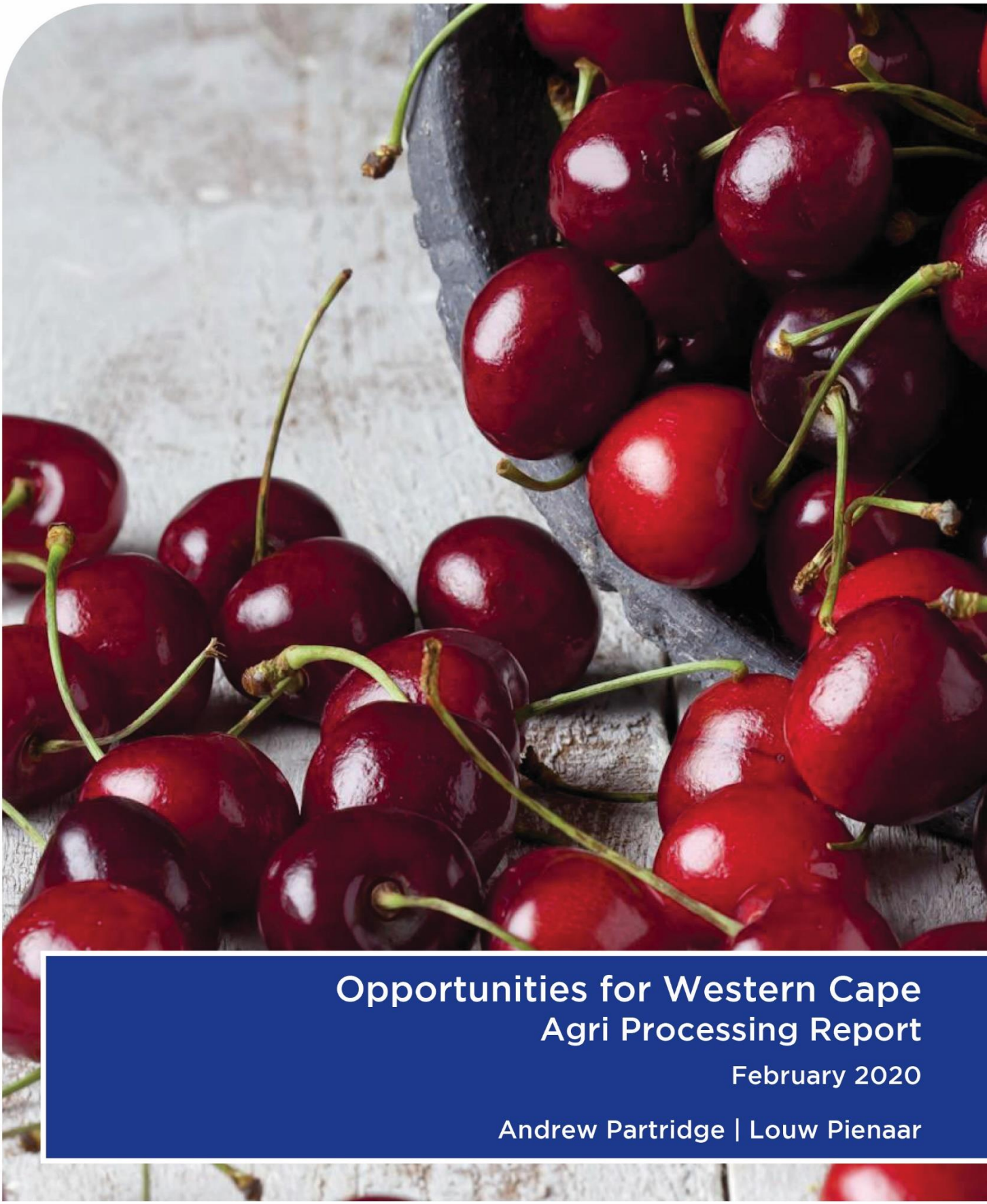
Western Cape Government

Agriculture



Opportunities for Western Cape
Agri Processing Report

February 2020

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EXECUTIVE SUMMARY

Agri processing was identified in 2014 as a priority sector for the Western Cape given the potential to contribute towards economic growth and job creation. This report provides an updated assessment of the recent performance of the sector. It also provides an updated version of the Agri Processing Index (API), a multidimensional index which scores 169 specific product lines based on a number of sub indicators grouped into thematic areas.

Recent evidence shows the importance of agri processing for economic development and job creation. This is both from the perspective of the sector itself where growth has been strong for a number of industries, and also for the strongly connected upstream (e.g. agriculture, forestry and fisheries) and downstream industries (e.g. retail trade, hospitality and tourism). It is particularly relevant for South Africa given the high level of unemployment among low skilled workers and the location of agri processing industries within agricultural value chains which tend to be the greatest absorber of low skilled workers.

In 2018 agri processing accounted for 4.9% of economic activity in South Africa and 3.2% of the labour force. However if agri processing is taken to include the primary agricultural sector from which supplies it then these shares rise to 7.3% and 10.2% respectively. This share is higher for the Western Cape where the two sectors together account for 10.7% of economic activity and 13.3% of employment. The sectors are particularly important for Western Cape exports, with agriculture accounting for 28.6% of total provincial exports and agri processing 25.7%. This means that together the two sectors account for more than half of the province's exports.

Strong growth in the imports of a number of agri processing products has meant that strong export growth has not resulted in a strong, positive trade balance. This highlights more opportunity in that there are a number of products being imported which could be produced domestically.

The updated API reaffirmed the great potential for berry production in South Africa which had been highlighted in the 2015 API. Cherries and macadamia nuts were also top performers, as were the more industrial processing of fruit jams and honey. Overall primary processing activities tended to perform better, largely driven by greater employment potential. However, performances across the different thematic areas varied significantly

across products, making generalised statements difficult to make. The API scoring for all 169 products is provided in the Appendix to this report.

Based on the analysis provided in this report, the following are recommended:

- Continued prioritisation of agri processing development in the Western Cape
- Efforts to accelerate increased production for products with very high APIs (e.g. cherries, berries, macadami
- a nuts, fruit jams and honey)
- Adoption of a whole value chain approach for agri processing developments
- A study to be conducted into the water requirements of production of different agri processing products
- All agri processing developments to be conducted in an engaged and inclusive manner

It is believed that with informed planning and targeted interventions, the agri processing sector could be a driver of economic growth and employment in the Western Cape. If done correctly this then also has the potential to provide a channel to help revive agriculture in the region and thus have additional spill over benefits for not just economic growth but food security, poverty alleviation and providing livelihoods for all the people living under the Western Cape Government's care.

1. INTRODUCTION

In 2014, at the start of the previous term of office for the Western Cape Government, an initiative was launched to develop a new provincial strategy for the Western Cape. Five strategic goals were developed and became the focus of the Provincial Strategic Plan for the period 2014-2019 (WCDoA & DEDAT, 2017). To support each of these goals, the Province identified several "game-changing" interventions and introduced Project Kulisa (meaning: "cause to grow") to drive specific goals relating to growing the economy and jobs. The first phase of the project identified three specific sectors that showed the most potential to accelerate economic growth and job creation; tourism, agri processing and oil & gas.

Since the agri processing sector is strongly linked with agricultural production, the Western Cape Department of Agriculture (WCDoA) embarked on developing a strategy for the Agricultural processing (Agri processing) sector in the Western Cape. The analyses that followed culminated into a second phase of Project Kulisa involving stakeholder engagements, the identification and prioritisation of competitive sub sectors and providing important insights into the Agri processing sector as a whole (Pienaar & Partridge, 2015).

The Western Cape Government is once again at the start of a new 5-year cycle and there is therefore the need to update existing information as contained in the first edition of this report (Pienaar & Partridge, 2015) and to provide important new insights on economic intelligence to support planning and policy decisions going forward.

Successful international examples of sustained economic growth and structural transformation in countries such as India, Mexico, Chile, Brazil and China have centred on the development of agricultural value chains (GGDA, 2018). Furthermore, the development of resilient food systems and agri processing industries are essential in an age where rapid industrialisation, market segmentation and consolidation make them increasingly complex. At the same time new challenges associated with population growth, conflict, climate change and degradation of natural resources may be driving the incidence, magnitude and impact of natural disasters (Vroegindewey & Hodbod, 2018).

This report then builds on Pienaar & Partridge (2015) by giving a recent overview of the performance of the sector in terms of economic growth and jobs, including new insights on provincial breakdowns. Additionally, this edition includes an industry assessment similar to the one used by Wijnands et al., (2015) to assess the competitiveness performance of agri

processing industries looking at market performance, trade success and the Relative tade Advantage. Finally the report provides an updated version of the developed Agri procesisng Database and a comparison with previous scores on the Agri Processing Index, a multidimensional product index for agri processing opportunities in South Africa.

The objective of this report is therefore to provide insights into developing robust interventions to support the development of agri processing in the Western Cape, highlighting specific products that have performed well in the recent years. Since the publication of the previous edition, more updated and detailed information is available to strengthen the research efforts towards formulating a coherent and robust strategy to drive agricultural value chain development in the Western Cape.

2. WHY IS AGRI PROCESSING AN IMPORTANT SECTOR

The role that the agricultural and related sectors is seen to play in development has been shaped by the seminal work conducted during the 1960's. It posits that as a country develops resources (capital & labour) are increasingly allocated away from the primary agricultural and mining sectors towards developing the industrial sectors of the economy. The relative share or contribution of agriculture to the total economy therefore declines over time, but continues to grow in absolute terms. This is also referred to as structural transformation of economies, which comes as a result of productivity growth (Johnston & Mellor, 1961). Thus, a balanced growth path and policy environment is needed to boost both agricultural growth and productivity whilst at the same time allocate investment and resources to develop downstream manufacturing of products. It should also be noted that the agricultural sector has over time become more similar to a conventional industrial sector with new technological advances, vertical integration, marketing and consumer preferences resemble much of the industrial landscape (FAO, 1997).

