith	13	21	70	67	4 000	4 387
Golden Delicious	22	25	80	85	3 650	2 952
Royal Gala	15	14	52	74	4 850	5 202
Pink Lady / Cripps Pink	15	10	80	78	8 000	5 813
Topred / Starking	19	10	53	43	4 200	4 585
Fuji	11	10	45	48	4 500	5 014
Braeburn	5	5	78	75	3 950	4 107
Sundowner	0	5	na	78	na	6 313
Total	100	100				

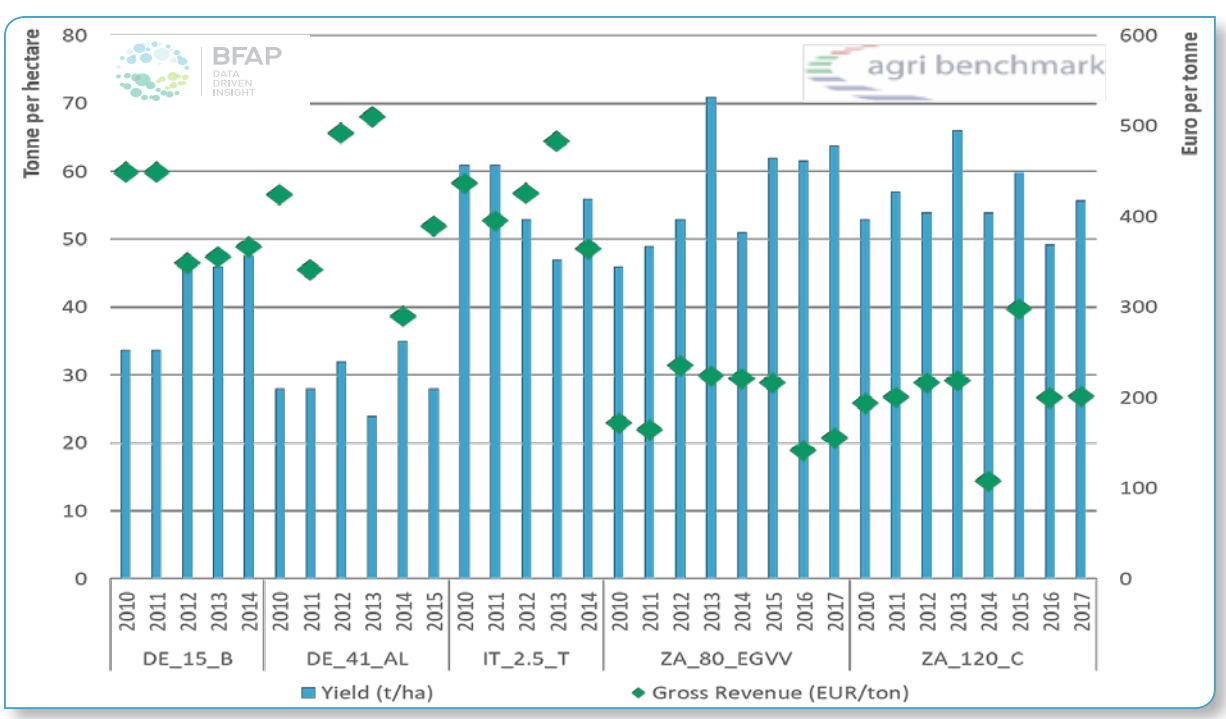


Figure 77: Yield (t/ha) and gross revenue (€/t) for apples 2010-2017 on various typical farms
Source: agri benchmanrk Horticulture, Thunen Insitutue (2018)

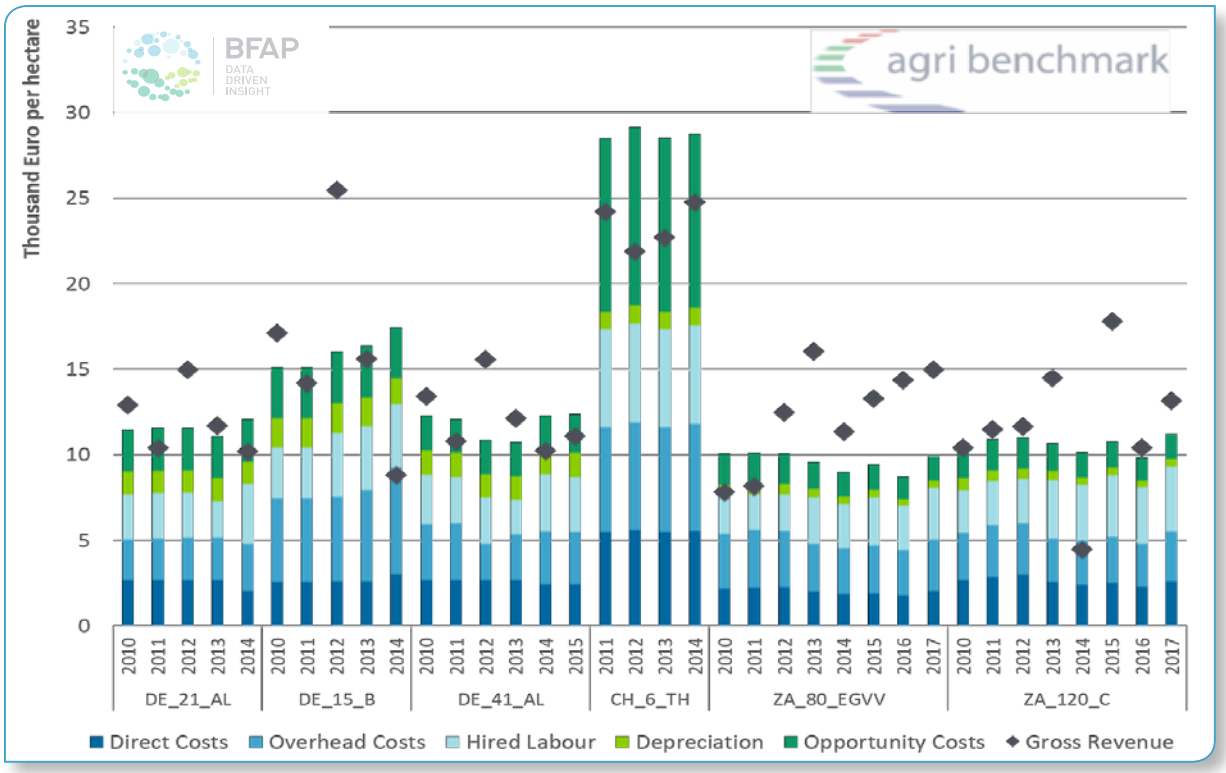


Figure 78: Total cost (€ per ha) and gross revenue for apples (2010 – 2017) on various typical farms
Source: agri benchmanrk Horticulture, Thunen Insitutue (2018)

possibly be ascribed to the fact that the gross revenues of the South African typical farms are based on farm gate prices (cost of packaging already deducted).

The total cost and gross revenue for the typical apple farms of Germany (DE), Switzerland (CH), Italy (IT) and South Africa (ZA) are indicated in Figure 78. The cost structures of the four smaller typical apple farms (one Switzerland, two Italian and one German typical farm) were higher than as for the other typical farms. Unfortunately, there are no updates of data for 2017 for the European and Switzerland typical farms.

It is clear from Figure 78 that the gross revenue per hectare varied widely from year to year on the typical farms. The gross revenue per hectare for the EGVV typical farm showed a steady increase over the period 2014 to 2017.

TABLE GRAPES

Despite the Western Cape drought, the South African table grape industry produced only 8.2% less than the previous record harvest in 2017. Favourable climatic conditions supported record export volumes from the Northern production regions. Conversely, the Bergriver and Olifantsriver areas faced a significant drought impact, resulting in decreases of 16% and 30% respectively in export volumes.

The appreciation of the exchange rate affected grape export earnings in US Dollar based markets such as the Far East, Canada and the Middle East. Relative currency strength in South Africa and Australia, combined with delayed shipping times due to windy conditions led to increased competition from Australia in Far East markets. At the same time, export volumes from both Peru (estimated 28 000 ha under production) and Chile (estimated 48 202 hectares under production) declined by 11% and 24% respectively compared to the previous season.

Table grape industry outlook

The South African table grape industry grew rapidly over the past 5 years, expanding the area under production by 27% from 2012 to 2017 to reach. Expansion was

supported by favourable prices in a recovering global market following a period of economic stagnation, which paved the way for investment in production area (Table 12). The table grape industry is dominated by exports, which increased its share in the total market by 20% between 2012 and 2017. Export volumes are expected to decline in 2018 from the record levels achieved in 2017, due to the lingering effects of the drought in the Western Cape and the continued concern related to irrigation water availability in the region. In 2017, much of the droughts impact was offset by an exceptional harvest in the Northern regions, combined with above average levels in the Orange River region.

Over the course of the next decade, a marginal increase of almost 3% is projected for export volumes (Figure 79), where South Africa is facing increasing competition for market share from southern hemisphere competitors such as Chile and Peru. Supported by a recovery in income growth in the medium term, as well as an expanding population, domestic demand is projected to increase by 10.4% over the same period, allbeit from a small base. In order to supply the increased demand in both the export and domestic market, the table grape area is projected to expand by 9.1%, resulting in a production expansion of 10.1% by 2027 (Figure 79).

Figure 80 presents the outlook for market prices in real (inflation adjusted) terms, as well as the market value of table grapes. Over the course of the next decade, market value is projected to find support from marginal growth in real prices of 1.9% and 4% respectively for the export and domestic fresh markets. Over the course of the 10-year projection period, the nominal value of exports is projected to increase by 61.6% to approach the R9.8 billion mark, whilst the value of the local market expands by 77.1% to surpass R500 million by 2027.

Evaluation of the export market share distribution presented in Figure 81 points to a shift from traditional markets such as the European Union, toward the United Arab Emirates (UAE), Saudi Arabia (SA), Hong Kong (HK), Malaysia (M), Thailand (T), Russia (RUS), United States of America (USA) and Canada. Going forward, access to new lucrative markets will have to be expanded, without weakening the position in existing market space.

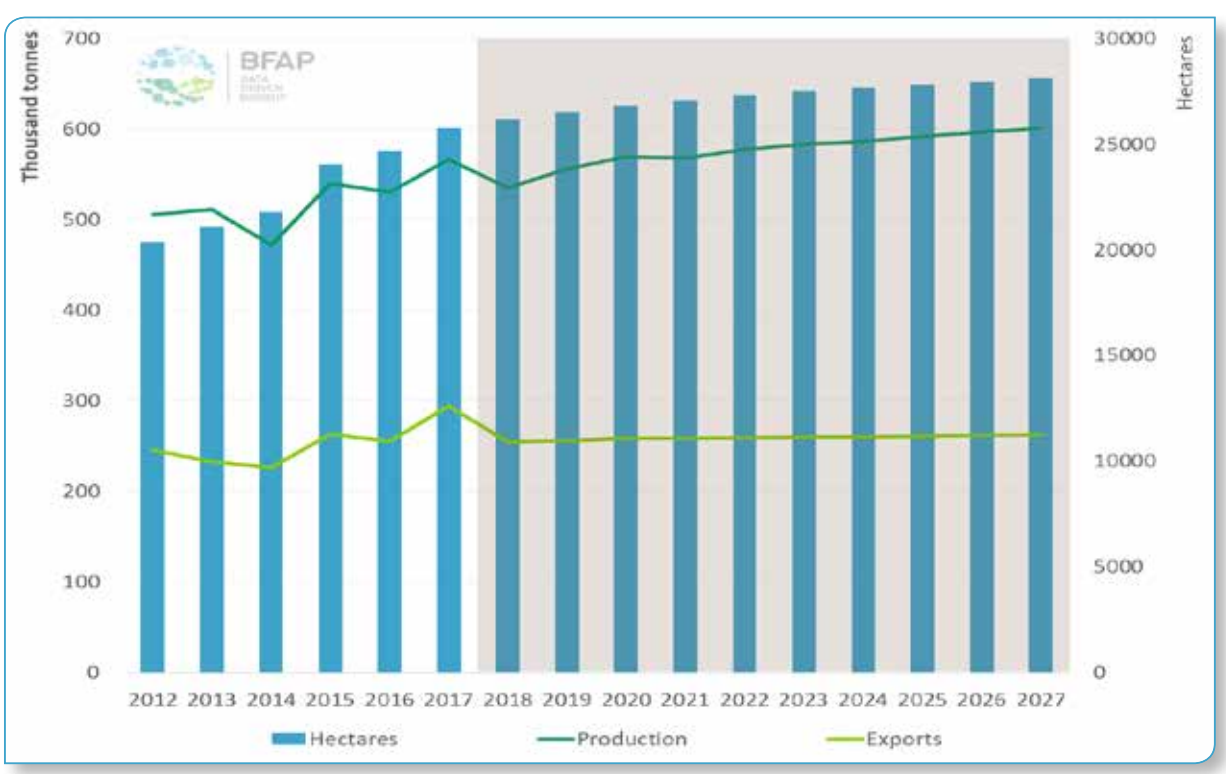


Figure 79: Production outlook for the South African table grape industry: 2012 - 2027

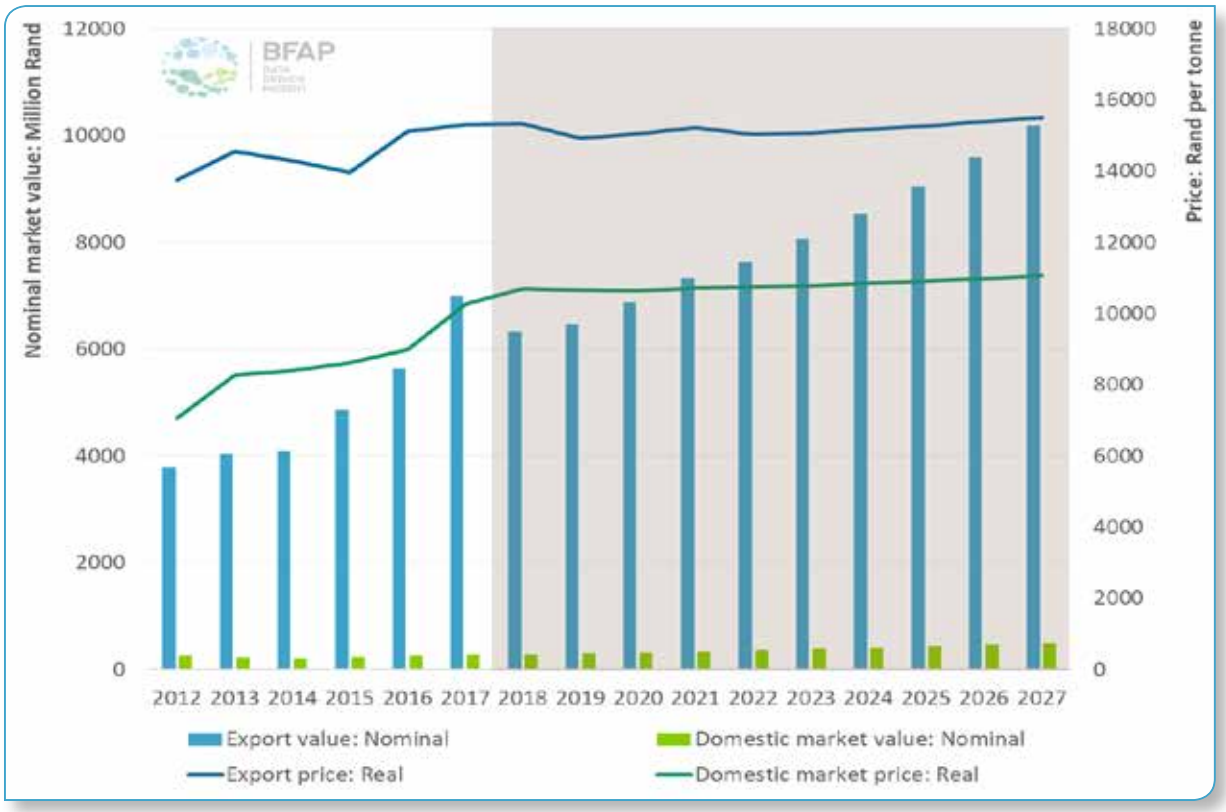


Figure 80: Real price and market value outlook for the South African table grape industry: 2012 - 2027

