



Western Cape  
Government

Agriculture

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# The Implications of COVID-19 for the Supply of Key Inputs to the Western Cape Agricultural Sector

WCD<sub>o</sub>A COVID-19 Economic Brief #01  
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## 1. Introduction

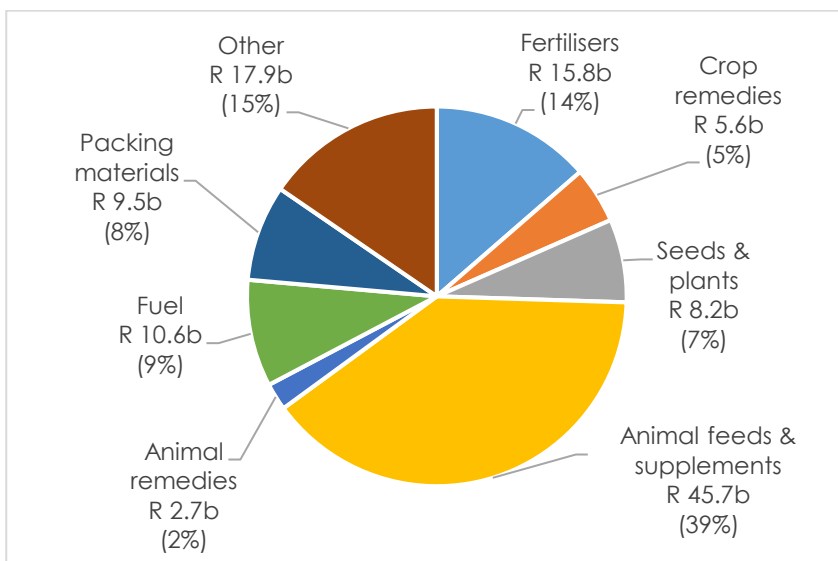
The recent outbreak of the COVID-19 virus, and resulting controls implemented by governments around the world, has had socio-economic impacts which have been unprecedented in terms of both scale and in terms of the depths to which they continue to reach. In South Africa agricultural activity has thus far been able to continue relatively unhindered compared to other sectors. However the current situation has presented several significant challenges for the sector. These challenges are particularly important given the significance of the sector to provide food in order to sustain lives. Because many of the impacts on the sector have long term implications, if the wrong decisions are made now there may be negative consequences persisting for quite some time (Troskie, 2020).

South Africa is a net exporter of food and thus has the capacity to produce enough for the country's population without relying on the supply of food from external countries (BFAP, 2020a). However, the country is a net importer of certain inputs which are necessary for the production of agricultural goods. In the Western Cape 47% of gross farm income is derived from horticultural products (Stats SA, 2020a) making it particularly important to ensure a sufficient supply of inputs needed for crop production such as fertilisers and plant protections. There has already been anecdotal evidence of shortages of certain inputs and whilst this will likely not impact on current food supplies there are concerns about the potential impacts on the preparations for the next harvest (Troskie, 2020).

This report looks at the broadly classified agricultural inputs used by producers, first generally then zooming in on plant protection s and fertilisers. The analysis necessarily begins at the national level before narrowing in to draw specific implications for the Western Cape Province.

## 2. Agricultural Inputs in South Africa

According to the 2017 Census of Commercial Agriculture (Stats SA, 2020a), the biggest aggregate input at the national level in terms of the value of expenditure was for animal feed and supplements, totalling R45.7 billion. Although the census reports expenditure on animals and animal products as farm purchases with the other expenditure categories, they are excluded here due to the fact that animals appear on the balance sheet of farms as assets. The inputs making up farm expenditure are broken down at the national level in Figure 1 where it can be seen that animal feed and supplements make up 39% of total expenditure.

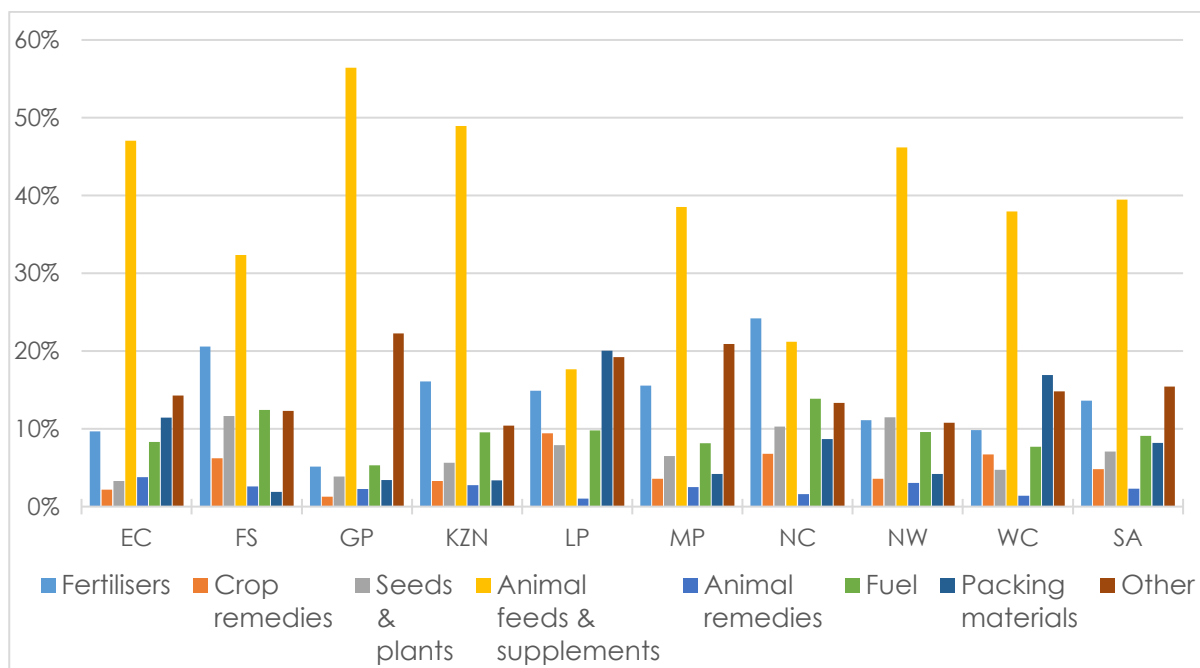


**Figure 1: Breakdown of Total Farm Expenditure on Production Inputs in South Africa, 2017**

Data Source: (Stats SA, 2020a)

Inputs directly used for crop production make up 26% of total farm expenditure in the country, totalling R29.6 billion in 2017. The biggest input here was fertilisers, R15.8 billion (14%), with seeds and plants totalling R8.2 billion (7%) and crop remedies totalling R5.6 billion (5%). Fuel and packing materials also make a significant contribution towards total farm expenditure totalling R10.6 (9%) billion and R9.5 billion (8%) respectively.

