

A PROFILE OF THE SOUTH AFRICAN CUCUMBER MARKET VALUE CHAIN

2021



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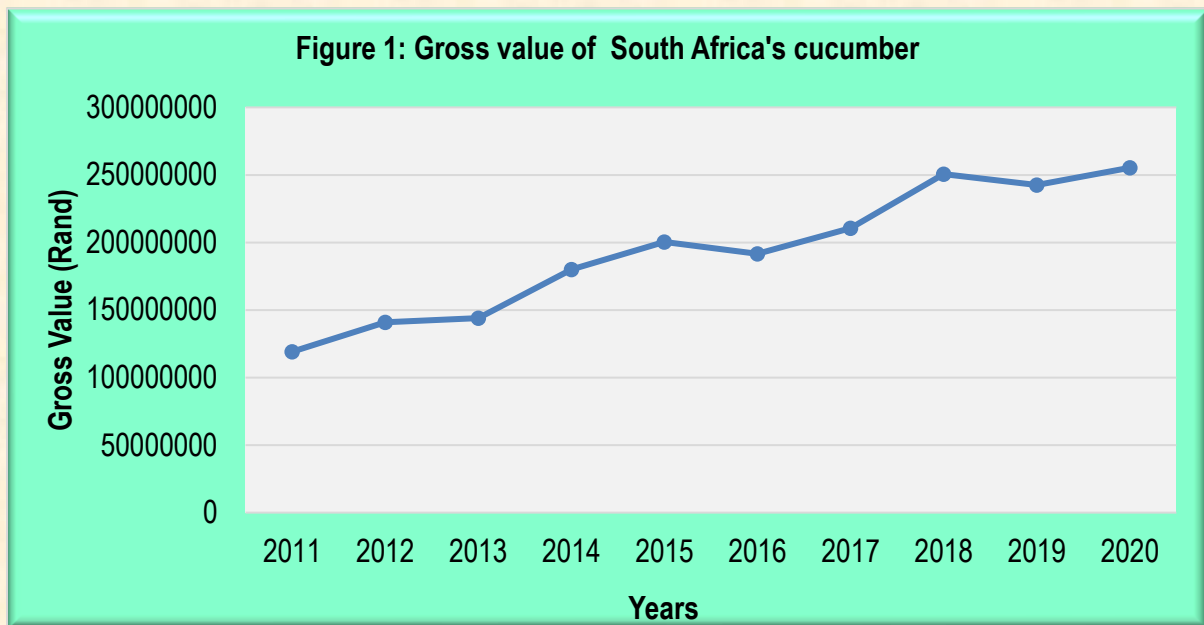
Department:
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REPUBLIC OF SOUTH AFRICA

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1. DESCRIPTION OF THE INDUSTRY

The cucumber (*Cucumis sativus*) is a widely cultivated plant in the family Cucurbitaceae. Cucumbers originated in India between the Bay of Bengal and the Himalayas. Some sources claim that cucumber origins are from tropical Africa and Egypt, where they are thought to have been used by people for many generations. There are three main varieties of cucumber that is slicing, pickling and burpless. They have been in cultivation for some 3,000 years, maybe being one of our oldest crops. China is the world's number one producer of cucumbers. Though cucumber technically is a fruit, cucumbers are widely considered vegetables. Cucumbers are 90-95 percent water and have limited nutritional value compared to other vegetables. Much like tomatoes and squash, however, their sour-bitter flavour contributes to cucumbers being perceived, prepared and eaten as vegetables and there is no conflict in classifying cucumber as both a fruit and a vegetable. Cucumbers are high in potassium and fibre with moderate amounts of Vitamins A and C, as well as folic acid, phosphorous, and magnesium. Although they can be cooked, cucumbers are most often eaten raw in salads, in cold soups and cucumber based sauces. With so many health benefits, cucumber has become one of the most important parts of food as well as skin diets.



Source: Statistics and Economic Analysis, DALRRD

Figure 1 above illustrates the contribution of the cucumber industry to the gross value of agricultural production over 10 years. In 2012, the cucumber industry contribution increased by 18% when compared to the 2011 industry contribution. This can be attributed to high production output and favourable producer prices in the same season. During 2013, cucumber gross value has gone up by 2.2% when compared to the previous year gross value and this can be attributed to a 2.2% increase in production output. There was a 24.9% increase in cucumber gross value in comparison to the 2013 value and this can be attested to an 8% increase in production output. In 2015, the cucumber gross value has slightly increased by 11.4%, when compared to the 2014 gross value and this can be attributed to a 12.4% increment in production output. Cucumber gross value decreased by 4.3% in 2016 when compared to 2015 value and this can be ascribed to a 3.8% decrement in the production output. During 2017, cucumber gross value has experienced a 9.8% increment relative to the 2016 gross value and this can be ascribed to 2.9% growth in

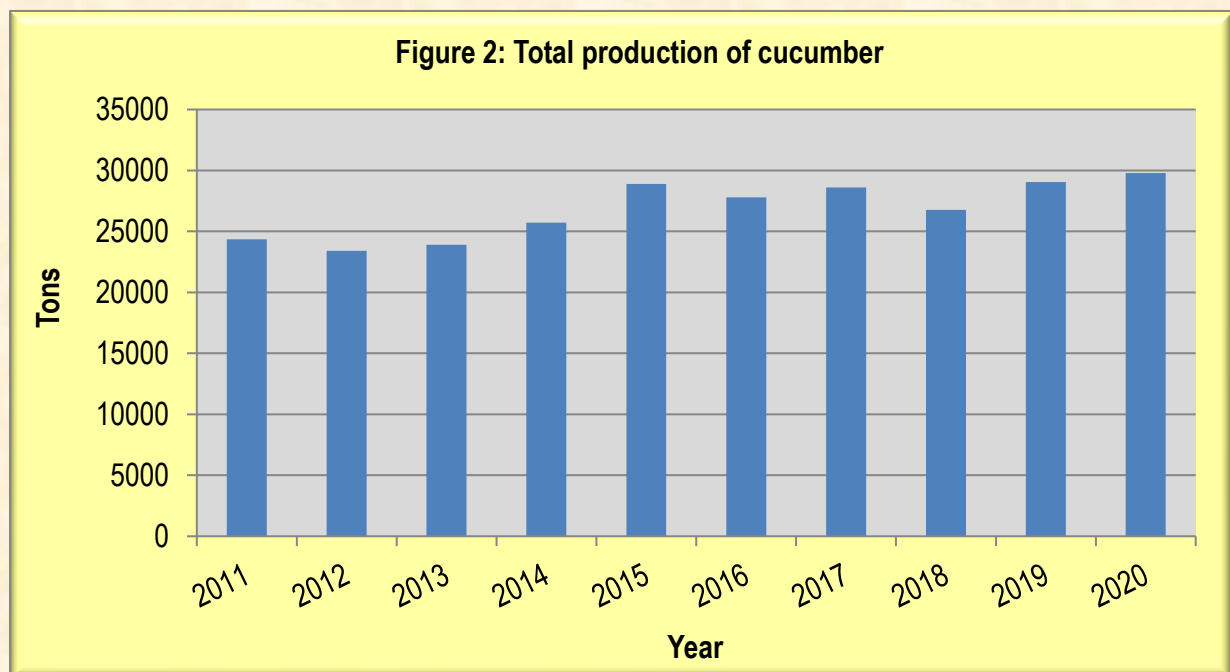
the production output. As of 2018, cucumber gross value has increased by 18.9% relative to 2017 value and this can be attributed to higher producer prices that occurred in the same year. In 2019, cucumber gross value declined slightly and this can be ascribed to high production which occurred while the prices were unfavourable. During 2020, cucumber gross value increased by 5.3% when compared by to 2019 gross value and this can be ascribed to a 2.5% increment in production output.

1.1 Production areas

Cucumbers are produced in almost all the provinces of South Africa, as they can also be produced under a controlled environment. However, the cucumber production is more concentrated in Western Cape, Eastern Cape, Free State and KwaZulu Natal Provinces. Globally, China is still the world's largest producer of cucumber, followed by Turkey, Iran, the Russian Federation, Ukraine, the United States of America, Spain, Mexico and Egypt (FAOSTAT, 2019). In Africa, Egypt remains among the largest producers of cucumbers and gherkins in the world.

1.2 Production trends

Figure 2 below illustrates the production volumes of cucumber over the past ten years.



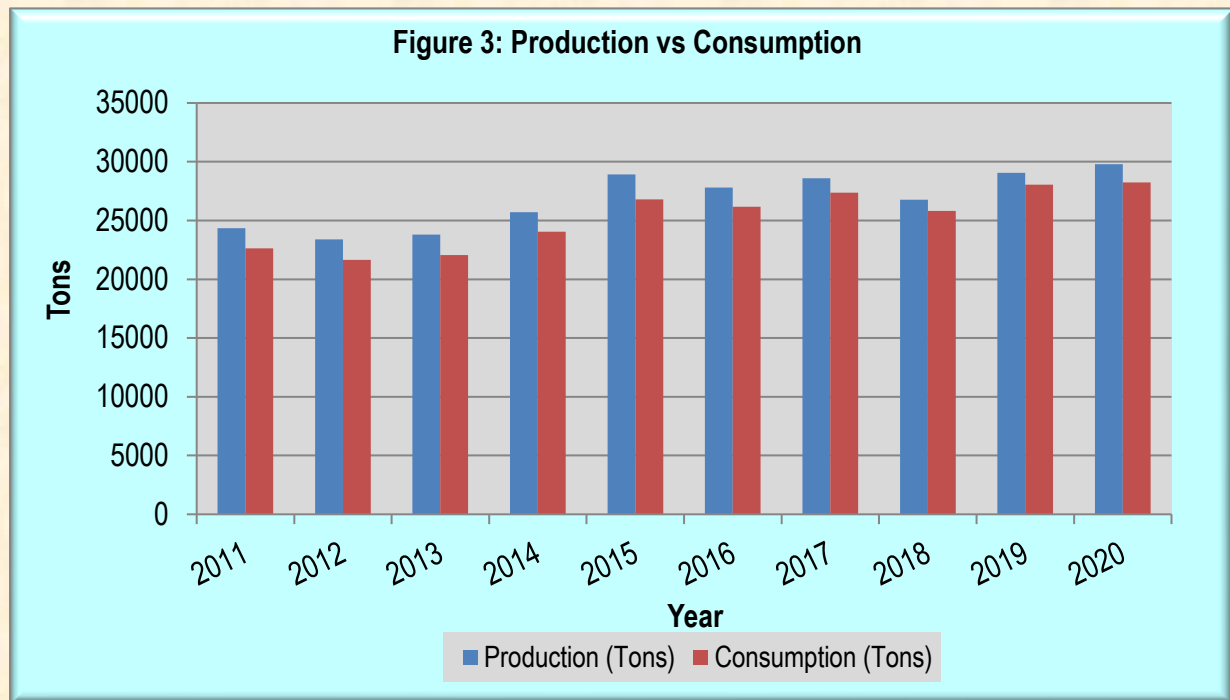
Source: Statistics and Economic Analysis, DALRRD

In 2011, the production volume was just above 29 783 tons and it was a record low production volume in ten years. In 2012, production output dropped slightly by 4.2% and during 2013, the output has gone up by 2.2% when compared to the previous year production output. During 2014, cucumber production output has slightly increased by 8% in comparison to the previous year production output. A record-high production volume was recorded in 2015, and this represents a 12.4% increase in production output in comparison to 2014 output. In 2016, cucumber production output experienced a 3.8% decrement in

comparison to 2015 production. There was a slight increase of 2.9% in cucumber production output relative to 2016 production output. Cucumber production in South Africa decreased by 6.3% in 2018 as compared to 2017. Cucumber production in South Africa increased by 8.5% in 2019 compared to the previous year's output (2018). South Africa produced 29 783 tons of cucumber in 2020, a 2.5 % increase over the previous year's output.

1.3 Production vs. Consumption of cucumber

Figure 3 below depicts the local consumption of cucumber compared to the production over 10 years. The figure indicates that the production of cucumber has been fairly higher compared to the consumption nationally over the decade. This indicates that in terms of cucumber production South Africa is self-sufficient and the surplus is exported. During 2020, South African average cucumber consumption is approximately 25 279 tons per annum. In 2020, fresh consumption increased slightly by 0.7% compared to the previous year (2019). The increase in fresh consumption can be attributed to a 2.5%% increment in cucumbers production output in the same year.



Source: Statistics and Economic Analysis, DALRRD

2. MARKET STRUCTURE

There is no regulation or restriction on the marketing of cucumbers. The prices of cucumber are determined by the market forces of demand and supply. The industry uses fresh produce markets, restaurants, processors, wholesalers and retailers as channels of marketing. Cucumbers are also exported to other countries through export agents and marketing companies. South Africa also imports cucumbers from other countries. Table 1 below indicates that in 2020, 72% of cucumbers produced were marketed through fresh produce markets. The remaining 28% is for cucumbers that were exported and cucumbers that were processed. In 2020, there was a 14% increment in volume exported and cucumbers that were processed

increased significantly by 62% when compared to 2019. The increment in export and processed volumes can be attributed to a 2.5% increase in domestic cucumber production output.

2.1 Domestic markets and prices

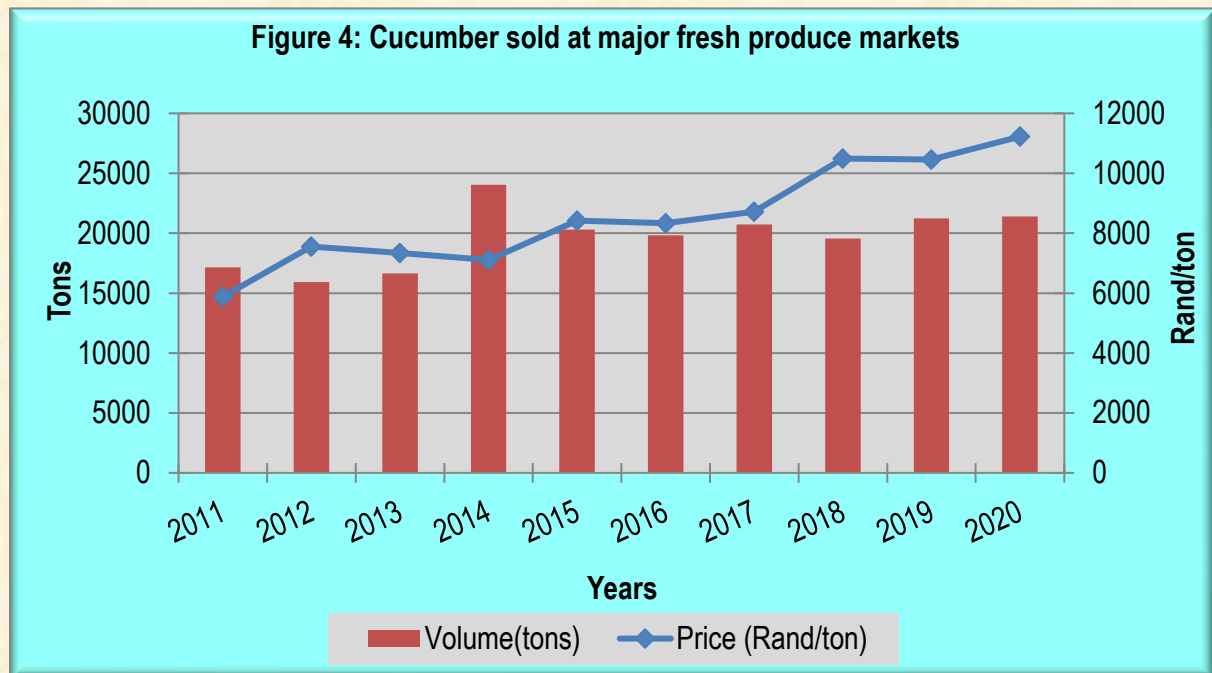
The various channels through which cucumbers are marketed are presented in Table 1.

Table 1: Cucumber sold through different market channels

Years	National Fresh Produce Markets (tons)	Exports (tons)	Processing (tons)
2011	17 151	2 076	1 521
2012	15 913	1 122	4 773
2013	16 653	1 221	1 574
2014	18 209	1 364	1 440
2015	20 302	1 732	1 908
2016	19 833	1 894	1 438
2017	20 727	1 678	1 109
2018	19 549	2 155	819
2019	21 241	1 545	887
2020	21 398	1 764	1 438

Source: Statistics and Economic Analysis, DALRRD

Figure 4 below illustrates South Africa's cucumbers sold at major fresh produce markets from 2011 to 2020.