As with many other countries, the South African economy has been going through a process of structural transformation with the share of agriculture's contribution to the Gross Domestic Product (GDP) declining over time. This is not to say that the primary agricultural sector has been declining in absolute terms, which in fact is not the case, but instead that other industries have been growing faster. Figure 1 puts this into perspective comparing the share of overall GDP contribution to GDP of agriculture, manufacturing (of which agri processing plays a significant part) and services for several countries (WorldBank, 2019). These countries were selected because they are all considered to be emerging markets with economies

comparable in its economic structure. As expected, all countries in this group had a declining contribution share for agriculture. What should however be of interest here is the different trajectory of the manufacturing industries across these countries that shows differing development trajectories throughout the past five decades.. Starting with South Africa, the country's manufacturing industry had a stable and slightly upward trending share of GDP until the early 1980's where it stood at 22.6% of the economy. Thereafter, this share has been declining to its current share of 12% in 2017. Although a declining share of manufacturing were recorded for other countries, it is clear that during the period between 1965 to the start of the 21st century, countries such as Singapore, India, Singapore and Malaysia were able to grow their manufacturing industries for much longer than South Africa and only started recording a declining share recently. Thus, South African economic growth has been unique in the sense that the declining share in the percentage of agricultural GDP has not been accompanied by parallel growth the industrial sector. This de-industrialisation in South Africa started because of trade sanctions in the 1980's and high spending on defence to maintain political control. There was therefore limited investment in infant agri processing industries at the time. Unfortunately, this decline has continued even though markets have been opened and the country has become a democracy.

In contrast, Malaysia, one of the countries that were comparable to South Africa back in the 1980's due to its level of productivity and output and its reliance on primary sectors, had a much different development pathway. In the process of a declining agricultural share in the economy, Malaysia went through a period of rapid industrialisation where its manufacturing share rose from 10% in 1965 to more than 31% in 2000. This growth was enabled by active promotion and favourable industrial policies aimed at expanding and diversifying their economy. Through that process, the Malaysian economy was able to increase employment in manufacturing industries from 8% to 16% of the entire labour force and manufacturing exports grew exponentially during this period (Rodrik, 2006). Others such as Singapore, India, Mexico and the Philippines have all had periods of growth in the relative share of their manufacturing sectors' contribution compared to South Africa's continued long-term decline. Although many of these countries have recently started to have a declining shares, which is expected as a country transition towards developed country status, the additional jobs created and investments made in new industries have benefitted their local economies greatly. Thus, the pathway towards industrialisation and growth in agri processing sectors can often be driven by industrial policy that promotes manufacturing investment as was the case with Malaysia (Rodrik, 2006).

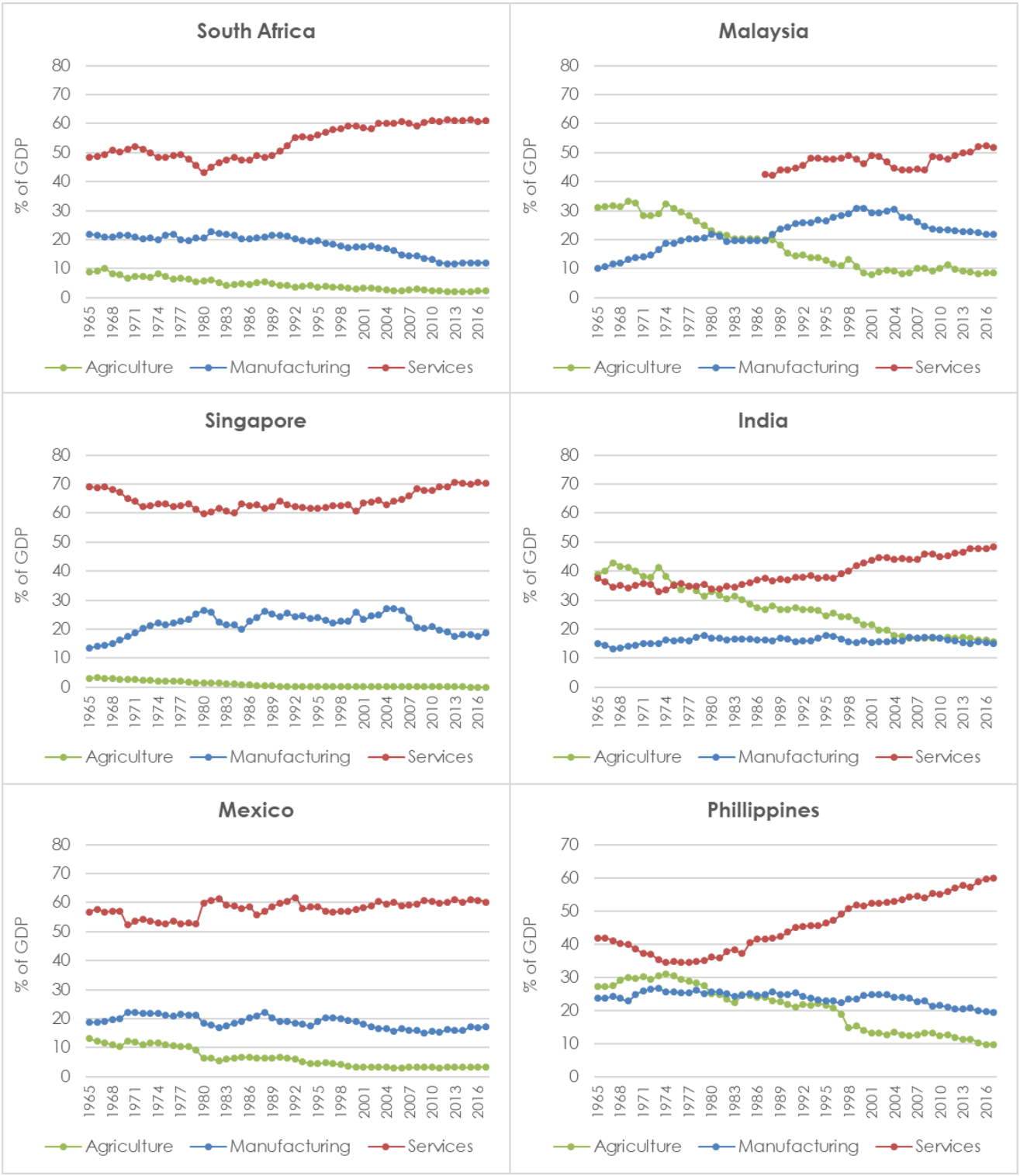

Figure 1: Value Added by Sector to GDP, Select Countries 1970-2018

Source: WorldBank, 2019

Further insight into the de-industrialisation experienced in South Africa can be seen in looking at the country's trade balance which is divided into agricultural and agri processing trade in Figure 2. The trade balance refers to total exports less total imports and therefore represent the net trading position of each sector. Both agriculture and agri processing had consistent positive and growing trade balances that followed similar trends between 1988

and 1999 (Quantec, 2020a). There was then a period where trade in agri processing products outperformed the primary agricultural exports in the early 2000's. Thereafter, the agri processing trade balance declined to a negative position within five years and has since had periods of growth and contraction. This is in contrast to the performance of trade in primary agricultural goods of which the net trade position have strengthened to its current value of R52.8 billion in 2018.

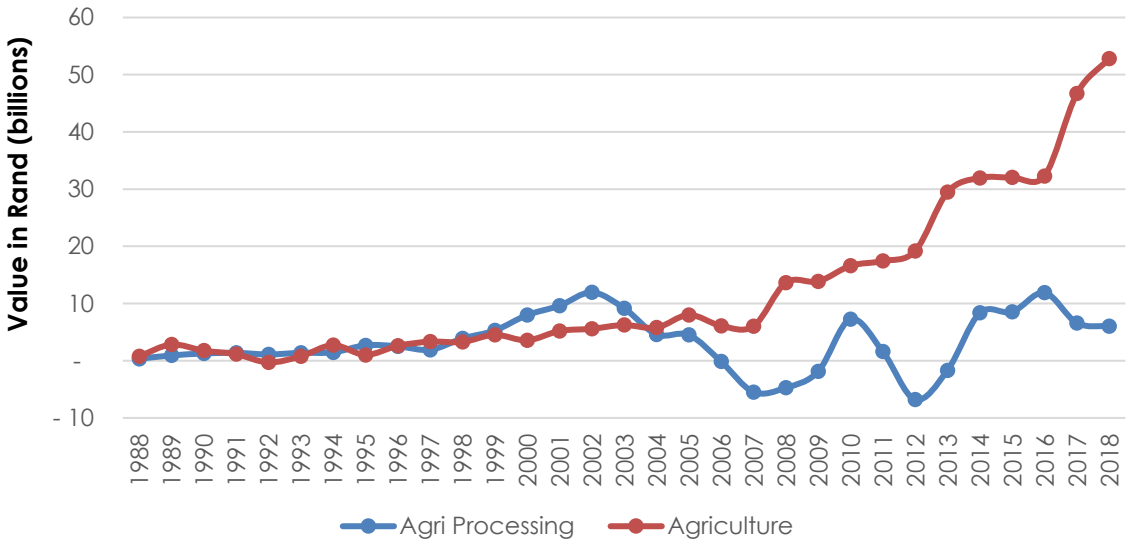

Figure 2: South African Trade Balance for Agriculture and Agri processing, 1988-2018
Source: Quantec, 2020a

The divergent trends in net trade flows are not a result of differences in export performance. In fact closer inspection of the data reveals that both agriculture and agri processing exhibited strong real growth over the past decade. Instead the lack of growth in net trade in agri processing is as a result of very strong import growth accompanying the export growth (Quantec, 2020a). This suggests an increase in domestic demand for agri processing products which is exceeding the rate at which production is currently growing.

It is therefore understandable that agri processing has been identified as one of the vital sectors to accelerate the pace of industrialisation and economic growth in South Africa. Policy documents that confirm this includes the New Growth Path (NGP), the Industrial Policy Action Plan (IPAP) and the National Development Plan (NDP). These documents highlight the linkages between agri processing and the rest of the economy and the opportunities to grow the value added to products and create jobs (NGP, 2011; DTI, 2018; NPC, 2011; ITAC, 2016).

To realise its potential to drive economic growth and job creation, a clear understanding is needed on the recent performance of the sector, its contribution to the economy and areas where competitiveness can be realised. The next section will highlight these dynamics.

3. MACRO ECONOMIC OVERVIEW OF AGRI PROCESSING IN THE WESTERN CAPE

At the onset of providing the macro-economic overview of the agri processing sector it is important to first define this sector and what it encompasses. The difficulty in defining what products are included emanates from the uncertainty of when something should be classified as an output of primary farming, fisheries and forestry, as opposed to that of the manufacturing sub-sectors such as food, beverages and related industries. In many cases, both value addition and the physical changing of products from the farm can take place either on-farm or off-farm, or within the same entity or different ones. Thus, apart from the apparent lack in data capturing, differentiation of what is "agri processed" is problematic.

