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# BFAP BASELINE

## AGRICULTURAL OUTLOOK

# 2021 - 2030



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South African Table Grape Industry (SATI)
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# FOREWORD

The Bureau for Food and Agricultural Policy (BFAP) was founded in 2004. It serves the broader African, as well as the South African food system through an end-to-end value chain approach which considers land, water, the economy and its people as well as elements of the socio-economic environment, such as infrastructure, governance, social change and technologies. Our purpose is to inform better policy and business decision-making. We provide unique insights by going deeper into scientifically based, robust analyses, supported by credible databases, a combination of integrated models and considerable experience. Over more than 15 years, the Bureau has developed a very distinct value proposition to deliver a holistic solution to public and private sector clients active in the agricultural sector and related value chains. We regard innovation as one of the key drivers for sustainability and, therefore, BFAP has invested in the Integrated Value Information System (IVIS), a geo-spatial platform which further enhances BFAP's product offering by providing enhanced visual solutions using the integration of data and insights to support strategic-decision-making along multi-dimensional value chains.

The BFAP Group consist of an experienced team with a range of multi-disciplinary skills including agricultural economics, food science, mathematics and data science, engineering, supply chain management, socio-economic impact assessment, systems technology, and geo-informatics. In addition, we fundamentally believe that a competitive and thriving agricultural sector with its related value chains is built on long-run partnerships. Hence, BFAP has developed a well-established network of local and international collaborators and partners in the public and private sector. This includes long-standing partnerships with private sector clients, research partners such as the Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri in the USA, the Food and Agricultural Organization of the United Nations (FAO) and the International Food Policy Research Institute (IFPRI). BFAP is also one of the founding members and partners of the Regional Network of Agricultural Policy Research Institutes (ReNAPRI) in Sub-Saharan Africa. As a team and as a network, we pool our knowledge and experience to offer the best possible insights and access to a unique high value network.

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
- publish research outputs with the associated Universities in peer reviewed journals as well as in respected 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 2021 EDITION** of the BFAP Baseline presents an outlook of agricultural production, consumption, prices and trade in South Africa for the period 2021 to 2030. The outlook is generated by the BFAP system of models and considers the performance of South African agriculture and its contribution to inclusive growth and economic prosperity as we enter the post-COVID era. The information presented is based on assumptions about a range of economic, technological, environmental, political, institutional, social and international market factors. 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 equating 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, markets are extremely volatile and the probability that future changes 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 play out over the short run and permanent factors 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. The 2021 edition captures, to the best extent possible and based on the most recent information available, the impact of the COVID-19 pandemic and the measures imposed to contain it. However, as we have learnt over the past 15 months, market (supply and demand) situations can change very quickly.

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 uncertainties of agricultural markets. 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 2021 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 should be taken into consideration.

# EXECUTIVE summary

**IN 2012,** the National Development Plan (NDP) identified a range of opportunities for agriculture which, if exploited equitably, could be the engine of inclusive growth in many less developed rural areas and towns of South Africa. In these parts of South Africa agriculture is typically the biggest employer of labour and capital, and has strong linkages to input suppliers and the agro-processing sector, which magnifies these opportunities through significant upstream and downstream employment and economic multipliers. The development of the Agriculture and Agro-processing Master Plan (AAMP), which is currently still in process, provides another opportunity to realign to the NDP's vision of an inclusive and thriving agricultural and agro-processing sector.

Achievement of this vision will require a portfolio approach towards inclusive agricultural and agro-processing transformation. This is an approach that has been presented in previous Baselines and has now been incorporated in the AAMP Framework Agreement. It is based on the principle that the South African food system can be classified as a combination of highly diverse value chains with a wide spectrum of producers linking to a range of formalised and sophisticated markets on the one extreme and completely unregulated and informal markets on the other. A serious effort is now required to reduce the persistent dualism in the sector where most of the output is produced by the traditional white farming sector, and to drive development in rural areas across the entire country, allowing a diverse range of producers to flourish.

Successful transformation will result in an increased number of smallholder farmers able to produce for local markets and ensure regional food security, and where possible and viable, link into formal or tailor-made value chains and grow their businesses. Nevertheless, South Africa's largely urbanised population and economically important international trade balance will still largely depend on commercial farming operations of both white and black commercial farmers and corporate agribusinesses such as the fruits, poultry and egg producers. The sustainable existence of a strong and healthy commercial sector is also vital for the bourgeoning smallholder sector, as the larger farmers create the critical mass of demand for research and technologies, input supply networks and value chains that will incorporate, expand and adjust to also serve the smallholder sector better if properly targeted.

Simulations of an alternative future state, where both cross-cutting preconditions and a list of value chain specific interventions and reforms identified during the development of the AAMP are implemented successfully suggest that real agricultural GDP could be increased by up to 14% above baseline projections by 2030. Under this scenario, the total gross production value from agriculture could increase by a further R32 billion in real terms, and the share of black farmer output of production could increase to more than 20% in most of the industries where transformation has been lagging. However, this alternative outcome requires successful implementation of very specific interventions and cannot therefore be incorporated in the current baseline outlook – which reflects muted growth over the coming decade in a business as usual scenario. The purpose of the baseline, as summarised below, is to provide a clear benchmark or yardstick of current realities that can serve as a roadmap to pinpoint required interventions that will lead to an improved socio-economic state for the country and its people.

Agriculture was a shining light in a difficult year in 2020. Amidst various restrictions imposed to curb the spread of the COVID-19 virus the South African economy contracted by a record 7%, yet agriculture was the only sector other than government services

to contribute positively, growing by 13% and yielding a trade surplus of more than US$4 billion. The pandemic also highlighted the sector's broader footprint, its complex interlinkages with the rest of the economy and the often underrated contribution of the informal sector. Despite unprecedented challenges across the value chain, food supply remained steady and, despite some exceptions, food price inflation remained at tolerable levels for most of 2020, averaging 4.5% for the year. Unfortunately, despite the sector's successful contribution to food security through the availability of food, overall growth of the economy remains low and the stark reality is that approximately half of the South African population cannot afford a basic healthy diet.

In an environment where world prices have risen sharply, the short term prospects for the sector remain upbeat. BFAP expects further growth of 7.6% in real agricultural GDP in 2021, underpinned by an expected bumper harvest for the major summer crops, sold at strong prices, as well as record exports from major fruit sectors such as citrus, pome fruit and table grapes. The citrus industry was already a standout performer in 2020, overcoming many logistical challenges to export record volumes.

In the medium term, the baseline reflects a conservative growth path for the agricultural sector and acceleration thereof will require a favourable environment, underpinned by certain pre-conditions for inclusive growth. These include 1) a stable and conducive policy and investment environment, 2) comprehensive, sufficient and predictable infrastructure and service provision and maintenance, including electricity, roads and water with well-functioning municipalities, 3) comprehensive and effective farmer support programmes, and 4) effective state services (e.g. trade affairs, port authorities, veterinary services, biosecurity control, plant health, agricultural research council etc.). It is these pre-conditions and the environment that they create that will ultimately determine long-term growth trajectories. Within specific sectors, they must be complimented by specific, targeted interventions to unlock growth potential.

One sector that exhibits ample potential for accelerated, inclusive growth is livestock – the largest of the three subsectors within agriculture. Strong growth over the past decade was largely underpinned by substantial investments in intensive operations producing chicken, eggs and pork. The beef industry also shifted from a net importing to a net exporting position and wool exports have been hailed as a major success, specifically because comprehensive support programmes boosted output from smallholder communal farms to deliver into export markets. However, the projected growth in the industry over the next decade is balanced on a knife's edge. Domestic consumption growth is expected to slow in an environment with weaker spending power, and production growth will need to rely on expanded exports and successful import replacement. The overall animal health system, an essential pre-condition to achieve this, is not currently efficient in managing disease outbreaks, hampering productivity amongst smaller producers and limiting opportunities for export led growth. South Africa has already lost its Foot and Mouth Disease free status, and has had to rely on bilateral agreements and geographical compartmentalisation to keep exports flowing. A well-managed veterinary strategy can reduce risks and enable further investment. The poultry masterplan also identified numerous actions to support competitiveness against imported products, but a more efficient animal health system is required to enable exports and broaden market opportunities.

Accelerated growth in livestock production will also enable expansion of field crop production, as animal feed is a key market offtake for the sector. Under baseline assumptions, which include stable weather conditions, further real growth in the value of field crops beyond 2021 is limited. Even in the soybean sector, which has been one of the most dynamic in recent years, growth is projected to slow as the industry moves towards self-sufficiency. Although this is a major milestone, it introduces the next phase of having to compete sustainably at export parity levels. To enable this, the overall competitiveness of the industry can be improved with the introduction of new seed technology and germplasm, along with a constant drive toward improved farming practices, improved efficiency in the handling and processing of grains and oilseeds, and investment in logistics - especially in the transport of soybean meal to the coastal areas where almost one third of the soybean meal is consumed.

Investments to improve efficiency of transport and particularly port logistics will also support South Africa's globally competitive and export orientated horticultural sector. Its export orientation make this sector less sensitive to domestic spending power constraints and it is currently reaping the rewards of more than a decade of investment. The total area under high-value export crops expanded by more than 70 000 hectares from 2012 to 2020, exceeding most of the initial targets set by the NDP. Export volumes are projected to further expand by approximately 40% by 2030. While this is a success in itself, it will bring significant price pressure in many markets, which implies government will have to negotiate favourable, competitive access to additional export markets and invest significantly in upgrading of port facilities. Furthermore, critical maintenance in the infrastructure of irrigation schemes has fallen behind, and water losses are estimated at approximately 30%. While water use efficiency has improved with increasing prevalence of netting, expansion and maintenance of infrastructure in existing irrigation schemes will be critical for new entrants to enter the sector successfully.

To conclude, fostering growth and sustainability of inclusive food value chains requires an integrated approach. Whereas the direction of short-term growth is mainly determined by external events like weather, global market prices and exchange rate fluctuations, it is the pre-conditions and the environment they create that will determine long-term inclusive growth trajectories. Despite the clear opportunities for growth, employment creation and the rapid raise of black farmers' share in agricultural output that BFAP has pointed out over a number of years, these opportunities will not materialise under the current policy regime. In the finalisation of the AAMP it will be critical for social partners to focus on very specific actions to be taken to improve on these pre-conditions, which includes clear accountability and timelines for execution.

# FOSTERING GROWTH AND sustainability of inclusive food chains

**OVER THE PAST** year, BFAP has supported the development of the government's Agriculture and Agro-processing Master Plan (AAMP). The President launched the Masterplan initiative in October 2019, instituting a template process to develop a collaboration between Government, Labour and Business. After an extensive consultation process, supported by background research, social partners (government, labour and business) have agreed to the principles and the vision set out in an AAMP Framework Agreement. The vision for the AAMP is to create "Globally competitive agricultural and agro-processing sectors driving market oriented and inclusive production to develop rural economies, ensure food-security, and create growing, decent and inclusive employment and entrepreneurial opportunities for all participants in agriculture and agro-processing value chains".

This aligns with the vision of an inclusive and thriving agricultural and agro-processing sector, as described in chapter 6 of the National Development Plan (NDP), which is today just as applicable as when launched in 2012. The NDP introduced a 3-tier growth strategy with the biggest opportunity for growth and development identified in (1) the under-utilised farm land in the former homeland areas and land reform projects, (2) the expansion in production of export-led high value crops and investment in integrated value chains, and (3) in the drive for inclusive growth and job creation in the agro-processing sector. With its linkages to agro-processing, agriculture also provides significant upstream and downstream employment and economic growth multiplier opportunities. In other words, the footprint for agriculture and agro-processing is significantly larger than their contribution to the overall economy of 2% and 5% respectively (Figure 1).

The NDP clearly identified the opportunity for agriculture to be the engine of inclusive growth in rural and less developed areas and towns of South Africa where it is typically the biggest employer of labour and capital. This includes under-developed rural areas, especially former homelands, with a high

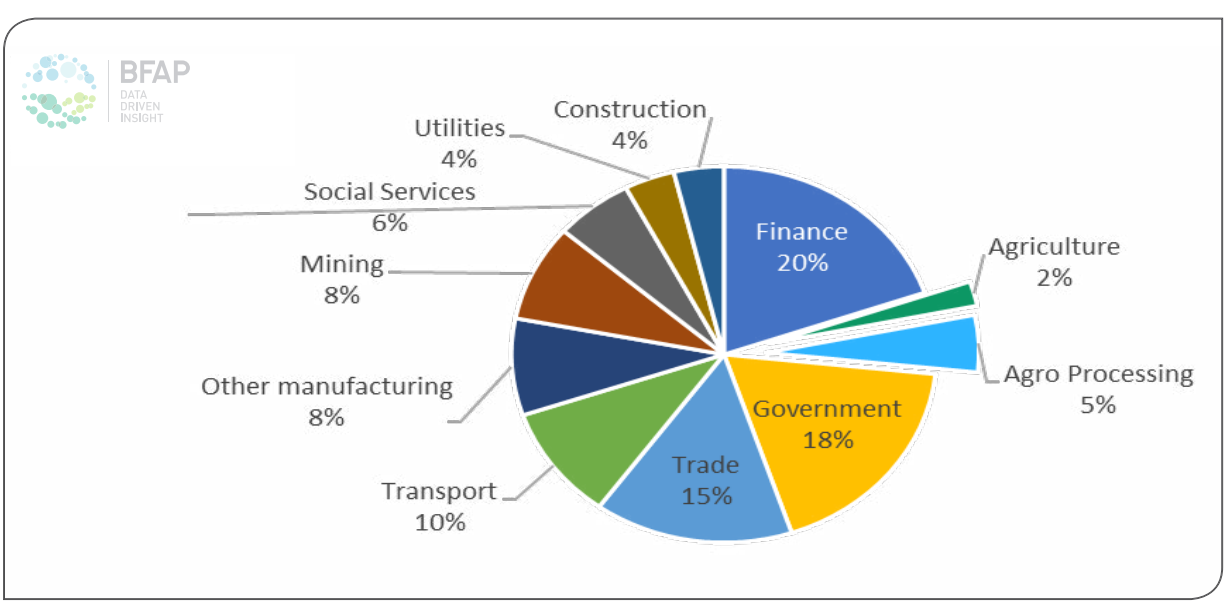



**Figure 1: Agriculture and agro-processing's contribution to the economy in 2019**

concentration of smallholder farmers and households. There are however some very basic pre-conditions that are required to reach the vision of the NDP, and these have been re-confirmed during the AAMP development discussions. The pre-conditions include:

- A stable and conducive policy and investment environment,
- Comprehensive, sufficient and predictable infra-structure and services including electricity, roads and water with well-functioning municipalities,
- Comprehensive and effective farmer support programmes,
- Effective state services (e.g. trade affairs, port authorities, veterinary services, biosecurity control, plant health, agricultural research council etc.)

The purpose of the annual BFAP Baseline publication over the past seventeen years is to provide a detailed analysis of the current state of the sector and more recently to critically assess its ability to meet the expectations and the role that was envisaged by the NDP. These assessments typically cover not only direct market related aspects, but also deal with the underlying key drivers that shape the future of the sector.

Before the current and potential future state of the sector is presented, we would like to reemphasise BFAP's portfolio approach towards inclusive agricultural and agro-processing transformation. This is an approach that has been presented in previous Baselines and has now been incorporated in the AAMP Framework Agreement. It is based on the principle that the South African food system can be classified as a combination of highly diverse value chains with a wide spectrum of producers linking to a range of formalised and sophisticated markets on the one extreme and completely unregulated and informal markets on the other extreme. Hence, inclusive agriculture and agro-processing transformation requires a multi-dimensional approach of matching farming systems with food systems. By providing support to those less favoured, and ensuring access to all farmers to this system in accordance with their competitive advantage, targeted and appropriate interventions will fast-track transformation in the industry, thereby increasing the output and participation of previously disadvantaged groups.

In this regard, a serious effort is now required to reduce the persistent dualism in the sector where most of the output is produced by the traditional white farming sector, and to drive development in rural areas across the entire country, allowing a diverse range of producers to flourish.

According to the 2017 Agricultural Census presented by StatsSA, commercial agriculture consists of 40 122 farms. However, this excludes more than 300 000 smaller scale farming operations, mostly but not exclusively operated by black farmers, that are not VAT registered. Note that the scale of farming measured here is not by land size, but rather by capital deployed. Furthermore, the General Household Survey reports

**Table 1: Number of farmers in South Africa, 2017**

| Number of farms and households | Large | Medium-small | Micro | Market-oriented smallholders | Total | Householders using farm resources |
|---|---|---|---|---|---|---|
| Growing of cereals and other crops | 387 | 2 474 | 5 698 | | 8559 | |
| Mixed farming (crops and animals) | 812 | 4 409 | 7 237 | 162 583 | 175041 | 975 776 |
| Farming of animals | 703 | 3 431 | 9 505 | 123 443 | 137082 | 1 174 696 |
| Horticulture | 649 | 1 966 | 2 028 | 15 054 | 19697 | 176 829 |
| Agricultural services | 59 | 290 | 474 | | 823 | |
| South Africa | 2 610 | 12 570 | 24 942 | 301 080 | 341 202[1] | 2 327 301 |
| Employment/households | 389 421 | 284 111 | 84 097 | 301 080 | 1 058 709 | 2 327 301 |

Note: [1]These farmers also employ wage workers, but the extent is not known, thus this is an underestimate of the livelihoods in this segment.

a further 2.3 million households that are engaged in some form of agricultural production activity (Table 1). Figure 2 provides a schematic representation of the different farmer categories and farming systems coexisting in South Africa. The farmer categories are (loosely) paired against their target markets and the examples of specific support services required for these farmers to thrive are identified. Successful transformation will result in an increased number of smallholder farmers able to produce for local markets, and ensure regional food security, and where possible and viable, link into formal or tailor-made value chains and grow their businesses. Nevertheless, South Africa's largely urbanised population and economically important international trade balance will still largely depend on large scale commercial farming operations of both white and black commercial farmers and corporate agribusinesses such as the fruits, poultry and egg producers. The sustainable existence of a strong and healthy commercial sector is also vital for the bourgeoning smallholder sector, as the larger farmers create the critical mass of demand for research and technologies, input supply networks and value chains that will incorporate, expand and adjust to also serve the smallholder sector better if properly targeted. Transformation of the commercial farming sector and the establishment and support of increased numbers of black commercial farmers are key for the continued existence of the sector. To this end, government should a) prioritise the provision of farmer support services so that people who wish to farm can do so and successfully create their own livelihoods; b) provide tenure security and support the sale and rental of land to ensure it is put to best use; c) ensure that farmers in remote areas are also able to access farming inputs; d) and support PPPs and the deepening of value chains to accommodate smaller operators.

The performance of the agricultural and agro-processing sectors over the past year has certainly confirmed the sectors' ability to recover from a combination of multi-year droughts and other adverse impacts like the outbreak of African Swine Fever (AFS), Highly Pathogenic Avian Influenza (HPAI), and Foot and Mouth Disease (FMD) to make a significant contribution to the country's economy, food security and employment. In fact, apart from government services, the agricultural sector was the only sector that achieved a positive growth rate during 2020, expanding by 13.1% in real terms. It was a remarkable year for growth in agriculture, coming at a time when all other sectors experienced significant contractions as a result of COVID-19. The national economy saw a record annual decline of -7%, the biggest contraction since at least 1946. Figure 3a puts these numbers into context, showing the real annual GDP growth for the South African economy in 2020, as well as the agricultural sector. The major drivers behind the good performance are summarised in Figure 3b, showing the contribution that each sub-industry made to real income growth between 2019 and 2020. Real gross income in the farming sector grew by 7.3%, of which

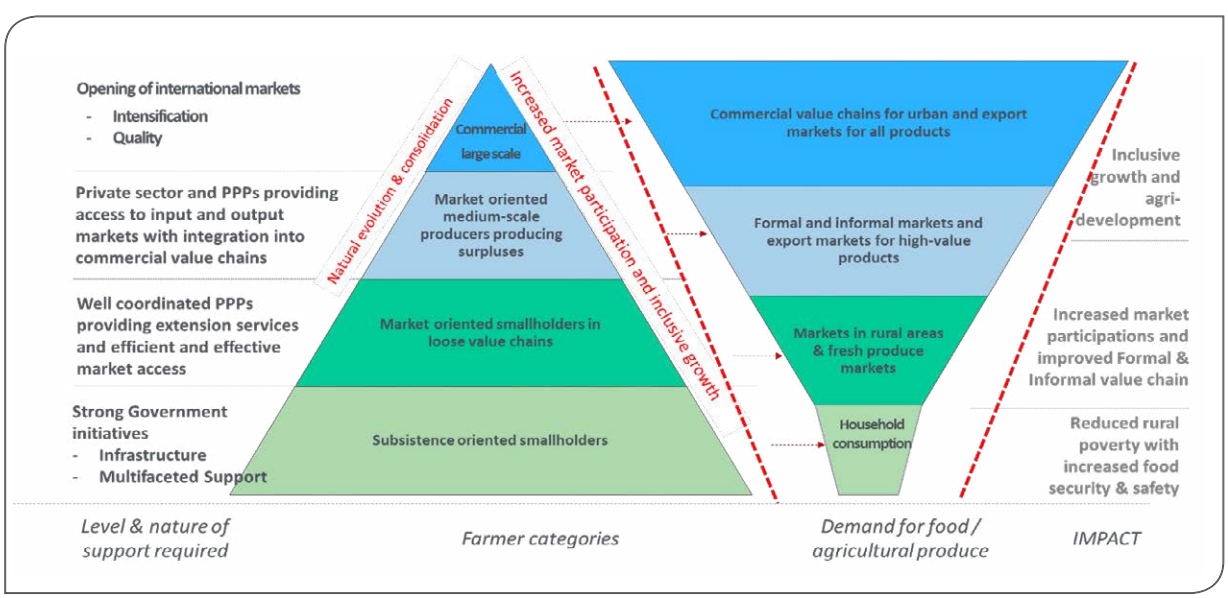



**Figure 2: Potential architecture of a redesigned Land Reform and producer support framework**

the income in the maize industry contributed the largest proportion of 2.8%, followed by eggs (1.3%) and citrus (0.9%). These industries made a large contribution owing to their relative size and strong growth in output, whilst benefiting from fairly normal operations, despite the restrictions associated with COVID-19. In the case of citrus, the sector overcame many logistical challenges, to export record volumes. Favourable weather conditions meant that the gross production value of field crops overall grew by 21%, whilst citrus expanded by 14%. Smaller industries that realised large increases in 2020 were oats, groundnuts, ostrich products, canola, mohair and barley.

Over the short run, the outlook for the agricultural sector remains upbeat and the BFAP Baseline 2021 projects that it will expand by another 7.6% year on year in real terms in 2021. This growth will come from an expected bumper harvest for maize and an all-time record harvest for soybeans, sold at much higher prices due to global market support, as well as record exports for major sectors such as citrus and table grapes.

However, over the long-run, the agricultural growth rate is projected to decline. Figure 4 presents a long-term trend of the real agricultural GDP, highlighting the key drivers responsible for the major fluctuations over a specific time period. Most importantly, it also presents an alternative growth path over the outlook period, which BFAP has in recent years referred to as the "bending of the curve". This alternative future has been simulated based on a list of key interventions and reforms identified during the AAMP process. Under this scenario, total gross production value from agriculture could increase by a further R32 billion in real terms above the baseline by 2030, and the share of black farmer output of production could increase to more than 20% in most of the industry where transformation has been lagging. A number of these key interventions are directly related to the pre-conditions that have been listed above. In the Baseline assessments over the years we have also dealt with these pre-conditions in great detail. They are the underlying drivers that will ultimately determine the long-run outcomes. In other words, whereas the direction of short-term growth is mainly determined by external events like weather, global market prices and exchange rate fluctuations, it is the pre-conditions and the environment they create that will determine long-term growth trajectories. There are numerous examples of collapse of infrastructure and services in small towns and in some cases farmers and agriculture firms have partnered with local communities just to get basic services running again and to undertake some maintenance of critical infrastructure. Without the required infrastructure and basic service delivery, critical investments in agriculture and agro-processing will remain limited or will be withdrawn, and growth will turn to decline.

The importance of a number of key underlying pre-conditions is illustrated through a view on growth opportunities in each of the three main sub-sectors (Figure 5).

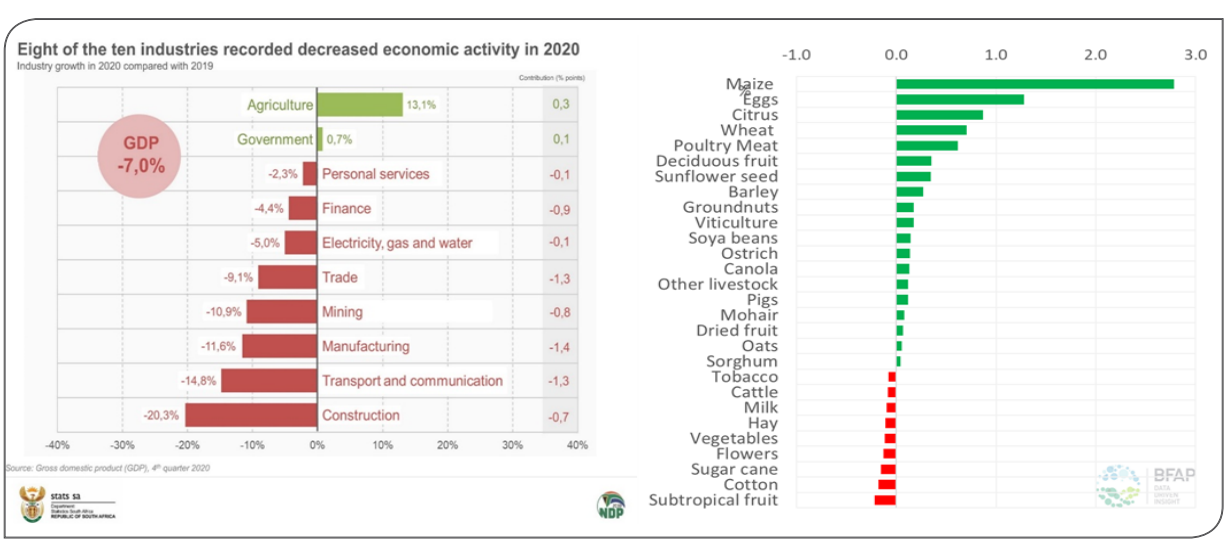



**Figure 3: a) Economic activity in 2020, b) Contribution to agricultural growth in 2020**

**Source: Stats SA & BFAP, 2021**

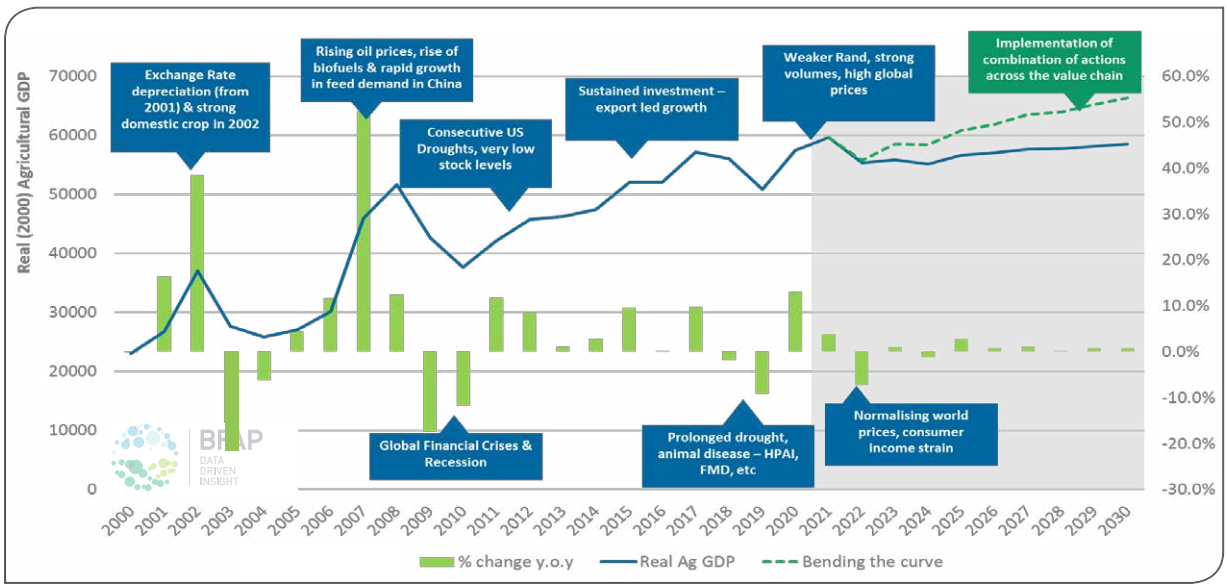



**Figure 4: Real Agricultural GDP: 2000-2030**

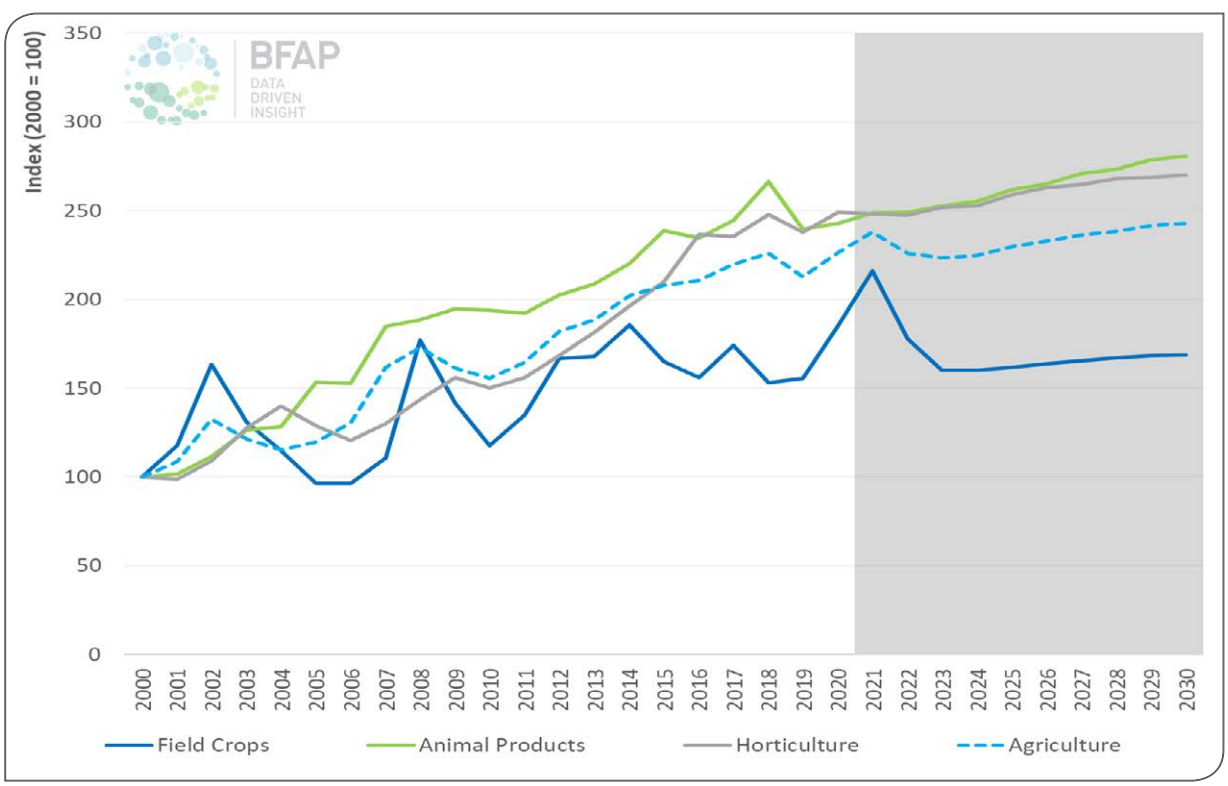



**Figure 5: Real Gross value of production under baseline assumptions – excluding potential AAMP interventions**

### Livestock

The largest share of the gross production value of agriculture is generated by animal products. A significant portion of this sector is operated within informal production systems, often only for household use with small surpluses sold into informal value chains. Hence, the actual value of the sector could be under-estimated by more than 20%. The beef sector specifically is often referred to a "sleeping giant" with approximately 40% of the herd currently managed within informal production systems characterised

by low productivity rates. These informal operations provide an opportunity for significant productivity gains that could boost overall inclusive growth and have a significant impact on rural food security. However, this opportunity will not be unlocked unless the pre-conditions of well-coordinated producer support programmes, which include an effective herd health management platform linked to infrastructure development, have been met.

Major investments in intensive livestock operations of broilers, layers and pigs have accounted for most of the growth in this sector over the past decade. The beef industry has also managed to shift from a net importing to a net exporting position and wool exports have been hailed as a major success, specifically because comprehensive support programmes have boosted output from smallholder communal farms to deliver into export markets. However, the projected growth in the industry over the next decade is balanced on a knife's edge. The overall animal health system, which is regarded as an essential pre-condition, can currently not anticipate or manage the outbreak of animal diseases, and desperate interventions are required. South Africa has already lost its foot-and-mouth free status and only through bilateral agreements and the move towards compartmentalisation has the industry managed to maintain access into a number of key exporting destinations from selected points of origin. In the poultry master plan, a number of key interventions were identified to support the industry's ability to compete against imported chicken meat. However, without the pre-condition of an effective animal health system that receives the overall buy-in and support from all social partners, with government accepting its responsibility in driving the health system, the opportunities for inclusive growth and the creation of jobs will remain a mere target and will not materialise.

**Horticulture**

The horticultural industry has posted the fastest growth of all subsectors over the past decade. The total area under high-value export crops has expanded by more than 70 000 hectares over the period 2012 to 2020, exceeding most of the initial targets set by the NDP. This figure is based on BFAP's initiative to update the NDP crops that we have been tracking for some years. From our engagement with the organisations and available data, these expansions are based on a combination of crop substitution (e.g. wine grapes to citrus) and major efficiency gains in some of the crops. In the Northern Cape, for example, some maize-wheat double cropping has been replaced by pecan nuts. Unfortunately, updated information around the total area under irrigation remains a challenge and a comprehensive fly-over census for all provinces remains critical to set an accurate baseline. Export volumes are projected to further expand by approximately 40% by 2030, which implies government will have to negotiate the opening of more export markets under favourable trade agreements and major investments are required for the upgrading of port facilities. Furthermore, critical maintenance in the infrastructure of irrigation schemes has fallen behind, and water losses are estimated at approximately 30%. The inclusion of new farmers has been particularly challenging, mainly due to high initial capital investment requirements where break-even is only achieved after five or six production seasons. Hence, the burning pre-conditions that social partners in the negotiations of the AAMP will have to focus on in the case of horticulture are tied to infrastructure development, favourable trade agreements in key export destinations and financing solutions for new entrant farmers that offer a "soft loan" to bridge the initial capital investment that is required for establishing orchards.

**Field crops**

Rapid growth in the production of field crops over the past two seasons has been boosted by record harvests that have coincided with high global commodity prices. Global prices are expected to shift from record highs over the next two years, which will likely also cause a decline in local output. Over the outlook period, growth in real terms is expected to remain relatively flat under the assumption of normal weather conditions. Growth in the soybean industry is expected to slow down as the industry is rapidly moving towards self-sufficiency. Although this is a major milestone that has been reached, it introduces the next phase: competing sustainably at export parity levels. The overall competitiveness of the industry will be improved with the introduction of new seed technology and germplasm and a constant drive in improved farming practices, together with an efficiency drive in the handling and processing of grains and oilseeds and investment in logistics, especially in the transport of soybean meal to the coastal areas where almost one third of the soybean meal is consumed.

Most of the growth in domestic demand for grains and oilseeds will come from the livestock industry and

the active implementation of the AAMP could unlock additional growth in the demand for feed, especially in the former homeland areas. The industry has achieved considerable success in growing the number of new black farmers and their share in production has been growing, albeit from a low base. The real challenge for the industry, especially for new entrant farmers lies in a comprehensive farmer support model, which includes access to finance, training and skills development, and multi-peril crop insurance. Further pre-conditions that will have to be addressed as a matter of urgency to ensure that South Africa can maintain a globally competitive grains and oilseeds value chain, include upgrading of ports to handle larger export volumes, maintenance and upgrading of rail infrastructure to move more product from inland production regions to ports and coastal consumption hubs, investment in the production of local fertilisers where we have the natural resources, and lastly the increased capacity at the registrar's office to speed up the processing and responsible registration of new technologies in seed, chemicals and other farming inputs.

Having touched on opportunities for upgrading of existing value chains through investment in very specific functions, the picture must be completed with an overview of South Africa's natural resource potential. This includes a stock take of idle resources that could be brought back into production and therefore make a contribution not only from a socio-economic perspective, but also from an environmental sustainability perspective.

Agricultural activities are directly dependent on the availability and quality of natural resources, particularly land and water. With only 15.8 million hectares (12.4%) of the total land surface area of 122.3 million hectares planted to field crops, South Africa is a semi-arid country with a weak resource base for agriculture, which is further limited by significant tracts of land that are under-utilised or unutilised as already identified in the NDP. This renders the sector inherently risky, with farmers exposed to large and regular climate volatilities that are becoming more frequent due to climate change. The figures below highlight the limited land use potential in South Africa, with more than half of total agricultural land area classified as low to medium potential (Class V – VIII). That is why 55% of all agricultural land is only suitable for extensive grazing systems (DALRRD, 2020).

Figure 6 illustrates land capabilities across the country. Ironically, some areas of high potential in the former homelands in KwaZulu-Natal, Eastern Cape, Limpopo,

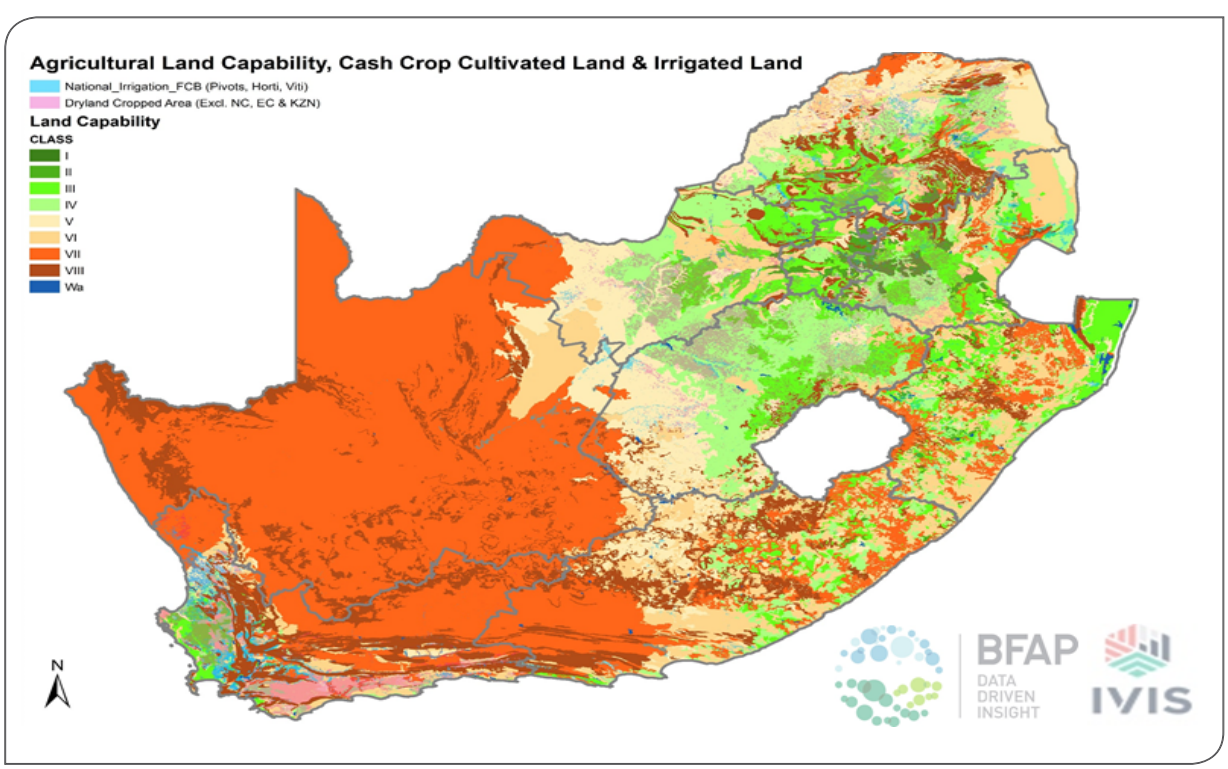



**Figure 6: Agricultural land capability map of South Africa**
**Source: Originally published in BFAP Baseline (2018)**

North West and Mpumalanga have high poverty and unemployment. Almost all field crop boundaries (2 million hectares) of small-scale or subsistence farms are situated in former homeland areas of which a total of 650 000 hectares (31%) is on high potential agricultural land. This is the legacy of past policies, which left these areas without the functioning physical, social and institutional infrastructure required for successful farming. Taking South Africa's relatively weak resource base for agriculture into consideration, these under-developed farming areas, plus the underperforming land-reform farms, present a major opportunity for growth in localised production and the development of agro-food chains. Table 2 presents a summary of an analysis conducted by the Agricultural Research Council (ARC) and Entsika, commissioned by DALRRD in 2019, to sample and determine the viability of 1.8 million hectares from the land reform farms. In most cases, these were productive commercial farms that were purchased by government under the Proactive Land Acquisition Scheme (PLAS) land reform programme. From the total of 1.8 million hectares that were assessed, 230 465 hectares are suitable for field crops, 83 636 hectares for horticulture, 1.5 million hectares for livestock production and more than 50 000 hectares can be irrigated.

Most cultivated fields in Mpumalanga, Gauteng and KwaZulu-Natal are on high potential soils while in the other provinces the highest proportion of cultivated fields are on marginal potential soils. In the Free State, for example, over 1.7 million hectares of cultivated fields are on soils that are officially classified as marginal to non-arable. This not only underlines the vulnerability with respect to climate, but also raises the importance of careful land use management, the availability of irrigation, unique soil characteristics, and risks related to terrain and soil management (e.g. erosion).

Eroded land is of particular concern in regions where high-potential soils and climatic suitability coincide with relatively steep terrain, typically found in the Eastern Cape and KwaZulu-Natal. Without proper management practices in such areas, potentially productive agricultural land is threatened by degradation and would be very costly, if not impossible, to rehabilitate. In total, eroded land has increased from 219 400 hectares in 2013 to 437 000 hectares in 2018 (99% increase), while barren land increased by 250 000 hectares (2%) over the same period (DEA, 2018). Most additional eroded land was previously classified as grassland and shrubland in the Eastern Cape, Free State and Northern Cape; this change can typically be attributed to over-grazing and poor soil management practices.

The changing climate, poor water management and lack of maintenance of critical water infrastructure in the country are affecting the availability of water, subsequently impacting food production. According to the Department of Water and Sanitation, between 1999 and 2011 the extent of main rivers in South Africa classified as having a poor ecological condition increased by 500%, with some rivers pushed beyond the point of no recovery. South Africa has lost over 50% of its wetlands, and of the remaining 3.2 million hectares approximately 30% are already in a poor condition. Various estimates of the total South African irrigation area have been documented since 1990 and it is important to make a distinction between actual area under irrigated crops (estimates) and the

**Table 2: Natural resource potential of PLAS farms**

| PLAS Hectares | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Provinces** | **Eastern Cape** | **Free State** | **Gauteng** | **Kwa-Zulu-Natal** | **Limpopo** | **Mpumalanga** | **North West** | **Northern Cape** | **Western Cape** | **Grand Total** |
| **Total assessed** | 232 479 | 203 253 | 44 912 | 153 030 | 92 739 | 242 356 | 240 925 | 571 122 | 77 770 | 1 858 587 |
| **Field Crops** | 8 834 | 34 553 | 18 010 | 23 261 | 8 625 | 54 045 | 22 406 | 54 257 | 4 588 | 230 465 |
| **Horticultur** | 9 997 | 9 959 | 2 335 | 14 997 | 14 467 | 20 358 | 6 746 | 8 567 | 14 232 | 83 636 |
| **Livestock** | 197 607 | 150 407 | 23 085 | 109 876 | 65 659 | 167 953 | 211 773 | 502 016 | 55 761 | 1 511 031 |
| **Irrigation** | 8 137 | 8 740 | 1 392 | 5 662 | 7 234 | 5 089 | 2 409 | 6 853 | 4 588 | 50 182 |

**Source: ARC, 2019**

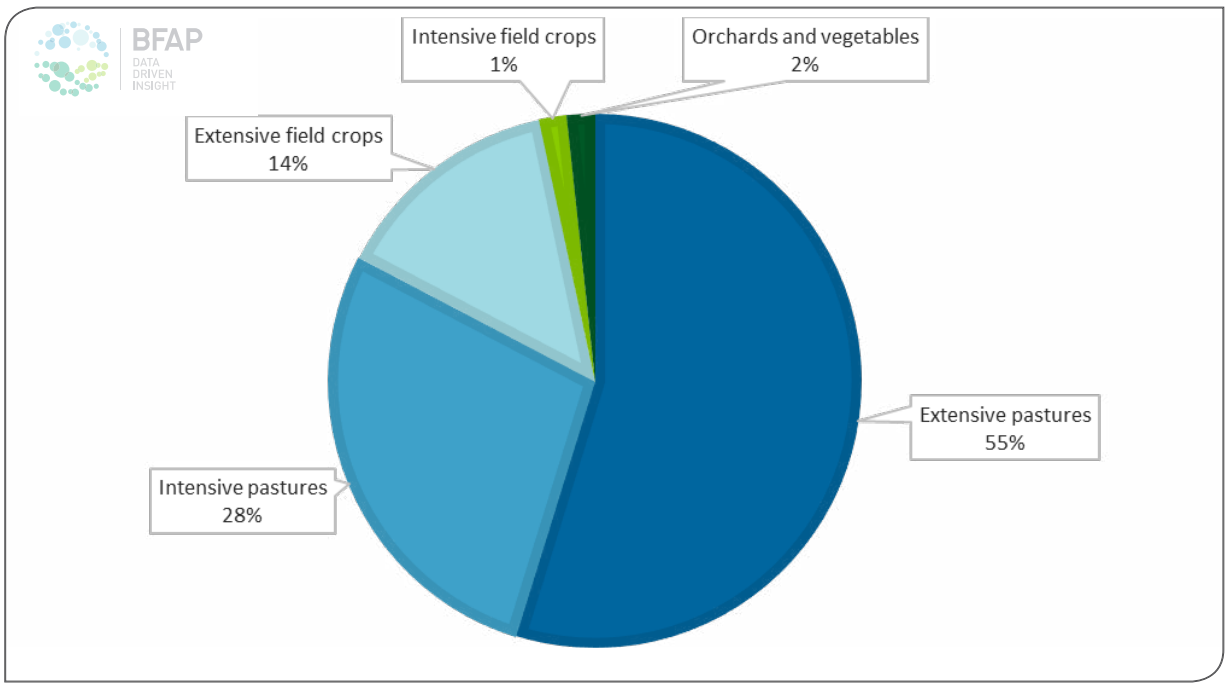



**Figure 7: Land use categories based on the natural resources**
**Source: BFAP (2019)**

registered area under irrigation (related to water licenses). According to the latest estimates by the Water Research Commission and the Department of Agriculture, Forestry and Fisheries (2018), the total area under irrigation is estimated to range between 1.29 and 1.59 million hectares, while the actual area registered for irrigation use ranges between 1.44 and 1.68 million hectares.

In its initial research for the Planning Commission, BFAP showed that 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 faces with respect to water resources. This expansion was based on the assumption of comprehensive implementation of the Water Administration System (WAS) on 600 000 hectares of irrigated land. The Water Research commission (WRC) has already proved that savings in excess of twenty percent are achievable at irrigation schemes where WAS has been implemented.

The recently completed Water Master Plan is based on the National Water Resource Strategy-2 (NWRS-2). The NWRS-2 provides an overview of water's contribution to the South African economy and states that "there is potentially sufficient water available for development" if water losses are reduced and water is used more diligently and productively. The management of water use is critical for optimum, long term environmentally sustainable social and economic benefit, which implies that water allocation must be seen holistically across social, economic and ecological frameworks. As pointed out by the NWRS-2, optimal water use (on and off-farm) remains key to the long-run use of water in agriculture. Therefore irrigation intensification or optimisation can contribute to an expansion in hectares irrigated without allocating more water to the water user (agriculture in this context). A significant shift away from typical flood and sprinkler irrigation to more efficient types of irrigation systems such as pivots and drip irrigation has been observed already. For example, based on the field crop boundary data base (as opposed to all listed / DWA registered water users), within the total area under irrigation, the move from less efficient forms of irrigation to pivot irrigation (as picked up in satellite imagery) changed from 410 000 hectares in 2000, to 585 000 hectares in 2010 (a 43% increase) and most recently, up to 825 000 hectares in 2018 (DAFF, 2018).

In line with the NWRS-2, the Directorate of Water Use and Irrigation Development of DALRRD developed an Irrigation Strategy, as well as the Irrigation Revitalisation Business Plan, which indicates that approximately 111 000ha of irrigated land requires revitalisation and further water availability was identified for a possible 34 000ha of irrigation expansion (Table 3). The basic motivation for expansion of land under irrigation remains the same, however recent reports from DALRRD point to the need to better understand the factors that influence the success of revitalised irrigation schemes and the way these programmes are structured. The Irrigation Strategy therefore seeks to practise irrigation within the confines of limited suitable natural resources to unlock the potential of people as well as land (DAFF, 2015). Figure 8 illustrates irrigation schemes situated in the former homeland areas of South Africa, where substantial portions of irrigation schemes targeted for revitalisation can be found.

Another important factor to consider with respect to water is climate change, which is characterised mainly by changes in absolute levels and the timing or volatility of precipitation and temperature. Total rainfall and its

**Table 3: Strategic water allocation possibilities to support growth**

| | | |
|---|---|---|
| Total expansion potential (new water developments - expanding storage & infrastructure) – Hectares | | 34 000 |
| Project Allocated | Western Cape: Clanwilliam Dam | 4 000 |
| No Water Developments Allocated | North West: Taung Irrigation Scheme | 1 300 |
| | Northern Cape: Upper Orange River Catchment | 5 000 |
| | Mpumalanga: Dept. of Agriculture in Mpumalanga | 3 000 |
| | Makhathini Irrigation Scheme | 10 000 |
| | Free State: Upper Orange River Catchment | 3 000 |
| | Eastern Cape: Upper Orange River Catchment, Umzimvubu Dam, Foxwood Dam | 7 700 |

**Source: BFAP (2018) and DAFF (2015)**

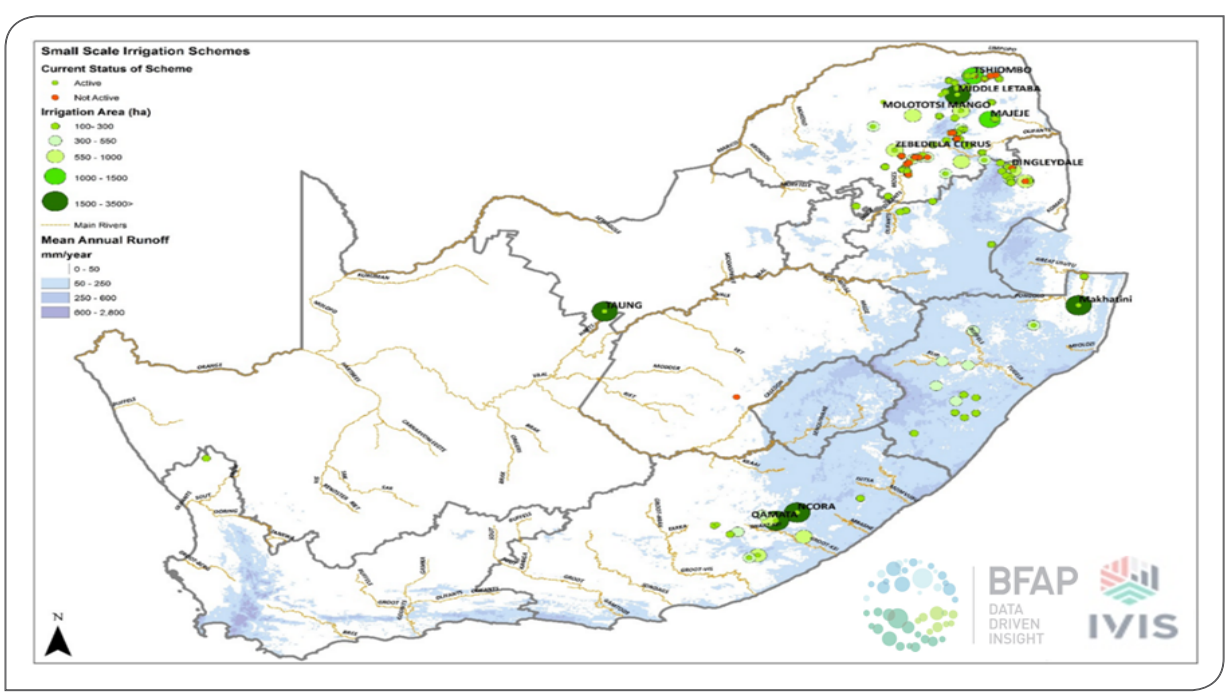



**Figure 8: Small scale irrigation schemes in South Africa**
**Source: DAFF: Directorate Water Use and Irrigation Planning, 2015, BFAP Baseline 2020**

distribution during the agricultural production season and its timing can influence both total area planted and total production, and consequently commodity prices. The last century's total rainfall during the respective summer (October – March) and winter (May – October) production seasons is shown in Figure 9. The winter production season rainfall has been declining whereas the summer production season rainfall has remained largely constant over the long run.

However, when a smaller regional breakdown is considered, more significant changes in rainfall patterns emerge. Figure 10 presents the total early season rainfall (August to November) for the past century's summer rainfall regions in North West Province. While it is not a-typical to observe August to November rainfall below 100mm over time, during the last decade, this has consistently been below 100mm. This consistently low rainfall coincided with severe drought years, which led to significant financial constraints for both large and small scale farming enterprises. It is interesting to note that the total season rainfall (apart from the drought years in 2016 and 2017) in North West, has remained close to the long-term average, which points to changes in the timing of rainfall rather than absolute volumes.

While agriculture has been earmarked as a primary driver of development, rural upliftment and transformation, South Africa's climatic and resource realities need to be considered. Dryland crop production is a risky endeavour and with climate change possibly bringing even more erratic weather and rainfall conditions a government supported multi-peril crop insurance product, as is common in the vast majority of leading agricultural countries, would be vital to keep farmers on farms and in business.

To conclude, fostering growth and sustainability of inclusive food value chains requires an integrated approach. As indicated, the direction of short-term growth is mainly determined by external events like weather, global market prices and exchange rate fluctuations, but it is the pre-conditions and the environment they create that will determine long-term growth trajectories. Despite the clear opportunities for growth, employment creation and the rapid raise of black farmers' share in agricultural output that we have pointed out over a number of years, these opportunities will not be materialised under the current state of pre-conditions that are not effectively managed. In the finalisation of the AAMP it will be critical for social partners to align on very specific actions to be taken to improve on these pre-conditions, which includes clear accountability and timelines for execution.

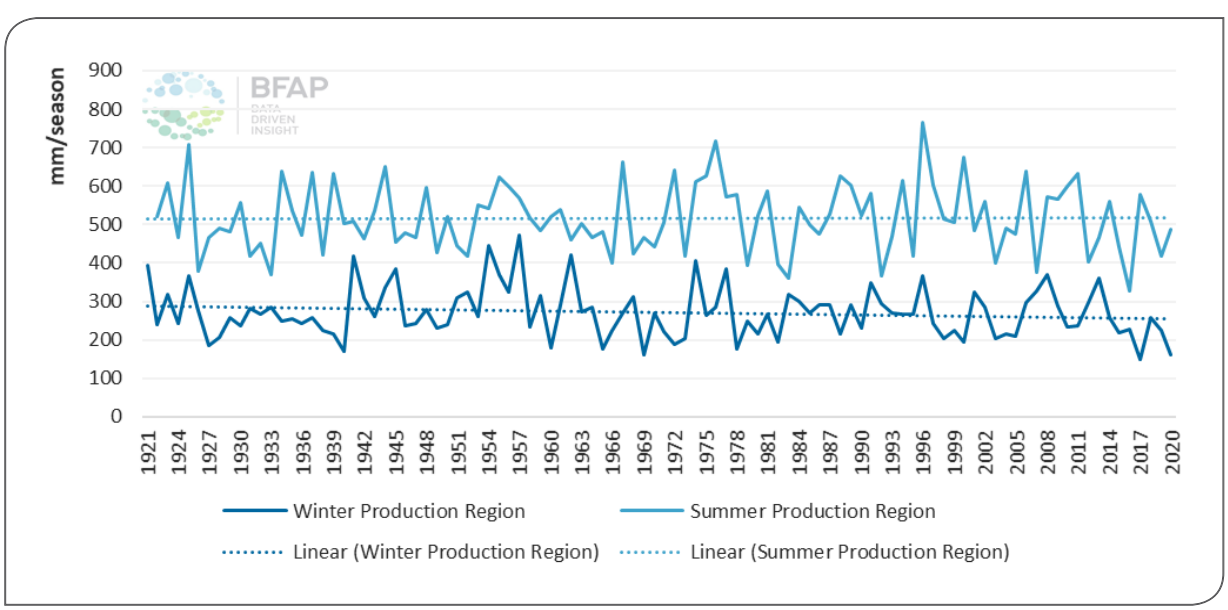



**Figure 9: Production determining rainfall for winter and summer production regions in South Africa over the past century.**

**Source: WeatherSA (2020), BFAP calculations (2020)**

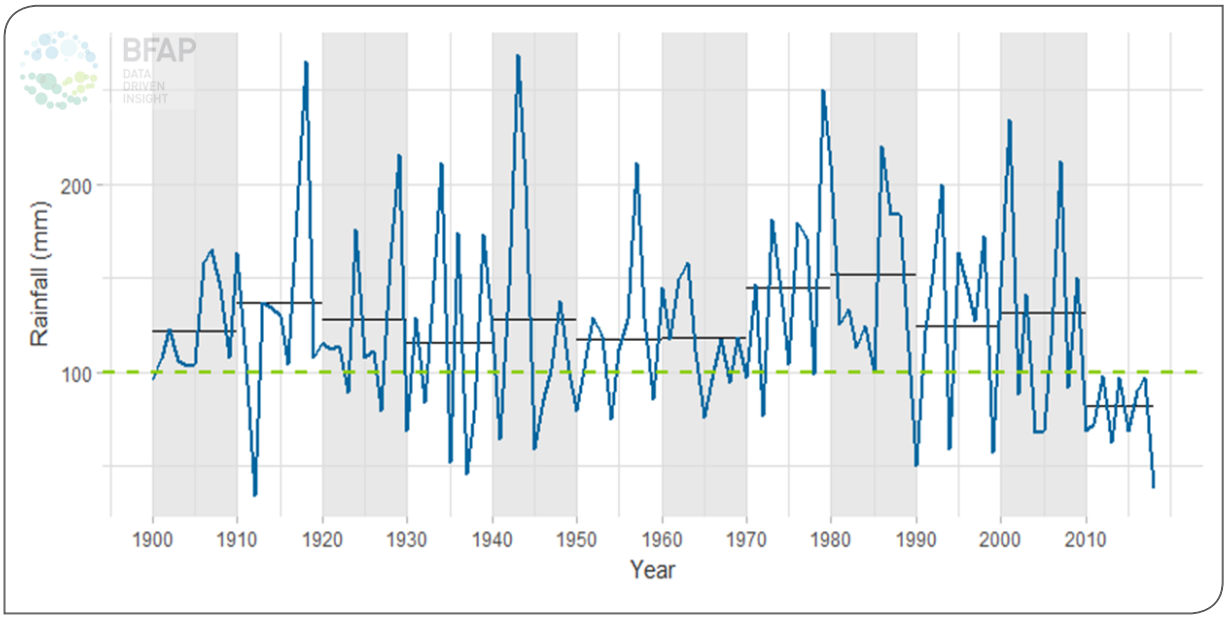



**Figure 10: Total early season rainfall from August to November in the North West Province**
**Source: Weather SA (2020), BFAP calculations (2020)**

# KEY BASELINE ASSUMPTIONS

**Policies**

The baseline assumes that current international as well as domestic agricultural policies will be maintained throughout the period under review (2021 – 2030). 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 assumed to be maintained.

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 300 000 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, and remains 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 original Trade, Development and Cooperation Agreement (TDCA), which was later replaced by the new Economic Partnership Agreement (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 65 000 tonnes of bone-in portions. On bone-in portions originating from the EU, South Africa applies a safeguard duty, which was introduced in 2018 at 35.3%. The safeguard will decline annually and be phased out completely by March 2022. In 2020, the general duty on bone in portions was increased from 37% to 62%, while the general duty on boneless cuts was increased from 12% to 42%. The projected tariff levels, as derived from the FAPRI projections of world commodity prices, are presented in Table 4.

**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). In addition, COVID-19 caused widespread turmoil and sent shockwaves through the global economy in 2020. It brought with it widespread uncertainty, risk appetite amongst investors declined and many emerging market currencies depreciated sharply. As one of the most frequently traded emerging market currencies, the Rand was no exception. As global economies locked down and movement restrictions were imposed, oil prices declined sharply, to as low as $28 per barrel of Brent Crude. However, much has changed since. As the vaccine rollout gather momentum globally and economic restrictions eased, activity started to resume and the rate of recovery has in many instances been faster than initially expected. On the back of multiple stimulus packages around the world, oil prices have recovered sharply, along with

**Table 4: Policy Assumptions**

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|
| **R/tonne** | | | | | | | | | | |
| Maize tariff: (Ref. price = US$ 110) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wheat tariff: (Ref price = US$ 279) | 285 | 615 | 971 | 829 | 816 | 814 | 821 | 805 | 827 | 854 |
| 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 | 866 | 821 | 725 | 648 | 659 | 680 | 701 | 725 | 743 | 760 |
| Sunflower cake tariff: 6.6 % of fob (4.95% for MERCUSOR origin) | 267 | 250 | 218 | 199 | 205 | 213 | 222 | 230 | 238 | 242 |
| Sorghum tariff: 3 % of fob | 109 | 107 | 98 | 101 | 104 | 106 | 110 | 114 | 118 | 121 |
| Soybean tariff: 8 % of fob | 598 | 556 | 500 | 515 | 525 | 540 | 557 | 573 | 589 | 603 |
| Soybean cake tariff: 6.6 % of fob (4.95% for MERCUSOR origin) | 416 | 405 | 375 | 391 | 400 | 413 | 428 | 439 | 453 | 458 |
| **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 |
| 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) | 2436 | 2646 | 2798 | 2931 | 3052 | 3139 | 3230 | 3324 | 3419 | 3515 |
| Lamb tariff: max(40 %* fob,200c/kg) | 2979 | 3258 | 3393 | 3515 | 3674 | 3829 | 4017 | 4189 | 4370 | 4551 |
| Chicken tariff (Whole frozen): 82% | 1821 | 2008 | 2117 | 2207 | 2294 | 2383 | 2474 | 2553 | 2632 | 2714 |
| Chicken Tariff (Carcass): 31% | 115 | 120 | 120 | 121 | 122 | 123 | 124 | 125 | 125 | 125 |
| Chicken Tariff (Boneless Cuts): 42% | 1068 | 1177 | 1242 | 1294 | 1346 | 1397 | 1451 | 1497 | 1543 | 1592 |
| Chicken Tariff (Offal): 30% | 180 | 198 | 209 | 218 | 226 | 235 | 244 | 252 | 260 | 268 |
| Chicken Tariff (Bone in portions): 62% | 654 | 721 | 761 | 793 | 824 | 856 | 889 | 917 | 945 | 975 |
| Chicken tariff: EU Origin | 261 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pork tariff: max (15 %* fob, 130c/kg) | 325 | 361 | 380 | 395 | 404 | 411 | 422 | 430 | 440 | 448 |

many other commodity prices, supporting a recovery in export led growth and currency appreciation in many emerging markets.

In South Africa, the rate of vaccine rollout has been slow and in June, the country was in the midst of a third wave of infections, along with a higher level of restrictions imposed to curb the spread. While the pandemic has no doubt exacerbated the situation drastically and was a key factor in the 7% decline in GDP in 2020, the reality is that South Africa's economy was plagued with structural challenges prior to the pandemic. While the results from first quarter growth were in many instances better than expected, supported by a higher global commodity price cycle, the projected recovery of 3.9% translates to only 2.8% in per capita terms and remains well below the 7% contraction of 2020. Under the baseline assumption, restrictions on economic activity emanating from the continued spread of COVID-19 are not expected to last beyond the end of 2021. Nevertheless, lagging unemployment, which was a challenge before, but a significantly larger one post COVID-19, and the substantial increase in debt levels are but a few of the factors pointing to a prolonged recovery of the South African economy.