The share of expenditure on each category varies significantly across South Africa's provinces. This can be seen in Figure 2 which shows the proportion of total farm input expenditure on each expenditure type for each province, as well as the South African national aggregate. The Western Cape's share of expenditure on animal feed and supplements is significantly less than most other provinces meaning that the Western Cape's share is lower than what is observed at the national level.

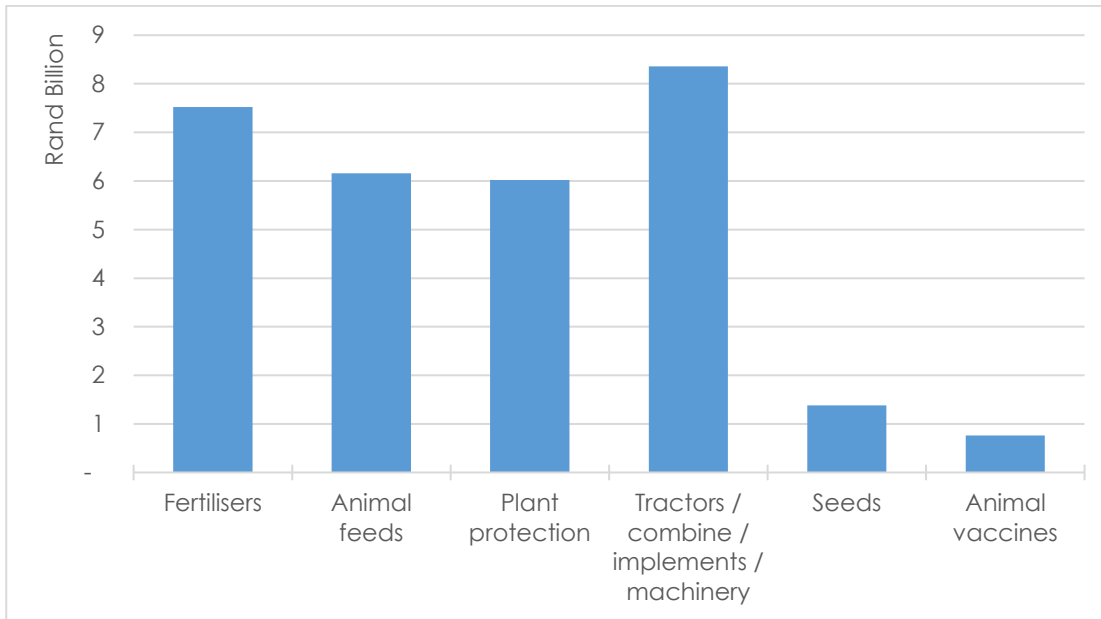


**Figure 2: Farm Input Expenditure Shares per Province in South Africa, 2017**

*Data Source: (Stats SA, 2020a)*

The biggest concern with regards to the implications of COVID-19 on agricultural inputs comes from those inputs where South Africa has a high level of dependence on imports. There are two sides to this. Firstly there could be supply shortages due to import restrictions imposed as a result of COVID-19 related regulations, export or activity restrictions in place in supplying countries, as well as the logistical disruptions imposed by restrictions. Already there is evidence of pressure from these input supply shortages which are expected to worsen over the medium to long term as stocks are depleted over time (Troskie, 2020). Then secondly even where supply channels are able to remain open, the sharp depreciation of the Rand which has been occurring will mean that these inputs become significantly more expensive (BFAP, 2020b).

The biggest imported agricultural input in terms of value is for agricultural machinery which had an average annual value of R8.4 billion between 2017 and 2019. Fertilisers was the next biggest imported input of all the key inputs compared in Figure 3 below. Fertiliser inputs averaged an annual value of R7.5 billion across the three years. Animal feeds and plant protection totalled 6.2 billion and 6.0 billion respectively. Imports of seeds and animal vaccines were much smaller in value but still significant averaging R1.4 billion and 0.8 billion respectively.



**Figure 3: Value of South African Imports of Key Agricultural Inputs, Average 2017-2019**  
 Data Source: (BFAP, 2020b)

The main importing countries in terms of agricultural production inputs are shown in Figure 4 where the size of the circle represent the total value of imports from each country. Combined the European Union countries the largest share of imports with China, the United States of America (USA) and Argentina also featuring strongly. This is, however, not homogenous across the different input types. The main suppliers of fertilisers are Saudi Arabia (17%), Qatar (16%) and Russia (13%). Plant protection imports are largely sourced from the EU (42%) and China (24%). South Africa is able to supply 75% of its own animal feed with the remainder being largely sourced from Argentina. Supplements for animals mainly come from China with animal vaccines being sourced mainly from USA, Netherlands and China (BFAP, 2020b).

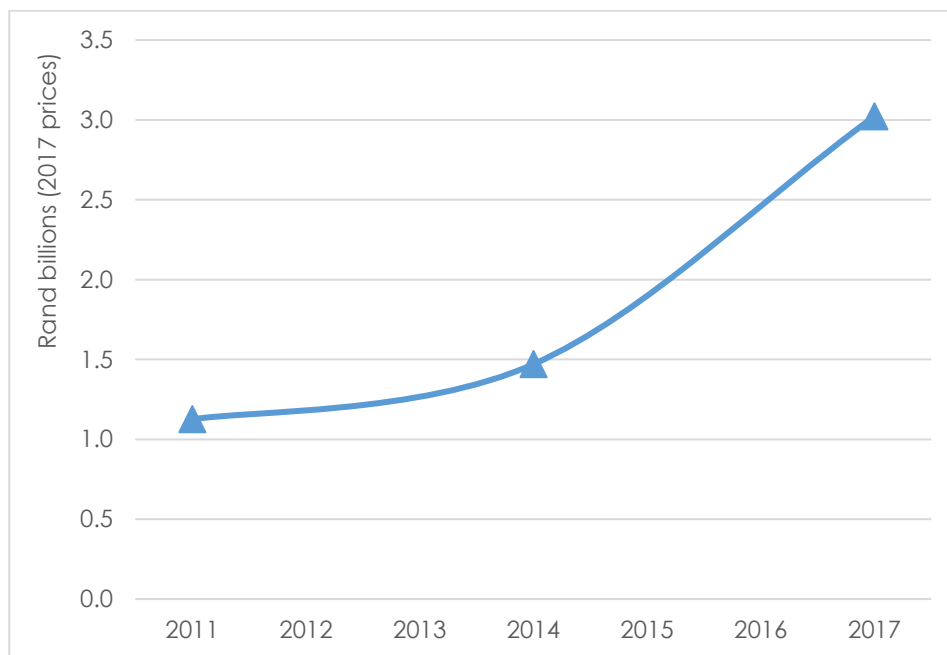


**Figure 4: Suppliers of Agricultural Inputs Imports into South Africa, 2017-2019**  
 Source: (BFAP, 2020b)

The impact of COVID-19 on the provision of agricultural production inputs will be different for different types of inputs. The rest of this report focuses on specific categories of inputs focused around crop production due to the prominence of crops in the Western Cape agricultural sector and the particularly high observed levels of imports used to supply these inputs. Specifically a brief overview is provided of the current state of supply of plant protection and fertiliser at the national level, before a more in depth analysis is provided on fertiliser use within the Western Cape Province.