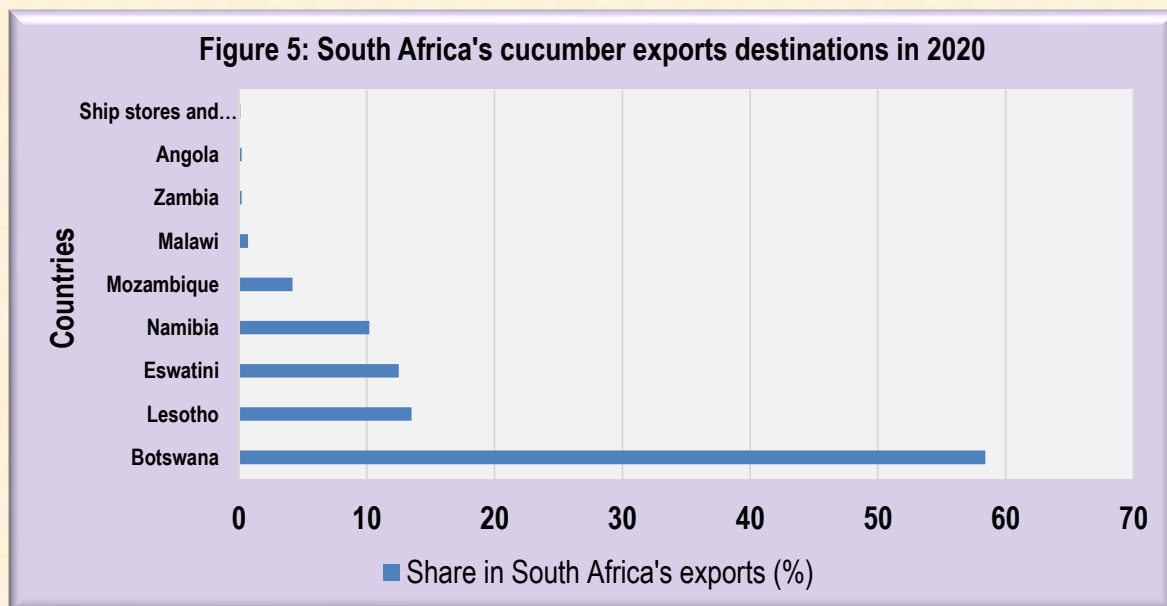


Source: Statistics and Economic Analysis, DALRRD

Figure 4 above illustrates the sales of cucumbers in the fresh produce markets over 10 years. In 2011, cucumber supplied at the markets were just above 17 151 tons. As of 2012, market price increased by 28.5% when compared to the 2011 market price and this can be attributed to a 7.2% drop in volumes supplied across the market. In 2013, cucumber volumes increased by 4.5% and as a result, the price fell by 2.8% when compared to the 2012 season. There was a 44% increase in cucumber supplied at the market during 2014 and as a result, the market price has dropped by 3.3% in comparison to the previous year. In 2015, the cucumber price has dropped by 15.5%, which can be attributed to a notable increase of 18% at cucumber supplied at the market. There was a 2.3% decline in cucumber volume supplied in the markets during 2016. At the same time, the market price slightly dropped by 0.9% and this can be ascribed to poor cucumber uptake. In 2017, cucumber market price eased slightly higher by 4.54% despite a 4.5% increment in the cucumber supplied at the market and this can be ascribed to strong demand for cucumber in the same season. As of 2018, there was a 5.7% decline in cucumber supplied at the fresh produce markets and this has resulted in a 20% increment in the cucumber price in the same season. There was a slight decline of 0.3% in market price relative to 2018 prices and this can be attested to an 8.6% increment in cucumber volume supplied at the market. In 2020, cucumber market price increased by volume supplied at the market increased slightly 7.2% despite a 0.7% increase in volume supplied at the market and this can be ascribed to good cucumber uptake.

2.2 South Africa's Cucumber Exports

In 2020, South Africa's cucumber exports still represent 0.1% of world exports for this product and its ranking in world cucumber exports were 42. South Africa has lost its competitiveness in cucumber export, despite a 14% increase in volume exported to the world. In 2019, South Africa cucumber export was ranked 41 in world cucumber exports. During 2020, South African cucumber exports left in ship stores was 0.1%. As of 2020, Botswana, Lesotho, Eswatini, Namibia and Mozambique, have remained the primary export markets for cucumber originating from South Africa. Globally Spain, Mexico, Netherlands, Canada, the United States of America, Turkey, Belgium, China, Greece and Jordan were major cucumber exporters in 2020. Figure 5 below illustrates South African cucumber export destinations in 2020.



Source ITC Trade Map

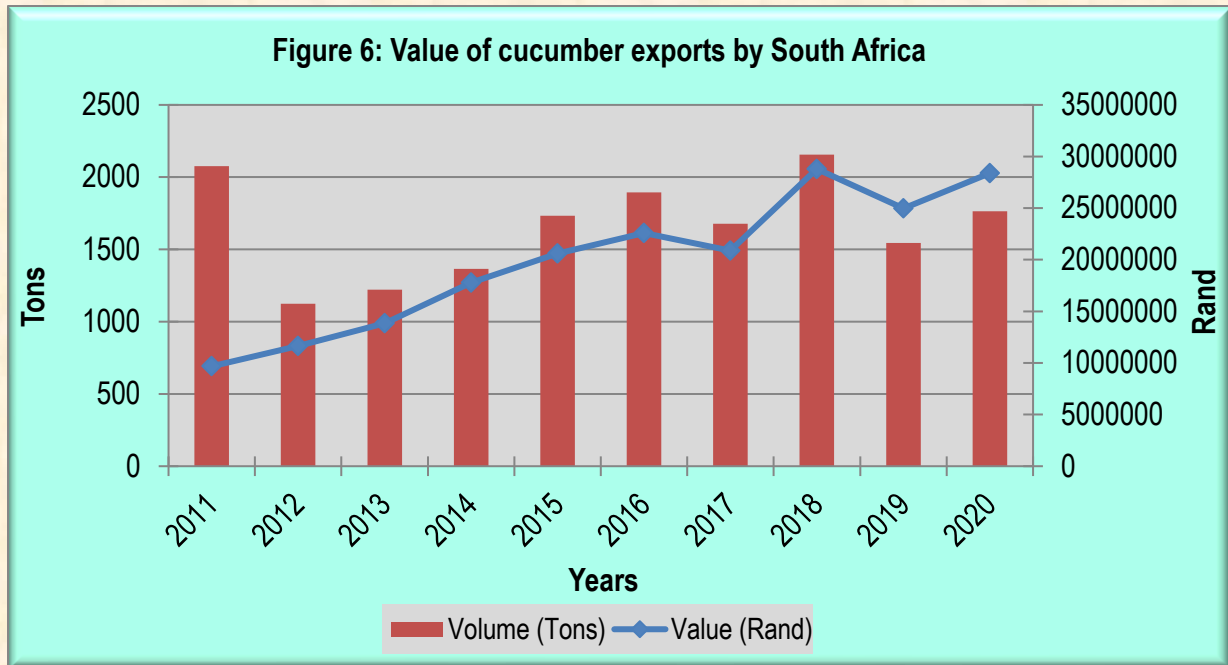
Table 2 indicates that Botswana has commanded the greatest share of 58.4%, followed by Lesotho with 13.5%, Eswatini has recorded 12.5%, Namibia has accounted for 10.2% and Mozambique with 4.2% share of South Africa cucumber exports. South Africa's cucumber exports to Botswana have increased by 14% in value and 6% in quantity during the 2016 – 2020 period. By 2020, South African cucumber export to Namibia has decreased by 23% in terms of value and has decreased by 29% in quantity during the 2016 – 2020 period. South African cucumber exports to Eswatini grew by 16% in value and 12% in quantity between 2016 and 2020. South African cucumber exports to Lesotho have gone up by 10% and 6% in terms of value and quantity respectively between 2016 and 2020.

Table 2: South African cucumber exports in 2020

Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020 (tons)	Growth in exported value between 2016-2020 (% p.a.)	Growth in exported quantity between 2016-2020 (% p.a.)	Growth in exported value between 2019-2020 (% p.a.)
World	1734	1717	100	1763	3	-2	0
Botswana	1013	1013	58.4	1048	14	6	7
Lesotho	234	234	13.5	212	10	6	-11
Eswatini	216	216	12.5	233	16	12	9
Namibia	177	160	10.2	169	-23	-29	-11
Mozambique	72	72	4.2	81	1	-3	-15
Malawi	13	13	0.7	10	-2	-6	-10
Zambia	4	4	0.2	3	-28	-33	-63
Angola	3	3	0.2	5	-47	-31	38
Ship stores & bunkers	2	2	0.1	1	-4	0	

Source ITC Trade Map

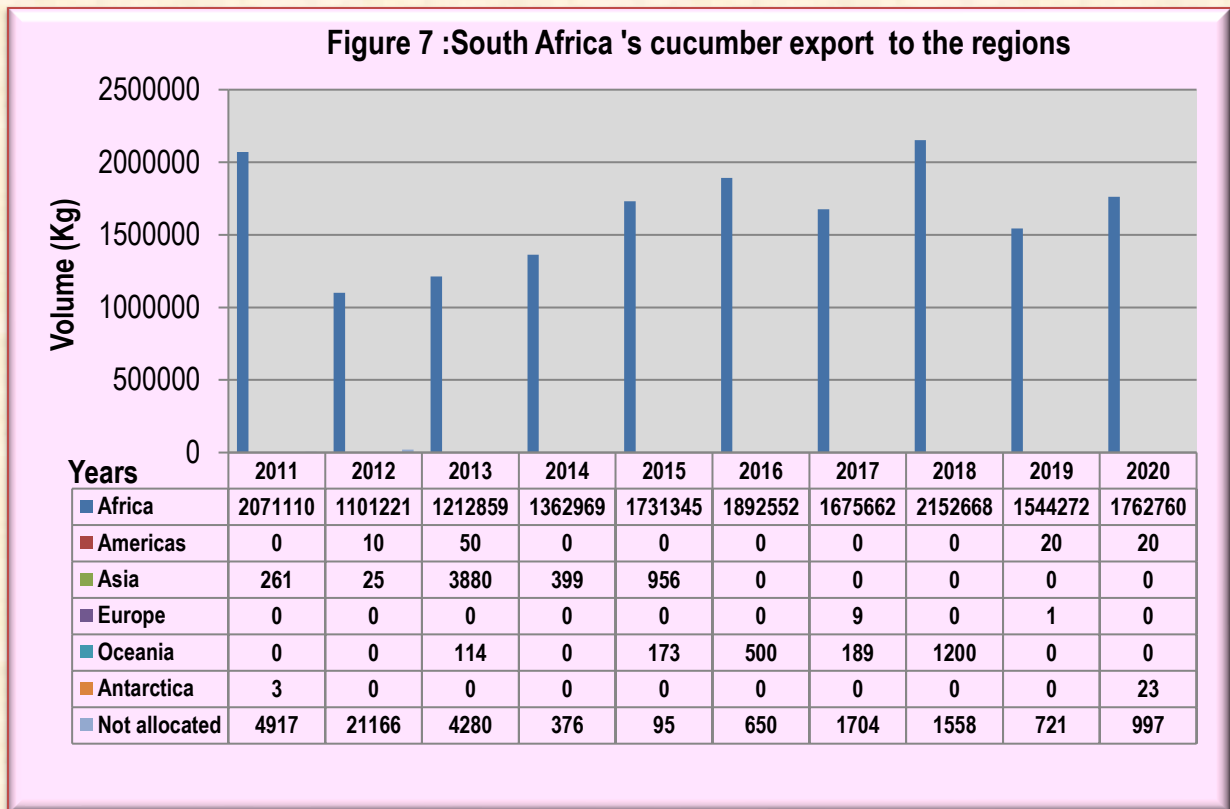
Figure 6 below illustrates cucumber exports from South Africa over the past ten years. The volume of cucumber exports has been fluctuating over the years. During 2011, cucumber exports was a record highest volume of 2 076 tons. In 2012, cucumber exports have gone down by 45.9% when compared to the 2011 exports. The decrease in exports during 2012 can be attributed to a 6.8% decline in cucumber production output in the same year. In 2013, export volume increased by 8.8% when compared to the previous year exported volumes. During 2014, cucumber export has gone up by 11.7%, which can be ascribed to an 8% increase in the domestic production output. There was a notable increase of 27% in 2015 and this can be attributed to a 12.4% increment in domestic production output. During 2016, South Africa cucumber exports grew by 9.3%, in comparison to 2015 exports. There was an 11.4% decline in South Africa cucumber export relative to 2016 export, despite a 2.9% growth in domestic cucumber output. From 2009, 2012 to 2017, it was more profitable to export cucumber since higher values were recorded for volume exported. As of 2018, South Africa cucumber export grew by 28% relative to export and it was also more profitable to export cucumber. In 2019, South Africa's cucumber export notably dropped by 28% and it was more profitable to export cucumber relative to 2018 exports. As of 2020, South Africa cucumber exports grew by 14% relative to 2019 export volume and this is attributed to a 2.5% increment in domestic production output.



Source: Quantec Easydata

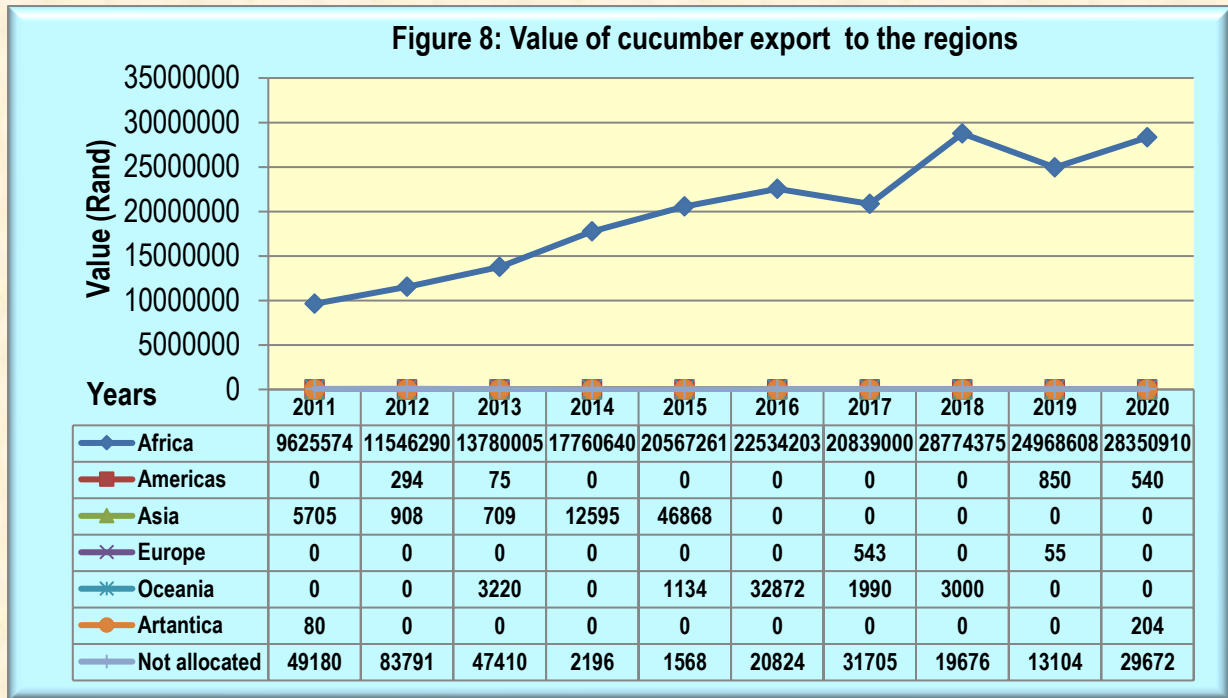
Figure 7 below illustrates South Africa's cucumber exports to the regions. Africa region is the primary export market for cucumber export from South Africa. Higher exports to African countries can be attributed to low export costs to the neighbouring countries and the high perishability nature of the product. Cucumber exports to the Oceania region were less significant. From 2011 to 2012, there were no cucumber exports to the European region. During 2012 and 2013, the African region continued to be the major market for cucumbers originating from South Africa and more than 94% of the cucumbers were exported to this region. As of 2012, the unallocated volume has increased by 30.5% when compared to the previous year and in 2013, unallocated exports dropped by 33%. In 2013, cucumber exports to the Asian region have significantly increased while exports to the Americas and Oceania regions were less significant. In 2014, the African region continued to be the primary export market for cucumber exports from South Africa. In the same year, unallocated exports and exports to Asia has significantly dropped when compared to 2013.