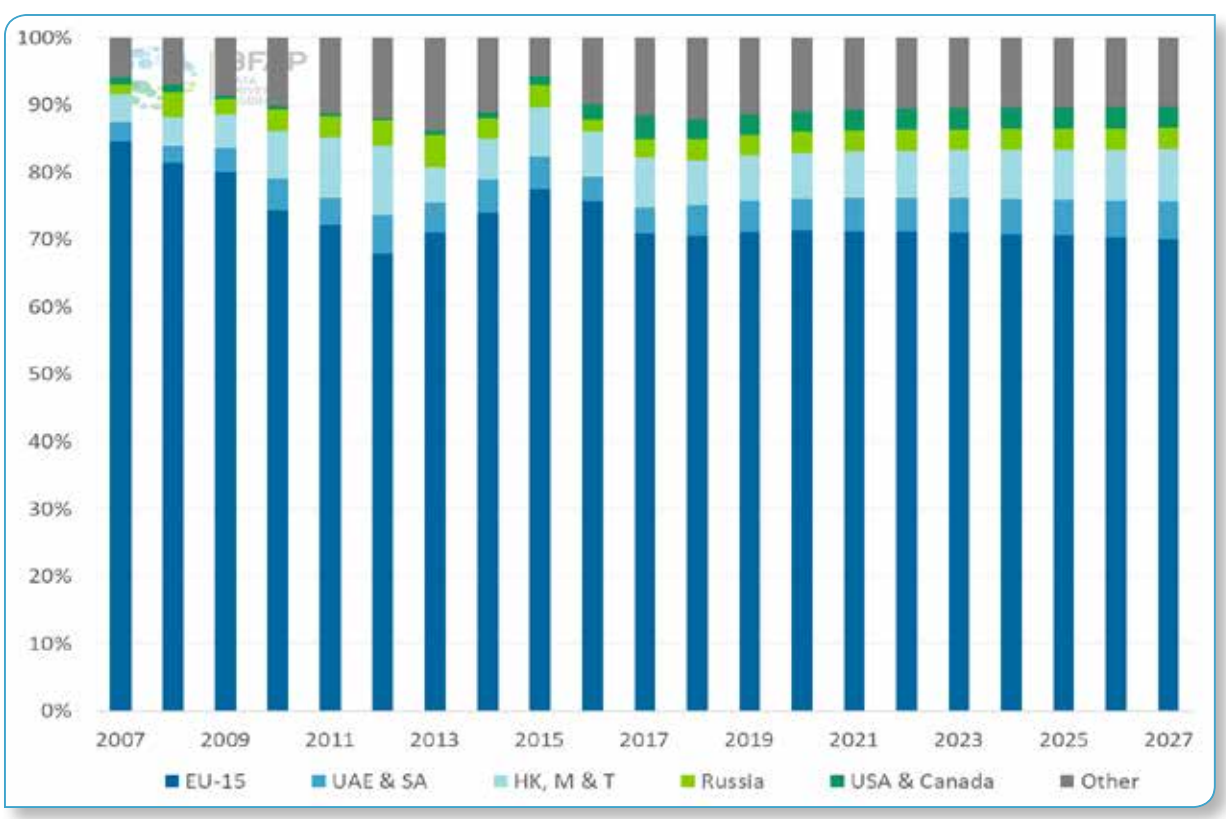


Figure 81: Export market outlook for the South African Table grape industry: 2007 – 2027

Table Grapes: Outlook for farm level profitability

The BFAP farm-level FinSim model for table grapes is based on specific assumptions, industry statistics regarding various controllable parameters such as farm size, enterprise composition, up to 24 table grape production blocks, each with a variable replacement cycle, age of first bearing and full bearing, as well as variable annual yields, variable production practices, and variable input and product prices. Various categories or classes of output for table grapes are provided for, to accommodate the different cultivar prices in the various market segments.

The production unit analysed within the BFAP FinSim methodology comprised 42 ha under table grapes production, reflecting a plausible table grape operational unit with cultivar distribution shown in Table 17. Establishment cost in 2017 were calculated at R422 380 per hectare, whilst production cost per hectare amounts to R247 491. Fixed cost for the operation amounted to R3 627 824 per hectare. Fixed assets and moveable assets were allocated accordingly to the production unit's requirements to service the investment, along with its operational activities.

The baseline was simulated as a business as usual situation, which is depicted in Figure 82. In order to account for risk, results were simulated stochastically and Figure 82 presents a probability analyses under normal asset and orchard replacement. It illustrates the likelihood of achieving a Net Farming Income (NFI) per hectare that is greater than R124 000 (green), below R72 000 (red) or in between (yellow). The probability of exceeding R124 000 per hectare increases significantly from 2020 onwards.

Given the uncertainty of the agricultural production environment, Figure 83 presents an alternative scenario, whereby yields are decreased by 13% in 2018 and by 5% for the 2019, due to limitations in water available for irrigation purposes following the drought in the Western Cape. Agriculture is frequently confronted with adverse weather conditions and Figure 83 highlights the exposure of a production unit to a sudden decrease in yield within a fixed capital and long-term decision-making horizon. The probability to achieve a NFI/ha greater than R124 000 is only discernible from 2020 when the unit returns to longer term average yield levels.

STONE FRUIT

The 2017/18 season was heavily influenced by drought conditions, as well as hail, which reduced production volumes substantially. This was not only true in South Africa, but also abroad in northern hemisphere countries such as France, Spain, Italy and the USA. Adverse weather reduced the global harvest to the extent that South African producers could benefit from higher prices in European markets. However, the appreciation in the value of the Rand offset some of this gain. Chile, South Africa's major competitor in the Southern Hemisphere, had a normal season, realising production levels very close to its long-term average and therefore providing stiff competition for South African products.

Within the global stone fruit market, South Africa provides roughly 9.37% of total plum exports, 0.77% of peaches and nectarine exports, and 1.24% of apricot volumes traded internationally (ITC, 2018).

Table 17: Cultivar distribution on the prototype table grape production unit

TABLE GRAPE VARIETIES	Ha	% Share
BARLINKA	1.65	4%
ALPHONSE LAVALLEE	1.65	4%
RED GLOBE	3.75	9%
CRIMSON SEEDLESS	9.75	23%
THOMPSON SEEDLESS	6	14%
SABLE	6.75	16%
SWEET CELEBRATION	6	14%
AUTUMN ROYAL	6.45	15%
TOTAL	**42**	**100%**

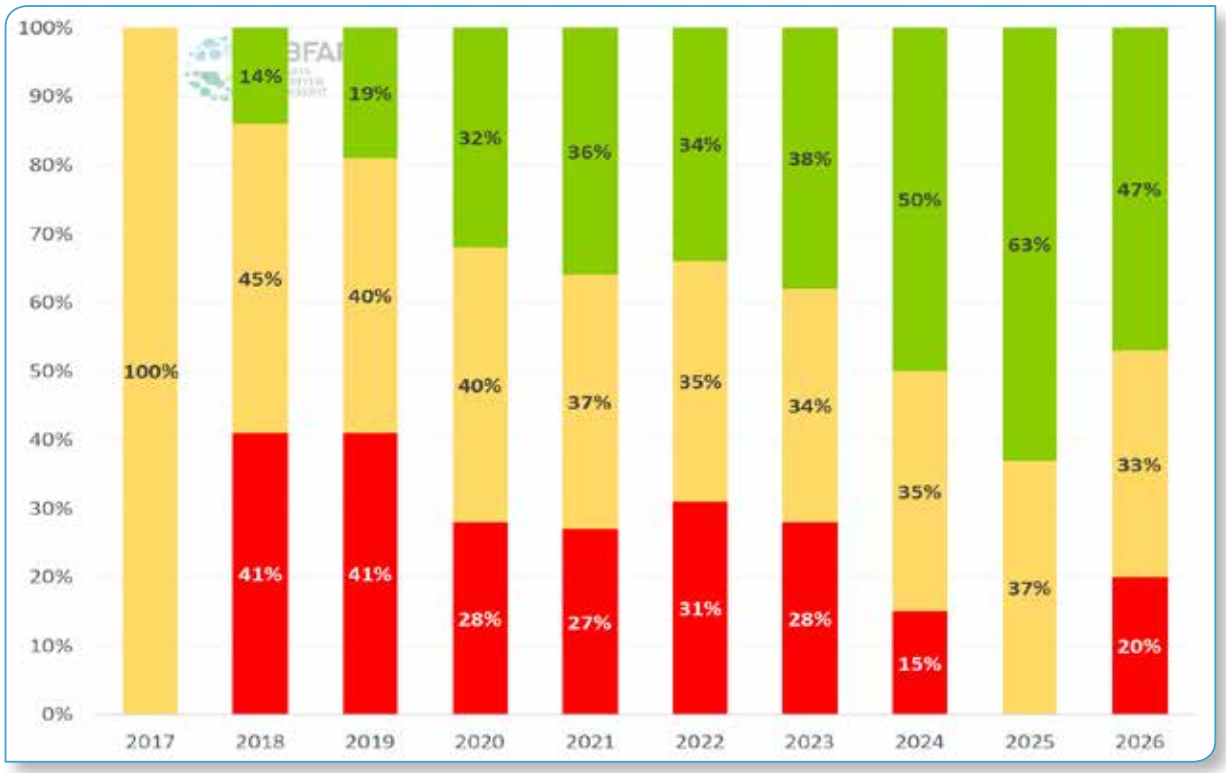


Figure 82: Stoplight chart illustrating the probability of attaining a NFI per hectare of less than R72 000 (red), more than R124 000 (green) or in between (yellow) on the prototype table grape production unit: Baseline

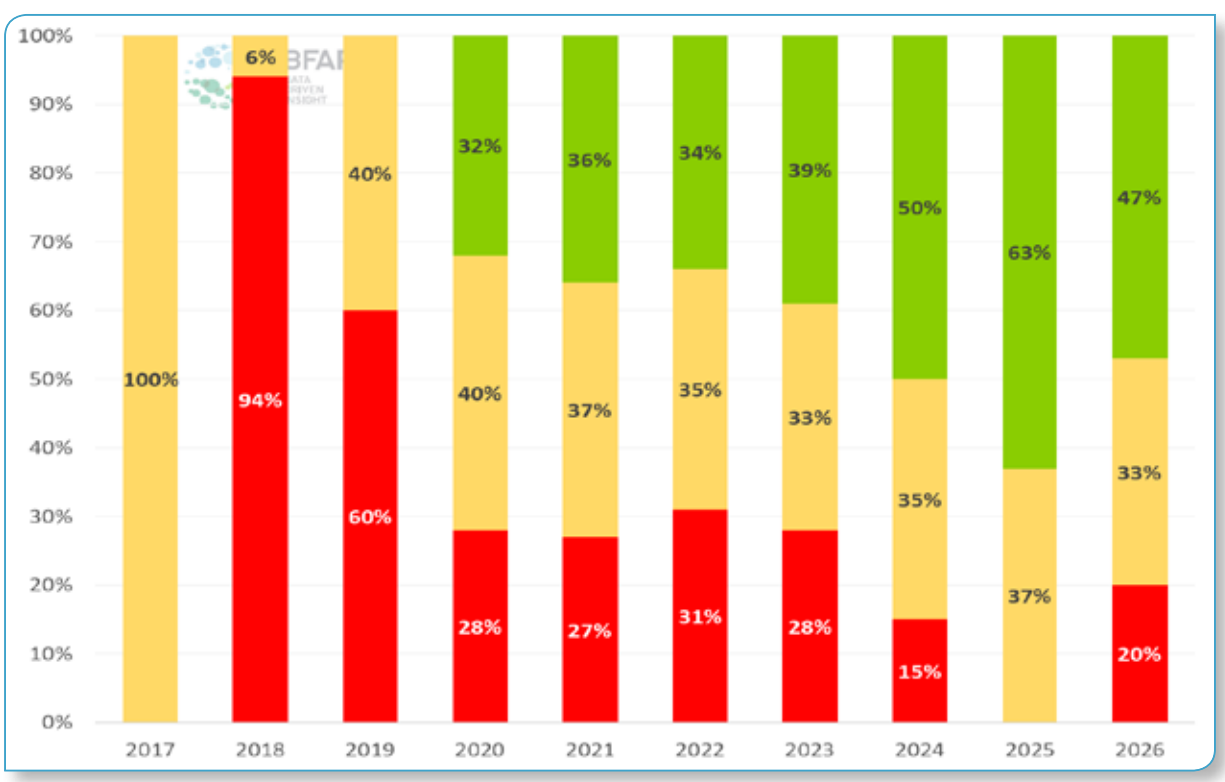


Figure 83: Stoplight chart illustrating the probability of attaining a NFI per hectare of less than R72 000 (red), more than R124 000 (green) or in between (yellow) on the prototype table grape production unit: Drought Scenario

However, given seasonality of production, the southern hemisphere context is a more relevant consideration. Here, South Africa plays a pioneering role, and is responsible for exporting 36.87% (66 765 tonnes) of plums, 14.17% (17 105 tonnes) of peaches and nectarines, and 62.38% (4 126 tonnes) of apricots. Regarding export, South Africa trails behind Chile, the most prominent competitor of the South African stone fruit industry.

Stone fruit industry outlook

The area under apricot production has declined consistently over the past decade, decreasing by 20.9% from 3 442 ha in 2007 to 2 724 ha in 2017 (Figure 84). Over the projection period, full bearing hectares are projected to consolidate somewhat, declining by a further 3.1% by 2027 relative to 2017. In light of the aged orchard structure, yield gains over the projection period are small and hence production volumes are projected to remain fairly consistent, declining by only 0.2% by 2027 relative to the average of 2016 and 2017.

The area under peaches and nectarine production increased fairly consistently for most of the past decade, before retracting in 2016 and 2017 (Figure 84). As a result, production volumes increased by 11.4% since 2007, having surpassed 210 thousand tonnes in 2015 before declining to just over 200 thousand tonnes in a drought affected 2017. With water expected to remain a constraint in the Western Cape, a slow recovery in area is projected for the next 10 years, reflecting an expansion of only 2.2% by 2027 relative to 2017. This will be sufficient to support a production expansion of 6.1% to just under 213 thousand tonnes by 2027.

Contrary to peaches, nectarines and apricots, significant investment occurred in plum production, with the area expanding by 31% over the past 10 years. In 2007, just over 58 thousand tonnes of plums were produced in South Africa, which increased to almost 89 thousand tonnes by 2017 (Figure 84). Given industry maturity levels and present water challenges, only a marginal increase of less than 1% is projected for plum production over the Outlook, on a marginally contracted area. Having already declined in 2016, the area under plum production is expected to decline by 2.7% by 2027 relative to 2017 levels.

Nominal product price increases reflected in Table 11 were favourable for stone fruit producers,

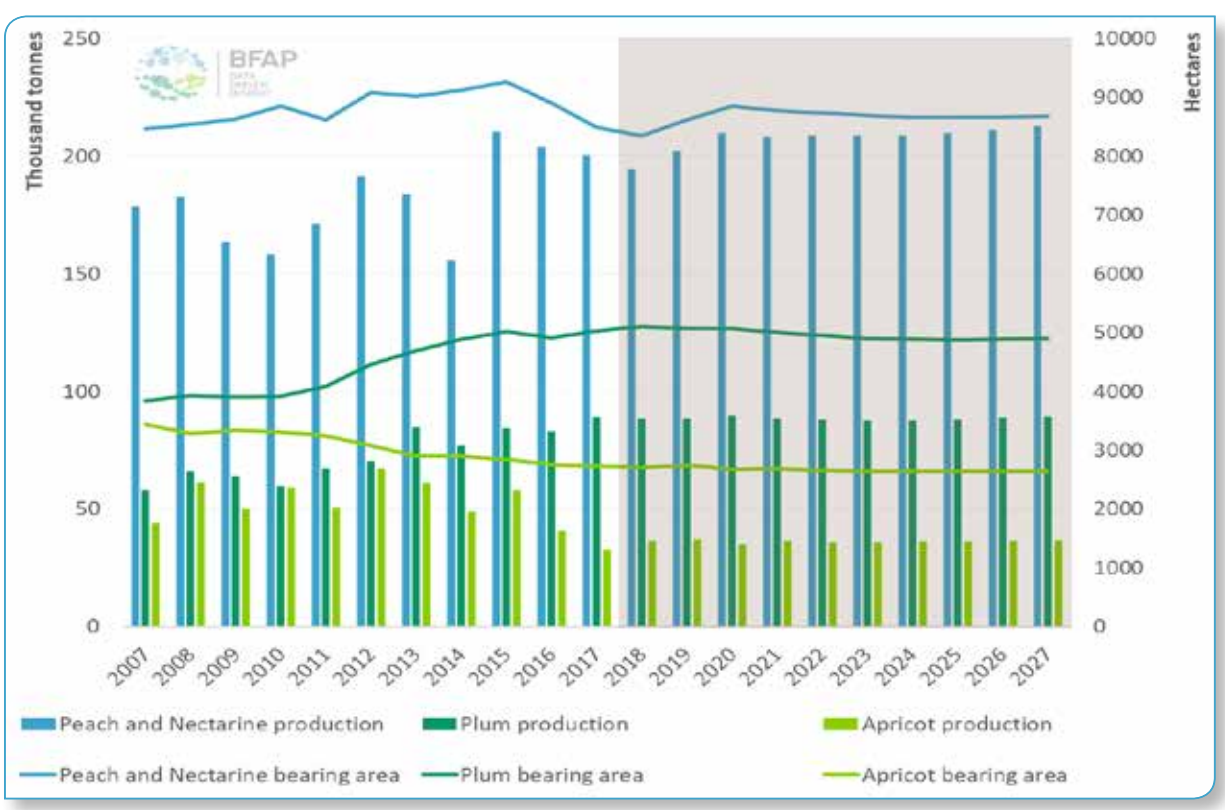


Figure 84: Production Outlook for the South African stone fruit industry: 2007 - 2027

particularly in 2015/16, when a sharp depreciation in the Rand supported nominal price gains for many fruit exporters. Apricot prices in particular increased sharply from 2010 to 2011 due to reduced export volumes from New Zealand. Real prices have typically declined in the recent past (Figure 85), due to the combination of drought impact in the Western Cape (and the resultant implications for fruit quality) and exchange rate appreciation in 2017. Over the course of the projection period, firm export demand, combined with consolidated production levels and gradual depreciation in the exchange rate support marginal gains in real export prices of 1% per annum for peaches and nectarines, 1.9% per annum for plums and 1.3% per annum for apricots (Figure 85).