### 3. Plant Protection Products

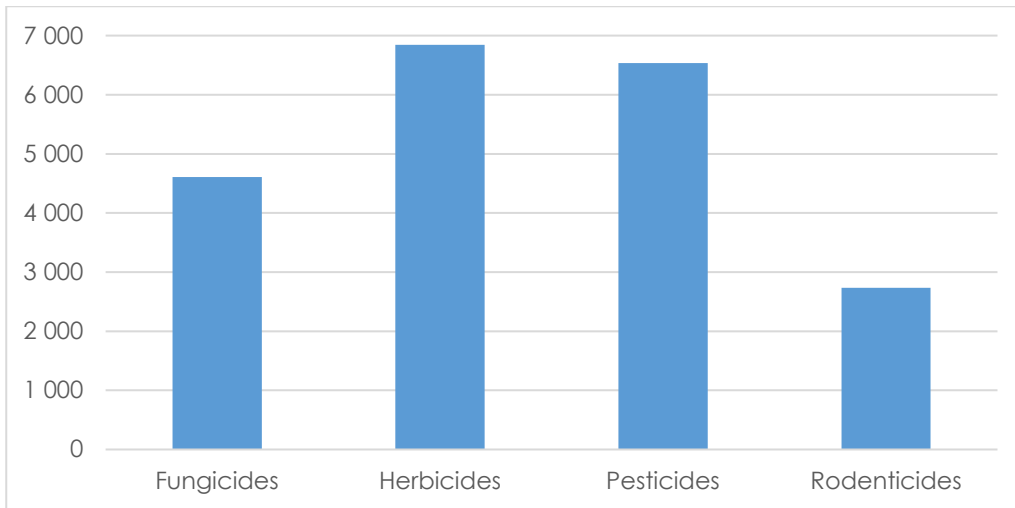
Plant protection products are generally produced in the manufacturing sector and there appears to have been strong growth in the production capacity for plant protection in South Africa. Even after the effect of inflation is removed, production of pesticides, insecticides, fungicides and herbicides according to Statistics South Africa's *Manufacturing Surveys* increased at an average annual rate of 18% between 2011 and 2017, and by more than 27% between 2014 and 2017 (Stats SA, 2019; Stats SA, 2020b). This strong real growth can be observed in Figure 5 which shows the value of production of pesticides, insecticides, fungicides and herbicides for all available years between 2011 and 2017 after converting all values to 2017 prices. In 2017 the total value of production was more than R3 billion.



**Figure 5: South African Real Value of Production of Pesticides, Insecticides, Fungicides and Herbicides, 2011, 2014 & 2017**

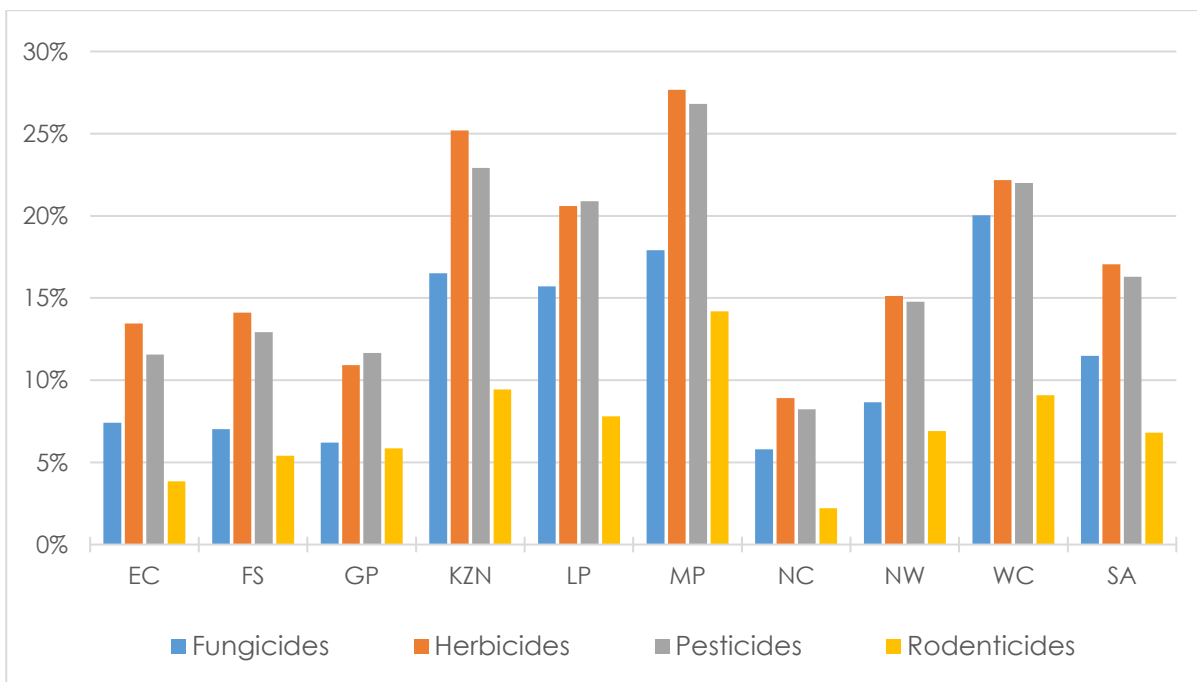
*Data Source: (Stats SA, 2019; Stats SA, 2020b)*

The most commonly used plant protection product used in the production of agricultural goods in South Africa, in terms of the number of farms using it, is herbicides. In total there were approximately 6.8 thousand farms using herbicides nationally in 2017, this is 17.1% of the total national number of farms. When compared with other key chemical inputs for agricultural production in Figure 6, the next most commonly used is pesticides which was used by 6.5 thousand farms (16.3%). This was then followed by fungicides and rodenticides which were used by 4.6 thousand (11.5%) and 2.7 thousand (6.8%) farms respectively.