There was a notable increase in exports destined for Africa region during 2015, export to Asia and Oceania region has also increased. During 2016, the Africa region remained the main recipient of cucumber exports originating from South Africa. In the same year, there was a notable increase in cucumber export to Oceania region and an unallocated export has notably increased. In 2017, the Africa region was still the primary market for cucumber export from South Africa however, the export volume eased lower by 11.5% relative to 2016 export volume. At the same time, cucumber exports destined for Oceania and Europe were insignificant, whilst unallocated volume was incomparably higher when compared to previous year (2016) exports. As of 2018, Africa region was still by far the main export market for South Africa's cucumber exports, export to Oceania and unallocated exports were trivial. In 2019, Africa region has remained the primary export destination for cucumber exports originating from South Africa, exports recorded for the American region was trivial and unallocated exports declined by 53% relative to 2018 exports. As of 2020, Africa region was still the main recipient of cucumber export originated from South Africa. Exports to the Americas and Antarctica were insignificant whilst the unallocated exports grew by 38% relative to 2019 export volume.



Source: Quantec Easydata

Figure 8 below illustrates the value of cucumber exports earned from the regions. During 2011, it was more profitable to export to Asia, while the unallocated exports had less export value. In the same year, it was also more profitable to export to African region when compared to the 2010 production year. During 2012, Cucumber exports to Asia fetched high values followed by unallocated exports and exports to African regions were less profitable. In 2013, it was more profitable to export cucumbers to Oceania followed by African region, and at the same time, it was less profitable to export cucumber to the Asian region. In 2014, Asia was by far the most profitable export market and exports to African region were less profitable. In 2015, it was still more profitable to export cucumbers to the Asia region, followed by Africa region, while exports to Oceania were less profitable. During 2016, it was relatively more profitable to export cucumber to the Oceania region, while Africa remained the least profitable export market. It was slightly more profitable to export cucumber to African region relative to the 2016 export value to the same region, unallocated cucumber exports have also fetched higher export values, whereas export destined to Oceania has less export value. As of 2018, Africa cucumber export value has increased by 38% relative to 2017 cucumber export value and unallocated export has also fetched a higher value. In 2019, it was more profitable to export cucumber to the African region relative to the 2018 export value. As of 2020, cucumbers exported to Africa region were of lesser value whereas, the unallocated export had higher value relative to the 2019 value.

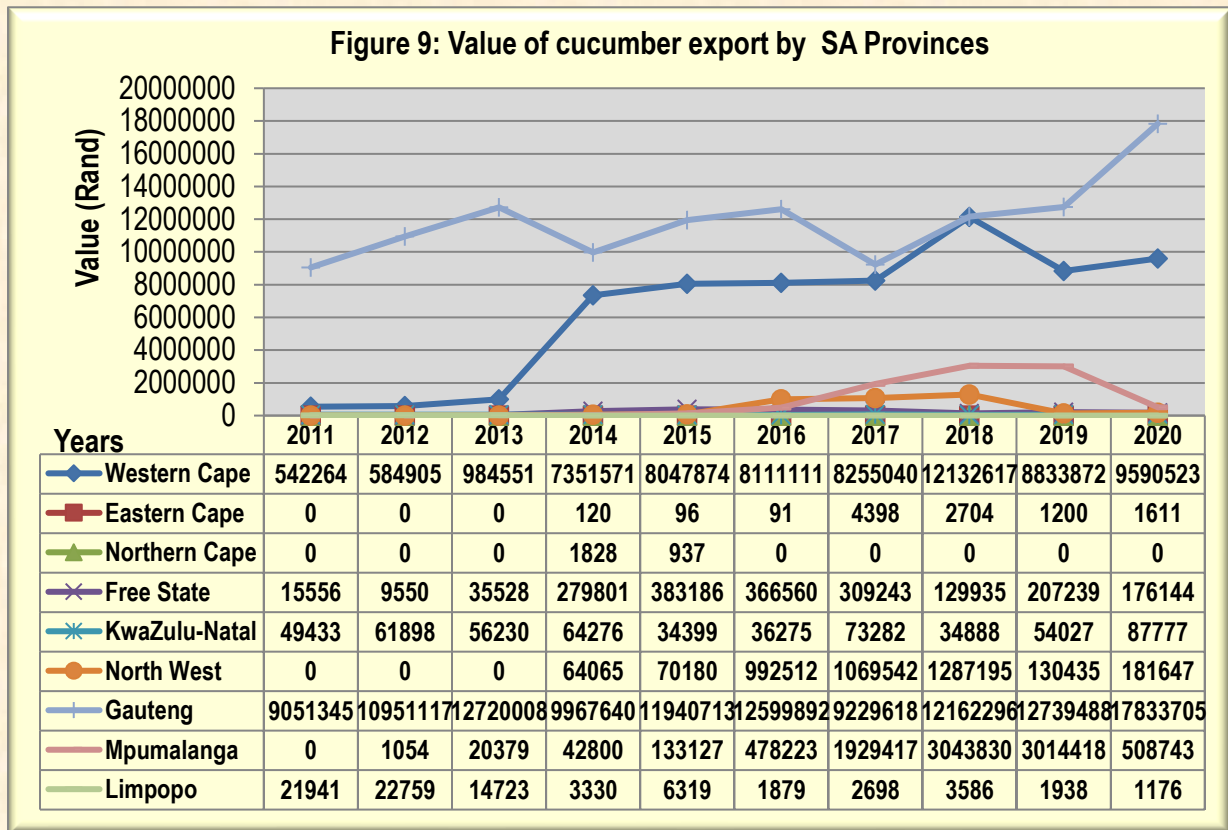


Source: Quantec Easydata

Figure 9 below illustrates the value of cucumber exports by South Africa's provinces from 2011 to 2020. In 2011, Gauteng, followed by Western Cape were the primary export exit point for South Africa's cucumber exports. Kwazulu Natal, Limpopo and Free State have contributed to a lesser extent. In 2012, Gauteng and Western Cape provinces continued to lead in cucumber exports from South Africa and KwaZulu Natal export value has notably increased. In 2013, the export value from the Free State province has significantly increased. In the same year, in Western Cape, KwaZulu Natal and Mpumalanga, export values have considerably increased. North West province has recorded its export value in 2014 and this can be ascribed to increased cucumber export to neighbouring Botswana. In the same year, Eastern Cape and Northern Cape have also recorded their first export values, which were insignificant.

During 2015, there was a significant increment in Gauteng, Mpumalanga, Free State, North West and Western Cape cucumber export values. High export values for Free State North West, Western Cape and Mpumalanga can be attributed to a notable increase in cucumber exports destined to the neighbouring countries. In 2016, Western Cape and Gauteng provinces remained the primary exit points for South Africa's cucumber exports. At the same time, Free State, North West and Mpumalanga have significantly contributed to South Africa's cucumber exports. During 2017, Gauteng was still the primary exit point for cucumber exports from South Africa, but the export value eased notably lower by 26.7% relative to the 2016 export value. In the same year, Eastern Cape, KwaZulu Natal, Limpopo and Mpumalanga export values have surged whereas Free State export share declined by 15.6%. As of 2018, Western Cape and Gauteng were still the primary exits for South Africa's cucumber exports and the values for these provinces has increased notably by 46% and 31.7% respectively. At the same time, KwaZulu Natal export value has increased notably by 52%, Mpumalanga export value has gone up by 57%, Limpopo export value eased higher by 32.9%, whilst Free State and Eastern Cape export values have declined by 57% and 38% respectively. During 2019, Gauteng and Western Cape were still primary exit points for South Africa's cucumber exports. In the same year, Free State and Mpumalanga export values have increased by 54%

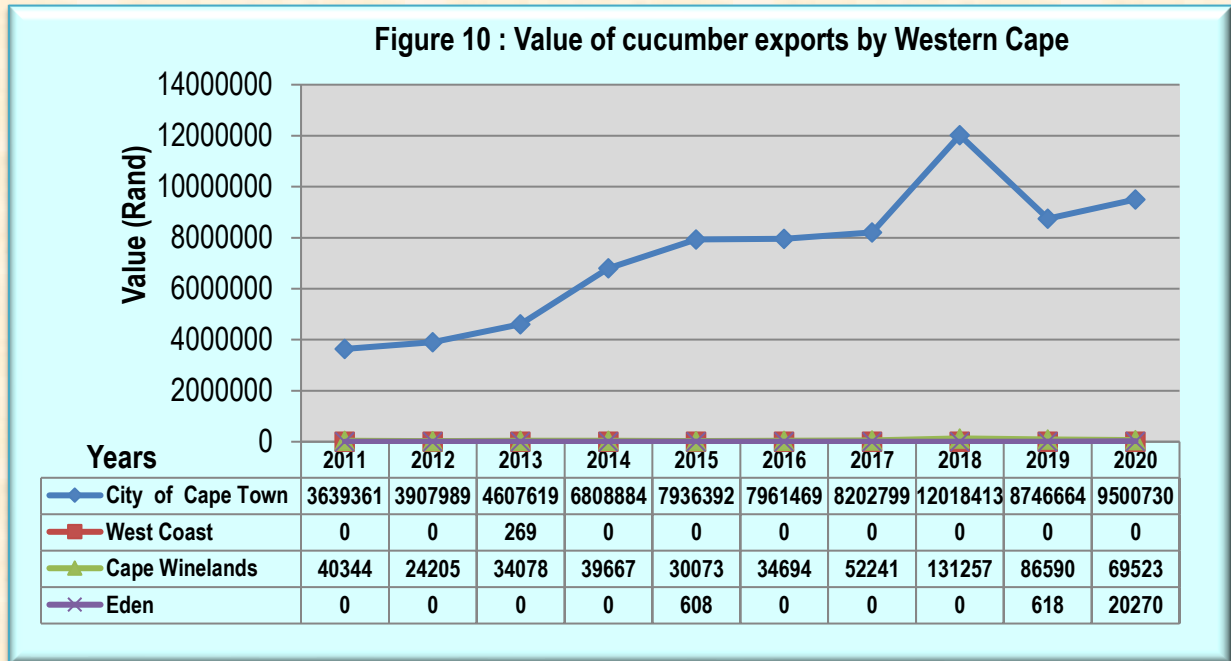
and 59% when compared to 2018 export values. In 2020, there was a significant increase in export values recorded for Gauteng, Western Cape, North West and Mpumalanga provinces. At the same time, the value of Limpopo's export value fell by 39%, Mpumalanga's export value dropped by 83 % and the value of the Free State's exports fell by 15% compared to 2019. The following figures (Figure 10 -15) show the value of cucumber exports from the various districts in all provinces of South Africa.



Source: Quantec Easydata

Figure 10 below illustrates that cucumber exports from Western Cape Province were mainly from the City of Cape Town district municipality. Cape Town harbour serves as an export exit point. During 2012, the City of Cape Town continued to be a major contributor to cucumber exports from Western Cape province and the export value has increased by 7.4% when compared to 2011 export value. In 2013, City of Cape Town and Cape Winelands district municipalities have notably increased their cucumber export values. During 2014, the Cape Winelands has contributed notably to Western Cape cucumber exports and Cape Winelands cucumber export value grew by 16.4% relative to 2013 export value. In 2015, City of Cape Town has recorded a higher value, Eden export value has recorded a trivial value, while Cape Winelands export value has notably dropped in comparison to the 2014 value. During 2016, City of Cape Town has remained the primary exit point of cucumber export from Western Cape province and Cape Winelands has notably increased its cucumber export value in comparison to 2015 values. As of the 2017 season, City of Cape Town export value grew slightly by 3%, Cape Winelands export value increased notably by 50%, whilst Eden has recorded a zero value. As of 2018, City of Cape Town was still by far the primary exit point for cucumber export from Western Cape province, and the export value has sharply increased by 46% and Cape Winelands export value was incomparably higher relative to the previous year (2017) export value. In 2019, City of Cape Town cucumber export value drastically dropped by 27% and Cape Winelands export

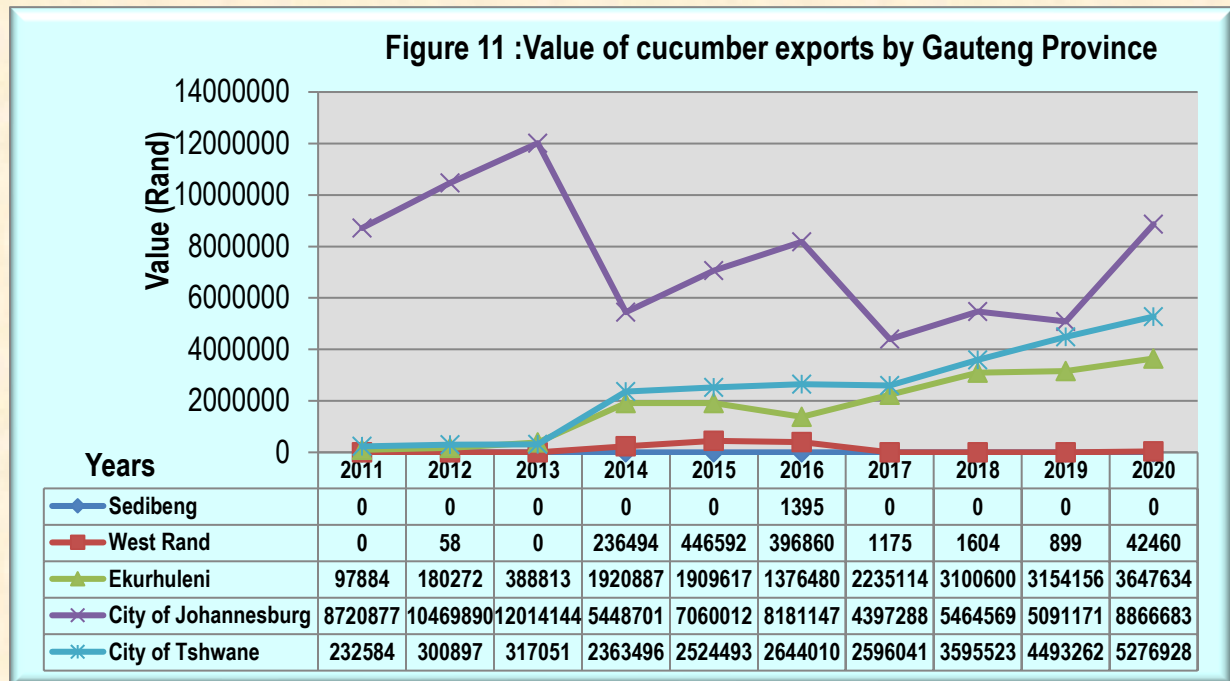
value declined by 19.7% in comparison to the 2018 export value. During 2020, City of Cape Town was still the primary exit point for Western Cape cucumber exports and the export value has increased by 8.6%, Cape Winelands export value has declined by 19% and Eden district export value was incomparably higher relative to 2019 export value.