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. Following the sharp depreciation in early 2020, the recovery has been stronger than initially expected and by June, it had reached pre-COVID levels. Nevertheless, the currency remains exceptionally volatile and considering longer term market fundamentals, risk and debt levels, it is still expected to depreciate steadily over the medium term to approach R20 to the dollar by 2030. Should the depreciation be more severe, it would result in higher price levels, as well as an increase in the cost of major inputs relative to the baseline. Conversely, a stronger exchange rate would reduce both the cost of inputs and the price of outputs 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. Prices are often influenced by political tension in oil producing regions, but under the baseline equilibrium oil prices are expected to fluctuate between $60 and $65 per barrel of Brent Crude in the medium term (Figure 11). 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 11).

**Table 5: Key Macroeconomic Assumptions**

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Millions** | | | | | | | | | | |
| Total population of SA | 59.7 | 60.3 | 61.0 | 61.6 | 62.1 | 62.7 | 63.3 | 63.8 | 64.3 | 64.8 |
| **SA cents per foreign currency** | | | | | | | | | | |
| Exchange rate (SA cents/US$) | 1415 | 1505 | 1580 | 1639 | 1685 | 1734 | 1786 | 1840 | 1895 | 1952 |
| Exchange rate (SA cents/Euro) | 1798 | 1913 | 1959 | 1999 | 2056 | 2132 | 2196 | 2262 | 2330 | 2400 |
| **Percentage change** | | | | | | | | | | |
| Real GDP per capita | 2.77 | 1.42 | 0.77 | 0.81 | 0.94 | 1.08 | 1.11 | 1.14 | 1.17 | 1.19 |
| GDP deflator | 4.20 | 4.70 | 4.40 | 4.30 | 4.40 | 4.30 | 4.30 | 4.30 | 4.30 | 4.30 |
| **Percentage** | | | | | | | | | | |
| Weighted prime interest rate | 7.0 | 7.4 | 7.9 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |

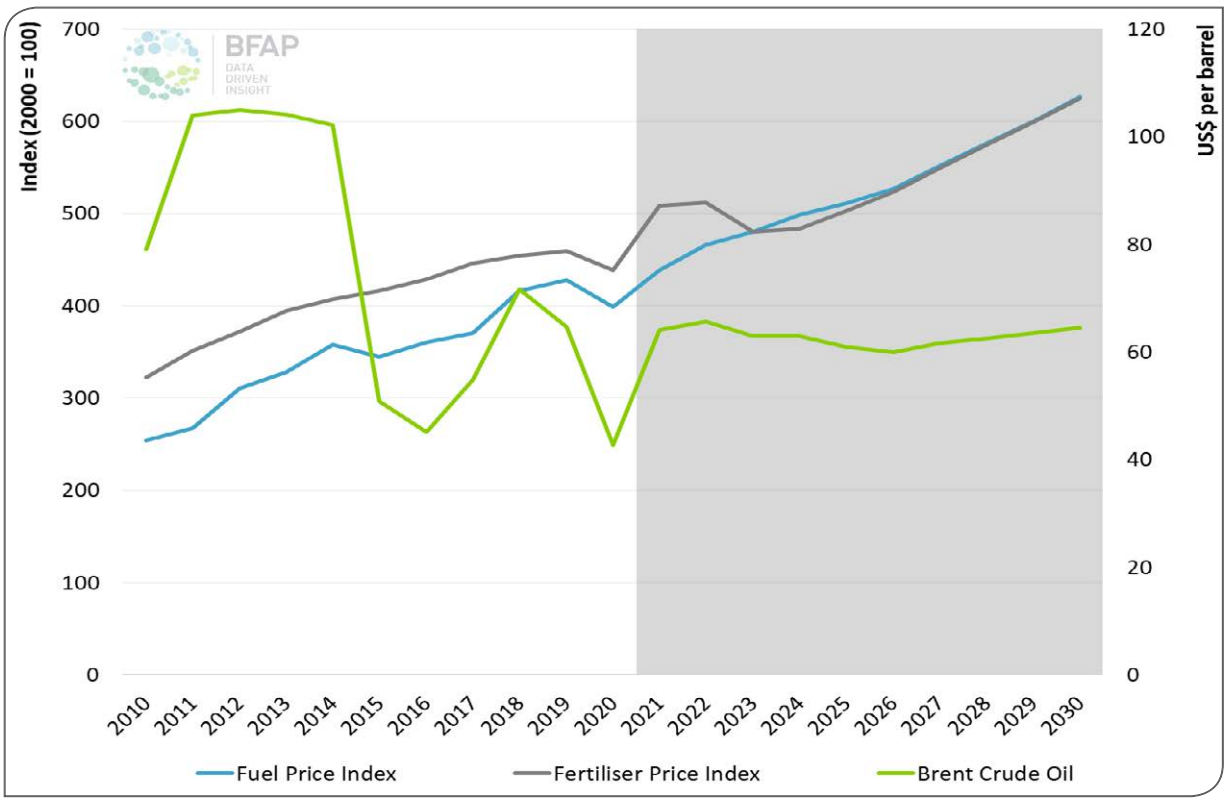



**Figure 11: Oil price assumption and input cost implication**
**Source: OECD, IMF, BER and BFAP (2019)**

## BOX 1: AGRICULTURAL INPUTS IN SOUTH AFRICA

Throughout the COVID-19 pandemic, major volatility was observed in indicators such as the Rand / US$ exchange rate and the Brent crude oil price (Figure 12). Since South Africa is a net importer of various farming inputs such as fertilisers and chemicals, these inputs are subject to fluctuations in the exchange rate and oil price. Since January 2020, the cost of Brent Crude oil has decreased significantly from roughly US$63/barrel to reach US$28/barrel in April 2020. Over the same period, the Rand depreciated against the dollar to levels above R19/US$. Towards the second quarter of 2021, the oil price has bounced back to above $60/barrel with a significant appreciation in the Rand to levels last observed at the start of 2019 (below R14/US$).

Grain SA data (2021) suggests that international fertiliser prices declined relative to 2019 during the pandemic, with the magnitude ranging from 6% for urea to 21% for potassium. However, during the second quarter of 2021, significant price increases were observed, even when compared to 2019 levels. The year-to-date (January – May 2021 relative to 2020) average increase in the cost of international fertiliser prices ranged between 34% and 60% for Eastern Europe urea and Middle-Eastern ammonia and 56% for US Gulf diammonium phosphate (DAP). The cost of potassium, however, was 16% lower compared to 2020. The depreciation in the Rand in the early part of 2020 has offset these increases to a large extent with the year-to-date domestic urea price increasing by 17% relative to 2020, limestone ammonium nitrate (LAN) by 13%, monoammonium phosphate (MAP) by 27% and potassium chloride indicating a decrease of 4%. Since international fertiliser prices reflected steep increases during May and June 2021, it is likely that domestic prices could continue to increase towards the summer planting season of 2021. Figure 13 illustrates the price trends and projections for domestic fuel, urea, phosphate and potassium. Fuel is projected to increase by 12% in 2021, urea by 20%, phosphate by 36% and potassium by 7%.

## BOX 1: AGRICULTURAL INPUTS IN SOUTH AFRICA (CONTINUED)

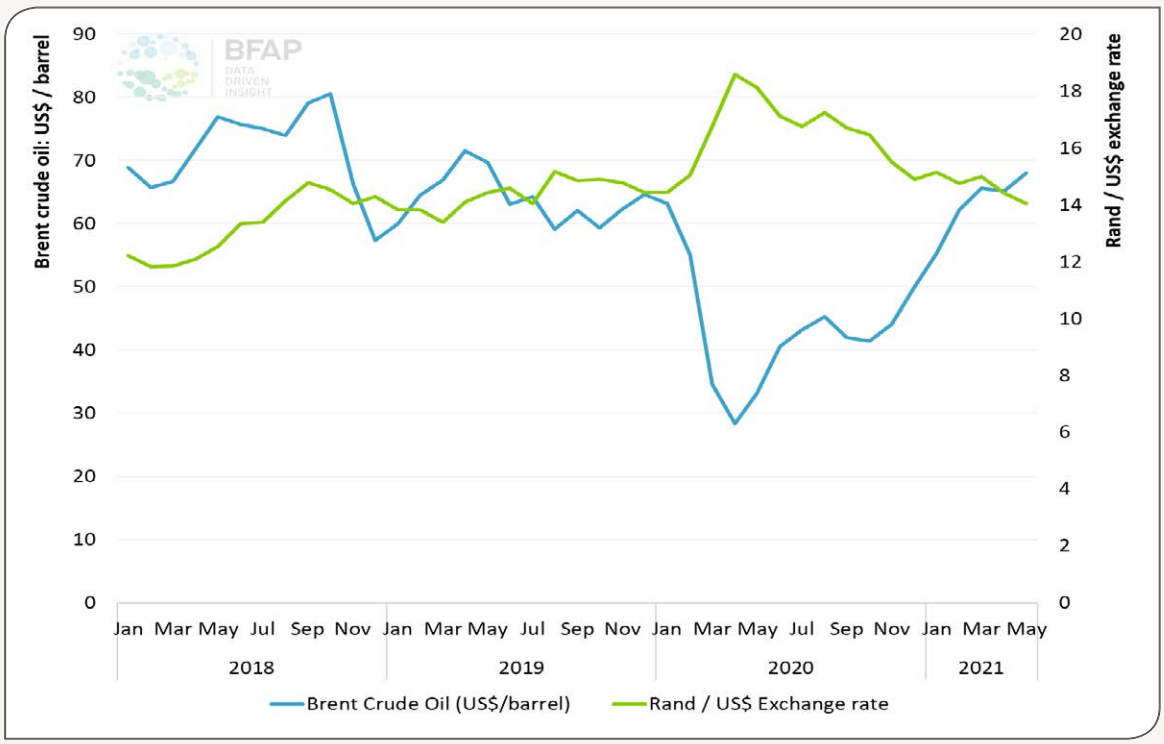



**Figure 12: Brent crude oil vs rand/US$ exchange rate: January 2018-April 2021**
**Source: SARB, 2021 & Oilprice.com, 2021**

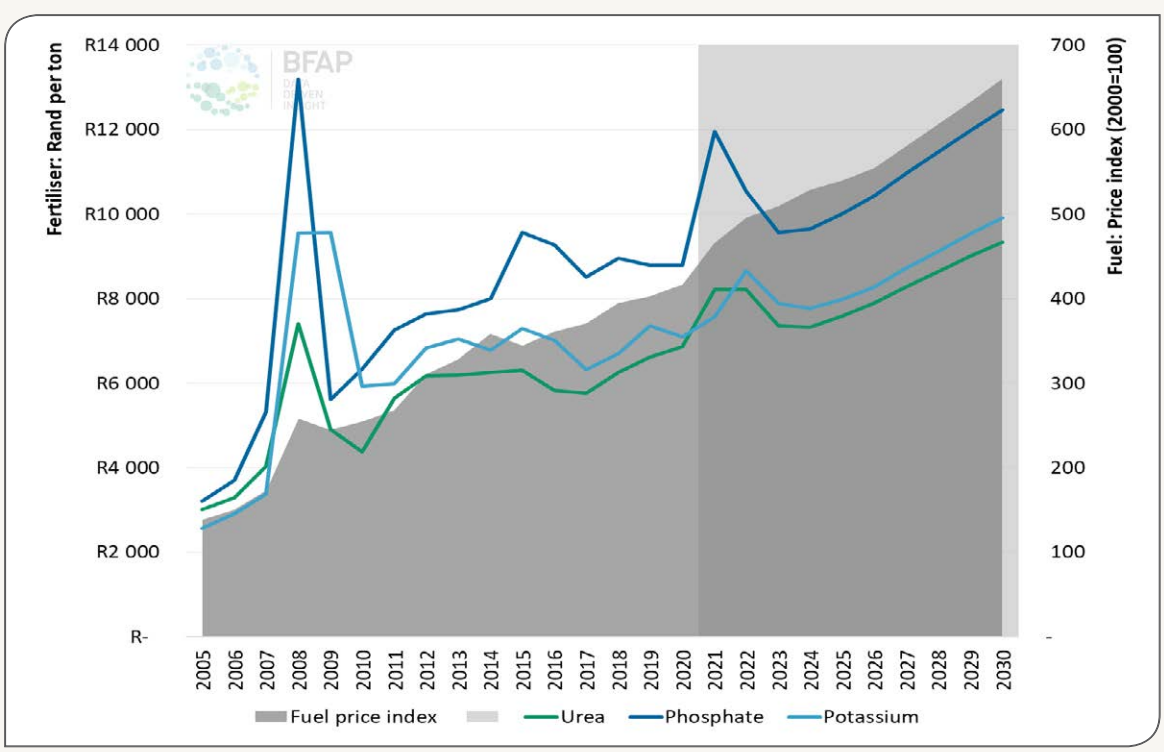



**Figure 13: Agricultural input cost trends: Fertiliser & fuel: 2005 - 2030**

## BOX 1: AGRICULTURAL INPUTS IN SOUTH AFRICA (CONTINUED)

Apart from fertiliser and fuel prices, labour intensive industries such as vegetables, sugarcane and horticulture face further pressure as a result of the introduction of the new minimum wage for farm workers from March 2021. The new minimum wage for farmworkers will be aligned with the national minimum wage of R21.69 per hour, implying a year on year increase of 16%. In addition Eskom recently announced a further electricity price hike of nearly 16%. A recent study indicated that a 15% increase in electricity tariffs could imply that the South African potato industry would have to absorb an additional R55 million in electricity expenses.

The cost price-squeeze effect, a term commonly referred to in agricultural production, points to an environment where the cost of production increases at a faster rate relative to revenue (function of yield and price). Figure 14 illustrates this concept by comparing the gross production value of soybeans, sunflower and maize with key agricultural inputs (fuel, plant protection and fertilisers). The index represents 2011 as the base (base = 100) and evaluates whether the cost of inputs have increased at a faster rate than revenue over the period from 2011 to 2021 (year-to-date). For maize and soybeans, revenue in general has outpaced the cost of inputs over the aforementioned period (except for selected years where the cost of herbicides has increased at a faster rate). The revenue for sunflower, however, has increased at a slower pace compared to maize and soybeans with costs increasing at a faster rate from 2012 to 2019.

In an environment with hikes in inputs costs, as is currently observed, coupled with a potential decline in output prices, as is projected in 2022, the effect of the cost price squeeze will be more prominent and poses a potential risk in coming seasons. Productivity growth and planning are therefore critical to offset this effect in the future.

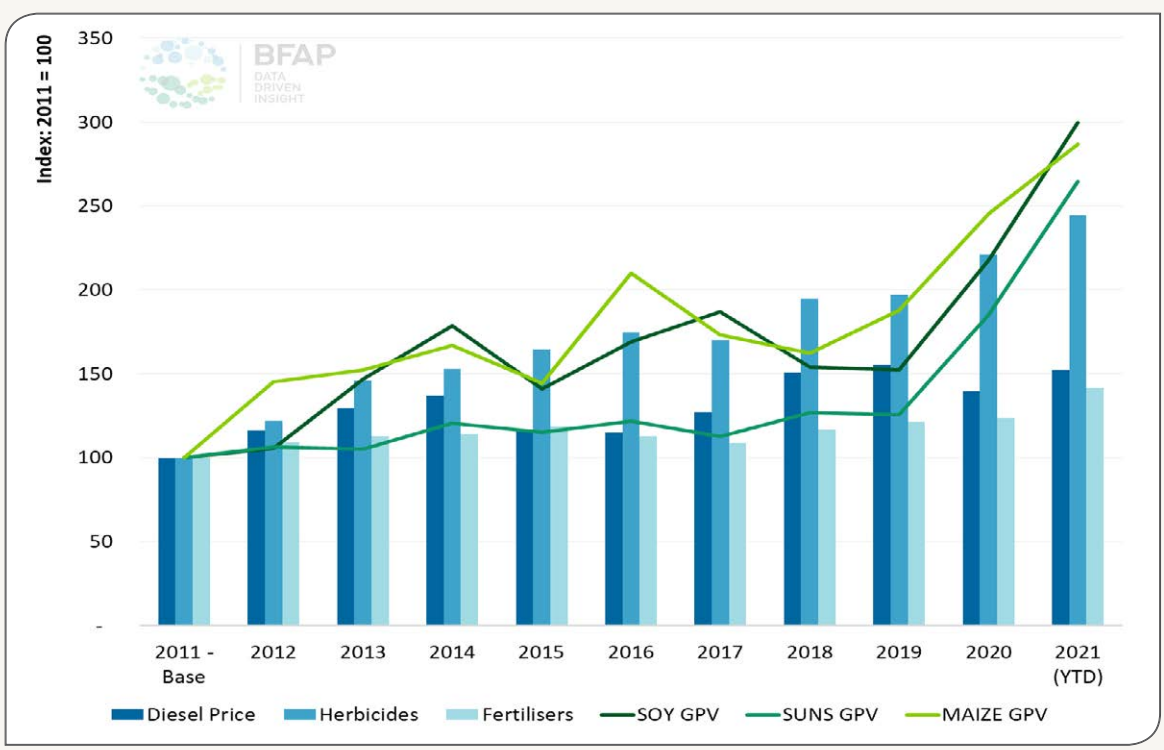



**Figure 14: Gross production value (crop turnover) vs. agricultural input costs**
**Source: BFAP & Grain SA, 2021**

# SOUTH AFRICAN CONSUMER PROFILE



**THIS CHAPTER PRESENTS** an overview of the South African consumer landscape, which underpins the modelling projections presented in the 2021 edition of the BFAP Baseline, and sheds light on dynamic changes in the socio-economic environment.

### Profile of socio-economic sub-segments amongst South African consumers

The socio-economically disaggregated view of South African consumers presented in this section is based on three main lifestyle clusters or segments: Low-income

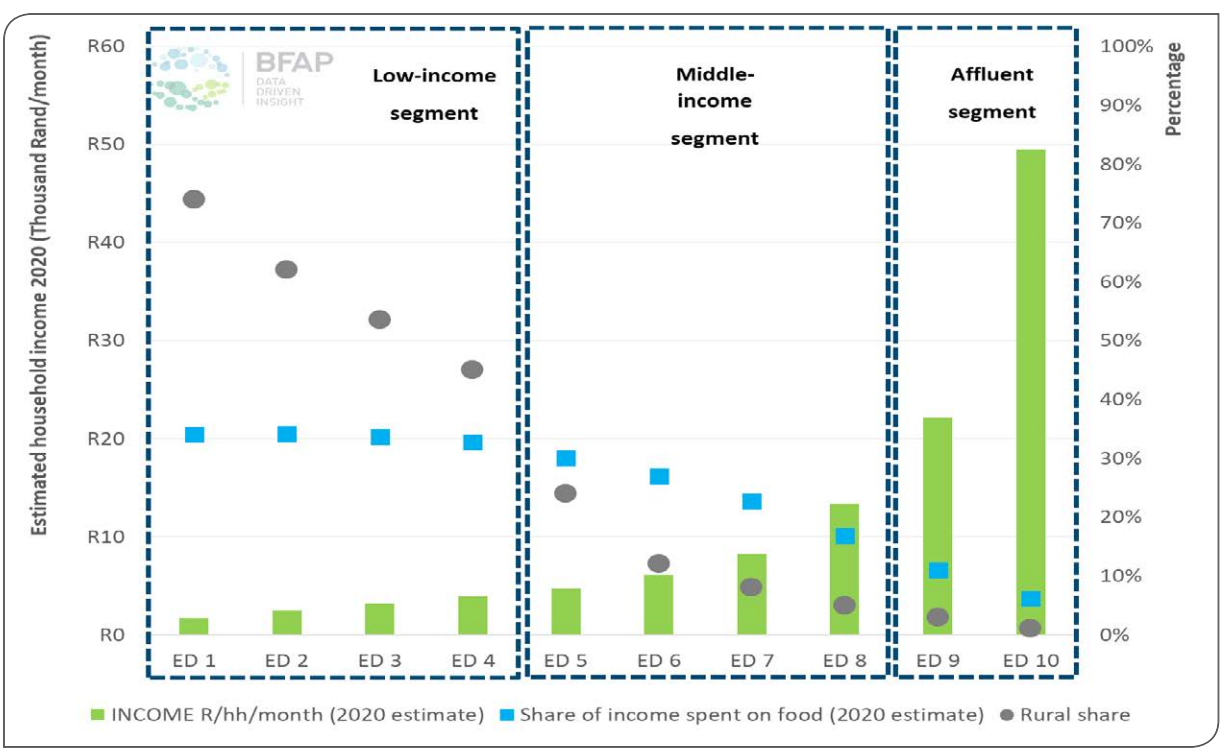



**Figure 15: An overview of the South African consumer spectrum**
**Source: BFAP estimations based on Stats SA Living Conditions Survey 2014/2015 & Establishment Survey SEM segments 2017 & 2019**
NOTES: (1) Each Expenditure Decile (ED) represents 10% of the households in South Africa. (2) * BFAP dietary diversity indicator refers to the number of food items accounting for 80% of food expenditure)

**Table 6: Selected characteristics of sub-groups within the South African consumer spectrum**

| Variable: | Low-income segment: | Middle-income segment: | Affluent segment: |
|---|---|---|---|
| **Unemployment rate (perceived)** | ±30% | ±25% to 14% | ±9% to <5% |
| **Education level: % with at least Gr 12** | ±30% to 50% | ±50% to 70% | ±70% to >90% |
| **Dominant provincial location** | KZN, EC, LP | GP, KZN, EC, LP, WC | GP, WC, KZN |
| **BFAP dietary diversity indicator*** | 30 (lowest dietary diversity) | 49 | >80 (highest) |
| **Top 5 food expenditure items** | Chicken<br>Maize meal<br>Brown bread<br>Beef | Chicken<br>Beef<br>Maize meal<br>Brown bread<br>White bread | Beef<br>Chicken<br>Milk<br>Sheep meat<br>Sugar-rich food |

consumers, middle-income consumers and affluent consumers. Figure 15 and Table 6 presents a summary of the prominent distinguishing characteristics of these three lifestyle clusters in South Africa.

**Dynamics in the South African consumer environment: HOUSEHOLD INCOME**

According to data from the South African Reserve Bank, the average per capita disposable income of households (the amount of money available to a household after accounting for income taxes) increased by 63.7 percent in nominal terms, but only 1.7 percent in real terms (accounting for inflation) from 2010 to 2020 (Figure 16). Following a gradual real positive growth trend from 2010 to 2017, the per capita disposable income of households declined by 6.2% in real terms from 2017 to 2020. The most pronounced decrease of 5.8% observed from 2019 to 2020 was

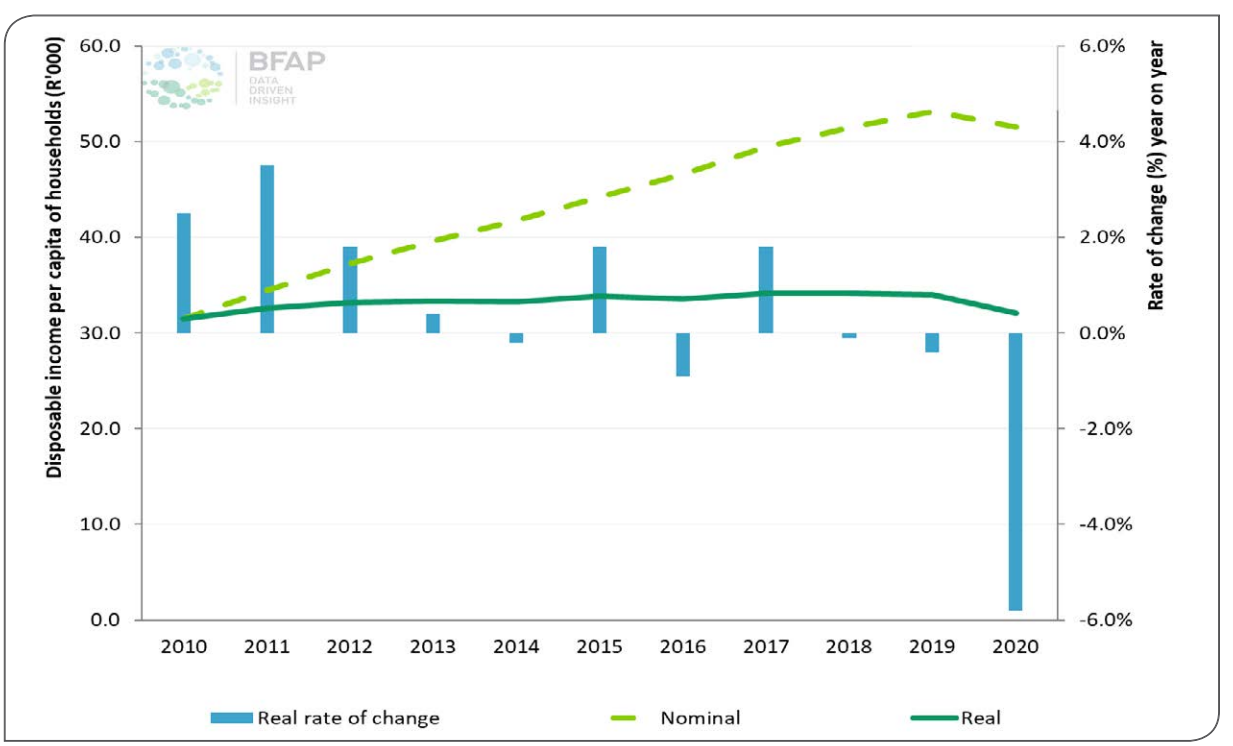



**Figure 16: Disposable income per capita of household in South Africa from 2010 to 2020**
**Source: South African Reserve Bank, 2020**

strongly attributed to the negative economic impact of the COVID-19 pandemic.

From a socio-economically disaggregated perspective, based on values from the 2017/2018 and 2019 Establishment Surveys, lower-income households followed by middle-income households experienced the most significant positive nominal and real income growth from 2017/2018 to 2019, whilst income declined within the affluent segment. These observations imply an improvement in income inequality in South Africa (i.e. a declining Gini coefficient) from 2017/2018 to 2019. The last official Gini coefficient figure for South Africa (0.65) dates back to 2015 (based on the Stats SA Living Conditions Survey 2014/2015).

Following the initial sharp deterioration in the job market through the hard lockdown in early 2020, the National Income Dynamics Study Coronavirus Rapid Mobile (NIDS-CRAM) survey suggested a notable recovery in employment numbers from April 2020 to October 2020 - close to pre-COVID levels. This was followed by a slight decline in employment towards January 2021. However, the employment recovery was more pronounced among individuals aged 18 to 40 years old with educations levels of at least matric or higher – thus in the more affluent segment. Due to the impact of the COVID-19 pandemic in South Africa, the possible income inequality improvements observed between 2017/2018 and 2019 were most likely eliminated to some degree.

According to the 2019 StatsSA General Household Survey, the dominant income source of households in South Africa was salaries / wages. This applied to 62.2% of households, compared to 64.8% in 2018 – thus decreasing slightly in importance from 2018 to 2019. Salaries/wages were particularly important in Gauteng and the Western Cape provinces. The contribution of grants, remittances and income from business increased slightly from 2018 to 2019: grants (46.2% vs. 45.2% in 2018), remittances (15.6% vs. 13.6% in 2018) and income from business (16.3% vs. 13.6% in 2018). Considering the negative socio-economic impacts of the COVID-19 pandemic in 2020 & 2021, the contribution of salaries / wages likely decreased further due to job losses, along with an increase in grant dependency – particularly among lower-income households.

In South African the dominant type of social support grant is the Child Support Grant, which was received by 70.7% of grant recipients in February 2021, followed by Old Age Grants (20.3%) and Disability Grants (5.2%) (SASSA, 2021). Considering the share of the South African population receiving social support grants in February 2021 (Child Support Grants, Old Age Grants, Disability Grants, Foster Child Grants, Grants in Aid, Care Dependency Grants and War Veteran Grants) (SASSA, 2021), 21.7% resided in KwaZulu-Natal, followed by Gauteng (15.9%), Eastern Cape (15.4%), Limpopo (13.7%), Western Cape (9.5%), Mpumalanga (8.2%), North-West (7.0%), Free State (5.8%) and the Northern Cape (2.8%). According to the 2019 Stats SA General Household Survey, grants contributed to the income stream of the largest share of households in the Eastern Cape (61.1% grants vs. 49.7% salaries) and Limpopo (59.0% grants vs. 49.6% salaries).

From May 2020 to April 2021 a special COVID-19 Social Relief of Distress Grant (SRD) of R350 was paid to unemployed individuals not receiving any form of income, social grant or UIF payment. Among the more than 44 million SRD grant payments made during 2020, most went to KwaZulu-Natal (22%) and Gauteng (21%), followed by Limpopo (14%), Eastern Cape (13%), Mpumalanga (8%), North-West (7%), Western Cape (7%) Free State (5%) and Northern Cape (2%).

**Dynamics in the South African consumer environment: CLASS MOBILITY**

Class mobility, defined as the movement of consumers to higher socio-economic groups, has been a key feature of the South African consumer landscape for many years (Figure 17). Historically, class mobility in South Africa revealed the following:

- A decline the percentage of consumers classified within the lowest socio-economic segments;
- An increase in the percentage of consumers classified within the higher socio-economic segments, with the most significant growth within the middle-class segments.

The COVID-19 pandemic implied significant limitations in terms of mass consumer surveys such as the Establishment Survey used to compile the SEM segments (www.brc.co.za). Thus, due to data limitations caused by the COVID-19 pandemic, it is not currently possible to illustrate class mobility for the period 2019/2020 as the 2020 Establishment survey results have not been released yet.

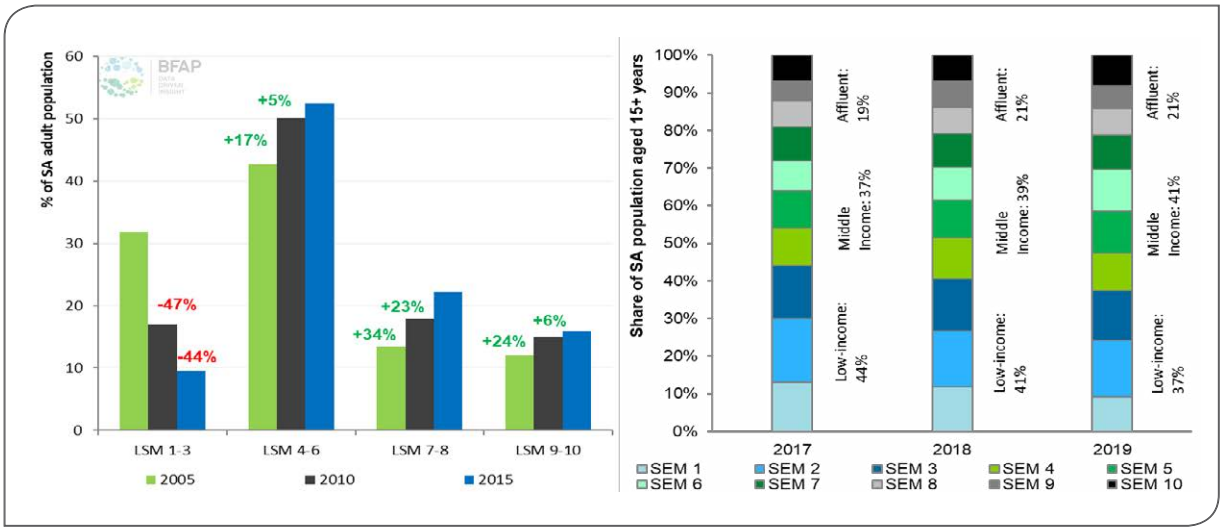



**Figure 17: Historical class mobility in South Africa**

**Source: BFAP calculations based on Living Standards Measure (LSM) data for 2005 to 2015 and Establishment Survey SEM data for 2017-2019**

The socio-economic impacts of the COVID-19 pandemic are expected to cause a significant slow-down in class mobility towards 2020/2021 – a similar trend to the class mobility slow-down observed in South Africa due to the 2009 global financial crisis.

### Dynamics in the South African consumer environment: HOUSEHOLD SIZE

#### National Level

Over the past two decades the average household size in South Africa decreased by approximately one person to 3.5 members per household. From a food security perspective, a smaller household size could be positive, as the total household income has to support less members – resulting in higher per capita income compared to larger households.

#### Provincial Level

Figure 18 illustrates the average provincial household size in 2019, as well as the estimated share of households in each province with children. Larger households are typically found in KwaZulu-Natal, Eastern Cape and Limpopo. These three provinces are among the top four provinces receiving child support grants in South Africa.

### Dynamics in the South African consumer environment: URBANISATION

#### National level:

At national level, a trend of increasing urbanisation is observed over time – as is illustrated by the share of population residing in urban areas:

**2001:** 58% (*Stats SA Census 2001*) → **2020:** 67.4% (*UN World Urbanisation Prospects 2018*) → **2030:** 72.1% (*UN World Urbanisation Prospects 2018*) → **2050:** 79.8% (*UN World Urbanisation Prospects 2018*)

Rising household income and urbanisation are often associated with the nutrition transition, where individuals exhibit changed dietary patterns (e.g. eating more fats / oils, sugar, animal-source foods, refined starch-rich foods and highly processed foods) often associated with the increased incidence of overweight, obesity and non-communicable diseases such as heart disease and diabetes.

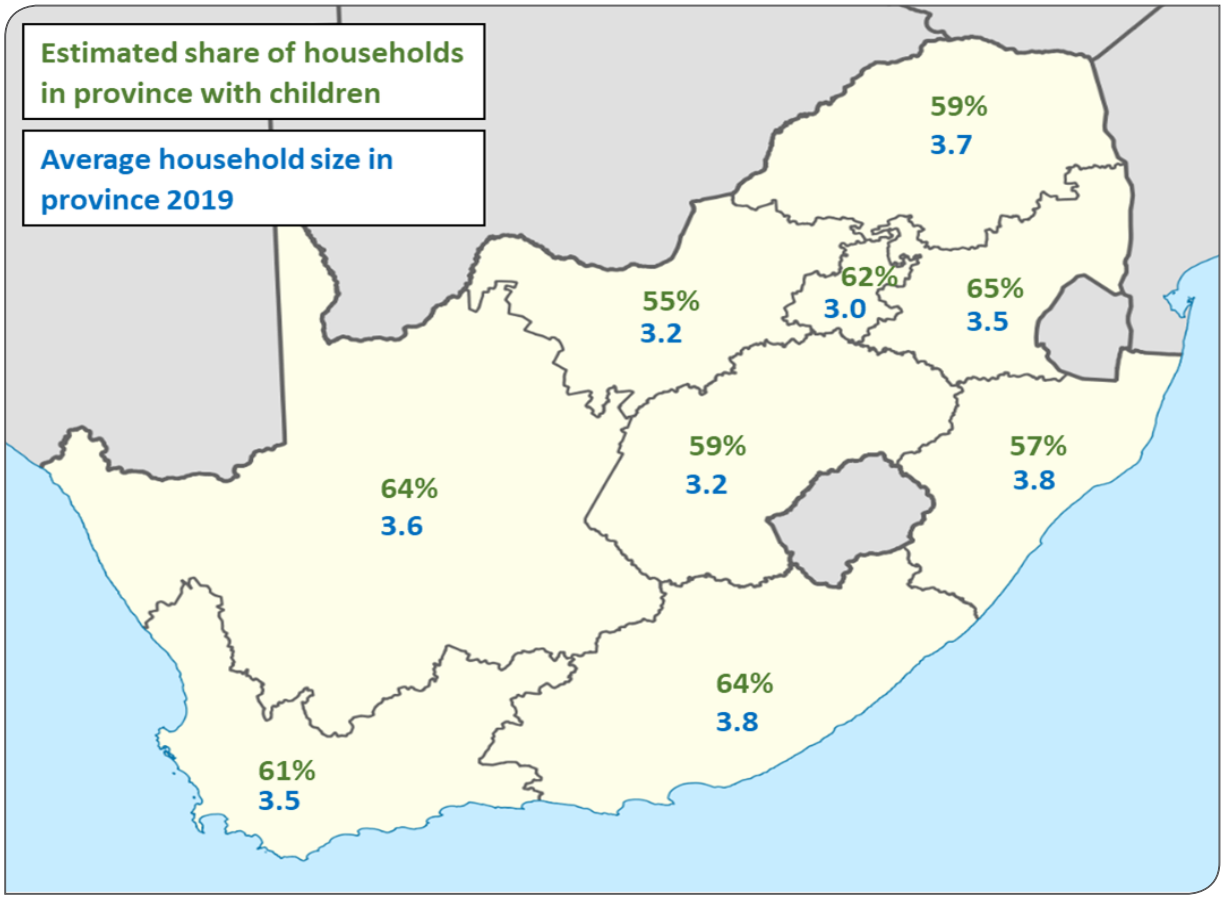



**Figure 18: Provincial disaggregation of share of households with children and average household size**

**Provincial level:**

| **Most urbanised provinces in South Africa:** | **Least urbanised provinces in South Africa:** |
|---|---|
| Gauteng, Western Cape. | Eastern Cape, Limpopo, KwaZulu-Natal, Mpumalanga. |
| Largest positive net in-migration (2011 to 2021): | Largest negative net out-migration (2011 to 2021): |
| GP > WC | EC > LP > KZN |

*Source: Stats SA Mid-year Population Estimates, 2020*

**Dynamics in the South African consumer environment: AGE DISTRIBUTION**

Notable dynamics within South Africa's population age distribution include:

- South Africa has a gradually aging population, with the median age increasing from 25.0 in 2010, to 27.6 in 2020 and expected to be 29.6 in 2030 (according to UN Population Prospects).
- From 2010 to 2020 the most significant growth occurred within the 15 to 24 years age bracket, implying additional pressure on the job market in coming years as these individuals grow into the working age population.
- From 2020 to 2030, expectations are that the most significant growth will occur in the 25 to 64 years age group – expected to increase by approximately 3.9 million individuals.

**Dynamics in the South African consumer environment: UNEMPLOYMENT**

From the fourth quarter of 2010 to the fourth quarter of 2020, the South African labour force increased by 3.99 million individuals (+21.8%), while the number of employed increased by only 1.13 million (+8.1%). The unemployment rate for South Africa, as reported by

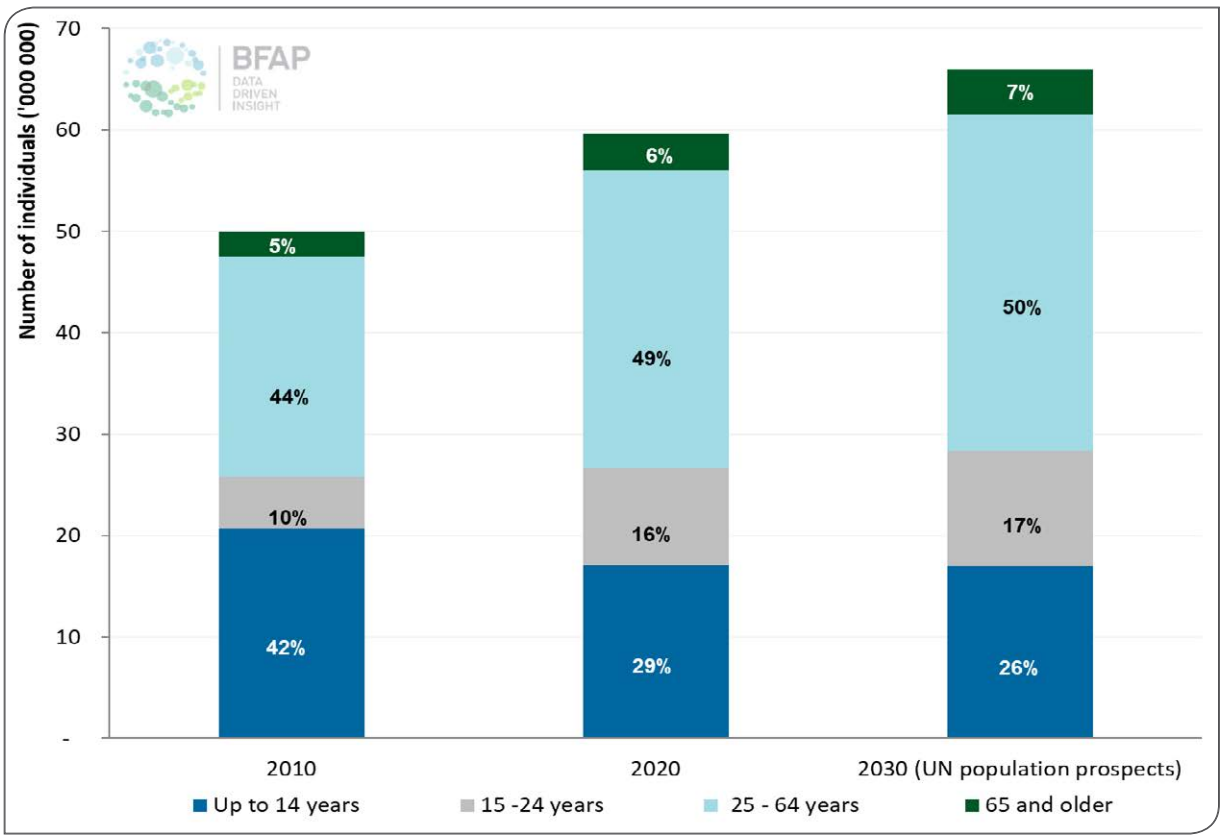



**Figure 19: Age structure dynamics in South Africa – comparing 2010, 2020 and 2030 projections**
**Source: Stats SA Mid-year Population Estimates, 2010 & 2020; UN Population Prospects, 2021**

Stats SA in the fourth Quarterly Labour Force Survey of 2020, was 32.5%, representing the highest value since the start of the Quarterly Labour Force Survey in 2008. This was strongly driven by the socio-economic impacts of the COVID-19 pandemic. Table 7 presents further trends on unemployment in South Africa.

**Dynamics in the South African consumer environment: DEBT**

Over the past decade, South African consumers have consistently been increasing debt levels (Table 8).

**Table 7: Disaggregated trends in South African unemployment – comparing Q4 2010 to Q4 2020**

| Category | Variable | Unemployment rate in Q4 2020 | | Ten-year increase in unemployment | |
|---|---|---|---|---|---|
| | | Highest | Lowest | Highest | Lowest |
| Age | Unemployment rate among active working age population | 25 – 34 years (41.2%)<br>35 – 44 years (27.4%) | 55 – 64 years (12.5%)<br>45 – 54 years (19.3%) | 55 – 64 years (+89.4%)<br>45 - 54 years (+70.8%) | 25 – 34 years (+42.6%)<br>34 – 44 years (+58.4%) |
| Province | Provincial unemployment rate | EC (47.9%)<br>GP (34.1%)<br>FS (33.4%)<br>NW (33.3%)<br>MP (33.0%) | WC (22.5%)<br>NC (28.7%)<br>KZN (29.6%) | EC (+80.1%)<br>KZN (+55.8%) | LP (+3.8%)<br>WC (+6.6%)<br>NC (+17.1%) |

Source: Stats SA Quarterly Labour Force Survey – Q4 2020

**Table 8: Trends in South African consumer debt – comparing Q1 2010 to Q4 2020**

| Measurement: | Value – Q4 2020: | % change – Q1 2010 to Q4 2020: | Comments: |
|---|---|---|---|
| Gross debtors book - value (nominal) (Figure 20) | R2 009.9 billion | +66.0% | • Increasing trends over time.<br>• Q4 2020 Highest value in time series. |
| Gross debtors book – number of accounts (Figure 20) | 36.9 million | +4.7% | • Decreasing trend from Q4 2019 to Q4 2020.<br>• Q4 2021 11% lower than the maximum value of 41.6 million in Q1 2015. |
| Number of credit applications received | 10.9 million | +87.6% | • Increasing trends over time, but COVID-19 impact visible in mid-2020. |
| Credit application rejection rate | 62.9% | +45.5% | • Maximum rejection rate observed in Q2 2020 (67.4%), after Q1 2014 (59.0%). |
| Credit granted to consumers with an income of less than R5 500 per month as % of total value of credit granted | 8.3% | -59.6% | • Q2 2020 to Q4 2020 lowest percentages observed since Q1 2018. |
| Credit granted to consumers with an income of less than R5 500 per month as % of total number of credit facilities granted | 42.3% | -10.3% | • Slightly higher than the five-year average (2015 to 2019 of 41.8%). |

Source: National Credit Regulator (NCR), 2020

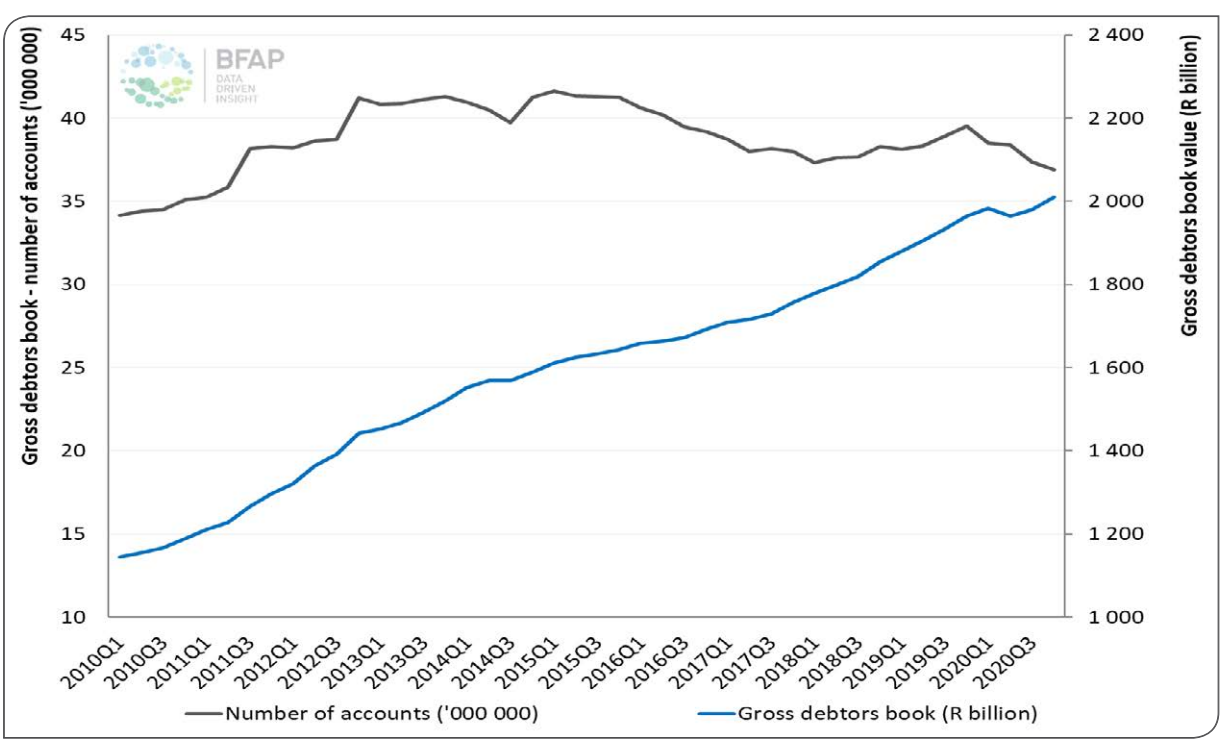



**Figure 20: Consumer debt in South Africa from a gross debtor's book perspective**

**Source: National Credit Regulator Statistics**

**Dynamics in the South African consumer environment: FOOD ACCESS**

The share of persons that experienced hunger declined significantly from 29.3 percent in 2002 to a thirteen year low of 11.1 percent in 2019 (Figure 21). Between 2010 and 2019, the share of people with limited food access was consistently higher than the share of people experiencing hunger, and also shows a decreasing trend over time from 29.1% in 2010 to 19.5% in 2019. In 2018, severely inadequate food access was reported for 6.3% of households.

On a provincial level, in 2019, food access problems were most prevalent in North West (29.6% of households experiencing inadequate food access), followed by the Northern Cape (28.5%), Free State (26.1%), Mpumalanga (24.0%) and Eastern Cape (21.0%).

As expected, the COVID-19 pandemic had a significant impact on food security in South Africa. For example, the four waves of the NIDS CRAM survey in 2020/2021 revealed the following:

- Approximately two thirds of household ran out of money to buy food (in the 'previous month') in at least one of the four survey waves, applying to 39% of surveyed households in January 2021.
- Household members going hungry in the 'past seven days' applied to 17% of surveyed households in February / March 2021, while 36% of households were affected at least once among the four survey waves.
- Households where children had gone hungry because there was not enough food in the 'past seven days' applied to 14% in February / March 2021, while approximately one third of households were affected at least once among the four survey waves.

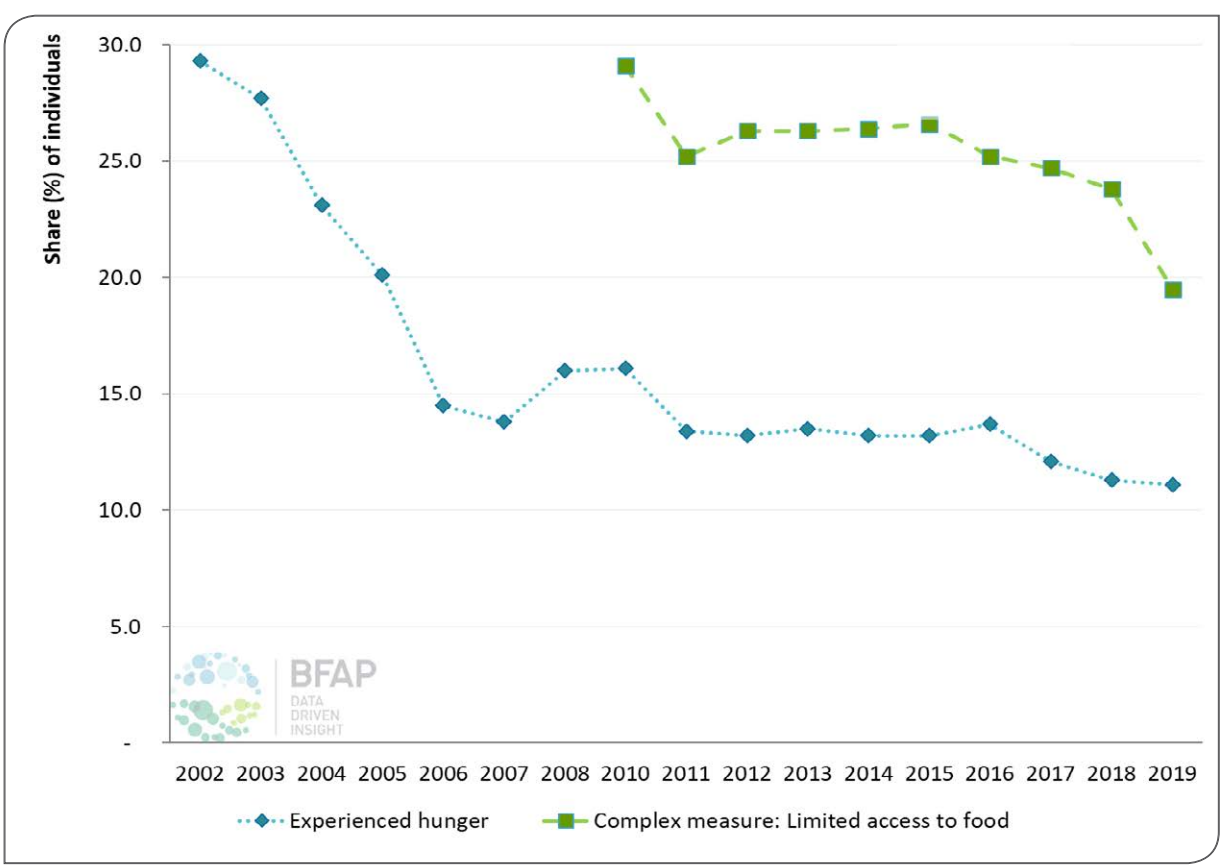



**Figure 21: Individuals' vulnerability to hunger and access to food (2002 to 2019)**
**Source: Stats SA General Household Survey, 2019**

# OUTLOOK FOR FIELD CROPS
## SUMMER GRAINS AND OILSEEDS



**International market situation**

The global grain and oilseed market was subjected to a number of opposing forces in 2020. Over the second quarter, industrial demand in particular weakened sharply amidst global lockdown action to curb the spread of COVID-19. However, once economic activity started to gradually resume, it also became clear that many countries' crop plantings and harvests were smaller than expected. In the face of strong import demand from China to feed its rapidly expanding pig herd, reduced stock levels and persistently dry weather in key production regions, prices ran up sharply over the second half of the year. From early August 2020 to mid-May 2021, the International Grains Council's (IGC) grain and oilseed price index increased by 51% - underpinned by an 85% increase in the maize subindex and a 58% increase in the soybean subindex. Further to the primary commodities, prices of vegetable oils soared to levels last experienced in 2011 due to a combination of factors. Oil palm production constraints in Malaysia arose due to an aging national plantation as a result of limited replacement, which was exacerbated by labour-related challenges amid COVID-19 linked travel restrictions.

A key factor underpinning recent commodity price gains are significant stock drawdowns. Maize stocks declined for the fourth consecutive year in 2020/21, following a modest 0.8% growth in production. Despite a 7% year on year increase in soybean production, supported by strong harvests in the USA and Brazil, record consumption resulted in a second consecutive year of stock reduction. Early estimates from the IGC for the 2021/22 season are positive in terms of output, with a 5% expansion expected in maize output along with a 6% expansion in soybean production. Demand in China is expected to remain strong, based on the continued recovery in its pig herd combined with a shift to more modern, large-scale, feed intensive production systems and recent growth in poultry production. Consequently, the IGC envisages another, albeit much smaller decline in ending stocks in 2021/22 – suggesting that prices could remain elevated in the short term. By contrast, the projected growth in soybean production is expected to result in a 4% improvement in soybean stock levels in 2021/22.

While the time required to fully replenish stocks is expected to support prices in the short term, medium term projections, based on the assumption of stable weather conditions, reflect an equilibrium for maize prices that is marginally higher than the 2018-2020 levels, trading at around 180 US$ per tonne post 2024. Similarly, oilseed prices are projected to stabilise around the 420 US$ per tonne mark (Figure 22). In line with oilseed prices, oilcake prices are expected to reach an equilibrium marginally higher than the average 2018-2020 levels, supported by growing livestock production. The equilibrium price of vegetable oil will be supported by higher palm oil prices emanating from the aging structure of oil palm

plantations in Malaysia, even if labour challenges ease in the medium term. This will support demand for other vegetable oils and on average, over the period 2024-2030, soybean oil prices are projected to trade roughly 15% above the average levels of 2018-2020 (Figure 23).

Not being an essential food product, the effect of the pandemic and the related lockdown measures was more severe in the cotton market. At the onset of the pandemic, retail apparel sales weakened, hindering yarn spinning in many countries, while manufacturing capacity was affected by movement restrictions and physical distancing measures. The resultant 15% year on year reduction in cotton prices was a key factor underpinning reduced production in 2020/21, to levels last observed in 2016. Over the coming decade, the OECD-FAO (2021) projects average production growth of 1.5% per annum from this smaller base. On the back of higher oil prices and increased efforts towards a greener economy in China, polyester production is expected to dampen, supporting modest gains in nominal cotton prices over the coming decade (Figure 23).

**Domestic market situation**

The 2020 season was an exceptional year for field crop production in South Africa, and 2021 is set to be even better. After consecutive drought years, weather conditions improved in 2020 and producers showed their resilience by delivering the second largest maize crop on record at 15.3 million tonnes. Demand for maize also strengthened as consumers spent more time at home which, together with budgetary constraints, resulted in many households returning to more basic and affordable food staples, even if preparation time is longer. Nevertheless, the crop was sufficient to replenish stocks and yield an exportable surplus of 2.8 million tonnes. Even at export parity levels, weaker world prices through the harvesting period were more than offset by the sharp depreciation in the exchange rate in the first quarter of the year and consequently, white and yellow maize prices both increased by around 8% year on year. The combined effect was a 47% year on year increase in gross production value from maize.

Favourable returns induced a further expansion in maize area in 2021, by 66 000 and 74 000 hectares respectively

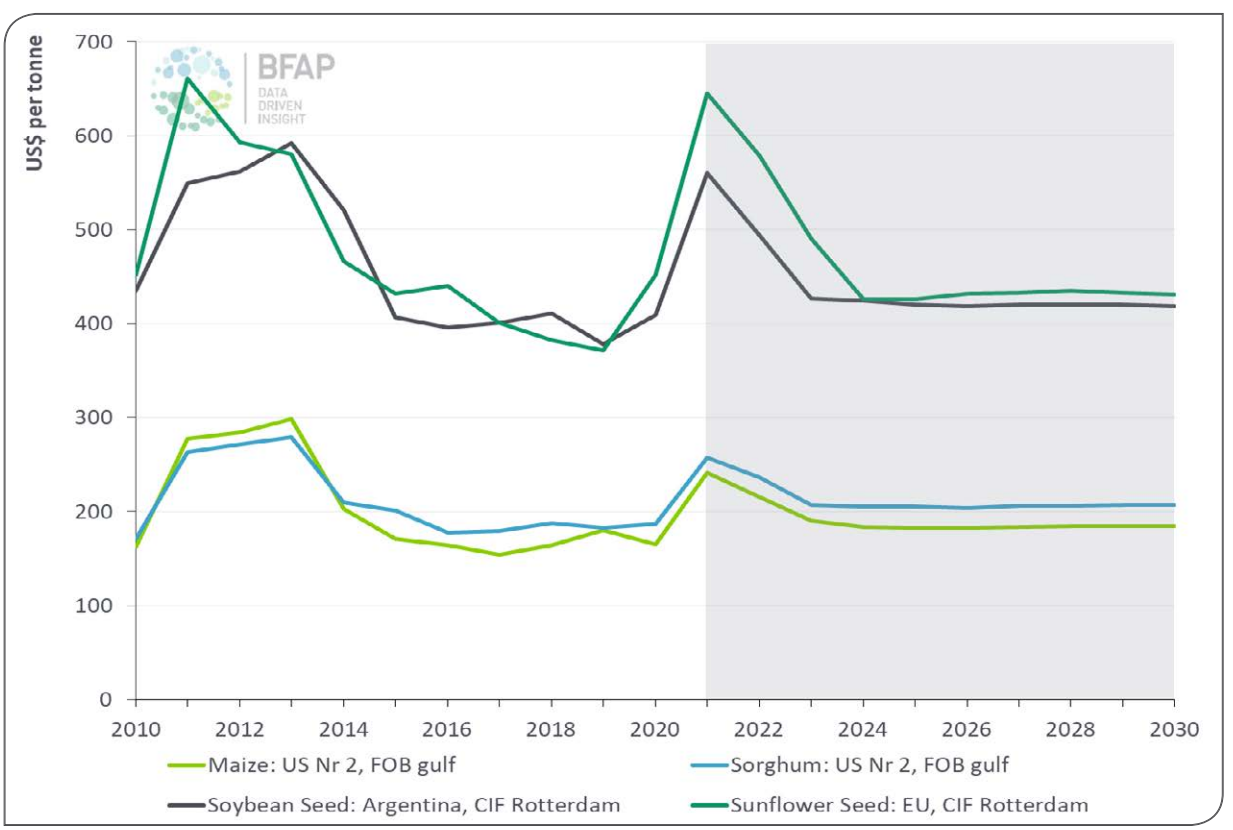



**Figure 22: World prices for major summer grains and oilseeds**
**Source: FAPRI & BFAP, 2021**

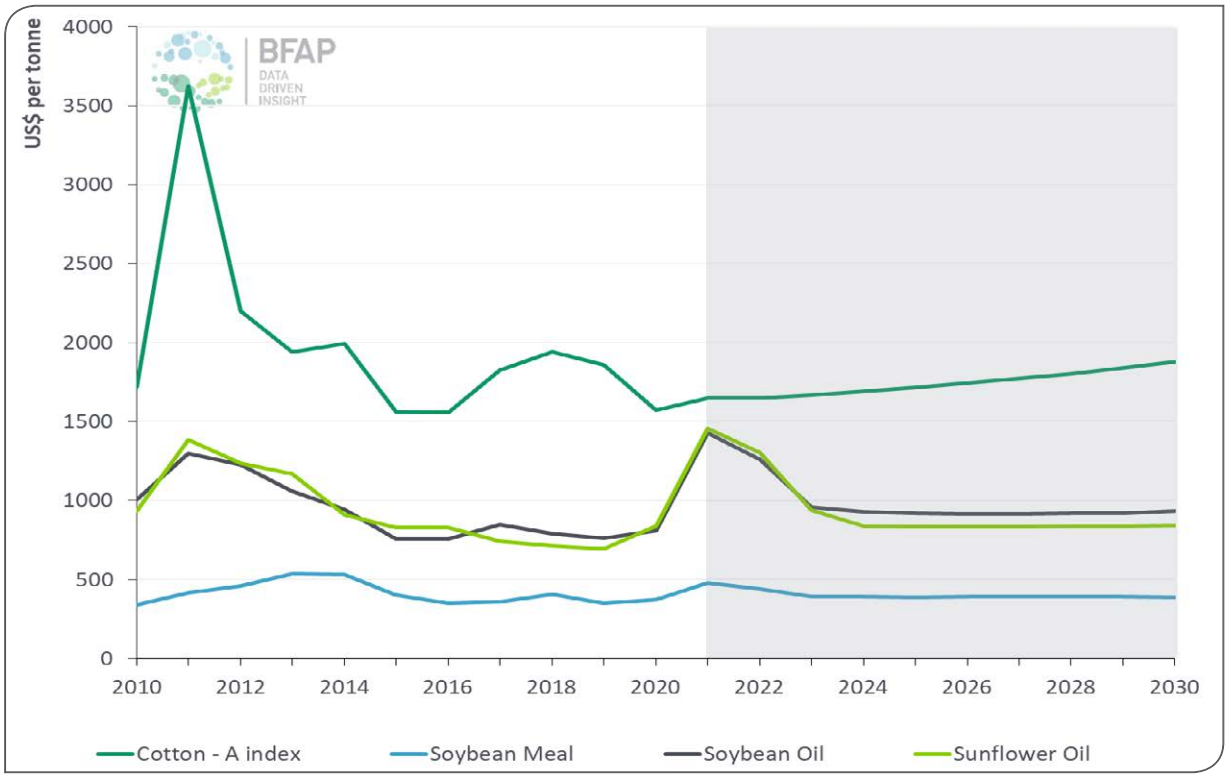



**Figure 23: World prices for major secondary products**
**Source: FAPRI & BFAP, 2021**

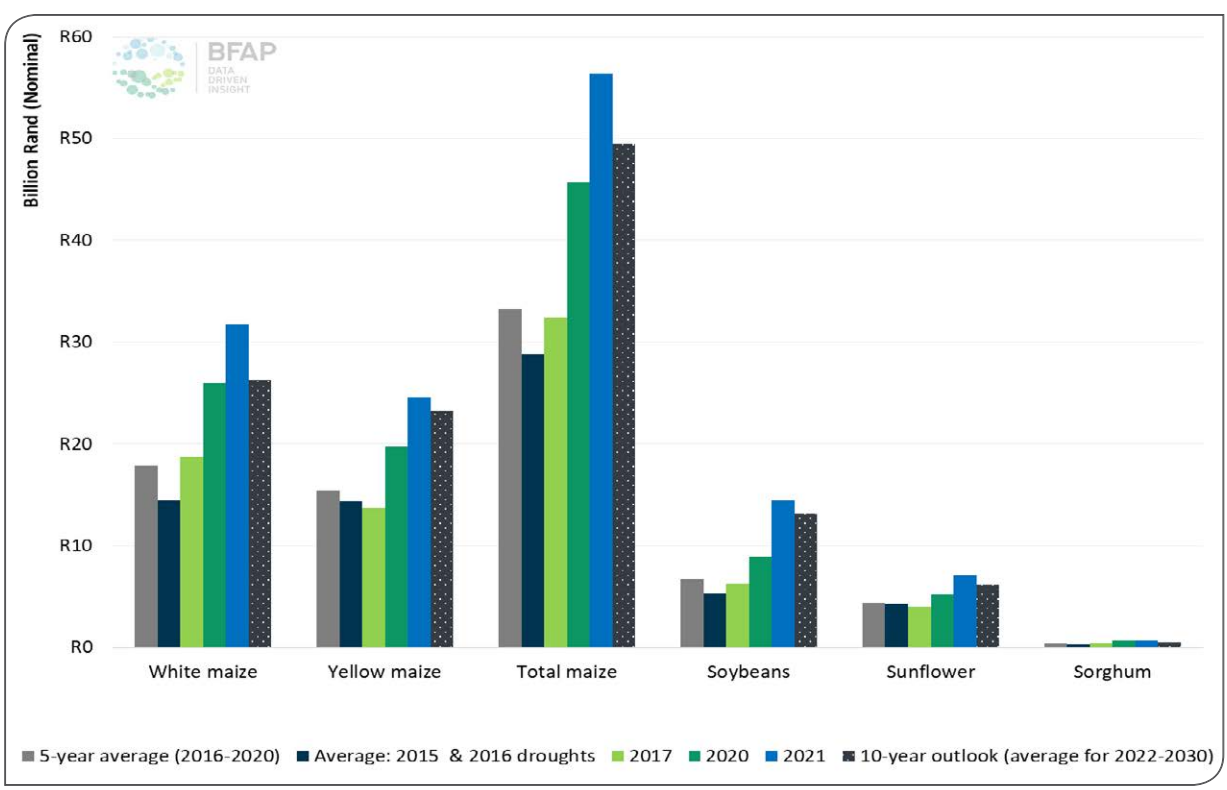



**Figure 24: Gross value of production for selected summer crops in South Africa**

for white maize and yellow maize. Favourable weather conditions are expected to support yield gains and BFAP projects an even bigger crop of approximately 17 million tonnes in 2021 – higher still than the 16.2 million tonnes expected by the Crop Estimates Committee (CEC). This will likely result in stock build up and stronger export volumes of 3 million tonnes. The remarkable development for producers is that, even though prices are already trading at export parity levels, international prices have increased to such an extent that even with the appreciation in the Rand, white maize and yellow maize prices are expected to increase by a further 7.4 and 15 percent respectively in 2021. This supports a further gain in gross production value of 23% from the higher base in 2020 (Figure 24). At the same time, it will result in increased maize meal prices, which represent the most affordable grain based food staple in South Africa (Box 2).