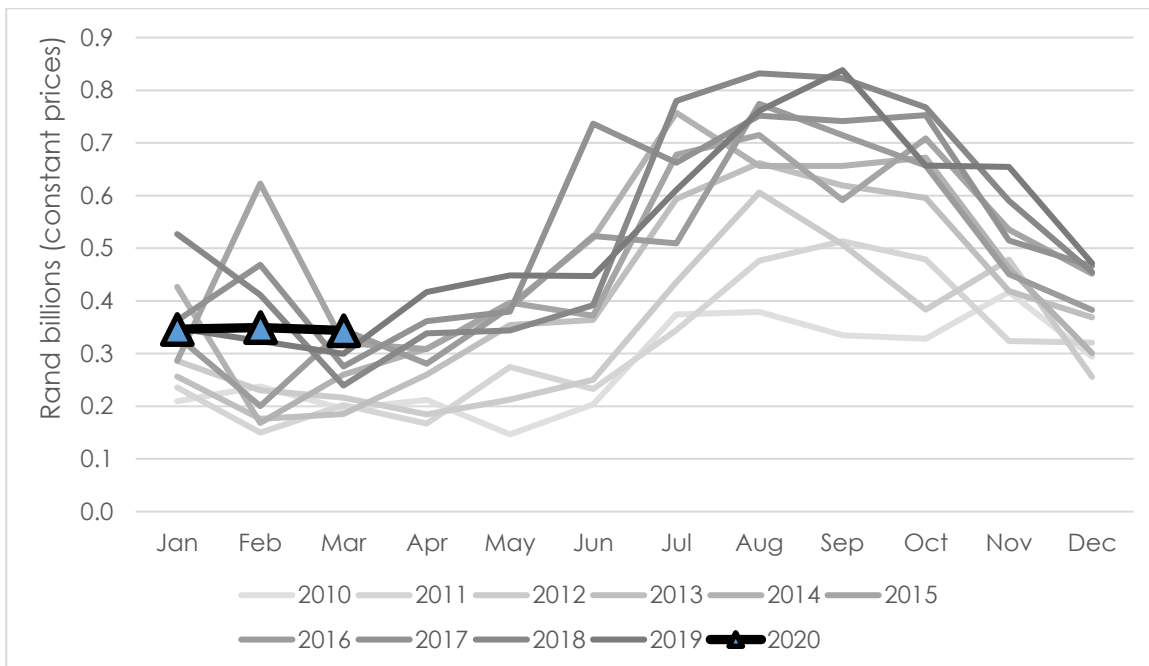
**Figure 6: Number of Farms Using Key Agricultural Plant Protection Inputs in South Africa, 2017**  
 Data Source: (Stats SA, 2020a)

More than 20% of farms in the Western Cape use fungicides, the highest proportion across South Africa's provinces. This provincial breakdown is provided in Figure 7 along with the proportion of farms using herbicides, pesticides and rodenticides. For all these other three categories the Western Cape has proportions exceeded only by those in Kwa Zulu Natal and Mpumalanga with 22%, 22% and 9% respectively.



**Figure 7: Proportion of Farms Using Plant Protection Products in South Africa by Province, 2017**  
 Data Source: (Stats SA, 2020a)

For the first three months of 2020 the imports of plant protection products was in line with previous years. This can be seen in Figure 8 which shows monthly imports in real values (base = December 2019) of plant protection products from 2010 to 2020. It is clear that the majority of imports take place from July to October. Given the current COVID-19 status of countries around the world as economies are only just beginning to open up it is a concern that this is the period we are just going into now.



**Figure 8: Real Monthly Imports of Plant Protection Products into South Africa, 2010-2020**

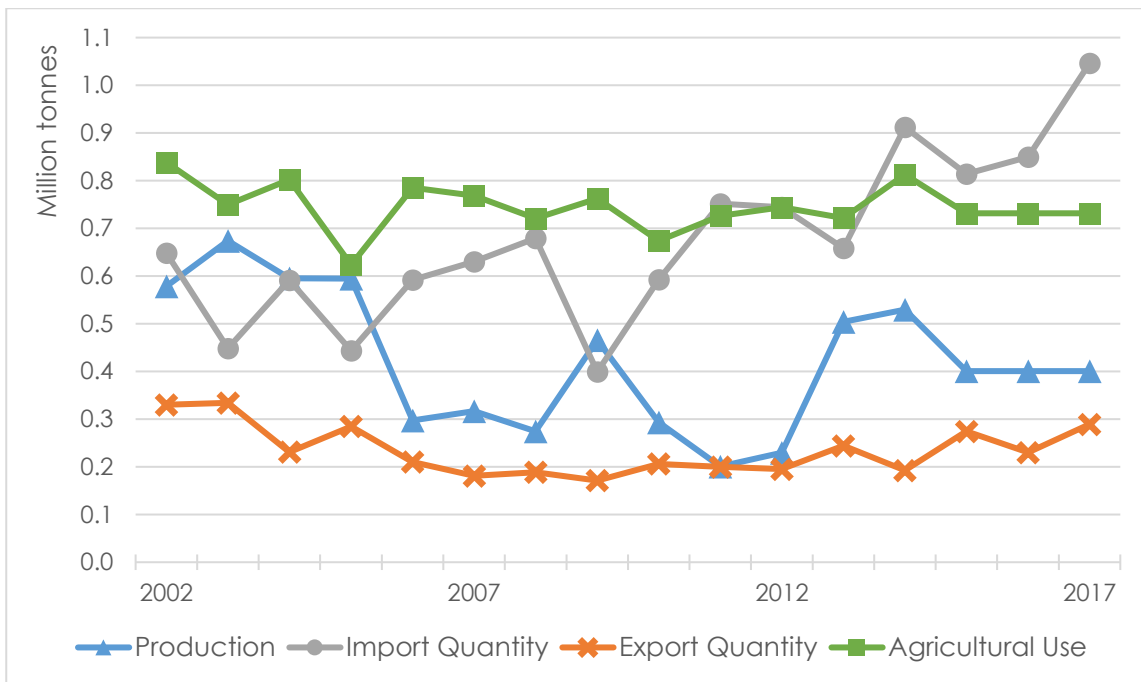
*Data Source: (ITC, 2020; Stats SA, 2020b)*

In conclusion, there are a large number of farms in South Africa who rely on plant protection products. The proportion of farmers using these products is also disproportionately higher for the Western Cape. Whilst imports of these products appear to have continued without any major constraint it is yet to be seen whether that will be the case in the coming months when imports are supposed to peak. In order to mitigate the risk of supply disruptions farmers should be encouraged to seek out alternative ways to protect plants from pests and diseases.