Following relevant definitions found in the available literature, the definition used by the Western Cape Government incorporates both value addition and physical processing (changing) of the product and therefore includes all post-harvest activities regardless of where it takes place or by whom it is done. The formal definition is provided in Pienaar & Partridge as:

> *"All post-harvest activities applied to products that originate from primary agriculture, forestry and fisheries which involve the transformation, preservation and preparation of products for intermediary and final consumption to make them usable as food, feed, fibre or industrial raw materials. This includes waste and waste products."* (Pienaar & Partridge, 2015, p.6)

Using this broad definition, Table 1 gives a summary of the contribution of both agriculture and agri processing to the economies of South Africa and the Western Cape. For comparison sake it also calculates a narrow definition of agriculture and agriprocessing which excludes forestry and fisheries and only includes food, beverages and tobacco in the agri processing component. Other agri processing is made up of textiles, wearing apparel, leather products, wood products and paper products.

Table 1: Economic Overview of Agriculture and Agri Processing, 2018

Item	Western Cape	% Contribution	South Africa	% Contribution
Economy (GVA)				
Total GVA	R590 billion	100	R4 341 billion	100
Agriculture	R17 billion	2.87	R92 billion	2.12
Forestry & Fisheries	R6 billion	1.06	R14 billion	0.33
Food, Beverage & Tobacco	R31 billion	5.21	R154 billion	3.55
Other Agri Processing	R9 billion	1.58	R58 billion	1.34
Agri + Processing (narrow)	*R48* billion	*8.08*	*R246* billion	*5.66*
Agri + Processing (broad)	*R63* billion	*10.73*	*R318* billion	*7.33*
Employment				
Total Employment	2.55 million	100	16.1 million	100
Agriculture	196 096	7.68	960 011	5.95
Forestry & Fisheries	58 764	2.30	177 938	1.10
Food, Beverage & Tobacco	58 863	2.30	309 619	1.92
Other Agri Processing	38 286	1.50	198 003	1.23
Agri + Processing (narrow)	*254 959*	*9.98*	*1 269 630*	*7.87*
Agri + Processing (broad)	*352 009*	*13.78*	*1 645 571*	*10.20*
Exports				
Total Exports	R168 billion	100	R1 458 billion	100
Agriculture	R36 billion	21.28	R72 billion	4.94
Forestry & Fisheries	R2 billion	1.25	R4 billion	0.26
Food, Beverage & Tobacco	R27 billion	16.10	R70 billion	4.81
Other Agri Processing	R7 billion	4.35	R49 billion	3.36
Agri + Processing (narrow)	*R63* billion	*37.38*	*R142* billion	*9.76*
Agri + Processing (broad)	*R72* billion	*42.98*	*R195* billion	*13.37*

Source: Quantec, 2020a; 2020b; 2020c

Starting with the economic contribution in terms of Gross Value Added (GVA), the primary agriculture, forestry & fisheries sector contributed 2.4% of the national economy, whilst this share in Western Cape was much higher at 3.9% (Quantec, 2020b). The agri processing sector in South Africa contributed around R212 billion in 2018, which made up 4.9% of total

GVA, whilst the Western Cape had again a significantly higher contribution to the regional economy of 6.8%. Thus, the agricultural and agri processing sectors had a combined economic contribution to the economy of 10.7%.

The combined share of these two sectors for South Africa in terms of formal employment was 10.2%, whilst the Western Cape's share was slightly higher at 13.8% (Quantec, 2020c). As will be discussed later in this report, there is the potential for under-counting of the number of agri processing jobs and this should thus be seen as a very conservative statistic.

In terms of export contribution, 43% of the Western Cape's exports are from agriculture and agri processing, compared to 13.4% for South Africa (Quantec, 2020a). Since the current economic conditions are constrained by a number of factors, the opportunity to grow the export base of agricultural value chains should be explored.

The agricultural value chain is not only important for its relative labour intensity, but also the type of labour it employs. This is particularly true with the current challenges the country is facing with an ever increasing unemployment rate over the past decade, particularly for low- to no-skilled workers. The latest statistics suggest that the unemployment rate is currently at 28.7% using the narrow definition and 36.3% if one includes the discouraged workforce (those that have stopped looking for employment) (QLFS, 2020). The literature on this continued trend points to the unique situation in South Africa where there is excess demand for skilled labour, but a shortage of skilled workers and on the other side a large pool of unskilled, unemployed workers unable to find employment (Bhorat & Hodge, 1999; Rodrik, 2006; Banerjee et al., 2008; Dias & Posel, 2007).

It is within this context that the agricultural and agri processing sectors continue to provide employment to workers in both the unskilled and semi-skilled categories. Figure 3 focusses on formal employment in the Western Cape, disaggregated according to skill level for 2018 (Quantec, 2020c). In the Western Cape 27% of the labour force is employed in skilled occupations, with 45% semi-skilled and 27% unskilled. In contrast, the Western Cape agricultural sector's share in un-skilled employment was 65% and 29% for semi-skilled. Whilst the agri processing sector makes use of a larger proportion of semi-skilled workers (53%). Add to this is the fact that the agricultural value chain creates jobs in rural and peri-urban regions which have a higher propensity of unemployment compared to cities (Kingdon & Knight, 2003).

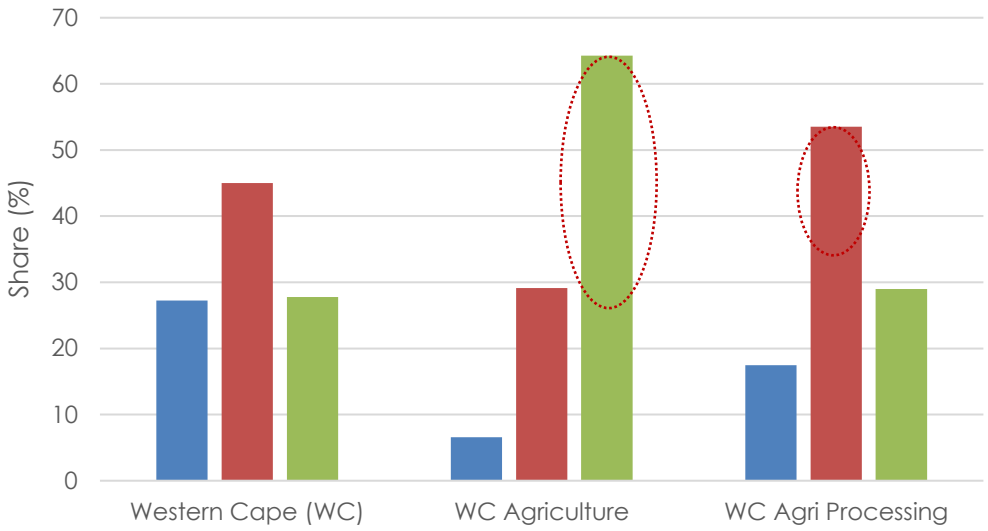

Figure 3: Western Cape Formal Employment by Skills, 2018

Source: Quantec, 2020b

To get a sense of the breakdown of the agri processing industry in South Africa, StatsSA (2014) released provincial breakdowns of the manufacturing sector's output by province and major cities, based on the large sample survey of South African manufacturing businesses. Figure 4 below shows that production of agri processing products is broadly concentrated in the provinces of Gauteng (36%) and the Western Cape (25%). This finding also holds for formal jobs in the sector (StatsSA, 2014). If one uses a simple multiplier based on these values, the sale of agri processing goods is associated with 1.6 direct jobs created per R1million sales.

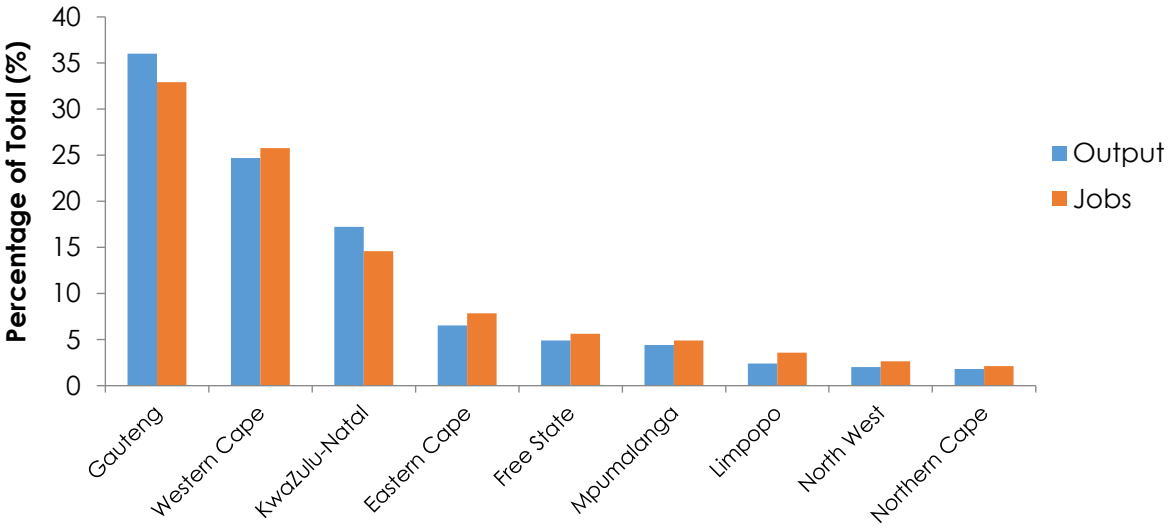

Figure 4: Provincial Breakdown of Food and Beverage Manufacturing in Output and Jobs, 2014

Source: StatsSA, 2014

Figure 5 provides the trends in Gross Value Added (GVA) and annualised job number for the Western Cape. Starting with the economic growth of the agricultural sector, GVA expanded from R11 billion in 2002 to R16 in 2018[1]. The average annual growth over this period was thus 2.1% despite the significant impact of drought conditions and outbreaks of animal diseases in the past few seasons. Agri processing value added to the economy is currently value at R23 billion and has grown at a much slower pace (1.35%) when compared to that of agriculture.