## BOX 2: RELATIVE AFFORDABILITY OF GRAIN-BASED STAPLE FOODS

Over the first four months of 2021, the most affordable grain-based starch-rich foods in South Africa were maize meal (R0.28/single serving unit (SSU)), cake flour (R0.35/SSU) and rice (R0.46/SSU). The least affordable grain-based starch-rich foods in South Africa were pasta (R0.93/SSU), white bread (R0.89/SSU) and brown bread (R0.80/SSU). Year on year grain-based staple food inflation rates for Q1 2021 were the highest for rice (+52%), followed by wheat flour (+19%), pasta (+18%), white bread (+13%) and brown bread (+11%) and maize meal (+8%).

From Q1 2019 to Q1 2021 the affordability gap between maize meal and rice has increased in favour of maize meal due to significant inflation on rice, which is primarily imported. The average monthly year on year inflation rate on rice was 36% in 2020 and 52% in Q1 2021. The consumption of more maize meal and less rice could present consumers with nutritional benefits as maize meal is fortified and thus healthier. However, soaring electricity costs could also play a role when considering the longer cooking times of maize porridge (±30 minutes) compared to rice (±15 minutes).

From Q1 2020 to Q1 2021 the affordability gap between maize meal and wheat flour, brown bread and white bread improved in favour of the wheat-based products, even though these products remain significantly more expensive than maize meal. Severe financial pressure on households due to the COVID-19 pandemic in South Africa could increase the staple food dependency of vulnerable households, with the downside of reduced dietary diversity.

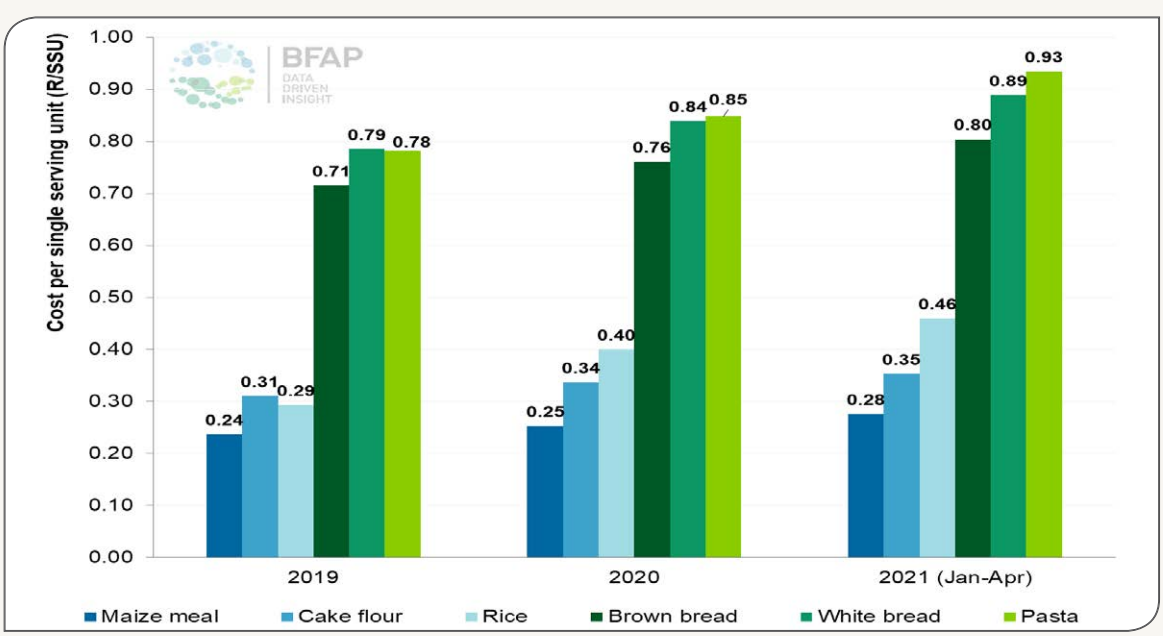



**Figure 25: Comparing the affordability of staple foods based on average monthly values for 2019, 2020 and 2021 (January to April) Source: BFAP calculations based on StatsSA monitored urban food retail prices & Single serving units as defined by the South African Food-based Dietary Guidelines**

Exceptional growth in maize production volumes in 2020 yielded a substantial exportable surplus and 2.8 million tonnes was exported successfully from South Africa. Of this, 45% was white maize, which is predominantly destined for the African region. With export volumes set to increase further in 2021, consideration of possible destination markets becomes increasingly important. Box 3 indicates that many countries across Southern Africa produced bumper crops in 2021 and prices have declined sharply in the region. This would suggest that South Africa will struggle to move large volumes of white maize into the region, instead opting to substitute white maize into animal feed, particularly in the Western parts of the country, and exporting more yellow maize, for which there is ample market space. This would imply however that white maize will trade at a discount to yellow maize in 2021, as is often the case in surplus years.

## BOX 3 – RECORD MAIZE PRODUCTION ACROSS THE SOUTHERN AFRICAN REGION

Consecutive bumper maize harvests has replenished South Africa's stock levels and resulted in a projected exportable surplus of 3 million tonnes in 2021. While global market conditions reflect ample space for such exports, it must be noted that 57% of South Africa's crop is white maize – a product not typically traded in the global market. Historically, South Africa's white maize exports have predominantly been destined for the rest of Southern Africa.

Consideration of crop expectations across the Southern and Eastern African region paints a very different picture to the global market. Figure 26 indicates that many countries in the region are expecting bumper crops. Traditionally, Zimbabwe is the biggest importer in the Southern African region, with Zambia and South Africa competing as suppliers. However, the size of domestic harvest expectations in Zimbabwe has resulted in the government banning imports of maize grain and products from June 2021, thus limiting market space for key surplus producers such as South Africa and Zambia.

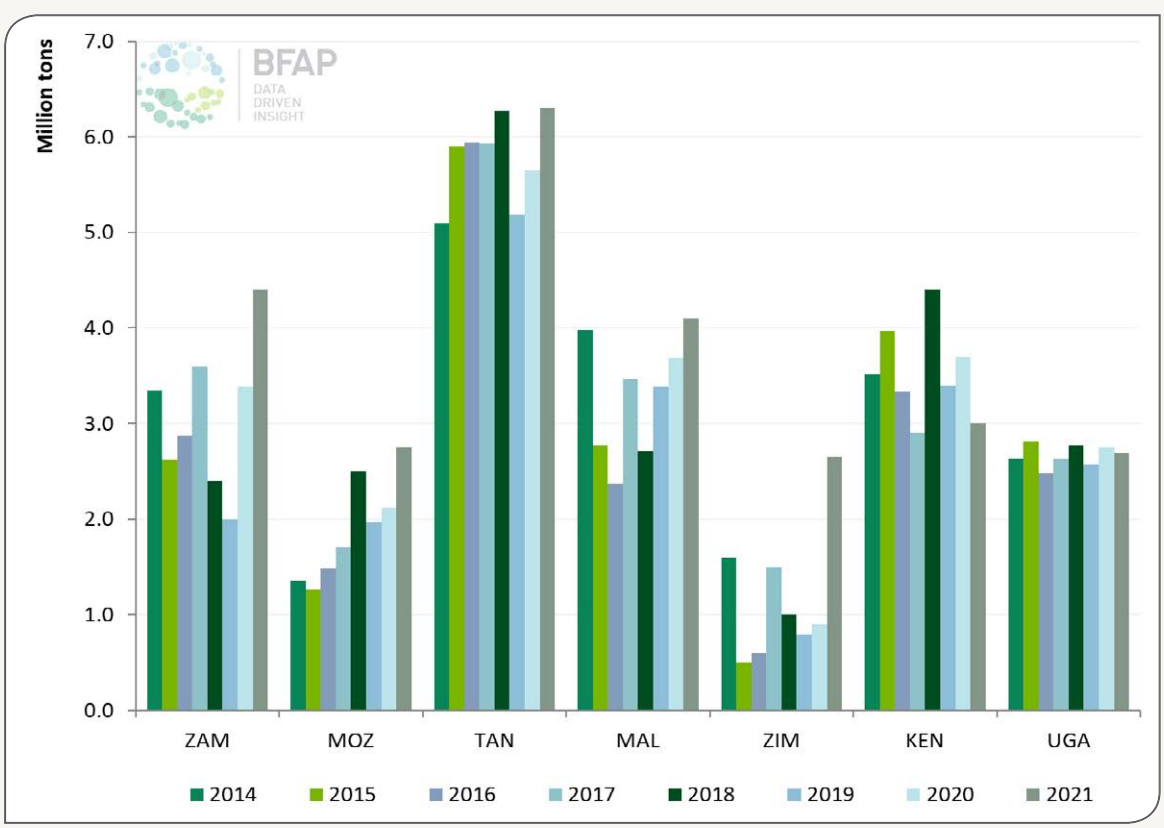



**Figure 26: Maize production in major Southern and Eastern African markets**

## BOX 3 – RECORD MAIZE PRODUCTION ACROSS THE SOUTHERN AFRICAN REGION (CONTINUED)

The hefty surpluses across the region are also reflected in prices. Figure 27 indicates that, despite the strong run in world markets, prices across the Southern African region in particular have come under pressure. In May 2021, when the US maize price was above 300 US$ per tonne, Zambian prices dipped as low as 130 US$ per tonne, while in Malawi prices declined to 160 US$ per tonne. Apart from South Africa, which produces a substantial amount of yellow maize and can substitute white maize into the animal feed market when surpluses are large enough and relative prices enable it, other markets across Southern Africa are not well integrated in global markets. This is partly because the non-GM white maize mostly traded in the region is differentiated from the yellow maize that predominates global markets, but also partly due to high costs of logistics across the region. Transport costs are such that, in landlocked countries such as Zambia and Malawi, a large exportable surplus that exceeds the demand from neighbouring countries results in drastic price declines before further export options become viable. Given that most countries in the region produced surpluses in 2021, prices could potentially decline further, suggesting that South African exports into the rest of the subcontinent will be limited.

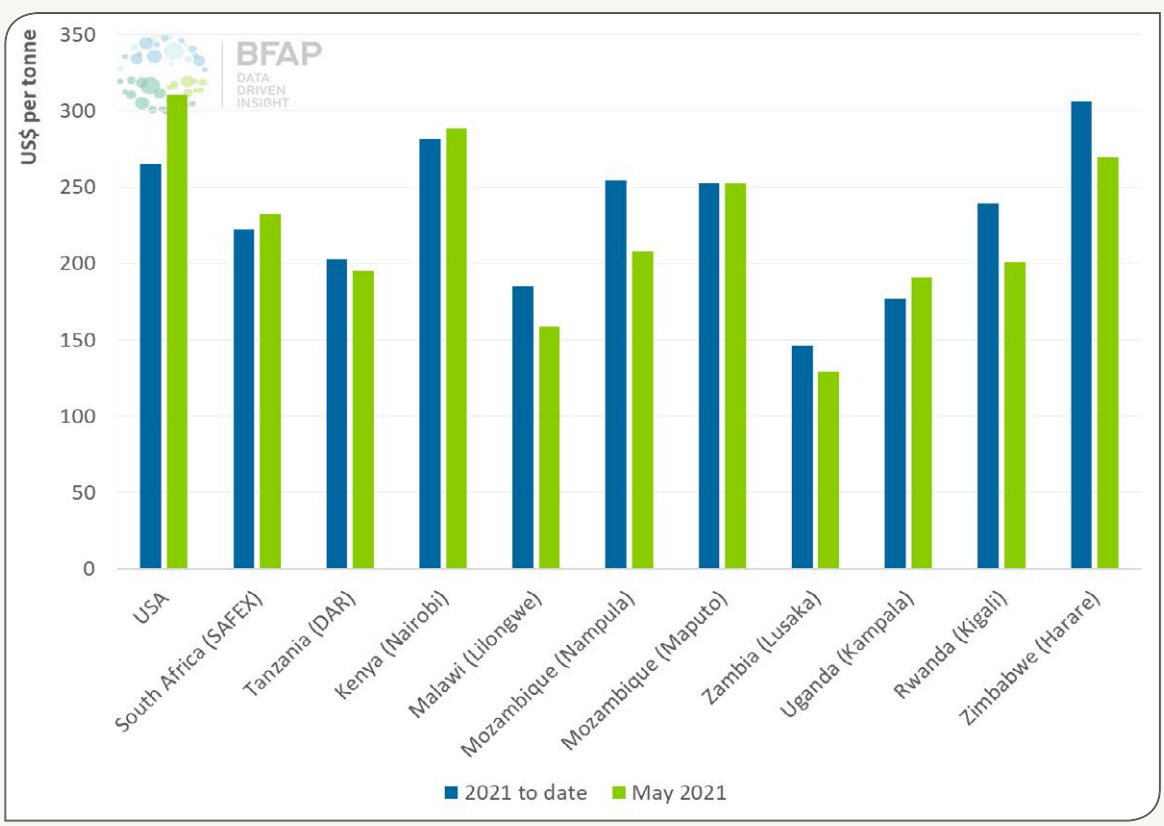



**Figure 27: Maize prices in Southern and Eastern Africa relative to the global reference**

Oilseeds producers also had a good year in 2020, with yield gains supporting production growth of 6% and 16% respectively for soybeans and sunflower seed, despite contractions in area planted to both crops. Prices for both of these major oilseeds are typically derived from the value of the products, all of which tend to trade close to import parity. Accordingly, prices found support from the weaker exchange rate and traded 29% and 23% higher year on year for soybeans and sunflower respectively. The result was a 38% and 43% gain respectively in gross production value from soybeans and sunflower (Figure 24). This strong performance is set to be surpassed again in 2021. In the case of soybeans, this follows a sharp increase of more than 100 000 hectares in area planted, combined with record yields to enable a record crop of

1.9 million tonnes, 54% more than in 2020. The sharp upturn in international prices for soybeans and soybean products is set to support a price gain of almost 5% year on year and subsequently also a 61% increase in gross production value from soybeans. The production expectations for sunflower are more muted following a reduction in area planted in 2021, but the strong run in international markets for sunflower seed and its products also supported domestic markets, and prices are expected to increase by almost 40% compared to 2020 levels. Accordingly, the gross value of sunflower production is expected to increase by 36%, despite a 2.7% decline in output.

Domestic cotton area for the 2020/21 season declined significantly from 2019/20 due to the robust performance of alternative summer crops, the restructuring of ginning capacity and seed availability from previous seasons (Cotton SA, 2021). The total area reduced by 39% or 10 830 hectares, with the largest decline observed in irrigated areas (down by 49%). Despite good yield prospects for the current season, the 4th production estimate from Cotton SA is projected at 80 235 lint bales, a decline of 40% relative to the 2019/20 season and nearly 70% below the 2018/19 season. An evaluation of farm-level profitability suggests that cotton can perform well, especially under dryland conditions and as part of a crop rotation.

## BOX 4: COMPETITIVENESS OF COTTON PRODUCTION IN SOUTH AFRICA

During the late 1990's, area under cotton production in South Africa exceeded 100 000 hectares, mostly cultivated under dryland conditions. A decade later, cotton area has declined significantly and reached a low in 2010 of less than 6 000 hectares planted. The reduction in area can be attributed to various factors, with one of the most important factors being relative profitability compared to alternative crops.

Commodity prices for alternative crops such as maize and soybeans increased strongly over this period, driven by strong demand for animal feed and industrial use, leading to an influx of investment into the primary cultivation of these commodities. Such investments unlocked yield gains, creating an attractive environment for these crops and often leading to lost acreage in competing crops such as cotton and wheat.

Figure 28 and Figure 29 evaluate cotton's current relative competitiveness in the North West dryland and Northern Cape irrigated producing regions through gross margins; a function of yield, price and direct expenditure. The 2021 baseline projections are compared with variability in yield and price, with the objective of determining a range of potential outcomes.

For the dryland example, maize and sunflower are projected to perform well in 2021 given the anticipated increase in both yield and price. The same is true in irrigated regions, which reflect robust performance from maize and wheat. Although the margin for cotton is projected lower compared to maize, sunflower and wheat in 2021, the analysis presents a robust performance from cotton in these production regions. The 2021 baseline projection for cotton varies between R6 600 – R12 600 gross margin per hectare for lower- and higher potential dryland regions in the North West and R14 400 for the Northern Cape irrigation region. In a scenario where price and yields for competing crops move back to trend yields and a 4-year average SAFEX price, cotton as an alternative looks increasingly attractive, especially in higher yielding regions.

The analysis illustrates that cotton can perform well against competing crops, however any expansion in the area under production is subject to a number of key value chain considerations:

- The industry should continue to build on efforts to accelerate yield growth, especially in dryland producing regions which reported a fairly flat trend over the past decade. These efforts are closely tied with the availability of new and improved seed varieties in South Africa.
- Additional investment and upgrading of gin capacity is required for existing and emerging production regions. Shorter distances between production regions and agro-processing facilities (gins) can further improve the competitiveness of local production.

## BOX 4: COMPETITIVENESS OF COTTON PRODUCTION IN SOUTH AFRICA (CONTINUED)

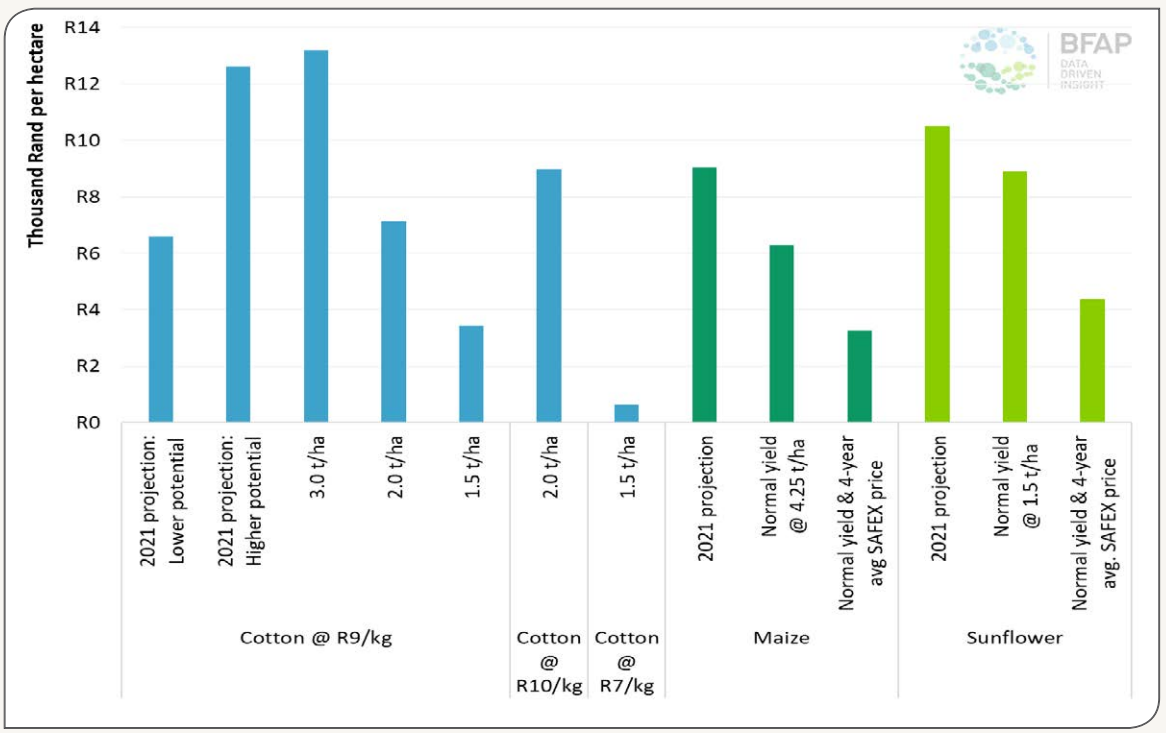



**Figure 28: North-West dryland gross margin for 2021: Sensitivity analysis with yield and price combinations**
**Source: BFAP, 2021**

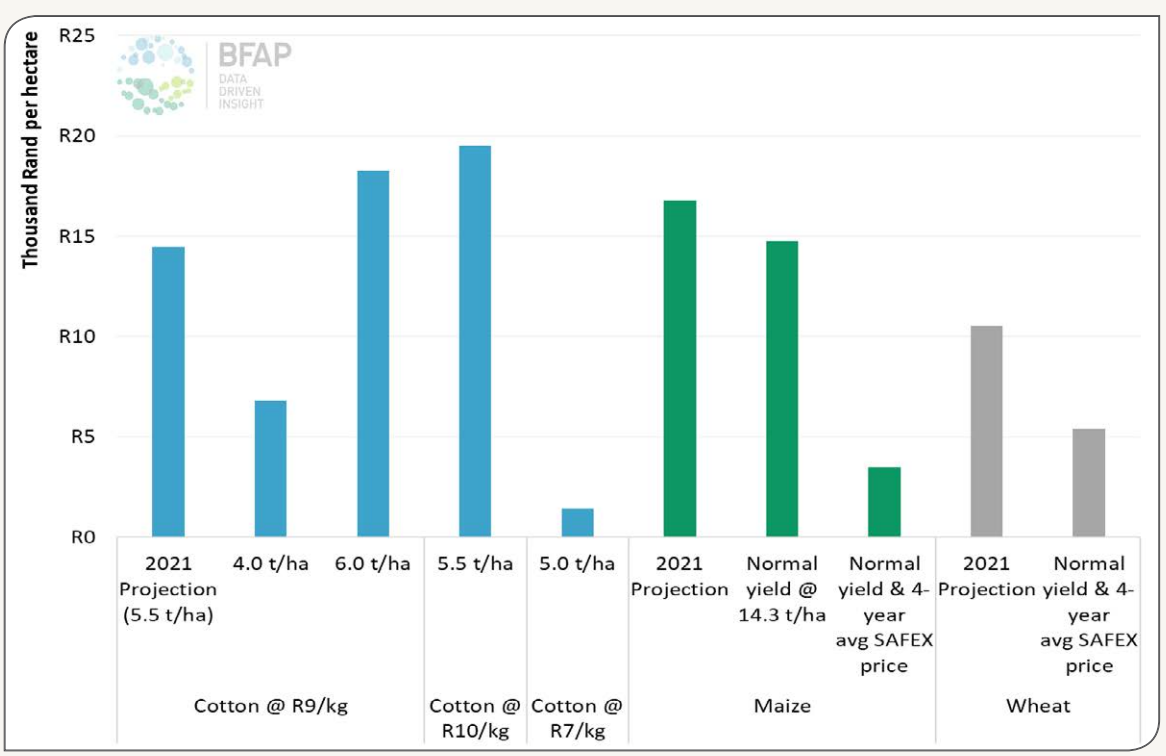



**Figure 29: Northern Cape irrigation gross margin for 2021: Sensitivity analysis**
**Source: BFAP, 2021**

**BOX 4: COMPETITIVENESS OF COTTON PRODUCTION IN SOUTH AFRICA (CONTINUED)**

- There exists remarkable technology in mechanisation, however the technology is often expensive and economic viability of investment to a large extent depends on the scale of operations. For an entrepreneur to invest in machinery to provide harvesting contractor services, sufficient hectares and continuity in area over seasons are required. There also exists an opportunity for financing models that considers financing the machinery over a longer period.
- From the market side, it will be important to develop new export markets and explore opportunities for domestic consumption and value addition, which could create employment opportunities in rural areas.

More generally, it is critical for all nodes in the value chain to ensure and promote transparency in the industry. Transparency through effective communication could promote surety that is required to attract critical functions throughout the value chain.

**Domestic market outlook**

Demand growth prospects for the various summer crops diverge due to differences in use and consequently also fundamentally different drivers affecting markets. Staple grains such as white maize and sorghum are predominantly consumed as food. Conversely, the bulk of yellow maize consumption goes to the animal feed industry where it provides the primary energy source in most feed rations. The bulk of oilseeds such as soybeans and sunflowers are crushed, producing both vegetable oil for human consumption and protein meal for inclusion in animal feed rations. Sunflower seed is a higher oil-yielding seed, therefore more orientated to human consumption where it faces strong competition from imported palm oil, whereas soybean seed has a higher protein content, with protein meal the main product.

The demand for basic food staples such as maize meal strengthened in 2020, with many consumers facing budgetary constraints, but also spending more time at home and shopping less frequently. Consequently, shelf life became an important consideration, as opposed to convenience and preparation time. The slow rate of recovery and persistence of high unemployment levels suggests that some of the dietary diversification evident over the past decade may be reversed over the next few years, before recovering somewhat over the second half of the outlook period as the effects of the pandemic ease and spending power recovers. After declining over the past decade, per capita consumption of maize is projected to rise by an annual average of 0.5% over the next ten years. In conjunction with a growing population, this supports growth of 12% in white maize for human consumption by 2030 relative to the 2018-20 base period. Relative prices dictate that a smaller share of white maize will be consumed as animal feed by 2030 compared to the base period. Similarly, but from a much smaller base, sorghum consumption is expected to increase by 8% over the coming decade after declining by almost 20% over the past decade.

Despite slower growth in the demand for animal protein in South Africa, the commitments made in the Poultry Masterplan, which should result in some import replacement and consequently a decline in the share of imported products in domestic consumption, combined with export led expansion in the beef sector still imply substantial growth in the demand for animal feed over the coming decade. Consequently, yellow maize consumption as animal feed is projected to rise by 34% over the next 10 years. Similarly, soybean processing volumes are projected to increase by 43% over the same period (Figure 30). This is partly due to increased feed demand, but also partly due to replacement of currently imported soybean meal with domestically processed products.

The demand trends presented in Figure 30 are also reflected in area projections. White maize area increased sharply in 2021 and is projected to remain firm in the short term, supported by strong revenue growth in a high world price environment, before returning to the longer term trend and decline from 2023 onwards. Nevertheless, the short term gains are such that, by 2030, white maize area will be similar to the levels planted on average between 2018 and 2020. Yield gains of 24% over the same period are

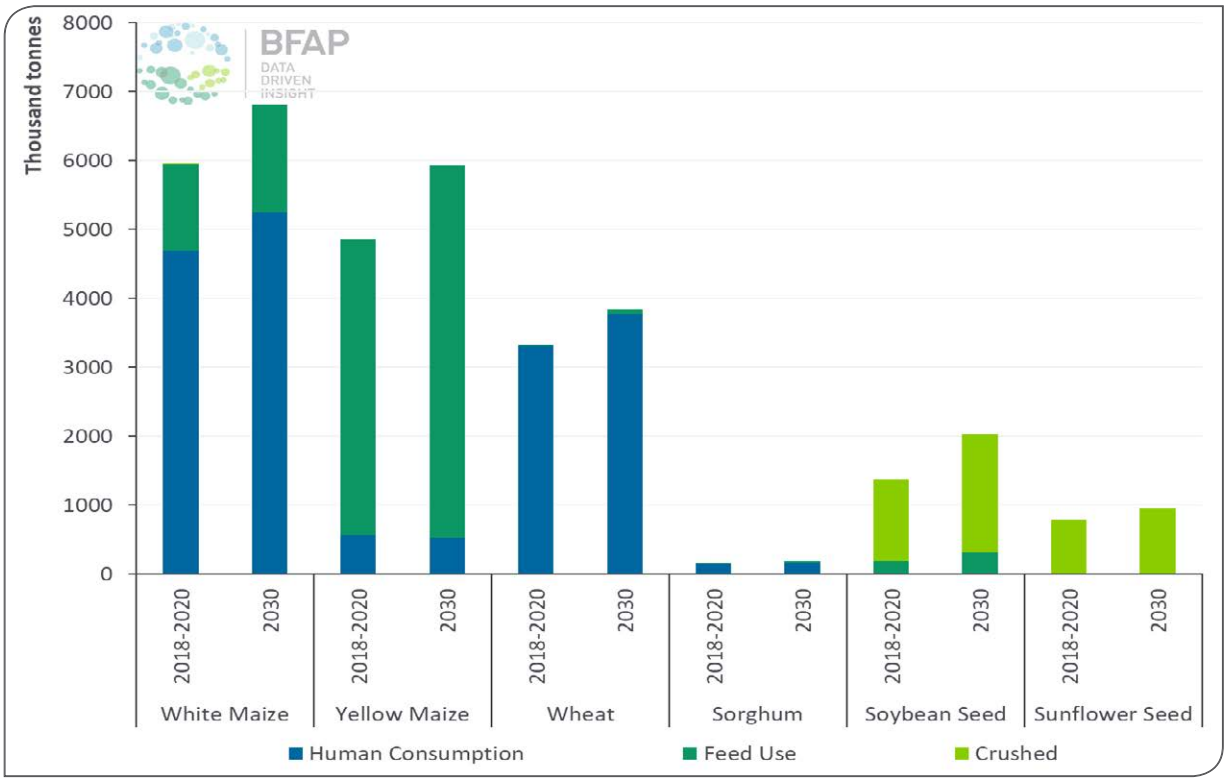



**Figure 30: Demand for summer grains in South Africa: 2030 vs. 2018-2020 base period**

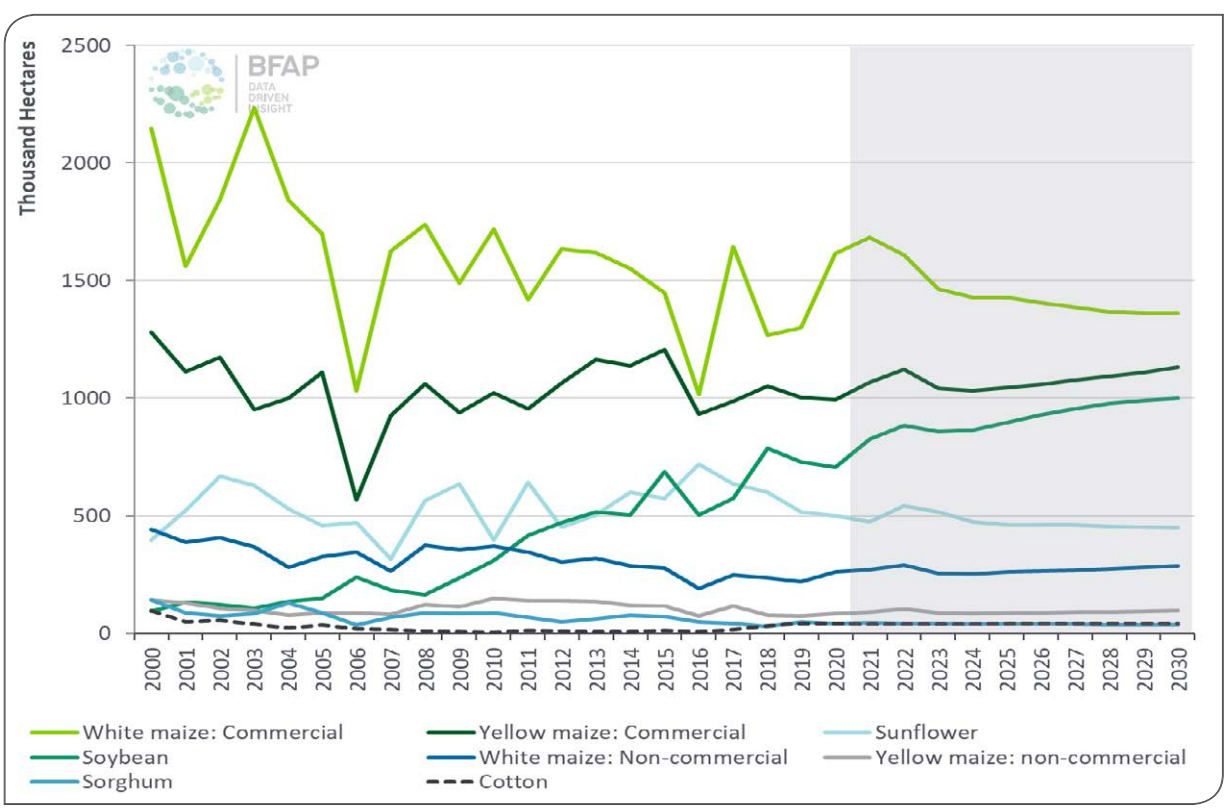



**Figure 31: Area under major summer crops in South Africa: 2000 - 2030**

sufficient to support the projected demand growth. Conversely, the area cultivated to yellow maize and soybeans continues to increase, expanding by 8% and 34% respectively over the 10-year period to 2030 (Figure 31).

Area projections for sorghum and sunflower reflect further consolidation. Both are mature and finely balanced markets. When prices increase towards import parity some expansion occurs, but this typically causes a correction and as prices decline to export parity levels, profitability deteriorates to the extent that producers cut back on area. In the case of sunflower, the reduction is also influenced by the increasing prevalence of Sclerotinia sclerotiorum (a plant pathogenic fungus that causes white mould under conducive conditions), posing additional challenges for producers which in many instances is expected to support a shift to soybean production. Consequently, sunflower area is projected to reach a level 17% lower in 2030 relative to the 2018-20 base period. A significant decline already occurred in 2021 and, while current high revenues are expected to support some short term correction, a normalisation in relative price levels over the second half of the outlook results in a further decline such that only 450 000 hectares are expected to remain under sunflower by 2030 under the current baseline conditions. Yet, over the same period, yields are expected to improve by 29%, reflecting technological gains and continuous improvement of farming practices, as well as the removal of more marginal land from production. This is sufficient to meet the growth in domestic demand, and in the long term, equilibrium prices trade between import parity and export parity levels, based on the derived value from oil and meal. A factor that could improve the outlook for sunflower production is a renewed investment drive, as new technology on high-oil sunflower seed is gaining traction. Whereas in the past, higher oil content seemed to be linked to some level of yield drags, commercial trials over the past two seasons have proven that certain cultivars have the ability to produce oil content as high as 50% compared to current industry averages of around 36%, without any meaningful yield drag. For the first time, one of the oilseed crushers has also introduced premiums for sunflower seed with an oil content above 40%. These are certainly prospects to monitor for the future development of the industry.

The sorghum area is projected to decline by 8%, reaching an equilibrium of around 40 000 hectares, well below the 79 000 hectares cultivated as recently as 2014. Area is expected to stabilise with sorghum prices trading at a premium of 20-30% over the yellow maize price. In light of a further decline, which removes lower potential areas from production, average yields improve by 16% over the ten year period to 2030.

Despite a substantial decline in the area under cotton production from the 2018/19 season, multiple interventions have been introduced to ensure greater efficiency in the value chain, both in terms of input availability and processing. This suggests that area will stabilise, before returning to a modestly increased trend over the outlook period.

Figure 32 considers the changes in area in conjunction with projected yields gains, comparing 2030 to the 2018-2020 base period. It reflects fairly consistent yield gains based on continuous improvements in cultivar technology, as well as a consistent evolution of production practices and area dynamics. The largest yield gain is projected for sunflower, reflecting technological gains and a further loss of area – typically in regions that have been increasingly challenged by Sclerotinia. In the case of white maize, yields are expected to improve by 24% by 2030 relative to the base period, due largely to technological gains, thus providing ample production for South Africa's market and an exportable surplus to neighbouring countries (Figure 33). Yield gains for yellow maize are a bit more subdued than white maize, owing to further area expansion, but are still expected to improve by 20% over the coming decade.

Despite additional area growth of almost 35% over the coming decade, soybean yields are also expected to improve by 24% relative to the base period. To some extent this reflects below average levels achieved in the base period, particularly in 2019 and 2020, when weather conditions in the eastern parts of the country were less conducive and yields were well below potential. The record national yield of 2.32 tonnes per hectare in 2021 indicates what can be achieved in more ideal conditions, but the projected yield path returns to trend levels in 2022, based on the assumption of normal weather, continued area expansion, as well as the impact of the breeding technology levy, which could incentivise seed companies to make the latest seed technologies available to South African producers.

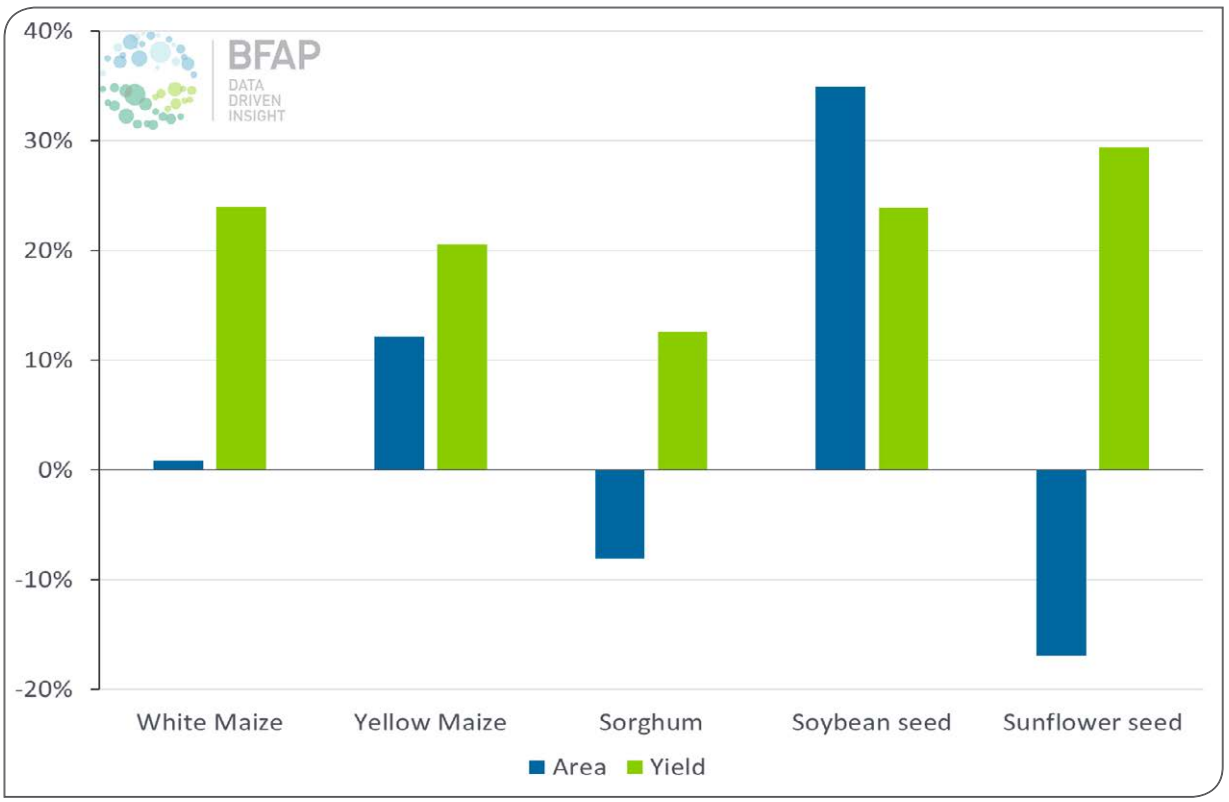



**Figure 32: Percentage change in area and yield for major summer crops: 2030 vs. 2018-2020 base period**

The combination of area and yield dynamics presented in Figure 32 will have different price effects for the various commodities. After an initial normalisation following the bumper harvest in 2021, maize production growth over the outlook period is projected to be sufficient to sustain domestic demand and yield a consistent exportable surplus. In reality, this surplus will fluctuate in line with weather dynamics, but in normal years white maize exports are expected to stabilise below a million tonnes. White maize is mostly exported into the Southern African region, where South Africa is facing increasing competition. Zambia for instance produces non-GM white maize and faces a favourable transport differential into Harare compared to South Africa. Nevertheless, South Africa is favourably positioned to supply Mozambique and its trade policy environment has been more stable than that of Zambia, presenting market opportunities when Zambian exports are controlled. Yellow maize is easier to trade in the global market and after an initial consolidation as yields normalise, yellow maize exports are projected to increase over the outlook period. This increase in exports is however less than the increase in production and with a smaller share of the total crop exported over time, prices trend marginally above export parity, more in line with parity levels calculated from favourable export locations such as the Eastern Free State. This does however result in a decline in the short term, as international markets normalise. With an increasingly competitive regional export market and in excess of a million tonnes of white maize set to be utilised as animal feed by 2030, prices are expected to trade marginally below yellow maize prices (Figure 33).

Figure 34 presents the impact of the price and yield projections on gross margins at farm level, on average across the major dryland producing regions. Gross margins only account for direct expenditure and while overheads, land leasing and owner remuneration still need to be deducted, it provides a sense of relative performance of different crops. It also shows just how good the 2020 and 2021 seasons were, as well as the implied level of normalisation, for maize in particular, from 2022 onwards. This normalisation is underpinned by the reduction in export parity based prices, high carryover stocks from the consecutive bumper harvest in 2021 and a sharp increase in production costs (Box 1).

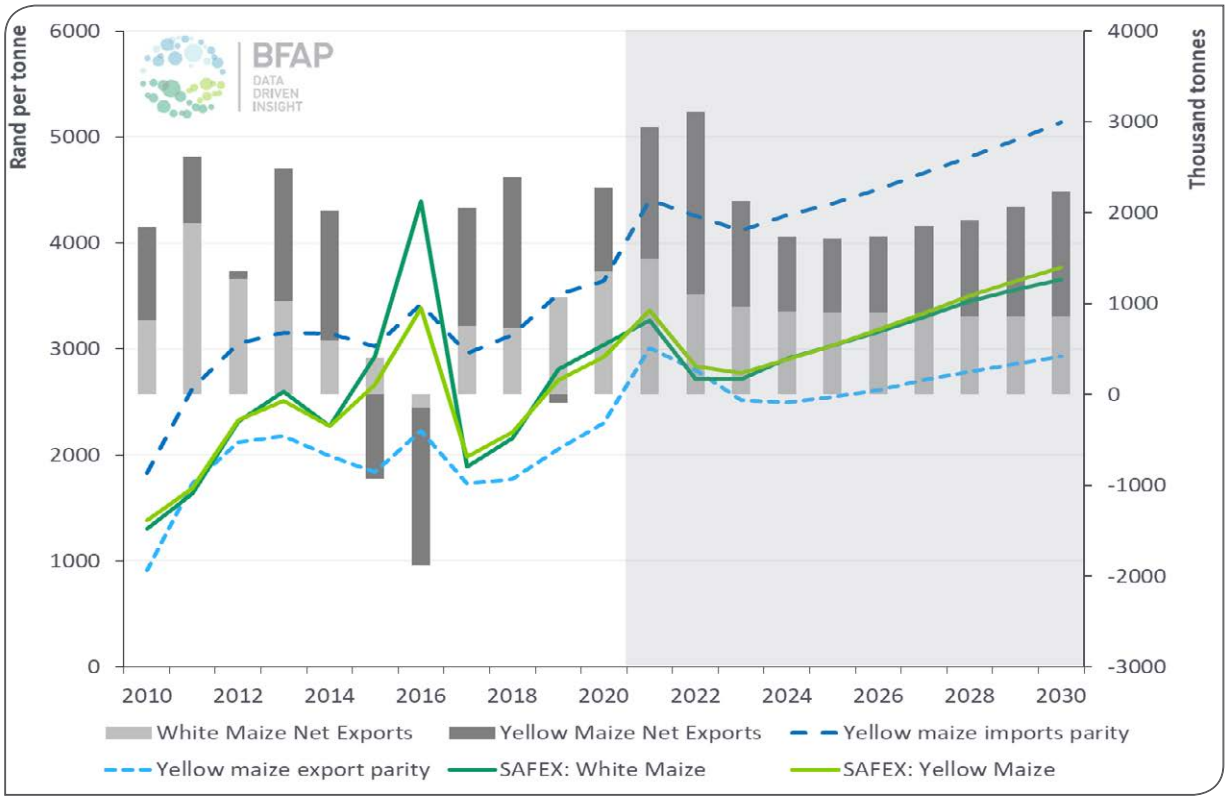



**Figure 33: Maize net exports and prices: 2010 – 2030**

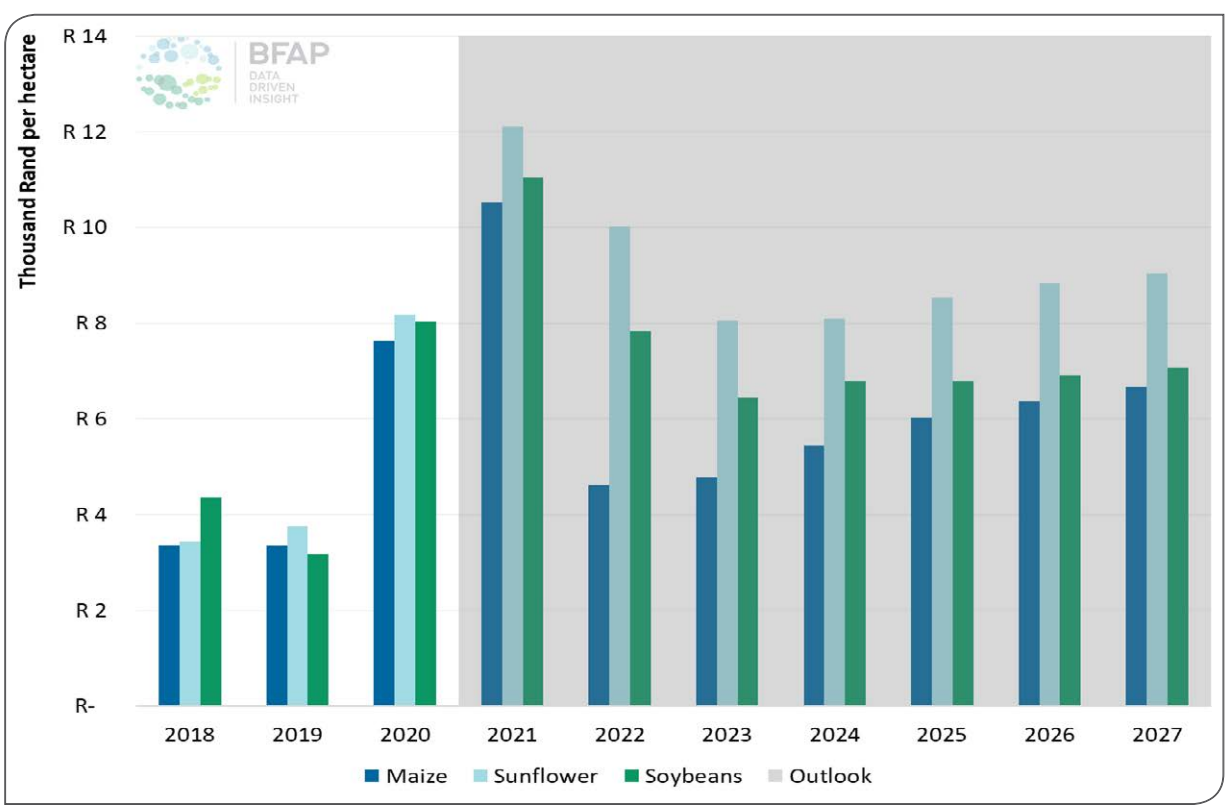



**Figure 34: Gross margins for key summer crops: Average for 7 agro-ecological regions: 2018 - 2027**

Figure 34 shows that gross margin performance for soybean production in 2020 and 2021 has been even stronger than that of maize owing to stronger prices as well as all-time record yields in 2021. South Africa remains a net importer of soybean products, which tend to trade closer to import parity. These product prices increased sharply on the back of the initial depreciation in the exchange rate in 2020 and the sharp rise in international prices in 2021. Over the course of the projection period, soybean production is expected to increase by 260 000 tonnes from the record crop in 2021 – an expansion of 2.4% per year (Figure 35). This represents a slowdown from the past decade when the soybean sector was one of the most dynamic sectors in agriculture, but it is now becoming more mature and therefore expanding at a much slower rate. Total soybean processing capacity in South Africa (crush and full fat) is derived from a combination of dedicated soybean processing facilities and plants with the ability to switch between soybeans and sunflower. The projected production growth is expected to support increased processing over time, to the point where current capacity will be utilised completely towards the end of the outlook (Figure 36). Consequently, South Africa is projected to produce a small surplus of beans, resulting in equilibrium prices trading between export parity and the derived value of the products, such as oil and meal (Figure 35).

Investments in expanded processing facilities, combined with continued improvements in utilisation rates, resulted in South Africa replacing more than 600 000 tonnes of imported soybean oilcake over the past decade. Figure 37 provides a summary of oilcake supply and demand in 2010, 2020 and 2030 – the sum of domestic production and net imports account for the total oilcake demand. It illustrates that net imports account for a declining share of total oilcake consumption, from 66% in 2010, to 22% in 2020 and projected at merely 14% in 2030.

Soybeans have become increasingly dominant in South Africa's oilseed complex, with utilisation increasing from 1.1 million tonnes in 2010 to 1.3 million tonnes in 2020. This compares to 360 000 tonnes of sunflower seed and 78 000 tonnes of canola seed that was used in 2020. Over the course of the projection period, soybean oilcake consumption is expected to increase by 2% per year, reflecting growth in livestock production, supported by actions such as the poultry masterplan, as well as favourable long term price ratios relative to alternative proteins such as fish meal. Despite sufficient soybean production to yield an exportable surplus by the end of the projection period (Figure 35), the high cost of transportation from South Africa's summer rainfall regions to the Western Cape in particular implies that South Africa will continue to import some soybean oilcake into coastal regions (Figure 37). Investment in rail infrastructure to reduce this cost would enable South Africa to become self-sufficient in oilcake production.

Vegetable oil consumption declined in 2020 as consumer spending came under pressure and food service operations slowed amid lockdown restrictions. Further reductions are expected in 2021 due to continued limitations in consumer spending power combined with exceptionally high prices in the global market, which reflect in South Africa's prices due to its position as a net importer. In the medium term, as incomes start to recover and operating restrictions in the food service industry ease, growth is expected to resume, and by 2030 consumption is projected to be 16% higher than in the 2018-20 base period.

Figure 38 indicates that palm oil imports continues to play an important role in the South African vegetable oil consumption mix. Palm oil imports have increased from an average of 330 000 tonnes from 2008-2010 to 490 000 tonnes in 2020 – an increase of 49%. Owing to its relative affordability and favourable heating properties, its share in total vegetable oil consumption increased from 36% in 2010 to 41% by 2020. Over the same period, sunflower oil consumption increased by 28%, soybean oil consumption by 9% and canola oil consumption by 114%, albeit from a very small base. Over the course of the projection period, sunflower oil consumption is expected to rise by 17%, compared to 16% for canola oil and 15% for soybean oil. With domestic soybean crush volumes still increasing, the share of domestically produced vegetable oil in the total non-palm oil consumption mix is projected to increase from 79% in 2020 to 86% in 2030. While sunflower oil and soybean oil does compete with palm oil in the consumption basket, palm oil is not produced in South Africa and as an affordable alternative, imports are expected to remain significant.

To conclude, the 2020 and 2021 seasons have been very strong for the field crop sector, but history shows it to be the most volatile amongst the three subsectors

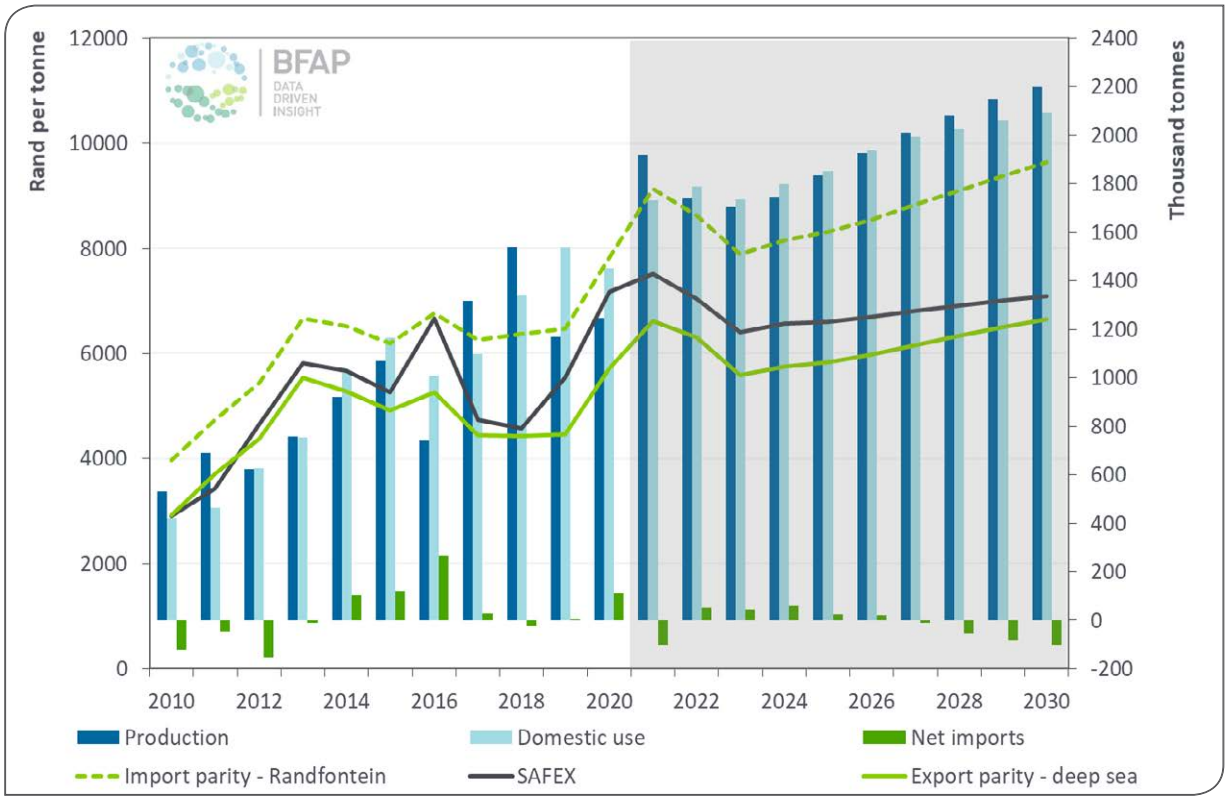



**Figure 35: Soybean production, consumption, trade and prices: 2010-2030**

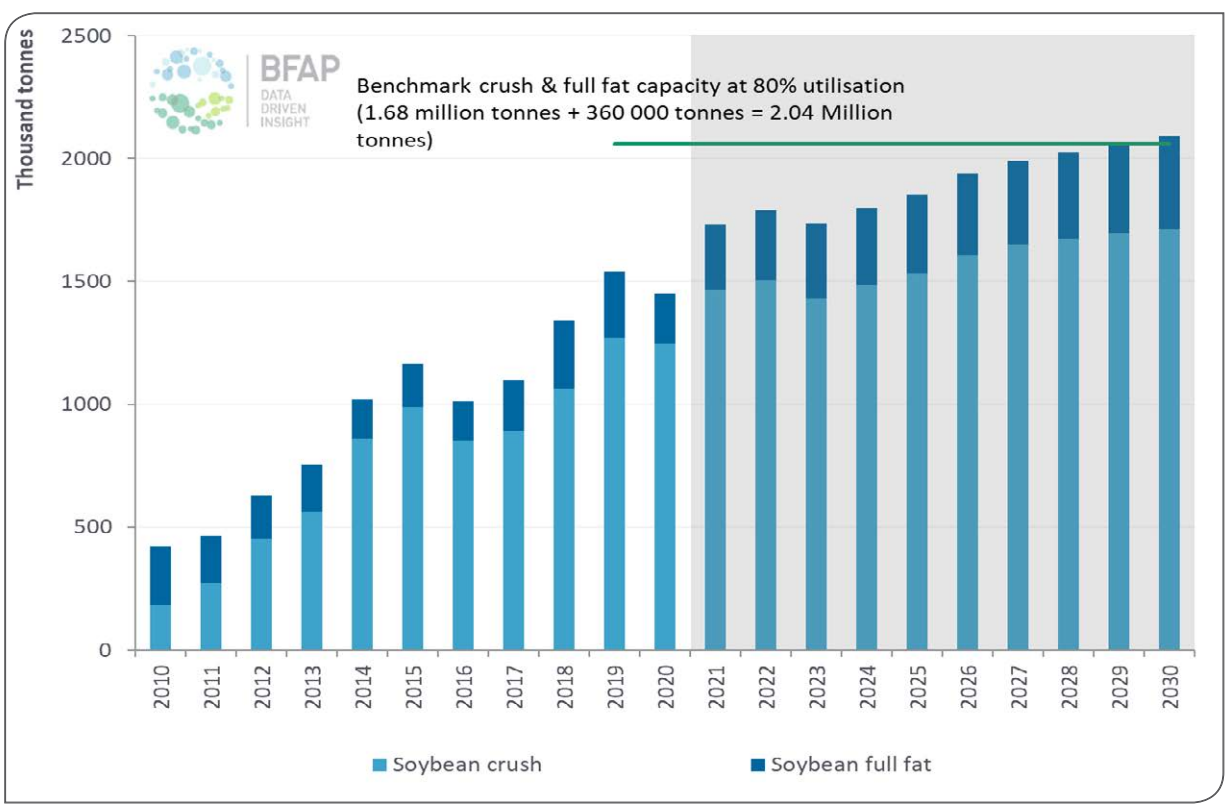



**Figure 36: Soybean utilisation and crush capacity: 2010-2030**

that constitute agriculture. The outlook reflects the assumption of stable weather conditions, but in reality, the sector will continue to be faced with changing weather conditions that induces significant volatility. Returns from field crops are expected to normalise along with international prices over the next three years and consequently, productivity gains will remain critical in a rising input cost environment.

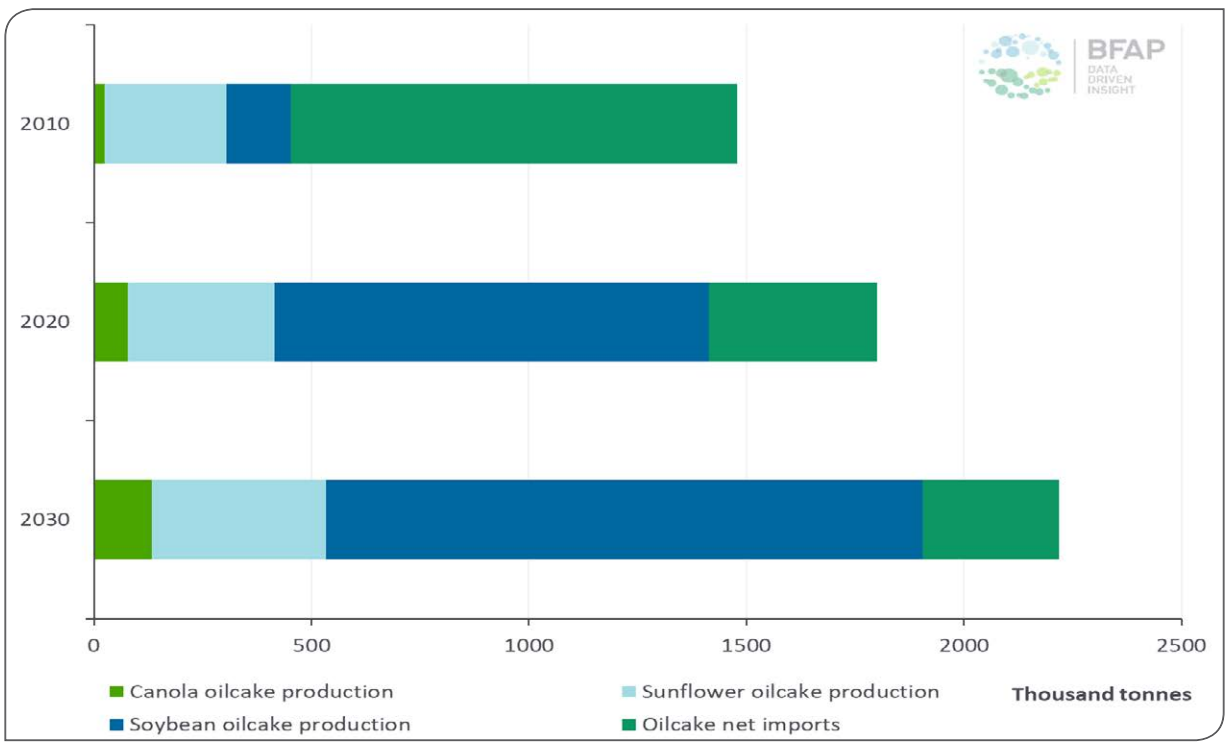



**Figure 37: Oilcake supply and demand in South Africa: 2010-2030**

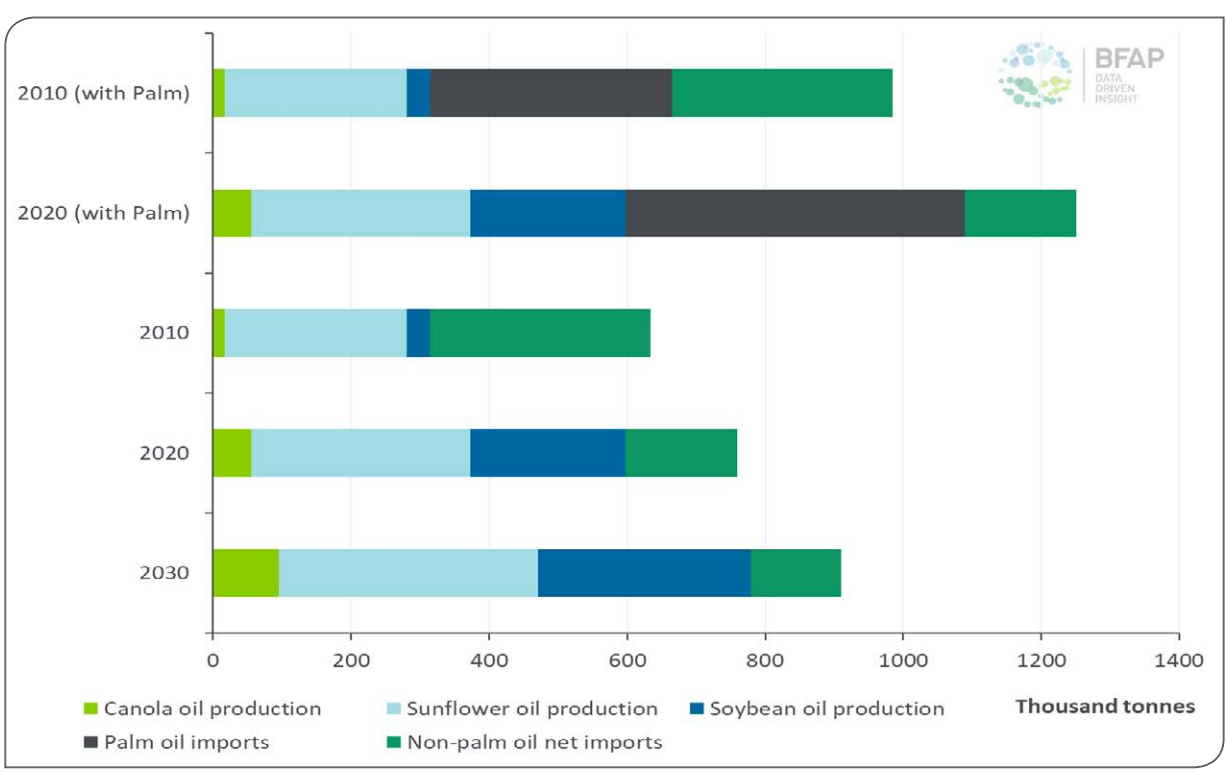



**Figure 38: Vegetable oil supply and demand in South Africa: 2010-2030**

# OUTLOOK FOR FIELD CROPS
## WINTER GRAINS AND OILSEEDS



**International market situation**

Global wheat stock levels have been increasing for the past four years, with production consistently outpacing total use. Prices have consequently traded mostly sideways until global grain and oilseed markets started rallying towards the end of 2020. This considerable increase in global prices was driven by the sharp rise in imports of maize and soybeans by China, together with a drop in global production of major oilseeds. Wheat markets were pulled along due to relative substitutability between products and prices increased by around 25% to reach 280 US$ per tonne in the first quarter of 2021 (Figure 39). However, the IGC expects global production to reach another record high of 790 million tonnes in the 2021/22 season, underpinned by increased production in Russia, Kazakhstan and Australia, implying a further increase in stocks. Wheat prices are consequently expected to decline within the next two seasons and to stabilise at around 220 US$ per tonne over the outlook period.

Following the record harvest in 2020, the IGC expects global barley production to decline marginally by 1.6 percent. Australian farmers are planting less barley and more canola due to the spike in canola prices. Contrary to the South African barley market, where more than 80 percent of consumption goes to the production of beer (industrial use), more than two thirds of the global production is consumed in the feed industry. Global feed use is anticipated to reach an all-time high of 109 million tons, mainly driven be a further increase in China, where new official guidelines aim to replace some maize in the feed rations with alternatives. Consequently stock levels are anticipated to contract in the coming marketing season, but overall price gains will be capped by weakness in neighbouring grain and oilseeds markets.