The lion's share of stone fruit export volumes will continue to be attributed to the plum industry, which is projected to reach a level of almost 62 thousand tonnes by 2027. Apricot exports remain small by comparison and is projected to approach the 4 thousand tonne mark by 2027. Peaches and nectarine exports are expected to exceed 16.5 thousand tonnes by 2027 (Figure 85).

Domestically, the real price view for the Outlook is also favourable, with Figure 86, reflecting an average annual increase of 1.7% for peaches and nectarines, 2.4% for plums and 1.3% for apricots. Apricot volumes in the domestic market remain small, but increase by approximately 9% over the Outlook to a level of 1 717 tonnes by 2027. The domestic plum market is larger, by expands by merely 2% over the projection period to exceed 19 thousand tonnes by 2027. The largest of the 3 subsectors in terms of domestic market volumes is peaches and nectarines, which is projected to expand by 5.3% over the next 10 years to approach 40 thousand tonnes by 2027 (Figure 86).

In light of fruit production's export orientation, as well as the fact that apples, oranges and bananas are favoured by South African consumers over the stone fruit contingent, it is anticipated that consumption level on a per capita basis will not increase significantly over the Outlook (Figure 87). By implication, the volume growth alluded to for these markets is mainly a result of a growing population.

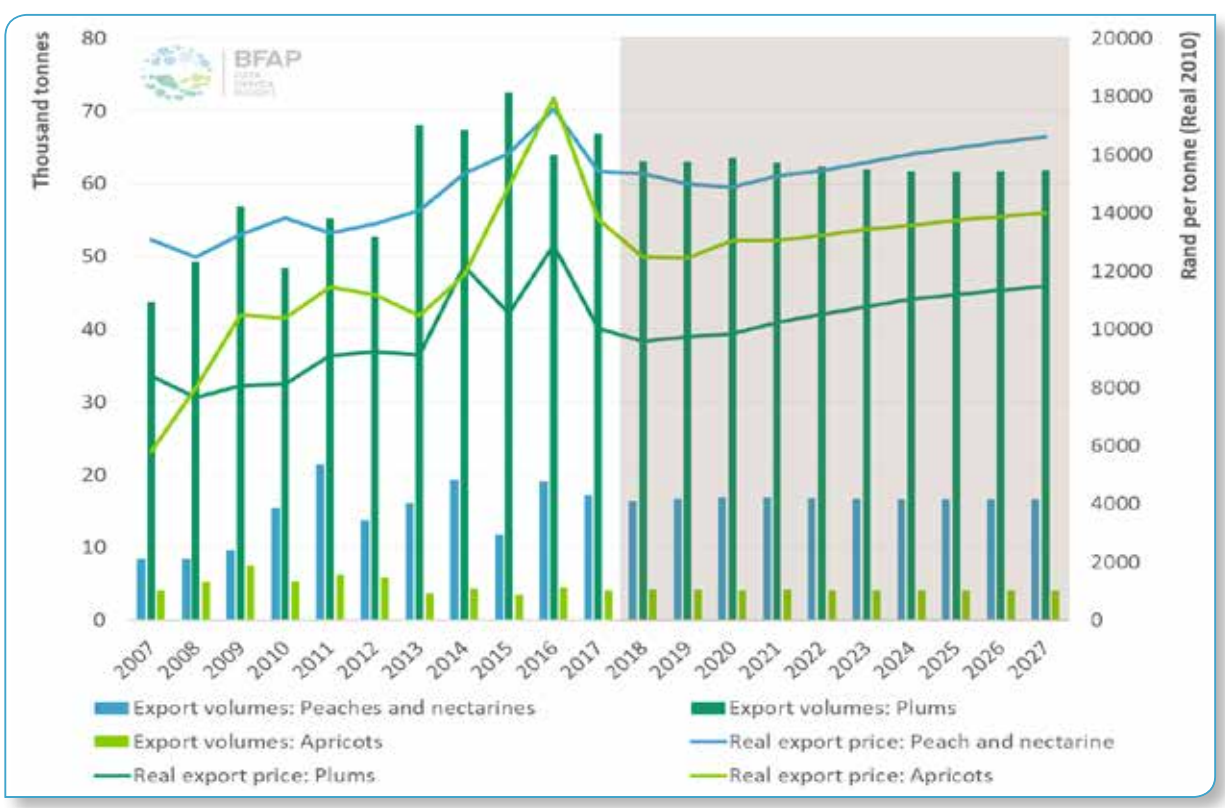


Figure 85: Export volume and price outlook for the South African stone fruit industry: 2007 -2027

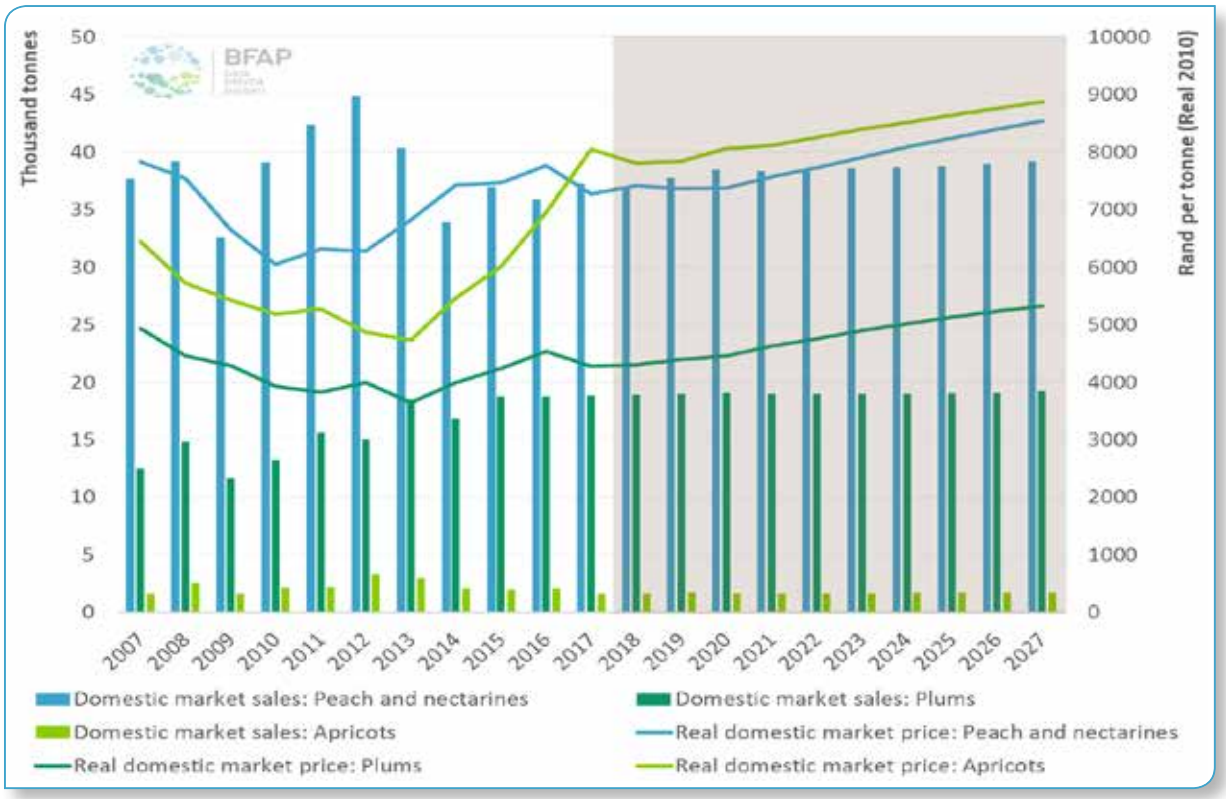


Figure 86: Domestic market outlook for South African stone fruit: 2007 - 2027

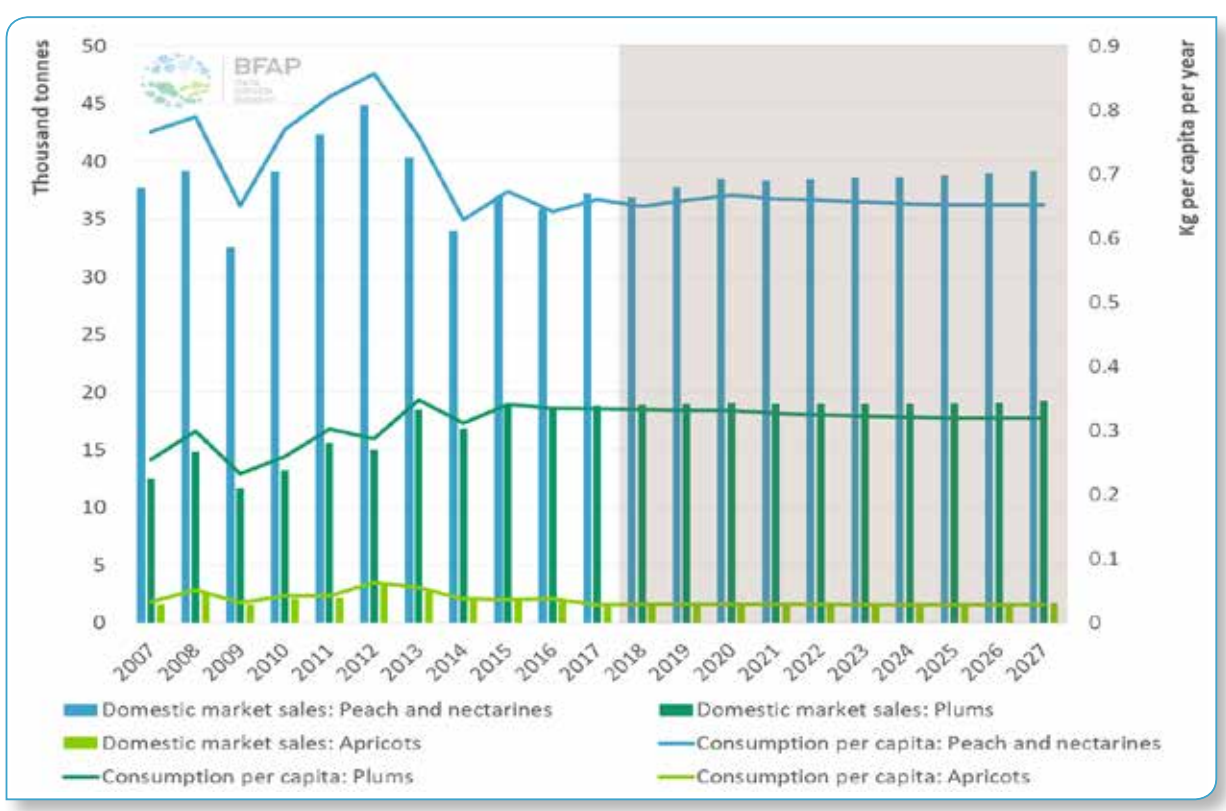


Figure 87: Domestic consumption of South African stone fruit: 2007 - 2027

STONE FRUIT: OUTLOOK FOR FARM LEVEL PROFITABILITY

This section includes an analysis of a typical stone fruit farm, based on the 2016/17 production statistics and market information, as well as a simulation of the implication of the Baseline projections on this typical farm. These projections were simulated stochastically for the period 2018 to 2027. The description and characteristics of this prototype farm is based on Hortgro Services (2018) data and adjusted through focus group discussion with producers. This typical farm consists of 62 hectares, which contains 38.81 hectares of plums, 9 hectares of peaches, 2.19 hectares of nectarines and 10.89 hectares of apricots, as illustrated in Table 18.

This typical or prototype farm is included in the Baseline for the first time this year and is not considered representative of the entire stone fruit industry in South Africa. The results and projections should be viewed in the context of certain "what if" scenarios and not as forecasts given a certain set of underlying assumption. The strategic decision maker should be creative and pro-active in evaluating the effect of alternative actions and implement those actions that utilize opportunities and follow practices that contribute to a financial and economically competitive farming system.

Performance of the prototype stone fruit farm over the projection period is illustrated by various measures. For each year, nominal values are simulated stochastically over 1 000 iterations, allowing for the calculation of maximum, mean and minimum values, as well as the probability distributions of these performance measures for two scenarios: a Baseline yield scenario and a drought affected scenario.

The baseline reflects a situation where weather normalises and is therefore based on normal production conditions and associated yields. By contrast, the drought scenario resembles a situation where yields are decreased by 10% in 2017, 5% in 2018 and 2% in 2019 and 2% in 2020. Both of these farming situations operates with an overhead costing structure of R2 474 574 per annum and direct allocated production costs per hectare of R227 163 for peaches and nectarines, R275 370 for plums and R157 222 for apricots. Establishment cost per hectare for both scenarios are set at R201 481 for peaches and nectarines, R275 553 for plums and R195 518 for apricots. Pricing per tonne of production follows the same trend as simulated in the BFAP Sector level model for stone fruit and this operation in both scenarios handles its own fruit packing.

Comparison in terms of NFI per hectare over the 2 scenarios (Figure 88 and Figure 89) illustrates the importance of production levels as the financial foundation of farming enterprises. The probability that this production unit will yield a NFI/ha of more than R51 000 is affected negatively by the sudden decrease

Table 18: Cultivar distribution on the prototype stone fruit production unit

STONE FRUIT PRODUCTION UNIT								
PLUMS			PEACHES & NECTARINES			APRICOTS		
VARIETY	Ha	% Share	VARIETY	Ha	% Share	VARIETY	Ha	% Share
AFRICAN DELIGHT	5.21	13%	ZANDVLIET	9	80%	SUPERGOLD	2.19	20%
ANGELENO	3.3	9%	BIG BANG	2.19	20%	SOLDONNE	2.25	21%
SUNKISS	6	15%				IMPERIAL	2.1	19%
FLAVOR KING	4.5	12%				BEBECO	1.35	12%
FLAVOR FALL	6.3	16%				CHARISMA	1.2	11%
FORTUNE	3	8%				SUAPRI	1.8	17%
LAETITIA	4.2	11%						
SAPPHIRE	6.3	16%						
TOTAL	**38.81**	**100%**	**TOTAL**	**11.19**	**100%**	**TOTAL**	**10.89**	**100%**

in production and the subsequent yields in the following two seasons as shown in Figure 88. Given the capital intensive fixed assets setup of this production unit, the probability analyses in year 2020 to year 2023 is driven by asset and orchard replacements. Keep in mind that the production unit follows a replacement strategy of 20 – 24 years (productive life cycle per orchard) where the orchards established in 1993 to 2007 will have to be replaced, hence the impact on probability to the end of the simulation period for both scenarios in Figure 88 and Figure 89. Note the impact of orchard re-establishments greater than 2.81 ha per annum (62 ha/22 years) - in other words more than 4.54% of production area per annum is replaced compared to other years simulated.

CITRUS

Citrus production faces a long decision-making horizon, since it takes about 2 years to receive nursery trees once ordered and, another 6 years for the established orchard to reach full production. Therefore, anticipation of market cycles and market developments is critical rather than relying on short-term market displacement (climatic impact on competitor's production supply) conditions, and abrupt depreciation of currencies.

Currently all citrus categories, except for Valencias (oranges) are expected to increase its export volumes, to the point where total citrus exports from South Africa exceed the 131 million carton (15kg) mark. Weather conditions impacted on the previous seasons, with droughts in the northern parts of the country and fruit splitting in the Eastern Cape.

New protocols on Citrus Black Spot (CBS) and False Codling Moth (FCM) present logistical (cold treatment) issues for the collective citrus industry, nevertheless production is projected to increase by a margin of 8%. Southern hemisphere competitors like Peru and Uruguay envisage an incremental increase in their soft citrus market share in the USA market, whilst lemon production volumes of Argentina and Uruguay are expected to recover to normal levels.