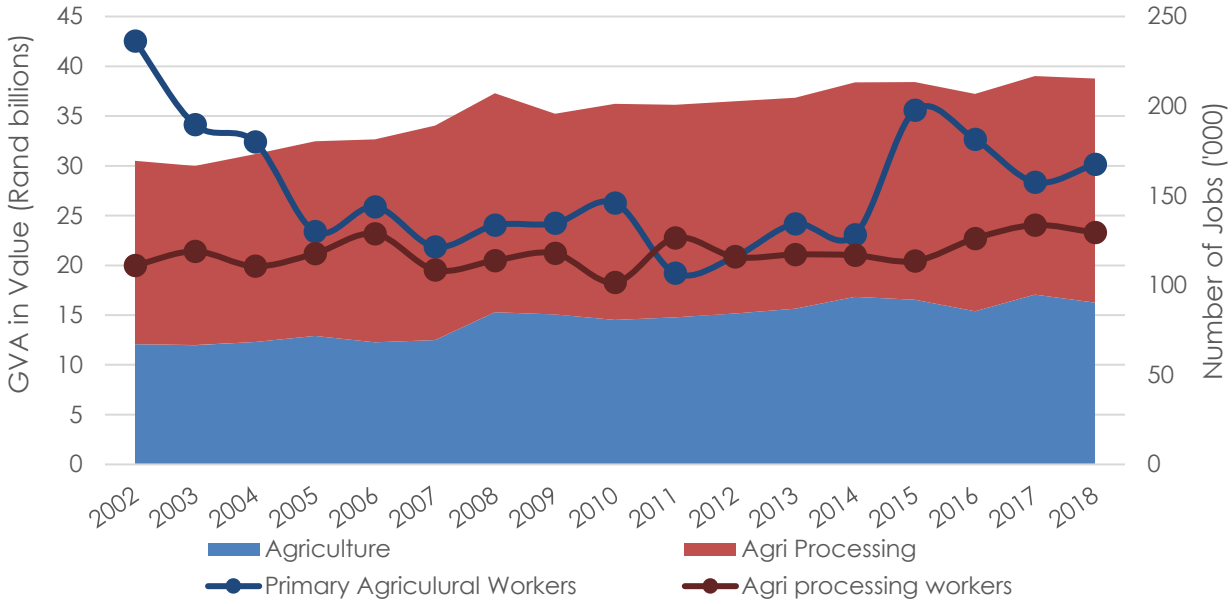

Figure 5: Western Cape GVA and Employment in Agriculture and Agri Processing
Source: Quantec (2020b); QLFS (2020)

As briefly referred to earlier, employment in agri processing jobs is often underestimated due to the method of classification of employment in the labour statistics. A typical labour force survey conducted by StatsSA normally asks separate questions used to categorise an individual worker into an occupation and industry. Although this is based on international best practise, the result of this approach is that workers with a direct agri processing occupation (baking bread, cutting meat, packing fruit) are often classified in other downstream industries due to the main economic activity of the firm. To solve this challenge, a new classification is developed using the detailed industry and occupation code to get a more robust head count of those directly employed on farms and in agri processing facilities. According to this classification, agri processing jobs have seen significant growth since 2008, growing from 113 800 to 130 000 in 2018, whilst primary agricultural jobs have added around 35 000 jobs in the same period (QLFS, 2020).

[1] *Prices are given in real 2010-prices as provided by Quantec (2020b)*

4. AGRI PROCESSING INDUSTRY-LEVEL ASSESSMENT

From this point forward, all information provided will analyse the agri processing sector from a national perspective. The reason for this is mainly due to the lack of provincially representative data on economic sub sectors. Since the Western Cape contributes to around 25% to the national agri processing value added, it is expected that national data will provide a good indication of the situation in the Western Cape. To this end, the industry performance in this section will only include the products produced within the manufacturing industry and will therefore exclude industries where a large proportion of value adding and processing occurring on the farm. When focusing in on specific agri processing products in the next section the broad definition is again employed to include on-farm or "primary processing" activities.

The Standard Industrial Classification (StatsSA, 2012) divides most of agri processing economic activities into the Manufacturing Section C. The definition used for manufacturing is stated as "*physical or chemical transformation of materials, substances, or components into new products… Materials, substances, or compounds transformed are raw materials that are products of agriculture, forestry and fisheries…. Substantial alteration, renovation or reconstruction of goods are generally considered manufacturing.*" (StatsSA, 2012: p.60) These economic activities are often carried out by plants, factories or mills and characteristically use power driven machines and material handling equipment.

Figure 6 provides a snapshot of agri processing industries according to their nominal annual average income growth (y-axis) from 2014 to 2017, their labour intensity (job per R1 million output produced) and the relative size in terms of total income for 2017 (StatsSA, 2014; 2017).

The bubbles situated in top right corner are those that are high-growth, employment-intensive industries. "Tobacco products" and "macaroni & other products" had the highest income growth with 29% and 24% respectively, whilst the sugar and bakery industry recorded negative growth in this period. Prepared animal feed was another growing market, but is relatively low in labour intensity. The textiles, processed fruit and vegetables, apparel and bakery products were the most labour intensive, each creating more than one job for every R1 million output.

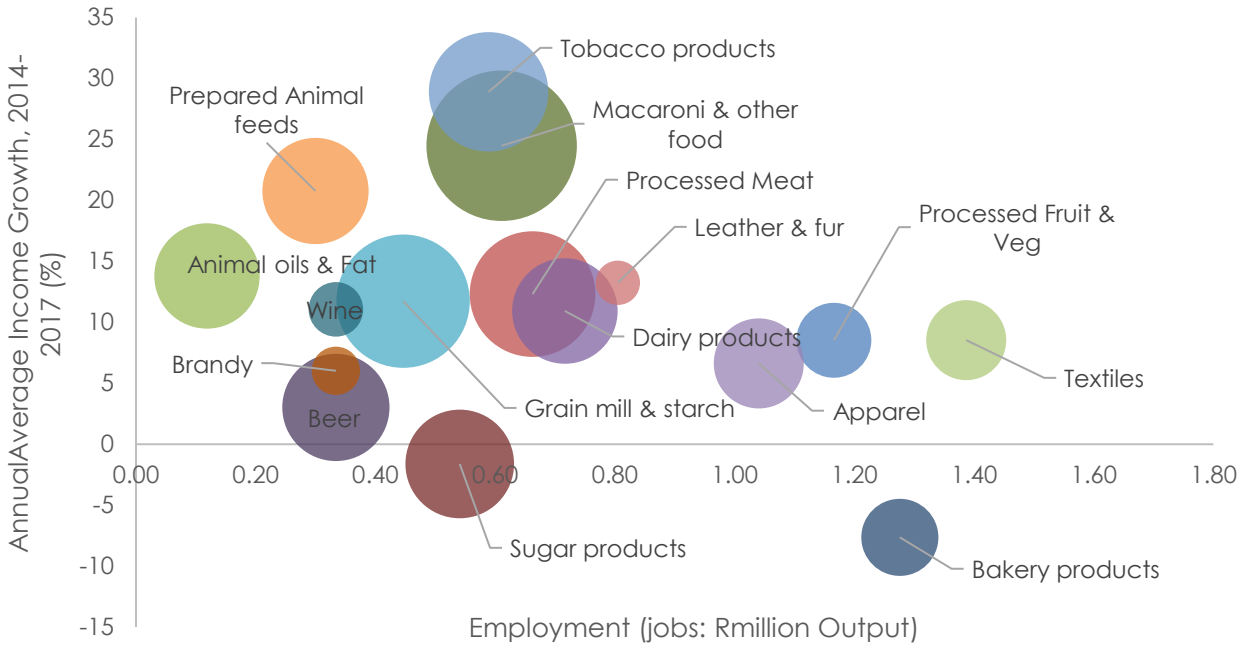

Figure 6: South African Agri Processing Sub-Sectors Income Growth, Employment Multipliers and Relative Size in Value, 2017
Source: StatsSA (2014; 2017)

Leather, processed meat, dairy and the grain industry all had decent income growth and employment multipliers. All of the beverages sectors were closer to the bottom-left corner meaning that both wine, beer and brandy had comparatively low growth and employment potential.

When it comes to agri processing industries, it is important to realise that South African manufacturers competes in the world market against many industrial powerhouses. The macroeconomic performance of South African agri processing industries are often highly dependent on the ability to produce goods at a cost comparable to those countries exporting products. Unfortunately, as Figure 7 point out, South Africa is mainly a net importer of agri-processed goods and this is reflected in the Relative Trade Advantage (RTA) value. The RTA measures the competitiveness of products, determined by assessing trade patterns which indirectly show relative market costs and other non-price competitiveness factors (Bojnec & Ferto, 2012). Competitive products have positive RTA values (+), the marginally competitive have negligible value, and uncompetitive products have negative RTA values (-) (Kleynhans et al., 2016).

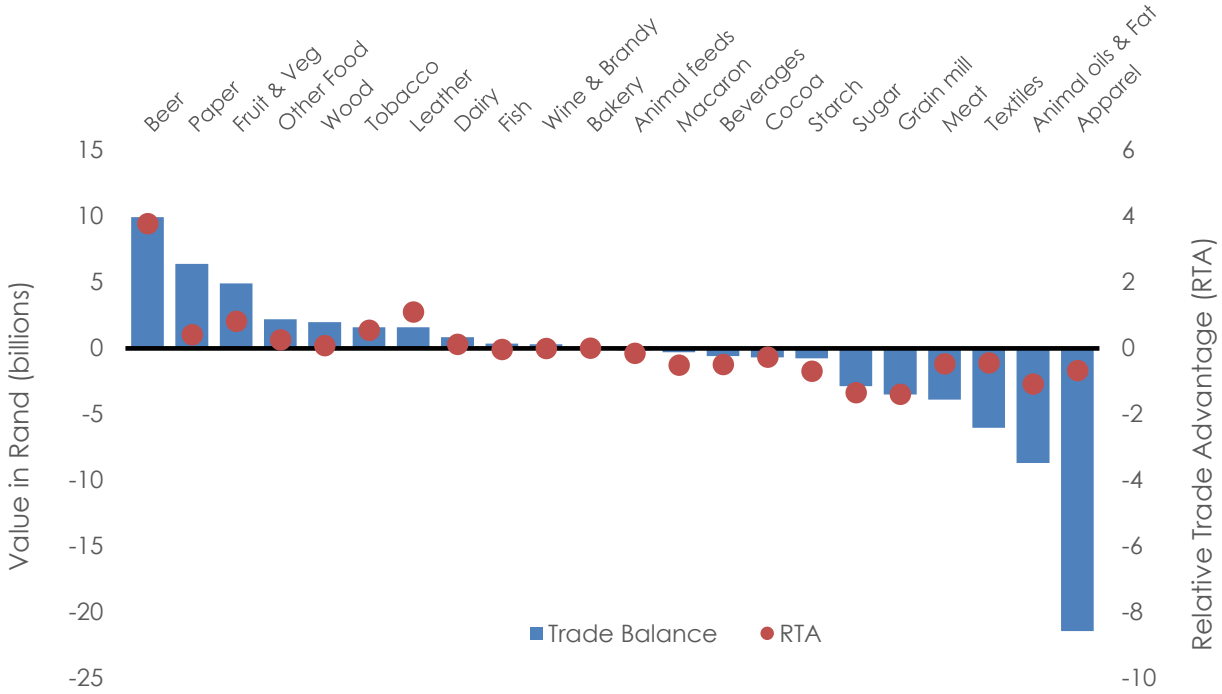

Figure 7: South African agri processing industry trade balance and Relative Trade Advantage in 2017
Source: Own compilation using Quantec (2020a) & ITC (2020)

South Africa's beer industry had the biggest positive trade balance with R9.9 billion and its global competitiveness has been developing since 1895 when the South African Breweries was founded. In the early 1990's, the company expanded its reach in international markets and was subsequently acquired by Anheuser-Busch InBev in 2016, making it part of the world largest brewer.