Over the past year, the world price for canola has shot up by 78% on the back of declining global supplies of oilseeds and stock levels plummeting to a multi-year lows. Figure 39 illustrates that the global price for canola currently exceeds previous record levels from 2011. Current market prices are expected to promote a sizeable increase of rapeseed and canola production in 2021/22, underpinned by significant increases in the area under production in Australia, Canada and Russia. However, the prospective increase in production will most likely be insufficient to completely offset the low stock levels and relatively tight supplies are expected for another season. Consequently, canola world prices are only expected to reach long-term equilibrium at around 430 US$ per tonne by 2023.

**Domestic market situation**

In 2020 the South African wheat, barley and canola industries celebrated various achievements on the back of what can only be described as textbook perfect weather conditions. In the case of wheat,

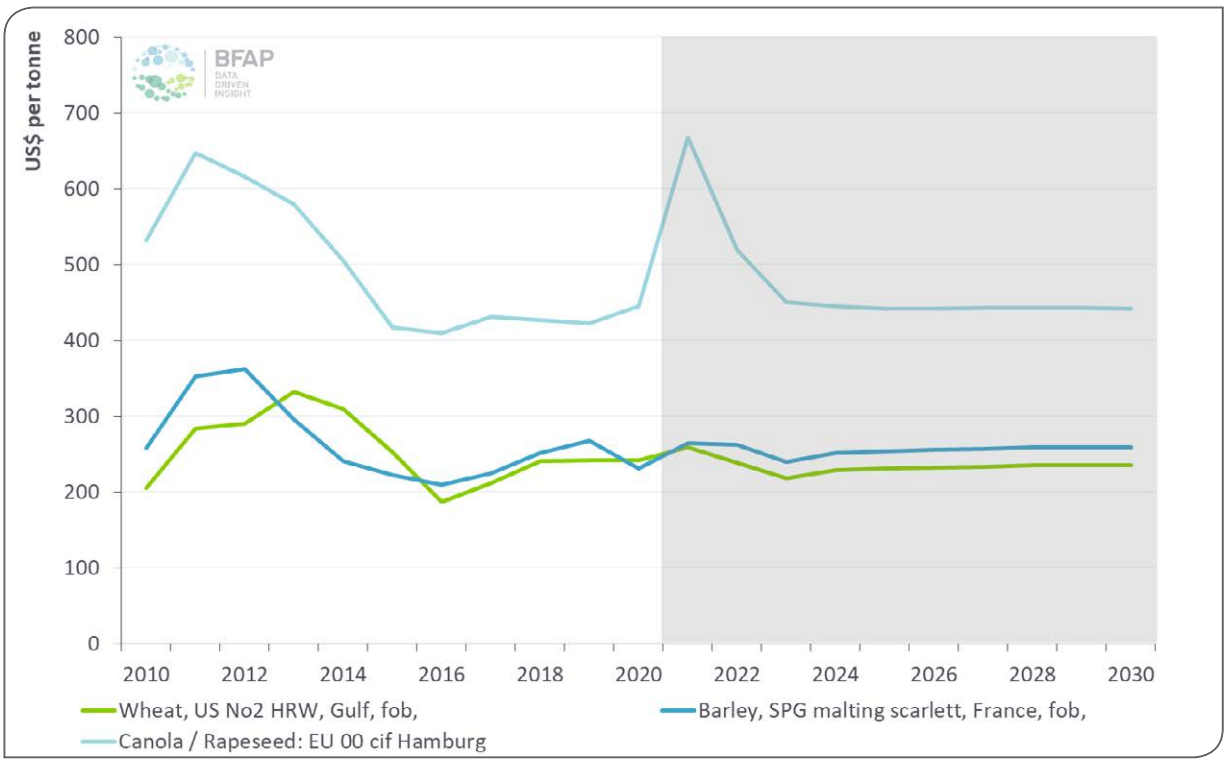



**Figure 39: World prices for major winter grains and oilseeds**
**Source: FAPRI & BFAP, 2021**

it is the first time since 2011 that South Africa breached the 2 million tonne mark, bringing the gross production value to well over R10 billion (Figure 40). What is remarkable in this achievement is that the 2020 crop came from a total area planted of only 509 000 hectares, compared to the 604 000 hectares of wheat that was planted in 2011. This implies that the average yield potential has grown considerably over the past decade, which can be attributed to significant investments in focused breeding programmes on the back of a new grading system, as well as improved farming practises involving conservation tillage and more rotational cropping. One negative factor from the large crop was the overall quality. According to the South African Grain Laboratory's Wheat Quality Report for the 2019/20 season, 32% of the crop was downgraded to "class other wheat", a feed grade equivalent. The downgrade was not due to insufficient protein content, but rather due to other grading criteria such as the percentage screenings that exceeded the maximum allowable deviation level of 3% (<1.8mm sieve) and falling numbers that were below the 220 seconds threshold. Despite the year on year increase in production of 37%, South Africa has remained a net importer of wheat, with just under 1.5 million tonnes of wheat expected to be imported in the current marketing season that ends in September 2021. Apart from the traditional main sources of imports such as Russia, Germany and Poland, 258 630 tonnes had already been imported from Australia by the middle of June 2021.

Despite the significant increase in global prices, South African wheat prices are expected to trade slightly lower in the current season compared to a year ago because the variable import tariff is triggered when the world reference price for US Hard Red Winter (US HRW) falls below 279 US$ per tonne. This implies that any fluctuation in the world price below 279 US$ per tonne, as was the case in recent years, does not really matter to the South African market since domestic prices are almost exclusively based on exchange rate movements. Due to the strengthening of the Rand, wheat prices are therefore projected to decline slightly to levels around R5000 per tonne in the current season. Over the outlook period, growth in consumption of wheat is expected at approximately 1.1% per annum, which is in line with the gradual increase in local production levels due to improved yields over time. Therefore, import levels are expected to remain within a range of 1.5

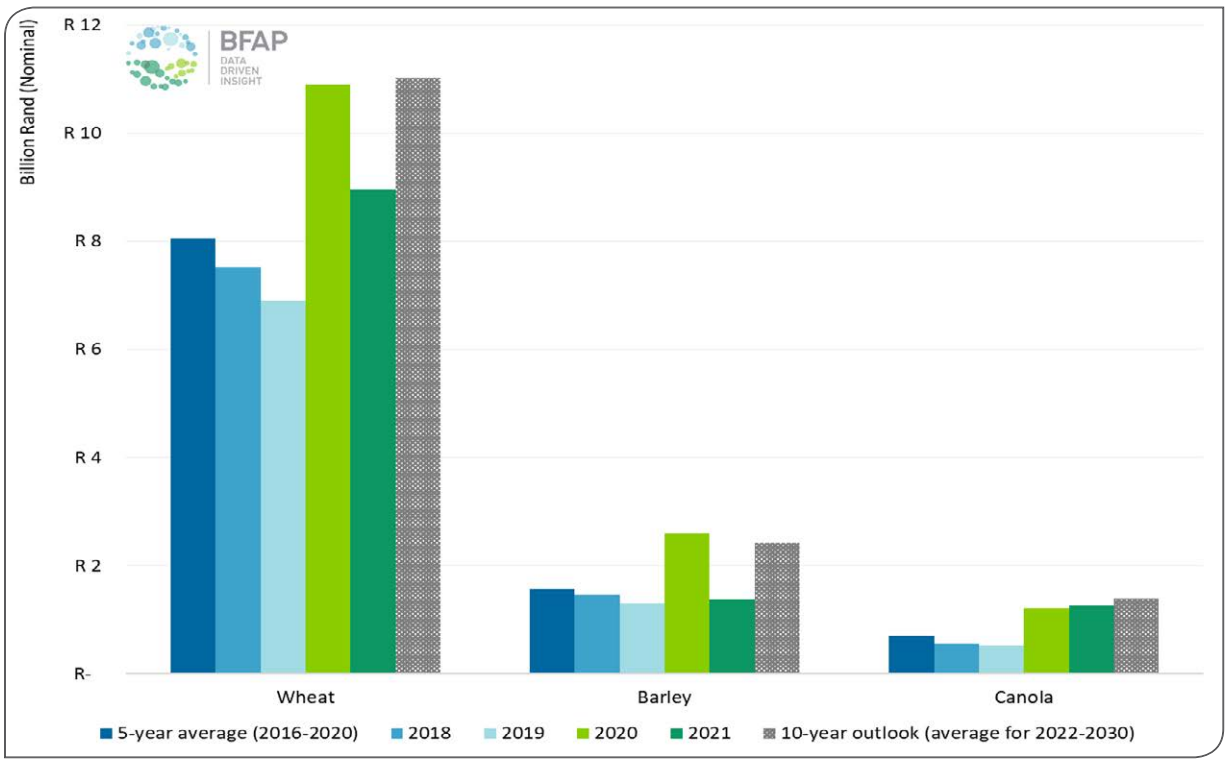



**Figure 40: Gross value of production for selected winter crops in South Africa**

million to 1.8 million tonnes over the outlook period. Although producers are switching some hectares out of barley to wheat in the current 2021 production season, over the outlook period wheat plantings are projected to decline marginally as producers are expected to introduce more rotational cropping, which also includes pastures for livestock and alternative feed grains such as lupins.

In the case of barley, dryland yields shot up to almost 4t/ha and overall production amounted to 521 000 tonnes, which presents an increase of 71% from the previous season and an all-time record harvest. However, when it came to the marketing of the record crop, producers were less fortunate. COVID-19 lockdown regulations caused havoc in the South African hospitality industry and, together with intermittent bans on alcohol sales, this resulted in a substantial negative impact on beer sales. With reduced utilisation, barley stock levels increased rapidly and some industry stakeholders argue that this has caused grading of malting barley to be more stringent than in the past season, with a significant portion of the crop being downgraded to feed quality. For barley, the monthly feed use over the period January 2017 to December 2019 has averaged around 5% (SAGIS, 2021). Towards January – December 2020, average monthly feed use increased to 23% and reached a high of 42% in March 2021. Feed grade barley trades at around 35% below barley sold for malting purposes. The combination of higher stock levels and a struggling hospitality industry has put a bearish outlook on the industry and the area under barley production for the current 2021 season has plummeted by 35% to 91 500 hectares (Figure 42). The question is, where to from here? In the short term, the impact of COVID has put significant financial constraints on the industry. However, over the outlook projections indicate that the area under production will gradually pick up again as the impact of the COVID subsides and markets turn to a new normal where South Africa will essentially be self-sufficient in barley production over the course of the next 10 years.

Percentage wise, the largest increase in the 2020 winter crop came from canola, with national average yields reaching 2.25t/ha, which is a target that the industry had set itself to reach only by 2030. Although at a much smaller scale, the canola industry is following the same trajectory as the soybean industry with area and yields increasing at a rapid pace. Ten years ago, the total South African canola crop amounted to 36 900 tonnes from 34 800 ha. Yields and area under

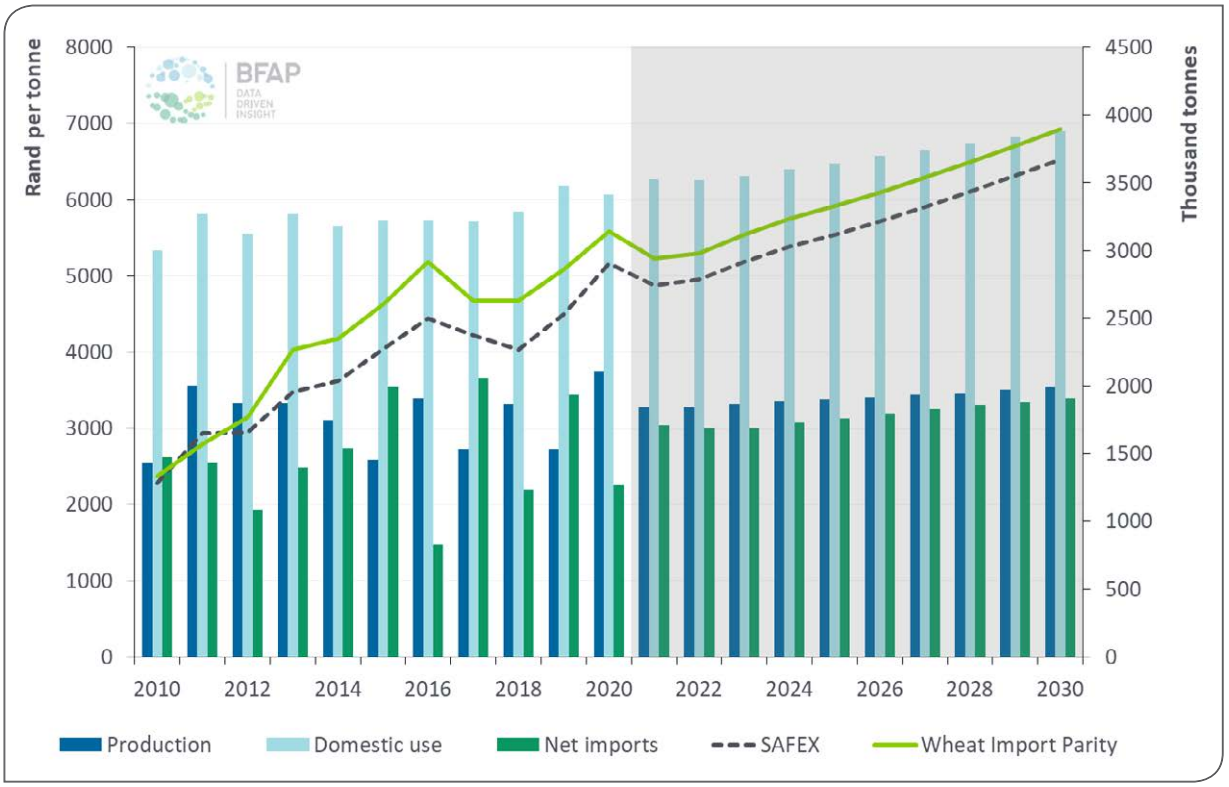



**Figure 41: Wheat production, consumption, trade and prices: 2010 - 2030**

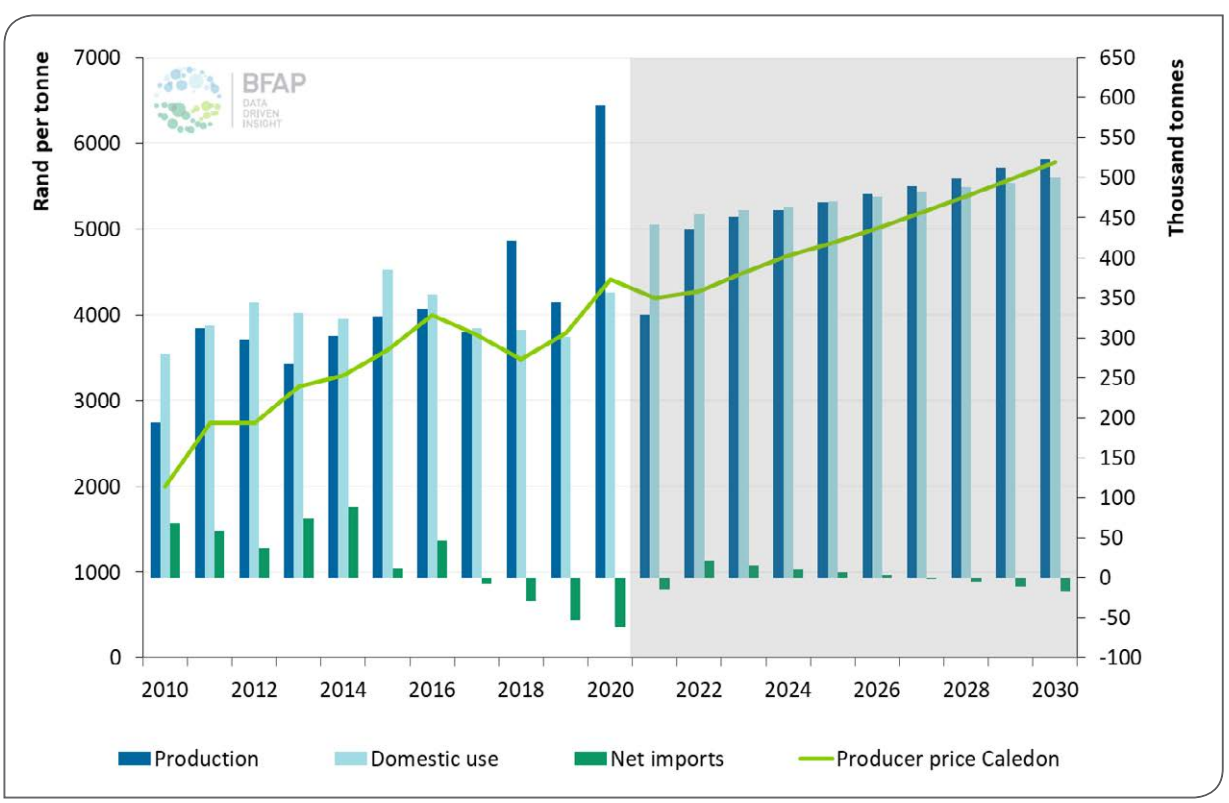



**Figure 42: Barley production, consumption, trade and prices: 2010 - 2030**

production grew due to a combination of improved seed technology and better farming practices combined with active marketing of canola as a viable rotational crop in the winter rainfall regions. Similar to soybeans, the market opportunity for canola lies in the production of canola meal for the feed industry and vegetable oil for human consumption, and South Africa remains a net importer in both of these market segments. Hence, significant investments in processing of canola created the required "demand pull" for the industry to expand.

Weather wise, 2020 was a textbook year and 167 000 tonnes of canola were delivered, which created a periodic surplus in the market. The timing of this significant jump in production could not have come at a better time with global vegetable oil prices rising rapidly towards the end of 2020. Within a couple of months, the export parity prices for canola rose to well over R8500/ton and for the first time in history South Africa exported 30 000 tonnes (to Europe). These exports have reduced the marketable surpluses and indirectly have paved the way for another strong season for canola with prices trading at record levels and producers switching out of barley into canola.

The combination of favourable profit margins and the challenges facing the barley and beer industry due to lockdown regulations, resulted in a further jump in the area under canola production. The baseline projects the total area planted for 2021 at 92 000ha and, based on trend yields, total production is expected to come in at 153 000 tonnes. So far, weather conditions have been ideal and the industry is preparing for a crop that exceeds 180 000 tonnes. Currently more investments are being made in storage and processing capacity for the larger crop. The long-run outlook for canola remains favourable with production rising to 244 000 tonnes and ample market space, mainly in the dairy industry which currently absorbs more than 95% of the meal. The increasing production of canola oil is providing more opportunity for import replacement of vegetable oils.

**Farm-level impacts**

The farm-level gross margin performance over the past 3 seasons for the Western and Southern Cape winter production region over the period from 2018 to 2021 (projection) is shown in Figure 44, which contextualises the ground-level realities through sensitivity analysis. Drought conditions in 2019 considerably impacted gross margins across crops, where exceptional yields in 2020 boosted the

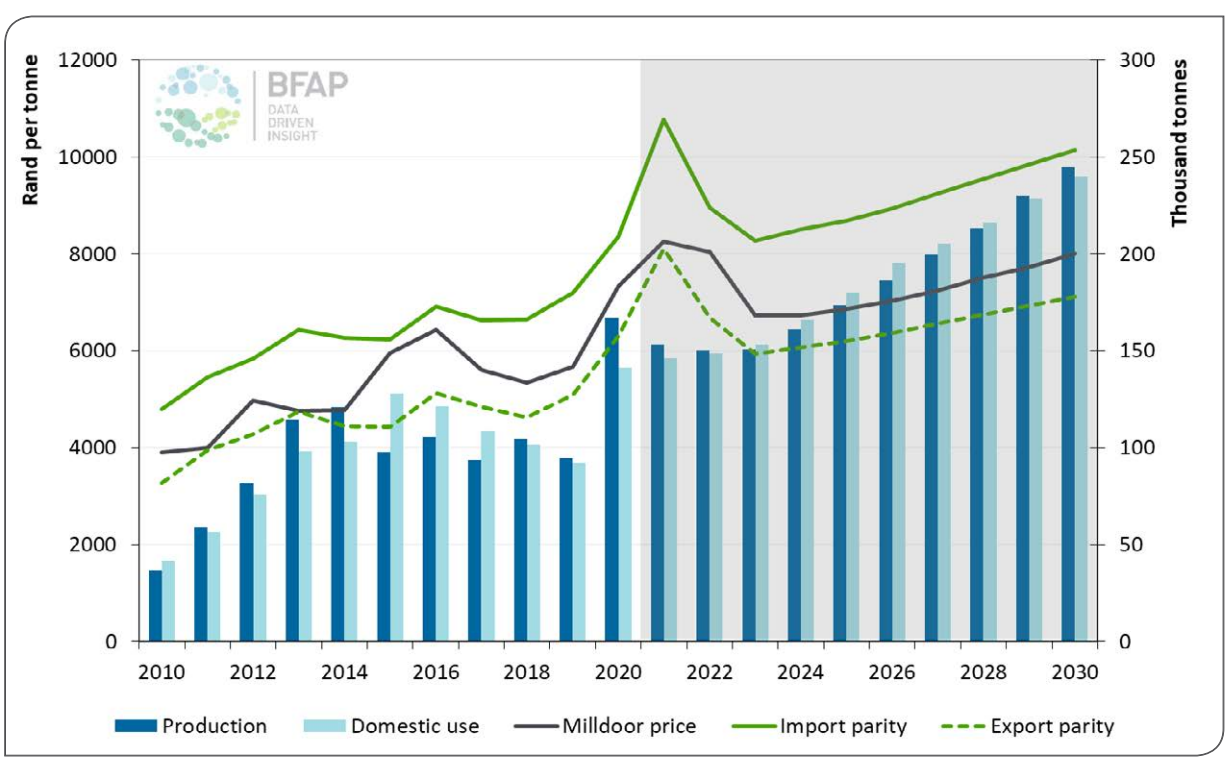



**Figure 43: Canola production, consumption, trade and prices: 2010 - 2030**

recovery due to favourable weather conditions. When the 2020 margins are considered, it is clear that wheat and barley still outperform canola and oats. However, in 2021, the margin between grains and canola will likely trend closer due to price hikes observed in the vegetable oil market, which lent support to canola prices. It is important to note that the gross margins for wheat and barley do not account for potential discounts due to quality issues.

Quality issues and other sensitivity measurements are presented in Figure 45, which compares the 2021 projected gross margins with variability in quality, yield and output prices. The scenario for wheat represents an outcome similar to the 2019/20 wheat quality report from the South African Grain Laboratory (SAGL) where a large share of the crop was downgraded to feed grade. If a similar event occurs in 2021, the gross margin for wheat could decline by R2 300 per hectare. In the event that the wheat SAFEX price decreases to R4 500 per tonne, gross margins will decrease by R1 200 per hectare from the baseline projection. Considering a producer planting 300 hectares of wheat, the total impact on the farm gross margin will vary between R360 000 – R700 000. Figure 46 assesses additional wheat sensitivity by accounting for various yield and quality combinations. It elaborates on the important question of whether a producer should prioritise yield or quality, which are often considered as substitutes. The x-axis represents the yield assumption and wheat grades illustrated as the distribution between BS, B1, B2, B3 and CoW grades. The analysis shows that there exists a fine balance between these variables, but in certain scenarios it can be more profitable to achieve higher yields, even if it implies that a larger share of the output will be diverted to lower quality grades (B2 – B3).

The barley feed grade scenario represents an event where 40% of the crop is downgraded to feed grade, implying that the producer price can decline by 43% or R1 800 per tonne (assuming feed grade is sold at a 75% of yellow maize price equivalent). Gross margins will decrease by R2 100 per hectare and yield for a Caledon producer will need to increase between 500 – 700 kilograms per hectare to match a wheat equivalent gross margin. To illustrate the impact at industry level, a 40% feed-grade assumption for all barley produced in the dryland and irrigated regions in South Africa could imply a reduction of R434 million in the gross production value (opportunity cost of selling feed- instead of malting-grade barley).

The canola sensitivity analysis measures its relative performance against alternative crops given variability

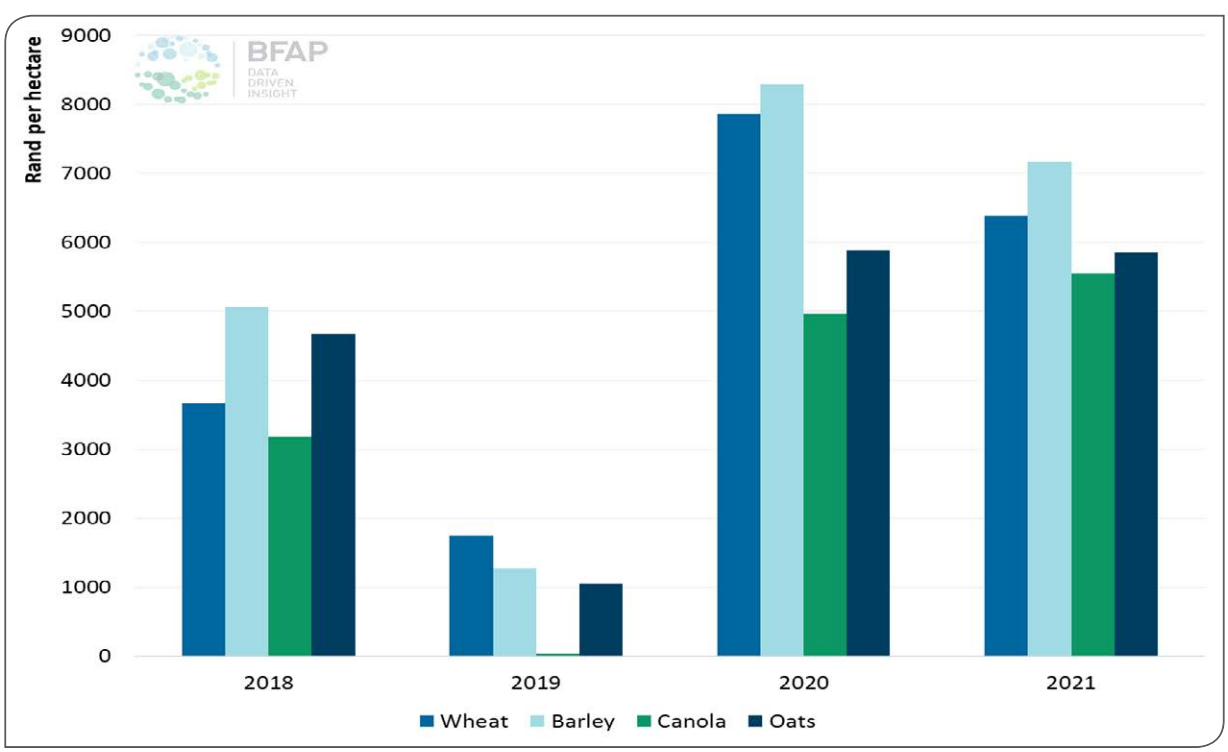



**Figure 44: Western & Southern Cape winter crop gross margins: 2018 - 2021**
**Source: Own calculations using data from Overberg Agri, SSK & Kaap Agri, 2021**

in yield. For this scenario, a yield of 1.5 and 2.0 tons per hectare is assumed. The sensitivity illustrates canola's potential and indicates that it can outperform competing crops by increasing yield by 200 – 300 kilograms per hectare. A 2.0 tonne per hectare canola yield will generate a gross margin of nearly R7 900 per hectare, 9% higher than barley, 23% higher than wheat and 34% higher than oats.

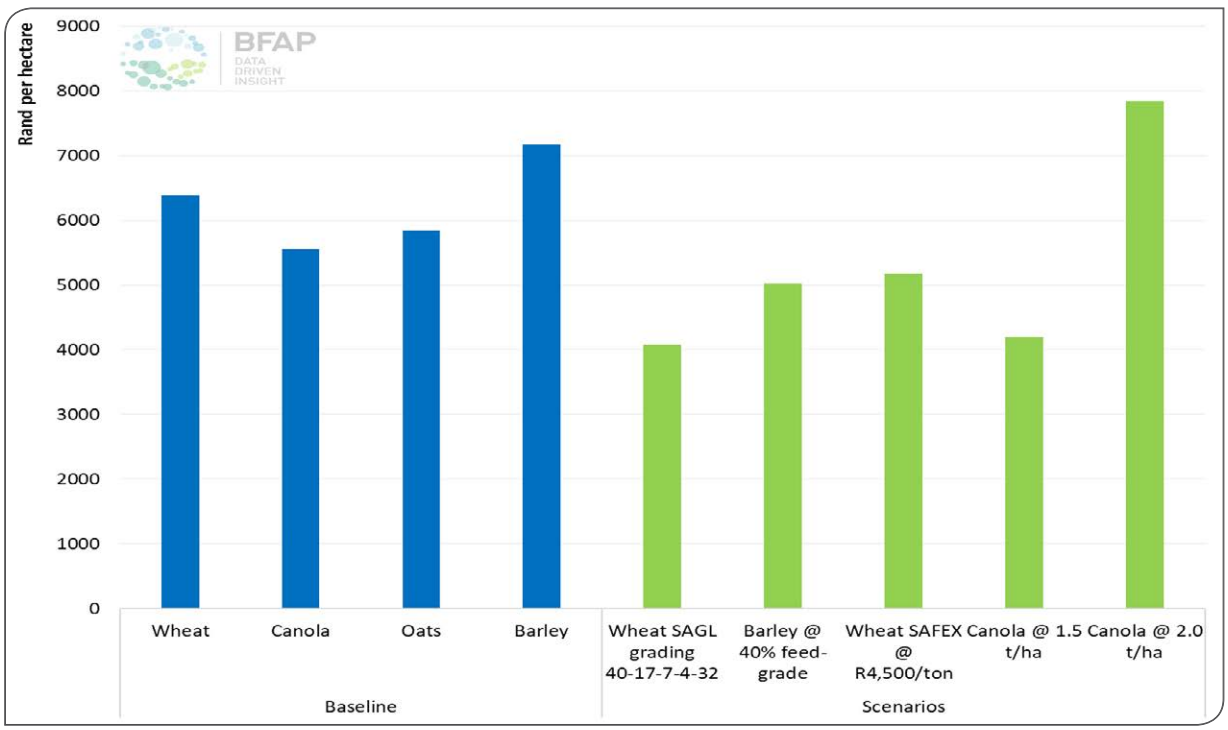



**Figure 45: Winter crop gross margin: Sensitivity analysis for 2021 production season**
**Source: Own calculations using data from Overberg Agri, SSK & Kaap Agri, 2021**

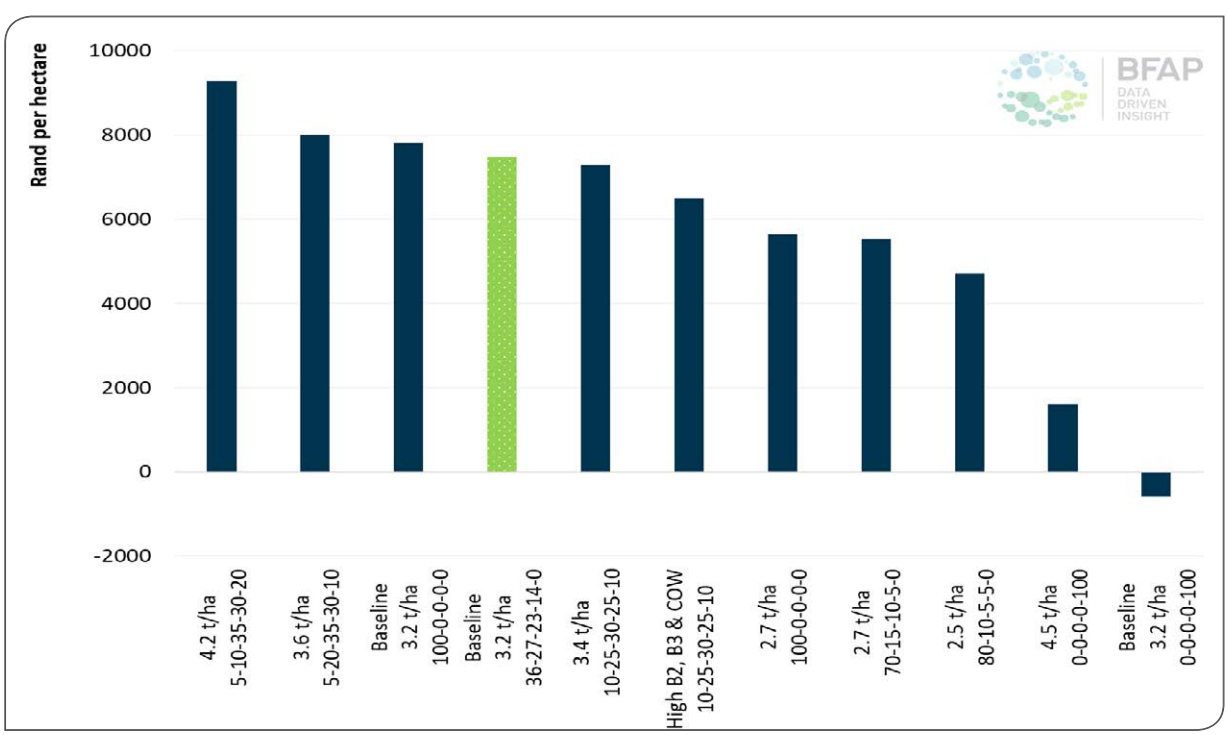



**Figure 46: Wheat protein grading: Scenario & impact on gross margins (2021)**
**Source: Own calculations using data from Overberg Agri, 2021**

# OUTLOOK FOR SUGARCANE AND SUGAR



**THE OECD-FAO OUTLOOK** (2021) is projecting that the real raw and white sugar prices will remain flat (at pre-COVID levels) over the next decade, while in nominal terms prices are projected to trend slightly higher rising by 2% per annum. Sugar consumption in high-income countries is expected to decline further, but considerable consumption growth in Asia and to a lesser extent in Africa will result in a projected tighter world market balance, despite increased production in especially Brazil, India and Thailand. The demand for and production of ethanol from sugarcane is expected to increase as countries endeavour to cut carbon emissions.

Global sugar consumption decreased during the COVID-19 pandemic but local consumption of sugar increased by 2.3% in 2020 as consumers reportedly used more sugar to bake or prepare confectionary products at home during the lockdown period. The introduction of the Health Promotion Levy in 2018 however brought a step change in the local sugar consumption market as is clear from the substantial 2019 local consumption drop (Figure 47). Over the next decade consumption is expected to increase at 0.8% per annum but from a much lower base, to reach 92% of the pre-sugar tax local consumption level by 2030.

Despite consumption gains, sugar production decreased sharply, by 9.4% year on year in 2020. This follows a rather muted reduction of 1.7% in sugarcane area but mainly reflects mill closures and operational constraints that resulted in 15% of growers' cane not being crushed in season (Canegrowers, 2020). The South African sugar industry has lost 16.5% of its cane area since 2005, and while the area under cane has been relatively stable at around 360 000 hectares since 2016, it is projected that under the current dispensation of duty free imports from Eswatini and due to the sharp rise in local labour costs, a further 46 000 hectares will be lost up to 2030 (Figure 48). In December 2020, BFAP estimated that a total of 4 900 permanent and 7 700 seasonal jobs will come under threat in the next ten years. While it can be argued that permanent jobs could, to some extent, be reallocated to alternative or new farming activities, seasonally employed, mainly cutters and stackers, will struggle to find alternative employment.

In line with a modest short term recovery in sugarcane area and with fewer operational constraints expected relative to 2020, sugar production is projected to increase by 6.8% in 2021. Over the outlook period, production is projected to remain flat despite further contractions in area due to increased yields. Yield gains are primarily driven by factors such as research, including cultivar development, better production practices, better plant protection products and the fact that more marginal cane areas will go out of production.

Since the introduction of the higher dollar-based reference price of US$680 on imported sugar in 2018,

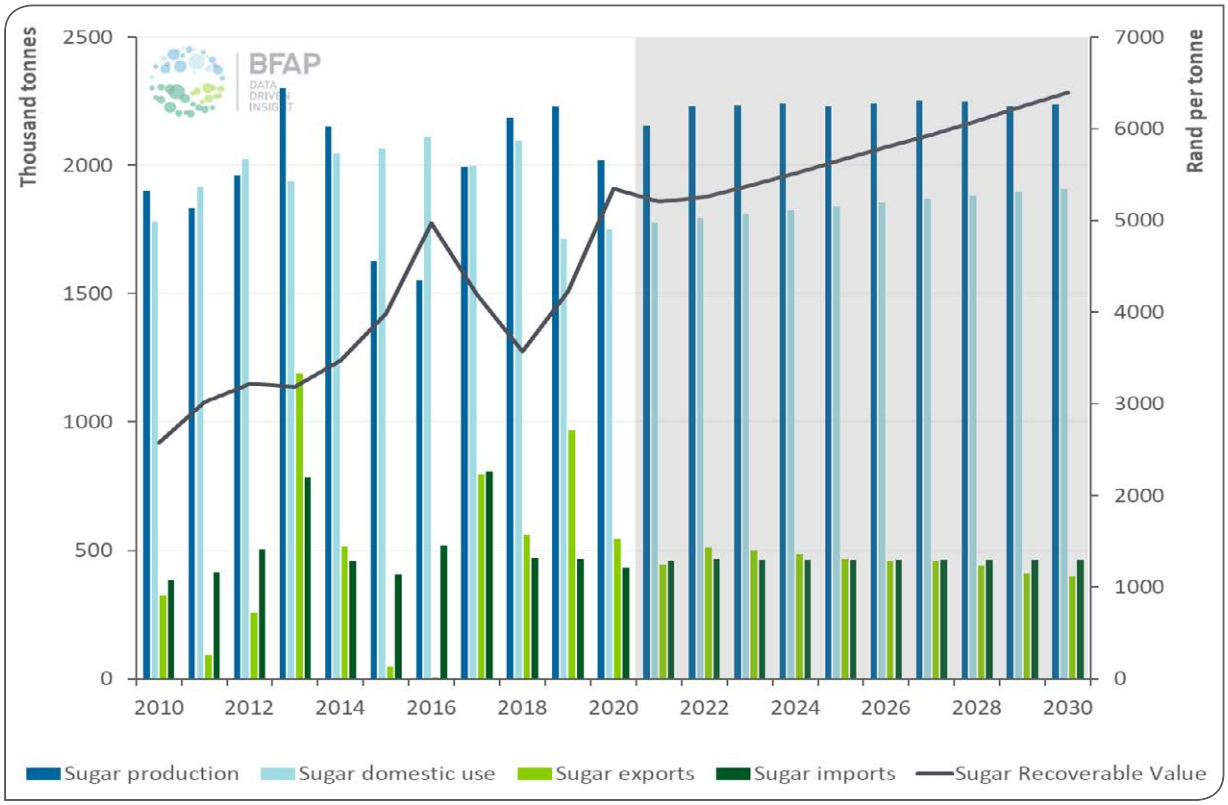



**Figure 47: Sugar production, consumption, trade and recoverable value**

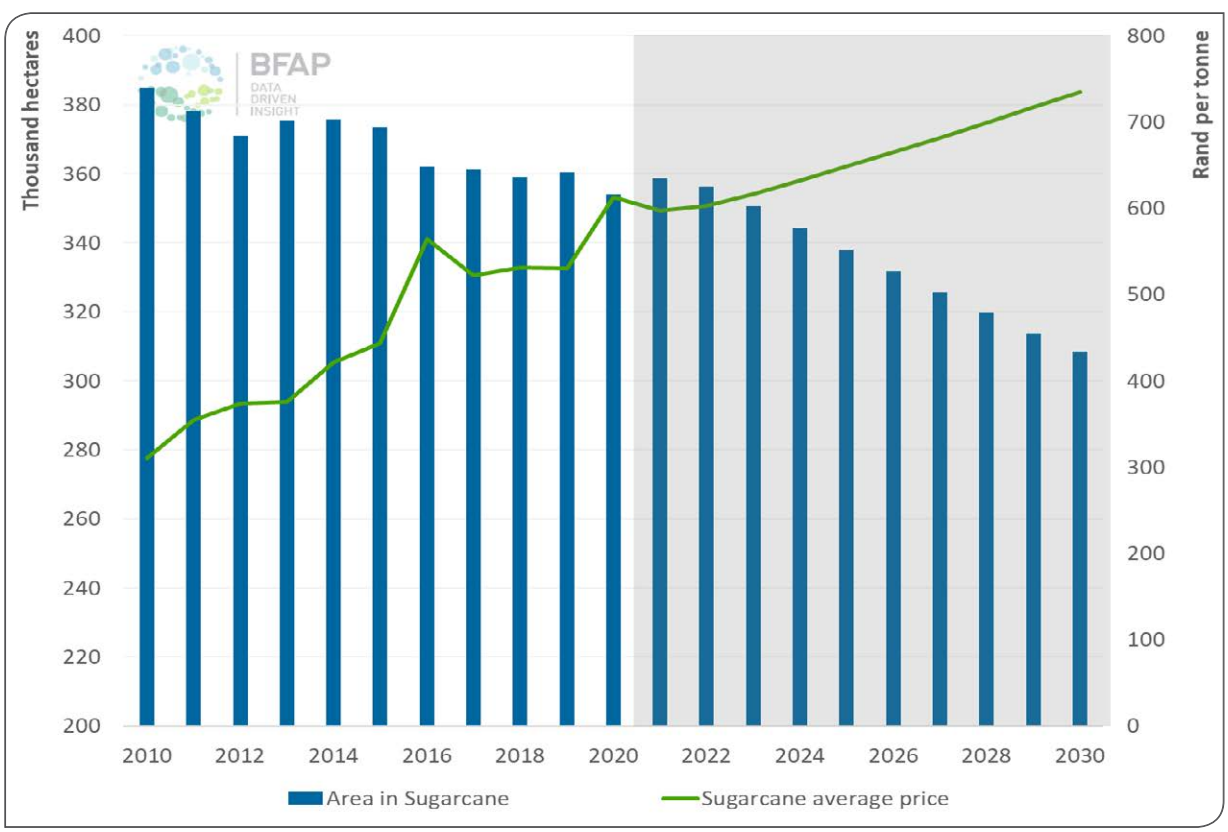



**Figure 48: Sugarcane area: 2010-2030**

imports of cheap, deep-sea sugar into the local market have eased. However, duty-free SACU imports from Eswatini continue to flow into the country. Imports declined by 7% for the 2020 season and are projected to increase by 6% in 2021, amidst a strengthening of the Rand exchange rate and generally easier trading conditions at lower levels of lockdown restrictions. Sugar imports from Eswatini displace SA sugar onto the world market, often at a price lower than the cost of production, reducing the realised price for the industry. The South African sugar industry was fortunate in that the weaker average Rand US dollar exchange rate countered the initial weak world sugar prices in 2020. In 2021, a strengthening of the Rand coincided with an increase in the world sugar price to pre-COVID levels, and the world price has continued on its upward trend. It is expected that the higher world price will serve as a motivation for a slight increase in area under cane in 2021, but that the success of the Sugarcane Value Chain Masterplan interventions will be instrumental in sustaining sugarcane area and sugarcane value chain jobs over the next decade. These interventions aim at restoring local sugar demand, ensuring producer price certainty, providing strategic trade protection from low-priced deep-sea imports, job retention and mitigation, small-scale grower support, transformation throughout the sugarcane value chain and industry restructuring to re-balance industry capacity, improve efficiency and restore profitability. The potential positive impact the Masterplan interventions could have for the sugar industry are not taken into consideration for the current baseline projection.

Figure 49 presents a sugarcane grower density map according to homogenous climatic and cane production system wards. This map, along with numerous others and production, employment and socio-economic indicator data sets form part of an integrated impact assessment tool BFAP has developed for the South African Sugar Association. With the tool, it is possible to do region specific scenario analyses of possible Masterplan interventions and market and policy changes, as discussions unfold.


**Figure 49: Sugarcane grower density per ward**

# OUTLOOK FOR ANIMAL PRODUCTS
## MEAT, EGGS AND WOOL



**Meat: Global market situation**

Global meat demand weakened in 2020 as the COVID-19 pandemic and the associated measures to contain its spread resulted in logistical challenges, reduced food service sector sales, and weaker household spending due to lower incomes. As a measure of meat prices globally, the FAO's meat price index declined by 4.5% year on year and this might have been sharper had it not been for strong import demand from China, where production is still recovering from ASF-induced reductions over the past two years. Across the various meat types, the sharpest price decline was evident in poultry, where increased output combined with weaker demand to induce a 9.8% decline year on year, compared to 5.8% for sheep meat, 3.6% for pork and 1.4% for beef.

As the global economic recovery continues, meat prices have started to rise and were trading 10% above May 2020 levels by May 2021. Import demand from Asia, particularly China, remains strong and global supplies have tightened as the market continues to adjust to the challenges faced in 2020, as well as sharp increases in feed prices. Over the course of the coming decade, the OECD-FAO (2021) projects a modest increase in nominal meat prices, but not beyond the peaks of 2011-2014. The projected gains in sheep meat prices are stronger than other meat types, reflecting constrained supply underpinned by rising opportunity costs of pasture land in New Zealand due to favourable dairy product prices.

Over the next 10 years, global meat production is expected to expand by 14%, reflecting continuous productivity gains, as well as herd expansion in the America's, China and Africa. While pork production is expected to increase in the short term as China and other East Asian countries recover from ASF-induced herd reductions, poultry will account for the bulk of long term production growth. This reflects strong demand for poultry products, due both to its affordability to low income consumers and its convenience and health attributes that appeal to higher income consumers.

**Domestic market situation: Meat**

In line with global market dynamics, South African meat prices also came under pressure in the first quarter of 2020, reflecting weaker demand and restrictions on food service operations. Over the second half of the year as restrictions aimed at curbing the spread of the pandemic eased, prices recovered. On average for the full year 2020, beef prices increased by 2.5%, supported by a 20% increase year on year in exports, mostly to China, where export volumes more than

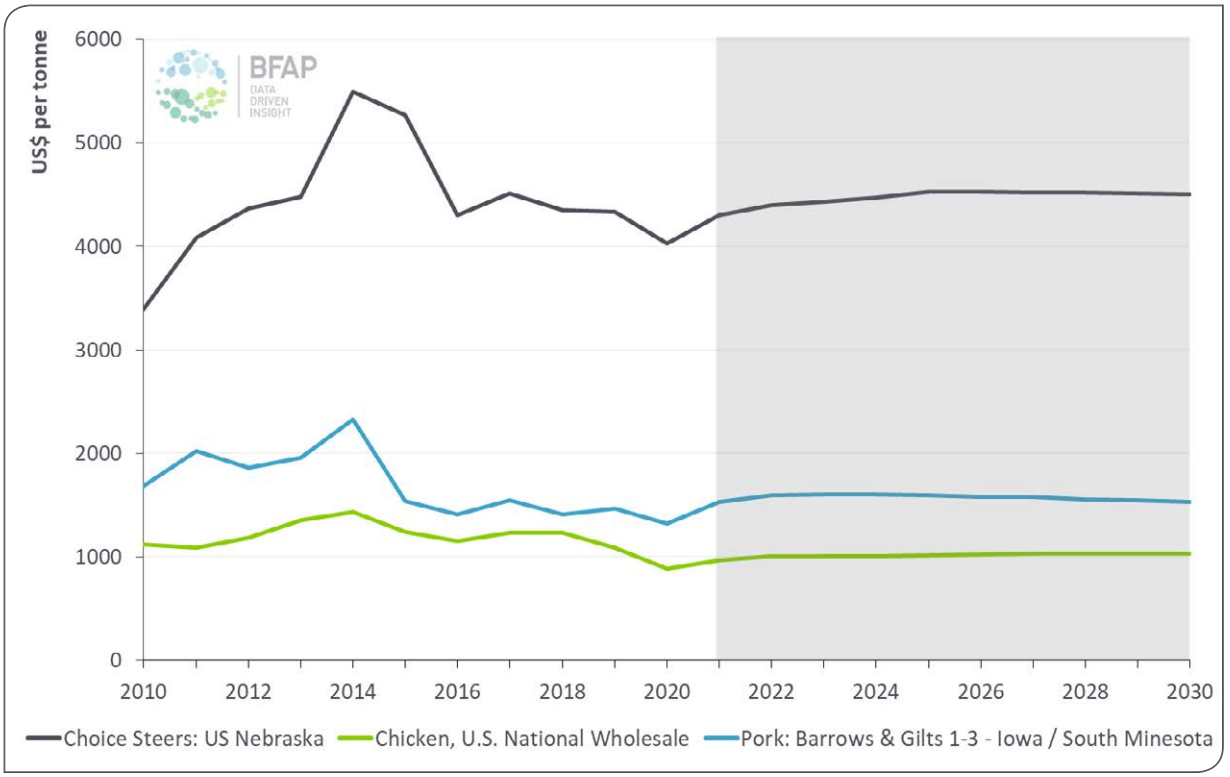



**Figure 50: World meat prices: 2010-2030**
**Source: FAPRI & BFAP updates, 2021**

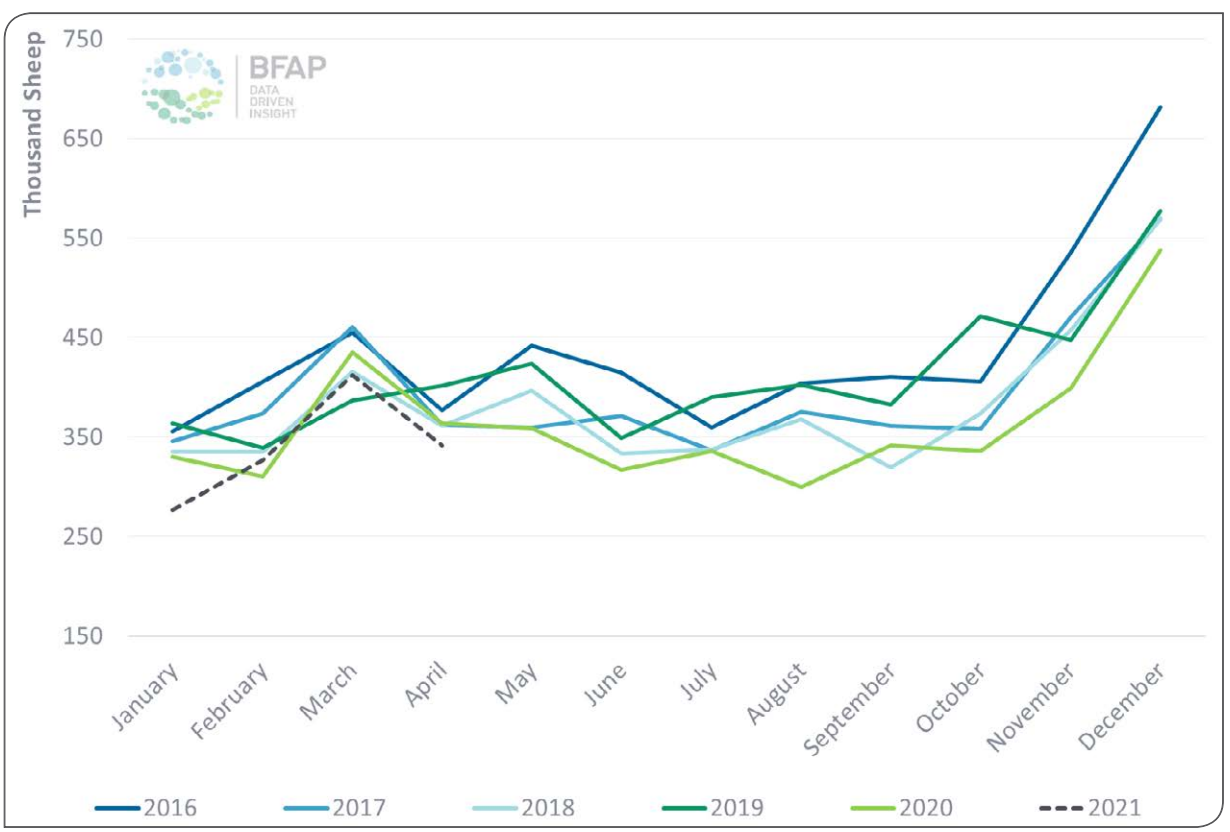



**Figure 51: Sheep slaughter volumes: 2016 - 2021**
**Source: South African Levy Administration, 2021**

doubled year on year, combined with constrained supply. Following good summer rainfall and record summer crop production, which supported cash flow and provided ample stubble for backgrounding, producers continue to rebuild herds, while the number of animals in feedlots has declined, initially as a result of weaker demand through 2020 and later due to high feed prices. Consequently, slaughter volumes declined year on year in 2020, as well as the first quarter of 2021. Sheep slaughters also declined by 3.5% year on year in 2020 (Figure 51), reflecting an almost 90% increase in live sheep exports, mainly to the Middle East, combined with lower imports and continued flock rebuilding efforts by domestic producers. Combined with the 13% weaker exchange rate, which more than offset the 5.8% decline in world prices, this resulted in a 15.7% increase in lamb prices in 2020, with further gains expected in 2021.

The increases in chicken and pork prices were more muted. Chicken prices increased by 2.2%, while pork prices remained largely unchanged compared to 2019 levels. As a net importer of chicken, prices are sensitive to international market movements. The initial depreciation in the exchange rate in Quarter 2 more than offset the decline of 9.8% in international poultry prices and once the Rand started to appreciate later in 2020, international prices started trending upwards. The feed intensive nature of both pork and poultry production implies that profitability will come under pressure in 2021 due to spiralling feed costs amidst bullish feed product markets globally.

Apart from the volatility in feed costs over the past 5 years, one of the biggest challenges facing livestock producers is animal disease outbreaks. The 2019 outbreak of Foot and Mouth Disease (FMD) inside of the recognised FMD free zone resulted in suspension of South Africa's FMD free status, which caused significant short term interruptions in exports. Exports resumed based on bilateral agreements, but these are more volatile and with the FMD outbreak still ongoing, substantial risks remain to producers. While the influence of FMD on beef trade was clear in 2019, animal disease risks stretch beyond FMD and well beyond beef production. Diseases such as Brucellosis and Lumpy Skin Disease are major contributors to low productivity amongst beef producers, irrespective of size of production. In the pork sector, the frequency and intensity of ASF outbreaks have been increasing and the 2019 outbreak resulted in significant losses. Similarly, the 2017 outbreak of Highly Pathogenic Avian Influenza (HPAI) resulted in widespread losses amongst poultry producers and sharp increases in egg prices.

The importance of the livestock subsector is reflected in its almost 50% contribution to the gross value of agricultural production. Unlocking and accelerating inclusive growth in the sector will require a well-coordinated strategy with interventions that speak to animal health, competitiveness, market access and inclusivity. Amongst these, the importance of a well-coordinated, efficient animal health and identification strategy stands out due to its influence on all other spheres. It is critical to enabling broader and more favourable market access, will improve competitiveness and support productivity gains that enable producers currently in the informal sector to substantially increase their contribution to total production. The AAMP currently being compiled presents an opportunity for a collaborative effort to achieve this. While the impact of improved animal health management will reach all livestock sectors, Box 5 provides a discussion on the opportunities for inclusive growth that can be unlocked in the beef sector.

### BOX 5: OPPORTUNITIES FOR INCLUSIVE GROWTH IN SOUTH AFRICA'S BEEF SECTOR

The South African beef industry is the second largest contributor to the Gross Value of Production (GPV) of agriculture in South Africa, contributing more than 12% (2018-2020). Over the past decade, the GPV of beef expanded by an annual average of 10%. Despite this, the red meat sector can be regarded as a 'sleeping giant'. Best estimates indicate that approximately 70% of marketed meat is produced in highly commercialised productive systems. Little official information is available on the informal sector, which is operating at a much lower productivity level but has massive economic and socio-economic value that is currently unaccounted for and under-utilised. There are approximately 14 million cattle in SA and an estimated 40% are in the hands of communal farmers; but the productivity of this herd is low because there are too many male animals in the herd (55%) and the calving percentage is low – best estimates are below 35%. If the female share in this herd can be increased to 60% and the calving percentage improve to 60%, the number of marketable weaners

## BOX 5: OPPORTUNITIES FOR INCLUSIVE GROWTH IN SOUTH AFRICA'S BEEF SECTOR (CONTINUED)

(70% of production) will increase by 129% or 793 800 animals (33% of SA's total cattle slaughters for 2020) valued conservatively at nearly R4 billion.

Within the context of the AAMP, a comprehensive end to end value chain analysis, including current and a potential future state, was conducted by BFAP, the National Agricultural Marketing Council (NAMC) and the Centre for Competition, Regulation and Economic Development (CCRED). Initial results suggest that over the next decade the South Africa beef sector has the potential to add an additional R 8.3 billion its annual GPV in real terms. Most of this growth can be unlocked by expanded and competitive export market access and growing the export share of production from 5% to 24%. This adds R 7.4 billion in additional revenue annually, with a substantial share of additional weaner calves supplied by emerging producers currently operating in the informal sector. Exports of high value premium cuts supports value chain profitability, whilst still providing affordable products to local consumers and processors from the rest of the carcass. In order to reach this potential future state, key value chain interventions are proposed at various nodes in the value chain, such as national herd health and vaccination prioritisation as well as focused support in emerging / subsistence production systems, where the multiplier effect is the highest. Increasing productivity by 8% in this producer category could translate to a 44% growth in production

### Domestic market Outlook: Meat

The fundamental factors that underpin meat consumption are income levels and the resultant changes in spending power, population growth and urbanisation. The sensitivity of meat products to collapsed GDP growth and consequently also spending power was evident in 2020, when per capita consumption of beef, pork and lamb declined by 5.8, 8.4 and 16.5 percent respectively. Consumption of poultry products, which is the most affordable amongst the four major meat types, increased by less than 1% year on year. While consumption levels in 2020 were also influenced by reduced food service operations and are therefore not attributable to spending power alone, the stagnation in economic activity in recent years prior to any influence by the pandemic, already resulted in weaker consumption growth during the past decade relative to the early 2000's. The prolonged nature of the economic recovery, combined with further increases in unemployment as a result of the pandemic, will likely result in markedly slower meat consumption growth in the coming decade.

## BOX 6: A CONSUMER PERSPECTIVE ON MEAT AND SUSTAINABILITY IN SOUTH AFRICA

At a global level, consumers have rising awareness about how their food is being produced and the impact of their food choices on current and future generations. This involves various social, ethical and environmental dimensions. Within the spectrum of the various food groups consumed, meat has been subjected to high levels of criticism, particularly linked to the heavy environmental footprint associated with the production of animal-source foods and to high levels of meat intake globally, driven by population growth and rising disposable income levels (both globally and in South Africa).
Internationally, particularly in developed countries, eating patterns with a stronger plant-based focus are growing in popularity and are typically associated with behavioural patterns such as:

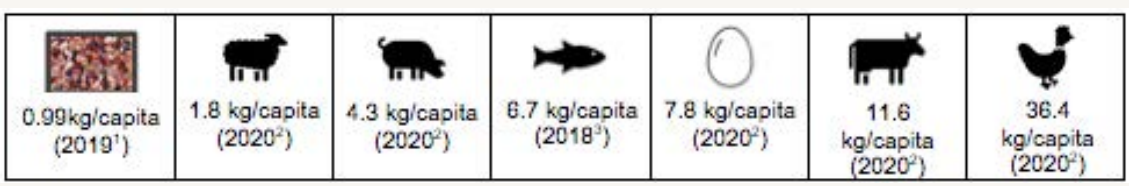
- Partially reduced meat intake in favour of plant protein sources (e.g. supporting initiatives such as 'meatless Mondays');
- Increased number of flexitarians, i.e. eating a primarily vegetarian diet with the occasional consumption of meat or fish;
- Increased number of vegetarians, i.e. not eating meat or fish;
- Increased number of vegans, i.e. not eating or using any foods or products derived from animals.

## BOX 6: A CONSUMER PERSPECTIVE ON MEAT AND SUSTAINABILITY IN SOUTH AFRICA (CONTINUED)

Despite rising global pressure to reduce the intake of animal-source foods, these foods can make a critical contribution to dietary diversity and nutrient intake as they provide a range of micro- and macronutrients. Scientific evidence has shown that food such as red meat, chicken, fish and eggs contain high quantities of and high-quality protein (eg. essential amino acids in the optimal ratios), as well as micro-nutrients (such as vitamins A, B1, B2, B6, B12, niacin, iron and zinc) that are critically lacking in the diet of most South African consumers (Schönfeldt et al., 2013). Consequently, the South African Food-based Dietary Guidelines recommend the consumption of moderate quantities of these foods as part of a healthy diet, specifically recommending the consumption of:

- Two to three fish servings per week (particularly oily fish);
- Approximately four eggs per week;
- A 90gram cooked lean serving of meat daily, eaten with as little as possible fat and salt.

In the South African context, the estimated typical annual per capita intake of plant-based protein foods such as dried beans are still significantly lower than animal-protein foods:




*(Sources: Abstract of Agricultural Statistics, 2020; BFAP (carcass basis); FAO / OECD Outlook)*

Figure 52 presents a comparison of the cost per gram of protein for selected animal-based and plant-based protein foods. The most affordable options are soybeans, lentils, split peas and chickpeas with a cost of R0.14

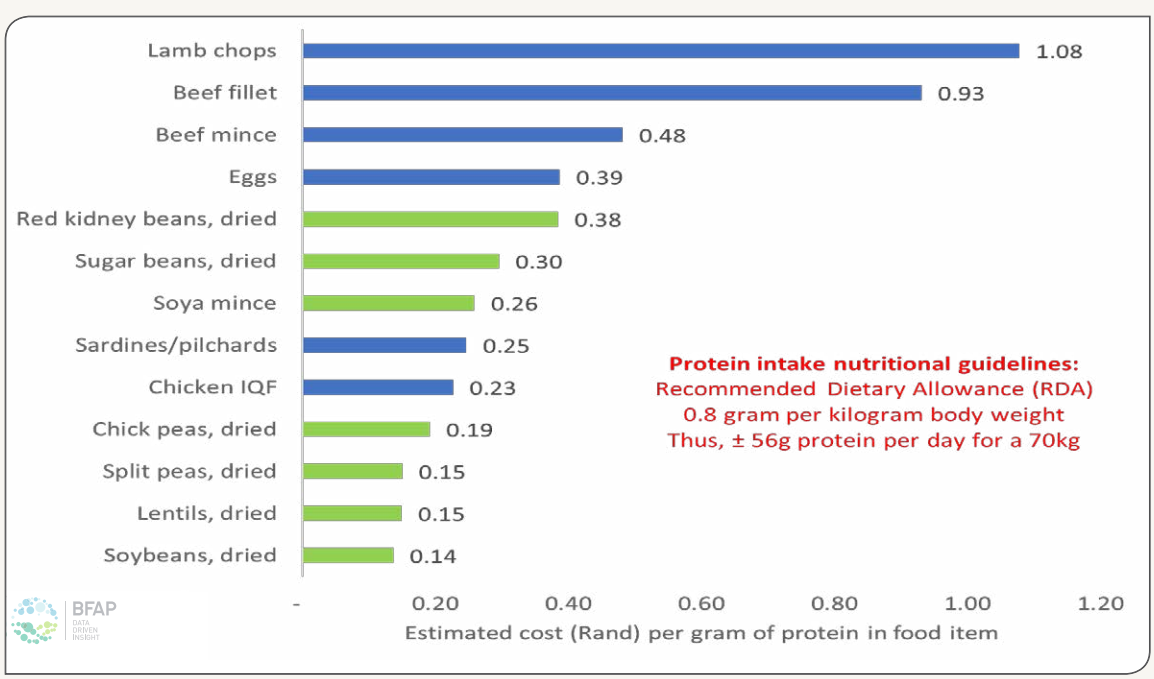



**Figure 52: Comparing the protein cost of a selection of animal-based and plant-based protein foods**
**Sources: BFAP calculations based on online retail scraper data for May 2021 and the Food Composition Tables For South African 2017**

## BOX 6: A CONSUMER PERSPECTIVE ON MEAT AND SUSTAINABILITY IN SOUTH AFRICA (CONTINUED)

to R0.19 per gram of protein. Interestingly, Individually Quick Frozen (IQF) chicken and canned pilchards are also in the 'more affordable category' at R0.23 and R0.25 per gram of protein respectively. The most luxurious animal-source foods such as lamb chops and beef fillet steak are approximately six times more expensive per gram of protein compared to the most affordable options. If obtained from only one food option, the cost of obtaining 56 grams of protein (i.e. the recommended daily intake for a 70kg adult) varies from ±R8/day for dried soybeans to ±R60/day for lamb chops.

Ideally, industry actions and policy options are needed that could encourage food consumption that is more sustainable and ethical, but still improves the health of individuals by taking into consideration the nutritional benefits and affordability of both animal-based and plant-based food options. Meat industries in South Africa will have to develop and implement pro-active strategies to be winners in the complex sustainability game at a local and international level.

Poultry remains the cheapest source of animal protein, but for many lower income consumers it has few alternatives and when disposable income declines, it becomes unaffordable, leading to a reduction in meat consumption and a switch back to a more starch-rich diet. Conversely, its relative affordability within the total meat basket implies that mid-income consumers who had been able to afford a more diverse meat basket may end up consuming more poultry. Amongst higher income consumers, its convenience and perceived health benefits are appealing. All of these factors combine to support demand levels, which was evident in 2020, when it was the only major meat type where consumption did not decline year on year. By 2030, consumption is expected to increase by 20% relative to the 2018-2020 base period (Figure 53). This is significantly slower than the 29% growth over the past decade and pales in comparison to the 71% growth achieved from 2000 to 2010.