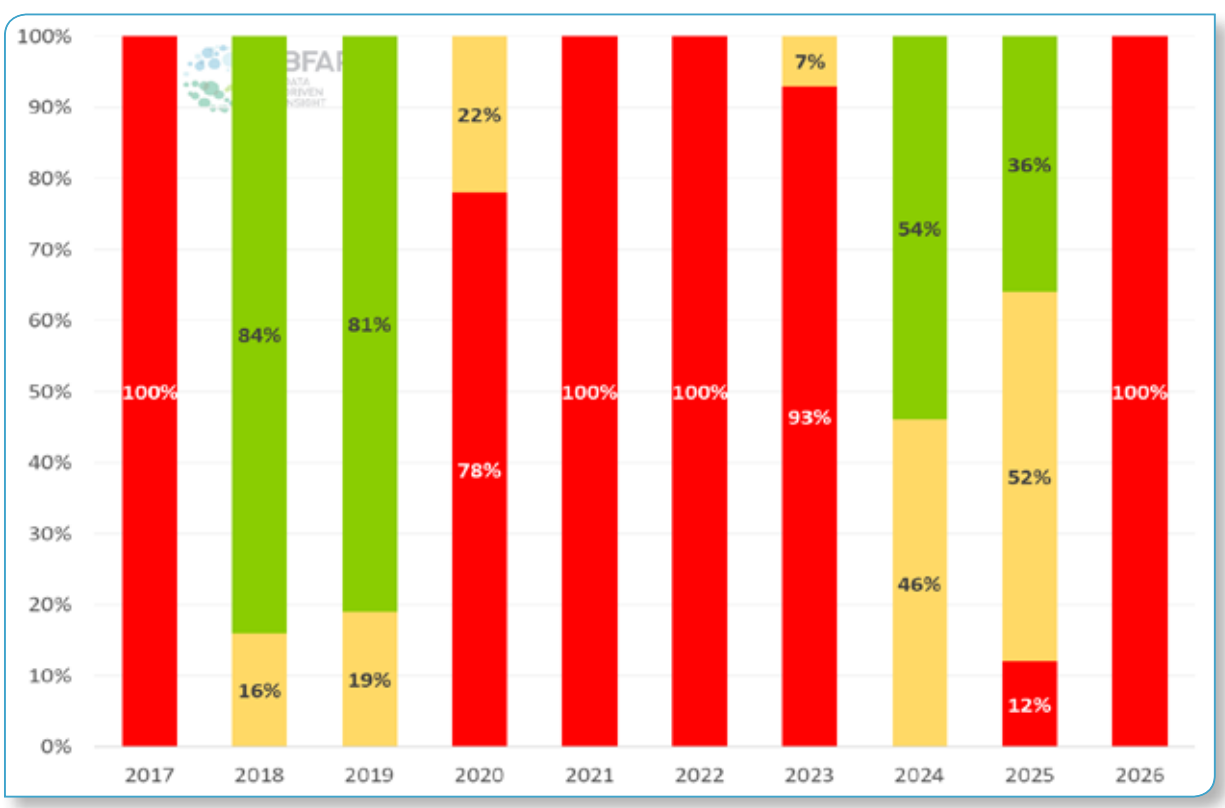


Figure 88: Stoplight chart reflecting the probability of attaining a NFI per hectare of less than R37 000 (red), more than R51 000 (green) of between R37 000 and R51 000 (yellow): Drought affected scenario on a stonefruit production unit

Figure 89: Stoplight chart reflecting the probability of attaining a NFI per hectare of less than R37 000 (red), more than R51 000 (green) of between R37 000 and R51 000 (yellow): Baseline on a stonefruit production unit

CITRUS INDUSTRY OUTLOOK

Although South Africa currently only produces roughly 1.8% of global orange volumes, less than 1% of soft citrus, 1.98% of grapefruit and 3.28% lemons and limes respectively, South Africa is the major exporter of citrus in the southern hemisphere.

The South African citrus industry expanded rapidly over the past decade (Table 12 and Figure 90). The Western Cape in particular, which is free of Citrus Black Spot (CBS) and Citrus Greening Virus (CGV), experienced huge investments in soft citrus, lemons and limes over the past 6 seasons, which replaced other less lucrative horticultural crops. The outlook for the industry still presents feasible expansions of all citrus types, but on a significantly slower growth trajectory, particularly over the second half of the coming decade, due to weaker real prices, as well as limitations in water and area of suitable expansion potential. By 2027, the area under orange production is expected to increase by 12.1%, with further expansions of 12.9% for soft citrus, 7.7% for grapefruit and 16.1% for lemons & limes (Figure 90).

In line with production growth, citrus export volumes also increased rapidly between 2007 and 2017, led by lemons and limes where export volumes increased by 109.6%. Soft citrus and orange export volumes increased by 75.8% and 10% respectively over the same period, whereas grapefruit exports declined by almost 11%. Over the next 10 years, this growth is also projected to slow as the industry moves closer to an equilibrium in the export market space. Orange exports are projected to increase by a further 13%, lemons and limes by 15.2%, soft citrus by 12.2% and grapefruit by 3.8% (Figure 91).

Following a recovery in some key competing countries, along with greater currency depreciation than in South Africa, competition for market share in key importing markets is expected to become increasingly stiff over the Outlook period. Argentina presents a prime example, where lemons and limes comprises more than 70% of the total citrus industry. Sharp depreciation in the Argentinian Peso of 73.9% over the past 30 months

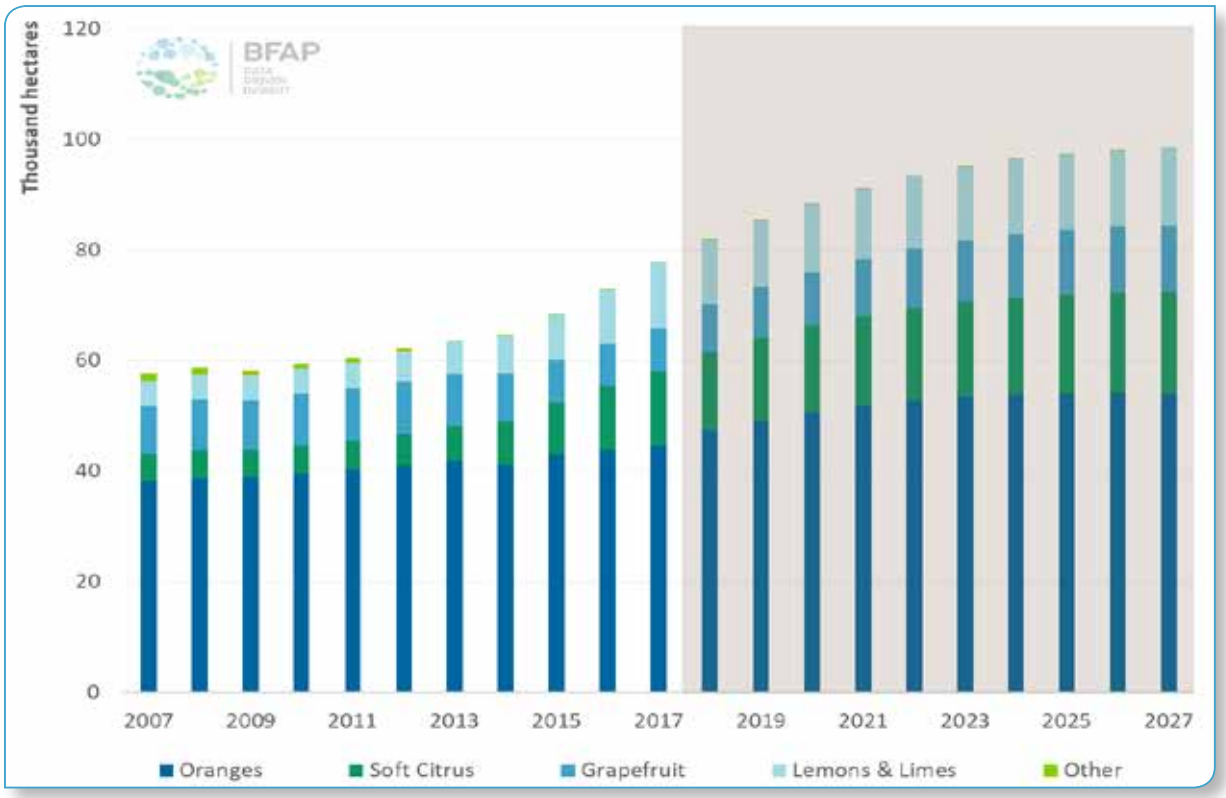


Figure 90: Production area outlook for the South African Citrus industry: 2007 - 2027

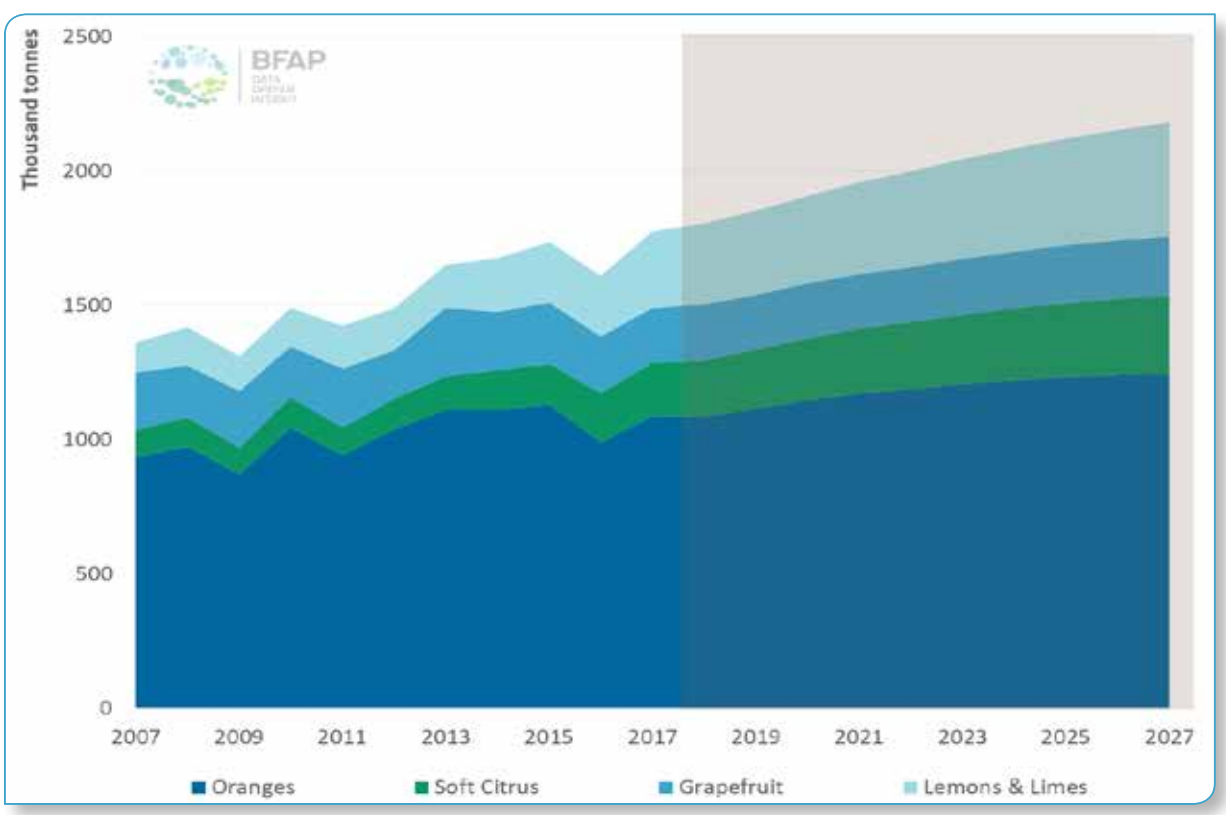


Figure 91: Export volume outlook for the South African Citrus industry: 2007 - 2027

presents a degree of concern regarding competitive product pricing.

In light of increasing competition from competitively priced products in international markets, citrus prices are not expected to outperform inflation over the next 10 years, implying that prices will decline in real terms (Figure 92). Given that export market requirements are becoming more cumbersome and the continuously high tariff structure faced by South African exporters, the real price decline in domestic markets is less than in the export market. Consequently, the domestic market share in total production is expected to rise marginally. The share of soft citrus, lemons and limes in total citrus production are projected to continue increasing.

Conclusions

Resilient, competitive fruit production and subsequent supply to lucrative markets are set within a long decision-making framework where relationships in the value chain set the foundation of sustainably adhering to environmental, ethical and economic principles. Increased competition among industries to acquire scarce resources to maintain and support industry growth will be the order of day and quality, consistency and continuity of produce supplied will remain paramount. Water is becoming increasingly scarce and in the face of climate change, volatile climatic conditions can be viewed as the "new normal".

The incessant efforts by the Fruit Industry Value Chain Round Tables, in conjunction with mobilised and organised industry bodies and the national government to support market access and facilitate trade negotiations is crucial to enhance the competitive performance and sustainability of these industries. As the South African fruit industry is primarily export orientated, market access, tariff negotiation, sanitary and phyto-sanitary issues, will remain vital to enhance competitive performance. Market innovation and the degree to which the public and private sector collaborate holistically to strategize and anticipate the direction of industry requires mutual buy-in across the board with a "shared-mission and joint vision" approach to inclusive expansion.

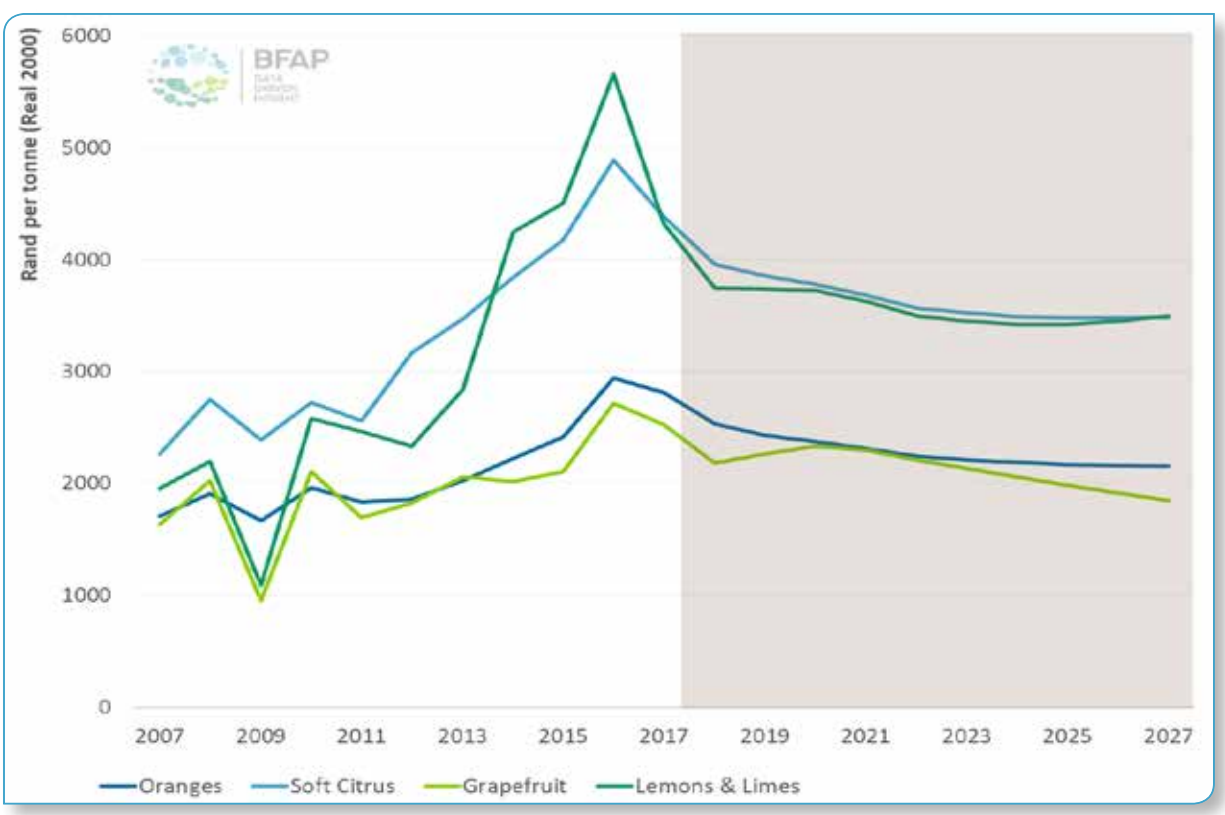


Figure 92: Real export price outlook for the South African Citrus industry: 2007 – 2027



OUTLOOK FOR HORTICULTURAL PRODUCTS

The purpose of this chapter is to highlight some of the factors challenging the industry, and to provide a degree of understanding and insight into their impact on the industry, in order to support decisions and actions to ensure the industry doesn't only survive, but thrive.

WINEGRAPES AND WINE

INTRODUCTION

The South African wine industry currently finds itself in a challenging space, derived from various factors, some cyclical, but others more structural and hence of a longer-term nature. The purpose of this chapter is to highlight some of these factors, and to provide a degree of understanding and insight into their impact on the industry, in order to support decisions and actions to ensure the industry doesn't only survive, but thrive. A thriving industry should support broad based empowerment and employment, and lead to sustainable and balanced growth and prosperity for all stakeholders.