Next, the South African pulp & paper industry produce a wide range of paper products such as newspaper, corrugated materials, tissue and paperboard. Along with its link to the forestry industry, the sector also provides an environmental service and its products are renewable resources and can be recycled (PAMSA, 2018). The positive trade balance of R6.4 billion, as well as the RTA of to 0.4, can be attributed to the industry's strong increase in packaging and tissue grade export volumes, even though there are increasing pressures on manufacturers due to imports of printing and writing grades.

Processed fruit and vegetables is also one of the more competitive agri processing industries, built on the growing and consistent production of fruits and vegetables. This category includes fruit juices, dried and canned fruit, as well as shelled nuts to name a few. This industry had a RTA value of 0.8 that was in third place behind beer (3.7) and leather (1.1), with a positive trade balance of R4.9 billion in 2017. The other food category given in

Figure 7 which had a trade balance of R2.2 billion includes products such as rooibos tea, infant food, herbs, sauces and soups. Other industries worth noting is that of leather, wine and dairy which were all marginally competitive with positive trade balances. After this all other industries were net importers with negative RTA values. This does not however mean that all products produced in any of these industries are uncompetitive and it is possible individual products have strong potential for growth and investment. This will be investigated further in the product analysis in Section 5.

Finally, Table 2 below shows the economic performance of each agri processing industry from 2013 to 2017, including annual average changes in income, employment, new capital expenditure, profit margins, and the trade balance as previously discussed. Agri processing industries have a relatively low average profit margin of 3.9% if one excludes beverages and tobacco, which is much higher (25.6% average). Around half of these industries had positive employment impacts whilst the overall increase in new capital expenditure was 6.6%, on average. Table 2 also shows whether or not industries' have increasing or declining trade balances in this period, of which the majority were on the decline. This decline negatively reflects on recent performance but also highlights an opportunity as local market demand could in the future be serviced by local supply.

Table 2: South African agri processing industry performance, 2014-2017

Industry Name	Total Income		Employment		New Capital Expenditure		Profit		Trade Balance	
	Value 2017 (R mil)	3-Year annual growth rate	Number 2017	3-Year annual growth rate	Value 2017 (R mil)	3-Year annual growth rate	Margin	3-year Average (%)	Value 2017 (R mil)	Net position
Processed Meat	52 142	12.3	30 065	1.2	905	3.7	2.1	1.5	-3 507	declined
Processed Fruit & Veg	18 561	8.5	20 049	2.6	901	-1.1	3.8	3.8	4 920	improved
Animal oils & Fat	36 682	13.8	4 151	9.6	751	18.9	-1.8	-0.1	-8 675	declined
Dairy products	36 784	10.9	22 410	-1.4	1 623	17.3	1.1	1.7	846	declined
Grain mill & starch	58 750	11.7	21 880	-2.1	917	-23.3	4.3	3.5	-4 234	declined
Prepared Animal feeds	37 303	20.8	10 523	14.4	974	15.9	2.5	2.2	-146	declined
Bakery products	19 637	-7.6	22 743	-12.8	626	-14.8	6.9	4.3	94	declined
Sugar & cocoa products	39 002	-1.6	17 219	-13.1	1 855	3.2	16.1	9.3	-3 543	declined
Macaroni & other food	74 818	24.5	40 122	10.9	1 176	1.4	7.3	7.0	1 924	improved
Beverages	165 876	17.6	35 200	-0.6	7 012	12.6	28.3	17.9	9 675	declined
Tobacco products	47 147	28.9	26 090	21.2	1 036	38.6	8.3	15.4	1 014	improved
Leather & fur	6 496	13.2	3 756	-9.9	130	11.7	4.7	4.0	1 634	declined
Textiles	21 146	8.5	26 442	0.7	776	4.7	4.6	4.1	-1 994	declined
Apparel	26 793	6.6	46 282	-13.6	550	3.9	3.0	3.1	-21 448	declined
Paper	86 756	24.2	43 429	13.5	5 538	13.1	8.5	7.5	6 414	improved
Wood	23 286	3.9	34 082	-7.5	1 674	0.1	1.2	2.7	1993	improved

Source: StatsSA (2014; 2017)

5. AGRI PROCESSING PRODUCT-LEVEL ASSESSMENT

The Agri Processing index (API) is a multivariate index developed to allow the prioritisation of agri processed products through the simultaneous consideration of a number of weighted relevant factors (Pienaar & Partridge, 2015).

The API draws on a number of different data sources, namely:

- The Statistics South Africa's Manufacturing surveys (StatsSA, 2014 & 2017)
- Secondary information from various institutions (Quantec, 2020d; Hortgro, 2018; SAWIS, 2018; CGA, 2018; SAOBC, 2019; StatsSA, 2019; MohairSA, 2019; FAO, 2019; SAMAC, 2019; SAPPA, 2019; SABPA, 2019; DAFF, 2018; SARooibos, 2019)
- The International Trade Centre's *Trademap* data platform (ITC, 2020)
- The World Trade Organisation's *Tariff Download Facility* (WTO, 2020)
- The World Economic Forum's *Global Competitiveness Report* (WEF, 2019)
- The *Geodist Database* of the Centre d'Études Prospectives et d'Informations Internationales (CEPII, 2012)
- The International Monetary Fund's *World Economic Outlook Database* (IMF, 2019)

The index is calculated based on the weighted average across thirteen different sub indicators across 5 broad thematic areas. The five thematic areas are global market growth, domestic market growth, trade barriers, production performance and employment potential. For more details about the sub indicators used to calculate these please refer to the write up in Pienaar & Partridge (2015). For the 2020 API weights are calculated such that each broad thematic area holds an equal total rate in calculations.

For the purpose of calculating the API, agri processing is defined as previously to broadly include not just higher end industrial "secondary processing" activities, but also "primary processing" activities which can occur on or close to the farm. Due to the availability of new data some of the original API groups were able to be further disaggregated increasing the product lines included in the index from 128 to 169. The top ten products in terms of the overall API, measured as an index from 0 to 1, are listed in Table 3 below. The full list of products by API is provided in the Appendix to this report. In the full table in addition to the overall API, the scores out of ten for each thematic from which the API is calculated are also provided.

Cherries featured as the top API for 2020 with an overall score of 0.85. This was driven by good all-round performance, but particularly strong production performance and employment potential. Over the three years till 2017, the labour-intensive industry's output grew at a real average rate of 16% per annum and employment by 17% per annum. Close behind cherries were macadamia nuts (0.85) and blueberries (0.84), after which there is a larger drop.

Table 3: Top 10 Products in Terms of Overall API, 2020

Rank	Code	Product Description	API
1	AP058	Cherries (fresh)	**0.850**
2	AP214	Macadamia nuts	**0.848**
3	AP218	Blueberries and cranberries	**0.837**
4	AP219	Raspberries, blackberries, mulberries and loganberries	**0.776**
5	AP063	Fruit jams, marmalade, chutney and frozen fruit	**0.771**
6	AP015	Honey	**0.755**
7	AP049	Lemons and limes	**0.737**
8	AP046	Guavas and Mangoes	**0.730**
9	AP051	Grapes: fresh	**0.724**
10	AP217	Dried grapes	**0.710**

Source: Own Calculations

As an aggregated group, berries other than strawberries topped the API list in 2015 (Pienaar & Partridge, 2015). It is interesting to see that still after disaggregation all the berry categories performed well with blueberries being 3rd highest, raspberries 4th, currants and gooseberries 11th and strawberries in 14th out of the 169 product groups.

Nuts also performed well in the 2015 API, coming in at third with a single aggregated group for all tree nuts. However once macadamia nuts and pecan nuts are taken out of this group and analysed on their own, the remaining nuts experience a substantial decline in attractiveness dropping down to position 143. Macadamias and pecans perform well on their own taking up 2nd and 15th position respectively overall.

Grapes also showed good performance along the value chain with fresh table grapes coming in at 9th and dried grapes 10th. Low global market growth meant that wine dropped in API from strong scores in the 2015 index (Pienaar & Partridge, 2015). However the industry still performed above average with bottled wine having the 37th highest API of the 169 products, and bulk wine the 53rd highest.

The top four products are products which would be considered more "primary processing" activities. The first product considered "secondary processing" by virtue of being the product of a more strictly industrial processing activity would be fruit jams which came 5th with an API of 0.77. Growth in production in this sector has been at a real average rate of 30% per annum over the past three years, with domestic consumption also growing strongly at 12% per annum over the past seven years.

Generally primary processing activities performed better than secondary, as can be seen in Figure 8 whist shows the average indicator scores for primary and secondary agri processing activities. On all areas primary processing activities outperform higher end processing activities, particularly so with regards to employment potential.