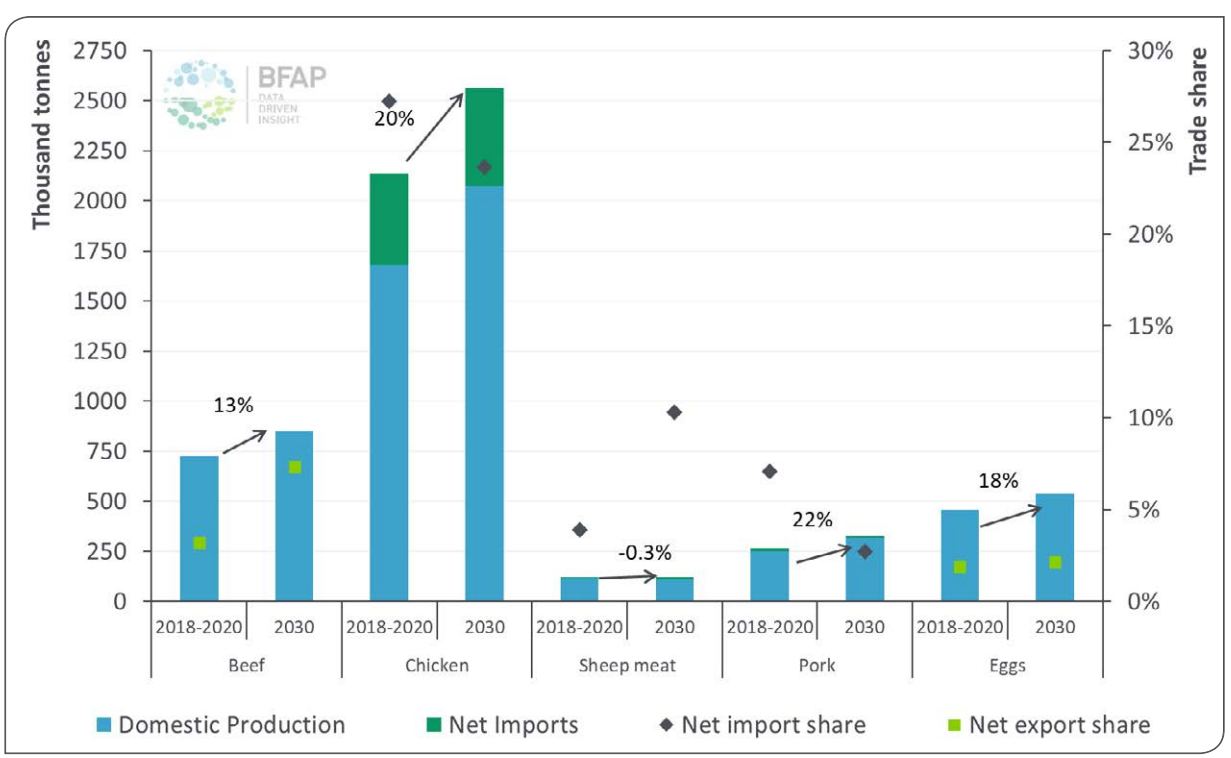



**Figure 53: Meat consumption in South Africa: 2030 vs 2018-2020**

Rising imports of competitively priced products have been a longstanding challenge for South Africa's poultry producers. Import volumes peaked at more than 550 000 tonnes in 2018, reaching 26% of domestic consumption, but have declined since. Various actions such as the safeguard duty imposed on bone-in portions originating from the European Union, ant-dumping duties and an increase in the general duty all contributed to this decline. In 2020 the trend accelerated, reflecting expanded production in South Africa following commitments made under the poultry masterplan and improvements in profitability from 2017 to 2019, as well as the combination of logistical challenges emanating from the pandemic and the weaker exchange rate, which increased the cost of imported products in 2020.

The actions and commitments in the poultry masterplan are expected to yield further production growth in the short term, but profitability remains key to the sustainability of these investments and the prospects for further growth in the medium term. The chicken to maize price ratio, which serves as a basic indicator for profitability in the sector, peaked in 2017 on the back of a record summer crop, but has been declining since. It is expected to bottom out in 2021 (Figure 54) at levels comparable to 2014 due to persistently high feed prices. These are expected to normalise over the next 2 years, as indicated in the field crop outlook. Over the course of the outlook the chicken to maize price ratio stabilises at levels similar to 2019, which remains below the 2017 peak, but are sufficient to support production growth of 1.7% per annum over the coming decade. Combined with further commitments in the poultry masterplan aimed at containing the growth in imports, the share of imports in domestic consumption is projected to reach 21% by 2030, from an average of 24% in the 2018-2020 base period (Figure 53). While substantially slower than in the past and not reaching the peaks of 2018, imports are still projected to increase over the coming decade. This reflects a normalisation of the logistical challenges that influenced 2020, as well as the continued phasing out of the safeguard duty on bone-in portion imports of EU origin.

Although much smaller than poultry, the pork sector will face similar dynamics over the outlook, owing to its comparably feed intensive production system. Pork's affordability within the broader red meat sector is appealing to consumers and was a major factor contributing to its dynamic consumption growth of 43% over the past decade. Production growth was even faster at 50%, allowing the share of imports in

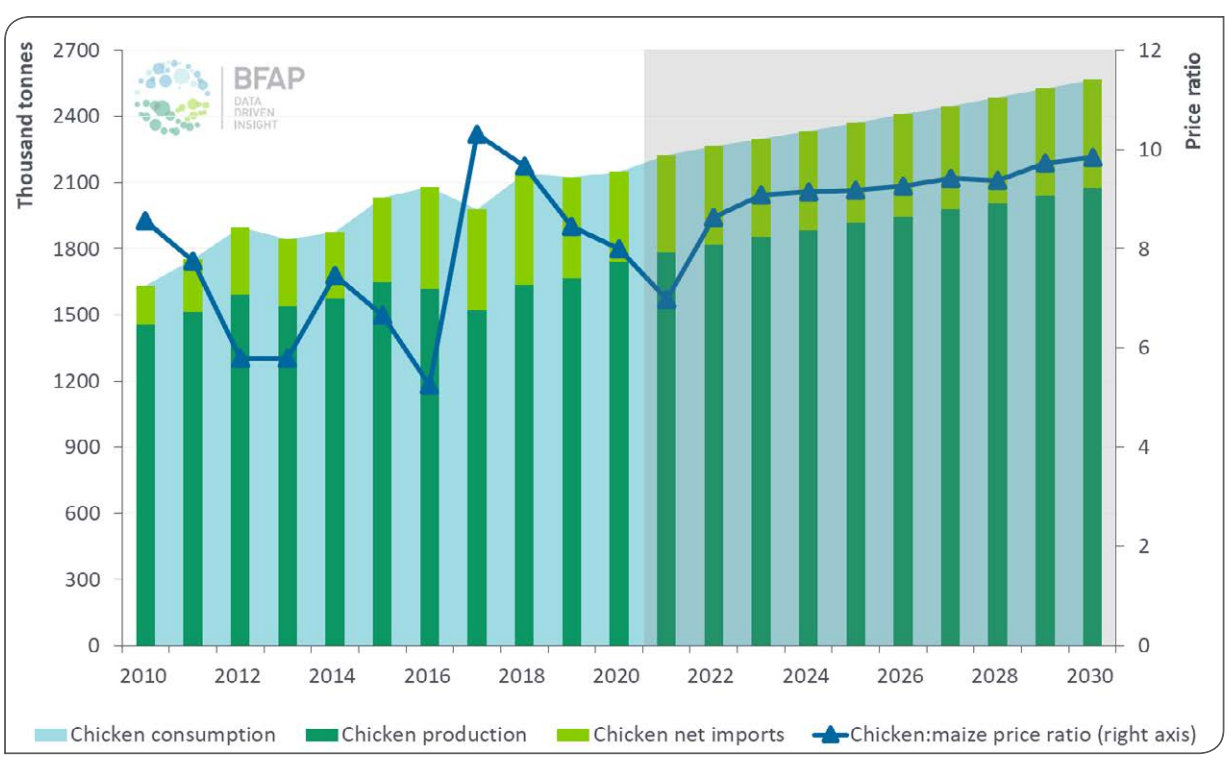



**Figure 54: Chicken production, consumption, imports and profitability: 2010-2030**

total consumption to decline from 14% in 2010, to 7% in 2020. A significant share of pork consumption is attributed to the food service sector, which was a major contributing factor to reduced imports of ribs in particular, as well as lower consumption volumes in 2020. The sector is globally competitive and despite significant volatility in feed grain prices, disease related challenges such as ASF and the outbreak of listeriosis in a processing facility in 2017 the sector has already exceeded the growth that was targeted by 2030 under the NDP.

As a small industry, pork prices are sensitive to changes in supply and demand, as well as those of other meat products. The relative substitutability between meat products implies that pork prices will also find support from elevated beef prices in the short term, but the projected increase of 14.5% is not sufficient to fully offset high feed costs in 2021 and profitability will come under pressure. This is reflected in the pork to maize price ratio in Figure 55, as the profitability indicator bottoms out at levels comparable to 2015, but remains above the levels associated with the 2016 drought. In the medium term, the ratio reaches an equilibrium at levels comparable to 2014, well below the peaks of 2017, but sufficient to support production growth of 2.5% per annum over the 10 year projection period. This implies that pork production will exceed 315 000 tonnes by 2030 and further reduce the share of imports in total consumption to 6%.

Traditionally, pork in South Africa has been consumed by more affluent consumers, with a substantial share consumed in more processed form. Its relative affordability compared to beef and lamb has however started to broaden its appeal and by 2030, consumption is expected to expand by 22%, the fastest among the major meat types. This growth is achieved from a small base, and the absolute volume of such growth is less than that of larger sectors such as chicken and beef, but the faster rate of growth will enable the sector to grow its share in the total meat consumption basket in South Africa to 9%.

Figure 55 presents official production figures, as recorded by the levy administrator. However, this fails to account for a substantial production and consumption volume attributable to the informal sector, which is not typically marketed through an abattoir and has been estimated to be as high as 10% of

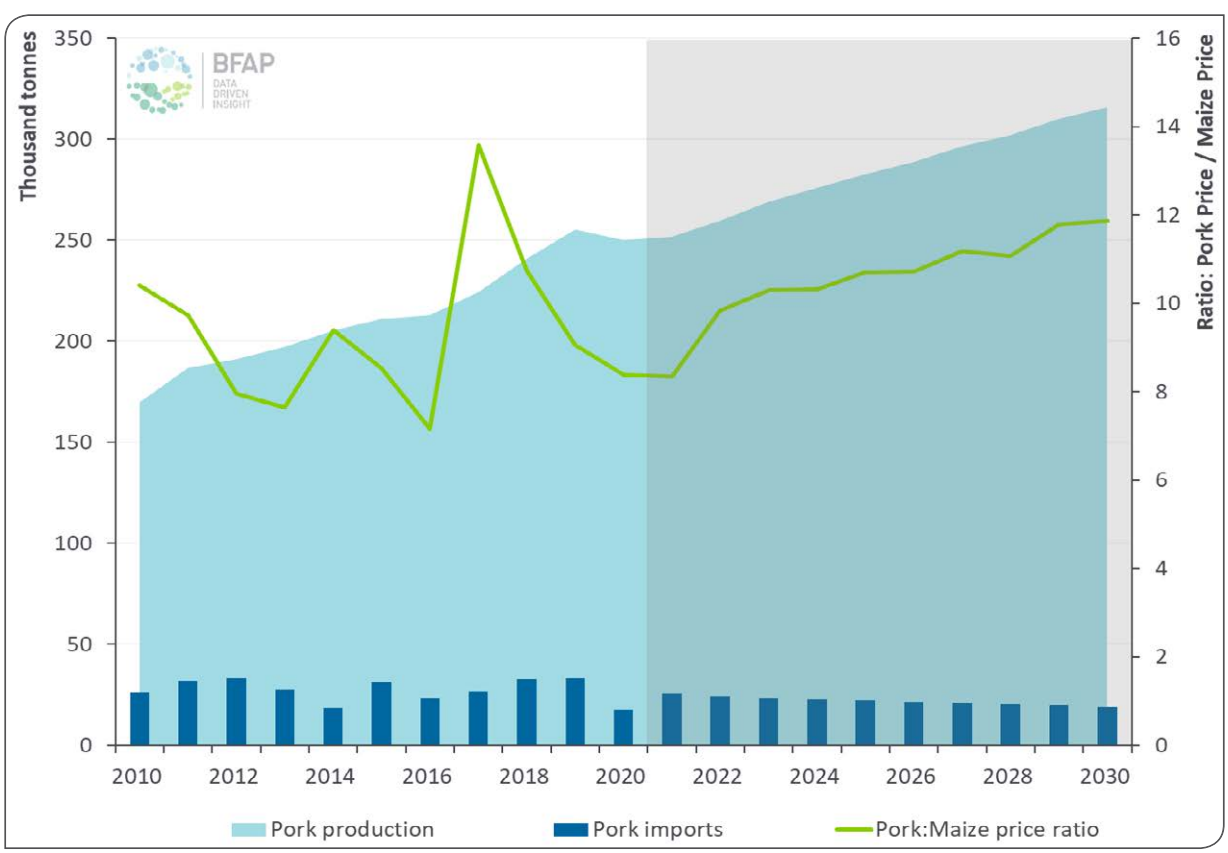



**Figure 55: SA pork production, imports and profitability: 2010-2030**

formal production volumes (BFAP, 2020). This suggests that the pork industry makes a broader contribution to food security and dietary diversity. However, within this segment of production, where biosecurity measures are not as advanced as on large commercial units, the risk of animal disease, particularly ASF, is ever present. The virus does not pose any risk to pork consumers, but with culling the most effective means of controlling the spread of the virus, the effect of an extended outbreak on production levels can be significant. While ASF is endemic to South Africa, stringent biosecurity measures help producers curb the threat. The stringent biosecurity measures applied by large commercial units, combined with a compartmentalisation strategy, mitigates the risk for these producers, but within the informal sector the first step to managing the risk more efficiently would be the implementation of an animal identification system that will also enable traceability throughout the value chain.

Another industry with a notable contribution from the informal sector is beef, where estimates indicate that as much as 40% of the national herd is in the hands of smaller, communal farmers, with substantial opportunity for productivity gains (Box 5), that will enable them to deliver into the formal value chain, where products can be finished in feedlots.

Beef is popular amongst South African consumers. Despite rapid growth in exports from 2012 to 2015, volumes have stabilised since at approximately 5% of production. While the volume share is small, exports typically comprise higher value products exported into premium markets. This provides price support to producers and enables them to deliver the remainder of the carcass into the domestic and regional market, where beef products comprise a range of more affordable and higher value products at retail level. Consumers are price sensitive however, as illustrated by the decline in domestic consumption levels post 2016, when domestic supply constraints following the drought resulted in sharp price gains. Over the next three years the effects of current herd rebuilding efforts are expected to reflect in production volumes, alleviating current supply constraints and mitigating further price gains to below general inflation levels. Combined with the recovery in consumer spending power, this will enable consumption growth of 13% over the 10 year period to 2030.

As producers continue to rebuild herds and constrain current supply, beef prices have increased sharply and on average for 2021 are expected to trade 6% higher than in 2020. This is however insufficient to fully offset the increases in feed grain prices, resulting in a further weakening of the beef to maize price ratio, which offers a basic indicator of profitability. From 2022 onwards, as feed prices normalise, this ratio improves to levels comparable to 2011, well below the peaks of 2017, but sufficient to induce production growth of 1.6% per annum over the coming decade (Figure 53).

The industry has moved successfully from a net importing to a net exporting position over the past decade, broadening its market beyond the limited domestic growth. Its competitiveness in the export market will benefit further from the persistently weak exchange rate, but the constant risk of disease outbreak and the implications that this can have for market access reduces the incentive to invest in large scale export driven expansion (Figure 56). While the share of exports in domestic production is projected to grow to 7% by 2030, this growth can be accelerated significantly if the constant risk related to animal disease is better mitigated.

Critical to better management of animal diseases is implementation of the Veterinary Strategy, as well as full implementation of an identification and traceability system. Such a system exists in the form of LITS-SA and if it can be successfully introduced as (again) proposed in the AAMP, export growth can be accelerated substantially, whilst at the same time enabling developing producers to supply additional weaner calves.

To date, the bulk of export growth has been attributed to high value cuts destined for the Middle East and Asia (Figure 57). While the strategy of exporting high value cuts optimises the value of the carcass, enabling competitively priced domestic sales, it also limits the share of total production that can realistically be exported. Apart from the fact that only A2 and A3 carcasses are typically destined for exports (+-80% of total slaughters), discussions with industry stakeholders suggest that prime cuts typically included under tariff lines associated with fresh and frozen bovine meat account for roughly 15 to 25 percent of a beef carcass. Even a major exporter such as Brazil only exports 24% of total production and the USA only 11%. For South Africa to reach in excess of 20%, exports would likely need to diversify, with high

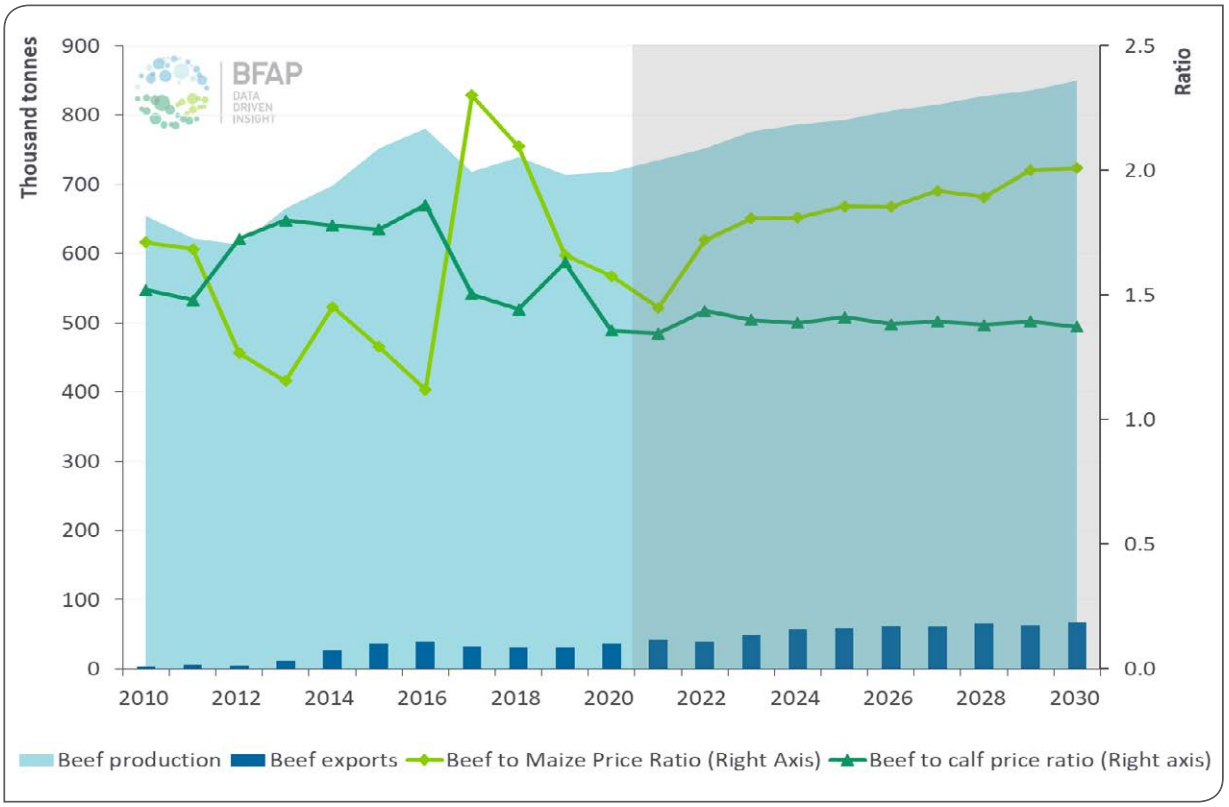



**Figure 56: SA beef production, consumption, trade and prices: 2010-2030**

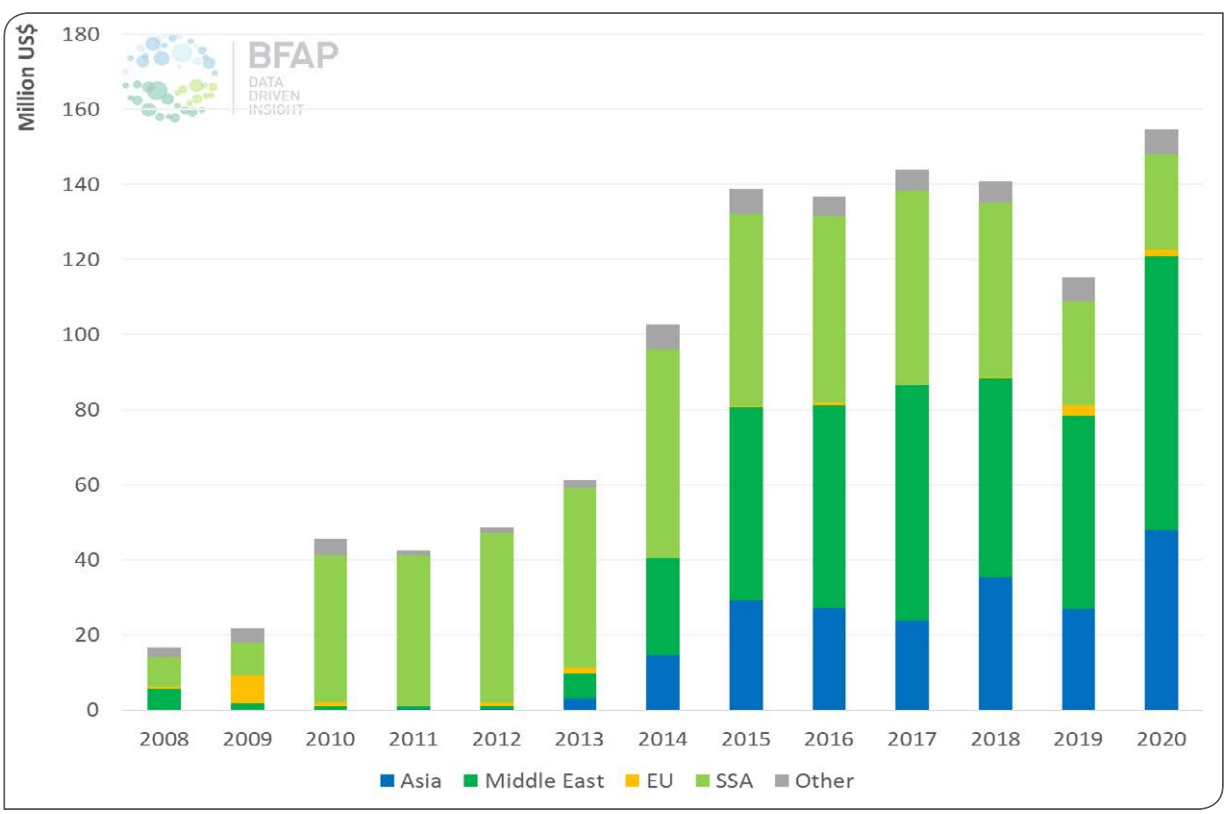



**Figure 57: South African beef exports by region: 2008 - 2020**

**Source: ITC Trademap, 2021**

value cuts still destined for the Middle East and Asia, and remaining parts of the carcass sold both in South Africa and exported into the rest of Africa, where the demand structure is similar to South Africa's domestic market.

Implementation of a combination of actions that speak to animal health, competitiveness, market access and inclusivity can enable a drastic acceleration of beef production growth in South Africa. Estimations indicate that an additional R8.2 billion can be added to the gross value of production above the baseline by 2030. The scenario also incorporates expanded market access for exports, enabled by the traceability system, and improved productivity for developing producers to supply at least 250 000 additional weaners by 2030, relative to the baseline, as well as a combination of actions to expand feed grain production. Under this scenario, South Africa would export 24% of beef production by 2030.

Lamb prices increased by 15.7% in 2020, despite the lower world price and weaker local consumer purchasing power. The increase was underpinned by supply constraints, emanating from a combination of the 90% increase in live sheep exports - to reach an estimated total of 152 000 animals, a 47% reduction in live sheep imports, from mainly Namibia, and national sheep herd rebuilding following an extended drought period in a number of sheep production regions. The first quarter of 2021 has also seen higher lamb and mutton prices, despite a stronger Rand, and while higher prices would be expected to support production expansion, the continued challenges associated with livestock theft and predation in especially extensive production systems remain a limiting factor, resulting in a consolidation of production volumes in the coming decade (Figure 58). The size and sustainability of the live sheep export market remains uncertain, and though price driven expansion through more intensive production systems is possible, it would require significant capital investment. In future, increased imports from Namibia, who is also in a herd rebuilding phase at present, should keep local prices in check over the medium term, reducing further incentives for such investments. Over the baseline period, domestic demand growth is weak (Figure 58), due to the prolonged nature of the economic recovery and the high price of lamb relative to other meat types. As such, to achieve further growth in the industry, focus

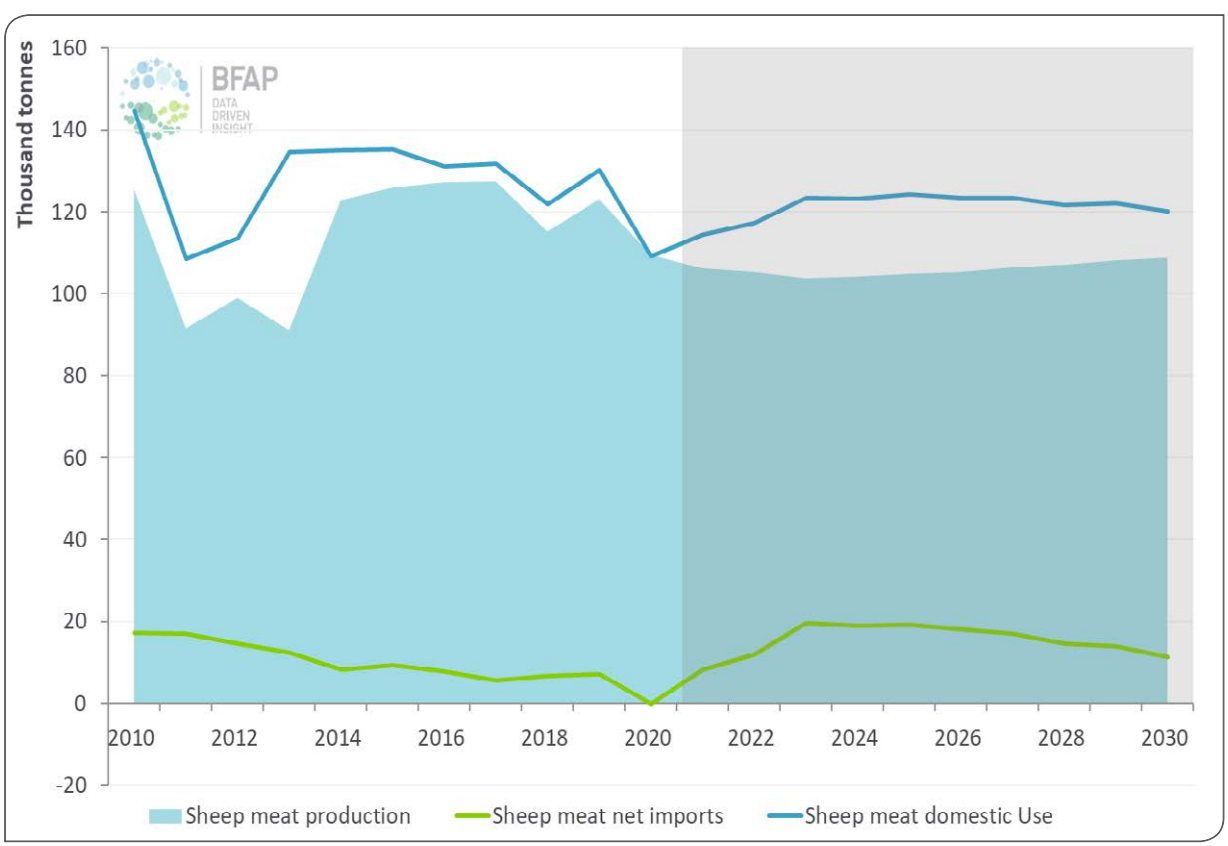



**Figure 58: Sheep meat production, consumption and meat imports: 2010-2030**

will have to move to the export market. As is the case for beef, exports of high value premium lamb and mutton cuts could support value chain profitability, whilst enabling more affordable products to local consumers from the rest of the carcass.

**Domestic Market Outlook: Wool**

The international wool price reached record highs in 2018, driven by strong demand for natural fibre in the apparel industry, but decreased by about 25% during 2019 and early 2020, partly due to the China-US trade war and despite droughts in Australia which constrained supply. Due to the economic hardship, trade logistical issues and uncertainty brought by COVID-19, the international wool price dropped by a further 45% from March to September 2020, but has since seen a remarkable rebound, increasing by more than 60% by June 2021. Though the pandemic impacted weaker Rand initially provided some support to the considerably lower international wool price for local wool producers, the stronger currency in early 2021 diluted the benefit of the recovering international price. However, there seems to be an growing international trend of moving away from 'fast fashion' towards more sustainably produced, 'natural', higher value apparel and at lower (pre-COVID) level wool prices, apparel companies could find it affordable to include more wool products in their offerings.

The wool industry has, through public-private partnerships, been successful in enabling poor farmers in communal areas to produce a high value commodity for the export market. It is estimated that communal farmers own about 26% of the 15 million strong national wool sheep herd and between 2000 and 2019 wool production by communal farmers has increased by more than 995%, reaching a high of 6,24 million kilograms in 2017. Industry, in collaboration with Government, has been able to improve communal farmer wool productivity through extension and focussed training, infrastructure support (dipping tanks, shearing sheds etc) and genetic improvements (ram swop programme) and it is estimated that with additional interventions and expansion of current programmes (as was proposed by industry in the AAMP) wool production by communal and small-scale farmers can increase by 3.56 million kilograms above baseline estimations to reach 9.48 million kilograms in 2030, with a total estimated value of R1.65 billion per annum.

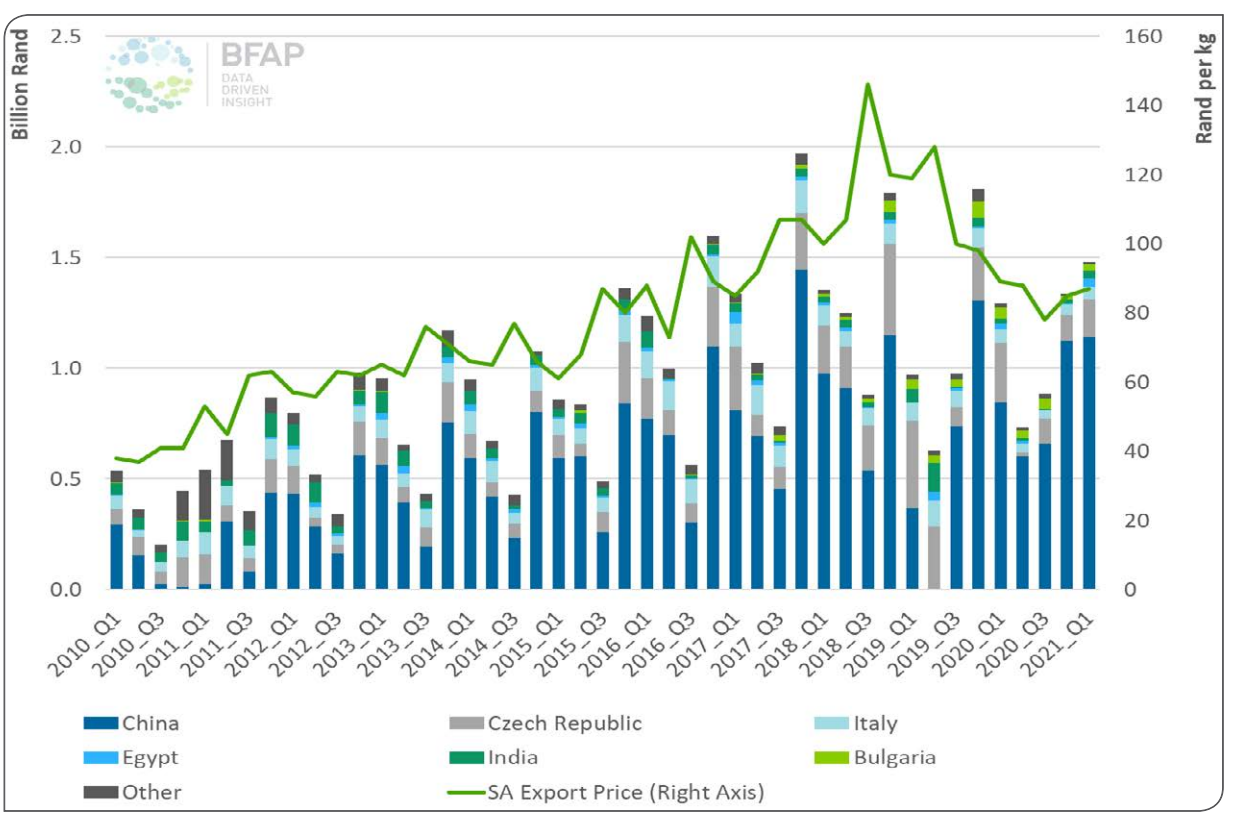



**Figure 59: Value of South African wool exports and trade weighted average export price**
**Source: ITC Trademap, 2021**

**Domestic Market Outlook: Eggs**

Eggs provide an affordable source of animal protein to South African consumers, but the fine balance between supply and demand, combined with limited international trade due to the characteristics of the product, make it a volatile market. This volatility was evident in 2017, when the outbreak of HPAI reduced the national layer flock by an estimated 20%. The resultant supply constraints induced a 17% increase in prices year on year, followed by a further 11% in 2018. Production volumes have however rebounded strongly since then and prices declined by 16% in 2019. In 2020, the COVID-19 pandemic introduced another exogenous shock to the sector. On the one hand, consumer spending power came under pressure, but on the other, consumption patterns changed due to lockdown measures, which resulted in more home cooking and baking, supporting demand for products such as eggs.

In 2021, the egg sector faced some early headwinds and increased risk. Firstly, as a result of the renewed outbreak of HPAI (which is highly contagious and potential further spreading remains a major concern). An outbreak similar to 2017 could have a severely constraining impact on supply at a time when demand is still strong. At the same time, high feed prices have brought profitability under pressure, pushing the egg to maize price ratio to a level comparable to 2015. This ratio is projected to improve in the short term, as feed prices moderate from 2022 onwards, whilst the steady economic recovery will support demand for eggs and consequently also prices. Over the outlook this profitability ratio reaches an equilibrium at levels comparable to 2011, well below the peaks of 2017 and 2018, but also well above 2013-2016 levels, thus supporting an average annual expansion in production of 1.2%. The ever present and elevated risk from HPAI is a key factor supporting a higher equilibrium price and consequently also profitability ratio over the baseline period relative to the recent past.

Over the course of the coming decade, egg consumption is projected to expand by 18% (Figure 53), supported by its relative affordability compared to alternative animal proteins, as well as the persistence of some of the consumer trends established through the pandemic and associated lockdown restrictions. The industry is set to remain a small net exporter, mainly into the Southern African region.

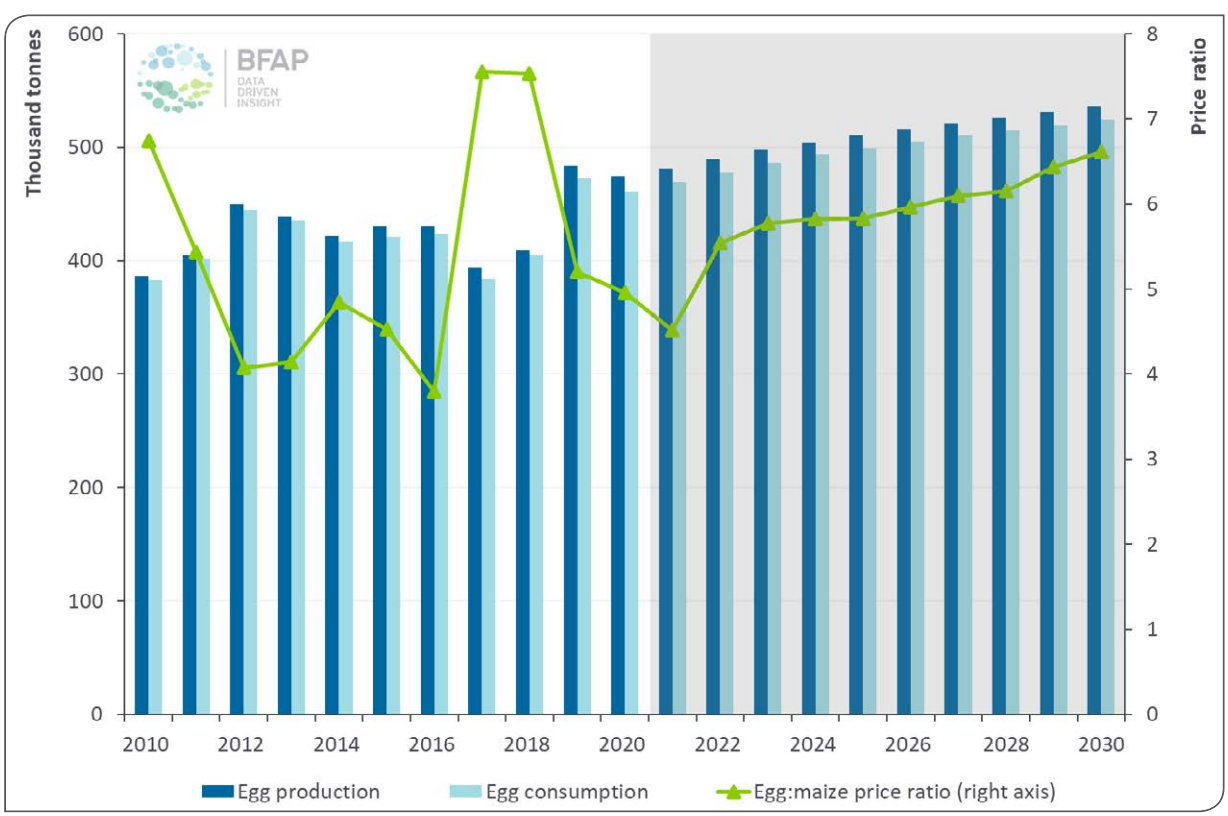



**Figure 60: SA egg production, consumption and profitability: 2010-2030**

## Concluding remarks

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 emergence of COVID-19 and the drastic restrictive measures imposed to curb the spread of the virus, serves to illustrate how sensitive the sector is to sudden changes in consumer spending power. Similarly, the impact of exchange rate instability and extreme volatility in weather conditions on profitability, and the resultant investment decisions, was clear over the past 5 years. However, in livestock markets, food safety and animal disease management adds an additional extremely important risk to manage. The price support 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, while 2019 illustrates how big the impact can be if that disease-free status is lost. As the sector navigates its way out of the crisis induced by COVID-19 and the measures imposed to contain it, the need for successful management of South Africa's animal health status and the associated biosecurity measures cannot be overemphasised.

# OUTLOOK FOR MILK AND DAIRY PRODUCTS



**International market overview**

The global dairy sector experienced some region specific challenges amid the COVID-19 pandemic, ranging from shortages in shipping containers to disposing of surplus products (OECD-FAO, 2021). Global dairy product prices continue to trade higher, supported by demand for animal fats, specifically butter, cheese and full-cream milk powder (WMP). This demand is supported by preferences for low carbohydrate and high animal fat diets (MPO, 2021). While trending upwards, international dairy prices have been exceptionally volatile, stemming from its small share of production traded internationally (7%), the predominance of a few exporters and importers and a constraining policy environment (OECD-FAO, 2021).

Global raw milk production rose by 1.4% in 2020, with a significant share attributed to India. Indian milk production is predominantly for its own market and as a result has minimal influence on world trade and price levels. Raw milk production in main dairy export countries (EU and US) also grew in 2020 compared to 2019, except for New Zealand, where drier conditions were constraining. Production gains resulted in stable domestic and export supplies for fresh and processed products – keeping price gains muted. In 2021 however, prices have started to rise in response to firming demand as the global economic recovery accelerates, high animal feed prices and tight supplies following poor weather in Oceania (Australia and New Zealand), combined with limited shipping container availability.

The FAO dairy price index, which comprises prices of processed products from major exporters, increased by 14% for the first 5 months of 2021 relative to the same period in 2020. Since January 2021, whole milk powder (WMP) prices registered the steepest increase (20.9%), followed by butter (15.4%), skim milk powder (SMP) (11.3%) and cheese (1.6%) (MPO, 2021). The OECD-FAO Agricultural Outlook projections reflect a further increase in nominal dairy product prices for the period 2021 to 2030, with the steepest increase attributed to butter (Figure 61).

Over the coming decade, raw milk production is expected to grow faster than most other agricultural commodities at a global level (OECD-FAO, 2021). Yield growth is expected to contribute more towards gains in production in almost all regions of the world, driven by the optimisation of production systems, improved efficiencies in feeding, animal health and better genetics (OECD-FAO, 2021). The bulk of additional growth is attributed to India and Pakistan, both of which are oriented towards supplying domestic demand, whereas growth in the EU – one of the biggest exporters of dairy products, is projected to be slower than the global average.

Global dairy production is consumed mostly in the form of fresh dairy products, unprocessed or slightly processed by fermentation or pasteurisation. The share of fresh dairy products in total world consumption is expected to increase in the next decade on strong demand growth from India, Pakistan and Africa as incomes and population rise. Consumption patterns for processed dairy products differ according to regions: The second most consumed dairy product is cheese, mostly in Europe and North America. Butter consumption is common in Asia, accounting for 50% of total processed dairy consumption and is expected to have the strongest growth in the next decade, but from a low base compared to Europe and North America. Cheese and WMP are common in Africa, although SMP is expected to show the highest growth but from a lower income consumption base.

**Domestic market overview and outlook**

In South Africa, milk production makes a significant contribution to the gross value of animal products and production structures have evolved over time. The number of producers has consolidated, declining by 57% from 2012 to 2021. Even so, total milk production has increased by 26% from 2011 to 2020, suggesting that fewer producers are producing at a larger scale, thus enabling the use of top technology that drives efficiency gains. The Milk Producer's Organisation (MPO) notes that production has moved more towards pasture-based areas, concentrated mainly in the Western Cape (31%), Eastern Cape (26.2%) and KwaZulu-Natal (27.0%). In 2020, the Eastern Cape registered the highest average number of cows in milk per producer (880), followed by Kwa-Zulu Natal (732) and the Western Cape (438) (MPO, 2021).

The secondary dairy sector, inclusive of milk processors, buyers and producer-distributors (PDs) also showed a dwindling trend in the number of role players at 67 PDs and 132 processors in 2021, down by 39% and 18% since 2015, respectively. The South African dairy market (2020) is divided into liquid products (62%), dominated by pasteurised milk and ultra-high temperature (UHT) processed milk, and 38% concentrated products, which is mostly hard cheese (MPO, 2021).

Despite COVID-19 and the measures imposed to contain its spread, total milk delivered to the market was down by only 0.2% in 2020 compared to 2019. Production was constrained by adverse weather conditions, such

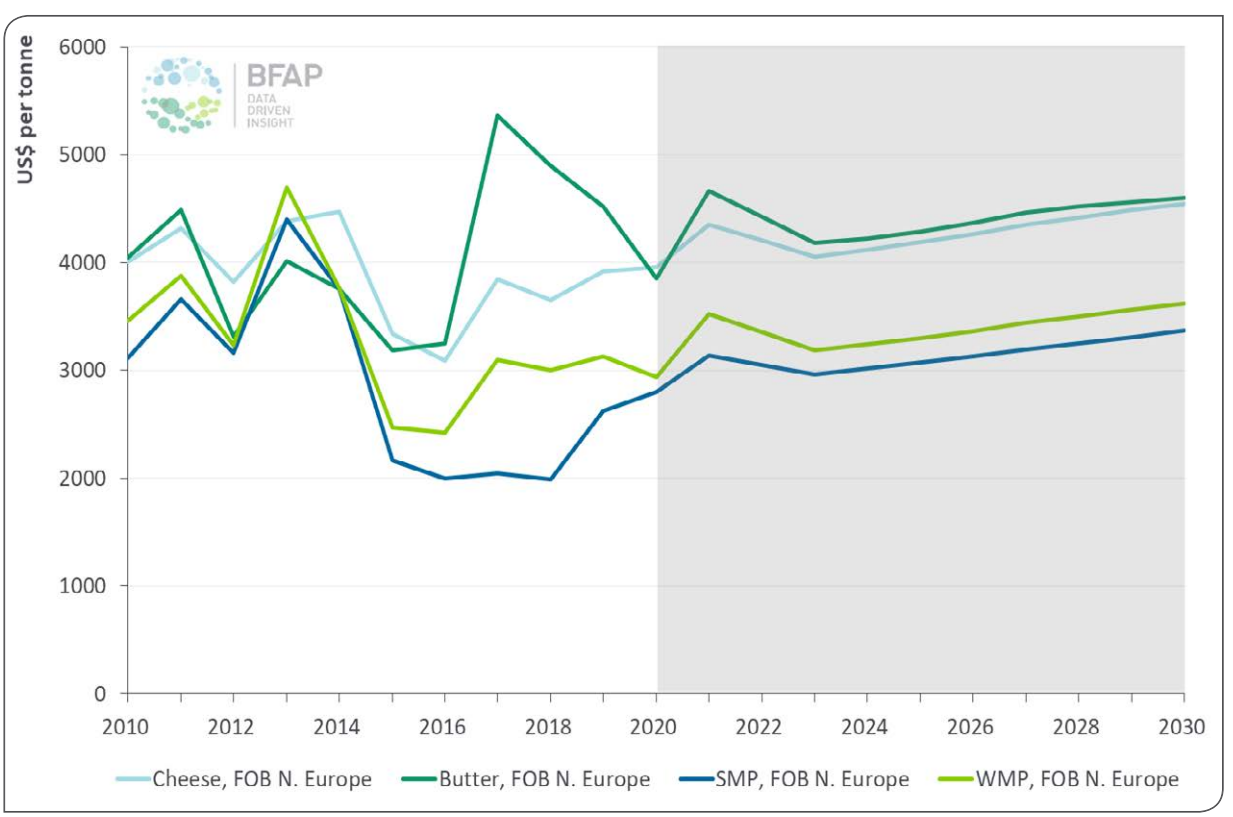



**Figure 61: Dairy product prices: 2010 – 2030**
**Source: OECD-FAO, 2021**

as late summer rains, and farm economics being under pressure due to high feed prices, as well as uncertainty with respect to future demand amidst the COVID-19 pandemic. On the demand side, consumer spending power came under pressure and restrictions imposed to control the pandemic resulted in shifting consumer preferences. Market research conducted by the MPO in 2020 points to growth in solid product sales, while fresh and flavoured milk consumption contracted.

Producer prices increased in 2020 relative to 2019. The milk to maize price ratio, which serves as a basic indicator of profitability, remained fairly stable year on year, albeit at a much reduced level compared to 2017 and 2018. At the retail level, sales quantities for fresh and flavoured milk was lower in 2020 in comparison to 2019 by 7.9% and 10.6% respectively, while sales for other dairy products (UHT milk, yoghurt, maas, pre-packaged cheese, cream cheese, butter and cream) increased, reflecting stronger demand for products with a longer shelf life, as consumers visited the shops less frequently. Pre-packaged cheese and cream sales registered the highest growth at 14.8% and 11.2%, followed by UHT milk (9.9%) and yoghurt (9.1%). Butter (8.2%), maas (6.2%) and cream cheese sales (2.2%) grew the least (SAMPRO, 2021). Retail prices for all dairy products increased in 2020, the steepest increase recorded for butter (11.1%) and cream cheese (4.9%) (SAMPRO, 2021).

Over the course of the coming decade, domestic production of raw milk is projected to increase by 26% above the average level from 2018 to 2020. This translates to growth of 2.3% per annum, on average, marginally slower than the 2.6% per annum over the past decade. After bottoming out in 2021 on the back of high feed product prices globally, the milk to maize price ratio is expected to reach an equilibrium at a level well below the peaks of 2017, but above the past three years (Figure 62). This suggests that production growth will be backed by improved farm economics relative to the recent past.

The dairy market is characterised by a fine balance between supply and demand and this will remain the case over the outlook, with the bulk of domestic production growth utilised locally. The utilisation of raw milk for liquid products is expected to increase by 23% by 2030 relative to the 2018-2020 base period and processing into concentrated products will rise

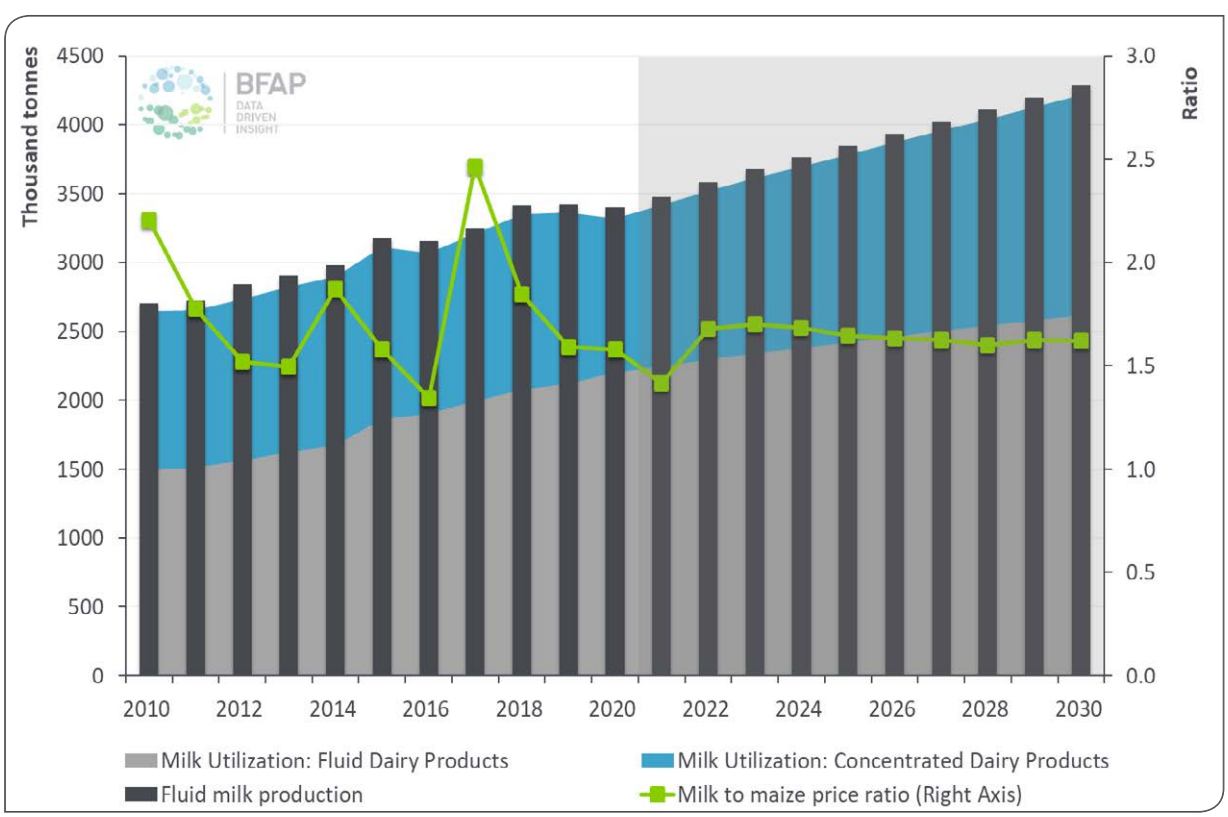



**Figure 62: Milk production, utilization and profitability: 2010-2030**

by 31%. This is supported by consumption growth of 37% for SMP, 36% for cheese, 31% for WMP, and 29% for butter (Figure 63). While growth in consumer demand for dairy products remains favourable, it is more muted than the past decade, where cheese consumption for example increased by 48%.

The South African dairy industry is a critical contributor to food security, and production expansion has already exceeded the targets set for 2030 in the National Development Plan. In the processing space, it contributes to both value addition and employment in agro-processing. It possesses immense potential to support food security and inclusive growth through productivity gains amongst emerging producers, but in recent years, it has also been increasingly challenged by deteriorating service delivery and an ever present risk of animal diseases. To unlock its potential and accelerate growth over the coming decade, a comprehensive strategy towards herd health and biosecurity will have to be adopted also through full implementation of the South African Veterinarian Strategy and an animal identification and traceability system. Furthermore, to improve competitiveness across the value chain, service delivery and infrastructure maintenance at municipal level need to be urgently addressed.

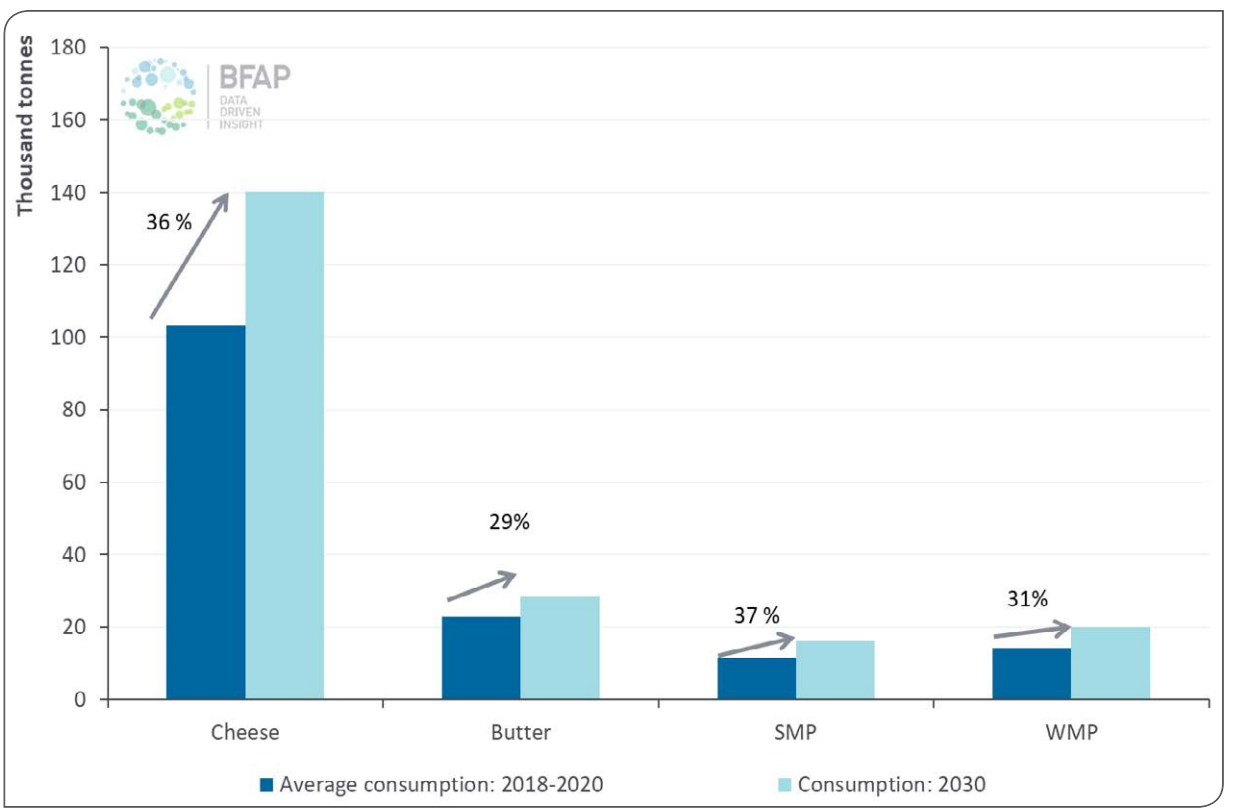



**Figure 63: Concentrated dairy product consumption: 2030 vs. avg. 2018-2020**

# OUTLOOK FOR HORTICULTURAL PRODUCTS
## POTATOES



**THE GROSS PRODUCTION** value (GPV) of vegetables in South Africa amounts to R21.58 billion (DALRRD, 2020). Figure 64 indicates that potatoes contribute the largest share of the GPV from vegetables, approximately 37%, followed by green mealies (27%), tomatoes (13%) and onions (11%). The average annual growth in GPV over the past five years was 6% for potatoes, 12% for green mealies and 7% for both tomatoes and onions.

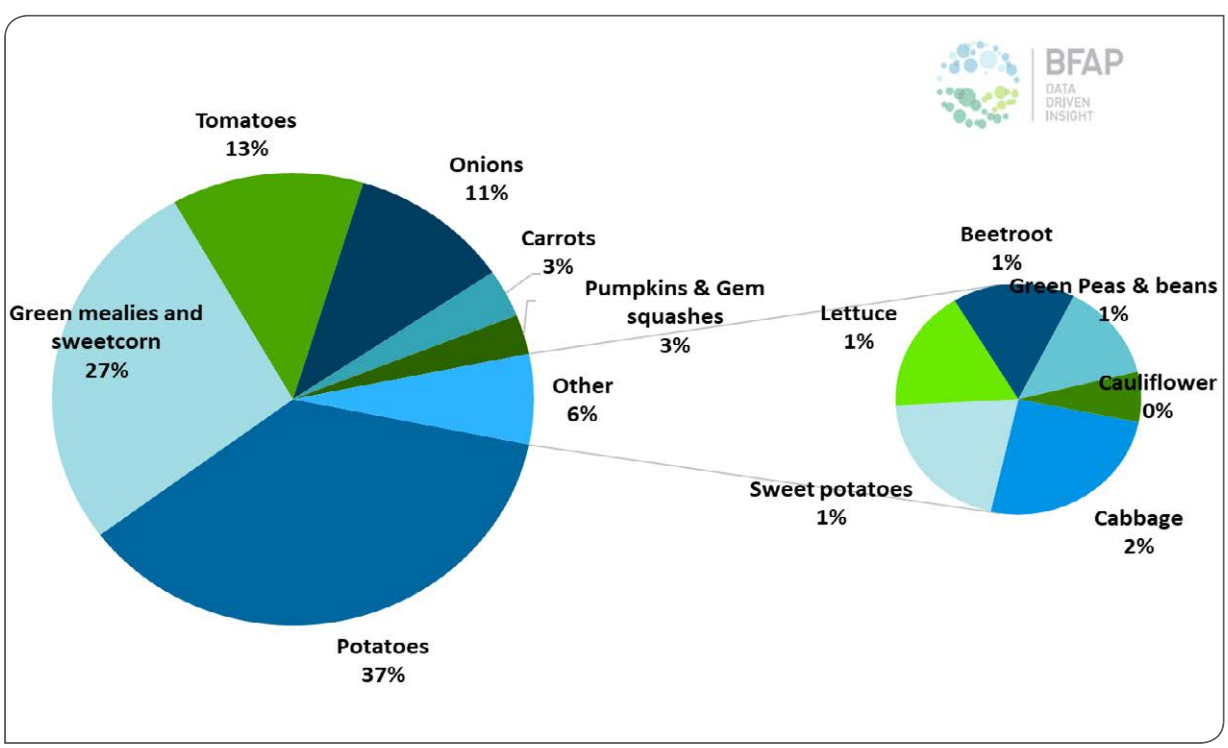



**Figure 64: Gross Production Value of Vegetable**
**Source: DALRRD, 2021**

### International market overview

World potato production has increased by an average 0.6% per annum over the past decade and was estimated at 370 million tonnes in 2019 (FAOSTAT, 2021). China (91 million tonnes, 25% of world production), India (50.2 million tonnes, 14%), the Russian Federation (22.1 million tonnes, 6%), Ukraine (20.2 million tonnes, 5%) and the United States (19 million tonnes, 5%) were the top potato producers and consumers in 2019.

With 2.7 million tonnes of potatoes produced in 2019, South Africa contributes only 1% of global potato production. Even though South Africa's total potato production share is small, the per capita production and consequently also per capita availability due to limited trade in fresh potatoes is very comparable: 43kg/capita/annum (South Africa) compared to 64kg/capita/annum in China, 37kg/capita/annum in India and 58kg/capita/annum in the United States.

### Domestic market outlook

South Africa's potato production has increased by an average 2.6% per annum over the past decade (Figure 65). During this period, potato area has remained relatively constant at an average 52 000 hectares while yield improvements of 2.2% on average per annum drove production gains. While area has remained stable, the number of producers has consolidated, with producers increasingly relying on scale to enable technological gains and mitigate persistent production cost increases. While mechanisation has increased in recent years, the sector is still highly labour intensive and contributes significantly to employment in agriculture.

Despite a 15% increase in potato prices in 2020, albeit with significant volatility at different times through the year, potato production is projected to decline marginally by 1.8% in 2021, to 2.6 million tonnes. This follows a weaker yield expectation, particularly in the Eastern Free State, with the area cultivated to potatoes remaining largely unchanged year on year. While the stronger price might have been expected to support area expansion, this was mitigated by substantial increases in input costs.

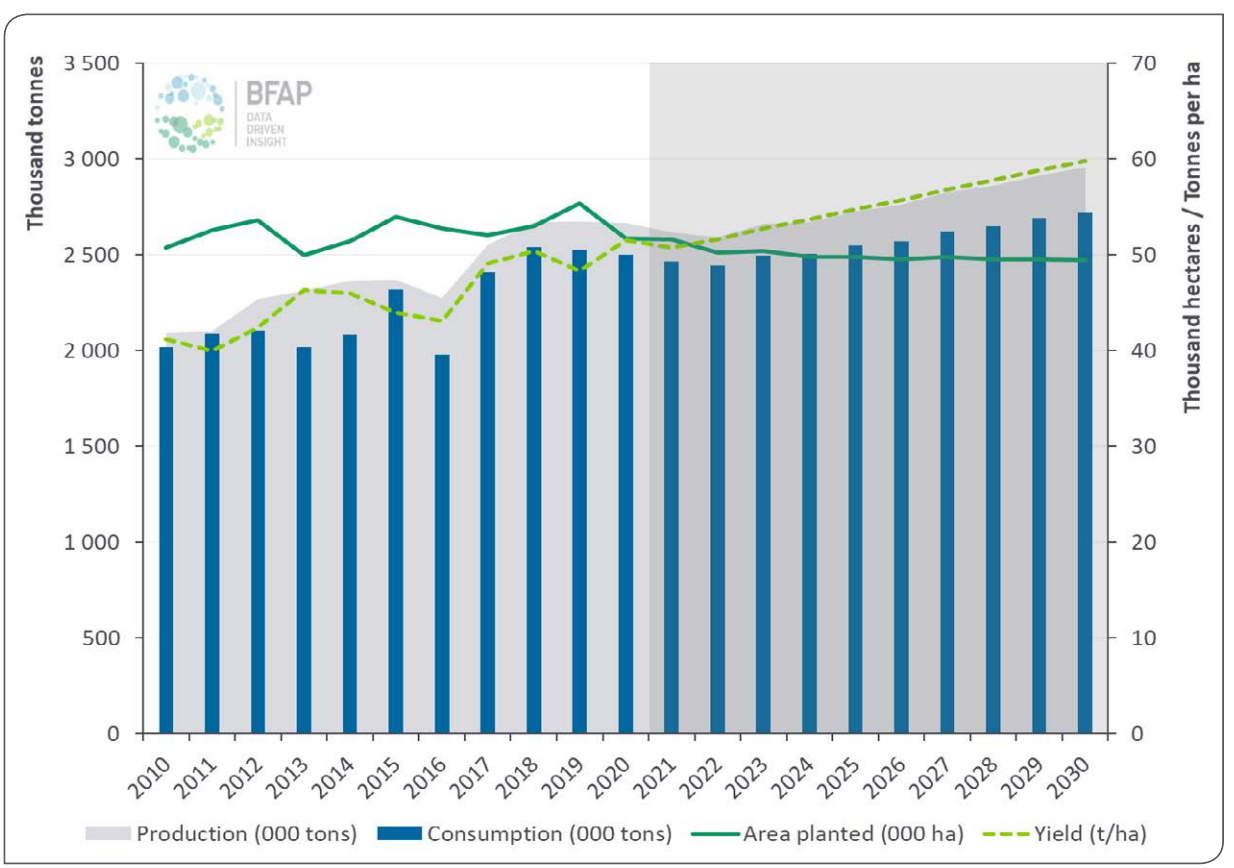



**Figure 65: Potato production, consumption, area and yield: 2010 – 2030**

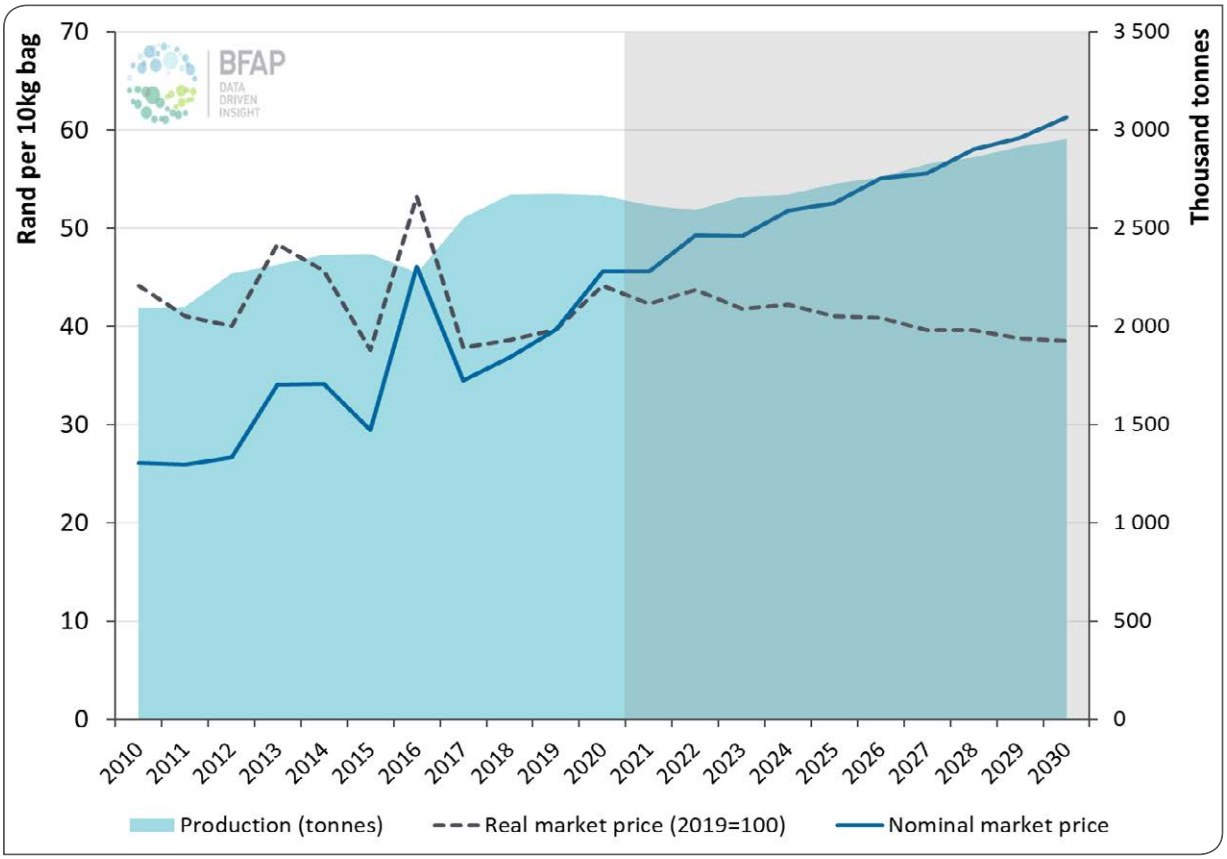



**Figure 66: Potato price vs. production: 2010 - 2030**

Over the course of the coming decade, the area under potatoes is projected to decline by an annual average of 0.4%, reflecting a continued cost squeeze amidst a volatile price environment and increasing competition for resources such as water. Underpinned by factors such as research, cultivar development, improved production practices and better plant protection products, average annual yield gains of 1.8% per annum will be sufficient to support production growth, despite the contracting area. Over the ten year projection period, production growth is expected to average 1.5% per annum and will therefore exceed 3 million tonnes by 2030 (Figure 65).

