

Mondstuk van die Suid-Afrikaanse aartappelbedryf • Mouthpiece of the South African potato industry

CHIPS

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**BASELINE AND MARKET
DYNAMICS FOR THE
COMING SEASON**

Growing tomorrow's
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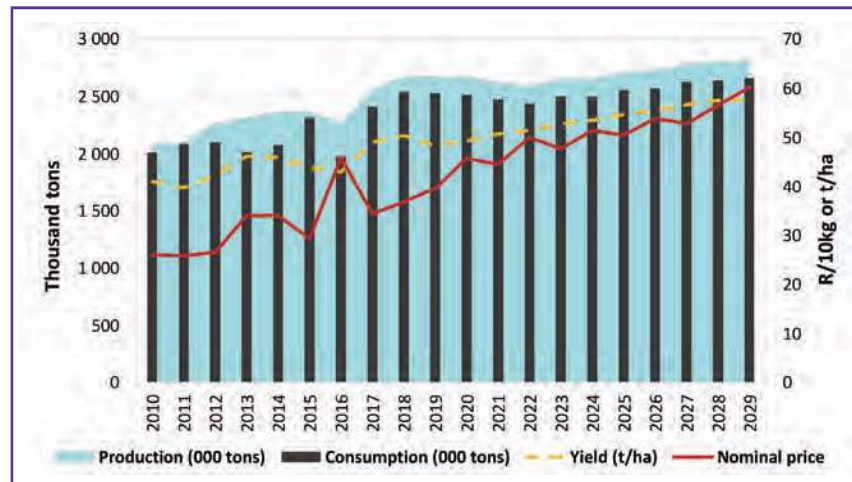
Baseline and market dynamics for the coming season

By Pieter van Zyl, Potatoes South Africa, Divan van der Westhuizen, BFAP, and Marion Delpont, BFAP

For every section of the agricultural industry, a series of core drivers or fundamental factors exist that can determine the direction of an industry. A differentiation can also be made between drivers influencing an industry in the short term, and the more long-term strategic drivers. The greatest challenge when making future projections is to make assumptions pertaining to the fundamental drivers, as well as to anticipate when the interrelationship between these drivers will change.

The past year was particularly challenging due to major Covid-19-related disruptions in the food and beverage sector. *Table 1* illustrates the macro-economic assumptions of the baseline outlook. The gross domestic product (GDP) growth rate for 2020 is 'less negative' than initially anticipated (-9.4%) due to a stronger rebounding of the economy in the third and fourth quarters. The ZAR/USD exchange rate is projected

Figure 1: BFAP potato outlook.



to strengthen in 2021 (largely due to a relative weakening of the American dollar), and the inflation rate is expected to slowly increase over the next three years.

BFAP's outlook for potatoes

South Africa's potato production has increased by an average of 2.6% per annum over the past decade

(*Table 2* and *Figure 1*). During this period, the area under potato production has remained relatively constant at an average of 52 000 ha, while yield improvements (2% average increase per annum) drove production increases.

The rate of increase in yields is projected to decrease to 1.7% per annum over the outlook period, to reach an average yield of 57.8 t/ha by 2029, while the area under potatoes is projected to decline by an average of -0.7% per annum to 48 730 ha by 2029. Yield increases are assumed to be primarily driven by factors such as research, cultivar development, better production

Table 1: Macro-economic assumptions for the 2021 baseline.

	2019	2020	2021	2022
Exchange rate (ZAR/USD)	14.55	16.45	15.36	16.24
GDP growth rate (%)	0.2	-7.2	3.1	2.8
Interest (%)	10.14	7.86	7	7.26
CPI food growth rate (%)	4.9	3.3	4.2	4.7

Table 2: Baseline summary.