Source: Quantec Easydata

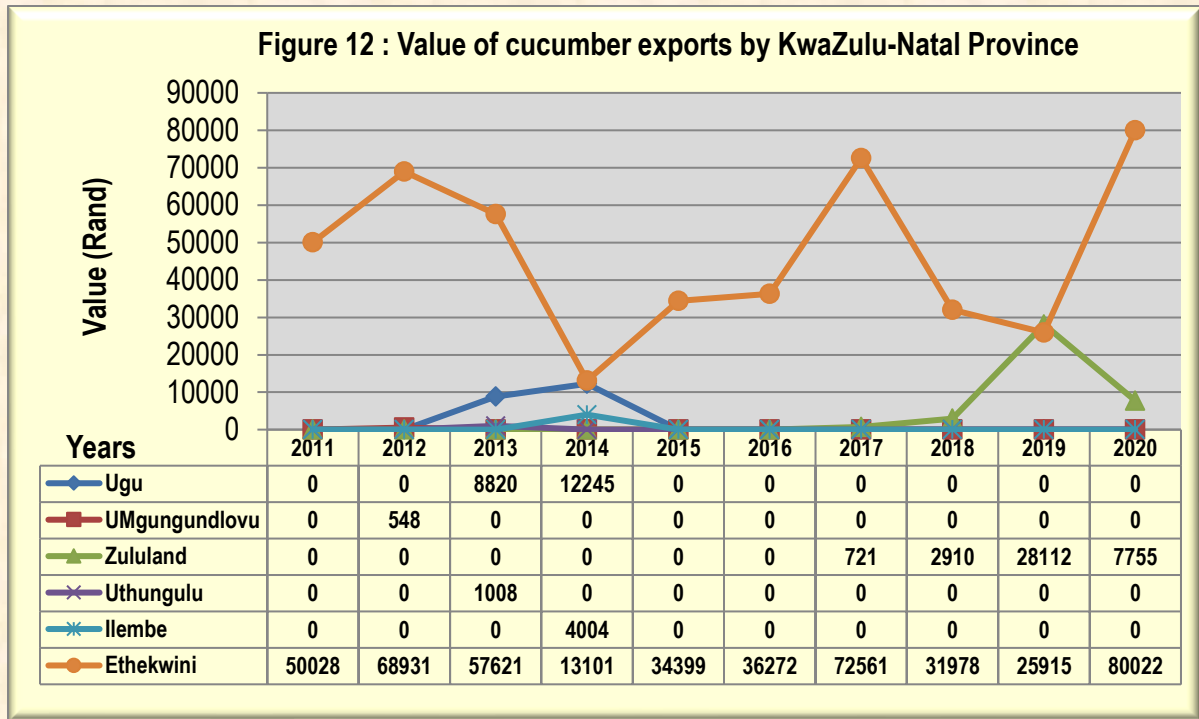
Figure 11 below indicates that cucumber exports from Gauteng province were mainly from the City of Johannesburg. City of Tshwane and Ekurhuleni district municipalities have contributed to a lesser extent. From 2011 to 2012, City of Johannesburg was by fair the primary exit point for Gauteng cucumber exports. At the same time, City of Tshwane and Ekurhuleni have registered notable export values. OR Tambo International Airport serves as an export exit point for cucumbers from these municipalities. During 2013, City of Johannesburg remained the main contributor to cucumber exports from Gauteng province and the highest export value was recorded in the same year. At the same time, Ekurhuleni and City of Tshwane have considerably increased their export values. The West Rand district has significantly contributed to Gauteng cucumber exports in 2014. In the same year, City of Johannesburg export value has drastically dropped, while Ekurhuleni and City of Tshwane have notably increased. During 2015, City of Johannesburg, West Rand and City of Tshwane export values have notably increased while Ekurhuleni export value has dropped in comparison to 2014 values. In 2016, City of Johannesburg has continued to lead in Gauteng cucumber exports, and City of Tshwane has notably increased its cucumber export value. At the same time, Ekurhuleni and West Rand export values have slightly dropped, while Sedibeng recorded an insignificant export value. During 2017, City of Johannesburg was still the preferred exit point for Gauteng cucumber export but the export value has significantly dropped by 46%, West Rand export value has also drastically declined by 99%, City of Tshwane export value has slightly decreased by 1% whilst Ekurhuleni export value has experienced a notable increment of 62% relative to 2016 export value. As of 2018, City of Johannesburg, City of Tshwane and Ekurhuleni were still the primary exits points for Gauteng provincial cucumber export. At the same time, there was also a notable increase of 36.5% recorded for West Rand district municipality. In 2019, City of Tshwane cucumber export value increased by 24.9%,

Ekurhuleni export value grew by 1.7%, whereas City of Johannesburg export value has dropped by 6.8% relative to 2018 export values. As of 2020, City of Johannesburg cucumber export value surged by 74%, Tshwane export value grew by 17%, Ekurhuleni export value rose by 15% and West Rand export value was incomparably higher relative to 2019 value.



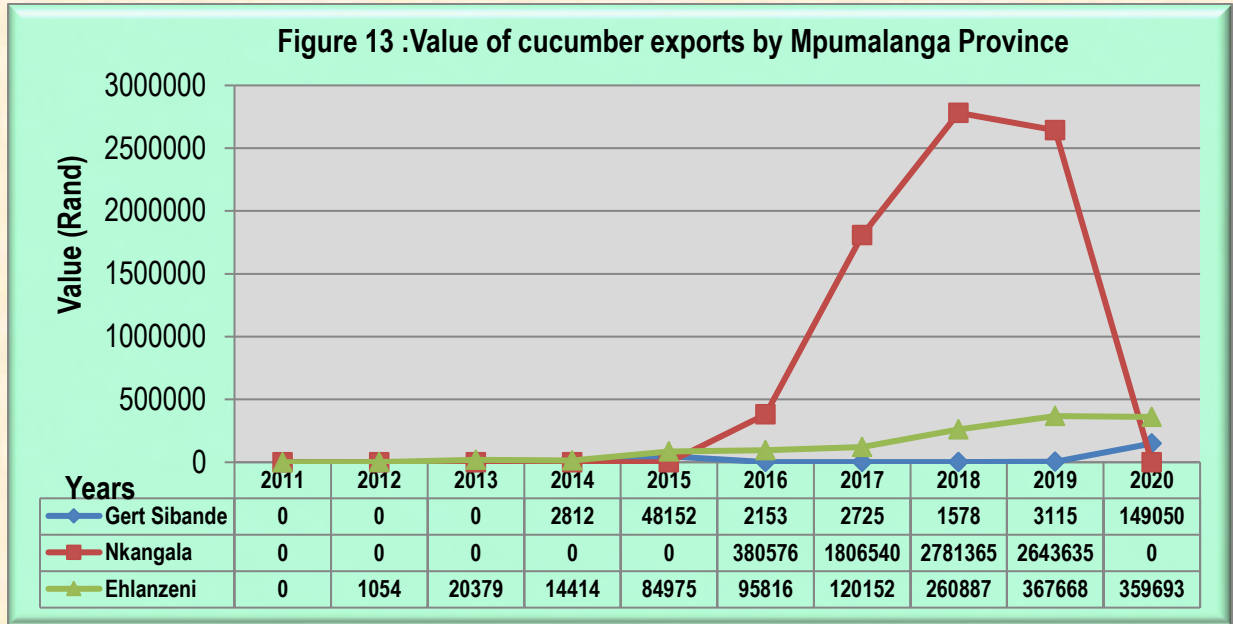
Source: Quantec Easydata

Figure 12 below illustrates that cucumber exports from the KwaZulu Natal province were mainly from the Ethekwini district municipality. In 2012, the export value for Ethekwini increased by 20% in comparison to the 2011 export value and Umgungundlovu has recorded a trivial export value. In 2013, Ugu district municipality has recorded cucumber export value for the first time in 10 years. At the same time, Ethekwini export value has gone down by 23% compared to the 2012 export value. Ugu and Ethekwini district have increased their cucumber export values during 2014. At the same time, ILembe has contributed for the first time to KwaZulu Natal export. In 2015, KwaZulu Natal cucumber was exported solely through the Ethekwini district and the export value has slightly dropped by 28% when compared to the 2014 value. During 2016, Ethekwini was still the primary exit point of KwaZulu Natal cucumber export and the export value has slightly increased by 5.4% when compared to the 2015 export value. The high exports by Ethekwini can be attributed to Durban Harbour which serves as an export exit point. Ethekwini cucumber export share has surged in 2017, in comparison to 2016 export value and this can be attested to 44% increment in the value of export destined to neighbouring Eswatini. In the same year, Zululand has contributed for the first time to KwaZulu Natal export value however, the export was significant. As of 2018, Ethekwini cucumber export value has gone down by 55.9% relative to 2017 export value and Zululand has also recorded a notable export value. In 2019, Zululand cucumber export value has surged whilst Ethekwini export value has dropped by 18.9% relative to the 2018 export value. During 2020, Ethekwini was still the primary exit point for KwaZulu Natal cucumber export whilst Zululand export value declined significantly by 72% relative to 2019 value.



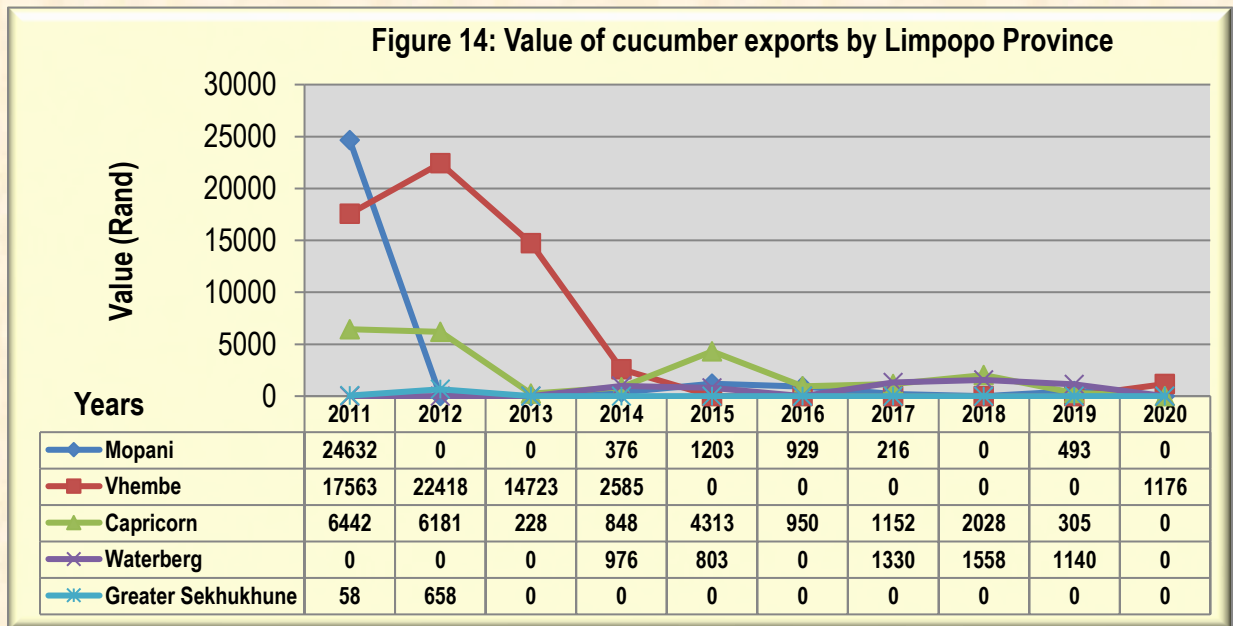
Source: Quantec Easydata

Figure 13 below shows that in 2011, the province of Mpumalanga had no cucumber trade. During 2012, Mpumalanga province exported cucumber through Ehlanzeni but the export value was less significant. In 2013, Ehlanzeni export value has notably increased and this can be attributed to an increase in cucumber exported to neighbouring Swaziland. During 2014, Gert Sibande has contributed to Mpumalanga cucumber export value for the first time in 10 years. At the same time, the export value for Ehlanzeni has increased by 56% in comparison to the 2013 export value. In 2015, Mpumalanga cucumber export value has notably increased and this can be attributed to an increase in exports destined to neighbouring Swaziland. During 2016, Nkangala has significantly contributed to Mpumalanga cucumber export values; Ehlanzeni export value improved by 12.7%, whereas Gert Sibande export has drastically dropped. High cucumber export value by Mpumalanga province can be attributed to a notable increase in cucumber export to neighbouring Mozambique and Swaziland. In 2017, Nkangala and Ehlanzeni cucumber export values were incomparably higher relative to 2016 export value and this can be attributed to a 28% increment in value of export destined for neighbouring Mozambique. As of 2018, Nkangala has remained as a primary exit point of Mpumalanga cucumber export and the export value was 53.9% more relative to the 2017 export value. At the same time, Ehlanzeni export value has drastically increased by 117% whilst Gert Sibande export value declined by 42% in comparison to the previous year (2017). In 2019, Nkangala district was still by far the main contributor to cucumber export however, the export value decreased by 4.9%. At the same time, Ehlanzeni export value grew notably by 41% in comparison to the 2018 value. Gert Sibande has contributed notably to Mpumalanga cucumber export and Ehlanzeni export value fell slightly by 2% relative to 2019 value.



Source: Quantec Easydata

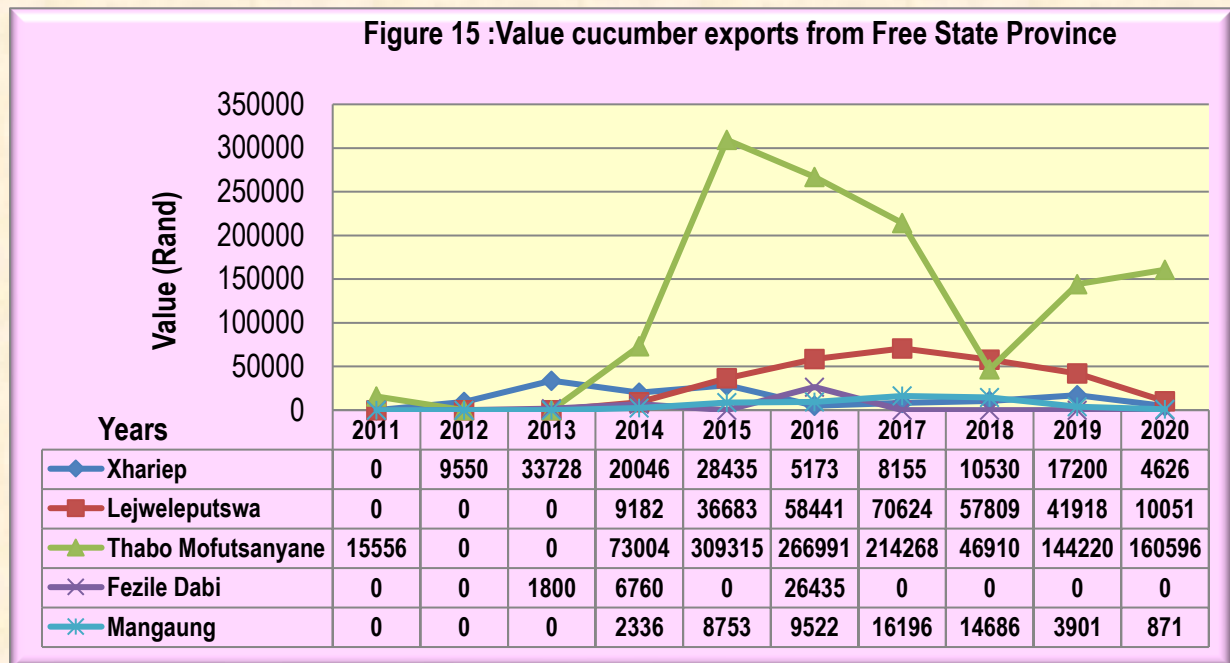
Figure 14 illustrate the value of cucumber exports by Limpopo Province.



Source: Quantec Easydata

Figure 14 above illustrates that in 2011, Mopani, Vhembe and Capricorn districts were the primary exit points for Limpopo cucumber exports. During 2012, Limpopo cucumber was exported through Vhembe and Greater Sekhukhune district. Export value for Vhembe exports has increased 26.6%, while Greater Sekhukhune export value was insignificant. In 2013, Limpopo province exported cucumbers through the Vhembe district and the export value has notably dropped when compared to the 2012 export value. During 2014, Waterberg contributed for the first time to Limpopo cucumber exports, but the value was insignificant.

At the same time, Vhembe cucumber exports have drastically dropped. In 2015, Limpopo cucumber was exported through Capricorn, Waterberg and Mopani districts. During 2016, Mopani and Capricorn districts have recorded insignificant export values. As of 2017, Limpopo cucumbers were exported through Waterberg, Capricorn and Mopani but the cucumber export values recorded were less significant. During 2018, Limpopo cucumber was exported through Capricorn and Waterberg districts and the export values have increased by 76% and 17% respectively. In 2019, Limpopo cucumbers were exported through Waterberg, Capricorn and Mopani, however, the export values recorded were less significant. As of 2020, Limpopo cucumber export was solely sourced from Vhembe district.