Potatoes are marketed through multiple channels and consumed in different forms. Approximately 70% of potatoes are consumed fresh, procured either in the formal or informal market, with the balance processed into potato chips and crisps. Owing to the effect of the COVID-19 pandemic on consumer spending power, total consumption declined for the second consecutive year in 2020, but the various marketing channels were affected differently. While the fresh formal value chain remained operational and arguably even benefitted from strong demand due to increased home-cooking through the lockdown, informal sales contracted by 8%. Distribution in the informal value chains occurs through hawkers who typically buy products at fresh produce markets. Thus lockdown restrictions which constrained informal trader operations were an important factor influencing sales, as was intermittent challenges at various fresh produce markets as a result of COVID-19 infections amongst workers. With food service operations halted in the early lockdown and constrained by restrictions on capacity and operating hours later in the lockdown, demand from this market segment also slowed. With many of the COVID-19 related challenges still relevant and consumer spending power strained, potato consumption is expected to decline by a modest 1.3% in 2021.

As economic restrictions are alleviated and consumer incomes recover over the projection period, potato consumption is projected to rise by an annual average of 1.2% per annum to reach 2.7 million tonnes by 2030. Under the baseline, a substantial

share of fresh potato marketing will continue to occur through fresh produce markets. In this regard, the relative affordability of potatoes to large parts of the population can be improved significantly through investment into infrastructure and improved maintenance of these fresh produce markets. This will enable potatoes to be delivered more competitively by reducing transaction costs in the value chain.

Potato prices are highly volatile, due both to the nature of the product and the small share of total production traded internationally. This fine balance between supply and demand makes prices sensitive to volume changes in the market at different times through the year, as well as consumer related dynamics. Prices declined in 2017 on the back of substantial production growth and from 2018 onwards, prices have increased at a rate higher than inflation, from R36.83 per 10kg bag in 2018 to R45.60 in 2020. In 2020, this was reflective of significant variation throughout the year due to various supply chain constraints through lockdown, as well as challenges with quality, that reduced the supply of high quality produce in the market, even if total production volumes remained stable. From this high base and in a persistently weak demand environment, nominal prices are expected to remain fairly stable year on year in 2021 and increase by an annual average of 3% per annum over the coming decade – marginally less than general inflation (Figure 66). Going forward, the demand for South African potatoes can be expanded if favourable market access to neighbouring countries can be achieved under the African Continental Free Trade Agreement (AfCFTA).

# OUTLOOK FOR DECIDUOUS FRUIT



## Introduction

The 2020 and 2021 seasons were generally good years for deciduous fruit producers. As the effects of consolidation to strong cultivars are starting to become visible, with maturing orchards and vineyards, production estimates for 2021 point towards another exceptional season. That is not to say that the season was free of challenges. Short term exogenous shocks, such as heavy rains in the Orange River production region impeded tablegrapes at the start of 2021, however the intrinsic value of the investments made in establishment of good cultivars are set to carry forward over the long-term. Further challenges included logistics, especially at Cape Town Container Terminal (CTCT), where strong winds slowed container loading, productivity challenges arose due to Eskom load shedding and a general lack of port operation productivity resulted in ships having to wait lengthy periods outside of Cape Town harbour. Consequently, some shipping lines opted to bypass CTCT. The World Bank Container Port Performance Index 2020 ranks Cape Town Harbour at 347th out of a list of 351 ports, with Port Elizabeth at 348th and Durban in the bottom 3 of port performance. In addition to domestic challenges, a worldwide shortage of containers also caused produce to enter the market at sub-optimal times.

From a consumption perspective, Covid-19 lockdown measures changed previously established patterns, closing restaurants and resulting in consumers eating more at home, thereby increasing supermarket sales. Health concerns also prompted consumers to choose more healthy products, such as fruit, provided they could afford it. The rate of recovery from the COVID-19 pandemic, which is uneven across the globe, will require nimble responses in future and coupled with rising volumes, will further proliferate the importance of broader market access. Already in 2020, market challenges, coupled with increased production, necessitated solutions such as the shifting of some pome fruit exports towards Russia, so as not to oversupply other markets.

## Production

Deciduous fruit typically constitute 23% of horticulture's GPV, but its export contribution is larger and the sector is a major employer within agriculture. The GPV of the major fruit and nut industries has grown significantly over the last decade – a trend that is expected to continue going forward. Driven by rising volume and value of exports, the GPV from major fruit and nuts increased from R17.5 billion in 2011 to R48.4 billion, on average, for 2018-2020. Current estimates suggest that by 2030, it could reach R98 billion (Figure 67).

### *Table Grapes*

Table grape production increased by 6.8% during the 2019/20 season to 319 621 tonnes and early estimations projects another 13.5% increase for the 2020/21 season. This performance emanates largely from growth of new and exciting cultivars. Growth will likely be sustained from cultivars such as Sweet Joy™, Sweetglobe™ and Autumncrisp®, of which the majority of vineyards are still below three years of age.

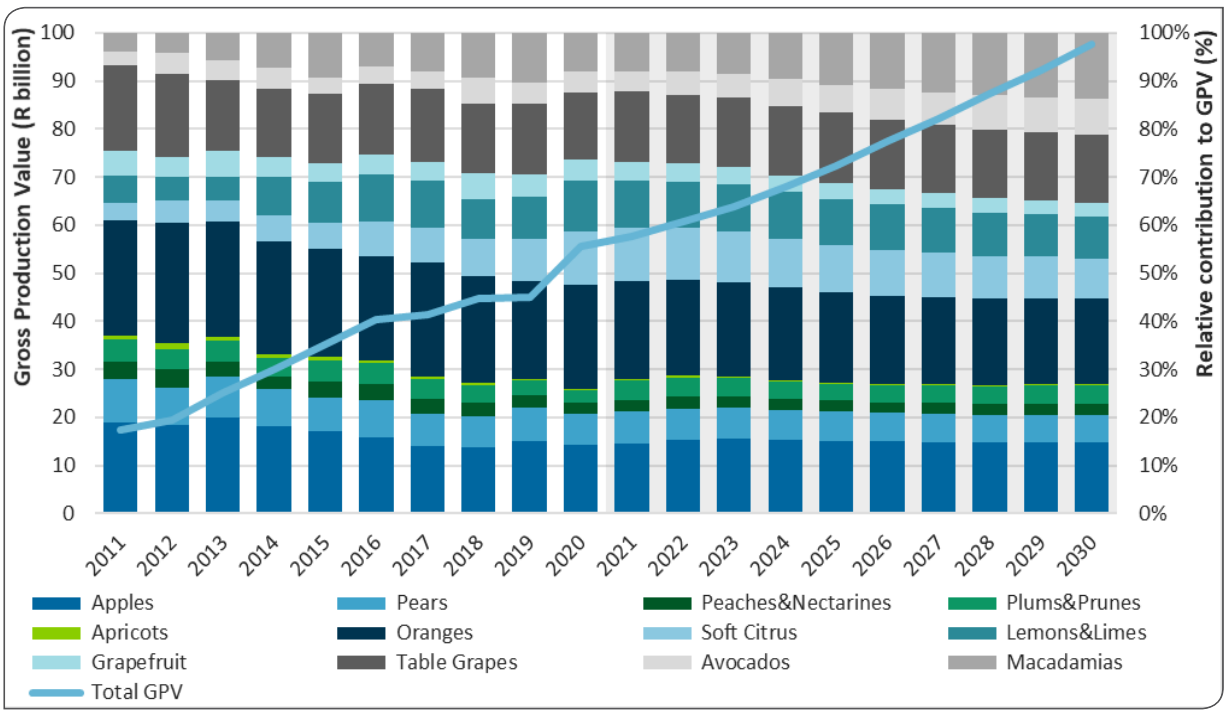



**Figure 67: Gross production value for key fruit and nut commodities: 2011-2030**

The industry in SA has consolidated in recent years, with slower growth in cultivated area, but a stronger focus on replacement and optimal cultivar choice as opposed to expansion. This trend is expected to persist over the outlook period. Over the past three years, graftings dropped to 8.34 million from the 20.05 million recorded in 2016/17. Newer cultivars are easier to work with in the vineyards, resulting in efficiency gains during harvesting and packing. The erection of net-structures has also increased. The erection of net-structures has also increased, improving fruit quality and thus enabling better pack-out volumes.

Production growth is expected to persist over the projection period, rising by 22% up to 2030 relative to the 2018-20 base period, to approach 400 000 tonnes. Volume growth is derived from modest growth in area, coupled with a substantial improvement in yields. Yield gains have already been strong over the past two seasons. This partly reflects a recovery from prolonged drought conditions in the Western Cape, but also the industry's maturity, strong cultivar adoption and a balanced spread between young and bearing vineyards.

Nominal GPV from table grapes grew by 18% in 2019/20 and is estimated to rise by a further 9% to reach R8.4 billion in 2020/21. Over the coming decade, nominal GPV is projected to expand by 79%, to approach R14 billion by 2030, on the back of a positive yield outlook coupled with favourable net export realisations in the long-run. The latter grew with 10.4% in 2019/20. Projections reflect annual growth of 4.5% in export prices over the coming decade, marginally faster than general inflation.

***Pome Fruit***

In 2020, apple production increased with 10.3%, and a further 3.7% is expected in 2021, thus exceeding 1 million tonnes for the first time. Over the outlook period, apple production is set to rise by 19.6% relative to the 2018-20 base period. This growth is supported by an increasing number of orchards reaching bearing age, along with the associated yield gains. Whilst the total area under apple production has increased steadily in recent years, yield gains were significantly faster. This trend is expected to continue, with the yield improvements attributed to novel production practices and cultivars that deliver higher yields and better pack-out rates. As such, over the next ten years, the total area under apple production is projected to increase with a modest 2.8% to just over 26 000 hectares, with

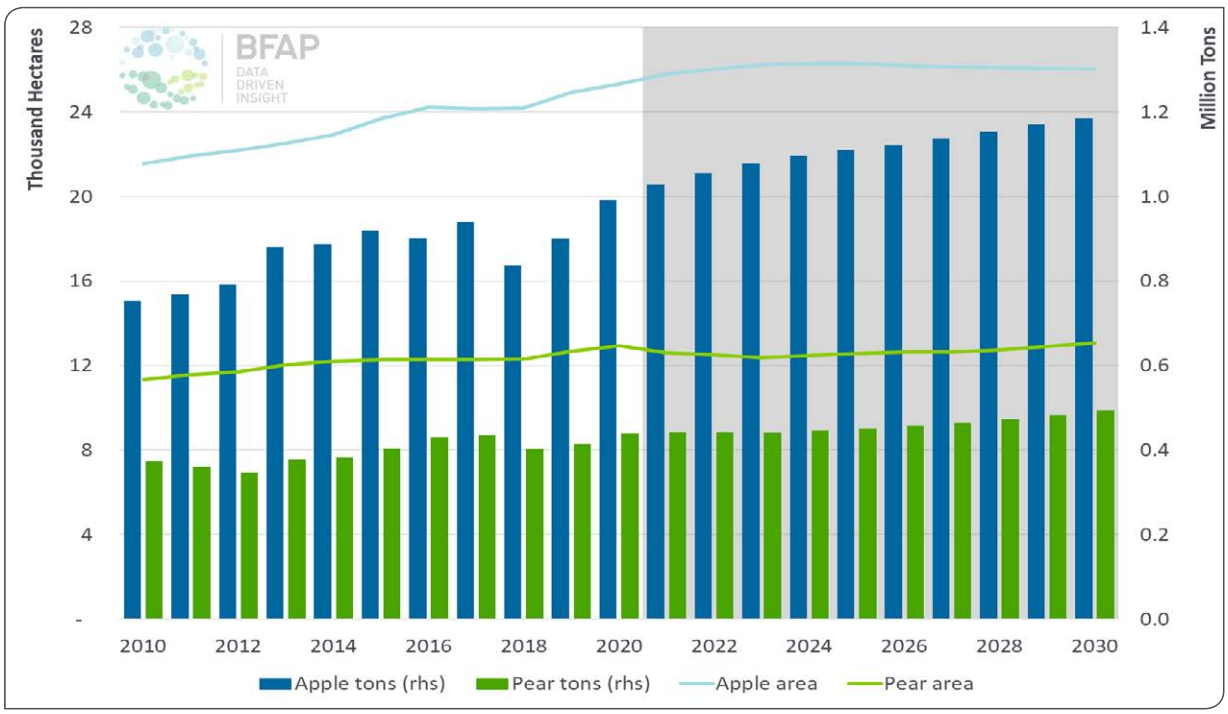



**Figure 68: Production volume and area for pome fruit: 2010-2030**

an associated increase of 16.3% in tonnes per hectare. Observations in the industry include higher plant densities and an increase of cultivation under nets. In terms of cultivars, the area under bi-colour apples has increased in response to rising consumer demand, while the area under green apples has contracted.

Pear production is smaller and growth has been more muted than apples. Although total volume in 2020 showed an increase of 5.9%, fresh sales contracted somewhat and thus higher volumes have gone into the processing market segment. Pear production growth is also expected to remain slower than apples in future, with an expansion of 12.6% projected by 2030 relative to the 2018-20 base period on a fairly stable area (Figure 68). The increased market demand for blush pears has prompted the industry to focus new plantings on cultivars such as Forelle, Cheeky, Rosemarie and Celina. Packham's Triumph plantings have also increased, owing to its good storage characteristics.

Nominal GPV for apples increased with 16.7% in 2020 to R7.9 billion, with exports finding support in the weaker Rand. Over the coming decade, the nominal GPV of apples is projected to increase by 82% to exceed R14 billion by 2030. The pear industry has recovered from its recent slump, surpassing the GPV of 2016 for the first time again in 2020. By 2030, the annual GPV of pears is projected to reach R5.6 billion – supported by yield gains per hectare and a continuous depreciation of the Rand. In real terms, however, apple and pear price projections follow a downwards trajectory. Market access remains an inhibiting factor and this is compounded by technological improvements in storage capacity, which enable producers to store and supply year round, reducing the effect of premium in-season pricing. Cultivar selection that serves market preferences is challenged by the time taken for both apples and pears to reach full production (7+ years). The time required to gain access into new markets further complicates matters, as producers are expected to plant market specific cultivars when they often do not yet have access to specific markets of interest.

***Stone Fruit***

The 2019/20 season saw peach and nectarine production increasing with 14.2% year on year, recovering from prior drought conditions. In contrast, plum production (which includes fresh and dried prunes), concluded another disappointing season – production increased by merely 2.8% from substantially reduced volumes in 2019, as late season volumes did not materialise due

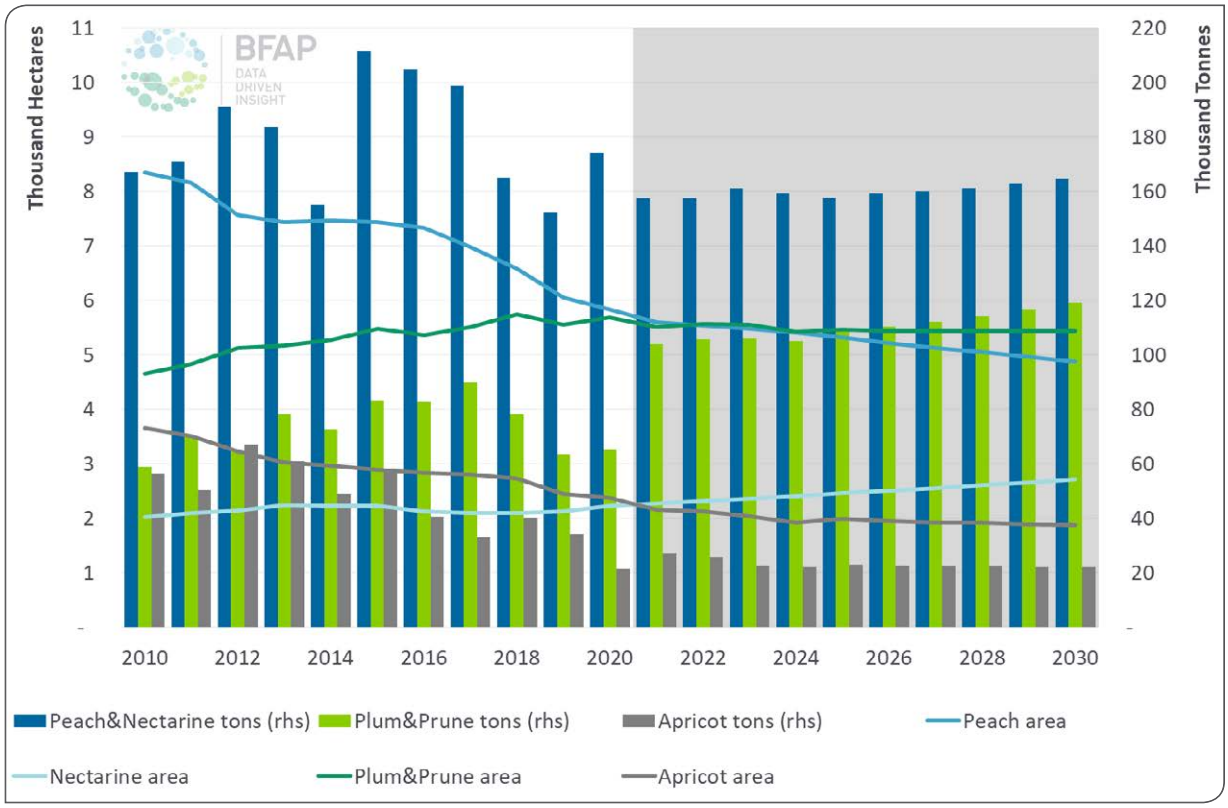



**Figure 69 Production volume and area for stone fruit: 2010-2030**

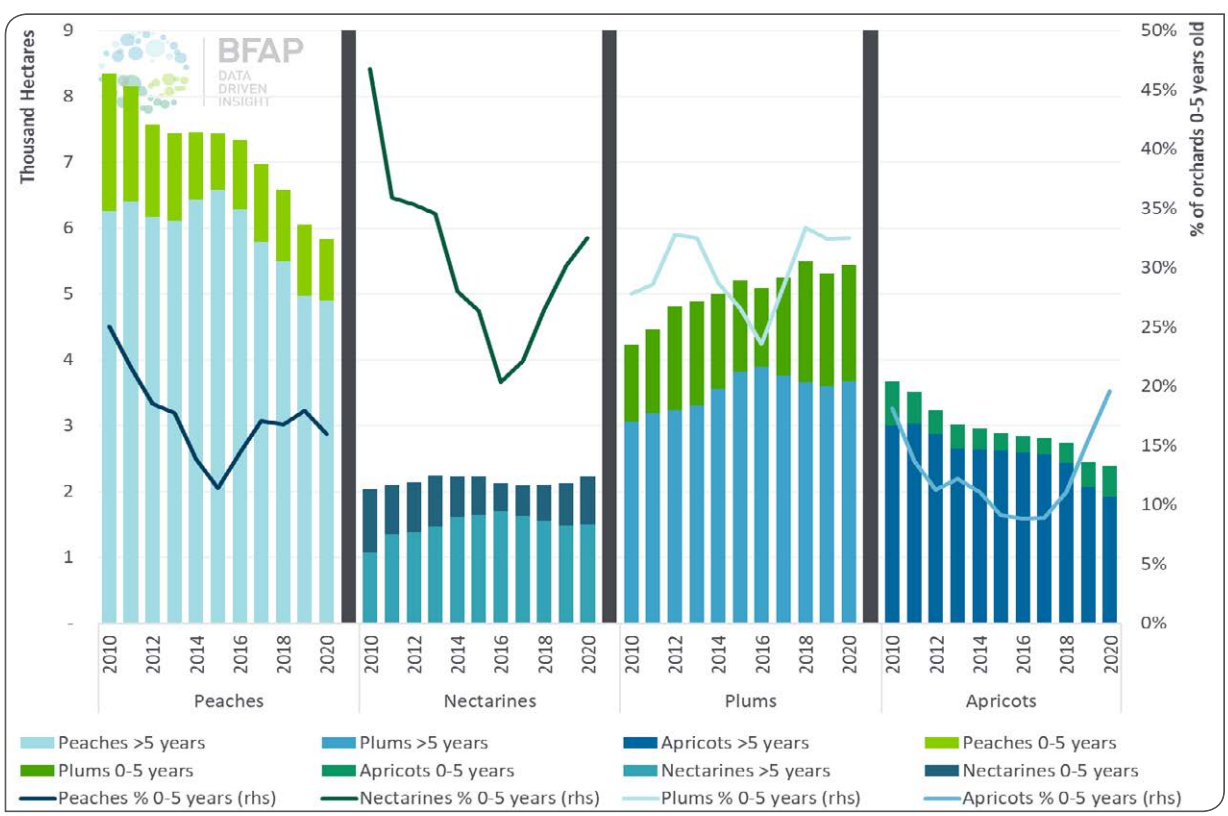



**Figure 70: Age distribution of stone fruit area**

**Source: HORTGRO (2021)**

to challenging weather conditions. Apricot production also decreased considerably, reaching record low levels.

Prospects for 2021 are much improved from a volume perspective. Plum production was closer to what would be expected for a 'normal' production season if the historic growth trend had been sustained from 2017 – this implies that a massive yield gain was realised year on year and production increased by almost 60%. This could be attributed to the industry uprooting underperforming cultivars and shifting focus to cultivars that are harvested towards the end of the season and therefore yield higher volumes. The sharp year on year increase in volumes, together with logistical challenges and fruit not reaching ships on time, caused difficulty in the marketplace. Apricot production also increased with 27% year on year, with mixed feedback on peaches and nectarines. Record exports were achieved, but data on fruit for the processing market is still outstanding. Over the coming decade, peach and nectarine volumes are projected to trend mostly sideways, whilst apricot production is set to decline due to contractions in area. The step change observed in the most recent plum harvest volumes becomes the platform from which additional growth over the next couple of years are expected, before levelling off towards the end of the outlook period. This projection has its base in the 32.5% of plum plantings being 5 years and younger (Figure 70).

Nectarines are especially popular in the market, both locally and internationally. Less experimental cultivars and good screening which pair cultivars to their appropriate production areas deliver good quality yields. Given the strong market demand, nectarine area could expand in future. Considering the substantial share of young orchards (0-5 years), yields are expected to continue to grow. The positive short and long term turn in yields of plums and apricots is best explained by Figure 70. Since 2015 an upheaval of young orchards as a share of the total area covered by stone fruit (orchards that are 5 years old and younger) is observed, serving as a positive indicator of investors' confidence in the sector, even when total area remains stable. The total area under plum production has risen annually with an average of 2.3% from 2010 to 2020. Since 2015 for peaches and 2017 for apricots, the decline in the total area was coupled with a steady increase of young orchards. Hence, despite some producers not replacing old apricot orchards with new plantings, others have expanded their cultivated area. These changes are paramount in the future potential of stone fruit.

Over the coming decade, plum production is projected to increase by 91%, however the largest increment occurs in the 2020/21 production season. Apricot volumes are expected to remain stable, supported by yield gains on a declining area. Some decline in area under peach and nectarine over the outlook period will have a knock-on effect on volume, with total volume also expected to decline, but not at the same rate as the area decline.

Healthy growth in the nominal GPV for peaches and nectarines are expected over the outlook period, with the last two seasons returning growth rates of 15.7% and 4.1% respectively. However, the industry will only surpass its R1.4 billon GPV of 2016 by 2022, with current projections pointing towards an industry valued of R2.3 billion by 2030. GPV for plums grew with 3% to R1.45 billion in 2019/20. A massive increase of 66% in nominal GPV is expected for the 2020/21 season, delivering R2.4 billion, with volume expected to continue to drive an additional R1.2 billion in production value towards the end of the outlook period. Price pressure in the medium term will, however, affect profitability and decision-making at producer level. Whilst apricot GPV has been under pressure in recent years as a result of low volumes, the outlook is more favourable – from R134 million for the 2019/20 season to an estimated R243 million by 2029/30.

Nominal prices of all market channels (local fresh market, fresh exports, dried market and the processing market) are expected to increase substantially over the next 10-year period for stone fruit in general, except for plum export prices that are expected to merely grow by 9.5% in nominal terms owing to additional volumes. With exports, an important part of the industry's revenue stream, drops in long-term real prices can be expected as these commodities fight for shelf space with other fruit in the same marketing period.

Cherries grew from a 188 hectare industry in 2013/14 to 469 hectares in 2018/19, with about 50% of the industry situated in Ceres. A large part of the cultivated hectares were between zero to two years old in 2018/19 and with these orchards maturing, a significant increase in production is estimated for 2020/21. Of the 636 tonnes produced in 2018/19,

313 tonnes went to the local market, 237 tonnes were exported and 86 tonnes were processed. Historically the local market has always been the main market outlet for cherries, except for the 2015/16 season when exports were 58 tonnes more than local sales, however, the export component has increased substantially over time and this trend is expected to continue going forward.

**Trade**

Considering agricultural exports from South Africa over the past three years, it is clear that horticulture in general, and deciduous fruits in particular play a prominent role. Trade factors, such as changes in exchange rates, changes in market access, tariffs and protocols, as well as port, air and road logistics significantly affects these industries. Figure 71 presents the major agricultural exports by value. Together with other horticultural products, like citrus, wine and nuts, deciduous fruits are also some of the biggest earners of foreign revenue for agriculture in South Africa.

***Table grapes***

A record volume of more than 72 million cartons was exported in 2020/21. This is despite the heavy rain in the Orange River region. Unfortunately, some post-season claims are expected with respect to quality checks on arrival in destination markets. In 2019/20, value generated from exports represented almost 95% of total GPV. At an individual producer level, the decision regarding the trade-off between quality and quantity will be a key driver in the volumes and associated price going forward, but even if a more conservative route is followed, export volumes are still projected to increase over the outlook period. Growth in vineyard area is modest, but newer cultivars deliver more cartons per hectare.

The EU and UK remains the main export destinations for South African table grapes, with a 74% combined uptake of export volumes for the 2019/20 season. Like many other South African fruit industries, Far East market access and favourable tariff structures still remains a key stepping stone for expansion. The industry has invested substantially in cultivars that are competitive in the market, but now requires more favourable and competitive access in alternative markets if growth is to be sustained. Table grapes are first in line for negotiating market access into South Korea and the Philippines, but are nevertheless still waiting.

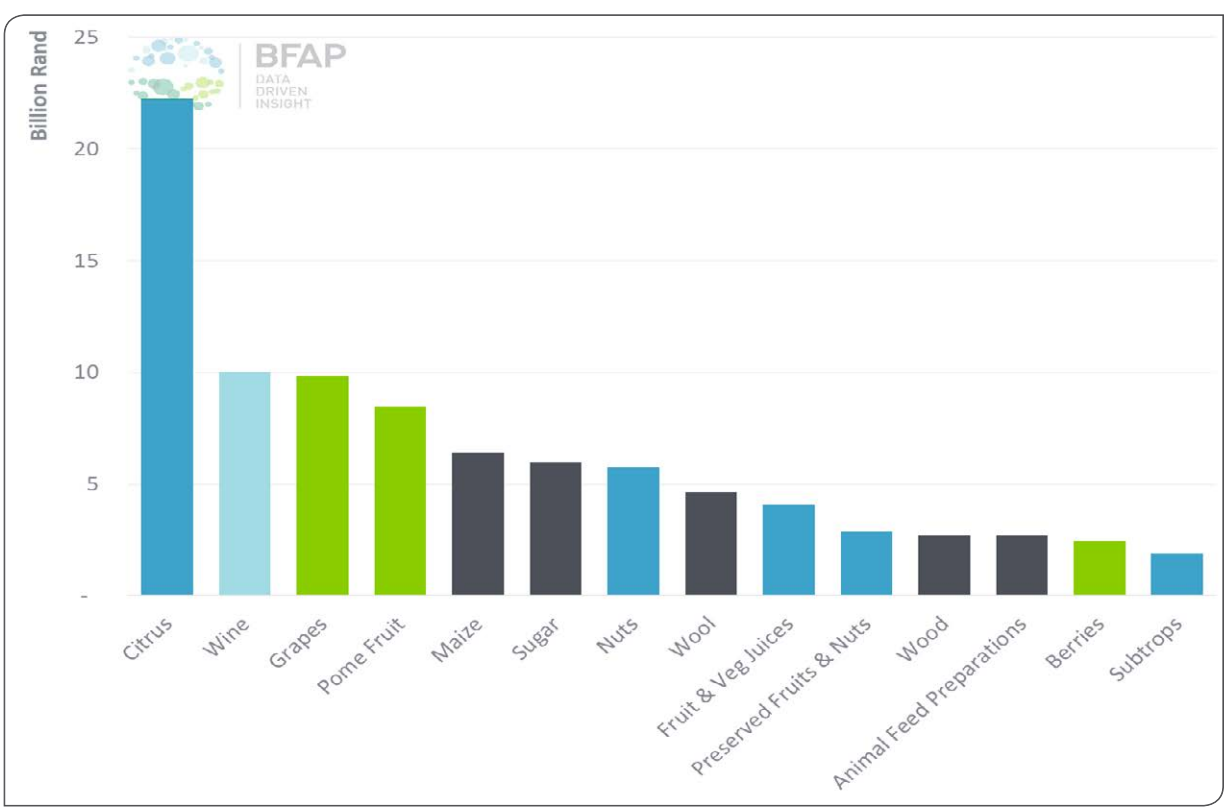



**Figure 71: SA's major agriculture and food exporting industries: 2018-2020**

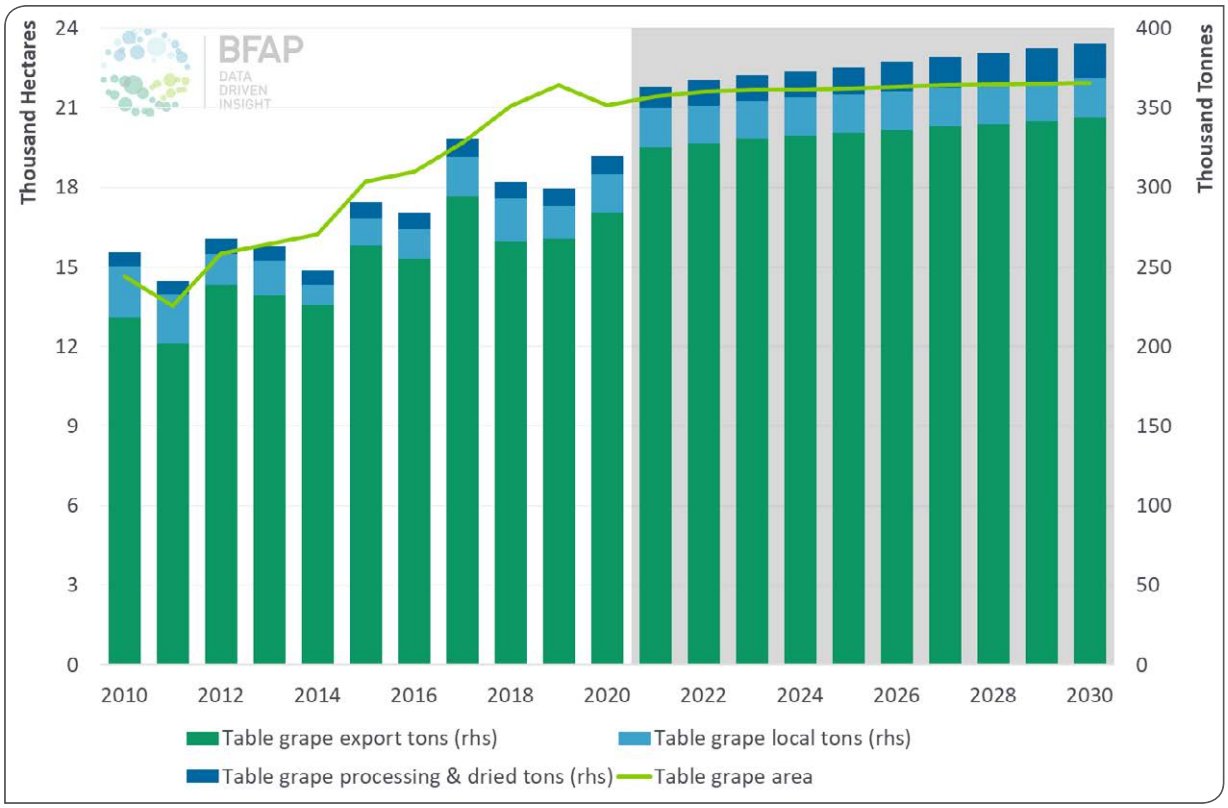
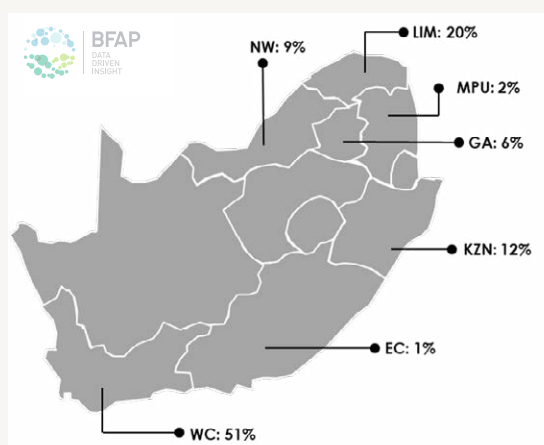



**Figure 72: Production area and market distribution for table grapes: 2010-2030**

## BOX 7: RISING PROMINENCE OF BLUEBERRIES IN SOUTH AFRICA'S FRUIT SECTOR

The South African berry industry has seen remarkable growth in the past few years. This labour-intensive industry is currently being driven by significant growth in export volumes. BFAP is in the process of developing a sector and farm model for blueberries and projections will be included in next year's Baseline. This textbox provides an overview of South Africa's berry industry, with special focus on blueberries and highlights the importance of this crop in terms of economic growth and job creation.




The map on the right provides an indication of the spatial breakdown of berry production areas in South Africa according to the hectares from the census of commercial agriculture (StatsSA, 2017). At the time, there were around 2 500 hectares planted, producing an estimated 20 000 tons of berries. Around 51% of all berries are produced in the Western Cape, followed by Limpopo (20%), KwaZulu Natal (12%) and North West (9%).

More recent statistics from BerriesZA suggest that blueberries are the largest cultivated berry in the country. BFAP has recently assessed the production statistics for the industry from 2001 to 2020. This industry's remarkable growth in both the area planted and volumes produced is provided in Figure 73. Blueberry hectares have grown from just over 200 to more than 2 800 in 2020. These hectares produced close to

## BOX 7: RISING PROMINENCE OF BLUEBERRIES IN SOUTH AFRICA'S FRUIT SECTOR (CONTINUED)

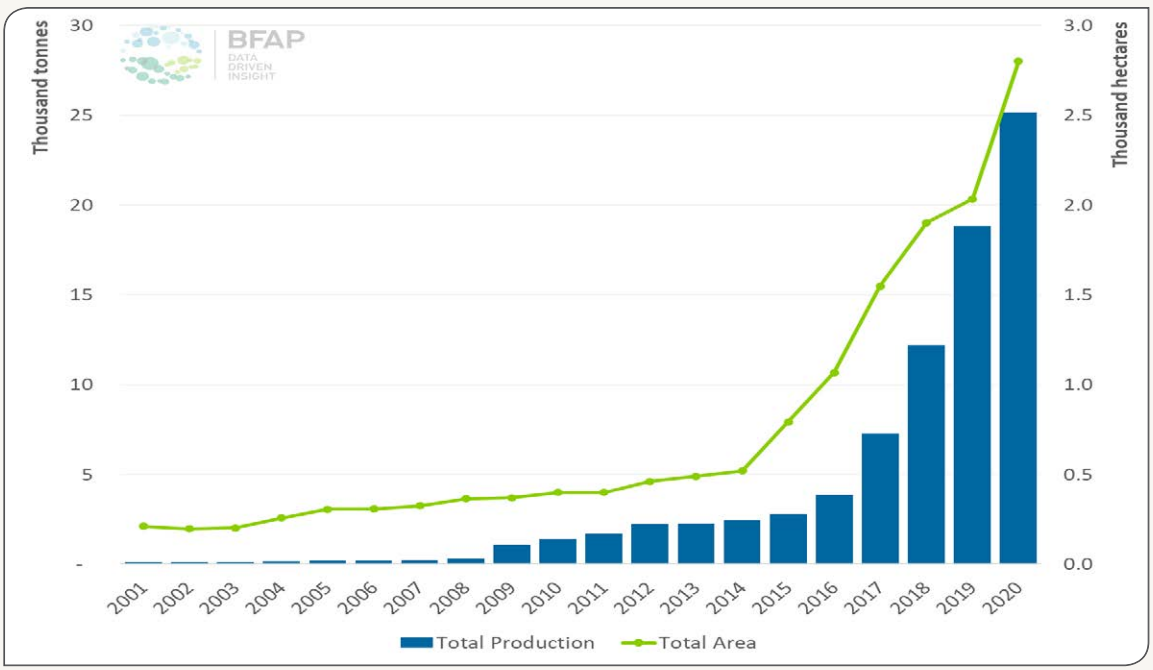



**Figure 73: Blueberry production and area in South Africa: 2001-2020**

25 000 tonnes, of which 72% were sold in export markets, followed by 15% for frozen berries and 13% in the local market and consumed fresh.

In 2020, South Africa exported 18 000 tonnes of blueberries, mainly to the Netherlands (44%), the UK (37%) and the United Arab Emirates (3%). South Africa is particularly well placed to supply the EU and Middle East, however gaining improved market access to the Far East remains a key focus area for the industry in order to spread risk and further grow in value. Growing the blueberry industry also holds significant potential for job creation in the agricultural sector, as it has one of the highest employment intensities in primary agriculture.

Blueberries employ 2.64 workers for every hectare planted

South African growers' plant some of the world's best plant genetics

Peak season in September and October to supply Northern Hemisphere

***Pome Fruit***

Apple export volumes increased with 8.4% from 2019 to 2020, with an increase of 5.9% expected for 2021. Pear export volumes decreased slightly with 1.6% in 2020, however it is estimated that export volumes will increase with 11.7% in 2021. Young apple orchards maturing into higher yield levels contributed to the increase in exports in 2020 and much of the growth in pear exports emanated from the summer pear category. Apple export volumes are projected to increase by 25% over the coming decade and pear export volumes by 20%. This is expected to come from cultivars that deliver better pack-outs and the expansion of production under netting. The most popular market for South African red and bi-red apples is the Far East & Asia market, with consumers in the UK preferring bi-pink apples. Green apples are well received in Africa. Green pears are preferred by the Russian Federation, with the dominant uptake of blush and low blush pears

by the Middle East and brown pears are enjoyed mostly by Europeans.

***Stone Fruit***

Where the bulk of the deciduous fruits are produced primarily for the export market (including nectarines and plums), apricots and peaches are mainly produced for the processing (including dried) market. In this past season, weather was more favourable, giving rise to the dramatic production increases described before. Whereas market demand seemed to be waning for peaches, sales during the past season saw a turnaround. Long-term projections look positive for all commodity groupings, with export shipping increasing by 45.8% for peaches and nectarines, 93.7% for plums and 84.0% for apricots over the next 10-year period, albeit from a low base of the 2019/20 season. Considering the outlook period presented in Figure 75, the 2020/21 season is essentially the start of a new chapter for plums. Depending on the consumer market for plums in the coming season, a change could well happen over the course of the next three years with producers having to decide to uproot and replace their plum orchards with other fruit types, or keeping confidence and wait and see what happen with the market.

Cherry exports was 160 tonnes in 2019/20, lower than the previous season's 237 tonnes. With the 2020/21 export volumes reaching 349 tonnes, this represents more than a doubling of volume. One considerable change is the method of export: In the previous season, more than 98% of exports were done by air travel and as a result of the limited flights available and the travel restrictions which drove airfreight prices up quite substantially, export volumes by air dropped to 54%. A substantial portion of export volumes have shifted to later-season exports, which would make sense from a production perspective as earlier varieties will be more susceptible to the harsh Ceres winters. In 2018/19, about 44% of export volumes went to the UK market, 28% to the Middle East and 16% to the EU. Since then this market split changed and in 2020/21 73% went to the UK, 8% to the Middle East and 8% went to the EU. This change could well have to do with the effect Covid-19 had on consumer behaviour, where more affluent nations could resort to including more niche products in their diet. The role lockdown regulations had also cannot be ignored (Box 8).

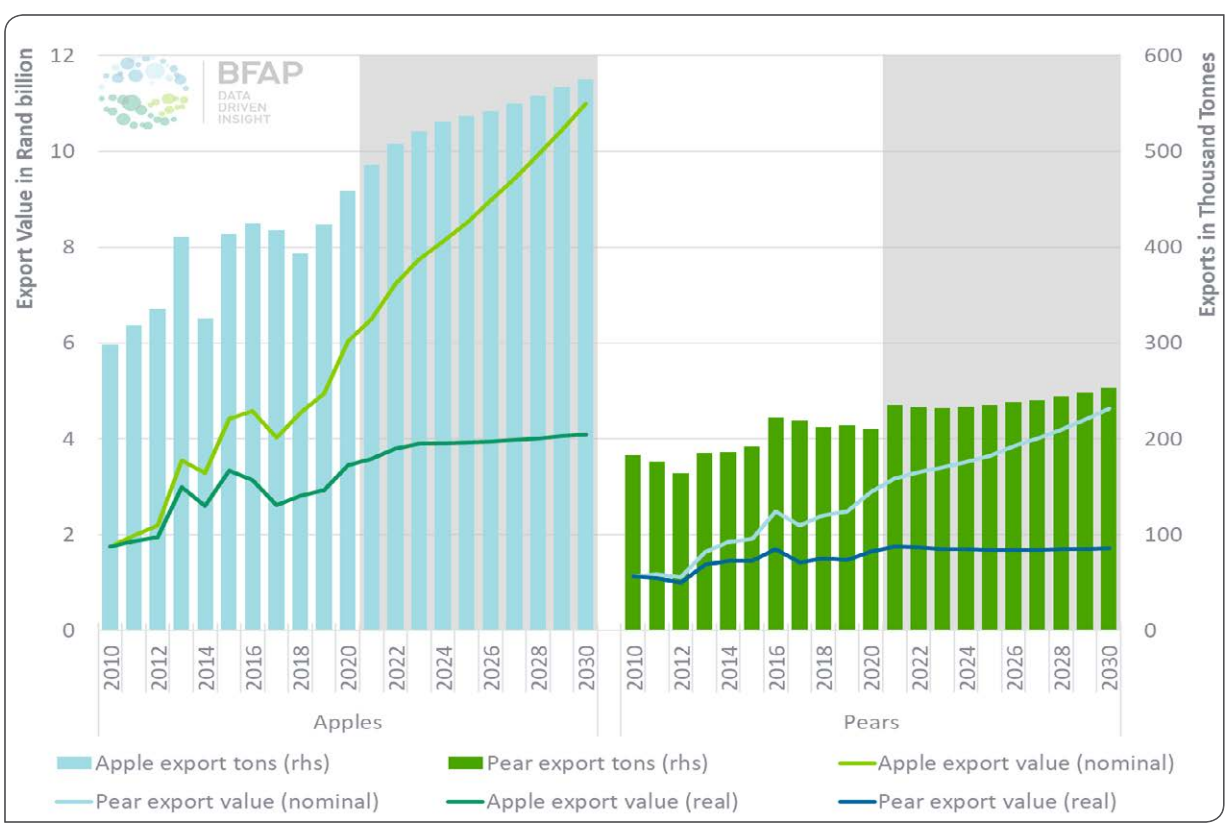



**Figure 74: Export value and volume for pome fruit: 2010-2030**

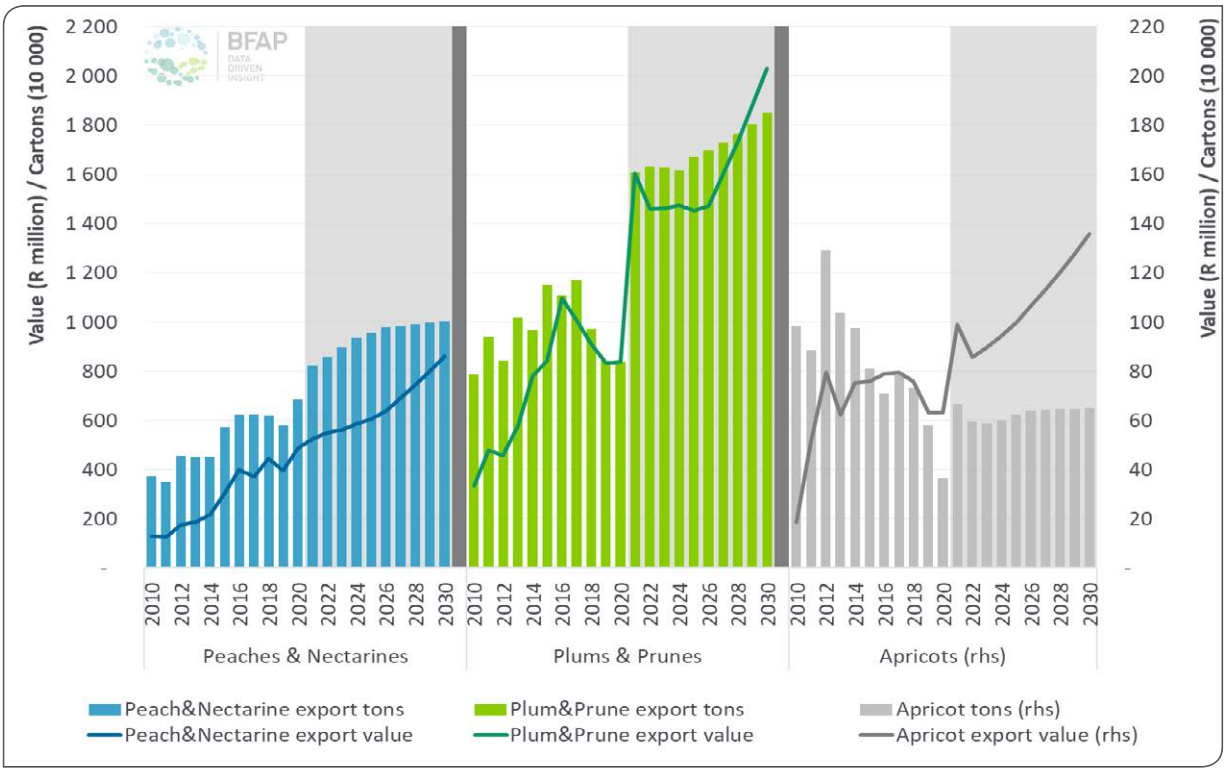
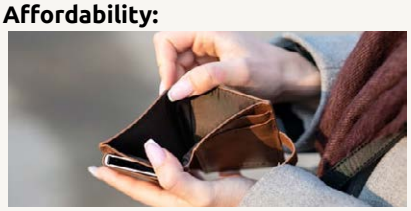
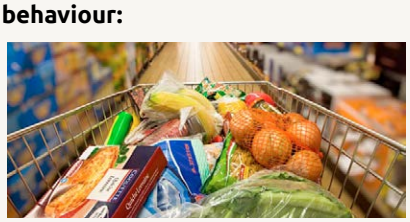
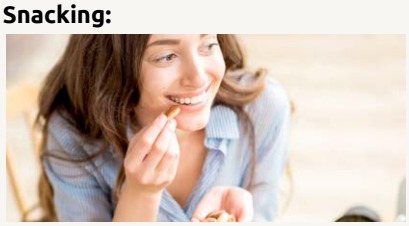



**Figure 75: Export value and volume for stone fruit: 2010-2030**

## BOX 8: EXPLORING THE IMPACT OF THE COVID-19 PANDEMIC ON FRUIT CONSUMPTION

| | |
|---|---|
| **Food safety:**  | Consumers' heightened awareness of food safety due to the pandemic is unlikely to change in the near future. Examples of fruit sector implications:<br>• More focus on washing fresh produce prior to consumption.<br>• A possible movement away from 'loose sell' fresh produce in retailers, which will have to be balanced with consumers' need for sustainability through more sustainable packaging options for pre-packed fruit. |
| **Affordability:**  | • The financial position of households around the globe has been and still is affected negatively by the pandemic. Facing food budget constraints, many consumers could be purchasing affordable fruit, offering good value-for-money and a long shelf life such as citrus, apples and bananas. |
| **Shopping behaviour:**  | • Fewer shopping trips to avoid potential disease exposure, with subsequent notion towards purchasing larger fruit pack sizes (i.e. more bulk buying).<br>• Significant growth in food online shopping – opportunity to sell pre-packed fruit but challenging for 'loose sell' fruit offerings.<br>• The impact on the South African informal food trade (i.e. street vendors) remains to be seen and could depend largely on the risk perceptions of their clientele. |

## BOX 8: EXPLORING THE IMPACT OF THE COVID-19 PANDEMIC ON FRUIT CONSUMPTION (CONTINUED)

| | |
|---|---|
| **Health and wellness:**<br>  | • Consumers' food choices to enhance health and overall wellbeing has become a mega-trend – further established by the pandemic.<br>• Fruit can contribute significantly to healthy dietary patterns, from the perspective of both fresh fruit and processed 'healthy' foods with fruit ingredients.<br>• The increased demand for immune-boosting fruit rich in vitamin C (e.g. citrus, papaya, kiwi) should linger for some time to come. |
| **Snacking:**<br>  | • A pandemic-induced shift to working-from-home has fuelled the existing demand for convenient snack foods.<br>• Fresh fruit and fruit within 'healthy' processed foods, could be marketed as integral components of healthy snacking at home and on-the-go. |
| **Comfort foods:**<br>  | • Despite many consumers' heightened awareness of healthy food choices, the pandemic did also create demand for comfort foods and treats.<br>• The fruit category could be incorporated into the comfort food trend in for example desserts, snack bars and ingredients within indulgent main meals (e.g. berry-based sauce served on steak). |
| **Home cooking & flavour adventures:**<br>  | • A return to home cooking and the preparation of meals offering 'flavour adventures' at home, were fuelled by consumers' increased avoidance of public spaces and restaurants in particular.<br>• The fruit industry could benefit from these trends, by educating consumers on the versatility of fruit as cooking ingredients. |
| **Sustainability:**<br>  | • Consumer demand for sustainably produced food (particularly in developed countries) has significant implications for the fruit industry. For example:<br>o Concerns about the 'food miles' and carbon footprint of imported fruit.<br>o Concerns about the water usage and impacts of commercial fruit production practices.<br>o Concerns about the environmental impact of commercial fruit production practices in terms of aspects such as pesticides, soil preservation and biodiversity impacts.<br>o Concerns about social sustainability and fair wages.<br>• Even though these issues are not yet at the forefront of South African consumers' fruit decision-making, they are critical to address when focusing on export markets in developed countries. |

### Domestic Use

Local consumption growth is expected to be slow for the deciduous fruit sector over the coming decade. However, trends differ by commodity type - apples, plums and to a lesser extent, nectarines, reflect good growth in local consumption, whereas the local pear, apricot and table grape markets seem saturated. In many cases, per capita consumption has been declining for some time, with the same production volume entering the local market annually. Pockets of potential exists in the fairly small local market for table grapes, with exclusive programmes in certain supermarket chains. The high cost of production and packaging, as well as the premium received in the export market, results in a small opportunity for expansion domestically. With the economic slowdown as a result of the pandemic and the shift towards more basic foodstuffs by more price conscious consumers, limited growth prospects exist at current price points in the local market for fresh fruit.

### Concluding Remarks

From a production perspective, 2020 was a strong year for the deciduous fruit industry, but challenges abounded through the rest of the value chain. Logistical challenges, which had already been evident in 2019, were exacerbated by restrictions aimed at curtailing the spread of COVID-19 and limitations on market access meant that producers could not always fully capitalise on the value of their produce. Such challenges will need to be addressed if growth in the fruit sector is to be sustained. Agricultural exports provide a good source of foreign revenue and the production of high quality exportable products is a key source of job creation. The next few years will be critical to broaden market access and creating an economic environment conducive to growth. The sustainability of the industries covered in this chapter is paramount if they are to be viable vehicles for job-security and generation of foreign revenue. This will require addressing the ports' infrastructural challenges, fast-tracking developments with market access and the continuation of sound investments into good cultivars.

# OUTLOOK FOR CITRUS AND SUBTROPICAL FRUIT



**Introduction**

2020 was a memorable year for the South African citrus and subtropical fruit industries. From field to fork, stakeholders showed tenacity to get the job done, often under trying circumstances. Despite the immense uncertainty that came with the pandemic, strict lockdown measures, as well as road and port holdups, the season was exceptional – partly assisted by a substantially weaker Rand. In nominal Rand per unit terms, 2020 was the best export season to date for avocados and for citrus, as a collective. The supply from producers and packhouses throughout the country was well received in a world market that showed strong demand for healthy products rich in Vitamin C.

With another record harvest for citrus expected in 2021, as well as year on year increases in avocado and macadamia volumes, interesting times lie ahead in these sectors. This chapter unpacks some of the historic changes and future projections for these industries from a production and market distribution perspective.

**Production**

Despite the 2020 harvest season coinciding with one of the strictest COVID-19 related lockdowns in the world, exceptional efforts resulted in a continuation of practices at farm level to ensure that produce could be harvested timeously. Citrus reached a new peak in production volumes, while the avocado harvest was more modest, with smaller fruit size as a result of low water levels in some production regions. After two consecutive exceptional macadamia seasons in 2018 and 2019, volumes were slightly lower in 2020, but early estimations for 2021 suggest that the industry should yield volumes close to its 2019 record harvest.

***Citrus***

The citrus industry is in a period of rapid expansion and has reported record production volumes for three consecutive years. This trend is expected to continue in the short term, especially in the current climate where prices have found support from strong demand and a comparatively weak exchange rate. Strong recent growth in cultivated area, especially for soft citrus and lemons that are still to enter into production over the next few years, will drive production growth and the true impact will only be evident over the medium term in the outlook.

Figure 76 presents the cumulative production volume of soft citrus, lemons and grapefruit on the left, together with the actual and projected cultivated area. Whilst the cyclical movement in grapefruit area is projected to continue, with a slight decline over the short to medium term, the area under production is expected to recover over the second half of the outlook. In 2020, around 345 000 tonnes of grapefruit

were harvested. A decline of almost 18 000 tonnes is expected by 2024, after which the cycle will regain momentum to just over 390 000 tonnes by 2030.

Stable prices for oranges are expected to support profitability and expansion of this subsector, with growth in area and production volume expected over the outlook period. Oranges are a more stable option relative to the volatile soft citrus and lemons subsectors, which may favour expansion once the area under soft citrus and lemons plateau over the second half of the outlook. Given that area expansions are expected to continue in the short term, production volumes of both soft citrus and lemons are projected to more than double by 2030 compared to the base period of 2018-20.

The 2020 GPV for citrus amounts to R26.5 billion, with 45% emanating from oranges, followed by soft citrus (23%), lemons (23%) and grapefruit (9%). With the 64% growth in production volume projected by 2030 (relative to the 2018-20 base), the nominal increase in GPV is projected at 70%. With the weakening Rand over the outlook period, this seems less than expected, but is due to the price pressure resulting from the additional volumes that will need to be absorbed in the market. Growth in demand across the different marketing channels, from new market access for exports, growth in local demand for fresh citrus as well as expansion of demand and capacity in processing, will positively impact on prices and reduce the pressure currently projected over the outlook period under the baseline assumptions.

***Avocados***

Given strong growth in demand for avocados, the area expansion in the sector over the past few years has been slower than might have been expected. This follows some challenges with availability of planting material, which have mostly been resolved now, as well as a rapid rate of replacement of existing orchards. However, with continued growth in demand expected to support prices over the projection period, nursery purchases remain strong, which will likely result in considerable area expansion in the coming years. Current projections point to area growth consolidating from around 2027 onwards, reaching close to 30 000 hectares by 2030 (Figure 77). Consequently, volumes are expected to grow too, particularly given that higher density plantings and newer cultivars are enabling higher yields earlier in the productive period of an avocado tree's lifespan. Together with the rate of replacement incorporated into the plantings over the

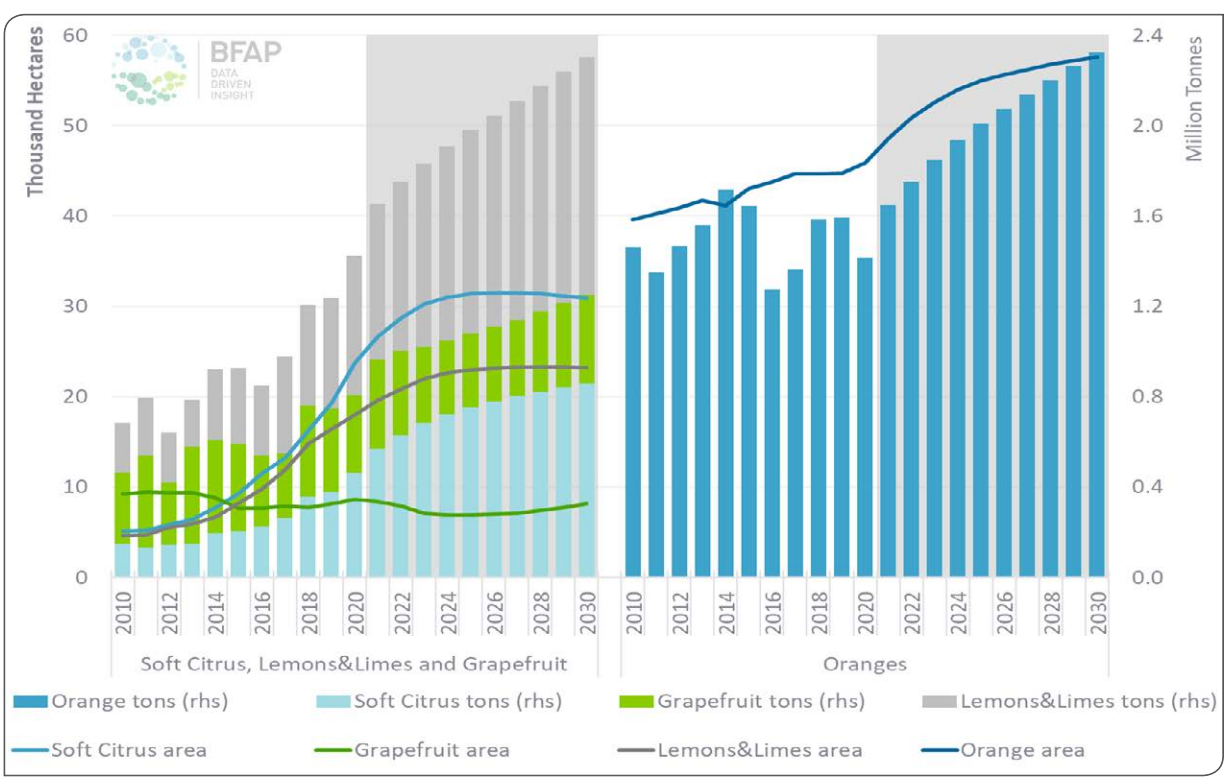



**Figure 76: Production volume and area for citrus: 2010-2030**

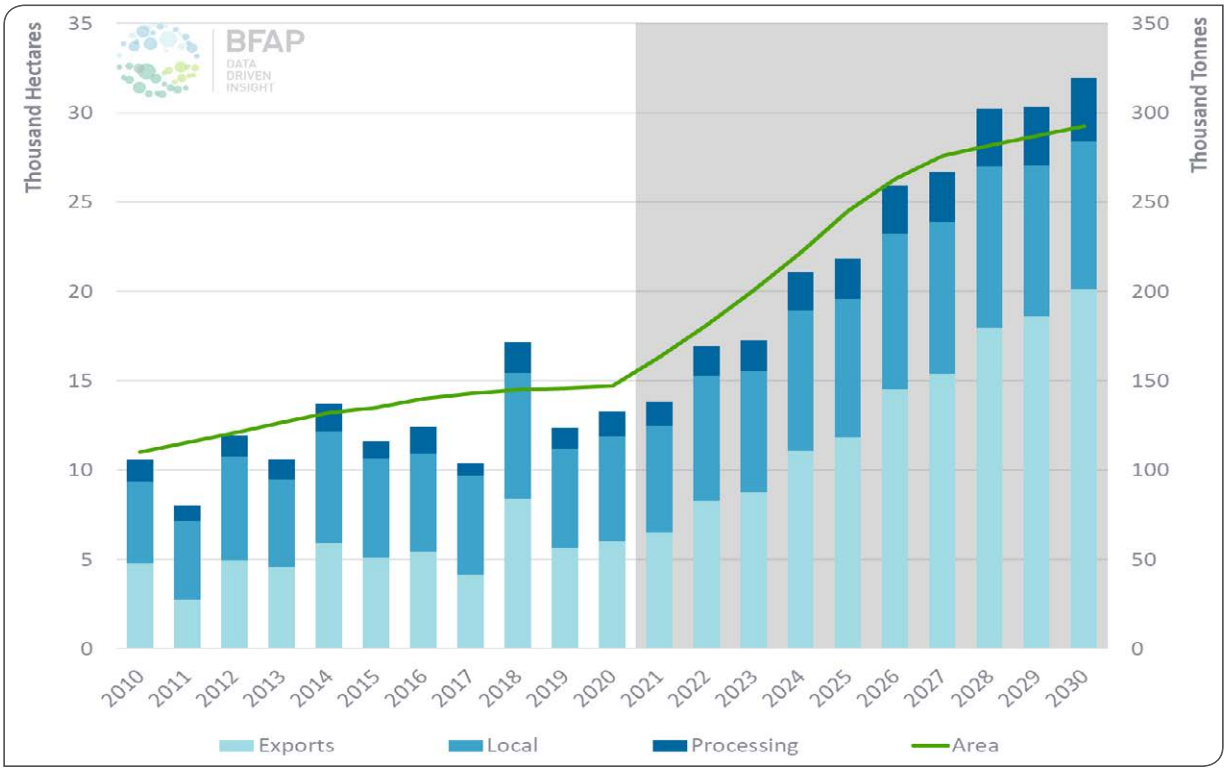



**Figure 77: Production volume and area for avocados: 2010-2030**

last couple years, production volumes are expected to rise substantially, exceeding 300 000 tonnes by 2030. This implies that area could double over the next ten years, with production increasing by 126% from a 2018-20 base.