GAME CHANGERS

Various game changing events have occurred in the industry during the past number of years, the impact of which, in some instances, is only playing out at present, or will only have an impact in the future. Short to medium terms events include the drought of the past 2 to 3 years, the increase in VAT rate, a build-up of wine stocks locally and globally, and reduced wine grape production levels in other parts of the world. Events of a more structural nature include a significant decline in producer numbers coupled with a slight decline in cellar numbers; a decline in the total vineyard area, especially since 2015; an ageing vineyard profile with limited new plantings; stagnant domestic consumption coupled with a moderation in per capita consumption in leading export markets; stabilisation of red versus white vines in terms of domestic area; and increasing competitiveness of alternative crops in terms of profitability relative to that of wine grape production. The question is, will these events continue as is, where will this leave the industry in terms of threats, but equally important in terms of opportunities, and how to best position the industry for a prosperous future.

GLOBAL MARKET EVENTS AND TRENDS

- The global area under vines remained stable during 2017 at an estimated 7.6 million hectares. Although

the area under vines has mostly stabilized in Europe after a few years of decline, vineyards in Spain have decreased year on year by about 0.8% while those in Italy have grown by 0.7%. After 10 years of growth, China's vineyard expansion slowed to grow by a mere 0.6% during 2017. The most notable year on year reductions in area under vines were seen in Turkey (-4%) and South Africa (-3%).

- Global wine production declined by 8.3% to 246 million hectolitres during 2017, the lowest level in 23 years. This reduction can mostly be attributed to the 14.6% fall in EU production due to adverse weather conditions reducing output in Spain (-20%), France (-19%), Italy (-17%) and Germany (-15%).
- Although global consumption has remained stable at 243 million hectolitres during 2017, consumption levels have changed in a number of countries. The USA, with consumption estimated at 32.6 million hectolitres, remained the leading wine consumer and increased its consumption by 2.9% during 2017. The declining trend in European consumption was also disrupted in 2017 as Spanish (+3.1%), Italian (+0.9%) and German (+0.9%) consumers increased their wine consumption. Chinese consumption performed well during 2017, growing by 18 million hectolitres (+3.5%). The most notable reductions in consumption were seen in France (-0.4%), the United Kingdom (UK) (-1.4%), Argentina (-5.2%) and Russia (-2.5%). Over the next 5 years (up until 2022), consumption is expected to grow in the US (+6%), China (+20%), Russia (+6%) and Canada (+17%) (Figure 93).
- Global trade continued to grow in both volume and value during 2017. Export volumes increased 3.4% to reach 107.9 million hectolitres, with notable increases in export volumes in New Zealand (+19%), Chile (+8%), France (+7%) and South Africa (+5%).
- Exports to the world's largest importer (by value), the USA, increased by 5.7% in volume and 3.6% in value during 2017. China saw another significant rise in imports in terms of volume (+17%) and value (+14.7%), with imports of higher valued bottled wines increasing by 15%. The growing domestic demand in China contributed 31% to global trade growth in 2017 (by volume). Exceptional increases in imports were also noted in the Netherlands and Russia, where import volumes grew by 10.9% and 10.4% respectively.

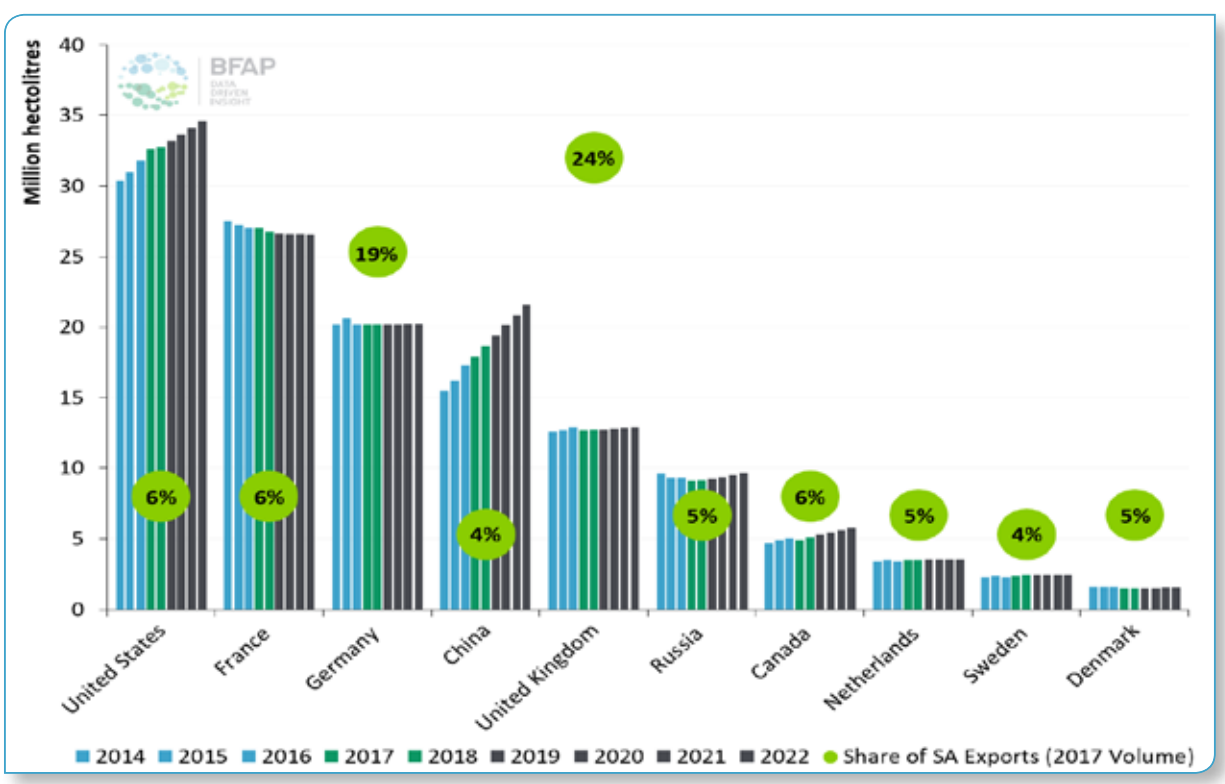


Figure 93: Global wine consumption trends and share in SA exports
Sources: OIV, 2018; Euromonitor, 2018; SAWIS, 2018

- Wine trade volumes consist of bottled, bulk and sparkling wines, which constitute 57%, 35% and 8% of the total market respectively. Bottled wine exports performed well during 2017, with its share in the total export mix increasing from 54% to 57% and representing 72% of the total value of wine exported. Exports of bulk wines (wines in containers of 2 litres or more) declined by an estimated 7% during 2017, with bulk exports continuing to play a significant role in exports from Spain, South Africa, Chile and Australia. During 2017, bulk wines represented 38% of the global market in terms of volume but only 10% of the value. Sparkling wine export volumes grew by 11.2%, with notable increases in Spain (+12%) and South Africa (+5%). Although sparkling wines only represent 8% of wine export volumes, these wines account for 19% of the value of the global export market.

SOUTH AFRICAN WINE AND BRANDY LANDSCAPE

CONSUMPTION

Evaluation of wine demand, disaggregated into groupings defined as standard priced wines (SP), medium priced wines (MP) and high priced wines (HP), illuminates some clear trends. Compared to 2017, with volumes as simulated in the baseline, SP shows an initial significant decline in demand as a result of sharp price increases, after which it stabilizes around 65 million litres, from 107 million litres in 2017 (Figure 94). This constitutes a total decline of 39% over a 10-year period.

MP shows a more gradual but persistent declining trend with a total decrease of 25% (234 million litres in 2017 to 176 million litres in 2027). Albeit from a smaller base, HP shows an increase in consumption of 29% in total (66 million litres in 2017 versus 85 million litres in 2027), with sparkling wine also showing an increase of 17% (9.2 million litres in 2017 to 10.8 million litres in 2017). Both fortified wine and brandy shows a marked decrease over the 10 year period – 23% and 50% respectively.

TRADE

South Africa exports close to 50 percent of its annual wine production, making it essential for the industry to be aware of global trends and how South African exports perform in the global market. Even though

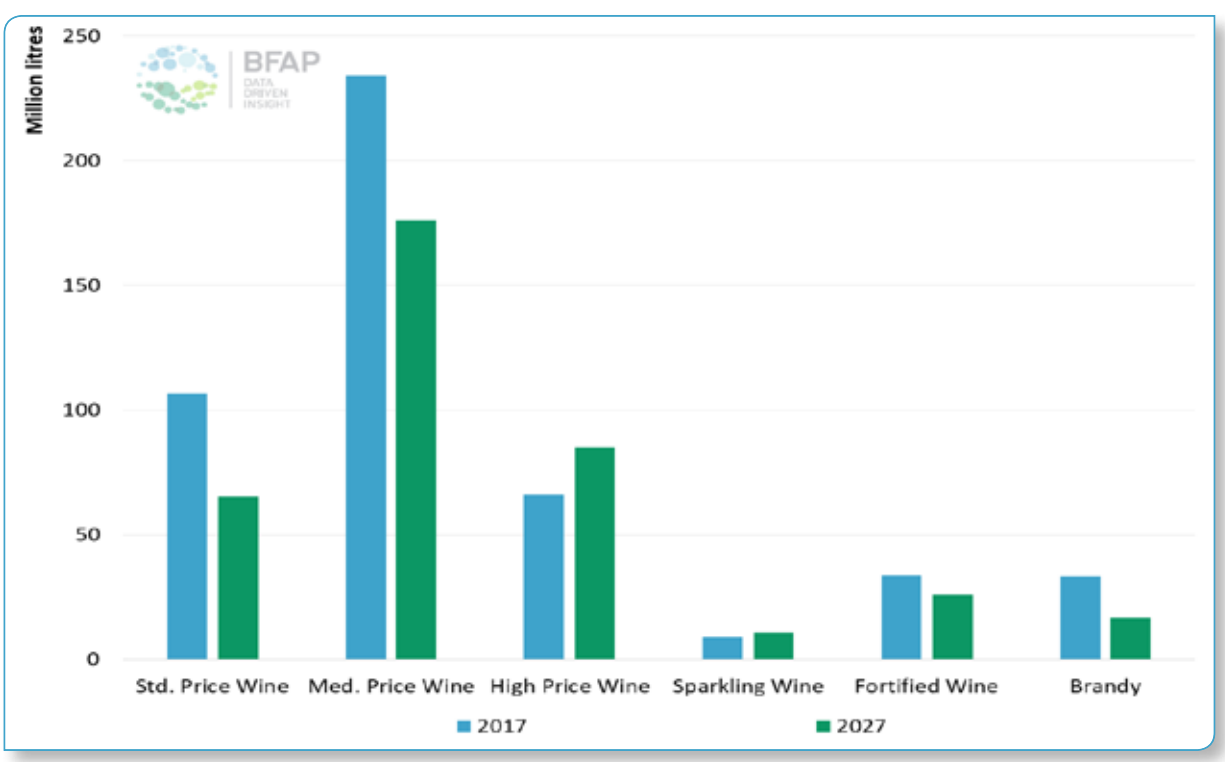


Figure 94: Wine and Brandy Consumption: 2017 vs. 2027

global production, consumption and trade of wine has remained relatively stable since 2011 on an aggregate level, several key developments are worth noting:

South African wine export volumes grew by 4.7% to reach 448 million litres during 2017. Strong growth in export volumes occurred to the US (+145%), China (16%), the UK (+8%) and Germany (+7%). At the same time, export volumes fell to France (-9%), Canada (-6%) and Russia (-16%).

South African wine exports during 2017 consisted of 61% bulk wines, 38% bottled wines and 1% sparkling wines. Bulk wine exports grew by 6%, bottled wine exports by 3% and sparkling wines by 5%.

Exports to Africa grew by 4%, with strong growth in red wines (+10%), blanc de noir and rosé's (+73%) and sparkling wines (+16%) offsetting lower white (-8%) and fortified (-7%) wines. Exceptional growth occurred in export volumes to Angola (+102%), Zambia (+79%) and Senegal (59%). Lower exports to Kenya (-3%), Tanzania (-15%), Mozambique (-55%) and Nigeria (-28%) however dampened overall export growth.

Figure 95 indicates that South Africa's average export price of R19.50 per litre is amongst the lowest of all leading exporters. Export prices can however be recorded differently among exporters; therefore Figure 96 also provides official import statistics from several key importers which provide comparable prices for each country. With the exception of bulk wine to China, South African export prices are still well below average import prices.

PRICES

The premium for red wine during the late 90's and early 2000's led producers to invest in the establishment of red vines, which in turn induced significant red wine price decreases as production volumes increased substantially (Figure 97). Real prices are expected to increase initially over the outlook period, after which it levels off as production and stocks recover.

The red wine ex-cellar price is projected to increase at a faster rate due to production decreases and a quicker reaction to supply-demand dynamics. Wine for brandy and distilling and grape juice prices are projected to increase gradually over the outlook period.

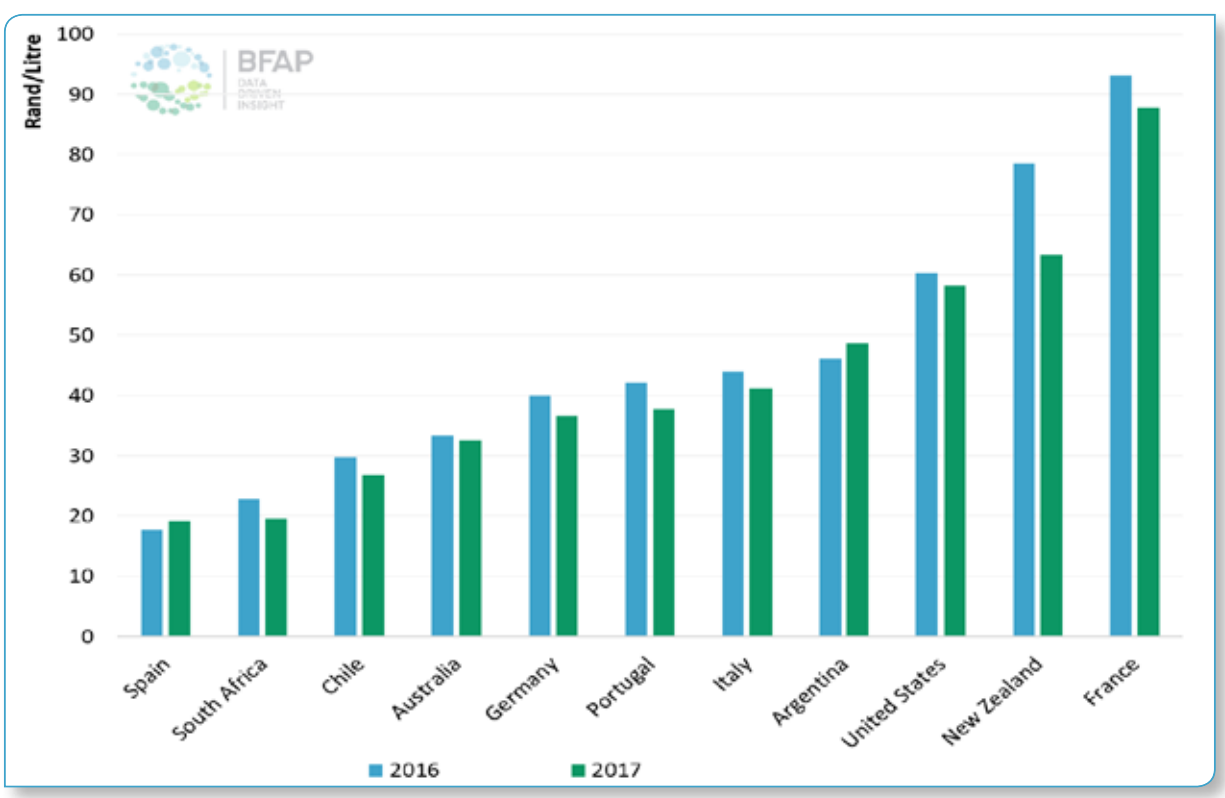


Figure 95: Average wine export prices among leading exporters: 2016-2017
Source: OIV, 2018