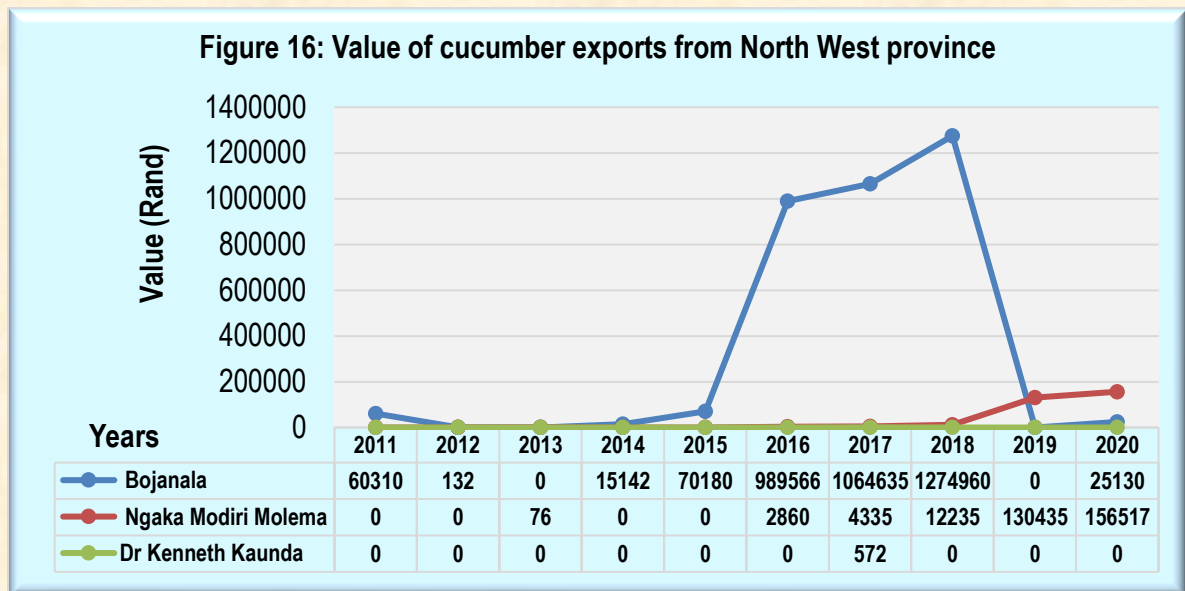


Source: Quantec Easydata

Figure 15 above illustrates the value of cucumber exports by Free State province. The province has recorded its first cucumber export in 2011 through Thabo Mofutsanyane district municipality. In 2012, Free State exports were exported through Xhariep and in the following year exports were recorded for Fezile Dabi. During 2014, Free State province has exported cucumber through Thabo Mofutsanyane, Mangaung, Xhariep, Lejweleputswa and Fezile Dabi. The overall Free State cucumber exports went up and this can be ascribed to cucumbers exported to neighbouring Lesotho. During 2015, Thabo Mofutsanyane export value has drastically increased and at the same time Xhariep, Lejweleputswa and Mangaung export values have also increased in comparison to the previous year export values. In 2016, Thabo Mofutsanyane was still the main exit point for Free State cucumber exports however, the export value has dropped by 13.6%. In the same year, Lejweleputswa and Fezile Dabi cucumber export values have significantly increased. The overall increase in Free State cucumber export value can be ascribed to an 18% increase in cucumber export destined to neighbouring Lesotho. As of 2017, Lejweleputswa export value was still by far the preferred exit point for cucumber export from Free State however, the export value has notably dropped by 19.7%, Lejweleputswa export value grew by 20.8%, Mangaung export value has surged by 70%, Xhariep export value increased by 57.7% whilst Fezile Dabi has recorded zero trade for cucumber. As of 2018, Xhariep export value grew by 29% whereas Lejweleputswa, Thabo Mofutsanyane and Fezile Dabi export values have decreased by 18.1%, 78% and 9.3% respectively. In 2019, Thabo Mofutsanyane and

Xhariep export values were incomparably higher relative to the previous year (2018) export values. At the same time, Lejweleputswa and Mangaung have experienced a notable drop in the cucumber export values. Thabo Mofutsanyane was still the primary exit point for Free State provincial cucumber export and the export value increased by 11% whilst, Xhariep, Lejweleputswa and Fezile Dabi export values have dropped by 73%, 76% and 77% respectively.

Figure 16 below illustrates the value of cucumber exports by North West province



Source: Quantec Easydata

Figure 16 above illustrates cucumber exports from the North West province. In 2011, North West exports were exported mainly through Bojanala and in the following year exports were recorded for North West province were trivial. In 2014 and 2015, North West province has exported cucumber solely through the Bojanala district. As of 2016 and 2017, North West cucumber exports have surged relative to the previous years. In the same year, Ngaka Modiri Molema and Dr Keneth Kaunda district have recorded trivial export values. During 2018, North West cucumber exports value was incomparably higher relative to 2017 export values and this can be ascribed to a 35% increase in cucumber export value destined to Botswana. In 2019, Ngaka Modiri Molema district cucumber export value surged and Bojanala export value grew notably by 19.7% relative to 2018 export value. Ngaka Modiri Molema cucumber export value increased further by 19.9% during 2020 and Bojanala has also contributed notably when compared to zero value in 2019.

2.3 Share analysis

Table 3 below is an illustration of the provincial share of national cucumber exports. Gauteng commanded the greatest share of South Africa's cucumber exports and Western Cape has contributed to a lesser extent. In 2012, Gauteng has recorded a 94.15% share of South Africa cucumber exports. During 2013, Gauteng continued to lead in cucumber exports and it has commanded a 91.96% export share. At the same time, Western Cape has increased its export share to 7.12% when compared to 5.03% in 2012. KwaZulu Natal, Free State and Mpumalanga have increased their export share during 2013 but the export shares were

insignificant. The high export shares in the Western Cape and Gauteng can be attributed to registered exporters and available ports based in this province. During 2014, Gauteng export share has drastically dropped to 56.08%, while Western Cape has notably increased its export share to 41.36%. Gauteng and Western Cape provinces have continued to dominate South Africa's cucumber export shares during 2015. In the same year, there were a slight increase in Free State and Mpumalanga cucumber export shares. In 2016, Gauteng has continued to lead in South Africa's cucumber exports by commanding 55.78% share, followed by Western Cape with 35.91% share. North West has increased its export share to 4.39% and Mpumalanga's share has gone up to 2.12%. During 2017, Gauteng cucumber export share has dropped further to 44.22%, Western Cape export share rose to 39.55%, Mpumalanga export share grew to 9.24% and North West export share has increased to 5.12% share. As of 2018, Gauteng has commanded a 42.23% share of South Africa's cucumber exports, Western Cape has registered 42.13%, Mpumalanga has recorded 10.57% whereas North West export share has declined to 4.47% relative to the 2017 share. In 2019, Gauteng was still the primary exit point for South Africa's cucumber export and the export share grew to 50.99%, Western Cape has registered 35.36% share and Mpumalanga has commanded a 12.79% share of exports. As for 2020, Gauteng cucumber export share increased to 62.84%, Western Cape export share dropped slightly to 33.79%, Mpumalanga export share delined sharply from 12.79% to 1.79% and other provinces have recorded insignificant export shares.

Table 3: Share of provincial exports to the total of RSA cucumber exports (%)

Year Provinces	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Western Cape	5.60	5.03	7.12	41.36	39.04	35.91	39.55	42.13	35.36	33.79
Eastern Cape	0	0	0	0	0	0	0.02	0.01	0	0.01
Northern Cape	0	0	0	0.01	0	0	0	0	0	0
Free State	0.16	0.08	0.26	1.57	1.86	1.62	1.48	0	0.83	0.62
KwaZulu-Natal	0.51	0.53	0.41	0.36	0.17	0.16	0.35	0.12	0.20	0.31
North West	0	0	0	0.36	0.34	4.39	5.12	4.47	0.55	0.64
Gauteng	93.50	94.15	91.96	56.08	57.92	55.78	44.22	42.23	50.99	62.84
Mpumalanga	0	0.01	0.15	0.24	0.65	2.12	9.24	10.57	12.79	1.79
Limpopo	0.23	0.20	0.11	0.02	0.03	0.01	0.01	0.01	0.01	0.00
South Africa	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 4: Share of district exports to the total Western Cape provincial cucumber exports (%)

Year District	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
City of Cape Town	98.90	99.38	99.26	99.42	99.61	99.57	99.37	98.92	98.92	99.01
West Coast	0	0	0.01	0	0	0	0	0	0	0
Cape Winelands	1.10	0.62	0.73	0.58	0.38	0.43	0.63	1.08	1.08	0.98
Eden	0	0	0	0	0.01	0	0	0	0	0.01
Western Cape	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 4 above indicates that in 2011, City of Cape Town commanded a 98.90% share and Cape Winelands commanded 1.10% of Western Cape Province. In 2012, City of Cape Town continued to lead in cucumber export and it has commanded 99.38%. During 2013, it has commanded 99.26%. Cape Town Harbour renders the exit point of cucumber exports During 2015, City of Cape Town continued to dominate in Western Cape cucumber export and it has recorded a 99.61% share. From 2016 to 2019, City of Cape Town was still the primary exit point for cucumber exports and the district has commended approximately 98% of Western Cape cucumber export share. In 2020, City of Cape Town cucumber export share grew slightly to 99.01% and Eden has recorded a trivial export share.

Table 5: Share of district exports to the total Gauteng provincial cucumber exports (%)

Year District	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sedibeng	0	0	0	0	0	0.01	0	0	0	0
West Rand	0	0	0	2.37	3.74	3.15	0.01	0.01	0.01	0.24
Ekurhuleni	1.08	1.65	3.06	19.26	15.99	10.92	24.22	25.49	24.76	20.45
City of Johannesburg	96.35	95.61	94.45	54.66	59.13	64.93	47.64	44.93	39.96	49.72
City of Tshwane	2.57	2.75	2.49	23.71	21.14	20.98	28.13	29.56	35.27	29.59
Gauteng	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easy data

Table 5 above, indicates that the City of Johannesburg commanded the most share of cucumber export by Gauteng Province. In 2011, City of Johannesburg commanded the greatest share of 96.35% share and City of Tshwane commanded a 2.57% share of cucumber exports by Gauteng Province. In 2012, City of Johannesburg continued to lead in cucumber exports from Gauteng and it has commanded a 95.61% share. In the same year, the City of Tshwane's export share has slightly increased to 2.75%. During 2013, Ekurhuleni has increased its export share to 3.06%, City of Johannesburg export shares have dropped when compared to the previous year export value. In 2014, City of Tshwane export share has increased to 23.71%, Ekurhuleni export share has gone up to 19.26%, while City of Johannesburg export share has gone down to 54.66%. During 2015, City of Johannesburg has continued to lead in Gauteng cucumber export by recording a 59.13% share and City of Tshwane export share has dropped slightly to 21.14%. At the same time, Ekurhuleni export share has dropped to 15.99%, whereas West Rand export share has increased to 3.74%. In 2016, City of Johannesburg has increased its export share to 64.93%, while City of Tshwane export share has dropped slightly to 20.98% and Ekurhuleni export share has declined to the 10.92%. In the same year, Sedibeng has contributed for the first time to Gauteng cucumber export share however, the share was trivial. City of Johannesburg cucumber export share has dropped notably to 47.64% in 2017, Ekurhuleni has registered a notable gain in cucumber export share of 24.22% and City of Tshwane export share has increased to 28.13%. As of 2018, City of Johannesburg has commanded 44.93%, City of Tshwane has registered 29.56% and the Ekurhuleni export share has increased to 25.49%. In 2019, City of Johannesburg export share declined to 39.96%, City of Tshwane export share increased to 35.27% whereas Ekurhuleni export share dropped to 24.76% share. In 2020, City of Johannesburg cucumber export share grew to 49.72%, City of Tshwane has registered 29.59% share and Ekurhuleni has commanded a 20.45% share of Gauteng cucumber export.

Table 6: Share of district exports to the total KwaZulu-Natal provincial cucumber exports (%)

Year District	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Ugu	0	0	15.69	41.72	0	0	0	0	0	0
Umngungundlovu	0	0.79	0	0	0	0	0	0	0	0
Zululand	0	0	0	0	0	0	0.99	8.34	52.03	8.83
Uthungulu	0	0	0	0	0	0	0	0	0	0
Ilembe	0	0	0	13.64	0	0	0	0	0	0
Ethekwini	100	99.21	84.31	44.64	100	100	99.01	91.66	47.97	91.17
KwaZulu Natal	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easy data

Table 6 shows that Ethekwini commanded a 100% share of cucumber exports from the KwaZulu Natal province in 2011. The greatest share by Ethekwini can be attributed to Durban Harbour which renders an export exit point. In 2013, Ethekwini export share has gone down to 84.31%, while Ugu has commanded a 15.69% share of exports. Ethekwini export share has dropped further to 44.64% during 2014, Ugu export share has increased to 41.72% and Ilembe has registered a 13.64% share. In 2015 and 2016, Ethekwini has commanded a 100% share of KwaZulu Natal cucumber export. During 2017, Ethekwini export share dropped slightly to 99.01%, Zululand has commanded a cucumber export share for the first time in ten years, however, the export share was insignificant. As of 2018, Ethekwini has continued to command the highest share of 91.66% of Gauteng cucumber export share and Zululand export share has notably increased to 8.34% relative to the previous year (2017). During 2019, Ethekwini export share dropped notably to 47.96%, whilst Zululand export share surged to 52.03%. In 2020, Ethekwini cucumber export share grew notably to 91.17% whereas Zululand export share declined significantly from 52.03% to 8.83% share.

Table 7: Share of district exports to the total Mpumalanga provincial cucumber exports (%)

Year District	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gert Sibande	100	0	0	25.59	36.17	0.45	0.14	0.05	0.10	29.30
Nkangala	0	0	0	0	0	79.51	93.63	91.38	87.70	0.00
Ehlanzeni	0	100	100	74.41	63.83	20.04	6.23	8.57	12.20	70.70
Mpumalanga	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 7 illustrates Mpumalanga provincial cucumber export share during ten years. In 2011, Gert Sibande district has commanded a 100% share of cucumber exports from this province. During 2012 and 2013, Ehlanzeni commanded a 100% share of exports from Mpumalanga province. In 2014, Ehlanzeni export share has decreased from 100% to 74.41%, while Gert Sibande export share has gone up to 25.59% in comparison to 2013 shares. During 2015, Gert Sibande cucumber export share has increased to 36.17% and Ehlanzeni export share has dropped to 63.83%. In 2016, Nkangala commanded the greatest share of 79.51%, whilst Ehlanzeni export share dropped notably to 20.04% and Gert Sibande export share has gone down to 0.45%. As of 2017, Nkangala cucumber export value grew notably to 93.63% whilst Ehlanzeni export share eased lower from 20.04% to 6.23%. In 2018, Nkangala was still in the lead in

Mpumalanga cucumber export share and it has commanded 91.38% and Ehlanzeni has registered an 8.57% share. During 2019, Nkangala export share declined to 87.70% and Ehlanzeni has commanded a 12.20% export share. In 2020, Ehlanzeni cucumber export share increased notably to 70.70%, and Gert Sibande export share grew notably from 0.10% to 29.30% share.

Table 8: Share of district exports to the total Limpopo provincial cucumber exports (%)

Year District	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Mopani	79.59	97.11	100	77.63	0	49.44	8.01	0	25.44	0
Vhembe	20.14	0	0	0	68.25	0.00	0	0	0	100
Capricorn	0.26	0	0	22.37	12.71	50.56	42.70	56.55	15.74	0
Waterberg	0	2.89	0	0	0	0	49.30	43.45	58.82	0
Greater Sekhukhune	0	0	0	0	19.04	0	0	0	0	0
Limpopo	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 8 above illustrates that in 2011, Vhembe commanded a 79.59% share and Capricorn commanded a 20.14 % share of Limpopo Provincial cucumber exports. During 2012, Vhembe continued to command a high export share and in 2013; Vhembe district commanded a 100% share of cucumber exports from Limpopo province. In 2014, Vhembe district export share has dropped from 100% to 77.63%, while Waterberg export share has commanded 23.37%. During 2015, Capricorn has recorded a higher cucumber export share of 68.25%, followed by Mopani with a 19.04% share and Waterberg export share has dropped to 12.71%. In 2016, Capricorn district increased its cucumber export share to 49.44% and Capricorn cucumber export share has gone up to 50.56%. Waterberg cucumber export share grew sharply to 49.30% during 2017, Capricorn export share dropped to 42.70% whilst Mopani export share decreased sharply to 8%. As of 2018, Capricorn has commanded 56.55% and Waterberg has recorded 43.45% of Limpopo cucumber export share. In 2019, Waterberg district has commanded a 58.82% share of Limpopo cucumber export, Mopani has registered 25.44% share, whereas Capricorn export share significantly decreased to 15.74% share. In 2020, Vhembe has commanded a 100% share of Limpopo provincial cucumber exports.