#### 4. Fertilisers

The usage of fertiliser in agricultural production has remained relatively constant since 2002. This can be seen in Figure 9 which shows the total quantity (tonnes) of production, agricultural use, imports and exports of the three main inorganic fertiliser nutrients: nitrogen, phosphorus and potassium. In total approximately 731 thousand tonnes of fertiliser were used for agricultural production in 2017. South Africa also exported 290 thousand tonnes of fertiliser which has also remained relatively constant over the same period. Domestic production of fertilisers has always been far less than what is demanded in the agricultural sector creating a strong import dependence. Over recent years production has also declined meaning imports have had to increase further to supply the South African agricultural sector. In 2017 more than one million tonnes of fertiliser were imported into South Africa with local producers only manufacturing around 400 thousand tonnes.

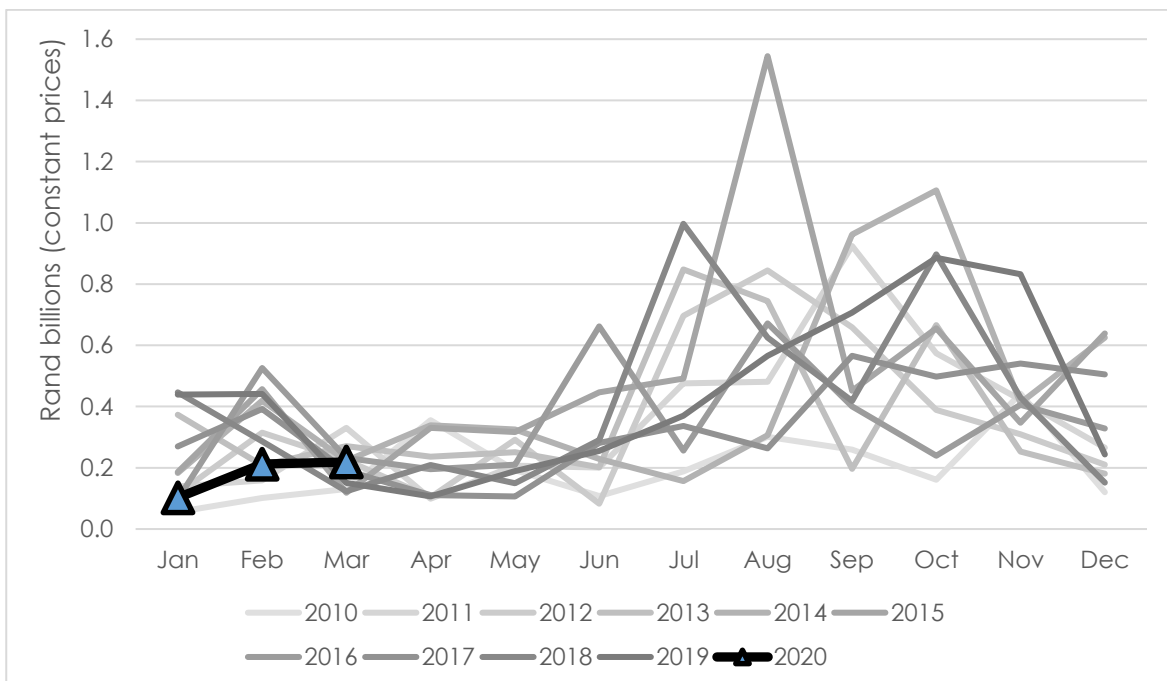
The inclusion of exports is done intentionally as it would be desirable to still be able to supply those export markets, whether they be re-exported products or the export of locally manufactured products. This is firstly due to the importance of maintaining the trade relationships in order to have markets tied down after the current pandemic is over, and secondly because of the responsibility South Africa has in supporting trading partners, particularly on the African continent and particularly with regards to ensuring adequate food provisions in these countries.



**Figure 9: Fertiliser Production, Use, Imports and Exports in South Africa, 2002-2017**

Data Source: (FAO, 2020)

As was observed in the case of plant protection products, most imports of fertilisers occur between July and October. Looking at the monthly import comparison over the past ten years in Figure 8, it does appear that imports were lower than usual in the first quarter of the year. This is a concern given the peak in imports expected in the coming months and uncertainties around the efficiency and efficacy of global supply chains. If stocks are already lower than usual supply could be put under severe strain if imports are not able to reach the levels they have in previous years.