The avocado industry was valued at R2.4 billion in 2020. This could grow by as much as 200% to over R7 billion in nominal terms in the coming decade. Over the last 10 years, avocado exports globally increased, on average, by 12.6% annually. This is expected to grow with indications that European consumption will continue to increase over time. As Europe is SA's most important market, a growth in demand from Europe could play out favourably for the South African avocado industry, with a bigger share of total production being exported, resulting in a faster growth rate in terms of value compared to volume. It should be noted however that South Africa is not the only supplier into these markets and will face stiff competition from Peru, Kenya and Colombia where the industry is also looking to expand, which can result in some price pressure if market saturation is reached.

***Macadamias***

Much of the rapid growth in macadamia area over the past decade has gone unnoticed by many outside of the nut sector. Macadamia trees typically bear its first nuts by year 3 or 4 and only reach full bearing yields around year 13. Accordingly, the 173% increase in cultivated area, from 18 359 hectares in 2011 to 50 133 hectares in 2020 are yet to fully reflect in production volumes. By year 7, a macadamia tree will yield roughly half of its full bearing potential. For illustrative purposes, Figure 78 presents the cultivated area per year, as well as a 7 year lag of the same data, to provide some indication of when around 50% of the volume harvested from new plantings would be observed in the production output. The production area is projected to continue its upward trend over the outlook period, albeit at a slower rate post 2025. Despite this slowdown, total area could reach between 75 000 and 80 000 hectares over the next decade, with the full impact of those plantings only to be observed around 2040 when the trees to be planted in 2030 will near their full potential.

Over the past decade, total production volume grew by 63%, from 30 068 tonnes, measured as nut in shell, to 48 925 tonnes. From a 2018-20 base of close

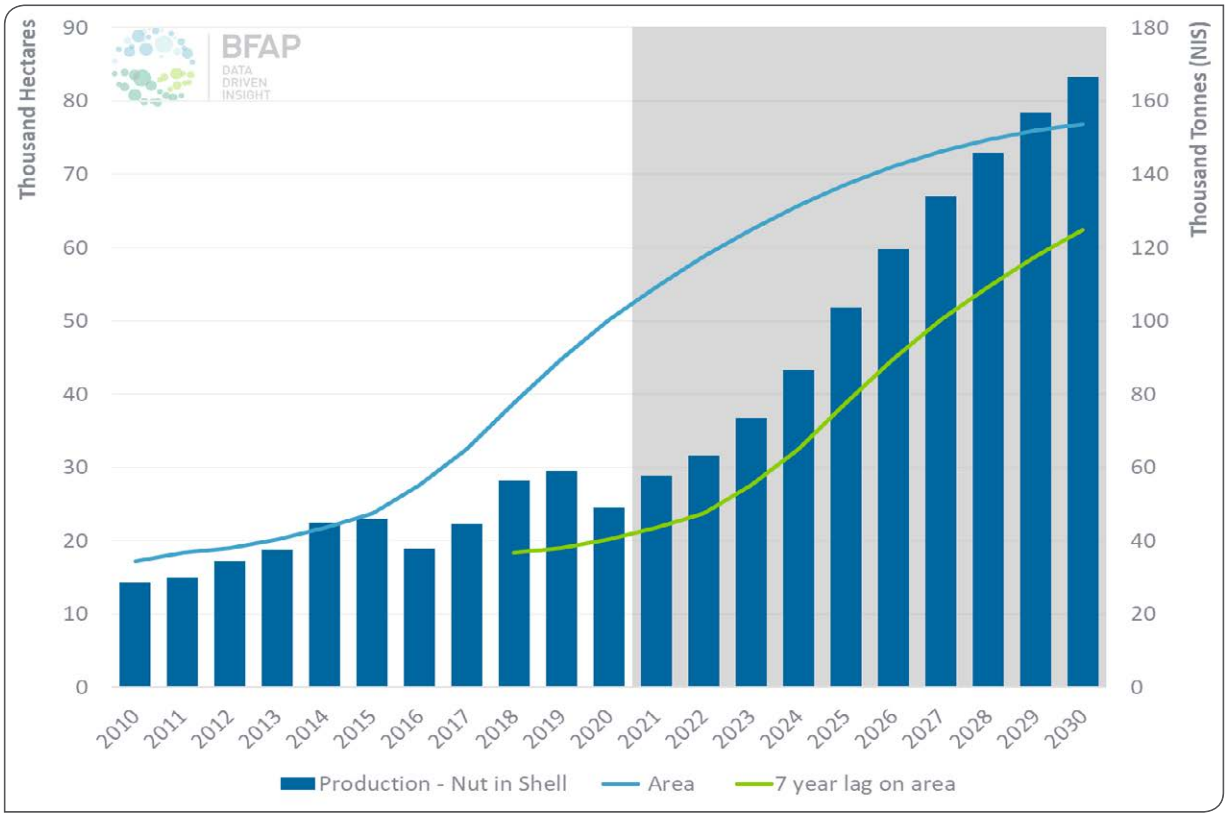



**Figure 78: Production volume (nut in shell) and area for macadamias: 2010-2030**

to 55 000 tonnes (nut in shell equivalent), and given the projected growth in area, volume could expand threefold or more. Such expansions at producer level will also require concomitant expansion across the broader value chain.

With such drastic increases in total volume expected from citrus, avocados and macadamias, an evaluation of the readiness of the value chain, from pack house or processing plant to market is of critical importance to ensure sustainability at production level.

**Trade**

All of the sectors in this chapter are predominantly export orientated, even if, in the case of avocados for example, significant volumes are also consumed locally. Despite the higher cost and risk carried by the producer to deliver produce to external markets, its higher value prospects still make it the preferred marketing channel.

Amongst the three sectors, macadamias top the table with an estimated 98% of sound produce exported, followed by 73% of soft citrus, 67% of grapefruit, 64% of oranges, 63% of lemons and 45% of avocados. In terms of contribution to GPV, 98-99% of macadamia value is generated in foreign revenue, followed by 93% for citrus and 63% for avocados. Exports will continue to constitute the bulk of value generated from fruit and nut sectors over the outlook.

***Citrus***

According to the World Citrus Organisation, Southern Hemisphere citrus production is expected to reach 22.7 million tonnes in 2021, which is 3.2% more than in 2020. On the back thereof, exports are expected to increase by 12.7% year on year to reach 3.8 million tonnes. With a large portion of South American citrus produced for processing, South Africa is the largest exporter of fresh citrus in the Southern Hemisphere as a collective and for each of the individual commodities within the citrus industry. As a result of the expected growth in volumes, price pressure is expected to ensue, but value will continue to trend upwards. Figure 79 suggest that, following a post pandemic normalisation, at a time of rapid volume growth, nominal prices trend largely sideways from 2023 onwards. In light of strong volume growth, export values continue to trend upwards over

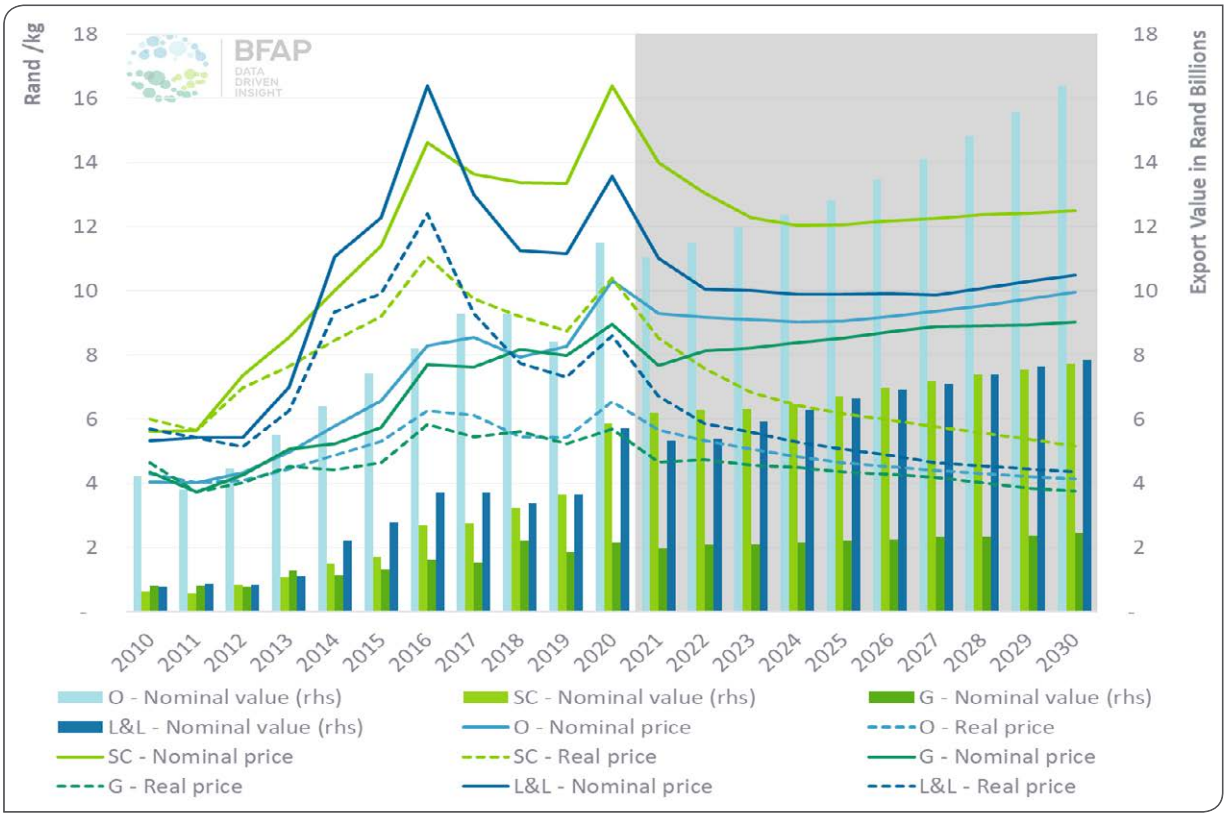



**Figure 79: Export value and prices for citrus: 2011-2030**

time. In real (2011) terms, prices have increased over the past decade, but continue to trend downwards, returning to values comparable to 2011 towards the end of the outlook period.

New market access can, however, alleviate the price pressure currently projected. After many years, South Africa gained access to the Philippines towards the end of 2020, with the first volumes shipped in 2021. In June 2021 South Africa gained direct access to the Chinese market for lemons, after six years of phytosanitary protocol negotiations and future focus include an expansion of the soft citrus cultivar list to Japan, as well as new access to Vietnam for citrus.

***Avocados***

With consumption of this superfood gaining momentum in Europe, which is South Africa's most important trade partner, the outlook for avocado exports is positive. Add to that the focus of gaining access to key eastern markets, including Japan, India, China, South Korea and Taiwan, the volume and value of exports are projected to trend upwards over the outlook period. Figure 77 indicates that export volumes are expected to grow as share of total production to reach 200 000 tonnes by 2030. With the additional volumes from new plantings entering the market, an interesting trend emerges: 2021 volumes are expected to surpass the 2020 volumes, despite 2020 being an 'on-year' and 2021 considered a typical 'off-year'. Although avocados are typically alternate bearing, much work has been done to reduce the difference in harvesting volumes between the on-year and the off-year. Together with the impact of new plantings contributing to production output, the first signs of upward trending year on year volumes over the next couple of years are already evident.

Avocado exports in 2020 were valued at R1.26 billion. In addition to a nominal price increase projected over the outlook period, which finds support from market growth and consumer demand, the relative growth in exports as a share of total production volume implies that the value contribution from avocado exports could increase threefold over the next ten 10 years.

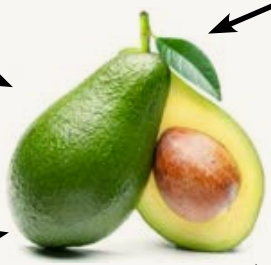
## BOX 9: A GLOBAL PERSPECTIVE IN THE GROWTH POTENTIAL OF AVOCADOS

Over the last decade global export volumes of avocados, on average, increased by 12.63% per annum, with the US, the Netherlands, France, Canada, Japan and the UK representing the major importing destinations (ITC, 2021). The annual per capita intake of avocados is particularly high in the United States (±3.7kg), Australia (±3.6kg), New Zealand (±3.1kg) and Canada (±2.5kg), with a lower consumption level of 1.2kg estimated for Europe. Market speculation suggests that the demand for avocados in Europe could triple in the coming years, moving closer to the per capita consumption levels observed in the United States.

**THE AVOCADO VALUE PROPOSITION:**

**Health appeal, e.g.:**
- Nutrient-dense, e.g.:
  - Vitamins K, E, C, B5, B6;
  - Minerals: potassium, folate;
  - Macro-nutrients: protein, 'healthy' fats, fibre.
- Low-carbohydrate food.

**Convenience potential, e.g.:**
- 'Ripe and ready" whole fruit;
- Pre-prepared Guacamole dip;
- Avocado in pre-prepared ready-to-eat salads.



**Sensory appeal, e.g.:**
- Appealing colour;
- Creamy texture;
- Diverse culinary uses, such as
  - E.g. Cuacamole dip, salads, sandwiches, breakfast ingredient, pizza topping & smoothies.
  - In food-away-from-home settings AND potentially benefiting from the revival of hom-prepared meals fuelled by the COVID-19 pandemic.

**Multiple industry applications, e.g.:**
- Food, cosmetics, pharmaceuticals.

Industry challenges to unlock the global market potential of avocado's:
- Continued technological advances, including controlled ripening, to improve product perishability and deliver 'ripe-and-ready' fruit to consumers in export destination countries.
- Sustainability challenges:
  - Development of solutions to reduce food waste associated with avocados;
  - Consumers in developed countries generally have growing concerns regarding the environmental sustainability of food, including issues such as the food miles of imported food, as well as concerns about factors such as water resources, deforestation, and supply chain transparency pertaining to these aspects. Social sustainability (e.g. fair living wages) is also growing in importance for consumers. The development, implementation and continuous improvement of avocado production measures to improve the effectiveness of water usage, minimise environmental impact and to ensure socially responsible production, are critical for future market access.
  - The demand for certified organically produced avocados is growing, but should be explored in terms of production requirements, market potential and economics. For some South African avocado producers, the establishment and/or expansion of organic production could open up market opportunities.
- Avocado cultivars:
  - Understanding target market preferences for different avocado cultivars, to align orchard development with future market needs.
  - Could consumer education on the characteristics of various avocado cultivars be beneficial?
- The potential for frozen avocado exports:
  - What is the market potential and consumer acceptance of imported frozen avocados? What are the quality and nutritional implications of frozen avocados? Supply chain infrastructure and investments required?

**BOX 9: A GLOBAL PERSPECTIVE IN THE GROWTH POTENTIAL OF AVOCADOS (CONTINUED)**

- Identification of alternative export market destinations, in addition to the US and Europe.
- Establishing phytosanitary agreements with countries identified as future expansion markets.
- Ensuring consistent supply to export markets in terms of quantities and product quality.
- From a consumer perspective it is critical to understand consumers' decision-making trade-offs between available purchasing power, quality requirements, their need for 'super fruits', convenience (e.g. year-round product availability and 'ripe and ready' fruit) and environmental / carbon footprint considerations.

***Macadamias***

Although macadamia production and consumption is growing across the globe, from 28 714 tonnes (kernel basis) in 2010/11 to 62 875 tonnes in 2020/21, it is important that the industry be considered within the global tree nut production context. Almonds (31%), Walnuts (19%), Pistachios (19%), Cashews (16%) and Hazelnut (10%) production amounts to 94.5% of all tree nut production in the 2020/21 season. Pecans (3%), macadamias (1%), Pine Nuts and Brazil Nuts (<1% each) round the output. South Africa's exports of macadamias, both nut in shell (NIS) and kernel (or shelled) basis, must be viewed in relation to global nut production and consumption.

South Africa exports roughly 40% of its macadamias as a nut in shell to Hong Kong, China and Vietnam. Some of these products are sold within these countries as NIS, others are cracked for local consumption, and the rest is processed and re-exported to importers of the final shelled product. The shelled product directly exported from South Africa is primarily destined for the US and European markets, although shelled exports to the Far East are growing too.

Even if the ratio between NIS (40%) and kernel (60%) exports (both measured as NIS equivalent) remain similar to existing levels, domestic cracking will still grow by 200% over the next ten years. Not only does it add value to the product and grow the agro-processing sector, it is also a valuable contributor to employment. Currently, the GPV is R4.5 billion and this is projected to grow by 196% towards 2030 to around R13 billion in nominal terms. This growth in value lags behind the growth in volume (Figure 80) despite gradual depreciation of the Rand, due to the projected downward pressure from additional volumes on prices over the outlook period. This phenomena is similar to what is projected for citrus, where South Africa is also a large supplier into the global market, implying that its volume growth would influence price levels.

**Domestic use**

Many South Africans were severely affected by the pandemic and the different lockdown levels enforced in an attempt to contain it. As a result, consumer spending had to adapt, with higher value, luxury products often forgone in favour of spending more related to basic needs. Challenges in the marketplace also played a role in 2020, with travel restrictions making it difficult for traders to acquire product. For the full year, sales volumes remained similar to 2019 at the National Fresh Produce Markets, even though operations in these markets were interrupted intermittently. Slightly lower volumes of avocados were traded at these markets, but with greater volumes sold directly to retailers, resulting in a year on year increase in fresh local consumption of avocados.

Over the outlook period, little change in domestic buying of citrus and macadamias are projected, with the focus of these industries directed towards exports, both from a volume and value perspective. Oranges remain on of the most affordable fruits in South Africa, with its fairly long shelf life and multiple uses making it, after bananas and apples, the most consumed fruit in South Africa. Macadamias, on the other hand, sells at price points in supermarkets where very few South Africans can even consider purchasing the product – per 100g it is more expensive than biltong and droëwors in supermarkets, leaving much to be done to grow the local consumer base. Domestic avocado consumption can grow, as these fruits become more popular over time with consumers, and domestic supply is also projected to result in an increased availability on the local market.

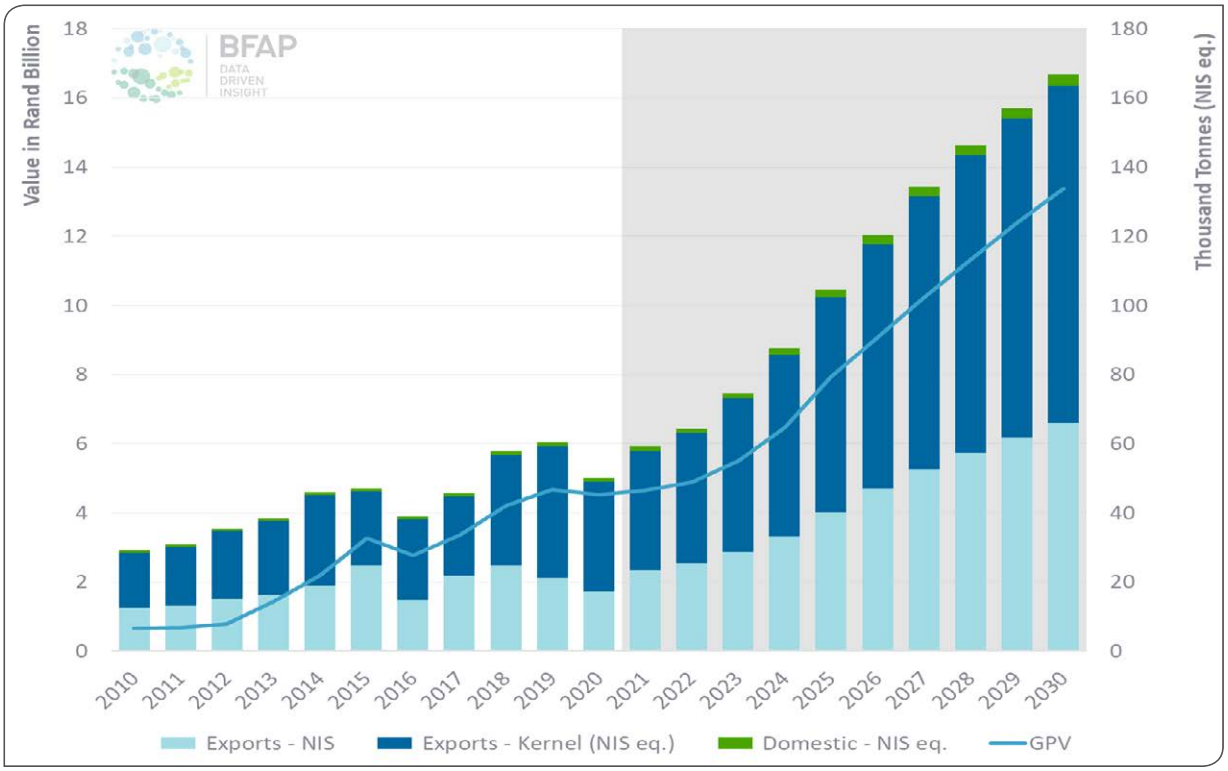



**Figure 80: Value and volume for macadamias: 2010-2030**

## BOX 10: SUPERFOODS TO ENHANCE HEALTH AND WELLBEING – A FRESH PRODUCE FOCUS

Even though all foods provide the consumer with basic nutrients and energy, functional foods contain components that enhance physiological responses associated with health and wellbeing. Certain foods such as fruits, vegetables and nuts are often characterised as conventional functional foods, with 'natural goodness' presenting the consumer with superior health benefits. The popularity of superfoods has been growing in recent years, with accelerated growth fuelled by the COVID-19 pandemic and the strong focus on general health, wellbeing, and immunity.

**Table 9: Examples of popular conventional functional superfoods in the fruit, vegetable and nut food groups contributing to immunity and health maintenance**

| Food group: | Food item: | Superfood 'ingredients': |
|---|---|---|
| Fruit  | Citrus fruit, e.g. oranges | Vitamin C; Antioxidants |
| | Kiwi fruit | Vitamins C, K; Potassium, folate |
| | Papaya | Vitamin C; Anti-inflammatory components |
| | Cranberries | Vitamin C, Polyphenols |
| | Pomegranate | Vitamin C, Antimicrobial & anti-viral properties |
| | Blueberries | Vitamin C; Potassium; Antioxidants; Phytoflavinoids |
| Vegetables  | Broccoli | Vitamins A, C, E; Antioxidants |
| | Spinach | Vitamins A, C, E; Antioxidants |
| | Red bell peppers | Vitamin A, C |

## BOX 10: SUPERFOODS TO ENHANCE HEALTH AND WELLBEING – A FRESH PRODUCE FOCUS (CONTINUED)

**Table 9: Examples of popular conventional functional superfoods in the fruit, vegetable and nut food groups contributing to immunity and health maintenance (continued)**

| Food group: | Food item: | Superfood 'ingredients': |
|---|---|---|
| Nuts  | Almonds<br>Cashew nuts<br><br><br>Pistachio nuts | Vitamin E; Manganese<br>Heart-healthy fats, plant protein, coppor, magnesium, manganese<br>Antioxidants, Vitamin B6, Potassium |

Globally, 2021 superfood trend predictions focused on a wide range of foods, such as:

- Fruit: avocados, blueberries, breadfruit, golden berries.
- Vegetables: sweet potatoes, beets, microgreens (small nutrient-dense vegetables), spinach, kale.
- Seeds, nuts: chai seeds, hemp seeds, various nuts.
- Animal protein foods: eggs, salmon.
- Oils: olive oil.
- Other: turmeric, ginger, black garlic, dark chocolate, fermented foods, chickpeas, green tea, hemp, ancient grains.

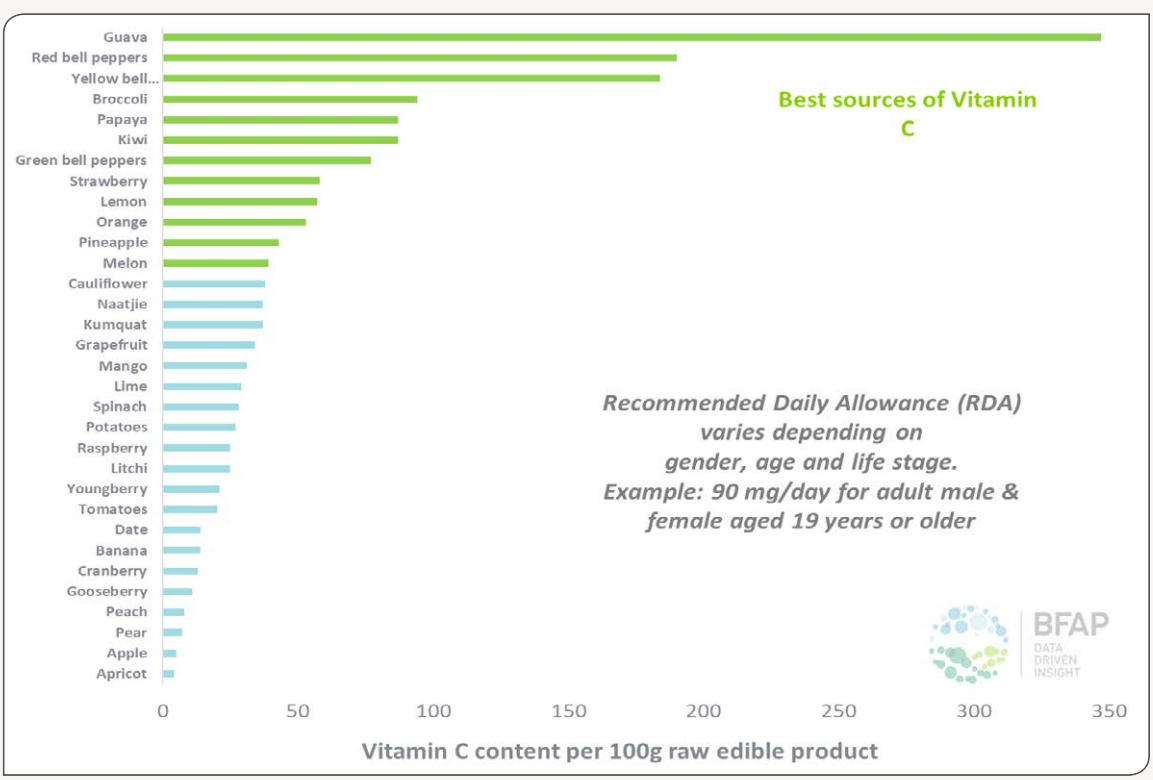



**Figure 81: Vitamin C content in various foods**

### Concluding remarks

Market access and demand growth remains at the core of longer-term sustainability of the citrus and subtropical fruit and nut sectors in South Africa. The multiple years between planting, first harvest and full bearing, makes it especially challenging for producers to fully integrate macro-economic indicators into their decision-making process. The prospect of good returns in future justifies the high cost of establishing new orchards, but when those prospects do not come to fruition, it has a significant impact on the return on investment. Despite the risks involved, it appears that producers in these sectors still see opportunity in the future and will continue to act on those beliefs. The investment in new and upgrading of existing infrastructure throughout the value chain is undisputedly critical to increase the potential for sustainable production at a primary level.

# OUTLOOK FOR WINE GRAPES AND WINE



**WHILE THE AGRICULTURAL** sector generally was not severely impacted by the COVID-19 pandemic, the same cannot be said about the wine industry, principally because of the severe limitations on trade in domestic and export markets that have been (and may still be) implemented as part of the restrictions imposed to curb the spread of the virus. The timing could not have been worse, as the restrictions came just as wine grape production volumes stabilized in 2020 after the three-year long drought in the Western Cape that ended with the 2018 harvest. Despite an easier trading environment for alcohol over the first half of 2021 when compared to 2020, the wine industry remains under severe pressure as a result of the rollover effect of 2020 and new restrictions on sales with the current third wave of infections amid the stalled vaccination roll-out. In total, since the first lockdown announced in March 2020, exports were banned for 5 weeks, while a total of 23[1] weeks of domestic sales bans have been imposed at four different stages, as well as long periods of restricted selling hours for both on- and off-premises consumption. With the latest restrictions still ongoing in July 2021, the time required for recovery remains somewhat uncertain.

While the industry is dependent on wine sales, it also underpins a broader wine tourism sector which employs thousands of people and contributed an estimated R7.2 billion to the South African economy in 2019 (Vinpro, 2020). Wine tourism was particularly affected by the stringent domestic regulations as well as by restrictions on domestic and international travel, resulting in job losses and affecting the livelihoods of many households.

To top it off, the restrictions imposed on the economy in 2020 resulted in a severe contraction in the South African economy, from which the country will take many years to recover. Thus, spending power will remain constrained, affecting the outlook for domestic wine sales. The outlook for wine grape and wine production is presented against this backdrop. In light of possible further restrictions in the second half of 2021, the uncertainty around these projections is higher than usual.

### International market overview

Over the past 20 years, world production peaked above 29 billion litres three times, in 2004, 2013 and 2018. The worst performing years were 2002, 2017, 2019 and 2020, all with volumes equal to or below 26 billion litres. South Africa is the world's seventh biggest producer of wine, which equates to 4% of the total world volume. The top three (Italy, France and

[1] Up to and including the end of July 2021

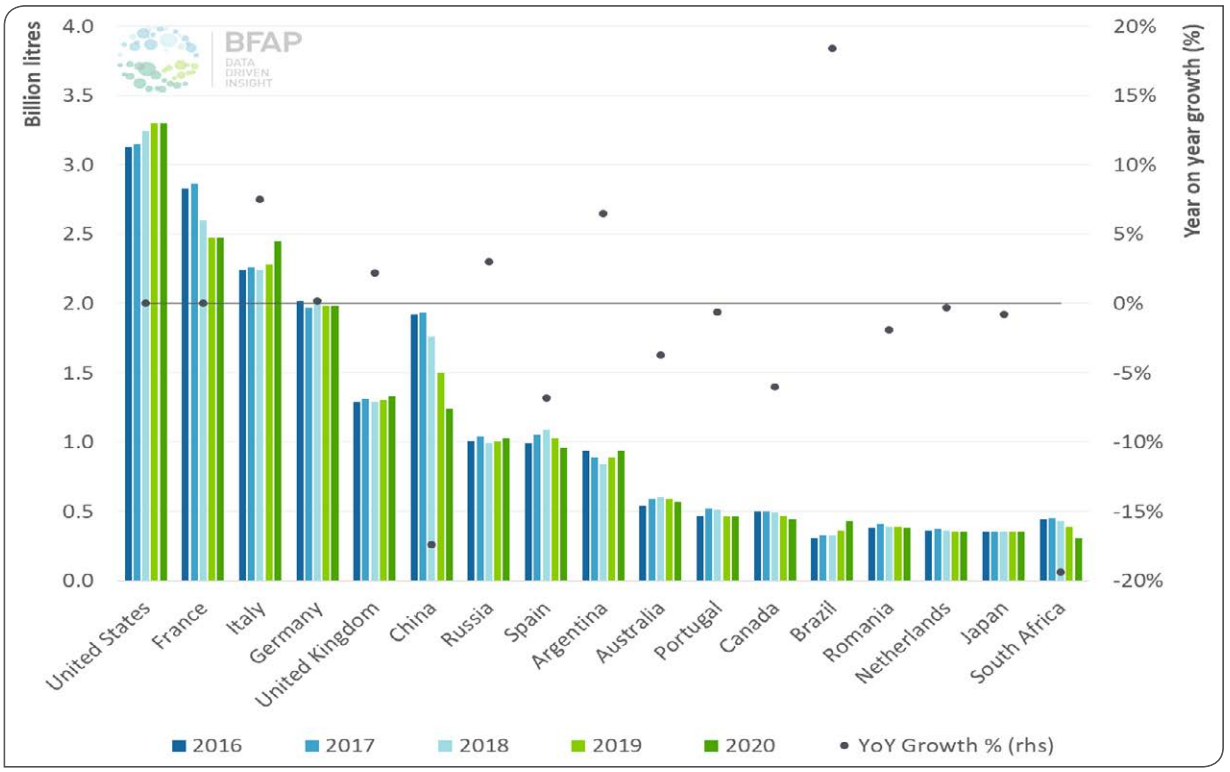



**Figure 82: Wine consumption in selected countries from 2016 to 2020**
**Source: OIV, 2020**

Spain) combined produced 52.4% of the total in 2020 and have all seen year on year increases in production to the extent of 3%, 11% and 21% respectively. Together with numbers four to six (the US, Argentina and Australia), the top 7 contributed 73.4% of total wine production last year. In contrast to the top three, the latter have all shown annual double digit decreases in wine production volumes, to the extent of -11%, -17% and -11% respectively.

On the consumption side, the US, France and Italy are the biggest consumers of wine, with 35.1% of total consumption. Whilst the OIV reports a 1% year on year increase in production volumes for 2020, it reflects a 2.8% decline in consumption volumes. Figure 82 shows the consumption volumes for some of the main countries by volume, together with the year on year change in consumption, from 2019 to 2020. Amongst the top five consumers, 2020 consumption remained steady and/or increased from 2019 levels. Whilst no changes are observed in the US and France, consumption in Italy (7.5%), Germany (0.2%) and the UK (2.2%) increased despite the pandemic. Although South African consumption declined the most in relative terms (-19.4%), the biggest absolute year on year change is observed in China (-260 million litres). Notable declines were also recorded for Spain (-6.8%), Australia (-3.7%), Portugal (-0.6%) and Canada (-6.0%). With many of these countries progressing in the process of vaccinating their populations, the extent to which changes in purchasing patterns through the pandemic will persist in the next few years remains somewhat uncertain. Such changes refer to increased purchases through supermarkets and e-commerce channels as opposed to clubs, cafes, restaurants and wine tasting venues.

Worldwide wine exports have stabilised since 2015, moving within a small band of 10.5 to 11 billion litres annually after progressively growing from around 6 billion litres in 2000. In the top 10 wine consuming countries, average annual growth in consumption over the last five years could only be observed in the US, Italy, the UK and Australia, whilst contractions are observed for France, Germany, China and Spain. Despite the negative average annual growth in total wine production (-0.36%) from 2016 to 2020, the combination of consumption equalling 91% of production over the last five years, the -1% average annual growth in total consumption of wine, and the

stabilisation in export volumes inevitably will lead to an increase in stock levels over time, especially in net exporting countries.

In terms of volume, bottled wine accounted for 53% of traded volumes in 2020, with a further 4% attributed to the "Bag in Box" (BiB) category and with Covid-19 not sparking much reason for celebration, a 5% decline in volume and 15% decline in the value of sparkling wine is observed. Despite the decline, it still represents 9% of volume and 19% of the value of traded wine. 34% of exports were traded in bulk. Bulk wine remained stable volume wise, but increased by 4% in value year on year, comprising 9% of total traded wine value.

**Domestic Consumption**

The restrictions on domestic wine sales through various stages of the lockdown in 2020, and again in 2021, present a severe setback to the industry's efforts to grow domestic consumption. Prior to the pandemic, domestic wine consumption was already trending downwards on the back of lower disposable income and higher prices, and 2020 represents the third consecutive year of decline. Consumption in 2020 was 29% lower than in 2017. The lockdown, together with the combination of sales restrictions and economic decline, contributed to the worst domestic consumption volumes in at least 30 years (since 1991). The industry is expected to recover somewhat in 2021, with a year on year increase of 21% projected. This is purely an economic outcome and does not account for possible further restrictions on sales through the second half of 2021. While sales restrictions are not expected to last beyond 2021 under the baseline, the economic recovery will take much longer. Consequently, while a substantial year on year recovery is projected in 2021, it is insufficient for domestic sales to exceed 2019 volumes, even at lower prices. In fact, it implies that consumption levels remain 13% below 2017's consumption levels.

Figure 83 presents the short term (2021) and medium term (2030) outlook for wine consumption in South Africa, referenced against the 2017-2019 average and 2020. After the initial setback in 2020, total wine consumption is projected to increase by an annual average of almost 2%. Naturally, this is influenced by the exceptionally low sales volumes in 2020 and current projections are that the average sales volume between 2017 and 2019 will only be exceeded by 2024. Within the still wine category, the low and basic price

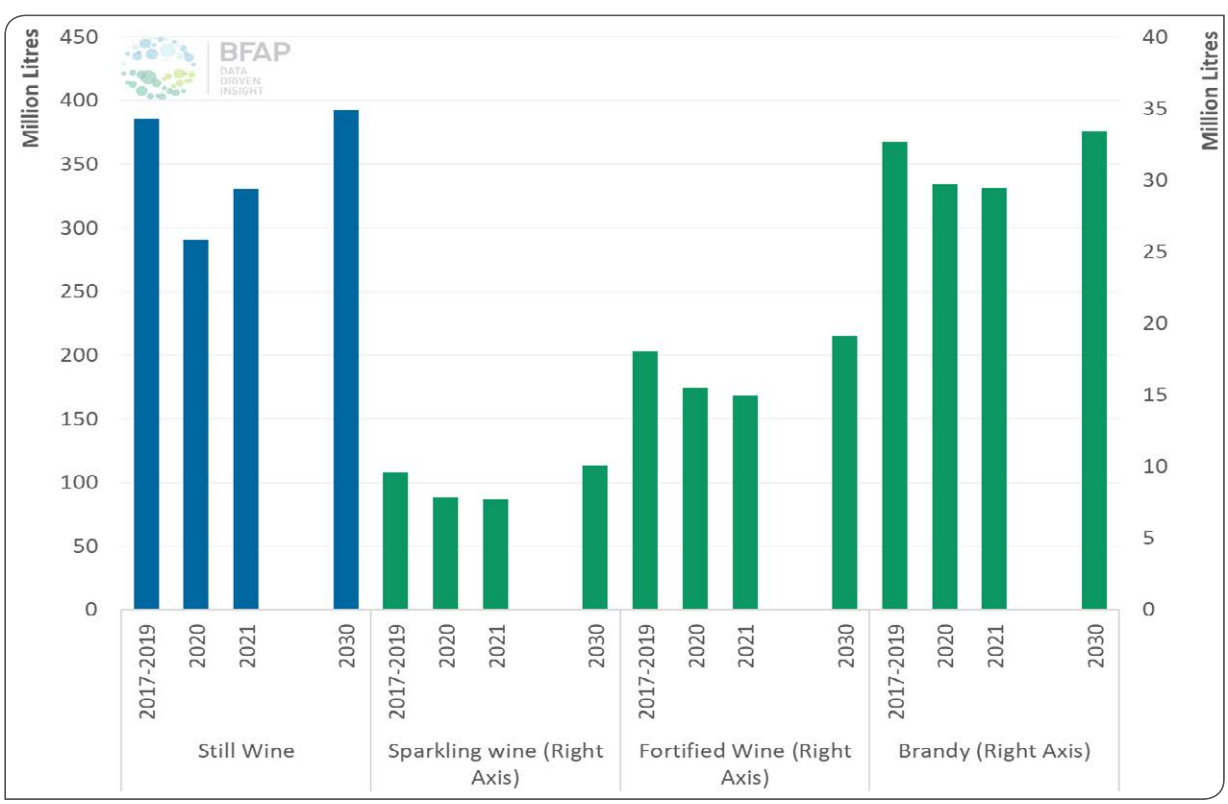



**Figure 83: Wine and Brandy consumption in South Africa: 2017-2030**

segments constitute the lion's share of consumption and the bulk of the decline is also attributed to these categories. These categories are typically consumed by lower income consumers and continue to face strong competition from beer in the alcoholic beverage complex. The rapid expansion in ready to drink beverages (RTD's) are also offering increasingly popular alternatives to consumers at higher price points. Premium categories are expected to perform better than lower priced categories over the outlook period, owing to their less sensitive consumer base. By 2030, small volume increases appear in all these categories (still wine, sparkling wine, fortified wine and brandy). Wine tourism remains a key component of the industry as a whole, and will remain an important contributor, especially whilst wine production remains under pressure in the medium term.

**Trade**

Although South Africa was able to recover from the initial five-week ban on exports early in 2020 and end the year with wine export volumes similar to 2019 (319 million litres compared to the 320 million litres in 2019), the industry has experienced a setback in its WISE[2] strategy to reach 60% of export volume to be sold packaged (as opposed to bulk) by 2025 (Vinpro, 2019). The reputational damage of not delivering on goods as a result of restrictions during the pandemic has played a role in that too. This comes after a 24% year on year decline in exports in 2019, which was driven by surplus global supplies, but also affected by a drought-related decrease in volumes and subsequent higher prices domestically.

Figure 84 presents bulk wine exports from South Africa to the 10 largest export destinations in 2018, 2019 and 2020. Although volume increases from 2019 to 2020 are observed into Germany (3.1%), the UK (9.5%), Denmark (8.0%), USA (551.8%), Canada (101.7%) and Finland (15.9%), much of it is still below the 2018 volumes. Substantial declines were evident to France (-14.4%), Belgium (-4.9%), Sweden (-7.9%) and the Netherlands (-17.8%). In terms of unit value (R/litre), the only mentionable increases came from exports to

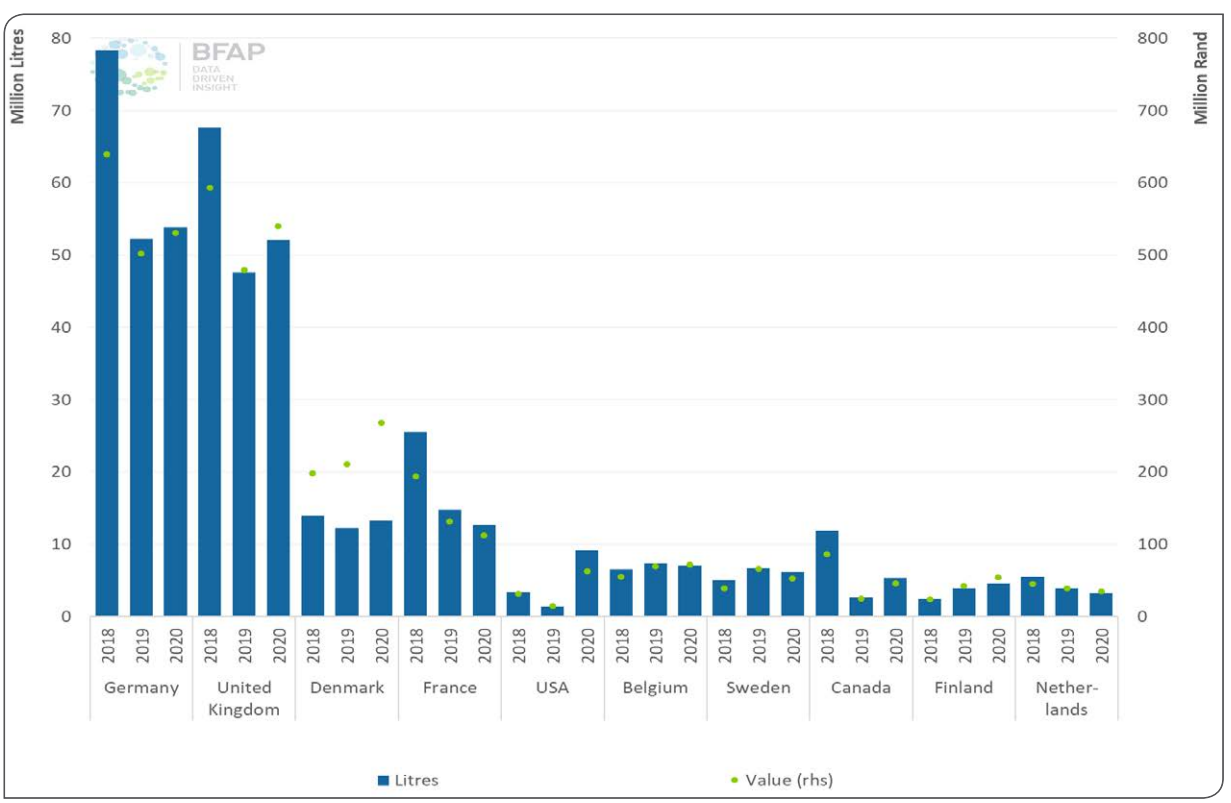



**Figure 84: Bulk wine exports from South Africa to selected destinations in 2018-2020**
**Source: SAWIS, 2021**

[2] Wine Industry Strategic Exercise

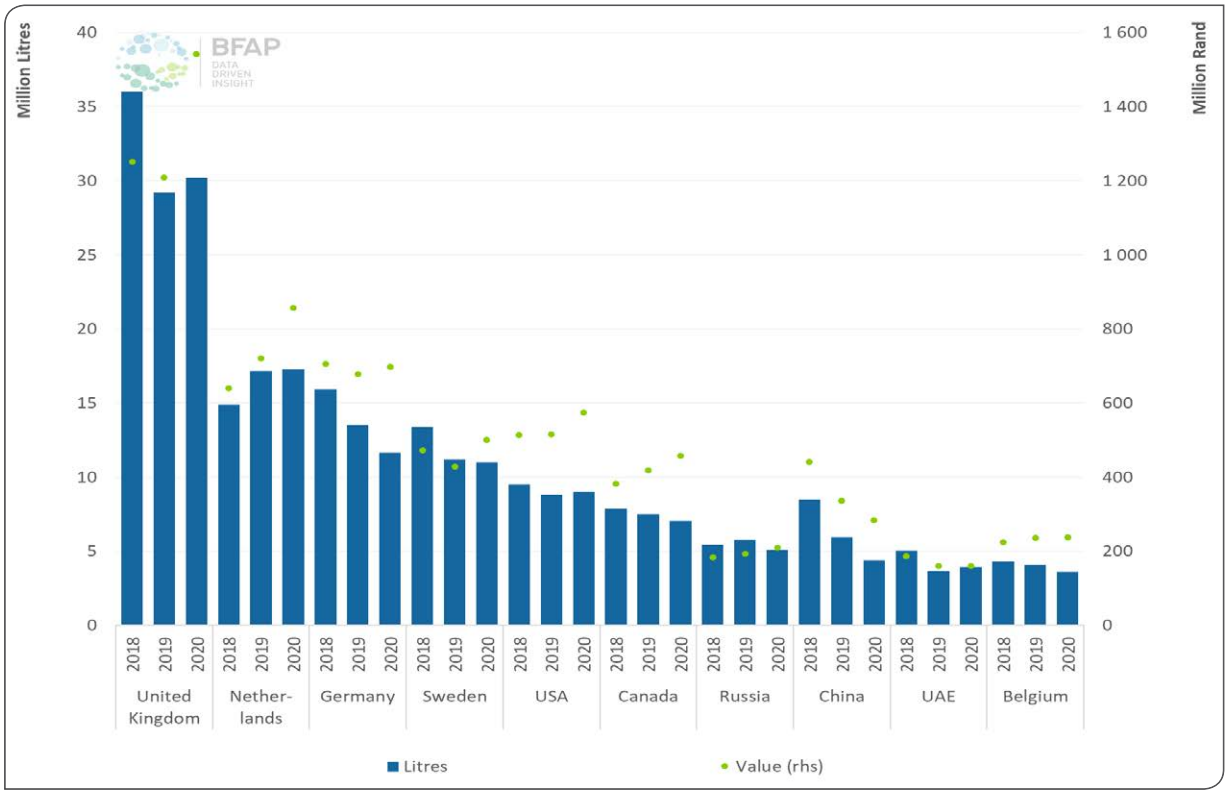



**Figure 85: Packaged wine exports from South Africa to selected destinations in 2018-2020**
**Source: SAWIS, 2021**

Denmark (17.7%), Belgium (9.2%), Finland (11.5%) and the Netherlands (8.3%), despite significant depreciation in the value of the Rand, effectively decreasing the unit value of sales in foreign currency. In total, bulk wine export volumes increased 4.3% year on year and value by 5.3%, effectively resulting in only a 1% increase in unit value.

In 2020, total packaged wine exports from South Africa declined 5.7% on top of a 14.4% decline from 2018 to 2019 in terms of volume. However, value has held up, growing by 8.2% year on year. Considering the decline in volume, the growth in total value resulted from a 14.8% increase in unit value – assisted by the weaker Rand which improved the relative competitiveness of South African wine. Figure 85 indicates that, among the major export destinations, packaged wine export volumes increased into the UK (3.6%), the Netherlands (0.6%), the US (2.5%) and UAE (8.2%), while the value of packaged wine exports improved all around, with the exception of China (-15.7%) and Belgium (0%). Increases in the unit value of packaged wine exports to the UK and Russia were 23.2% and 24.1% respectively, with increases between 13.6% and 19.3% for packaged wine into the Netherlands, Germany, Sweden, Canada, China and Belgium.

Despite the continued impact of COVID-19, an 18.8% increase is expected in South Africa's export volumes in 2021, reflecting the re-opening of the food service sector in many developed countries as vaccine coverage accelerates, as well as the damage to some Northern Hemisphere harvests due to frost. With the appreciation of the Rand, it is unlikely that value will grow at the same rate. Beyond the initial recovery in 2021, export volumes are projected to increase by an annual average of 1.4% over the ten year projection period. The process of rebasing South African wine's market position is expected to continue, with a continued focus on quality premiums and high value markets more important than ever. With BREXIT, South Africa has effectively negotiated a bigger duty free export quota into the collective EU and UK market as the new quota into the UK comes into play whilst the quota with the EU remains as it was. Competition will, however, remain strong as other countries have also closed favourable deals with 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.

While traditional trade partners remain strong, some shifts are also evident over the outlook, with exports into the BRIC region expected to expand by an average annual rate of 6.5%, driven mainly by Russia and to a lesser extent China, as China's consumption over the last 5 years (Figure 82) has declined substantially. Exports into Africa are also projected to increase by an annual average of 2.7%, though from a much smaller base. By 2030, the share of total exports into the BRIC region is projected to increase to 10.2%, from 2.7% in 2020, mainly at the expense of the EU (Figure 86). In 2020 the lowest volumes were exported to BRIC countries since 2006 and thus the projected growth is partly as a result of the recovery from the 2020 low and partly as a result of additional volumes. While Chinese import demand has slowed in recent years, the US-China trade war provides additional opportunities for increased market share into China. China levied substantial import tariffs on US wine during 2018, which could provide space for South African exports to China to grow.

**Production and Prices**

An historic perspective on wine grape production in South Africa reflects a distinctly declining trend over the past decade, more so in terms of vine area than in grape production, when disregarding the drought period of 2017-2019, from which the industry has recovered in terms of volume. The number of vines has declined consistently over the past decade, by 1.7% per annum. Although an average annual decline in wine grape production of 1.1% is observed from 2011 to 2020, the recovery from the drought in 2020 brought production volumes to a very similar level to that of 2011 – 1.30 million tons in 2011 and 1.34 million tons in 2020. Considering the decline in total area, from 108 918 in 2011 to 98 138 in 2020, the production per hectare has increased over the last decade from 11.94 ton to 13.65 ton per hectare. Factors such as cultivar choice and vines per hectare contributed to this.

Projections of wine volumes towards 2030 (Figure 87), considers the commendable yield growth of the past decade, along with the age structure of wine area in South Africa (Figure 88). To add to the complexity, wine production competes with other horticultural

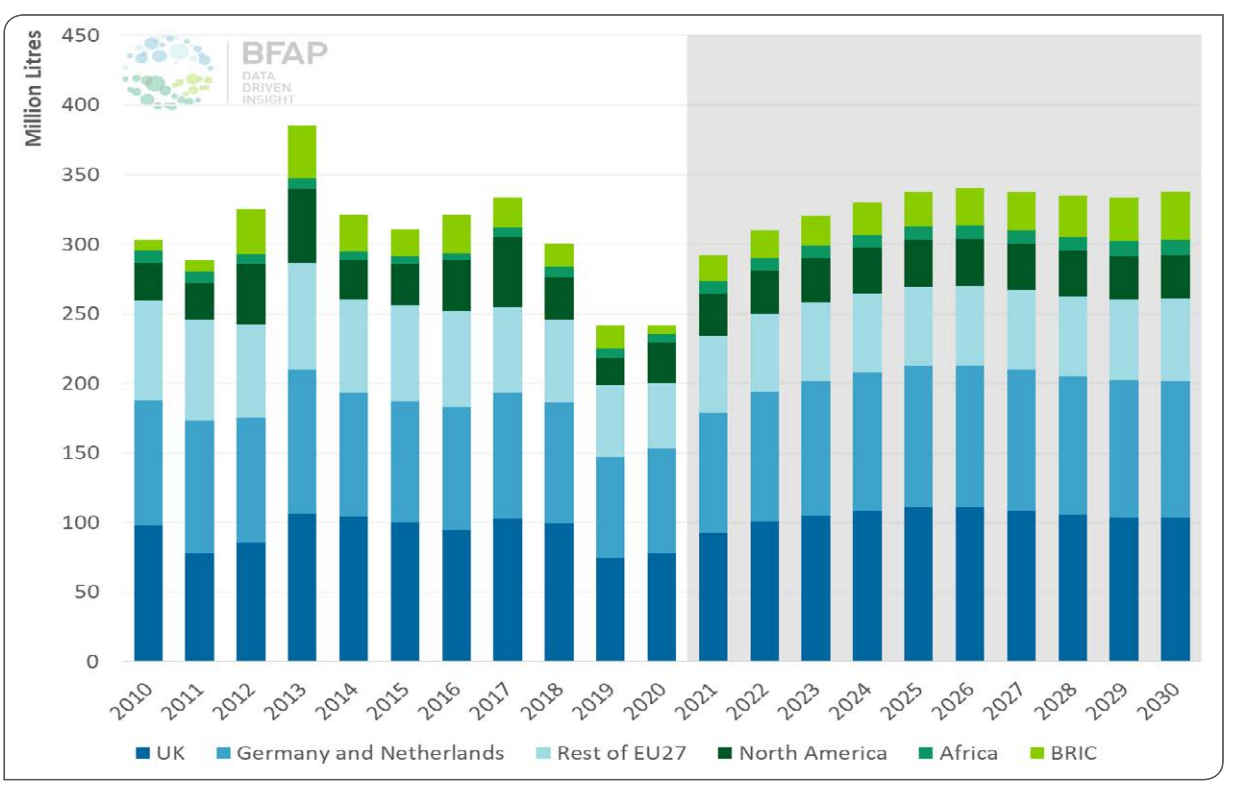



**Figure 86: South African wine exports, disaggregated by region: 2011-2030**
**Source: SAWIS, 2021 & BFAP Projections**

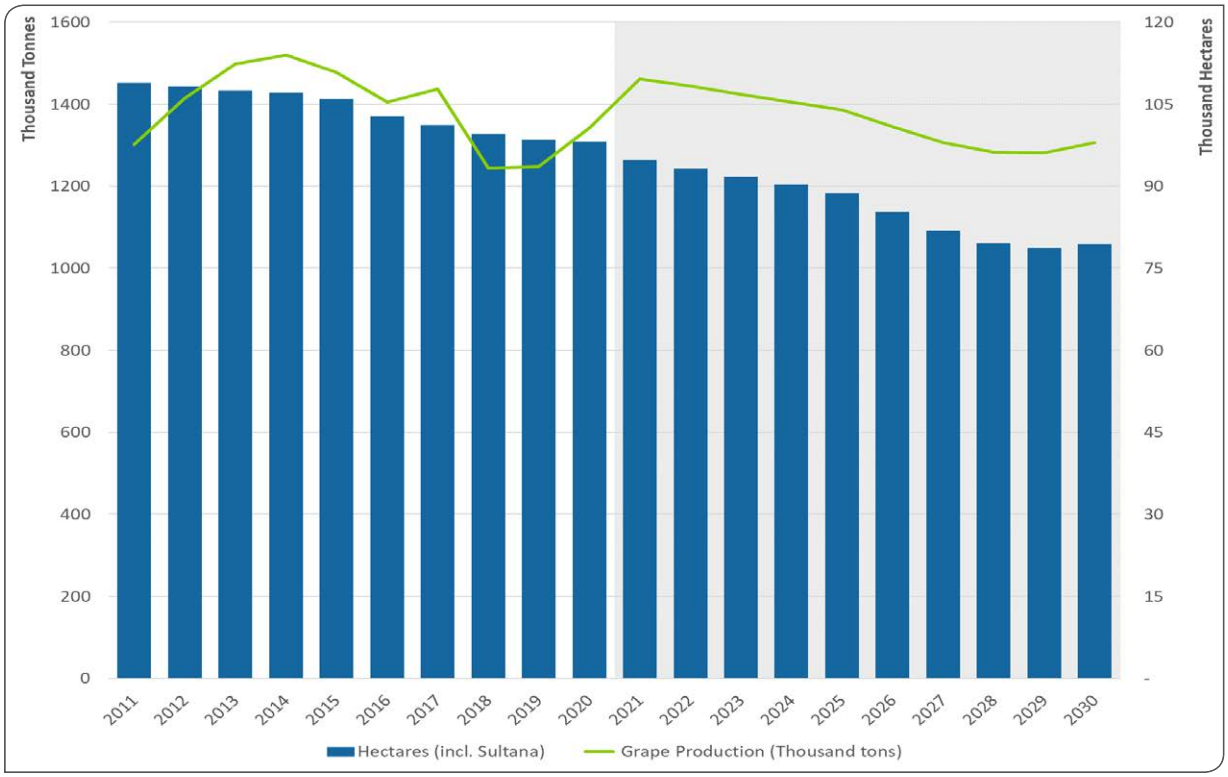



**Figure 87: South African wine grape production: 2011-2030**
**Source: SAWIS, 2021 & BFAP Projections**

sectors for land and water, and with the weaker relative profitability of wine grapes compared to other fruit sectors, the wine industry is projected to continue to lose ground. As such, the area under wine grapes is projected to decline by an annual average of 1% over the outlook period, with wine grape production set to decline, on average, by 0.5% annually. This is not to be confused with wine sales over the medium term, as stocks have accumulated over time and thus there are opportunities to expand sales whilst contracting on the production side for a period of time.

Having increased rapidly through the 1990's, the share of red grape varieties in total vine composition fluctuated between 40% and 43% from 2003 to 2019. The age structure of white and red grape varieties presented in Figure 88 reflects aging red vineyards. The share of old vines (> 20 years) in total red has increased significantly in recent years, which could be beneficial from a quality perspective and contribute to an emphasis on premium wines throughout the value chain, or simply the inability to uproot and replace with new vines. At the same time, the share of younger vines (<10 years) has stabilised from 2014 onwards. The reduction in vines aged below 4 years is indicative that the decline in real prices, which was stronger for red wine grapes relative to white (Figure 89), over the past few years has slowed the establishment of new vineyards drastically. Encouragingly, after the real price increases from 2017 to 2019, the share of vineyards younger than 4 years showed a marginal increase for the first time since 2014. For white varieties, the age distribution is more even. Older vines (>20 years) are increasing, but at a much slower rate than red, but the share of vines aged below 10 years continues to decline, not reflecting the stabilisation evident in the red varieties. The combination of more consistent establishment in recent years, as reflected in a more stable number of vines younger than 4 years, combined with vine orders to be planted over the next few years, suggests that the share of white varieties in total vines could increase marginally by the end of the projection period.

Whilst the area under both white and red cultivars has declined over the last decade, it is the change in the age structure of the vines that is of particular interest. Wine grape vines, like most other perennial crops, take multiple years to reach full bearing capacity, after which they can produce a full bearing yield for

15+ years. As the vine grows older, it becomes less productive, with more old wood and less new growth where a new harvest can be picked from. In the white wine cultivars, a decline in hectares younger than 10 years can be observed over the last decade, with the share of older vines increasing. On the red wine side the change is much more prominent – with 82% of the area in the productive prime (4-10 and 11-15 years old) in 2011, those categories shrunk to a combined 32% in 2020. As a result, older vines, which may be nearing the end of their optimal bearing volumes of production cycle but are entering the period of optimal value, have gone from 13% of total area to a massive 61%.

Whilst the 7% of red vineyards and 10% of white vineyards that are 3 years and younger are encouraging, one also has to consider cultivar specific trends, as certain cultivars point to higher tonnage, but with a much greater share of the crop ending up being distilled, whilst others, often at lower yields, end up in premium wine products, such as sparkling wine. Examples of the former category include Colombar and Chenin Blanc, whilst on the latter includes cultivars like Chardonnay and Pinot Noir. Over the last 5 years, an uptick in the area under Cabernet Sauvignon, Merlot, Sauvignon Blanc and Chardonnay are observed in the '0-3 years' category. Despite declines in Chenin Blanc and Colombar for the same category and time frame, these cultivars still represent 47.7% of total young white vines – this share was 60.6% in 2016.

In response to contracting supply, wine prices increased at above inflation levels in 2017, 2018 and 2019 (Figure 89), supported by an average annual growth rate in export prices of 8.3% over the same period. With supply expected to rebound strongly in 2021, a sharp increase in accumulated stocks, a stronger Rand and the persistently weak demand, average bulk domestic prices are expected to decline further in 2021. Higher volumes have had to be sold in lower priced segments, such as non-alcoholic use. Stock levels reached an all-time high in 2020 and are expected to increase further in the short term. The prolonged recovery on the demand side suggests that stock levels will remain high for the foreseeable future, only reducing significantly beyond 2025 (Figure 90). Despite the significant reduction projected beyond 2025, ending stocks at the end of the outlook period are projected to remain above the pre-pandemic level of 2019. Consequently, current projections suggest a trough in nominal prices that will result in similar prices to 2019 only being realised by 2025.