Table 9: Share of district exports to the total Free State provincial cucumber exports (%)

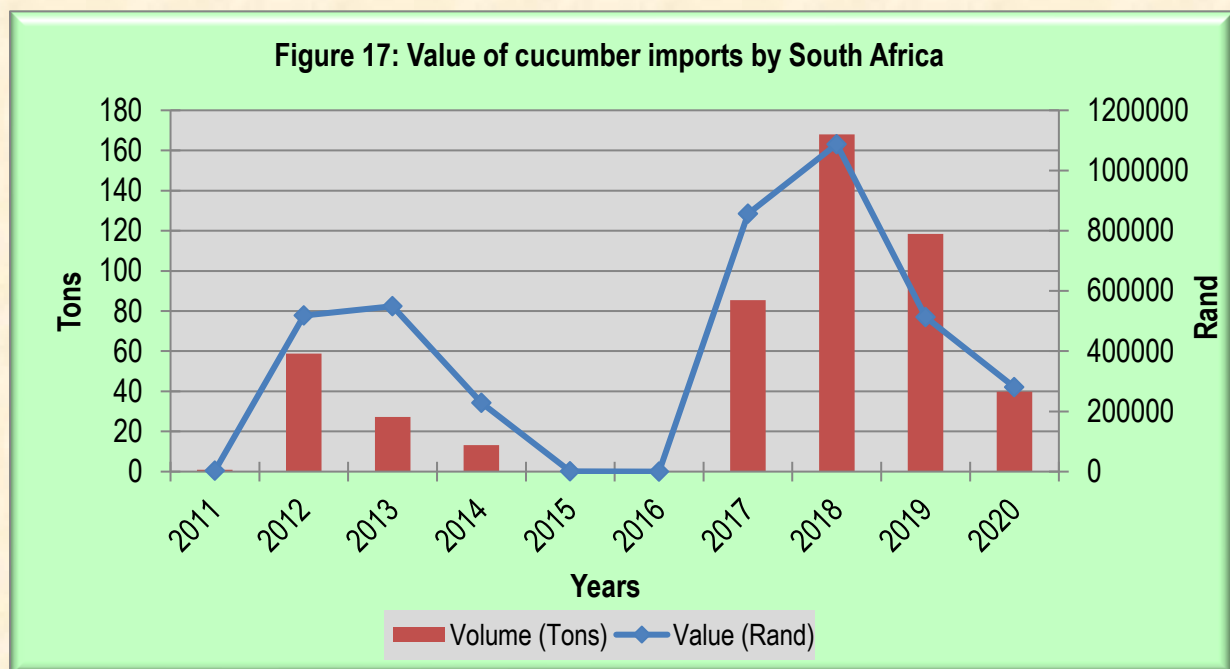
Year District	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Xhariep	0	100	94.93	7.25	7.42	1.41	2.64	8.10	8.30	2.63
Lejweleputswa	0	0	0	9.81	9.57	15.94	22.84	44.49	20.23	5.71
Thabo Mofutsanyane	100	0	0	78.02	80.72	72.84	69.29	36.10	69.59	91.17
Fezile Dabi	0	0	5.07	2.42	0	7.21	0	0	0	0
Mangaung	0	0	0	2.50	2.28	2.60	5.24	11.30	1.88	0.49
Free State	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 9 above shows that in 2011, Thabo Mofutsanyane has recorded a 100% export share of Free State provincial cucumber export and Xhariep has commanded a 100% share in 2012. During 2013, Xhariep has commanded 94.93%, while Fezile Dabi has commanded a 5.07% share. Thabo Mofutsanyane has recorded a 78.02% share in 2014. Mangaung has commanded 12.31% and Xhariep has recorded a 7.25% share to the total Free State provincial export share in 2014. During 2015, Thabo Mofutsanyane cucumber export share has increased to 80.72%, followed by Lejweleputswa with 9.57% and Xhariep has recorded a 7.42% share. In 2016, Thabo Mofutsanyane continued to lead in Free State export share by commanding 72.84% share, Fezile Dabi export share increased to 7.21% whilst Xhariep export share dropped sharply to 1.41%. Thabo Mofutsanyane export share has dropped to 69.29% during 2017, Lejweleputswa export share grew to 22.84% and Mangaung has registered a 5.24% share of cucumber export. During 2018, Lejweleputswa increased its cucumber export share to 44.49%, Mangaung export share grew to 11.30% whilst Thabo Mofutsanyane cucumber export share declined sharply to 36.10% share. As of 2019, Thabo Mofutsanyane cucumber export share surged to 69.59%, whilst Lejweleputswa export share dropped notably to 20.23% share. Thabo Mofutsanyane cucumber export share increased to 91.17%, Lejweleputswa export share declined to 5.71% and Mangaung export share dropped further to 0.49% share.

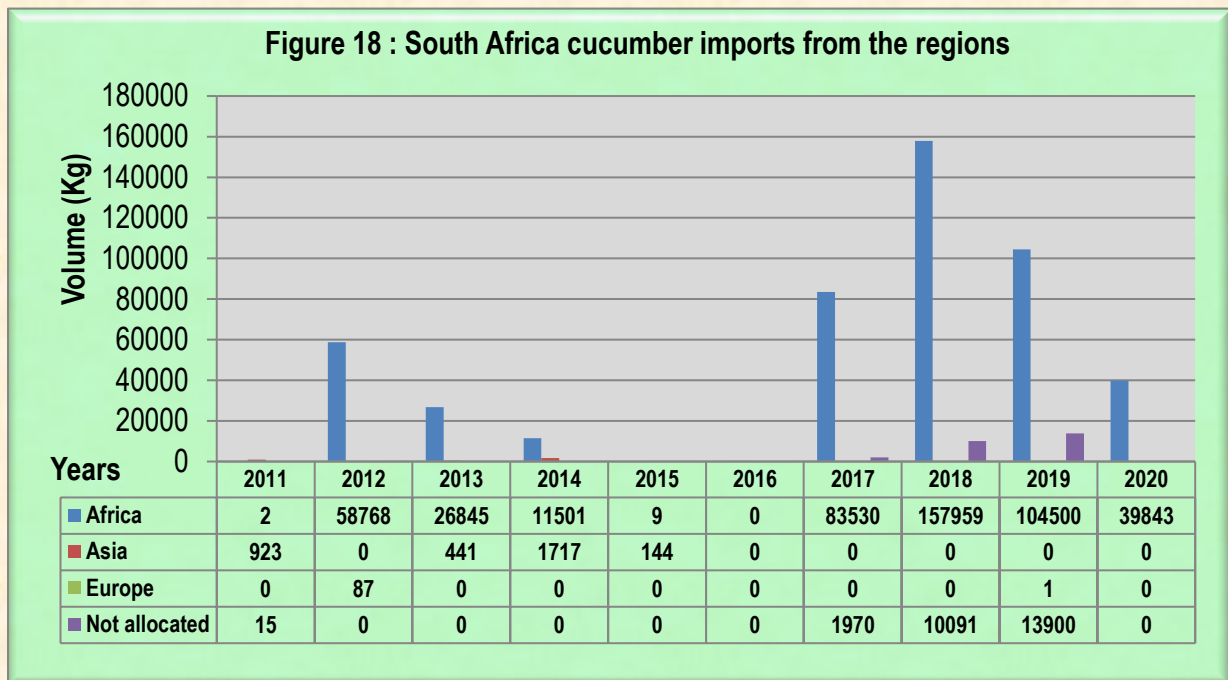
2.4 Cucumber imports by South Africa

In 2020, South African cucumber imports still represented 0% of world imports and the country was ranked number 98 in the world cucumber imports. South Africa is self-sufficient in terms of cucumber production, hence low volumes of imports. In 2011, the import volumes were insignificant. . During 2016, there were no cucumber imports recorded for South Africa. These can be attributed to increasing domestic cucumber production in the same years. Globally, the United States of America, Germany, United Kingdom, the Netherlands, France, Poland, Czech Republic, Canada, Belgium and Sweden were top cucumber importers during 2020.



Source: Quantec Easydata

Figure 17 above indicates that cucumber imports were relatively unstable from 2011 to 2020. During 2011, South African cucumber imports were insignificant and this can be attributed to a 15.5% increase in domestic production. During 2012, South Africa imported only 59 tons of cucumbers and this can be attributed to a 6.8% increase in the domestic cucumber output. In 2013, South Africa imported only 27 tons of cucumber and it was relatively more expensive to import cucumber when compared to 2012 and 2013 imports. During 2014, cucumber import dropped by 51.5% in comparison to 2013 and this can be ascribed to an 8% increase in domestic production output. In 2015, South Africa's cucumber import has dropped further by 99% in comparison to 2014 imports and this can be attributed to a 12.4% increase in production output. During 2016, South Africa has recorded zero trade for cucumber, despite a 3.8% decline in domestic production output. South Africa has imported 85.5% tons of cucumber in 2017, which was incomparably higher relative to the 2016 import volume. The import volume surged despite a 2.9% growth in domestic cucumber output. It was more expensive to import cucumber when compared to 2015 imports. As of 2018, South Africa's cucumber import has surged 96% relative to 2017 imports and this can be attributed to a 6.3% decline in cucumber domestic production output. In 2019, South Africa's cucumber notably declined by 29% relative to the 2018 import volume. The drop in cucumber import volume can be attributed to an 8.5% increment in domestic production output. Cucumber imports into South Africa decreased by a significant 66% in 2020 when compared to the previous year's (2019) imports. At the same time, cucumber imports into South Africa were significantly more expensive.

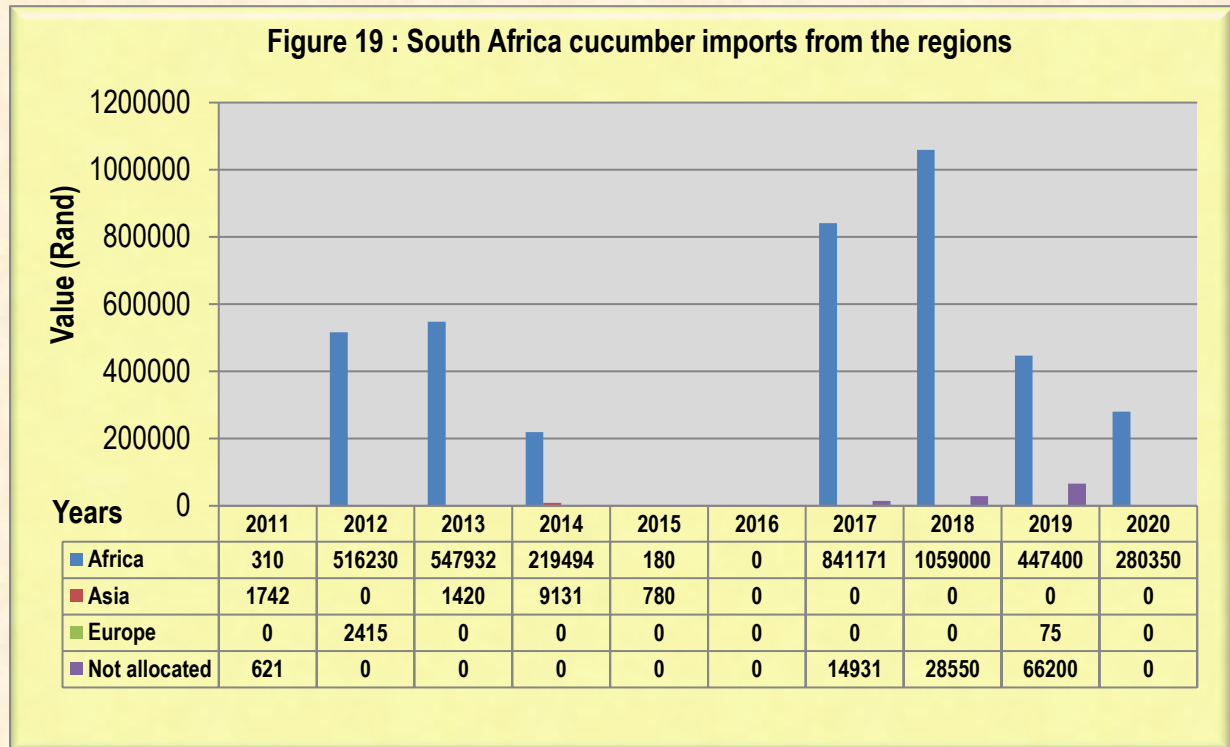


Source: Quantec Easydata

Figure 18 above, shows the regions that supplied cucumber during the 10 years. During 2011, South Africa imported considerable volumes of cucumber from the Africa region. South Africa apply a 0% tariff for cucumber imports from Zambia and Zimbabwe. In 2012, South Africa's cucumber exports were sourced mainly from the African region. In 2013, South Africa imported cucumber from Africa and Asia regions (Hong Kong, Turkey and China). In 2014, Africa (Eswatini) and Asia (India) remained the main suppliers of cucumber imported by South Africa. During 2015, South Africa has imported cucumber from Asia region; however, the import volume was insignificant. In 2016, there were no cucumber imports recorded for South

Africa. During 2017, South Africa has imported a substantial volume of cucumber from Africa region (Namibia and Eswatini) and there was a notable increase in unallocated imports. As of 2018, Africa (Namibia and Eswatini) region was still the primary supplier of South Africa's cucumber imports. At the same time, there was a notable volume of imports which was unallocated. During 2019, Africa (Namibia) region was still the primary source of South Africa's cucumber imports and the unallocated imports have notably increased by 38% relative to 2018 imports. In 2020, South Africa has imported cucumbers solely from African region and the import volume has declined notably by 61% relative to 2019 imports.

Figure 19 below illustrates the value of cucumber exports by region from 2011 to 2019.

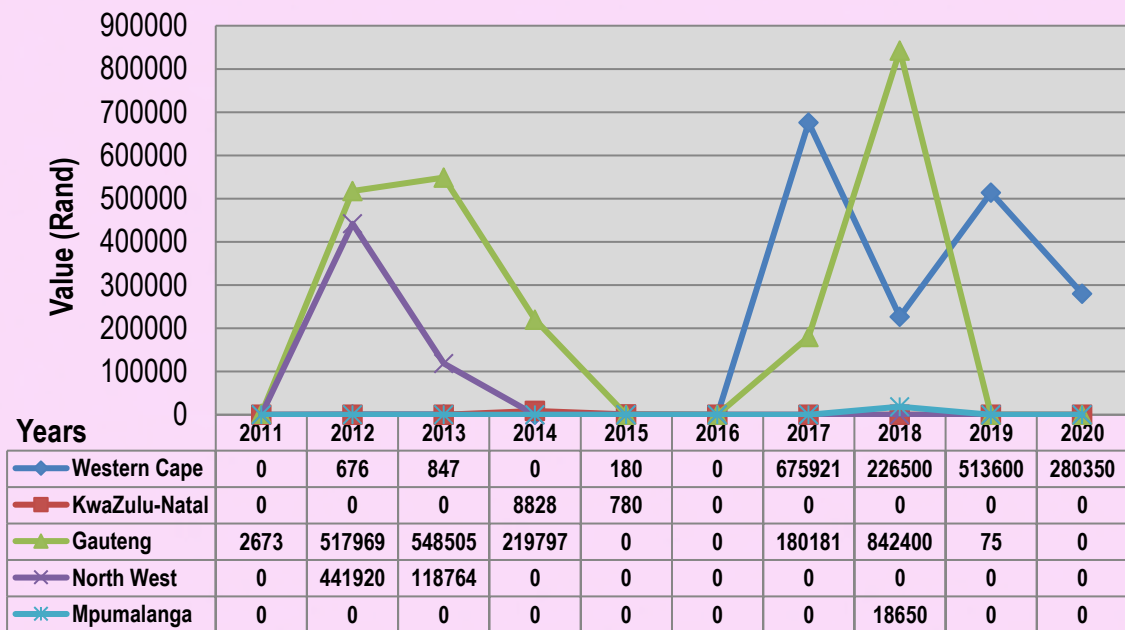


Source: Quantec Easydata

Figure 19 above shows the value of cucumber imports from regions. The African region has recorded higher values as high volumes were imported from this region. In 2012, it was cheaper to import cucumbers from the African region. During 2013, it was relatively more expensive to import cucumbers from Africa region and imports from Asia were relatively cheaper. In 2014, it was cheaper to import cucumber from the Asia region, while it was more expensive to import from Africa region. Cucumber import values for Africa and Asia regions were insignificant. During 2016, South Africa recorded zero trade for cucumber. In 2017, South Africa cucumber import value was a record high in a ten year period, which is attributed to a record high import volume during the same year. As of 2018, it was cheaper to import cucumber from Africa region, relative to 2017 imports from the same region. Unallocated imports have also fetched higher import value. In 2019, it was cheaper to import cucumber from Africa region, in comparison to the 2018 cucumber import value from the same region. It was more expensive for South Africa to import cucumbers from the African region relative to the 2019 cucumber import value.