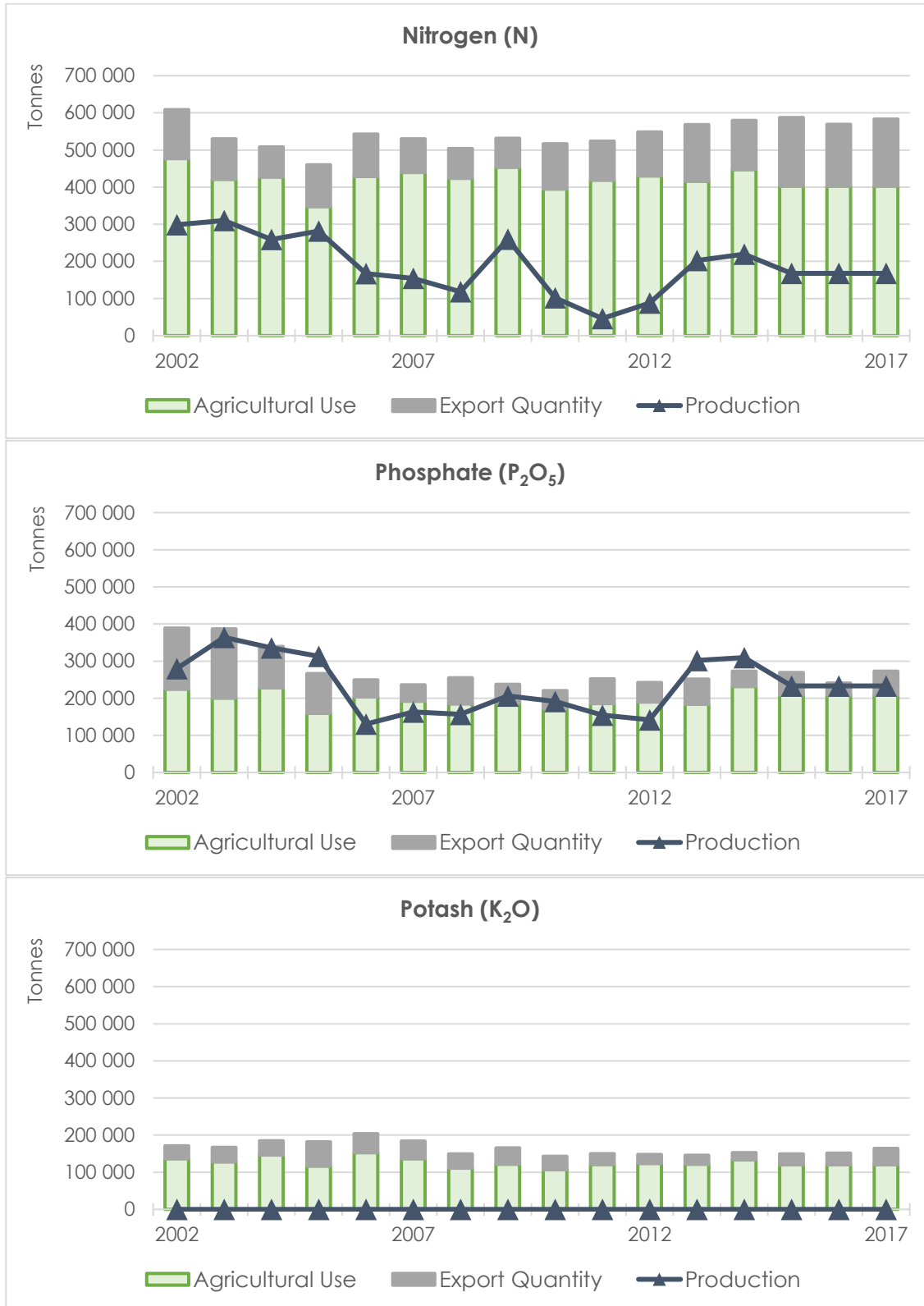
**Figure 10: Real Monthly Imports of Fertiliser Products into South Africa, 2010-2020**

Data Source: (ITC, 2020; Stats SA, 2020b)

When broken down by nutrient content as in Figure 11, the biggest demand is for nitrogen, totalling 402 thousand tonnes in 2017, 55% of the total fertiliser use for agriculture. When combined with the



total exports of 181 thousand tonnes, the total demand of 583 thousand far exceeds the 167 thousand tonnes produced domestically. In terms of phosphorus, production has exceeded the amount used in agriculture for the past five years, even exceeding the combined amount exported and used in agriculture in 2013 and 2014. The lowest use was for potash with only 120 thousand tonnes used in 2017 and 44 thousand exported, but this was all supplied through imports with no domestic production recorded.

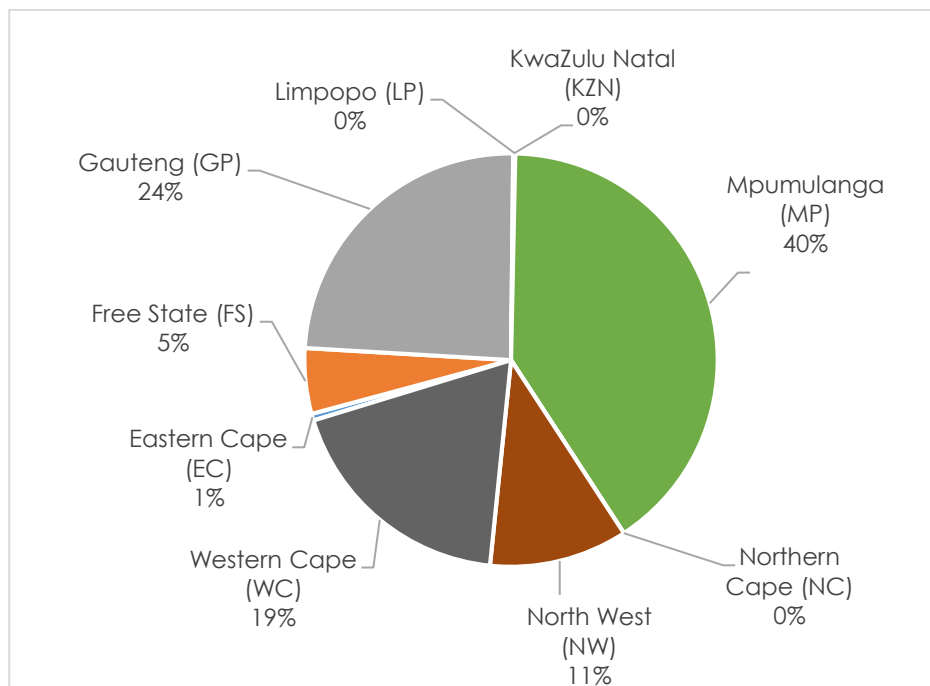


**Figure 11: Fertiliser Domestic Supply and Demand in South Africa, 2002-2017**

Data Source: (FAO, 2020)

In addition to being the users of agricultural inputs, the agricultural sector also produces certain inputs. Whilst approximately 15% of farms in South Africa use nitrogen fertilisers in 2017, there were also 10% which used organic fertilisers which can be produced by domestic agricultural producers. In 2017 the South African agricultural sector produced organic fertiliser to the value of R122 million. This may sound like a lot but it only equates to less than 1% of the value of total fertiliser used in agricultural production (Stats SA, 2020a).

Organic fertiliser to the value of R49.5 million was produced by the Mpumalanga agricultural sector in 2017, 40% of the national total. This made it the biggest producer in terms of South Africa's provincial breakdown of the value of organic fertiliser production in Figure 12. Production in Gauteng totalled R29.6 million (24%), the Western Cape totalled R22.8 million (19%) and the North West totalled R13.2 million (9%).