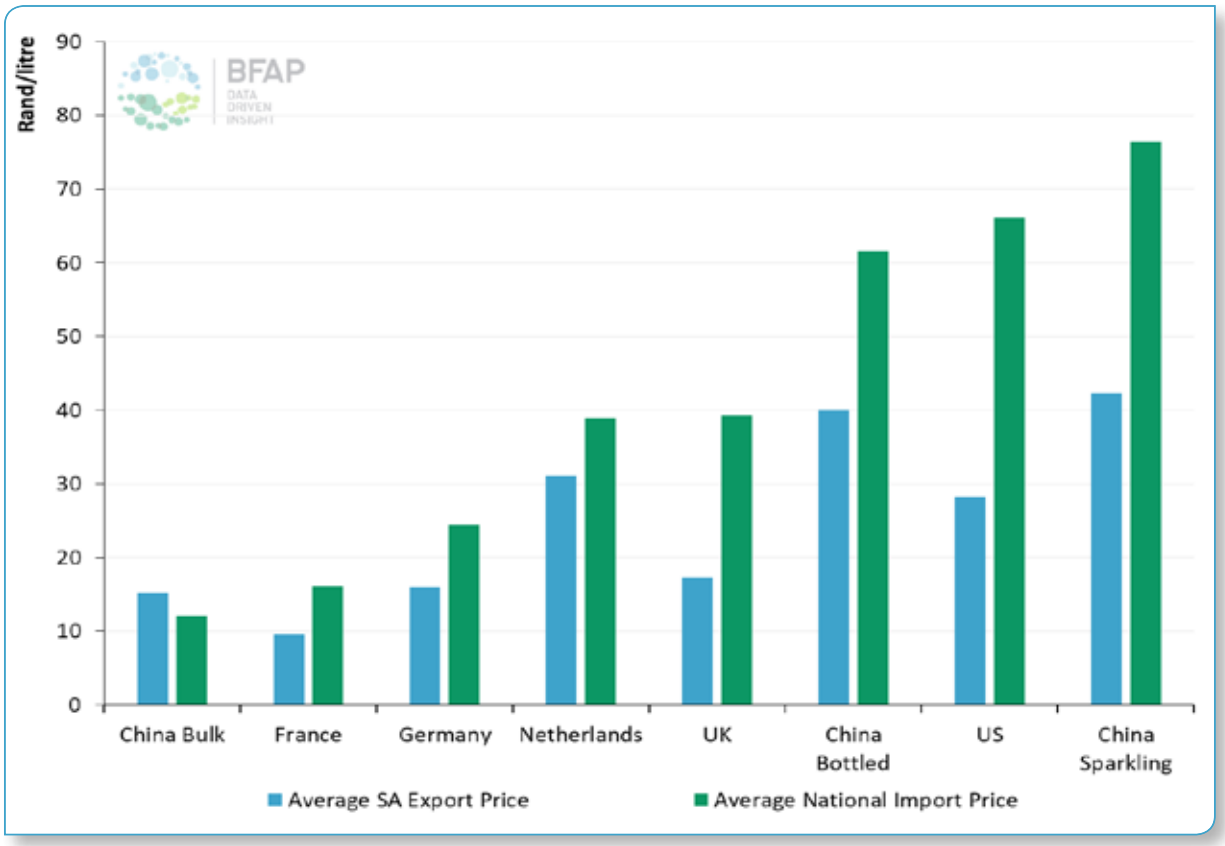


Figure 96: Average wine import prices among key importers: 2017
Source: OIV, 2018; European Commission, 2018; China Wine Business, 2018; USITC, 2018

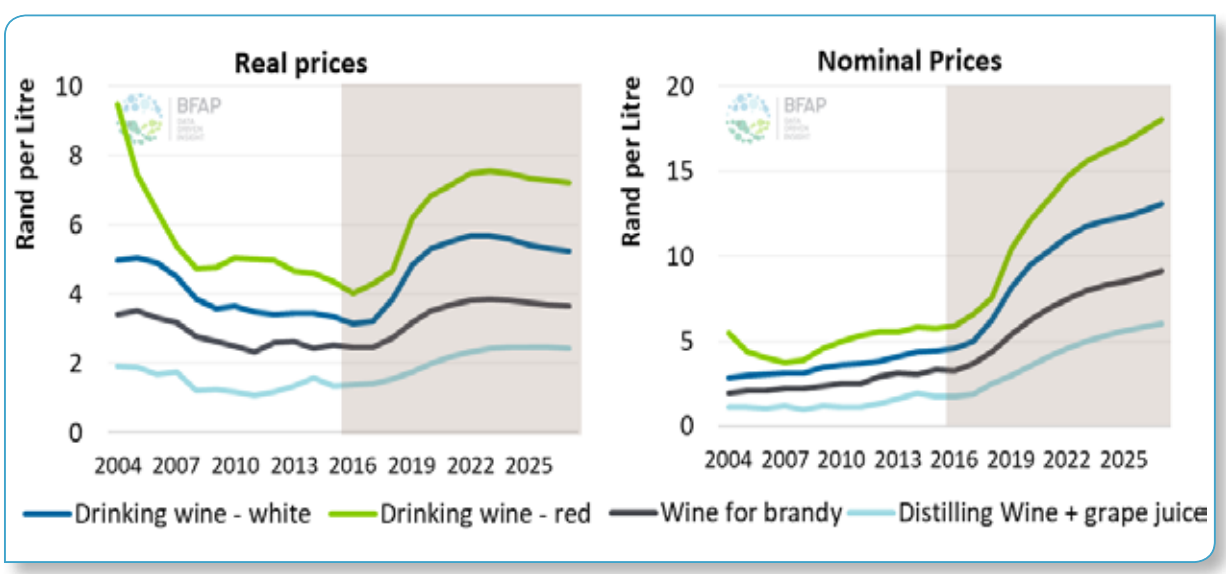


Figure 97: Historic and projected South African wine prices in real (left) and nominal (right) terms: 2004-2027

SA WINE GRAPE PRODUCTION

The number of vines in production shows three distinct trends from 1990 to date. During the period 1990 to 2000, the number of vines in production increased from 271 million to 305 million. From 2000 to 2009 it remained fairly stable around an average of 303 million. However, since 2010, vines in production reflects a distinct decline and reached a level of 279.7 million in 2017. That constitutes a decline of 7.7% against the levels of the 2000's. The total number of bearing vines in South Africa is expected to further decline to levels of 198 million vines in 2027. The composition of white versus red cultivars is showing signs of reverting back to a greater percentage of white as opposed to red. During the 1990's, the ratio of white to red started at 84:16, before moving to 56:44 by 2015, where it has remained up till 2017. However, on the basis of vine orders to be planted during the next 3 years and onwards, it is clear that the percentage of white vine cultivars on order for planting is starting to increase. This could start swinging the vineyard production ratio of white to red back to at least a 60:40 ratio as simulated in the baseline. Figure 98 presents the extent of the change in the proportions of red and white wine cultivars planted.

The current age distribution of yielding vineyards suggests that vineyards younger than 4 years have stabilised at 7 thousand hectares, whereas vineyards aged between 4 and 15 years have consistently declined since 2011. The share of older vineyards (older than 16 years) has grown from 34% of the total area in 2011 to almost 50% in 2016. The impact is a slight increase in composition of bearing versus non-bearing hectares in percentage terms as illustrated in Figure 99, as well as a potential decline in absolute hectares under vineyards. These two key trends are expected to continue going forward due to a) the growing number of vines reaching their replacement age following the rapid expansion in plantings in the late 1990s and early 2000's and b) current low profitability levels forcing producers to either switch to alternative crops or extending the life of existing vineyards and by limiting production expenses to the bare minimum.

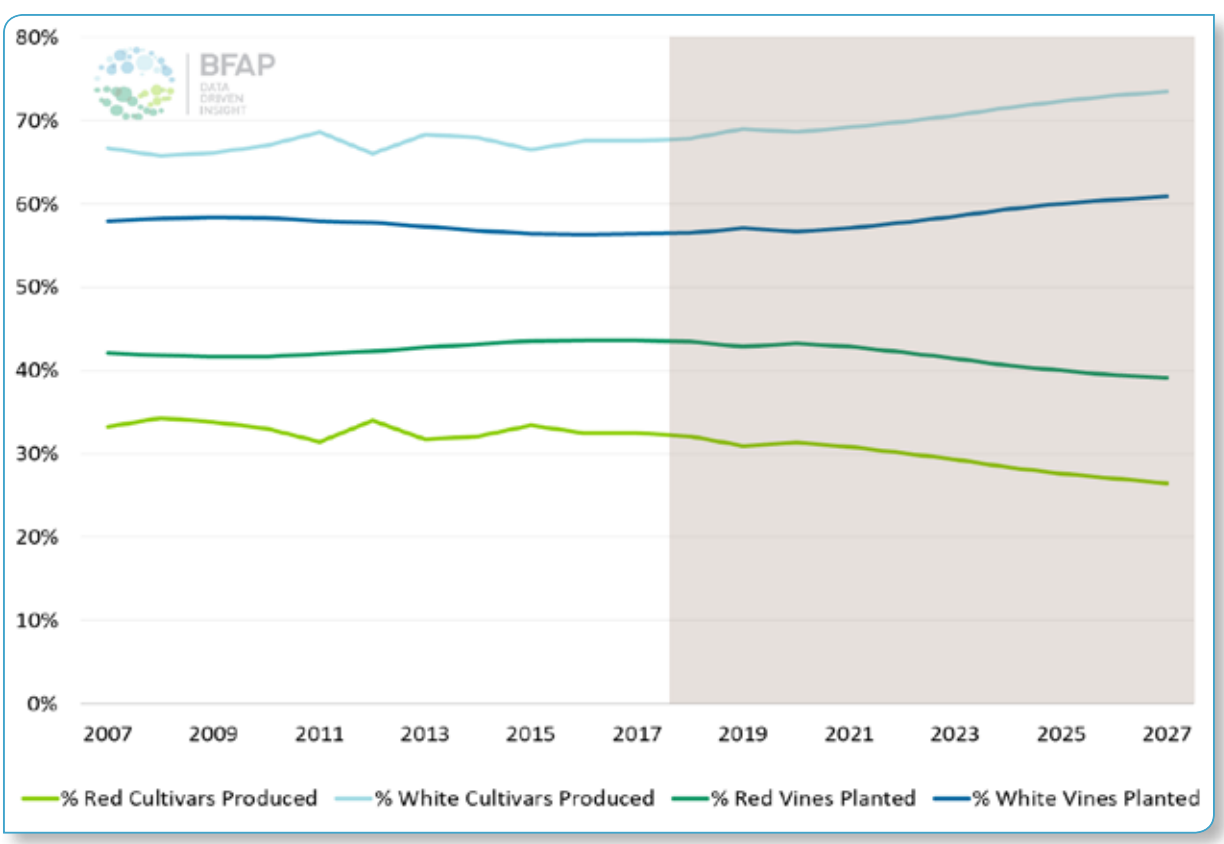


Figure 98: Relationship between white- and red wine cultivars in SA: 2007 - 2027

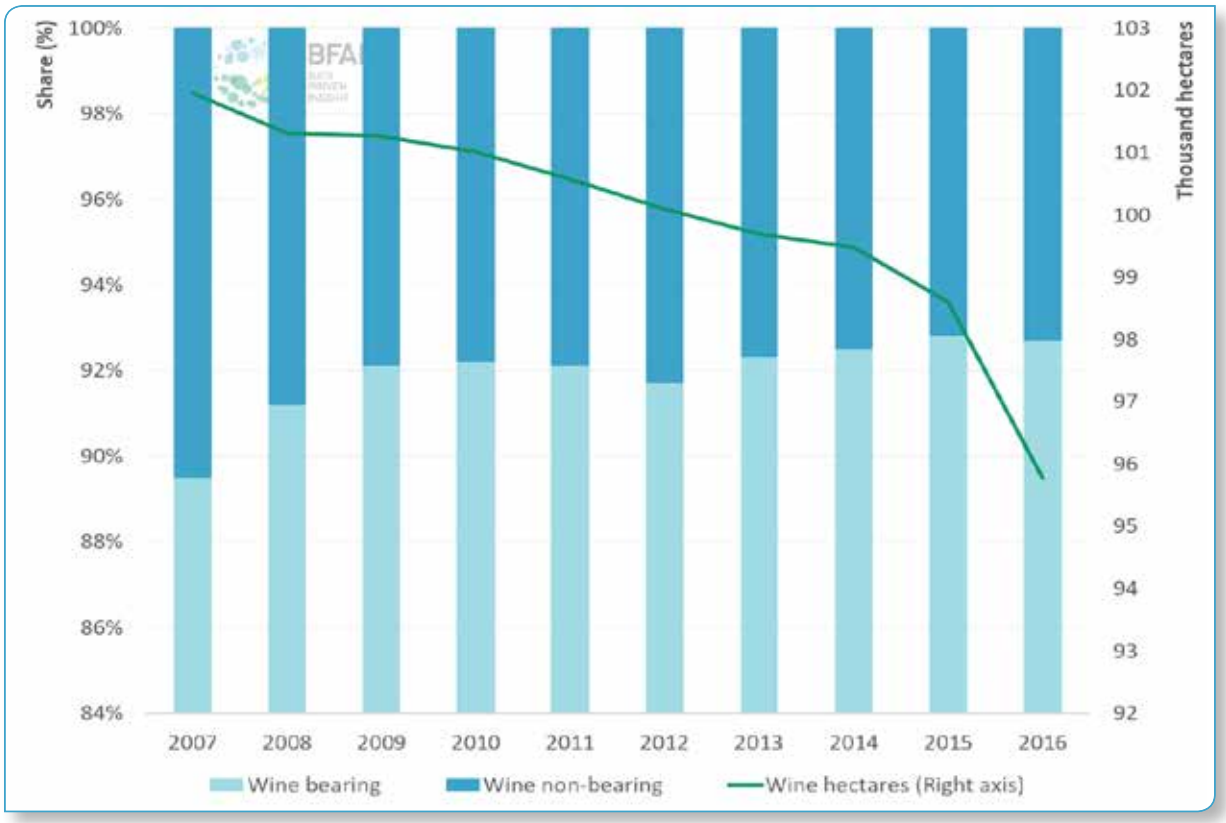


Figure 99: Wine hectares and bearing status of South African vines: 2007 – 2016
Source: SAWIS (2017)

COMPETITIVENESS

Competitiveness can be defined in various ways. In the 2017 BFAP Baseline, on-farm competitiveness was partly explored through benchmarking against other wine grape and wine producing farms elsewhere in world. The 2018 Baseline presents an alternative perspective on competitiveness through the Relative Trade Advantage (RTA) – a measure of international trade competitiveness. RTA, as developed and applied by Balassa (1965), Vollrath (1991), and Van Rooyen, Esterhuizen, & Stroebel (2011), is a measure of competitiveness since it expresses the proportion of a country's exports of a specific product or commodity relative to the proportion of world exports of that product or commodity. Therefore, in interpreting RTA numbers, an RTA value of less than 1 indicates a relative trade disadvantage, whilst an RTA value greater than 1 indicates a relative trade advantage. Furthermore, an RTA value showing an upward trend over time, indicates an improvement in its trade competitiveness, whilst a declining trend shows a product or commodity losing ground in terms of trade competitiveness over time.

Figure 100 illustrates the competitiveness of the SA wine industry as measured by the RTA. It illustrates that both South African bulk and bottled wine is in a position of being able to trade competitively in the global market. However, it also shows that within the global trade environment, the bulk wine category experienced many fluctuations in trade competitiveness since 2011, but has improved its position marginally over time. The bottled wine category managed to largely maintain its position since 2011 but unfortunately hasn't shown a significant improvement.

It should be noted that RTA is a tool with limitations and offers a fairly narrow and hence limited view on trade competitiveness. However, in spite of its limitations, it does provide food for thought, particularly regarding

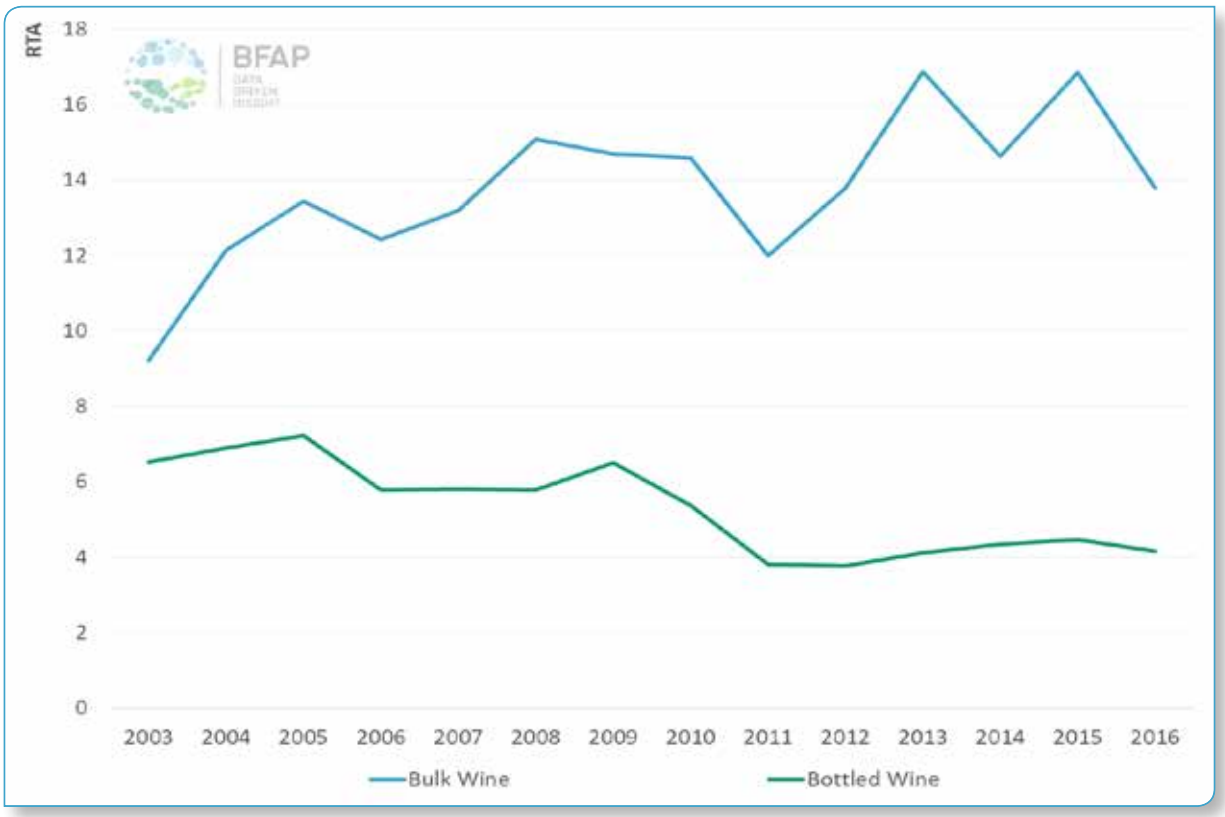


Figure 100: Competitiveness of SA Wine: Bulk and Bottled[9]

the success to date of strategies to prioritise bottled exports over bulk.