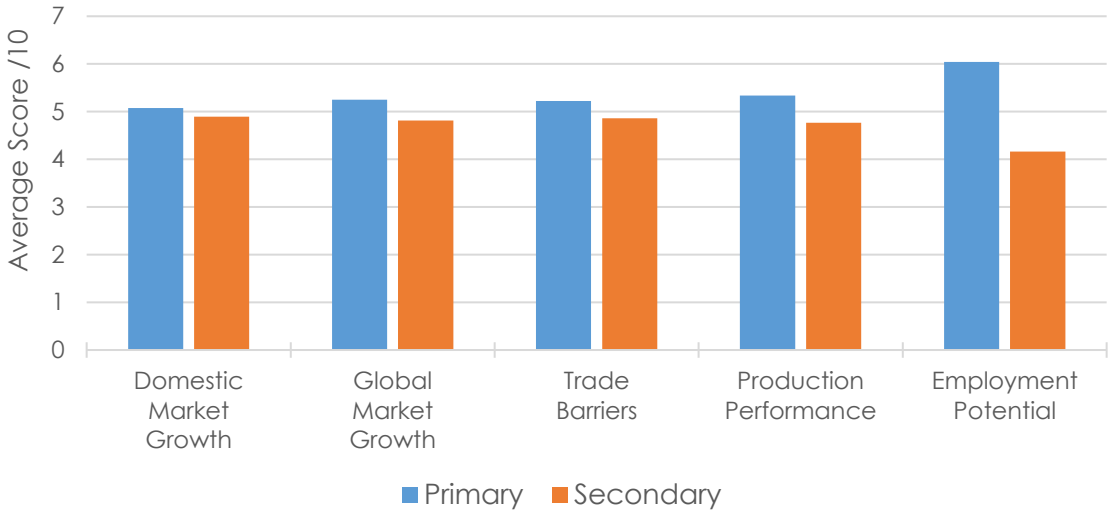

Figure 8: Average Scores for Primary and Secondary Processed Products, 2020
Source: Own Calculations

The top six primary agri processing activities in terms of API are plotted on the radar chart in Figure 9 by score on each thematic area. Blueberries (and cranberries) and raspberries both performed very well in terms of global market growth, but relatively poorly in terms of domestic market growth. In the domestic market macadamia nuts and cherries had very high scores. Scores appeared to be more uniformly high for employment potential and production performance, and relatively low for trade barriers. The trade barriers scores were particularly low for lemons and limes; and for guavas and mangos.

By comparison, the top six secondary processing activities plotted in Figure 10 all had relatively low scores for employment potential and global market growth. The one slight exception was honey which had the highest score on both of these areas. Dried grapes

and wood for fuel had very high scores in terms of domestic market growth. Despite performing very well in terms of trade barriers, canned pineapples performed very poorly in terms of global market growth.

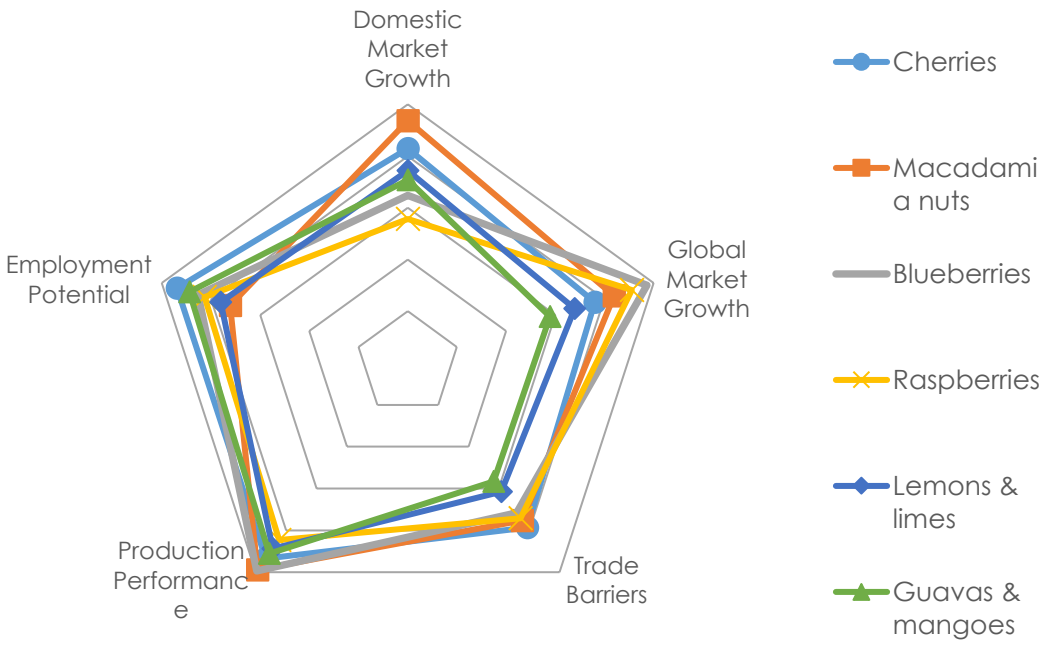

Figure 9: API Product Scores, Top 6 Primary Activities
Source: Own Calculations

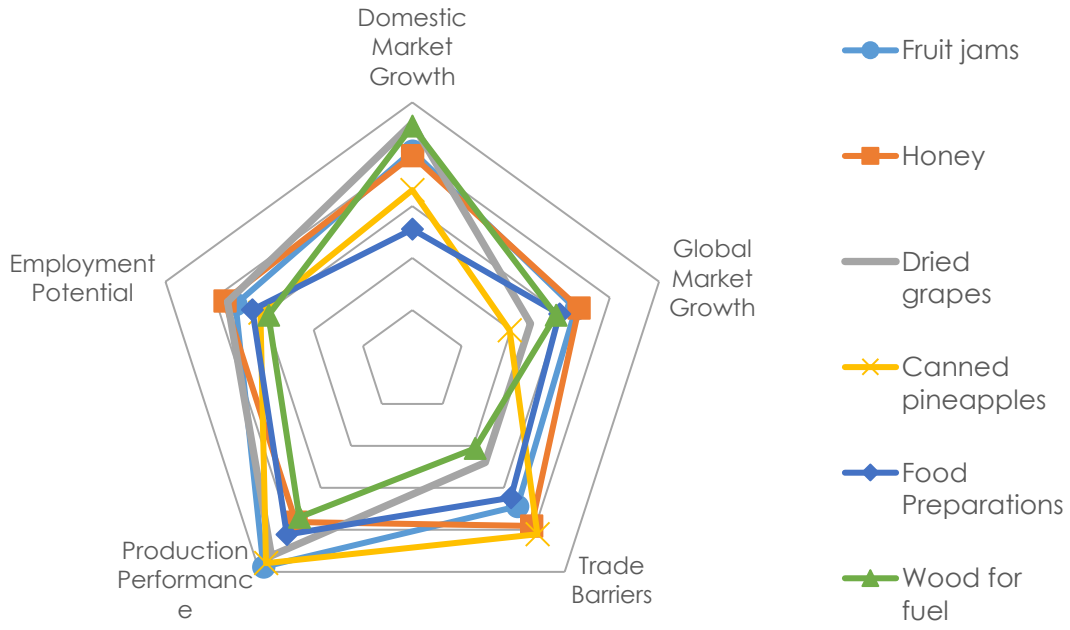

Figure 10: API Product Scores, Top 6 Secondary Activities
Source: Own Calculations

Table 4 shows the top performing products on each thematic area of the API. There is a significant degree of variation with there being no product which features in the top ten on every area, or even on four out of the five areas. There are three products which feature in the top ten on three areas, namely: macadamia nuts; blueberries and cranberries; and barley seed for sowing.

Table 4: Top Scoring Products on API Thematic Areas

#	Domestic Market Growth	Global Market Growth	Trade Barriers	Production Performance	Employment Potential
1	Newspapers	Barley Seed for Sowing	Cabbage	Barley Seed for Sowing	Grain sorghum, for sowing
2	Wine: Bulk (>= 2l)	Blueberries and cranberries	Asparagus (fresh or chilled)	Blueberries and cranberries	Soft Citrus
3	Macadamia nuts	Sugar Cane, Raw	Canned citrus fruit	Macadamia nuts	Cherries (fresh)
4	Dried grapes	Currants and Gooseberries	Canned fruit (exl. pineapple, citrus, pears, apricots, cherries, peaches & strawberries)	Grain sorghum, for sowing	Barley Seed for Sowing
5	Brandy	Raspberries, blackberries, mulberries and loganberries	Pumpkins, squashes and gourd	Fruit jams, marmalade, chutney and frozen fruit	Guavas and Mangoes
6	Wood for fuel	Figs	Brussels sprouts (fresh or chilled)	Currants and Gooseberries	Cauliflowers and broccoli (fresh or chilled)
7	Asparagus (fresh or chilled)	Unprepared cereal straw & husks	Canned pineapples	Newspapers	Blueberries and cranberries
8	Cherries (fresh)	Avocados	Cherries (fresh)	Canned pineapples	Wool
9	Fruit jams, marmalade, chutney and frozen fruit	Herbs and Spices	Canned pears	Olive oil, canola oil and other vegetable oils (excluding soya bean and sunflower)	Pecan nuts
10	Game meat; excl. ostrich	Macadamia nuts	Honey	Unrefined animal fats and vegetable oils	Currants and Gooseberries

Source: Own Calculations

As a final note, the API analysis thus far has not considered one area which has become of particular importance in South Africa, and particularly the Western Cape, in recent years. This is the issue of water and it is the intention of the Department to attempt to incorporate measures of water efficiency into the API calculations in order that new developments do not add to the water stress in the region. However, at this stage users of this data should

note that there is no account of water efficiency and so these results must be considered alongside the implications in terms of water requirements.

The overall analysis here only skims the surface of what can be extracted from the developed database. The Appendix to this report contains the full list of product scoring to calculate the API. The full database with specific sub indicator values and scoring, or any data sub set thereof, is freely available from the authors.

6. CONCLUSION AND RECOMMENDATIONS

This report has provided an updated assessment of agri processing in South Africa, with a specific focus on opportunities for the Western Cape. The analysis shows that agri processing continues to be an important sector in South Africa, both in terms of the value added to the economy and the potential for job creation. It is particularly relevant for South Africa which has a high pool of unemployed low skilled workers which could be absorbed by the sector and the resultant growing downstream agricultural industries.

Whilst the sector has achieved strong economic growth and the realisation of increasing opportunities in global markets, the increasing imports of agri processing products suggest that producers are not currently managing to take advantage of growing domestic demand. In this way this also presents a market opportunity for local producers to capture by replacing imports in the domestic supply.