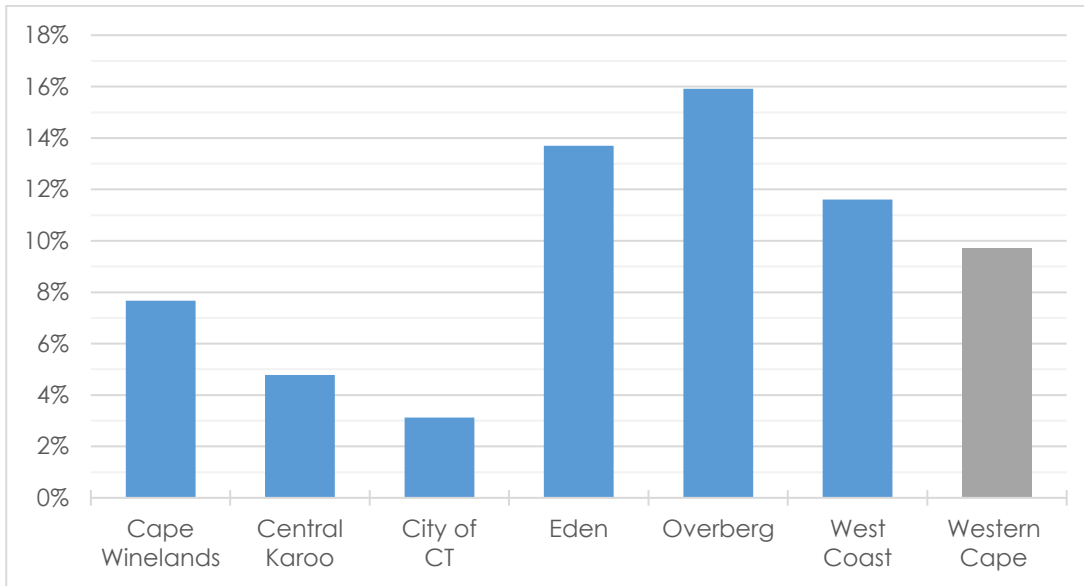
**Figure 12: Provincial Breakdown of Organic Fertiliser Production from Agricultural Activities in South Africa, 2017**

*Data Source: (Stats SA, 2020a)*

South Africa's clear import dependence on certain agricultural inputs is a cause for concern. The case of fertilisers is an interesting one as this is an input where a particularly high import dependence has developed in recent years but also where there is significant untapped potential for domestic agricultural producers to increase their incomes and at the same time contribute towards ensuring a reliable supply of fertilisers for the sector as a whole.

## 5. Fertiliser Use in the Western Cape Agricultural Sector

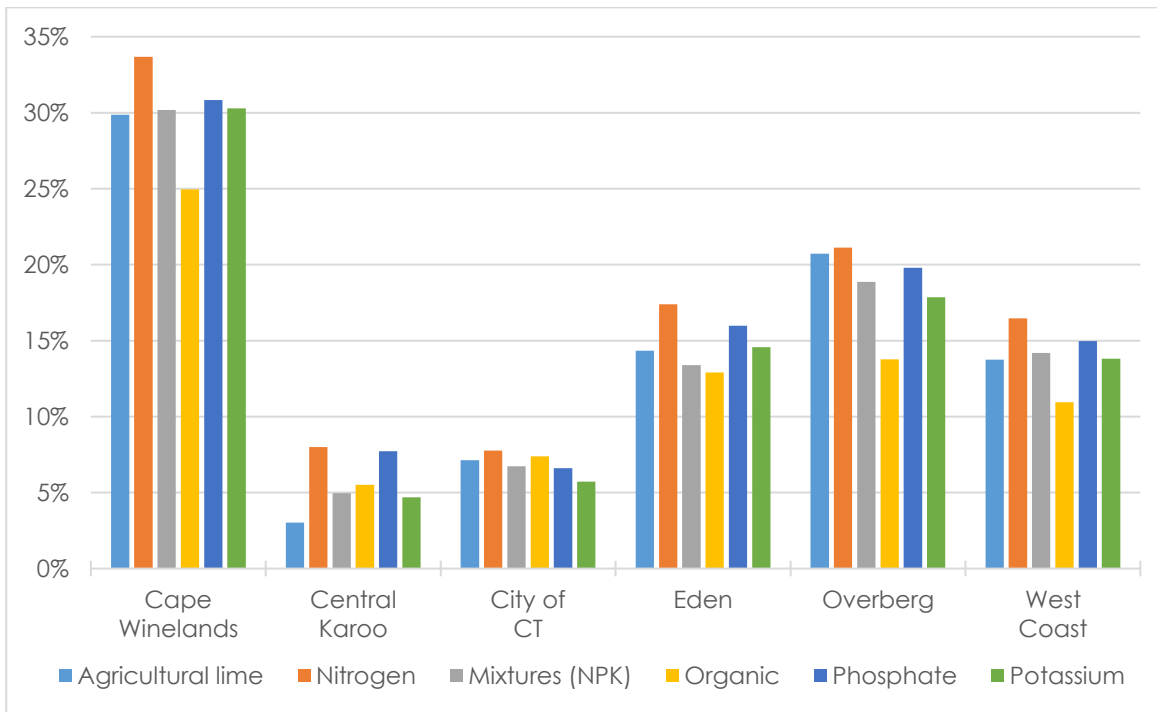
It was already shown how the breakdown of farm expenditures differs significantly across the different provinces, but even within provinces this will vary in line with what is most suitable in the various agro-climatic environments. This is evident when looking at the share of farm expenditure on inputs being used for fertiliser at the district level in Figure 13. The share in the Overberg is 15.9% and for Eden 13.7%, both significantly higher than the overall share of 9.7% for the Western Cape. Similarly the City of Cape Town and Central Karoo had much smaller shares at only 3.1% and 4.8% respectively.



**Figure 13: Western Cape District Shares of Input Expenditure Used for Fertilisers, 2017**

*Data Source: (Stats SA, 2020a)*

Despite fertilisers making up a relatively low share of farm expenditure on inputs in the Cape Winelands, the district has the highest proportion of farms using fertilisers in production. This is for all six of the main fertiliser types for which the shares are displayed for each district in Figure 14. For all the non-metropolitan districts the highest shares was with regards to nitrogen, followed by phosphate or in the case of the Overberg agricultural lime. Organic fertilisers have the lowest share for all non-metropolitan districts asides from the Central Karoo where fertiliser use is very low all round.



**Figure 14: Share of Farms Using Fertiliser Types by Western Cape District, 2017**

*Data Source: (Stats SA, 2020a)*

There is also a significant amount of variation across local municipalities in terms of the proportion of farms which use fertilisers. This can be seen in Table 1 which shows for each municipality in the Western

Cape the annual gross farm income, the number of farming units and then the percentage of farms which use the six different types of fertilisers included in the analysis: agricultural lime, nitrogen, mixtures (NPK), organic, phosphate and potassium.