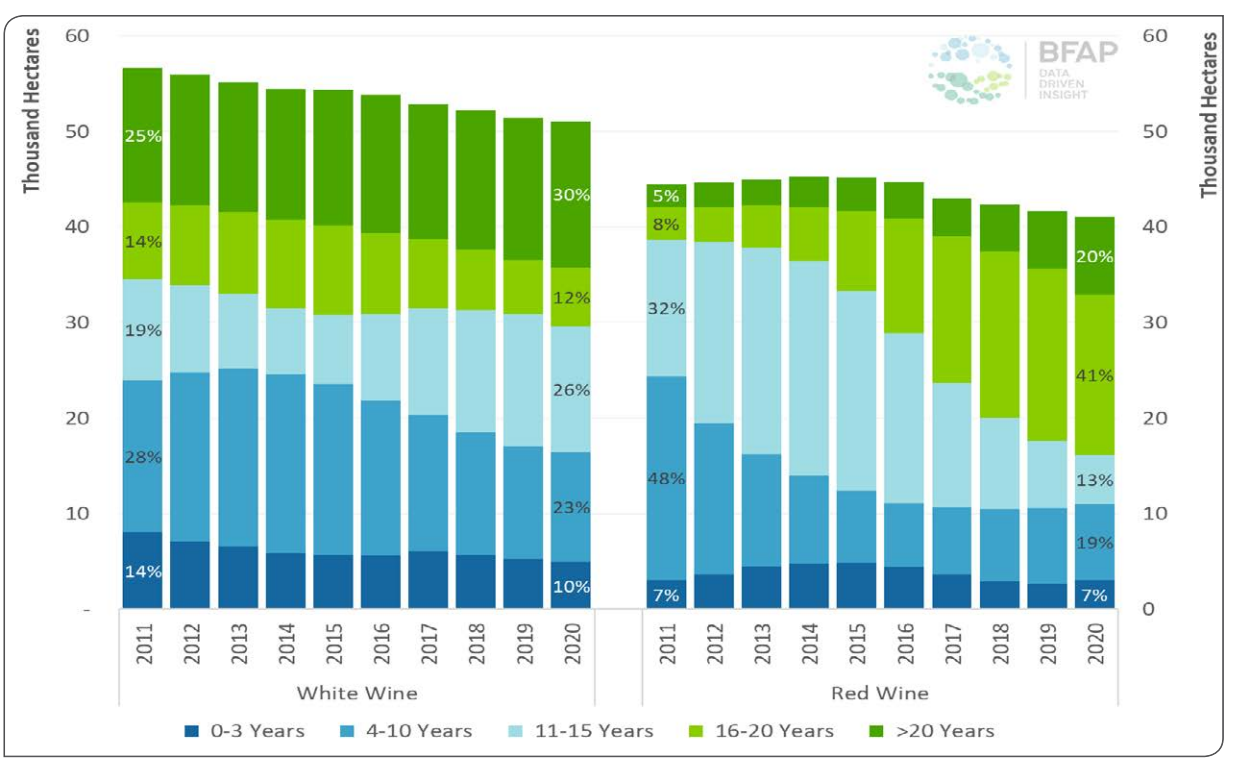



**Figure 88: Age structure of South African vines**
**Source: SAWIS, 2021**

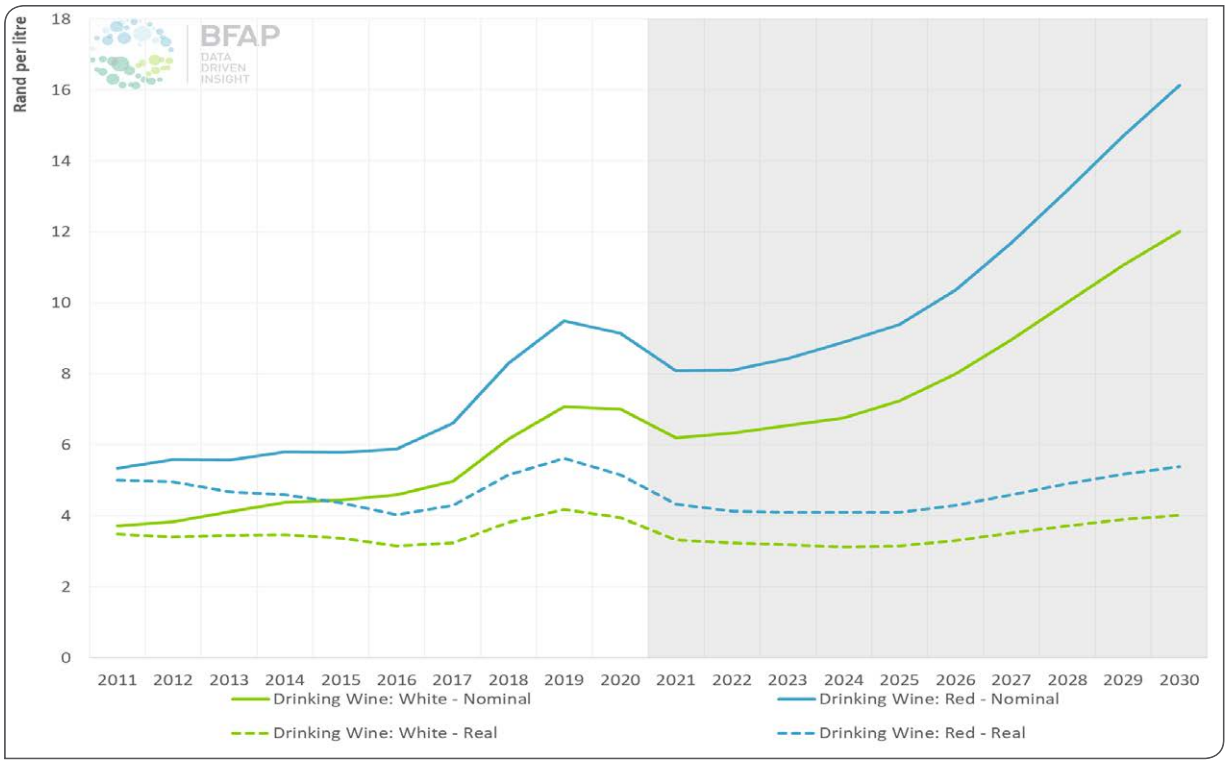



**Figure 89: Historic and projected South African wine prices in nominal and real terms: 2011-2030**

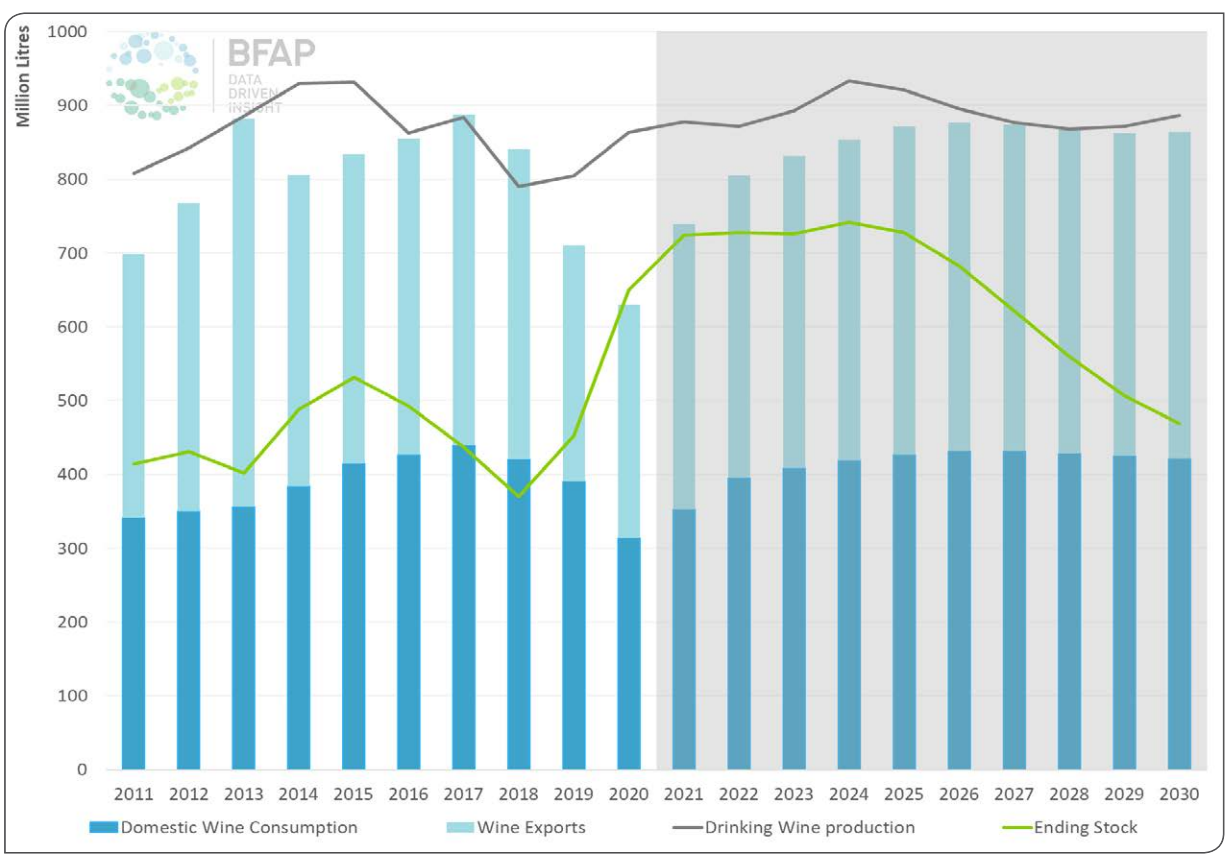



**Figure 90: Production, consumption, trade and stock levels: 2011-2030**

## BOX 11: QUANTIFYING THE IMPACT OF TRADE RESTRICTIONS ON THE SOUTH AFRICAN WINE INDUSTRY IN 2020[3]

COVID-19 and the actions imposed by government to control its spread influenced the wine sector in multiple ways. Intermittently, sales were banned outright and at other times, hours and outlets were restricted. Indirectly, the pandemic also influenced the economic environment within which the wine sector operates. Wine is a luxury product within the agriculture and food space, and sales are sensitive to changes in consumer spending power. Consequently, the contraction in economic activity would already have had an impact on wine sales, but the restrictions exacerbated the situation. To separate the direct impact of the restrictions from the macro-economic impact, BFAP conducted a retrospective simulation with the wine sector model for 2020. Alignment of macro-economic outcomes with that of 2020 accounts for the indirect impact, thus enabling a simulation of what domestic sales and exports might have materialised had sales restrictions not been imposed. 2020 production volumes are also fixed at actual levels, given that the harvesting process was almost complete when the first restrictions were imposed.

Figure 91 presents the simulated outcomes for 2020, relative to the actual values of domestic sales, exports and ending stock for 2020. Domestic sales were reduced by 15%, or 54 million litres, as a result of the various restrictions, while exports were reduced by 10%. In the case of domestic sales, the loss was less than the share of sales that would ordinarily be attributed to a 14 week period – the total time that sales were banned outright in 2020. This suggests that some of the sales lost in periods of prohibition were recovered on re-opening when consumers restocked. Nonetheless, even when valued at average bulk wine prices, the reduction in volume equates to a loss of R410 million in revenue related to the primary product, before accounting for additional value added to the point of sale at retail level.

With respect to exports, the total loss in volumes was more than the share of sales that would ordinarily occur over the period of the ban. The export market is very competitive and South Africa has built a reputation of over performing in terms of quality across various price points, as well as reliable supplies. The prohibition of exports damaged this reputation and the inability to deliver on orders placed prior to lockdown can have long standing consequences.

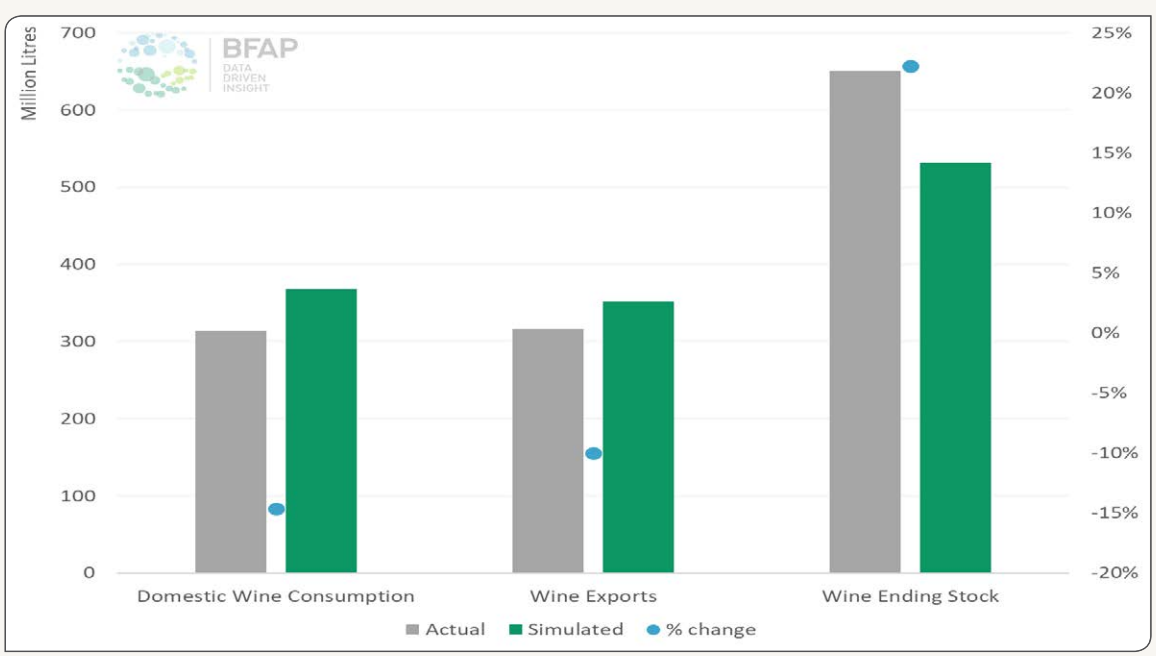



**Figure 91: Impact of sales ban on domestic consumption, exports and ending stock in 2020**

[3] This box is based on an extract from the paper "COVID-19 and the South African wine industry", a working paper by BFAP that has been submitted for publication in the Agrekon special edition related to the COVID-19 pandemic.

## BOX 11: QUANTIFYING THE IMPACT OF TRADE RESTRICTIONS ON THE SOUTH AFRICAN WINE INDUSTRY IN 2020 (CONTINUED)

In light of reduced sales, stock levels increased sharply in 2020 – by 44% relative to 2019 levels. While some increase was to be expected, simulations suggest that it could have been contained to 18% had sales restrictions not been imposed. With stock levels ending 22% higher in reality than in the simulated outcome, the restrictions imposed on the industry will have a prolonged effect – even in the absence of any further actions. Projections flowing from the two different outcomes in 2020 point to a prolonged period at significantly reduced prices, which originates from the sales restrictions. Price between the two scenarios only converge by 2026 and valued at average bulk wine prices, the cost to the industry between 2020 and 2027 was estimated at R2.7 billion. This is only related to the primary product at wholesale level and does not yet account for additional value addition that occurs up to the final point of sale at retail level.

South Africa's wine industry has been going through a process of consolidation, with a stated strategy of prioritising value over volume. This strategy will undoubtedly be more difficult to accomplish in a post pandemic environment, but in height of current stock levels, remains critically important to achieve. While the macro-economy has deteriorated, simulations suggest that the response to the pandemic has put the industry in a sharper negative spiral that will take years to recover from.

### Concluding remarks

2020 will perhaps go down as one of the most challenging years for the wine industry. Following from a period of consolidation, the industry has been set back significantly in its strategy to prioritise value over volume in a smaller, but truly value driven market, both domestically and overseas. Even in the absence of further sales restrictions, the macro-economic implications of the pandemic and associated contraction in economic activity will be felt for many years. Furthermore, the impact of several rounds of restrictions on wine tourism, one of the pillars of the WISE strategy, has been devastating.

While the industry may be contracting in the sheer volume of production, it remains passionate and determined to overcome the many challenges presented in 2020. While demand is expected to take some time to recover, some of South Africa's trading partners are making progress with achieving herd immunity, with the result that they are starting to return to some version of "pre-Covid normalcy" over the medium term. This creates favourable conditions for South Africa to continue to strive towards 60% packaged exports from current levels of just over 40%, thus unlocking more value from exports. In a post-pandemic world, this will improve the returns for wine cellars and marketers, which could soften the blow of current price projections, and filter through to other nodes in the value chain, most prominently the producer. Paramount to the achievement of the 60:40 strategy for exports and ultimately the long term sustainability of the industry is alignment on cultivar choices and practices throughout the value chain to ensure the necessary quality for the strategy and a consequent positive impact on returns throughout the value chain.

A highlight for the industry is the relative stability of premium wine sales despite the pandemic, with wine consumers in this segment less affected by the economic downturn and less price sensitive. In a post pandemic future, it is not impossible to achieve the same revenue returns for lower quantity but higher quality. Part of achieving its ultimate aim of premiumisation will be efforts to reduce the accumulated stock in the short term, as these stock negatively impact producer prices. The industry will undoubtedly continue to face competition from other fresh fruit export sectors for resources such as land and water, and a stabilisation volumes in the medium term will require price gains from premiumisation to be passed through efficiently to producer level. Whilst a number of producers may be tempted to uproot their wine vineyards and establish other crops, not all of them may be able to do so, especially considering the cost of establishing a new orchard or vineyard with a netting structure can be three times the cost of establishing a new wine vineyard. This may result in more producers continuing with wine grapes than what is economically viable in the medium term. With farm gate revenue a function of price and volume, price pressure can also create the necessity to increase volume to cover cost, which can negatively impact quality and exacerbate the situation further. As such, the effectiveness of the industry's mechanisms will be put to the test in determining whether individual producer decision-making will align with industry strategy.

# PROSPECTS FOR AGRO-PROCESSING



**THE LATEST ROUND** of high-level planning for the agricultural sector, the Agriculture and Agro-processing Master Plan (AAMP), marks a refreshing change from the norm as, for a change, agro-processing is included as a critical extension of the agricultural value chain to assist in driving development and growth. Early growth theorists have stressed the importance of the agricultural sector in facilitating economic development, starting in the late 1950's (Johnston & Mellor, 1961) largely because agriculture has strong inter-linkages with other sectors of the economy. Largely based on a number of nations' development histories and resulting development theory, a country's economy should start with a dominant agricultural sector, after which an inevitable relative decline takes place as other sectors of the economy start to develop. This process of structural transformation leads to resources (labour and capital) being pulled away from the farm and utilised in fast growing secondary industries. Whilst this process is underway, increased agricultural productivity ensures that the agricultural sector continues to grow in absolute terms, but it's share to the overall economy will decline over time as other sectors grow faster.

The immediate question that arises from these realities is how South Africa has performed in developing secondary industries to support wide-spread growth in the economy. Further to that, how has South Africa performed relative to other nations? The answer to these questions is critical in shaping planning and policy formulation that will pave the way for industrialisation, not only in South Africa, but the wider African region. The newly established African Continental Free Trade Area (ACFTA) provides a window of opportunity to re-imagine and implement industrial policy that, together with the primary agricultural sector, could drive growth in secondary industries that have not materialised over the past four decades. However, any proposed growth strategy should be built on developing sustainable and competitive businesses, taking global market dynamics and trade into account. Import replacement of processed agricultural products has often been mentioned as critical for local enterprise development, but as will be seen later in this chapter, there are important nuances to consider. Industrialisation through agro-processing should be built on agricultural productivity, large-scale investments and focus on African regional trade in manufactured goods.

This chapter will provide insights into the importance of agro-processing and it's linkage with agriculture gained from analysis and discussion within the process of formulating the AAMP. Thereafter, one agro-processing industry, plant oil manufacturing will be discussed to explain the challenges and policy needed to develop local production and, if possible, replace imported oil.

### Agro-Processing in context

Agro-processing is a subset of the wider manufacturing sector that processes and transforms raw materials and intermediate products derived from the agricultural sector. A wider definition would include not only the transformation of the product, but all other value adding activities, whether it takes place on-farm, or off-farm in manufacturing facilities. Thus, all transformation, preservation and preparation of farm products for both intermediary and final use constitute agro-processing. Unfortunately, official data on these activities mostly includes only processing output conducted within registered manufacturing firms, but this still provides the basis to understand South Africa's agro-processing capacity and performance over time.

Figure 92 shows the contribution share of agriculture and agro-processing to the economy, and further disaggregates the main sub-sectors of each based on the most recent detailed industry information from the Census of Commercial Agriculture (2017) and the Survey of the Manufacturing Industry (2017). It is worth noting again that many informal, small-scale and micro enterprises would not be captured in these data outputs but remains a critical segment of the AAMP sectors.

Starting with the overall breakdown of the South African economy according to the various main sector contributions, the agriculture, forestry and fisheries sector made up 3% of the national economy. The manufacturing sector contribution is significantly higher at 13%. Within each of these sectors, the pie chart breaks these into those that are of particular importance to agricultural value chains. Agriculture is the largest sub-sector (88%) relative to forestry and fisheries with 8% and 4% of total output value respectively. Moving further to the right in Figure 92, the major industries are presented in terms of their contribution to gross farm income. Livestock made up around 52%, followed by horticulture and field crops with 24% each.

Agro-processing made up 30% of South Africa's R2.15 trillion output generated by the manufacturing sector. Other notable manufacturing sub-sectors includes petroleum, chemical, rubber and plastic with 23% and manufacturing of various metals and metal products. Agro-processing industries are then listed according to the percentage contribution to gross income, with beverages (23%), wood & paper products (15%) and macaroni & other food (10%) in the lead.

As have been unpacked in previous chapter of this year's Baseline, agriculture's performance has been strong, but what can be learned from agro-processing

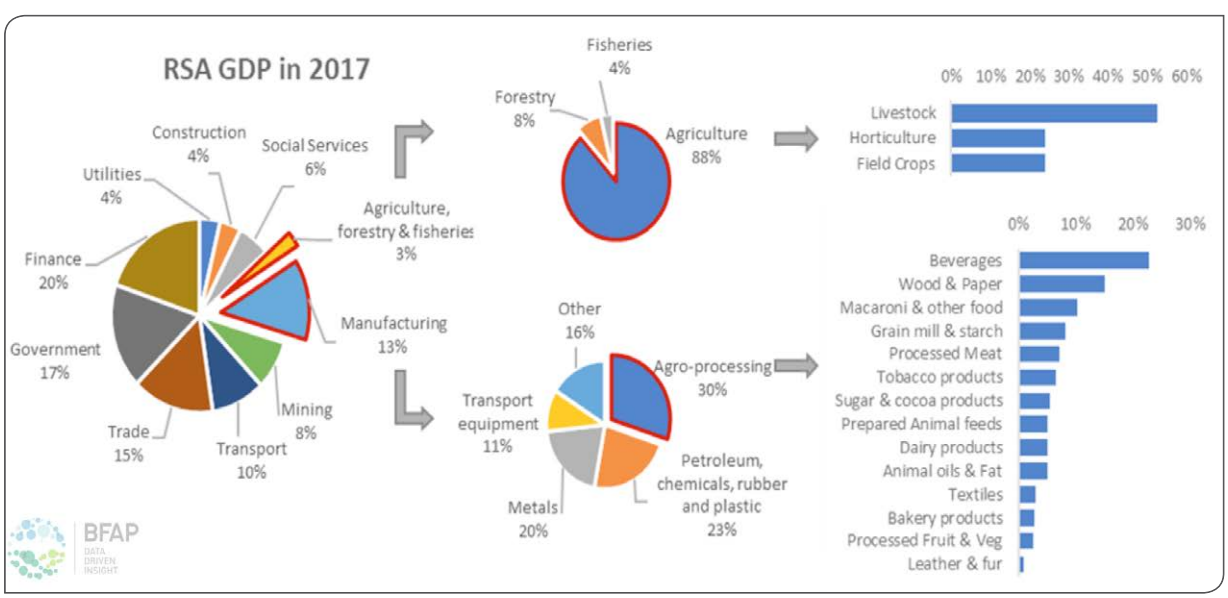



**Figure 92: Agriculture and agro-processing contribution to the economy**
**Source: Quantec, 2021**

over the past two decades? Detailed information on sub-industry GVA is presented in Figure 93. Clearly the largest contributor to value added in the agro-processing sector was food, beverages & tobacco, with a combined share of 75% of the total. Although the latest 2020 GVA numbers are not available, it is expected that this industry realised a large and negative contraction from the 2019 level, since the overall manufacturing sector declined by 11.6% in real terms.

One way of interpreting the performance of agro-processing sub-industries is to assess the value of output. Table 10 summarises the real annual growth rates for different periods and for the lowest level of detail available. In the early 2000's the sector experienced significant growth of around 4.5%, the highest it's been in the past two decades. As will be seen in the trade section, agro-processing industries are largely dependent on the prevailing economic

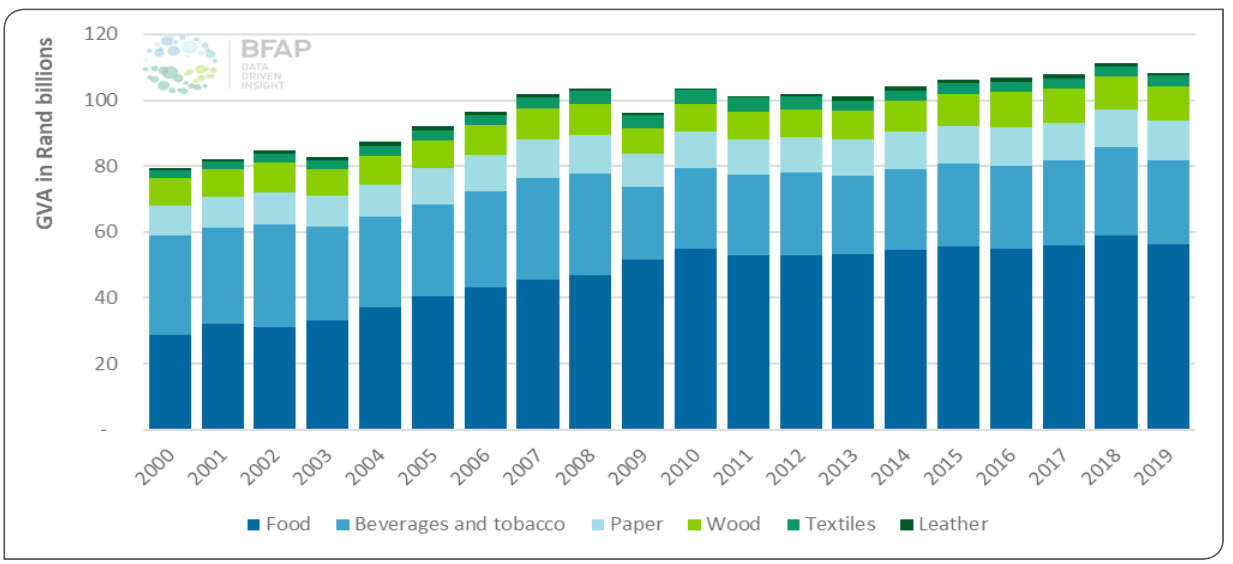



**Figure 93: Agro-processing Gross Value Added in real-2010 prices**
**Source: Quantec, 2021**

**Table 10: Growth in gross value added by agro processing in real 2010 terms**

| Industry | Real Average Annual Growth in Output (%) | | | |
|---|---|---|---|---|
| | 2000-2005 | 2005-2010 | 2010-2015 | 2015-2020 |
| Meat, fruit & veg, oils | 7.49 | 2.83 | 0.95 | 1.10 |
| Dairy | 4.37 | 2.22 | 2.10 | 2.46 |
| Milling products | 8.39 | 1.92 | 0.03 | -0.33 |
| Other food | 3.72 | 2.46 | -1.17 | 2.62 |
| Beverages | 2.44 | -0.21 | 0.75 | -1.13 |
| Tobacco | 0.90 | -0.30 | 0.56 | -2.65 |
| Textiles | -3.63 | 3.77 | 1.50 | -5.14 |
| Other textiles | 3.95 | 1.20 | -2.83 | -7.54 |
| Leather | 6.34 | 3.30 | -1.69 | -7.34 |
| Wood | 4.38 | 1.43 | 1.26 | -4.53 |
| Paper | 3.51 | 1.14 | -0.30 | -2.45 |
| **Total** | **4.50** | **1.65** | **0.24** | **-0.55** |

conditions in the local market, since the country has been unable to extend its manufactured exports. Industries such as meat, processed fruit & vegetables and manufactured oil realised growth of 7.4% in this period, whilst grain milled products expanded by 8.4%. Looking at the annual growth in total output for agro-processing, it is clear that the sector has been under pressure, consistently declining its average annual sales with Covid-19 no doubt contributing to the decline observed for the 2015 to 2020 period in a number of industries. What is also clear is that the performance of the agro-processing industry stand largely in contrast with the growth observed in the primary agricultural sector.

Figure 94 provides details on the trade performance in the form of the trade balance for each industry. On aggregate terms, South Africa has a growing and large positive trade balance for primary agricultural products, mainly driven by the strong growth in the exports of products from crops. For agro-processing, the trade performance has been less consistent with the trade balance going through various periods of growth and decline, and in some instances, turning negative. Whereas agriculture's positive and growing trade balance reached R63.8 billion in 2020, the agro-processing value was more than six times lower at R9.4 billion, but still positive.

Crop sectors make a large contribution and is growing its export base (Figure 94), whilst beer and processed fruit and vegetables made up the largest contributions to the positive trade balance for manufactured agricultural goods. South Africa's continued dependence on imports of vegetable oils, grain milling products and meat contributed to the relative weak trade balance for agro-processing when compared to the farming sector.

When one is confronted with these realities, usually the first suggestion would be to develop a localised strategy toward replacing imports with ramped up locally manufactured agro-processing output. However, as will become clear with the example of vegetable oils, it is critical to consider the underlying drivers of demand and supply and the overall competitiveness of an industry to assess the potential for import replacement.

Figure 95 presents a more detailed breakdown of vegetable oil imports over the past two decades, both in volume and value terms. By far the largest

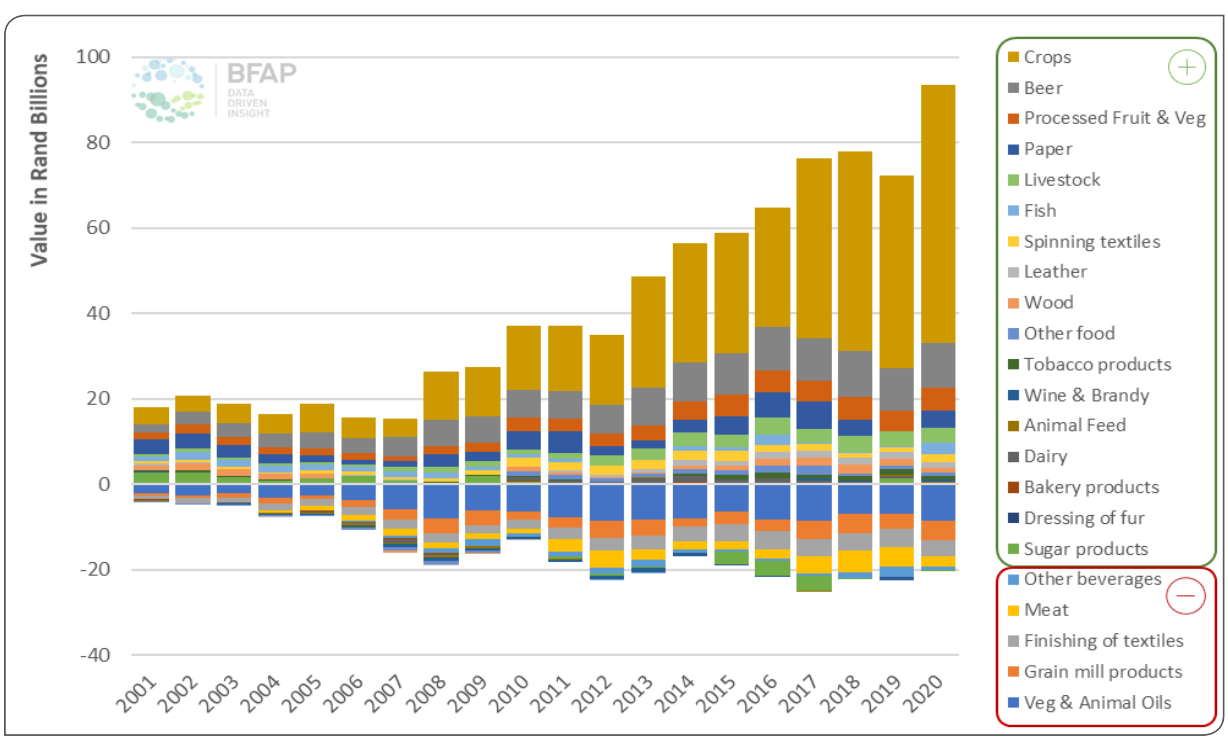



**Figure 94: South Africa's trade balance for agriculture and agro-processing sub industries**
**Source: Quantec, 2021**

imported product, palm oil imports have been growing consistently over time, from 248 000 tonnes in 2001 to 525 000 tonnes in 2020. Albeit at a much lower level, sunflower oil imports have also been increasing, especially over the past five years, reaching 262 000 tonnes in 2020. Against this backdrop of increased imports for palm and sunflower oil, soybean and canola oil imports have gone in the opposite direction, increasingly being able to replace imports by means of increased local production. In the case of soybean oil, import volumes declined from its peak in 2011 of 278 000 tonnes to 150 000 tonnes in 2020.

Thus, within the same industry of vegetable oil manufacturing, we have these contrasting outcomes. Delving into these different trajectories, it becomes clear that, first of all, South Africa does not produce any palm oil and does not have the climatical conditions to produce it in the future. The world's largest palm oil producing countries were Indonesia and Malaysia by some margin, producing 40 million and 19.5 million tonnes in 2018 respectively. Palm trees are mainly grown in tropical climates with high temperatures, low humidity and long summer day lengths.

The question is then, can palm oil be replaced by other locally produced vegetable oils? The first part of the answer lies in the relative pricing of vegetable oils. Figure 96 shows that international palm oil is priced significantly lower than any of the other major vegetable oils and over the outlook period this relationship is not expected to change, despite the current spike in vegetable oil prices. Palm oil is not only a low-cost alternative to many other vegetable oils, but produces up to ten times more oil per unit area than other oilseed crops and the fact that it is not genetically modified (GM) is attractive to the European market. Due to the high level of imports, local vegetable oil prices are closely linked to international prices and therefore, from a pricing perspective, palm oil trades at a discount of approximately 25% compared to sunflower and soybean oil.

Apart from the fact that it is competitively priced, the rapid growth in the use of palm oil was ignited when the South African Department of Health drew up legislation aimed at regulating the use of trans-fatty acid in foods in 2010. The implication was that food manufacturers and many fast-food outlets required a fat alternative that did not convert to trans fats with heating, still providing the same solid texture and taste in foods without the industrial addition of hydrogen. Palm oil provided the solution to this problem and has since then taken over this market segment with little opportunity for substitution from any of the other oils. A considerable amount of research has been undertaken in the development of high-oleic sunflower and soybeans, which will also comply with the health

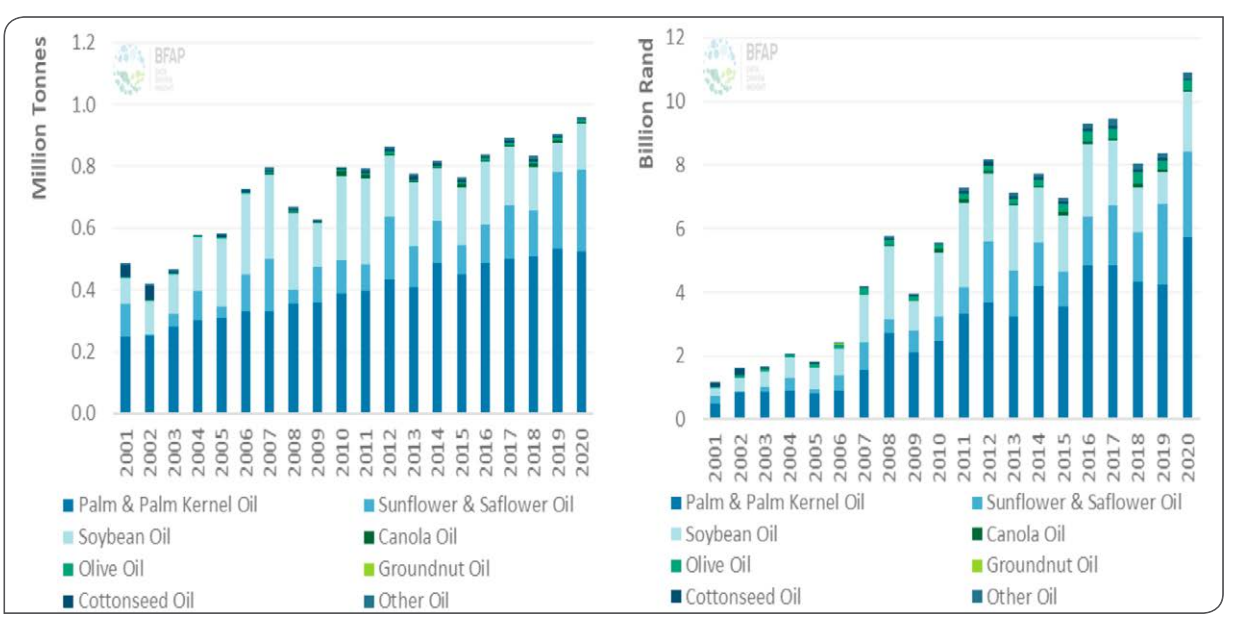



**Figure 95: Vegetable oil imports by volume (a) and value (b)**

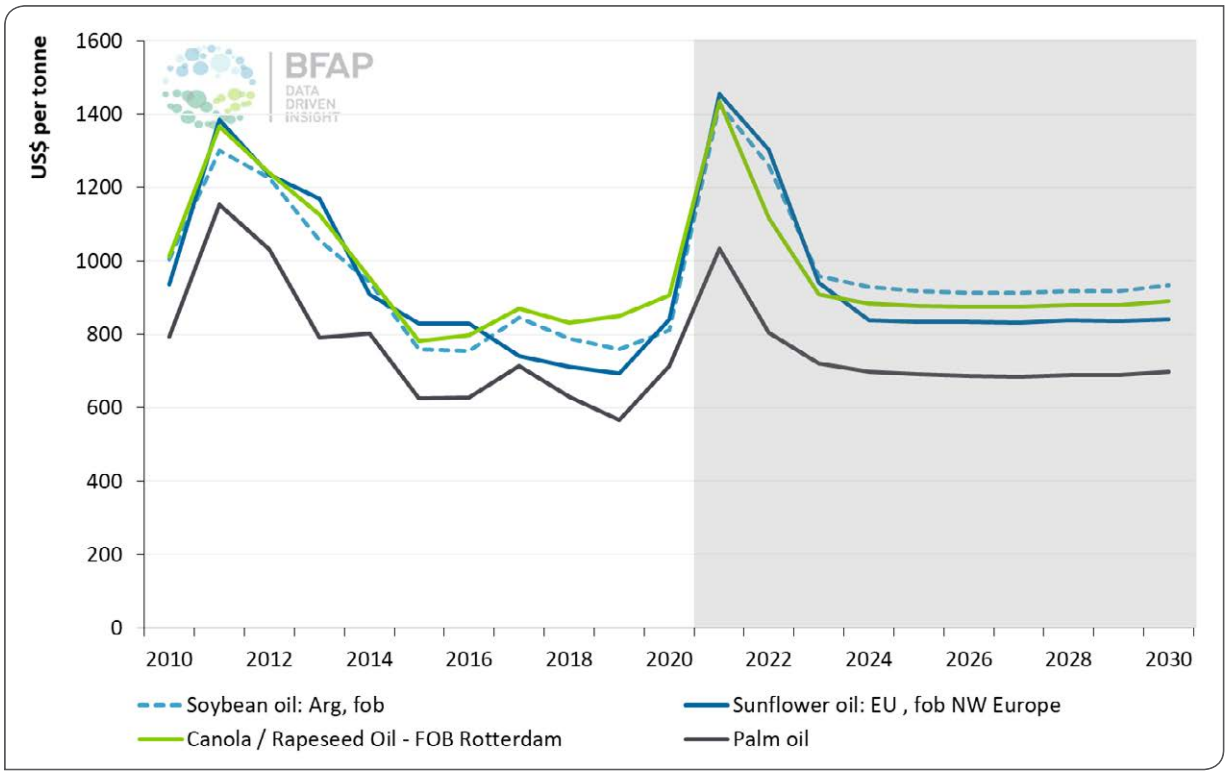



**Figure 96: International vegetable oil prices**
**Source: OECD-FAO, 2021**

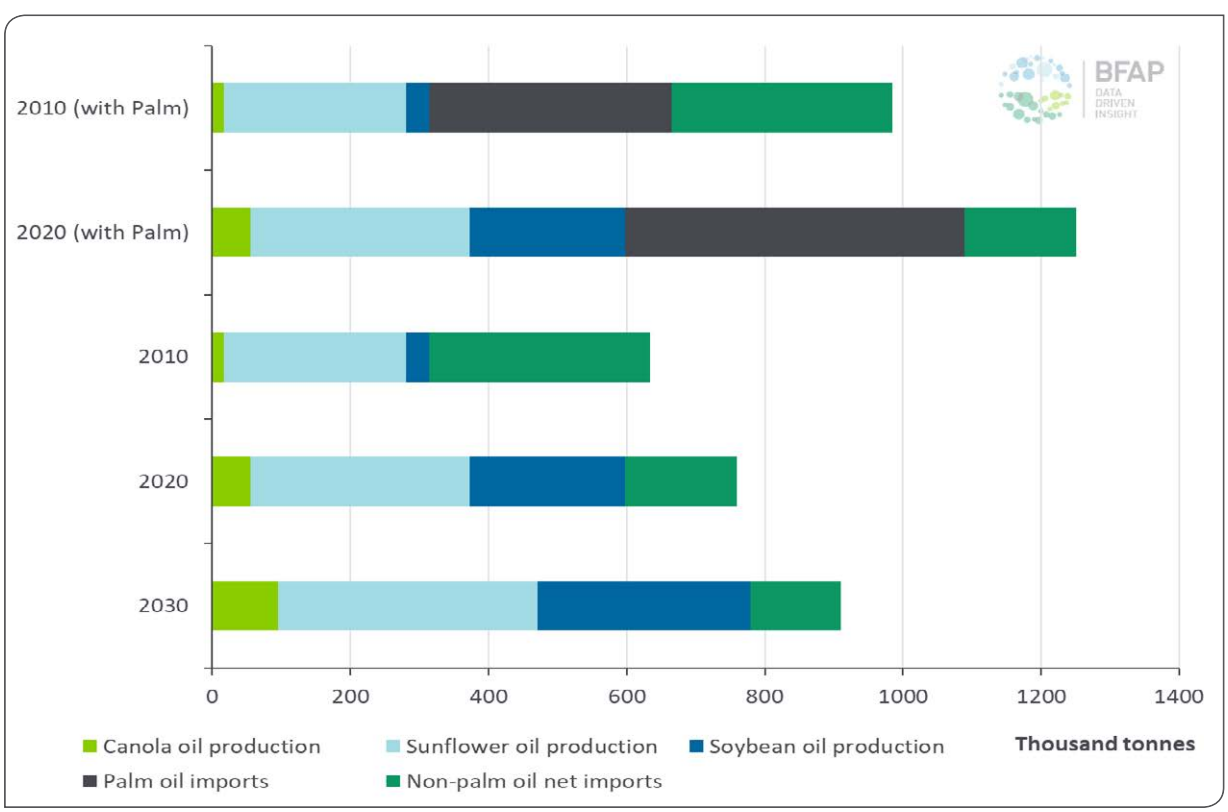



**Figure 97: South Africa's vegetable oil consumption outlook**

regulations, yet this oil cannot be produced cost competitively yet in the bulk market and is currently traded only in niche premium markets.

Clearly, the opportunities for import replacement in the bulk vegetable oil consumption market are limited, but imports of sunflower, soy and canola oil will be significantly reduced over time. Figure 97 presents that latest outlook from BFAP's market model. Local production of sunflower, canola and soybean oil is projected to increase by 19%, 71% and 37% respectively by 2030, and consequently non-palm oil imports are expected to decline by almost 20%.

The largest share of imports by 2030 will comprise of sunflower oil, which implies there exists further opportunity for import replacement if the local production of sunflower can be expanded. BFAP recently published a comprehensive sunflower value chain report, where challenges and the required reforms are clearly highlighted. Through improved farming practices, where sunflowers are not produced as a "catch crop", but as a primary crop with the necessary focus on planting dates, fertiliser applications, and selection of high-oil cultivars, the local production can increase significantly. Furthermore, an incentivised pricing mechanism has already been tested where producers can receive a price premium for delivering sunflower with a high oil content. A wide adoption of this pricing model will also boost the competitiveness of sunflower relative to other crops, especially in western production regions where sunflower has proven to be more resilient to drought compared to maize and soybeans.

# FOOD INFLATION IN 2021 AND BEYOND...



**Introduction**

As early as mid-2020, when the world started to emerge from the first wave of the COVID-19 pandemic and its associated lockdowns, analysts and policy makers around the globe expressed concerns around high (global) inflation going forward. These concerns were based on higher lockdown savings rates, specifically in more affluent nations, which resulted in pent up demand combined with supply shocks and production and processing backlogs. In the case of agricultural commodity prices, these inflationary concerns are currently playing out – even if many of them are not COVID-19 related. Figure 98 shows the subcategories of the global food price index from the start of 2019 to May 2021. From the graph it is apparent that since May 2020, when many of the initial hard lockdown restrictions globally eased, most of these categories followed an upward trajectory with the most notable increases being in vegetable oils, cereals, dairy and sugar. Since the start of 2021, the meat sub-index has also started to gain momentum on the back of higher input costs. This chapter explores the effect of this on South African food inflation and highlights the local nuances that caused the South African food inflationary context to look slightly different from that of the global one depicted in Figure 98.

**Trends and projections in food inflation**

South African food inflation was recorded at 6.3% in April 2021, up from 5.9% in March and was highlighted as a key driver of headline inflation. All food categories except breads and cereals and fruit recorded annual inflation rates above 5%. Meat, which has the largest share of the food expenditure basket at 31.7%, was a key driver of inflationary pressure - recording a rate of 7.1%. Meat inflation, in a South African context, has remained firm over the past months due to a combination of factors. The first is reduced slaughter numbers. For 2021Q1 slaughter numbers were around 3.5% down compared to a year ago. This is a symptom of more aggressive herd rebuilding: The relatively high grain prices have allowed livestock producers, that engage in livestock and grain production, to retain additional animals, while good summer rains supported pasture and feedlot stocking was reduced as a result of high maize prices and ample availability of stubble for backgrounding. This resulted in tight supplies that are keeping prices high. In terms of chicken meat, price increases have been less remarkable than for red meat. Here industry stakeholders are reporting weak demand and note that they are struggling to push volumes during certain times of a month. Grains are also a key input in livestock production and surging input costs of inter alia, feed, electricity and wages have all added to cost push pressures.

In terms of breads and cereals, grain prices are substantially higher compared to the corresponding

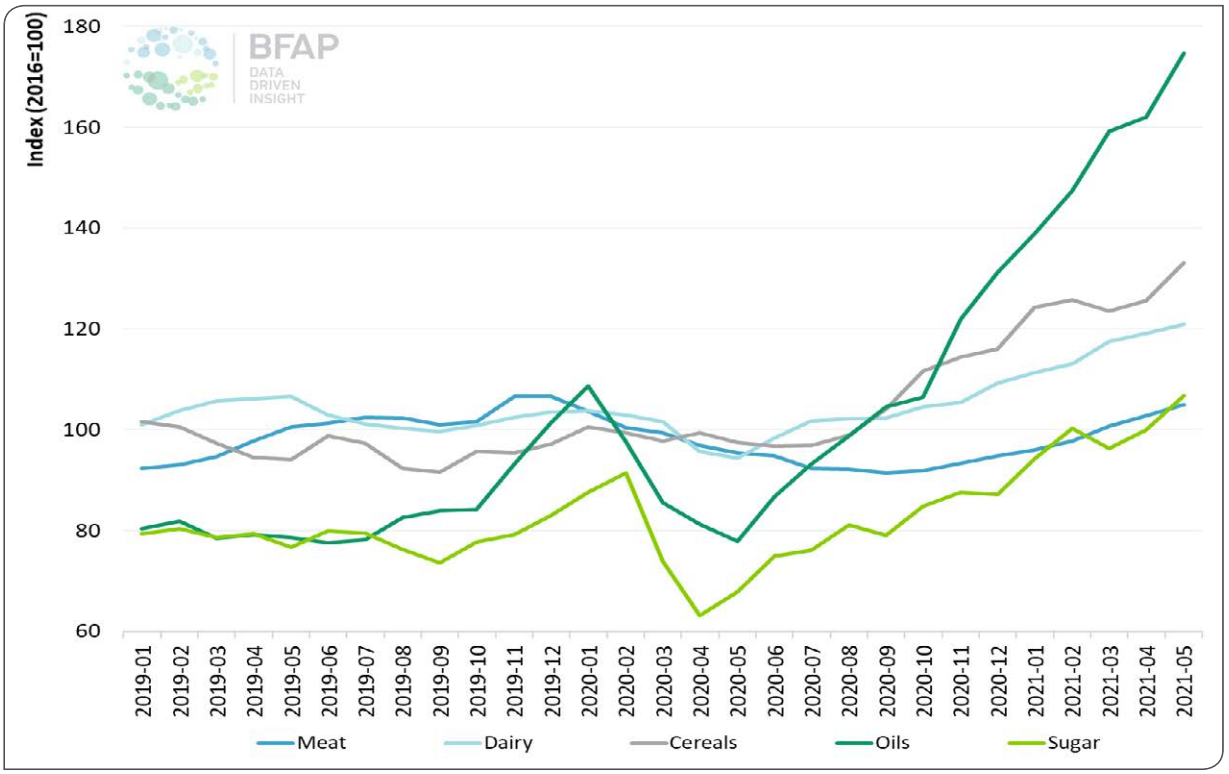



**Figure 98: World food price index – Sub indices**
**Source: FAO, 2021**

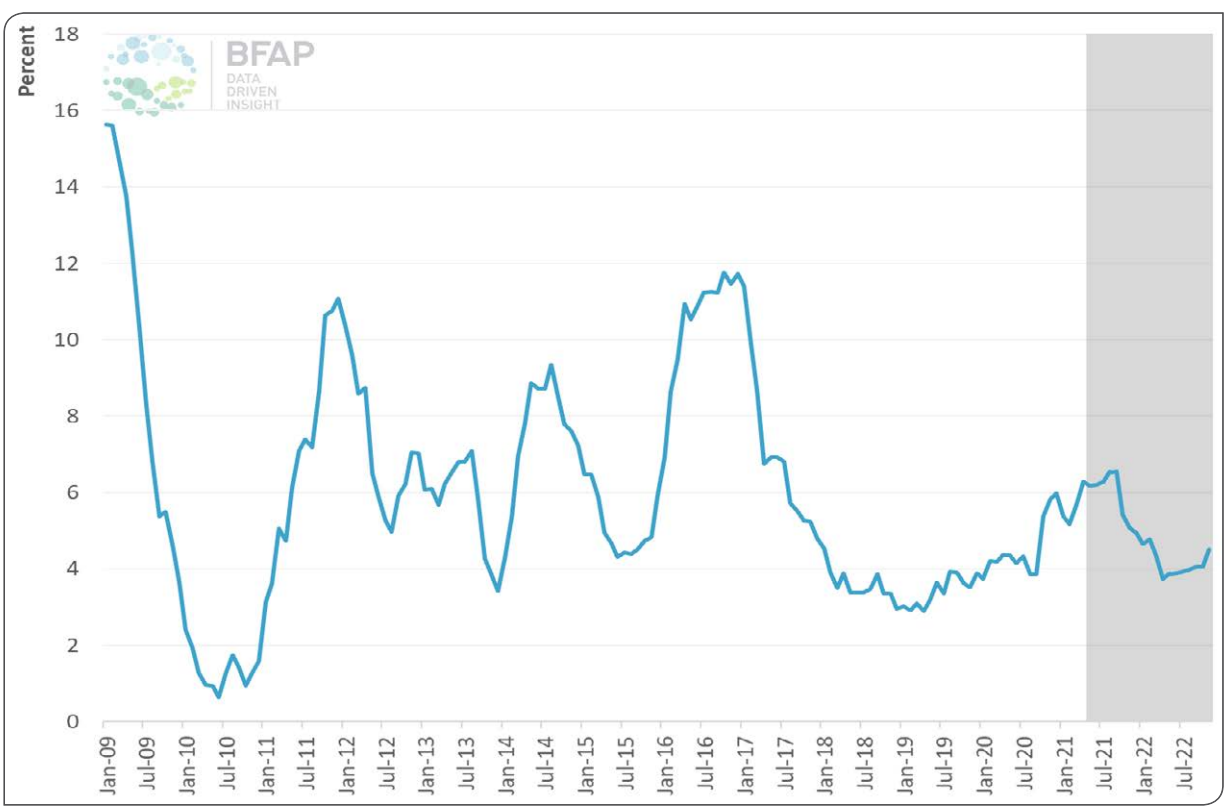



**Figure 99: South African Food and Non-alcoholic inflation dynamics and projections**
**Source: Stats SA, 2021 & BFAP calculations[4]**

time in 2020. The effect is however notably smaller than the global price surge in grain prices. This is attributable to the resilience of the Rand which contributed to keep grain and cereal inflation at relatively modest levels of 4.9% in April 2021. Despite a bumper crop for the current season, grain prices are high on the back of high international prices. These are however expected to ease in the 2021/22 season which could limit the inflationary pressures from breads and cereals into 2022.

Locally, fresh produce inflation has shown divergent inflationary trends. In April 2021, vegetable prices increased by 6.3% whilst fruit prices remained constant compared to the corresponding month in 2020. Vegetable inflation was predominantly driven by surges in tomato prices, which reached record levels in early April due to extremely low supply. This was a symptom of the heavy rains in the northern regions of South Africa earlier in 2021. Fruit inflation, in turn, was 0% due to the high base of fruit prices in April 2020. During this month in 2020, the exchange rate weakened to close to R19.00 to the dollar due to the spread of the pandemic. South Africa also experienced a sovereign credit rating downgrade. This greatly supported the export realisation for fruits, which caused local prices to also trade higher. Based on the high base, fruit inflation is expected to remain trivial over the course of the year. Vegetable inflation, in turn, could remain firm with production volumes of products such as onions remaining low due to climate constraints.

Dairy prices have increased on the back of surging international prices and strong local demand. Products such as milk and cheese are more affordable sources of protein and in the context of consistently increasing meat products, dairy product prices are finding demand support. A similar phenomenon is also apparent in egg prices. For these products, increased prices of grain have also resulted in margins being increasingly under pressure and where sufficient demand permits it some of these pressures are passed through to consumers.

Our expectation is that food and non-alcoholic beverage inflation will average around 5.2% in 2021 and reduce to 4.2% in 2022. The monthly dynamics are depicted in Figure 99. Although there are signs of commodity price deflation in products such as grains for 2022, overarching factors such as significantly higher oil prices, compared to a year ago, will likely drive up manufacturing and distribution cost.

**Comparison of CPI based food inflation to the BFAP Thrifty Healthy Food Basket (THFB)[5]**

Considering the period from January 2014 to April 2021, the annual inflation on healthy eating (as measured through the BFAP THFB) was lower than the CPI inflation of food and non-alcoholic beverages[6] for 55% of the months considered. From mid-2016 to February 2019 CPI food inflation was generally higher than inflation on healthy eating, while in the last year (from April 2020, coinciding with the COVID-19 pandemic in South Africa), inflation on the cost of healthy eating was generally higher than CPI food inflation (Figure 100). The composition of the CPI index for food & NAB (reflecting 'typical' South African food expenditure patterns) differs from the typical composition of the BFAP THFB (reflecting basic 'ideal healthy' South African food expenditure) in terms of both the food items included as well as the relative weights of food categories. Higher inflation on the cost of healthy eating compared to CPI food inflation is often attributed to high inflation on foods contributing to dietary diversity.

[4] The projections are based on a time series model in which the statistical properties of the inflation series were used to extrapolate future values

[5] In 2015 BFAP identified the need to develop an approach to measure the cost of healthy (nutritionally balanced) eating in the South African context – thus enabling the comparison of consumers' actual and 'more ideal' food expenditure patterns and associated inflation. The methodology takes into consideration national nutrition guidelines, typical food intake patterns of lower-income households, official Stats SA food retail prices and typical household demographics. Consisting of a nutritionally balanced combination of 26 food items from all the food groups, the BFAP THFB is designed to feed a references family of four (consisting of an adult male, an adult female, an older child and a younger child) for a month. For more detail on the methodology applied to develop the BFAP THFB please refer to the 2015 edition of the BFAP Outlook.

[6] In South Africa the typical monthly inflation on food and non-alcoholic beverages is calculated based on the Stats SA Consumer Price Index (CPI) for food and non-alcoholic beverages. Consisting of a typical basket of food items, the index weights are based on the food expenditure patterns of the average South African household.

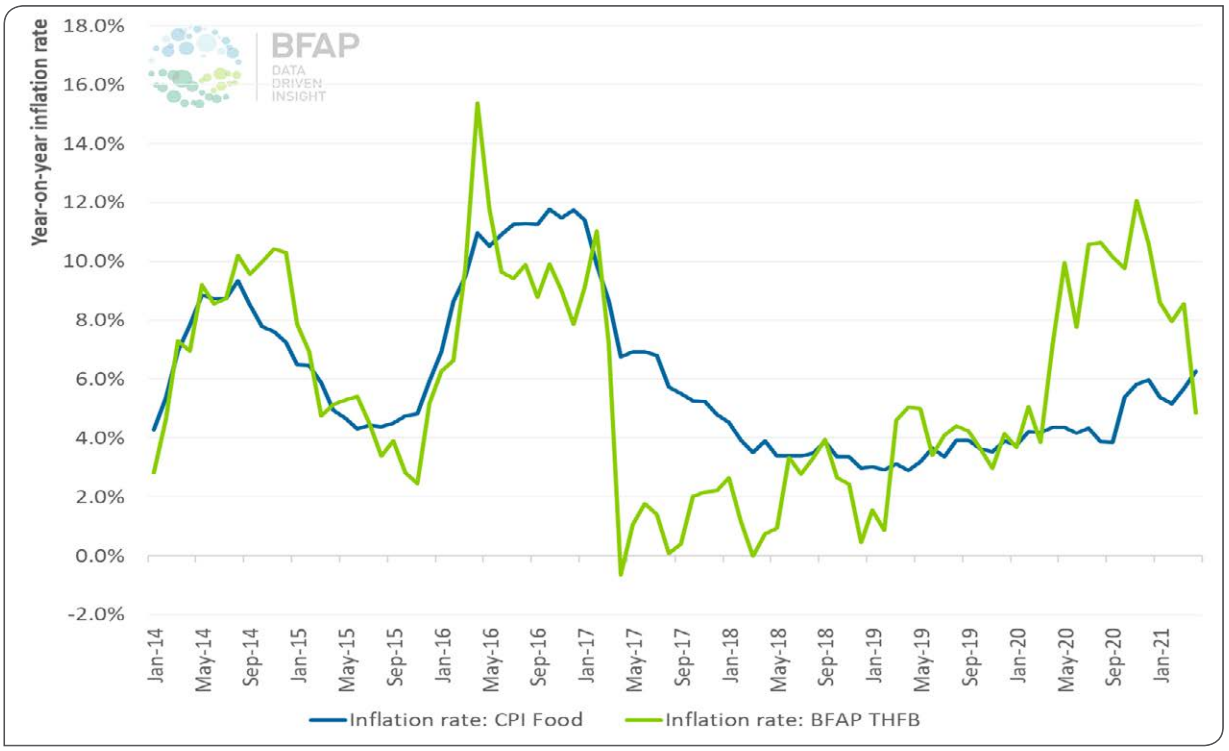



**Figure 100: A comparison of inflation on the BFAP Thrifty Healthy Food Basket and the CPI for food and non-alcoholic beverages from January 2014 to April 2021**

**Source: BFAP calculations & Stats SA CPI data for all urban areas**

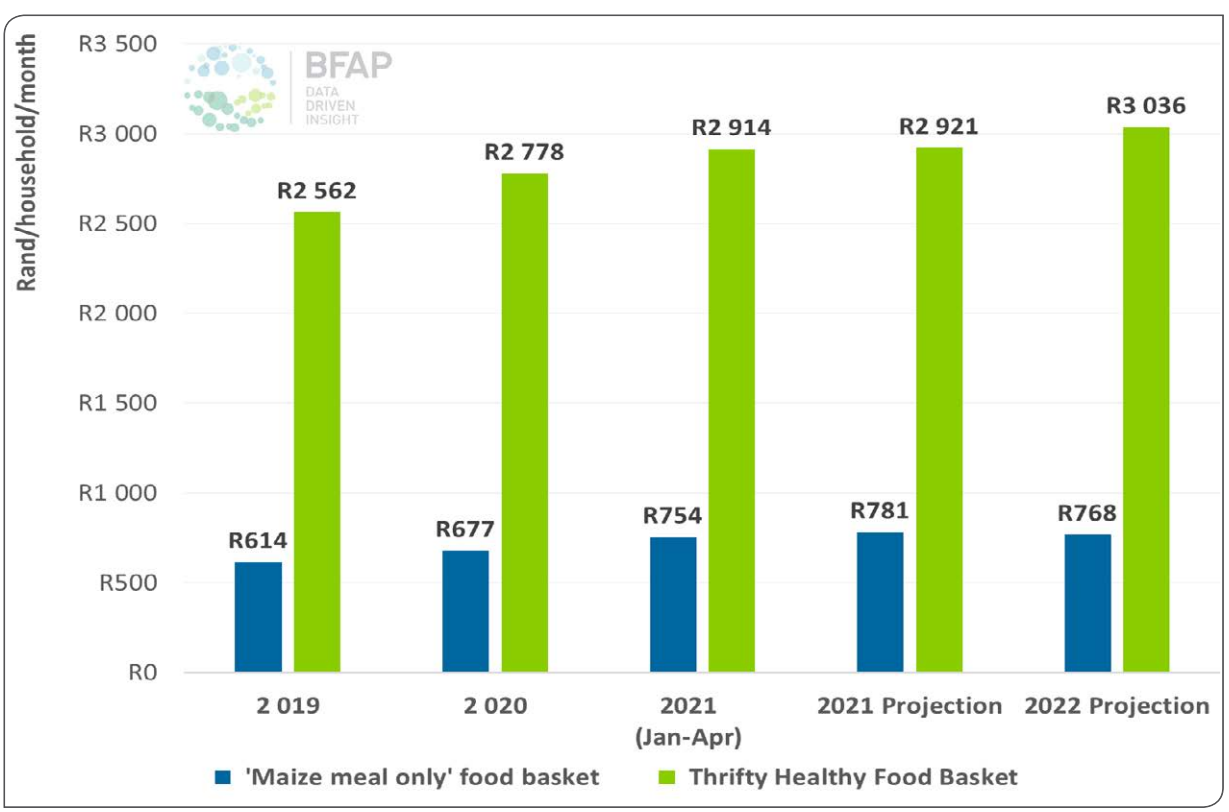



**Figure 101: Historical and projected costs of the BFAP 'maize meal only' and Thrifty Healthy Food Baskets for the period 2019 to 2022**

**Consumer level impact of projected food price dynamics**

Figure 101 depicts two hypothetical food baskets, with historical values for 2019 and 2020, as well as projected values for 2021 and 2022:

- A 'maize meal only' food basket for the reference family of four, estimating the monthly cost of obtaining their total monthly energy requirements from only one food source – the most affordable starch-rich staple food in South Africa. Thus, this basket gives an indication of the absolute minimum cost of obtaining enough daily energy, even though nutritional diversity is obviously severely lacking for such a diet.
- The BFAP Thrifty Healthy Food Basket (THFB) measures the cost of basic healthy eating, for a four-member low-income household in the South African context (consisting of an adult male, an adult female and older child and a younger child). Thus, this basket gives an indication of the typical cost of obtaining a basic healthy food selection with enough daily energy and adequate nutritional diversity.

Despite projections that some commodity prices (such as white maize) are expected to show a deflationary trend, higher manufacturing and distribution costs still result in positive year on year inflation for related products.

From 2019 to Q1 2021 the cost of the BFAP THFB increased by +10.3% (2019/2020) and +11.3% (2020/Q1 2021) to a level of R2 914 per month. Over this period the BFAP THFB was on average 305% or R2 070 more expensive than the 'maize meal only' food basket – stressing the significant cost difference between minimum adequate energy intake and a basic balanced food basket in the South African context.

The cost of the BFAP THFB is expected to increase to R2 921. From 2021 to 2022 the cost of the BFAP THFB is expected to increase to R3 036.

**Affordability of the food baskets in 2021:**

Affordability measures are based on the assumptions of households earning one or two full-time minimum wages, receiving two child grants and benefitting from school feeding programs.

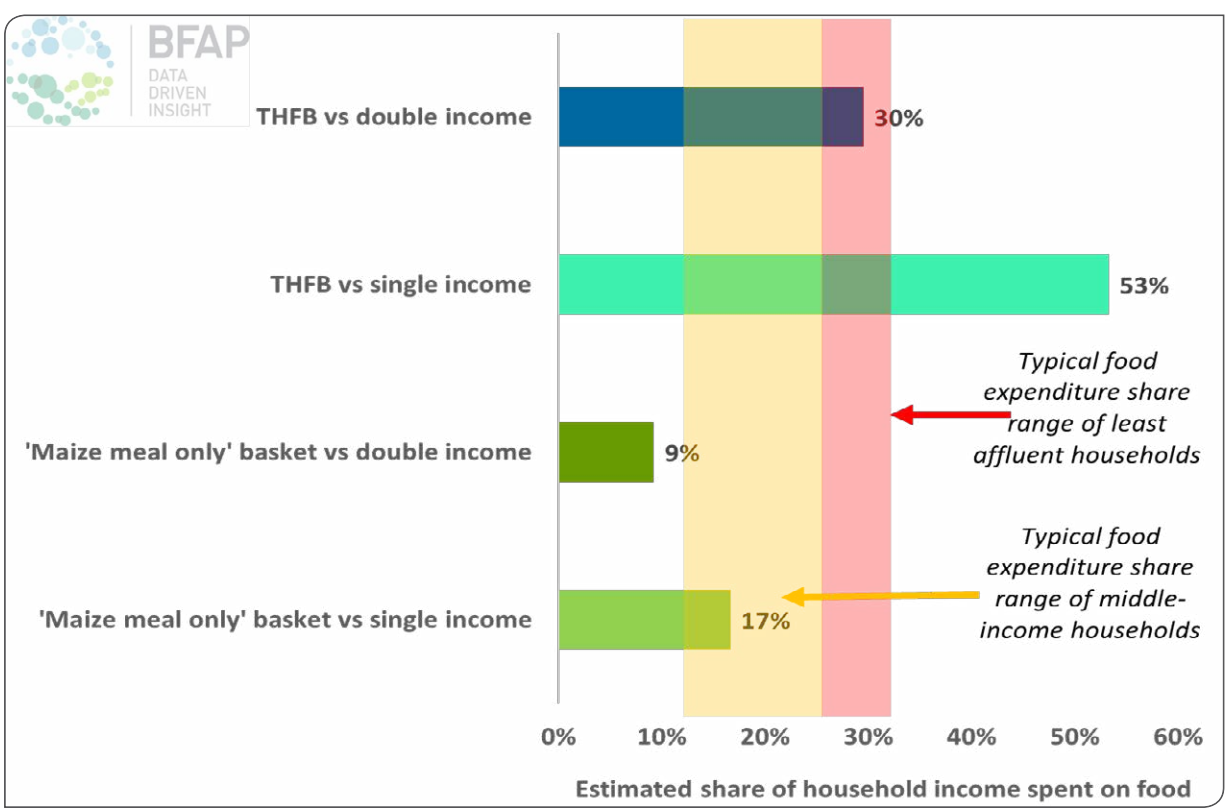



**Figure 102: Affordability of the 'maize meal only' and THFB in 2021**

**Source BFAP calculations; Food expenditure shares: Stats SA LCS 2014/2015**

In 2021 the 'maize meal only' basket could absorb ±17% (single wage income) to 9% (double wage income) of the income of the typical household – thus being affordable within the context of typical food expenditure shares depicted in Figure 102. A household with only one wage earner will however not be able to afford the BFAP THFB, as the basket will absorb 53% of household income which is significantly higher than the typical 32% food expenditure share of the least affluent households in South Africa. A household with two wage earners will have to spend ±30% of income on food, falling within the food expenditure share range of the 40% least affluent households in the country. However, in the case of additional shocks (e.g. income loss) these households could rapidly move into a space where their food expenditure share could increase above typical levels and become too expensive. At present, approximately half of the South African population cannot afford basic healthy eating.

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# NOTES

# NOTES

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