It was also shown in the analysis that performance differed significantly across different agri processing industries and products. This highlights the need for databases such as the one presented here, which breaks down agri processing into specific products and can distinguish between the potential of different products to contribute towards the country's development goals.

Going forward the following recommendations emanate from the analysis presented here:

- The prioritisation of agri processing development should be continued as it continues to exhibit strong potential for economic growth and job creation.
- A broad definition of agri processing should be adopted nationwide, to ensure that more labour intensive "primary processing" activities are included.

- A further investigation should be undertaken into the potential to accelerate development initiatives in those industries with very high API scores. This is particularly the case for cherries, berries, macadamia nuts, fruit jams and honey.
- Decision makers should adopt a whole value chain approach when developing plans around agri processing. The database developed here provides a useful tool for scoring different products, ideally value chains should be identified where there are high scores all along in order to maximise the upstream and downstream benefits of an initiative.
- A study should be carried out to calculate the water requirements of production. This could then either form a supporting document to accompany the API reporting going forward or can be integrated into the API calculations.
- Due to the nature of agri processing production, specifically the fact that it is spread over a number of different sectors as per the conventional sector classifications, it is important that agri processing developments are conducted in an engaged and inclusive manner.

The main purpose of this report was to be an information source for the sector. Keeping this information updated will help to ensure efficacy of policies and plans around agri processing. It is believed that if developments in the agri processing sector are made based on current good quality information, then this sector has the potential to generate substantial economic benefits for the Western Cape, South Africa and even further for the countries which neighbour South Africa on the African continent.

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APPENDIX: Full API List

#	Code	Description	API {0-1}	Domestic Market Growth (/10)	Global Market Growth (/10)	Trade Barriers (/10)	Production Performance (/10)	Employment Potential (/10)
1	AP058	Cherries (fresh)	**0.850**	8.29	7.61	7.87	9.35	9.38
2	AP214	Macadamia nuts	**0.848**	9.37	8.39	7.53	9.88	7.22
3	AP218	Blueberries and cranberries	**0.837**	6.48	9.73	7.16	9.94	8.52
4	AP219	Raspberries, blackberries, mulberries and loganberries	**0.776**	5.57	9.11	7.42	8.46	8.25
5	AP063	Fruit jams, marmalade, chutney and frozen fruit	**0.771**	8.13	6.62	6.88	9.76	7.16
6	AP015	Honey	**0.755**	7.95	6.75	7.81	7.63	7.60
7	AP049	Lemons and limes	**0.737**	7.44	6.79	6.15	8.88	7.60
8	AP046	Guavas and Mangoes	**0.730**	7.08	5.79	5.66	9.11	8.88
9	AP051	Grapes: fresh	**0.724**	7.14	4.57	7.65	8.93	7.90
10	AP217	Dried grapes	**0.710**	9.20	4.79	4.79	9.23	7.49
11	AP062	Currants and Gooseberries	**0.699**	2.34	9.29	5.19	9.70	8.43
12	AP223	Canned pineapples	**0.690**	6.62	3.94	8.21	9.59	6.15
13	AP234	Barley Seed for Sowing	**0.690**	2.95	9.73	2.66	10.00	9.14
14	AP061	Strawberries	**0.681**	4.74	6.52	6.88	8.64	7.25
15	AP215	Pecan nuts	**0.672**	3.14	5.96	7.30	8.76	8.46
16	AP171	Wool	**0.664**	5.85	5.57	5.76	7.51	8.49
17	AP007	Fish, fish products and other aquatic animals (shellfish, crutaceans, molluscs etc.)	**0.661**	6.64	5.97	6.39	7.57	6.48
18	AP053	Watermelons (fresh)	**0.658**	3.82	6.76	6.90	8.82	6.60
19	AP134	Miscellaneous Food Preparations	**0.654**	5.11	5.96	6.47	8.22	6.48
20	AP152	Wood for fuel	**0.645**	9.09	5.82	4.12	7.40	5.83
21	AP043	Figs	**0.645**	5.82	8.59	4.79	7.22	5.83
22	AP038	Sweet Potatoe	**0.644**	6.46	5.87	5.76	8.40	5.68
23	AP041	Bananas and Plantains	**0.640**	6.62	7.93	5.90	4.97	6.60
24	AP054	Pawpaws (papayas) (fresh)	**0.640**	7.24	5.74	6.84	5.21	6.95
25	AP126	Canned fruit (exl. pineapple, citrus, pears, apricots, cherries, peaches & strawberries)	**0.636**	5.22	6.52	8.66	6.86	4.56
26	AP205	Cauliflowers and broccoli (fresh or chilled)	**0.635**	5.17	7.31	5.03	5.68	8.55
27	AP145	Tobacco & tobacco products	**0.634**	6.48	3.50	5.38	9.41	6.92
28	AP212	Peppers (Capsicum/Pimenta)	**0.633**	7.37	5.94	5.96	6.33	6.07
29	AP142	Brandy	**0.631**	9.15	7.39	7.44	4.85	2.72
30	AP220	Kiwifruit (fresh)	**0.628**	5.19	6.56	5.92	8.52	5.21
31	AP098	Sugar Cane, Raw	**0.615**	5.59	9.45	6.00	3.37	6.36
32	AP224	Canned citrus fruit	**0.615**	7.06	7.39	8.76	2.90	4.64
33	AP165	Newspapers	**0.613**	9.52	2.58	2.58	9.64	6.33
34	AP237	Grain sorghum, for sowing	**0.613**	7.14	1.01	2.86	9.82	9.82
35	AP060	Plums and sloes (fresh)	**0.613**	5.40	4.32	6.17	7.81	6.92
36	AP207	Cucumbers and Gherkins (fresh or chilled)	**0.612**	7.40	6.51	7.24	3.67	5.80

#	Code	Description	API {0-1}	Domestic Market Growth (/10)	Global Market Growth (/10)	Trade Barriers (/10)	Production Performance (/10)	Employment Potential (/10)
37	AP138	Wine: Bottled	**0.612**	8.03	3.68	6.53	7.99	4.38
38	AP120	Pasta	**0.603**	5.69	5.84	4.91	7.34	6.39
39	AP130	Sauces	**0.594**	4.68	6.45	5.66	6.63	6.30
40	AP028	Cabbage	**0.591**	3.46	6.46	9.11	4.20	6.33
41	AP026	Onions (fresh or chilled)	**0.590**	6.69	5.63	4.32	5.86	6.98
42	AP045	Avocados	**0.590**	7.15	8.46	7.00	1.72	5.15
43	AP169	Cartons and containers made from paper and paperboard	**0.585**	6.68	3.79	3.67	8.17	6.92
44	AP133	Ice cream and other edible ice	**0.585**	4.52	5.63	4.08	9.17	5.83
45	AP079	Meal and Flour from Oats, Barley, Rye and Malt	**0.579**	2.95	7.82	4.46	8.99	4.70
46	AP136	Soda drinks and flavoured water	**0.578**	4.09	5.37	6.11	8.05	5.27
47	AP082	Breakfast Cereals	**0.575**	5.62	4.99	4.22	9.05	4.85
48	AP001	Bovine Meat	**0.574**	5.31	5.82	7.18	5.33	5.06
49	AP034	Pumpkins, squashes and gourds (fresh or chilled)	**0.573**	3.64	5.68	8.60	3.91	6.83
50	AP047	Oranges	**0.572**	2.52	5.23	6.27	7.87	6.69
51	AP023	Trees, shrubs and bushes	**0.569**	6.03	5.57	5.01	5.50	6.33
52	AP025	Tomatoes (fresh or chilled)	**0.569**	6.91	5.10	4.60	5.98	5.86
53	AP139	Wine: Bulk (>= 2l)	**0.568**	9.49	5.33	4.18	6.09	3.28
54	AP125	Bread	**0.563**	4.81	7.59	5.33	7.16	3.25
55	AP203	Garlic (fresh or chilled)	**0.560**	7.99	6.42	2.07	8.70	2.84
56	AP146	Essential oils	**0.558**	6.97	6.95	5.72	0.71	7.54
57	AP002	Swine Meat	**0.558**	5.13	4.11	5.74	7.28	5.62
58	AP050	Grapefruit	**0.557**	5.25	5.45	4.32	8.11	4.73
59	AP213	Spinach (fresh or chilled)	**0.556**	2.17	7.18	7.50	3.20	7.75
60	AP005	Animal Offal	**0.552**	5.67	7.25	7.51	2.07	5.09
61	AP167	Toilet paper, tissues, napkins etc.	**0.551**	4.94	3.58	4.10	7.75	7.16
62	AP064	Coffee and Coffee Substitutes	**0.539**	5.51	4.44	4.85	6.92	5.24
63	AP172	Mohair and Kashmir	**0.533**	4.95	6.05	1.32	7.93	6.42
64	AP022	Flowers, Bulbs and Other Ornamental Plants	**0.533**	4.33	3.75	6.80	5.44	6.33
65	AP231	Dried prunes	**0.529**	6.73	5.23	4.79	6.69	2.99
66	AP127	Pure Fruit Juice	**0.528**	6.40	2.99	6.96	5.92	4.14
67	AP014	Birds Eggs	**0.527**	7.42	4.46	3.69	6.57	4.23
68	AP044	Pineapples	**0.526**	5.16	4.30	6.65	3.73	6.45
69	AP031	Carrots, beetroots and other similar edible roots (fresh or chilled)	**0.525**	2.99	6.10	5.90	3.96	7.31
70	AP092	Hop Cones	**0.521**	4.72	5.34	4.26	3.79	7.96
71	AP013	Cheese and Curd	**0.521**	5.25	6.06	4.00	7.04	3.70
72	AP158	Wooden furniture	**0.521**	3.34	5.80	6.59	5.09	5.21
73	AP105	Olive oil, canola oil and other vegetable oils (excluding soya bean and sunflower)	**0.520**	3.61	3.89	4.24	9.53	4.73
74	AP004	Game meat; excl. ostrich	**0.519**	8.07	1.14	5.66	5.74	5.33
75	AP103	Unrefined animal fats and vegetable oils	**0.517**	5.00	2.52	4.14	9.47	4.73