Concluding remarks

Under the current export strategy, Europe, and mainly the UK and Germany, will continue to drive wine exports over the outlook, largely as a result of the substantially increased duty-free quota. However, it is not clear how Brexit will influence the size of this quota into the EU, or whether there will be a duty-free quota into the UK. The prominence of projected exports to the EU also assumes that South Africa can maintain the preferential status that it has over all other competitors except Chile, which also currently has duty free access into the EU. Similarly, the African Growth and Opportunities Act (AGOA) presents growth opportunities in the United States, depending on how the Trump administration plans on utilizing AGOA to the benefit of the USA. Export volumes to the USA have been increasing since 2000 and higher values are typically attained. Rising exports into the BRIC countries have mainly been driven by Chinese demand.

Going forward, the outlook for total exports shows a gradual decline in total export volumes, although growth is expected towards certain export destinations including various African countries. Within the context of a decline in wine production, the total export volume projected for 2027 declines to well below 350 million litres. This offers the opportunity to rebase the market position of South African wine in the export markets, focussing on quality premiums through correctly positioned and marketed brands. Deliberate and cohesive strategies are required to ensure correct market position in especially the "new" markets of the United States, China and Africa. Along with exports, domestic consumption is also projected to decline as a result of higher prices. With the effect of lower yields due to the drought over the next few years, wine stocks will show a decline, reaching minimum levels in

[9] Bulk Wine is wine packaged in a unit of 2 litres and more, Bottled wine is wine packaged in units of 2 litres and less

2019, before starting to increase marginally over the second half of the Outlook when production starts to recover (Figure 101).

To conclude: It is important that the industry as a whole, as well as each stakeholder separately build on WISE to ensure a consistent and coherent approach is followed to position the industry correctly to drive demand, whilst obtaining improved relative prices in especially export markets. This needs to be done to improve profitability through the whole of the wine value chain in order to stimulate investment, since investment is likely to ensure the correct varieties and correct quality is available for future production and sales.

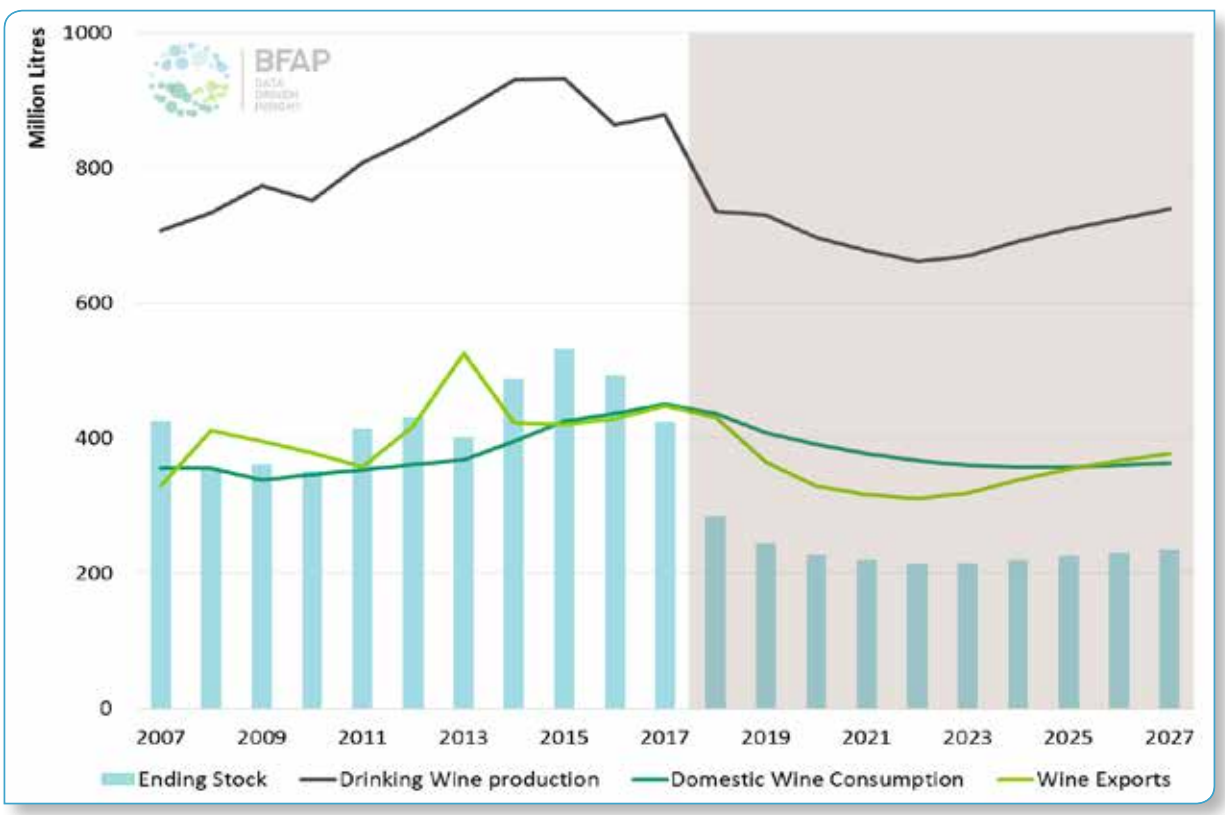


Figure 101: SA production, export, domestic consumption, and stock volumes: 2007-2027




After a wave of severe drought-induced food inflation, South African consumers found some relief on the back of a rebound in crop production, with food inflation losing pace since the beginning of 2017

FOOD INFLATION: 2018 AND BEYOND …

INTRODUCTION

After a wave of severe drought-induced food inflation, South African consumers found some relief on the back of a rebound in crop production, with food inflation losing pace since the beginning of 2017. This was supported by low inflation and even disinflation in recent periods, in breads and cereals, oils and fats, as well as fruits and vegetables. The sustained positive aggregate food inflation was, however supported by dynamics in the meat sector. Red meat specifically, although showing initial signs of recovery, is still experiencing the effects of the 2015/16 drought, further supported by relatively weak exchange rate levels, which in turn maintained attractive export opportunities. In the first quarter of 2018, average meat prices were still exhibiting double-digit inflation. There is however a general consensus amongst analysts and industry experts that food inflation has bottomed out (at 3.5% in March 2018) and will begin an upward cycle supported by, inter alia, an array of tax factors that took effect on 1 April 2018. These include a 1% increase in VAT and a substantial increase in the fuel levy.

FISCAL CHANGES AND FOOD INFLATION

Figure 102 presents the year-on-year change in the different sub-categories considered to calculate food inflation for April 2018. At the time of compiling this document, this was the only data available for the period following the implementation of new VAT legislation. Although it is difficult to attribute the increases depicted in Figure 103 exclusively to the range of tax changes, it does provide an indication of the effect of these policies on food inflation. Another notable factor that could have added to food inflationary pressures in April 2018, is stronger demand through the Easter period. Here it is apparent that meat prices are still the largest driver of food inflation, although the rate at which meat prices are increasing has moderated substantially from the highs of between 14% and 15% in the third quarter of 2017.

FOOD INFLATION OUTLOOK

Going forward, food inflation is expected to increase,

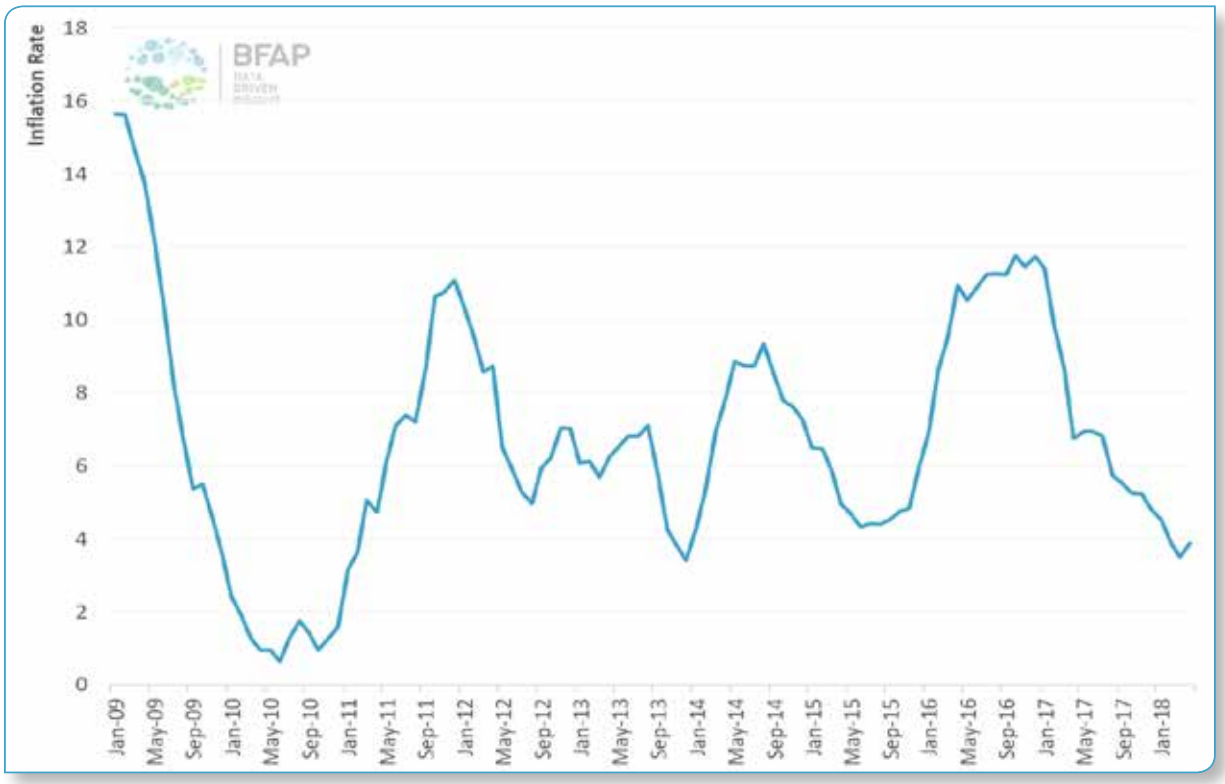


Figure 102: Historical overview of food inflation in South Africa - Jan 2009 to April 2018