	2019	2020	2021	Average annual growth: 2010 to 2019	2029	Average annual growth: 2020 to 2029
Area ('000 ha)	55.34	51.73	51.78	0.3%	48.73	-0.7%
Yield (t/ha)	48.32	51.55	50.72	2%	57.80	1.7%
Production ('000 tons)	2 674	2 667	2 626	2.6%	2 817	1.1%
Fresh consumption ('000 tons)	1 853	1 857	1 802	2.5%	1 962	1.1%
Nominal market price (R/10 kg)	39.72	45.80	44.65	5.3%	60.25	3%

practices, and better plant protection products.

The projections generated by the Bureau for Food and Agricultural Policy's (BFAP) potato partial equilibrium model are based on a set of macro-economic assumptions, as well as the latest industry information. For 2021, potato production is projected to decrease slightly by 1.5% to 2.63 million tons. Despite a 15% increase in the potato price from 2019 to 2020, the potato production area is projected to remain nearly constant in 2021 (51 780 ha) due to significant expected production cost increases from 2020 to 2021 (Figure 1).

The decrease in production is therefore largely driven by a decrease in the average yield from 51.55 t/ha in 2020, to 50.72 t/ha in 2021, assuming that factors such as research, cultivar development, better production practices, and better plant protection products will drive an average increase in yield of 1.2% per annum. Potato prices are driven by domestic supply and demand dynamics as potatoes are not typically traded in bulk.

Despite the relatively constant crop size from 2018 to 2020 (2.67 million tons), the nominal average market price of potatoes increased consistently from R36.83/10 kg bag in 2018, to R45.80/10 kg bag in 2020. These recent price movements can largely be attributed to demand dynamics, which need to be unpacked and understood in more detail.

The real average market price (deflator consumer price index for all products, December 2012 = 100) has also been increasing over the past few years and is projected to increase marginally over the outlook period.

The sensitivity of the potato price

The potato price is extremely sensitive with regard to production volumes as well as quantities demanded. A sensitivity analysis using two scenarios has been performed for the 2021 season to illustrate this. Firstly, a 10% increase or decrease in the average yield in 2021 was imposed and the resulting

Table 3: Price sensitivity analysis: yield variability.

	2021 (baseline)	2021 (10% increase in production)	% change	2021 (10% decline in production)	% change
Area ('000 ha)	51.78	52.06	0.6%	51.50	-0.5%
Yield (t/ha)	50.72	55.78	10%	45.66	-10%
Production ('000 tons)	2 626	2 904	10.6%	2 351	-10.5%
Price (R/10 kg)	44.65	24.70	-44.7%	64.37	44.2%

Table 4: Price sensitivity analysis: GDP growth rate variability.

	2020 (baseline)	2020 (10% increase in GDP)	% change	2020 (10% decline in GDP)	% change
GDP (% growth)	-7.2	-6.5	10%	-7.9	-10%
Fresh onsumption ('000 tons)	1 857	1 858	0.4%	1 856	-0.4%
Production ('000 tons)	2 667	2 667	0%	2 667	0%
Price (R/10 kg)	45.80	46.65	1.9%	44.96	-1.9%

price movements were modelled (Table 3). It can be concluded that a 1% increase (decrease) in yield can cause a 4.4% reduction (increase) in the average potato price.

Secondly, a change in consumers' situations also has significant implications on the demand for and ultimately the price of potatoes. The 2020 season is a case in point, where consumer income declined on average (represented by the GDP growth rate) and lockdown regulations resulted in more home-cooked meals prepared than usual.

Covid-19 brought about a great deal of uncertainty around the extent to which the consumer was impacted, and Table 4 illustrates the impact of imposing a 10% increase and decrease of the GDP growth rate on the potato market. It can be concluded that a 1% increase in GDP growth rate can cause a 0.2% increase in the price of potatoes.

GDP growth rate (as a proxy for consumer income) is only one factor affecting fresh potato consumption and, therefore, the impact of GDP on the price of potatoes is 'indirect' (the price of potatoes is determined by fresh potato demand and supply).