Figure 20 below illustrates South Africa's provincial cucumber imports. In 2011, Gauteng province was the entry point for South Africa's cucumber import. Higher import values were recorded in 2012 and 2013. At the same time, Western Cape has contributed to South Africa cucumber imports, but the import values were insignificant. During 2014, Gauteng import value has notably dropped and KwaZulu Natal has contributed to South Africa cucumber import. During 2015, South Africa imported cucumbers through the Western Cape and KwaZulu Natal provinces. However, the import values were insignificant. In 2016, there was no record of cucumber entering South Africa. During 2017, Western Cape was by far the primary entry point of cucumber imports and this can be ascribed to neighbouring Namibia supplying 95.3% of South Africa cucumber imports. Gauteng cucumber import value has significantly increased relative to 2016 zero trade. During 2018, Gauteng province was by fair the primary entry point for South Africa's cucumber imports, followed by Western Cape and Mpumalanga has also recorded a notable import value. The Mpumalanga import value can be attributed to cucumber imports from the neighbouring Eswatini. As of 2019, Western Cape was the primary entry point for South Africa's cucumber import and Gauteng has registered a trivial import value. High import recorded for Western Cape can be ascribed to 86.1% import share from neighbouring Namibia. Western Cape province was still the primary entry point for South Africa's cucumber imports and neighbouring Namibia was still the sole supplier of cucumber imports.

Figure 20: Value of South Africa's provincial cucumber imports



Source: Quantec Easydata

2.5 Cucumber processing

Cucumber can be cooked, but they are most often eaten raw in salads, in cold soups and cucumber based sauces. Cucumbers are also the vegetable of choice for pickles. Cucumbers are pickled for flavour and longer shelf-life. Pickles are made by placing cucumber in a seasoned brine or vinegar solution. Cucumber juice is in great demand in various forms as a cooling and beautifying agent for the skin. Cucumber juice is also used in the preparation of cosmetics like soap, glycerine, creams and perfumes. Cucumber can be cooked, but they are most often eaten raw in salads, in cold soups and cucumber based sauces. Another benefit of cucumber is it helps to heal a range of illnesses, including lungs, stomach, chest problems, gout, and arthritis and tapeworm. Figure 21 presents a cucumber value chain tree explaining its uses.

Figure 21: Cucumber value chain tree explaining its uses

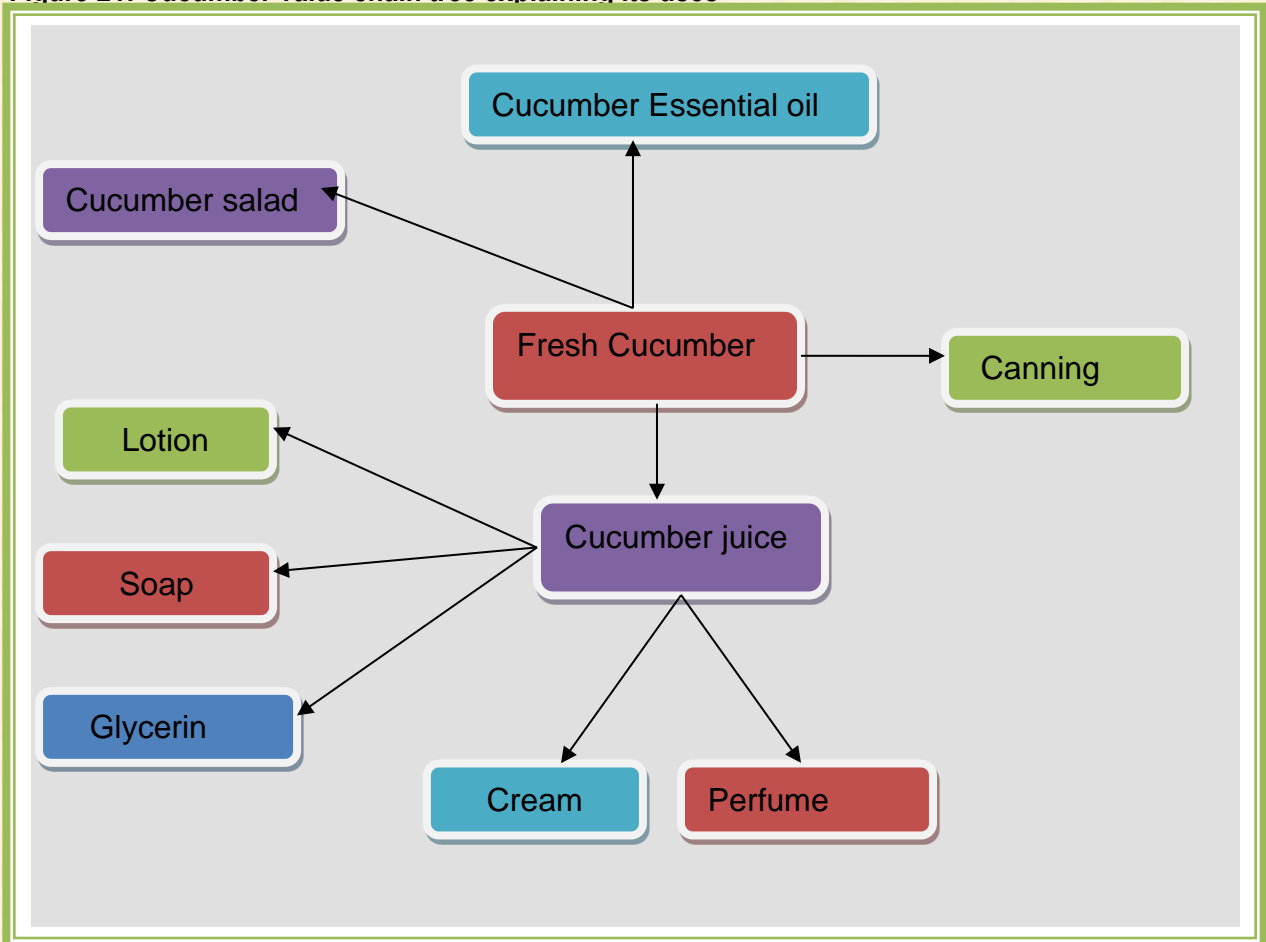


Figure 22: Cucumber market value chain

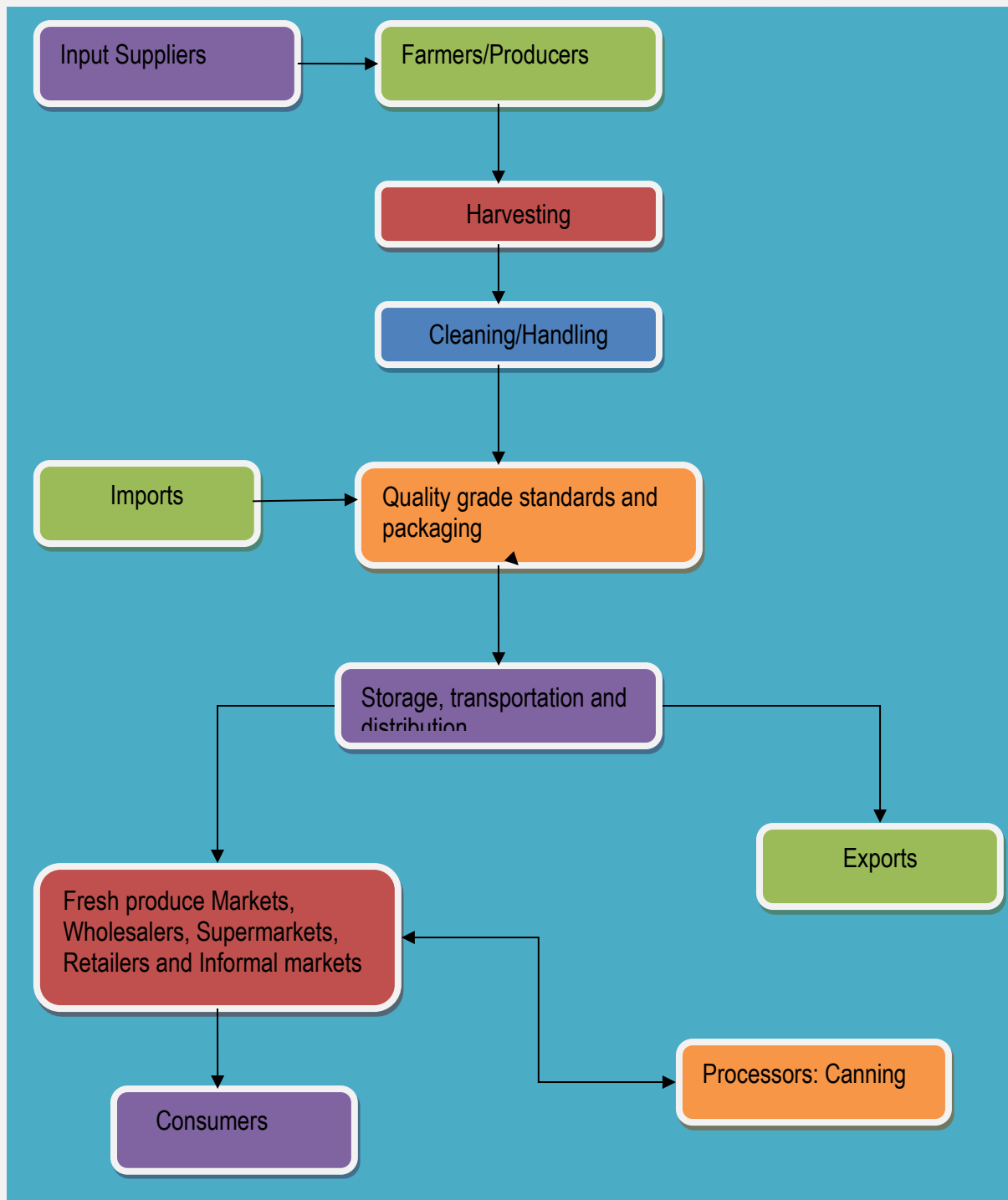


Figure 22 presents the market value chain for cucumbers. The cucumber value chain can be broken down into the following levels: the producer of cucumber (farmers), packhouse owner (who cleans, grade and quality control); cold storage and transport facilities (store and transport cucumber on behalf of the farmers); traders in cucumber (market and sell cucumber); processors (add value to cucumber and process cucumber to other usable forms) and end-users (consumers).

3. MARKET INTELLIGENCE

3.1 Tariffs

Tariffs applied by the various markets to cucumbers originating from South Africa during 2019 and 2020 are presented in Table 10.

Table 10: Tariffs applied by various export markets for cucumber originating from South Africa.

Country	Product Description (H070700)	Trade Regime description	2019		2020	
			Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
Angola	Cucumber and gherkins fresh or chilled	MFN duties Applied	50.00%	50.00%	50.00%	50.00%
Belgium	Cucumber fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Botswana	Cucumber and gherkins fresh or chilled	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
China	Cucumber and gherkins fresh or chilled	MFN duties Applied	13.00%	13.00%	13.00%	13.00%
Czech Republic	Cucumber fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Canada	Cucumber and gherkins fresh or chilled	MFN duties Applied	0.00%	0.00%	0.00%	0.00%
Egypt	Cucumber fresh or chilled	MFN duties Applied	5.00%	5.00%	5.00%	5.00%
Germany	Cucumber fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Iran	Cucumber fresh or chilled	General tariff	90.00%	90.00%	55.00%	55.00%
Lesotho	Cucumber fresh or chilled	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
Malawi	Cucumber and gherkins fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Mauritius	Cucumber fresh or chilled	MFN duties Applied	0.00%	0.00%	0.00%	0.00%
Mexico	Cucumber fresh or chilled	MFN duties Applied	10.00%	10.00%	10.00%	10.00%

Country	Product Description (H070700)	Trade Regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
Mozambique	Cucumber and gherkins fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Namibia	Cucumber fresh or chilled	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
Netherlands	Cucumber fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Russian Federation	Cucumber and gherkins fresh or chilled	General tariff (MFN)	56.74\$/ton	10.00%	56.74\$/ton	10.00%
Eswatini	Cucumber and gherkins fresh or chilled	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
Poland	Cucumber fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
United Kingdom	Cucumber fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
United States of America	Cucumber and gherkins fresh or chilled	Preferential tariff for GSP countries	0.00%	0.00%	0.00%	0.00%
Zambia	Cucumber and gherkins fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Zimbabwe	Cucumber and gherkins fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%

Source: Market Access Map

During 2020, Botswana, Namibia, Lesotho and Eswatini remained the primary export markets for cucumber originating from South Africa and together they account for 94.6% of South Africa cucumber exports. These countries apply a 0% Intra SACU rate to cucumber exports from South Africa. South Africa has also exported cucumber to Mozambique, Angola, Malawi and Zambia. Angola is still protected by 50% tariffs respectively despite the existence of the SADC- FTA. Zimbabwe and Mozambique apply 0% preferential tariff, thereby adhering to SADC-FTA. Zambia and Malawi also apply a 0% preferential tariff to cucumber exports originating from South Africa. South Africa can also diversify their cucumber exports to Europe since these countries apply 0% a preferential tariff to cucumber exports originating from South Africa due to EU-SA Free Trade Agreement (FTA). China is the largest producer of cucumber and its domestic producers are still protected by a 13% tariff. Turkey is the second-largest producer and its domestic market is protected by 29.70%. Iran is the third-largest cucumber and the market is still applying a 55% tariff.

3.2 Non-tariff barriers

3.2.1 The European Union

Non-tariff barriers can be divided into those that are mandatory and laid out in the EU Commission's legislature, and those that are as a result of consumers, retailers, importers and other distributions' preferences.

3.2.1(a) Product legislation: quality and marketing

There are a number of pieces of EU legislation that govern the quality of produce that may be imported, marketed and sold within the EU.

General Food Law covers matters in procedures of food safety and hygiene (micro-biological and chemical), including provisions on the traceability of food (for example, Hazard Analysis and Critical Control Points, of HACCP).

EU Marketing Standards, which govern the quality and labelling of vegetables, are laid out in the CAP framework under regulation EC 2200/96. These regulations include diameter, weight and class specifications, and any produce that does not comply with these standards are not allowed to be sold on the EU markets (detailed lists of products and their standards can be found in the annexes to the directive). The legislation (under EU 1148/2001) also dictates that a Certificate of Conformity must be obtained by anyone wishing to export and sell vegetables in the EU if that particular vegetable falls under the jurisdiction on the EU marketing standards, Vegetables to be used in further processing needs a Certificate of Industrial Use, whilst another legislative directive covers the Maximum Residue Limits (MRL) of various pesticides allowed.

3.2.2 Product legislation: phytosanitary regulations

The international standard for phytosanitary measures was set up by the International Plant Protection Committee (IPPC) to protect against the spreading of diseases or insects through the importation of certain agricultural goods. The EU has its own particular rules formalized under EC 2002/89, which attempts to prevent contact of EU crops with harmful organisms from elsewhere in the world.

The crux of the directive is that it authorizes the Plant Protection Services to inspect a large number of vegetable products upon arrival in the EU. This inspection consists of a physical examination of a consignment deemed to have a level of phytosanitary risk, identification of any harmful organisms and certification of the validity of any phytosanitary certificate covering the consignment. If the consignment does not comply with the requirements, it may not enter the EU, although certain organisms can be fumigated at the expense of the exporter.