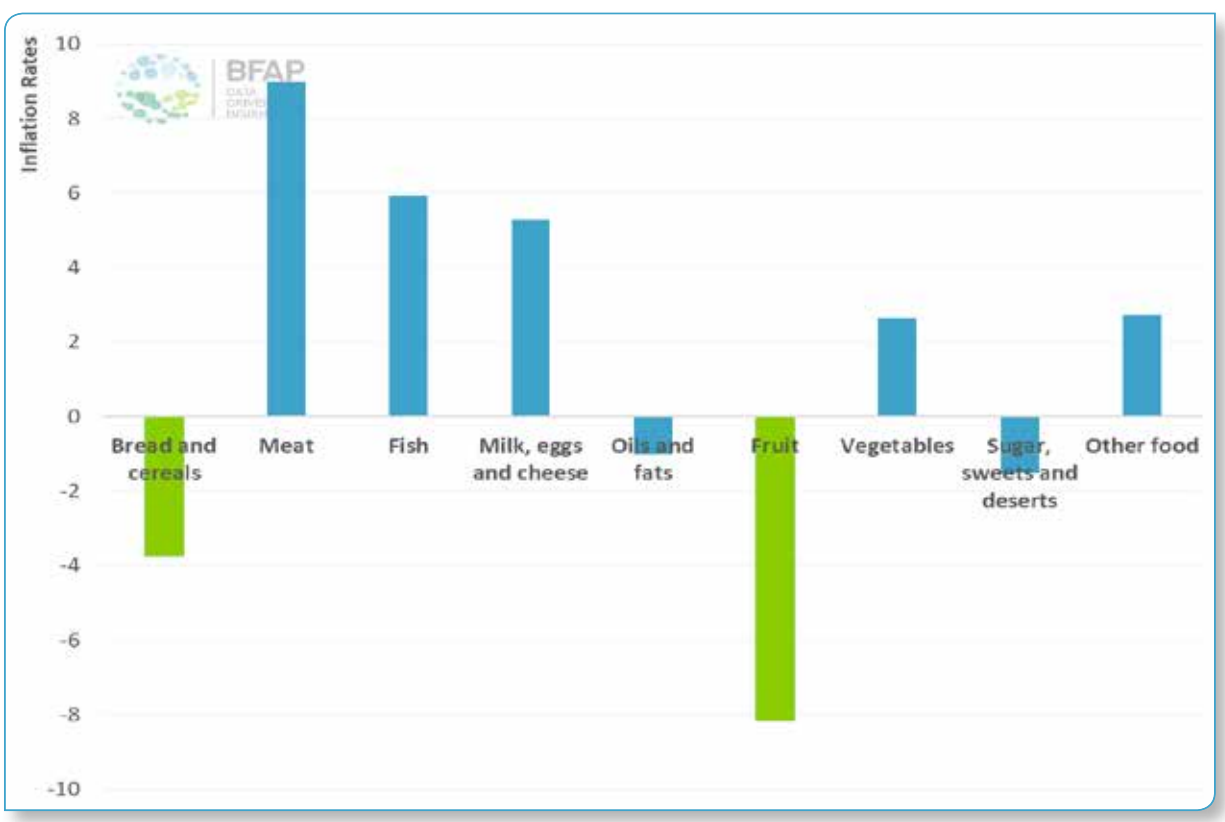


Figure 103: Year on year inflation rates by food sub-group: April 2018

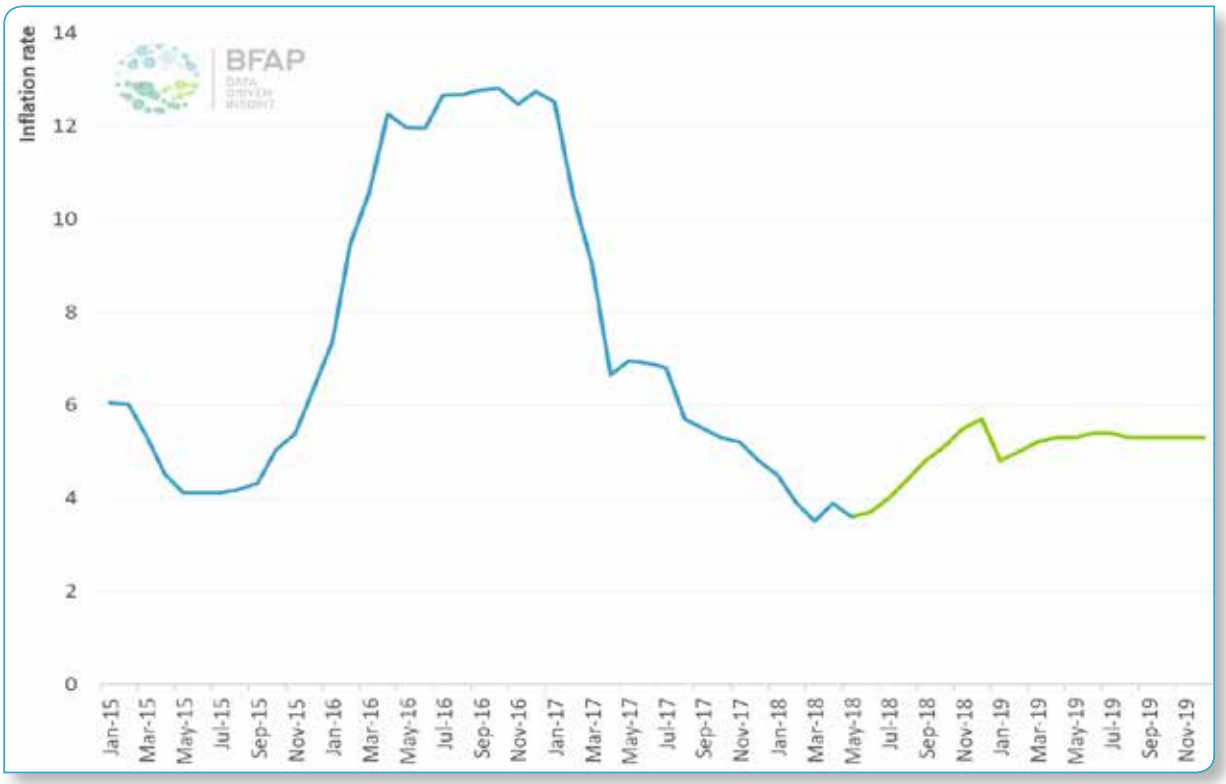


Figure 104: Food inflation projections – April 2018 to December 2019

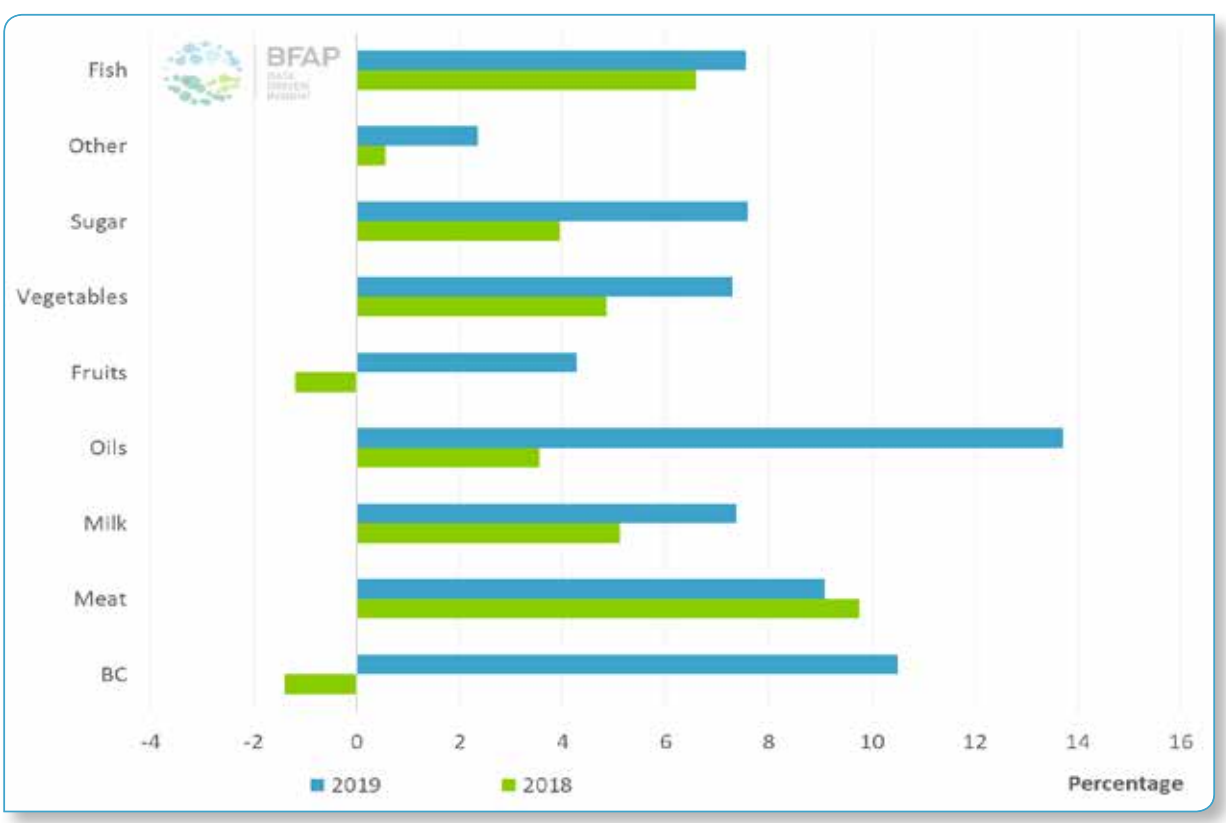


Figure 105: Projected average inflation rate per selected CPI sub-components

albeit not substantially, until the end of 2019. The associated projections for this are presented in Figure 104 and were generated by considering the time series properties of the various sub-series included in the food inflation basket. This considers the inertia associated with prices in the respective series, which are then extrapolated, and calibrated based on market fundamentals, for 20 months, until the end of 2019. The projections in Figure 104 shows that food inflation is expected to stabilise just below 5.5%. Figure 105 presents an average breakdown of the inflation rates associated with the different product groups. It is apparent that the largest contributors to food inflation in 2019 is expected to be "Meat," "Oils" and "Breads and Cereals", with increases of 5.5% and 6%, respectively. These projections were developed to align with key macro- economic assumptions as earlier in the baseline, of which oil prices and exchange rates arguably have the largest impact on food inflation. In this sense, scenarios relating to these two factors, that are substantially different from the baseline assumptions, could force the side-ways movement presented in Figure 104, to into an upward trend.

CONSUMER LEVEL IMPACT OF FOOD PRICE DYNAMIC – THE BFAP BALANCED FOOD BASKETS

Over the last few years, BFAP has developed a range of 'balanced food basket' options for low-income consumers in South Africa, in order to facilitate the measurement of food affordability from an 'ideal' balanced diet perspective. The BFAP balanced food baskets are not necessarily a reflection of consumers' food intake reality, but rather an indication of what it will cost to consume a basic healthy eating plan. These baskets consider the nutritional recommendations of the Department of Health (DoH) Guidelines for Healthy Eating, which recommends various food guide unit quantities, within the various food groups, for different individuals in terms of gender and age. The 'BFAP thrifty balanced food basket' contains all food groups, but has proportionally more staple food units (set out by the DoH as 'an economic eating pattern').

The detailed composition of the BFAP thrifty balanced food baskets (in terms of the specific food items included, as well as relative importance of items within food groups), was based on the typical food purchasing patterns of lower income households, as indicated by the Stats SA Income and Expenditure Survey (IES) of 2010/11. The selection of products was strongly influenced by the food items monitored by StatsSA for retail prices across South Africa.

The BFAP Balanced Food Basket includes the following 29 food items:

- Starch-rich staple foods: Maize meal, brown bread, white bread, rice, potatoes and wheat flour;
- Animal protein foods: Beef mince, chicken pieces, canned pilchards, eggs, polony and beef sausage;
- Vegetables: Tomatoes, onions, carrots, cabbage and pumpkin;
- Fruit: Apples, bananas and oranges;
- Dairy: Full cream milk, sour milk / maas and cheddar cheese;
- Fats & oils: Sunflower oil, margarine and peanut butter;
- Sugary foods: White sugar
- Legumes: Dried beans and baked beans in tomato sauce.

In reality, consumer food expenditure is more complex than 29 food items and will include additional items not considered, which will represent an additional expense to these figures. Furthermore, consumers could also switch between food items adding further complexity to the analysis of food affordability.

The food affordability analysis focuses on two types of households: A single male, and a family of four consisting of an adult male, an adult female and two children. The costs of these food baskets are calculated by applying the official historical monthly food prices monitored by Stats SA in urban areas, as well as retail prices projected through the BFAP modelling system and transmission analysis. A critical assumption in this regard is that lower income consumers with significant budget constraints would purchase the least expensive product options available to maximise utility with their limited food budget, and thus the packaging size option of a product with the lowest unit cost is used to calculate basket costs (Table 19 and Figure 106).

Table 19: The BFAP balanced food basket costs for 2017, 2018 and 2019

Basket option:	Household type:	Average 2017	Average Jan–April 2018	Projection 2018	Projection 2019
BFAP Thrifty Balanced Food Basket	Adult male	R750	R758	R768	R807
	Family of 4	R2 714	R2 764	R2 786	R2 928

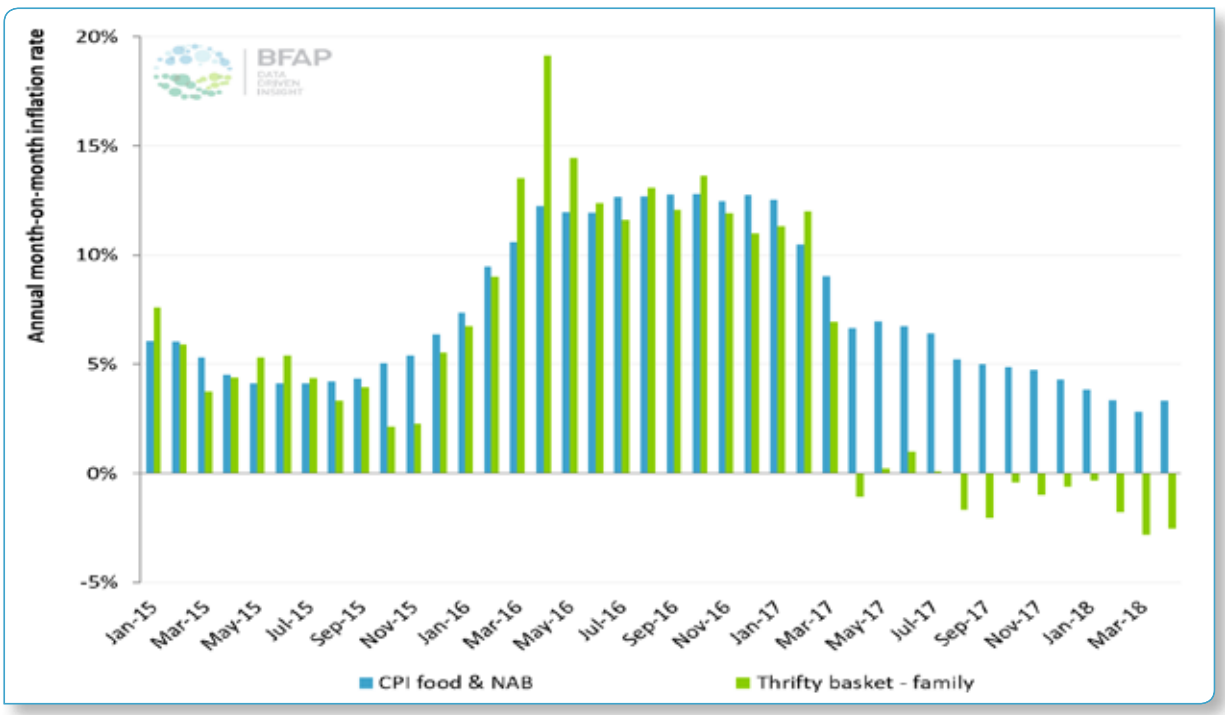


Figure 106: Comparing the inflation rate on the BFAP thrifty balanced food basket with the CPI (food and non-alcoholic beverages) inflation rate from January 2015 to April 2018

Comparing the annual monthly inflation rate on the BFAP thrifty balanced food basket with the CPI (food and non-alcoholic beverages) inflation rate from January 2015 to April 2018 (Figure 106), it is evident that even though the thrifty basket inflation rate was higher for several months during the drought impact period, it was generally lower than CPI food inflation from March 2017 onwards. These differences are caused by the different product weights applied to CPI food and the BFAP thrifty balanced food basket.

In April 2018, the cost of the BFAP thrifty basket amounted to R751 for an adult male and R2 738 for a family of four per month. Applying BFAP retail price and inflation forecasts, the average cost of the BFAP thrifty basket for 2018 is estimated at R2 786 for a family of four (+0.8% higher than the average basket cost of January to April 2018 and 2.7% higher than the average basket cost in 2017). The projected cost of the BFAP thrifty balanced food basket in 2019, for a family of four, is R2 928 per month (5.1% higher than the projected 2018 value).

To be able to afford the thrifty basket in April 2018, a four-member household required a monthly income of about R7 823 (if 35% of total expenditure is allocated to food), implying that a household in SEM segment 5 and upwards could afford such a basket (based on household income data from the October 2017 release of the Establishment Survey). Thus, SEM segments 1 to 4 (54% of the SA population aged 15 years and older) will not be able to afford the BFAP thrifty balanced food basket, unless they drastically reduce spending on non-food items.

FOCUS ON MEAT AFFORDABILITY

Meat is expected to contribute significantly to food inflation for 2018 and 2019. Consequently, this section

examines the relative affordability of various meat options to South African consumers over time, by considering the costs per single serving unit (where a single serving unit is defined as one consumption unit according to the Food ration scales for Hospitals and Health Institutions of the Department of Health) (Figure 107). Single serving costs were calculated based on official monthly food prices monitored by Stats SA. Comparing average values for 2015 to 2018, the most significant increases in price per SSU occurred for lamb (+28%), beef mince (+24%), IQF chicken (+19%), polony (17%), pork chops (+16%) and fresh chicken (+15%), while a 12% increase was observed in the SSU cost for canned pilchards. The most affordable meat option remained canned pilchards, followed by polony. The affordability of polony relative to canned pilchards decreased towards 2017 and improved somewhat to 2018. The third most affordable meat option was IQF chicken portions (being up to 183% more expensive than canned pilchards). The affordability of IQF chicken relative to pilchards decreased from 2016 to 2018. From 2016 to 2018 beef mince was about 60% more expensive than IQF chicken on an SSU cost basis.

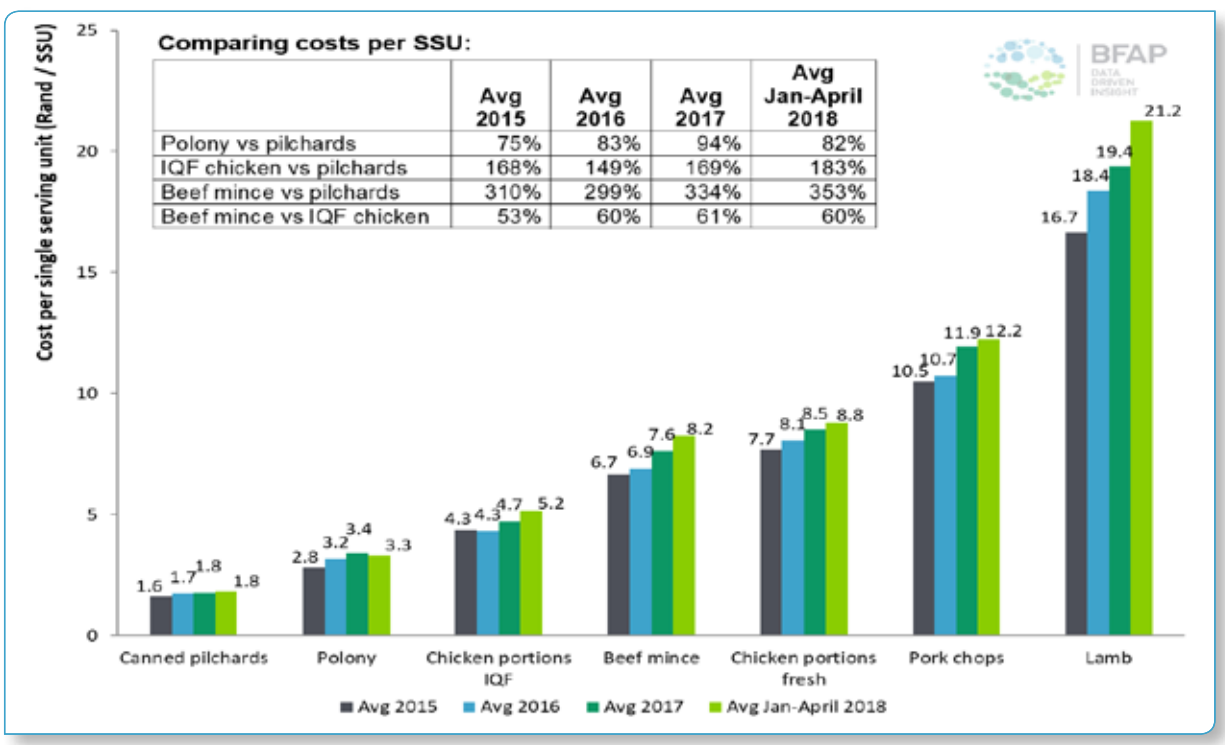


Figure 107: Overview of the cost per single serving unit for various meat options considering avg 2015, avg 2016, avg 2017 values as well as the average prices for January to April 2018

BOX 5: APRIL 2018 BFAP BALANCED FOOD BASKET WITH 14% VS 15% VAT

In order to gauge the impact of the VAT change on the BFAP thrifty basket, a calculation was done to evaluate the effect on the total cost associated with the basket under 14% VAT dispensation vs. the current 15% VAT dispensation. The results are presented below:

	April 2018 with 15% VAT	April 2018 with 14% VAT	Difference
Thrifty basket: adult male	R751.01	R749.30	R1.71
Thrifty basket: family of four	R2738.01	R2731.66	R6.35

Example of impact:

For a family of four, the increase per month is R6.35. From a purchasing power perspective, this could have bought 810g of maize meal, which amounts to ±16 single serving units less maize meal per month.

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