Fresh potato consumption (bulk of demand for potatoes) influences the potato price directly. After a 10% increase in GDP growth, fresh

potato consumption only increased by 0.4%. If, however, fresh potato consumption had to fluctuate by a full 1% (due to higher GDP growth rate changes or other factors influencing demand), this would lead to a 4.75% increase (or decrease) in the average potato price.

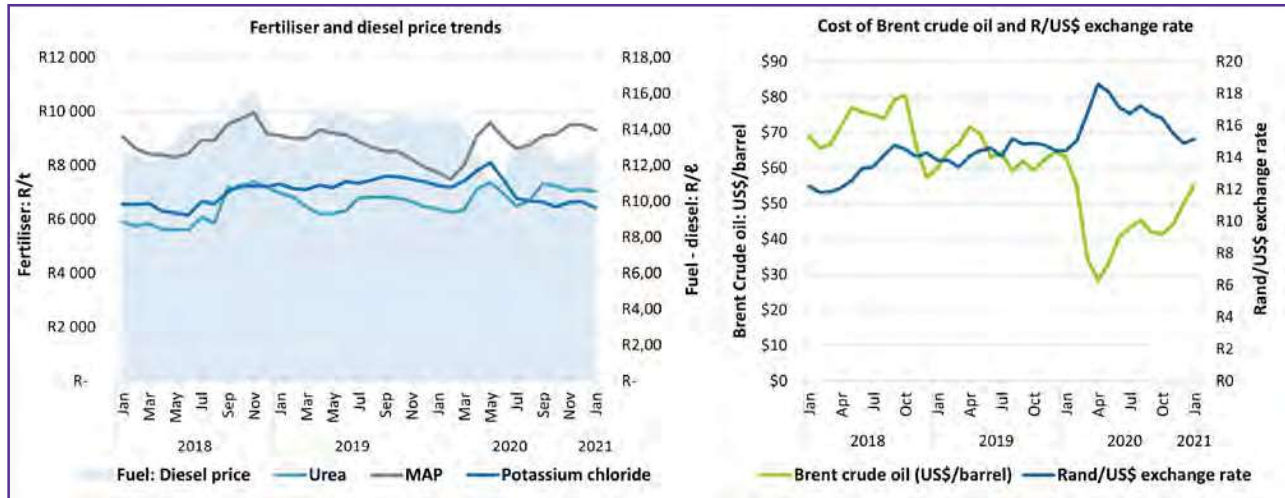
The average nominal potato price is highly sensitive to various volume changes in the market – albeit a supply change or a change in demand and consumption.

Farming input expenditure trends

Producers often face an environment in which the cost of inputs increases at a faster rate than output or farmgate prices. Throughout the Covid-19 pandemic, major volatility was observed in macro-indicators such as the ZAR/USD exchange rate and the Brent crude oil price (Figure 2). 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 has depreciated against the dollar to levels above R19/US\$.

Figure 2: Fertiliser, diesel, and Brent crude oil price trends, and ZAR/USD exchange rate. (Source: Grain SA, 2021)



The correlation between these macro-indicators and domestic fertiliser and fuel prices is clearly visible, with domestic fertiliser peaking in May 2020, and fuel in August 2020.

Apart from fertiliser and fuel prices, the potato industry faces further pressure resulting from the introduction of the new minimum wage for farmworkers during March 2021 and further electricity hikes to

be implemented in April 2021. The new minimum wage for farmworkers will be aligned with the national minimum wage of R21.69/h, implying a year-on-year increase of 16%.

The recent announcement by Eskom entails an electricity tariff hike of almost 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. **C**

For more information, send an email to Pieter van Zyl via pieter@potatoes.co.za, Divan van der Westhuizen via divan@bfap.co.za, or Marion Delpert via marion@bfap.co.za.

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T +27 12 809 4000 | F +27 12 809 4003 | www.rsaseeds.co.za | admin@rsaseeds.co.za