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76	AP209	Asparagus (fresh or chilled)	**0.515**	8.68	4.82	8.95	2.13	1.15
77	AP175	Fabrics made from woven vegetable fibres (e.g. cotton, flax, jute)	**0.515**	3.03	4.29	3.53	9.29	5.59
78	AP029	Lettuce (fresh or chilled)	**0.514**	1.43	5.94	6.41	4.67	7.25
79	AP066	Tea: Packaged or Otherwise Processed	**0.513**	3.86	4.36	2.72	8.58	6.15
80	AP033	Beans (fresh or chilled)	**0.506**	6.79	5.56	4.60	3.55	4.79
81	AP088	Ground Nuts	**0.505**	6.51	3.17	2.78	4.73	8.08
82	AP111	Infant food preparations and formula	**0.505**	2.77	7.87	4.18	4.38	6.07
83	AP006	Poultry Meat	**0.504**	5.28	4.69	5.31	6.75	3.17
84	AP137	Beer	**0.499**	7.22	6.42	5.88	3.25	2.16
85	AP140	Flavoured wine and other alchoholic bevarages derived from fruit (excluding wine)	**0.497**	7.84	4.88	5.64	4.02	2.49
86	AP204	Leeks and other alliaceous vegetables (fresh or chilled)	**0.496**	6.35	3.19	6.75	1.78	6.72
87	AP135	Beverage waters, ice and snow	**0.495**	5.04	3.54	6.13	6.39	3.67
88	AP210	Celery, other than celeriac (fresh or chilled)	**0.493**	3.51	4.93	7.53	4.32	4.35
89	AP059	Peaches / nectarines (fresh)	**0.492**	6.07	3.33	2.47	8.28	4.47
90	AP216	Peanut butter and roasted penauts	**0.491**	6.26	6.74	6.94	1.60	3.02
91	AP055	Apples (fresh)	**0.489**	7.08	2.87	3.47	4.14	6.89
92	AP068	Herbs and Spices	**0.488**	5.17	8.42	4.30	1.66	4.88
93	AP106	Sunflower oil	**0.485**	6.15	3.83	3.08	6.80	4.41
94	AP124	Sweet biscuits, waffles and wafers	**0.485**	5.58	5.69	3.85	6.04	3.11
95	AP230	Dried apricots	**0.483**	3.00	3.56	4.00	8.34	5.27
96	AP211	Mushrooms and truffles (fresh or chilled)	**0.480**	3.17	4.12	6.15	6.51	4.02
97	AP087	Soya Beans	**0.477**	0.78	7.42	4.12	5.38	6.15
98	AP099	Rooibos	**0.477**	5.85	5.39	4.56	0.24	7.81
99	AP039	Nuts, seeds and mixes (excluding ground-nuts): prepared or preserved	**0.475**	6.40	6.47	7.42	1.36	2.10
100	AP009	Yoghurt	**0.472**	4.30	3.77	3.53	7.69	4.32
101	AP225	Canned pears	**0.470**	2.83	1.14	7.87	4.79	6.86
102	AP112	Raw sugar, from sugar cane	**0.460**	5.25	4.16	3.77	7.10	2.72
103	AP057	Apricots (fresh)	**0.455**	5.53	3.43	1.52	5.56	6.72
104	AP035	Frozen, canned, dried or otherwise prepared vegetables	**0.455**	4.11	5.14	5.33	4.56	3.61
105	AP010	Buttermilk	**0.454**	7.03	5.22	2.33	5.15	2.99
106	AP163	Wood pulp	**0.453**	5.21	5.44	3.29	6.27	2.43
107	AP024	Potatoes and potato seed (fresh or chilled)	**0.451**	2.22	5.57	4.10	4.26	6.39
108	AP067	Condiments and Seasonings	**0.448**	4.70	5.24	5.48	2.01	4.97

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109	AP052	Dried fruit (excl. grapes apricots, prunes & apples)	**0.448**	3.74	6.53	6.13	1.48	4.50
110	AP003	Mutton/Lamb Meat	**0.443**	2.78	4.78	4.02	5.62	4.97
111	AP118	Chocolate and other food preparations containing cocoa	**0.440**	5.42	5.08	4.16	4.91	2.43
112	AP153	Wood in the rough, asides from wood for fuel	**0.437**	6.23	6.31	3.55	1.95	3.79
113	AP017	Feathers, Down, Skins, Other Parts of Birds	**0.436**	4.65	4.90	3.81	4.50	3.96
114	AP116	Sugar confectionery, non-cocoa	**0.433**	5.98	4.73	6.25	2.60	2.10
115	AP206	Brussels sprouts (fresh or chilled)	**0.432**	3.16	5.25	8.38	3.31	1.51
116	AP032	Peas (fresh or chilled)	**0.431**	3.35	4.96	7.00	4.08	2.16
117	AP083	Flour, Meal and Flakes from Potatoes and other Starches	**0.431**	3.16	4.28	6.00	4.62	3.49
118	AP168	Miscellaneous paper products	**0.430**	5.18	4.20	1.81	2.37	7.93
119	AP119	Mixes and doughs for bread, pastry, biscuits, etc.	**0.429**	5.64	5.95	6.17	2.31	1.36
120	AP132	Soups and broths	**0.427**	5.55	4.70	5.94	1.30	3.88
121	AP012	Dairy Fats and Oils (e.g. Butter)	**0.425**	7.03	6.80	2.70	2.49	2.25
122	AP091	Sunflower Seeds	**0.422**	4.54	5.71	1.64	2.78	6.42
123	AP048	Soft Citrus	**0.419**	3.33	0.24	2.54	5.27	9.56
124	AP156	Particle board, including veneer faced	**0.418**	3.03	6.94	6.06	0.47	4.41
125	AP159	Wooden containers	**0.417**	2.53	7.00	4.44	2.43	4.44
126	AP072	Barley & malt	**0.414**	3.85	4.90	2.80	3.49	5.68
127	AP238	Triticale	**0.407**	6.30	0.15	3.55	4.44	5.92
128	AP080	Maize Meal and Maize Flour (includes samp and mielie rice)	**0.406**	4.10	4.16	1.95	6.98	3.11
129	AP143	Whisky, gin vodka and other spirituous liquors	**0.404**	3.89	4.27	7.26	2.72	2.07
130	AP008	Milk and Cream	**0.401**	3.71	4.02	3.33	5.03	3.96
131	AP174	Vegetable textile fibres (e.g. cotton, flax, jute)	**0.401**	3.84	4.81	3.73	1.18	6.51
132	AP123	Bakery products other than bread and biscuits	**0.400**	3.60	6.65	3.83	3.14	2.78
133	AP073	Oats	**0.399**	2.96	3.66	5.56	2.96	4.82
134	AP101	Animal Feed	**0.398**	2.94	6.06	2.52	5.80	2.57
135	AP056	Pears and quinces (fresh)	**0.396**	3.62	3.75	2.43	3.61	6.39
136	AP154	Treated wooden poles, blocks and beams	**0.392**	2.61	5.23	4.18	3.43	4.14
137	AP147	Raw animal hides and skin (excluding furskins)	**0.383**	3.82	0.82	2.52	7.46	4.53
138	AP100	Unprepared cereal straw & husks	**0.382**	4.55	8.52	3.51	1.54	0.98
139	AP236	Maize (corn) seed	**0.379**	6.25	2.68	1.38	0.30	8.37
140	AP104	Soya bean oil	**0.379**	1.27	3.47	3.65	6.15	4.41
141	AP232	Dried apples	**0.377**	1.62	6.37	6.06	1.12	3.67

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142	AP161	Builders joinery and carpentry, of wood	**0.376**	1.95	3.04	5.29	2.84	5.68
143	AP040	Nuts; excl. Macademia, pecan and ground nuts	**0.375**	6.01	4.56	3.94	1.89	2.34
144	AP208	Globe artichokes (fresh or chilled)	**0.371**	3.12	6.07	1.40	6.45	1.51
145	AP011	Whey, milk powder, creamers and other milk products	**0.370**	3.79	2.90	5.29	3.85	2.66
146	AP162	Plaits and plaited products	**0.368**	3.08	1.13	5.48	6.21	2.49
147	AP144	Dog or cat food (retail)	**0.359**	4.23	8.08	4.50	0.77	0.36
148	AP030	Chicory (fresh or chilled)	**0.359**	5.01	4.52	4.73	0.95	2.72
149	AP228	Canned peaches & nectarines	**0.354**	4.59	1.33	7.18	0.59	4.02
150	AP090	Canola Seeds	**0.354**	3.98	4.32	3.41	1.24	4.73
151	AP227	Canned cherries	**0.352**	5.00	3.91	5.50	0.83	2.37
152	AP149	Manufactured leather products	**0.347**	3.97	4.32	7.63	0.65	0.77
153	AP229	Canned strawberries	**0.341**	4.07	4.78	6.31	0.18	1.69
154	AP114	Refined sugar	**0.336**	6.03	4.49	2.62	1.83	1.83
155	AP235	Maize (excl. seed for sowing)	**0.334**	0.58	5.21	5.36	1.42	4.11
156	AP151	Furskins and furskin products	**0.320**	4.58	1.83	5.86	0.89	2.87
157	AP075	Rice (Semi-Milled, Wholly Milled or Broken)	**0.319**	3.36	4.61	3.29	3.08	1.63
158	AP201	Ostrich Meat	**0.318**	4.71	0.51	5.25	0.12	5.33
159	AP108	Margarine, edible animal or veg oil preparations nes	**0.310**	2.49	3.91	4.32	2.54	2.25
160	AP069	Wheat	**0.307**	3.92	0.99	2.66	3.02	4.73
161	AP233	Wheat Seed for Sowing	**0.293**	2.39	0.74	3.33	0.06	8.11
162	AP226	Canned apricots	**0.292**	2.79	1.76	5.19	1.07	3.79
163	AP157	Fibreboard of wood or other ligneous materials	**0.290**	2.94	2.91	3.59	0.36	4.70
164	AP148	Leather (excl. ostrich)	**0.277**	2.42	3.03	3.45	2.66	2.28
165	AP221	Persimmons (fresh)	**0.272**	2.98	2.57	2.64	1.01	4.38
166	AP155	Veneers and sheets for plywood etc	**0.265**	1.46	3.18	3.75	0.41	4.44
167	AP078	Wheat Meal and Wheat Flour	**0.253**	4.01	2.62	2.41	2.25	1.36
168	AP239	Ostrich leather	**0.224**	2.42	1.24	3.20	2.19	2.13
169	AP076	Grain sorghum (excl. for sowing)	**0.200**	2.73	0.62	3.37	0.53	2.72