3.2.3 Product legislation: packaging

The EU commission lays down rules for materials that come into contact with food and which may endanger people's health or bring about an unacceptable change in the composition of the foodstuffs. The framework

legislation for this EC 1935/2004. Recycling packaging materials are also emphasized under 94/62/EC, whereby member states are required to recycle between 50% and 65% of packaging waste. If exporters do not ship produce in packaging which is reusable, they may be liable for the costs incurred by the importing companies. Wood packaging is subject to phytosanitary controls (see Directive EC 2002/89) and may need to undergo heat treatment, fumigation, etc.

3.2.4 Non-legal market requirements: social and environmental accountability

To access a market, importers must not only comply with the legal requirements set out above, but also with market requirements and demands. For the most part, these revolve around quality and the perceptions of European consumers about the environmental, social, health and safety aspects of both the products and the production techniques. Whilst supplying vegetables that complies with these issues may not be mandatory in the legal sense, they are becoming increasingly important in Europe and cannot be ignored by existing or potential exporters.

(i) Social responsibility is becoming important in the industry, not only amongst consumers but also for retail outlets and wholesalers. The Social Accountability 8000 (SA8000) certification is a management system based on International Labour Organization (ILO) conventions, and deals with issues such as child labour, health and safety, and freedom of association, and requires an on-site audit to be performed annually. The certificate is seen as necessary for accessing any European market successfully. The major retailers in the EU also play an important role in tackling environmental issues, which means that exporters have to take these into account when negotiating exporting arrangements.

(ii) Environmental issues are becoming increasingly important with European consumers. Consumer movements are lobbying against purchasing non-environmental friendly or non-sustainable produce. To this end, both governments and private partners have created standards (such as ISO 14001 and EUREPGAP) and label to ensure products adhere to particular specifications. Labels are an absolute must for exporters attempting to enter the rapidly expanding organic produce market. The EU Commission has recently adopted an EU label for identifying food produced according to EU organic standards in the directive EEC 209/91.

3.1.5 Consumer health and safety requirements

Increasing consumer conscience about health and safety issues has prompted a number of safety initiatives in Europe, such as EUREPGAP on good agricultural practices (GAP) by the main European retailers, the international management system of HACCP, which is independently certified and required by legislation for European producers as well as food imported into Europe (EC 852/2004), and the ISO 9000 management standards system (for procedures and working methods), which is certified by the International Standards Organization (ISO).

3.2 The United States

The USDA has quality standards for vegetables that provide a basis for domestic and international trade and promote efficiency in marketing and procurement. At the same time, the USDA issues quality certificates based on these standards and a comprehensive grading system. Graders are located around the country at terminal markets. These certification services, which facilitate the ordering and purchasing

of products by large-volume buyers, assure these buyers that the product they purchase will meet the terms of the contract in terms of quality, processing, size, packaging and delivery.

3.3 Asian Market Access

Japan's agricultural sector is heavily protected, with calculations from the Organization for Economic Co-operation and Development (OECD) estimating that almost 60% of the value of Japan's farm production comes from trade barriers or domestic subsidies. Japan uses tariff rate quotas (TRQ) to protect its most sensitive products, and reserves the right for trading many of these products (within the quota) for one or two-state trading enterprises. However, these extremely protective measures apply only to some products; others are able to compete more effectively with outside competition, often on the grounds of higher quality.

Perhaps the biggest barrier to trade with Japan in vegetable markets is its strict phytosanitary requirements, which have often been challenged in the WTO as having little or no scientific justification. Other measures that are being challenged include Japan's use of fumigation on agricultural products when cosmopolitan pests (already found in Japan) are detected. Japan is also increasing its labelling requirements.

4. GENERAL DISTRIBUTION CHANNELS

There are roughly three distinct sales channels for exporting vegetables. One can sell directly to an importer with or without the assistance of an agent (usually larger, more established commercial farms/orchards). One can supply a vegetable combine, which will then contract out importers/marketers and try to take advantage of economies of scale and increased bargaining power. At the same time, vegetable combines might also supply large retail chains. One can also be a member of a private or co-operate export organization (including marketing boards) which will find agents or importers and market the produce collectively. Similar to a vegetable combine, an export organization can either supply wholesale markets or retail chains depending on particular circumstances. Export organizations and marketing boards will wash, sort and package the produce.

5. LOGISTICAL ISSUES

5.1 Mode of transport

The transportation of vegetables falls within two categories – *ocean cargo* and *air cargo* – with ocean cargo taking much longer to reach the desired location but costing considerably less. Of course, the choice of transportation method depends, for the most part, on the fragility of the product and how long it can remain relatively fresh. With the advent of technology and container improvements, the feasibility, cost and attractiveness of sea transportation have improved considerably. As more developing countries begin to export and supply major developed countries markets, so the number and regularity of maritime routes, and the container vessels travelling these routes, increase.

Presently South American countries like Peru benefit from the asparagus trade, which has led to some level of economies of scale with other vegetable products, and this has enabled cheaper transport prices for their other vegetable varieties. Such economies of scale could benefit SADC countries if more producers became exporters and took advantage of the various ports which have special capabilities in handling vegetable produce (for example, the proposed terminal in Maputo). For some products, to reach the

destination market with an acceptable degree of freshness, air transport is the only option (asparagus, for example, is flown from Peru to the sufficient to cover the transport costs, and collective agreements between farmers of different commodities with different harvest periods can become particularly important.

5.2 Cold chain management is crucial when handling perishable products, from the initial packing houses to the refrigerated container trucks that transport the produce to the shipping terminals, through to the storage facilities at these terminals (and their pre-cooling capability), onto the actual shipping vessels and their containers, and finally on to the importers and distributors that must clear the produce and transport it to the markets/retail outlets, etc. For every 10°C increase above the recommended temperature, the rate of respiration and ripening of produce can increase twice or even thrice. Related to this are the increasingly important traceability standards, which requires an efficiently controlled supply chain and internationally accepted business standards. At home, store lettuce in a plastic bag in the refrigerator crisper. Iceberg lettuce should be cored, rinsed lightly and drained thoroughly before storing. Lettuce should keep in the refrigerator for two to five days or more.

5.3 Packaging also plays a vital role in ensuring safe and efficient transport of a product and conforming to handling requirements, uniformity, recyclable materials specifications, phytosanitary requirements, proper storage needs and even attractiveness (for marketing purposes).

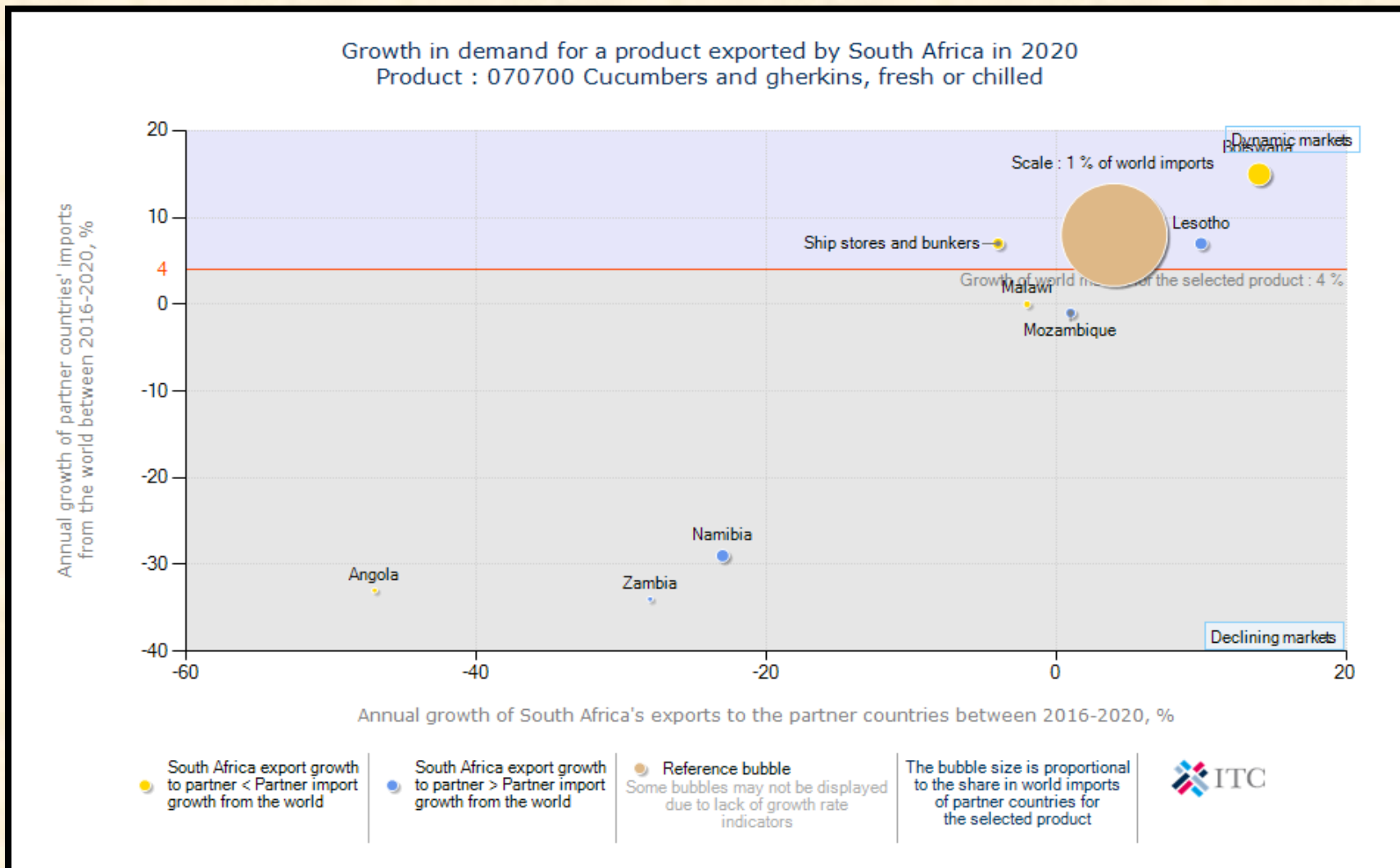
5.4 Storage and Conditioning for cucumber -The recommended storage temperature is 10° to 13°C at a relative humidity of 95%. Even under these conditions, cucumbers cannot be expected to keep satisfactorily for more than 2 to 3 weeks. Chilling injury develops rapidly at temperatures below 10°C, and above 13°C ripening and yellowing occur. Once pulled the cucumbers should be cooled as quickly as possible. Humidity should be kept high to prevent shrivelling. Cucumbers for a fresh market can be waxed or shrink-wrapped in polyethene film to minimize water loss. Holding cucumbers at higher temperatures will cause a rapid loss of green colour. Loss of colour will also occur more rapidly if held in the same room with apples, tomatoes or other ethylene producing crops.

Pickling cucumbers are normally stored for long periods in a brine solution. If, however, fresh pickles need to be stored or held for a short period before being processed or placed in brine tanks, the cucumbers should be cooled as rapidly as possible to 10°C. Hydro cooling has been used successfully to remove field heat.

6. COMPETITIVENESS OF SOUTH AFRICAN CUCUMBER EXPORTS

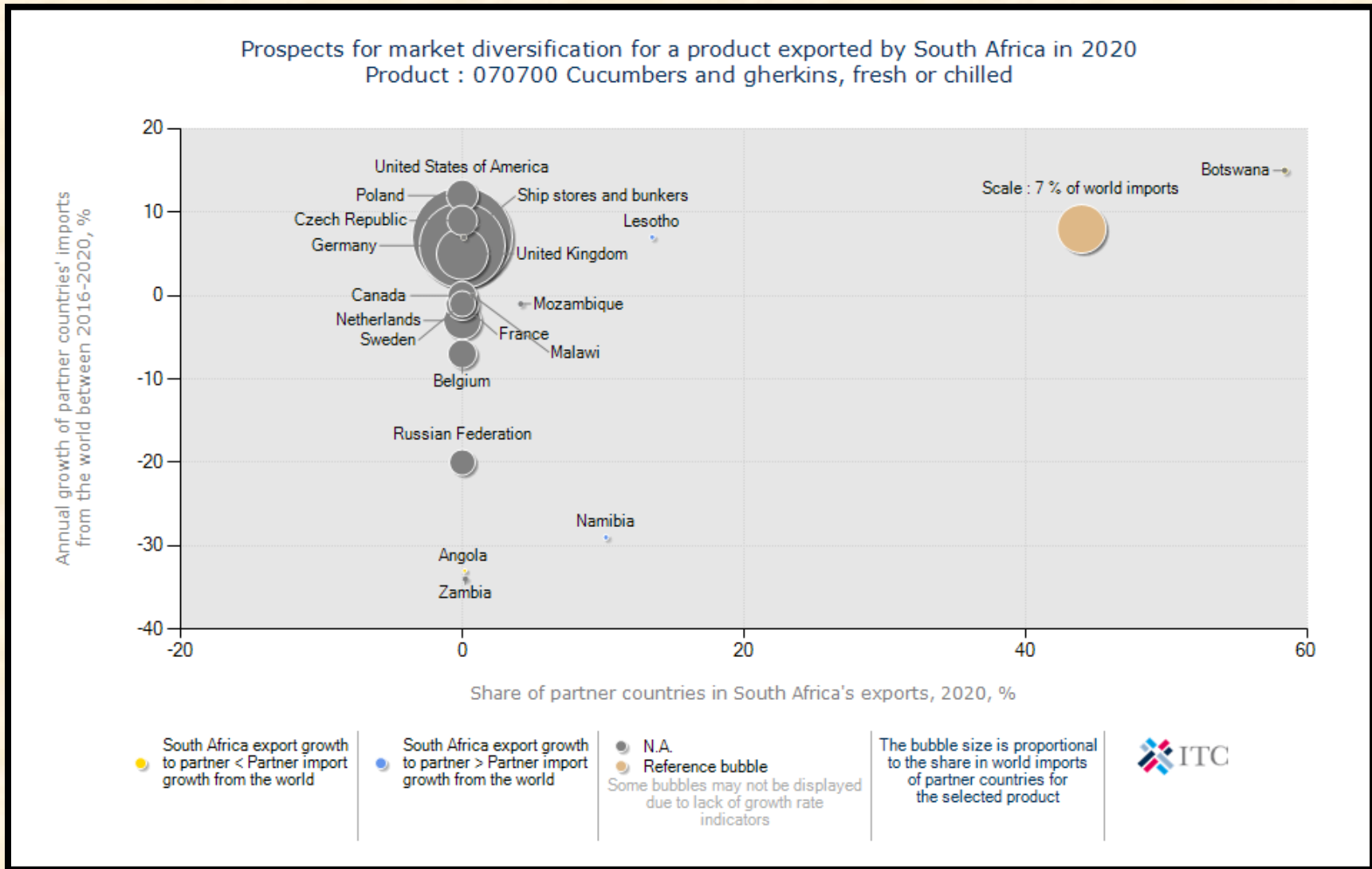
Figure 23 below shows that South Africa's cucumber exports to Lesotho are growing faster than the world imports. South Africa's performance is regarded as a gain in the dynamic market. South Africa's cucumber exports are growing slower than the world cucumber imports into Botswana and Malawi. South Africa has lost market share in these dynamic markets and South Africa's performance is regarded as underachievement. South Africa's cucumber exports to Mozambique, Zambia and Namibia are growing while world imports are declining into these countries. South Africa's cucumber exports are declining while world imports are growing into Angola.

Figure 23: Growth in demand for cucumbers exported by South Africa in 2020



Source: ITC Trade Map

Figure 24: Prospects for market diversification for cucumbers exported by South Africa in 2020



Source: ITC Trade Map

Figure 24 above illustrates that Botswana still holds the biggest share of South African cucumber exports. This country holds more than 58.4% share of South Africa's cucumber exports. Prospective export markets for cucumber from South Africa exist in the United States of America and Lesotho. Other small exports market exists in the United Kingdom and Germany. However, if South Africa is to diversify its cucumber exports the most lucrative market exist in Poland and Czech Republic which have increased their cucumber imports from the world by 12% and 9% respectively between 2016 and 2020 period.

7. ACKNOWLEDGEMENTS

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