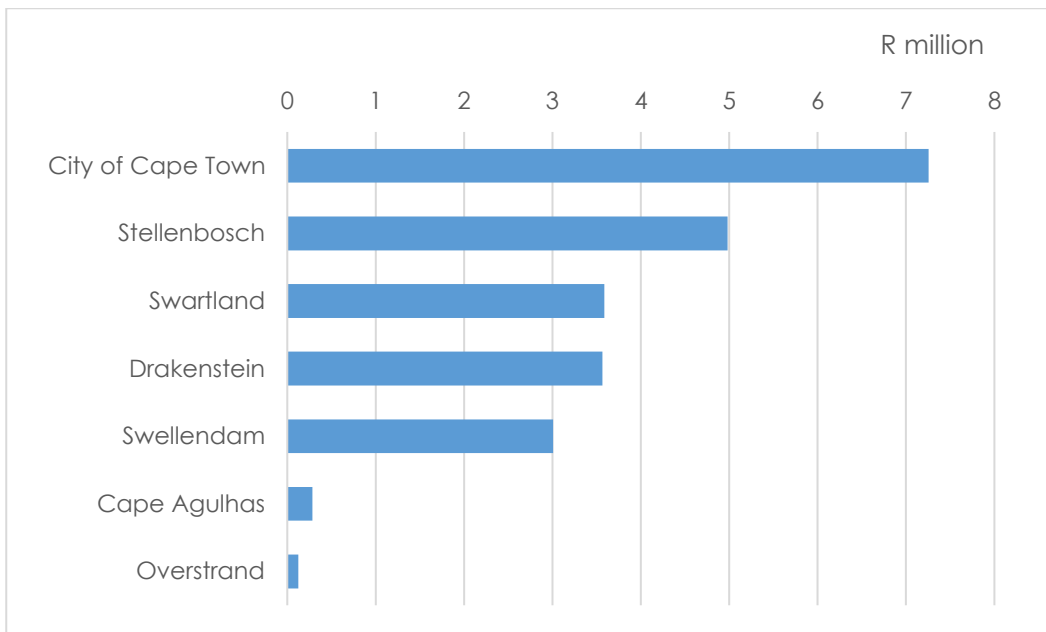
**Table 1: Percentage of Farms Using Different Fertiliser Types by Western Cape Municipality, 2017**

	Gross Farm Income (Rm)	# Farm Units	Proportion of Farms Using					
			Lime	Nitrogen	Mixtures (NPK)	Organic	Phosphate	Potassium
<b>Cape Winelands</b>								
Breede Valley	5 994	450	39%	43%	40%	36%	39%	41%
Drakenstein	4 516	436	20%	21%	22%	18%	19%	19%
Langeberg	2 760	456	22%	29%	20%	18%	27%	26%
Stellenbosch	4 048	372	19%	24%	22%	18%	18%	16%
Witzenberg	5 968	281	57%	60%	55%	38%	59%	58%
<b>Central Karoo</b>								
Central Karoo	491	363	3%	8%	5%	6%	8%	5%
<b>City of CT</b>								
City of CT	5 901	786	7%	8%	7%	7%	7%	6%
<b>Eden</b>								
Bitou	189	39	21%	21%	15%	26%	23%	21%
George	1 668	275	18%	20%	16%	18%	16%	19%
Hessequa	1 772	397	19%	23%	18%	12%	21%	18%
Kannaland	167	113	12%	19%	12%	14%	18%	14%
Knysna	214	59	19%	20%	19%	15%	19%	19%
Mossel Bay	384	179	7%	8%	6%	7%	7%	7%
Oudtshoorn	1 500	208	6%	8%	8%	9%	10%	7%
<b>Overberg</b>								
Cape Agulhas	1 441	181	18%	14%	13%	8%	14%	10%
Overstrand	814	115	21%	21%	17%	21%	18%	17%
Swellendam	1 429	265	11%	12%	11%	8%	11%	11%
Theewaterskloof	4 965	419	28%	30%	27%	18%	28%	26%
<b>West Coast</b>								
Bergrivier	2 248	286	16%	22%	19%	12%	19%	19%
Cederberg	3 241	286	17%	20%	17%	14%	20%	19%
Matzikama	1 155	475	7%	11%	9%	10%	10%	9%
Saldanha Bay	389	103	6%	8%	6%	1%	6%	3%
Swartland	5 101	393	19%	19%	18%	11%	17%	15%

Data Source: (Stats SA, 2020a)

Witzenberg and Breede Valley had particularly high percentages of farmers using the different fertilisers. These are also the two municipalities with the highest recorded gross farm income for 2017 with a combined value of R12 billion accruing to 731 farming units.

Organic fertiliser from agricultural activities is only produced in seven municipalities in the Western Cape: Drakenstein, Stellenbosch (Cape Winelands), Cape Agulhas, Overstrand, Swellendam (Overberg), Swartland (West Coast) and the City of Cape Town Metropole. The value of organic fertiliser produced in each municipality is provided in Figure 15.



**Figure 15: Value of Organic Fertiliser Produced by Western Cape Municipality, 2017**

*Data Source: (Stats SA, 2020a)*

Certain areas of the Western Cape are distinctively more dependent on fertilisers for production, particularly the agriculturally rich Cape Winelands area. Even at the municipal level it can be seen that some of the municipalities with very large agricultural sectors have large proportions of farms using fertilisers. Given the reliance on imports for fertiliser, and tumultuous state of the world currently, there would appear much benefit to expanding production of organic fertilisers. The data suggests in the Western Cape this is currently a much underutilised means to support the sector and provide extra income for farmers in the province.

## 6. Conclusion and Recommendations

The current pandemic the world is experiencing, and the resulting impact of the measures put in place to try and best deal with the pandemic, would suggest that there would be significant benefits to the stability and profitability of the agricultural sector to invest into developing industries to supply inputs into key productive sectors.

There is a particular concern for the Western Cape with regards to fertilisers and plant protection products. This concern stems from three key points. Firstly these inputs are particularly important for the Western Cape where crop production makes up the bulk of farm income. Secondly, South Africa has over the years been mainly dependent on imports to provide these inputs. Then thirdly the bulk of imports of these products takes place between July and October, placing added importance on ensuring the smooth functioning of these global supply chains.

Building capacity for the production of many agricultural inputs requires time and large capital outlays. One exception in this regard would be the expansion in production of organic fertiliser on the farm. There is evidence of this occurring but only at a small scale in only seven municipalities in the province. If this can be done at a greater scale across the province it will assist farmers in providing more income but also contribute significantly to the stability of agricultural production.

This report only provides an overview and a lot more work is required to assess what kind of fertilisers the Western Cape Agricultural Sector could produce, the suitability of such fertiliser for agricultural production in the province and how, if at all, producers need to be incentivised. However if suitable

solutions can be found it could help to ease the pressure on agricultural production, lessen the vulnerability to global supply shocks and potentially lead to the development of new industries which could provide much needed jobs in South Africa going forward.

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