

A PROFILE OF THE SOUTH AFRICAN GARLIC MARKET VALUE CHAIN

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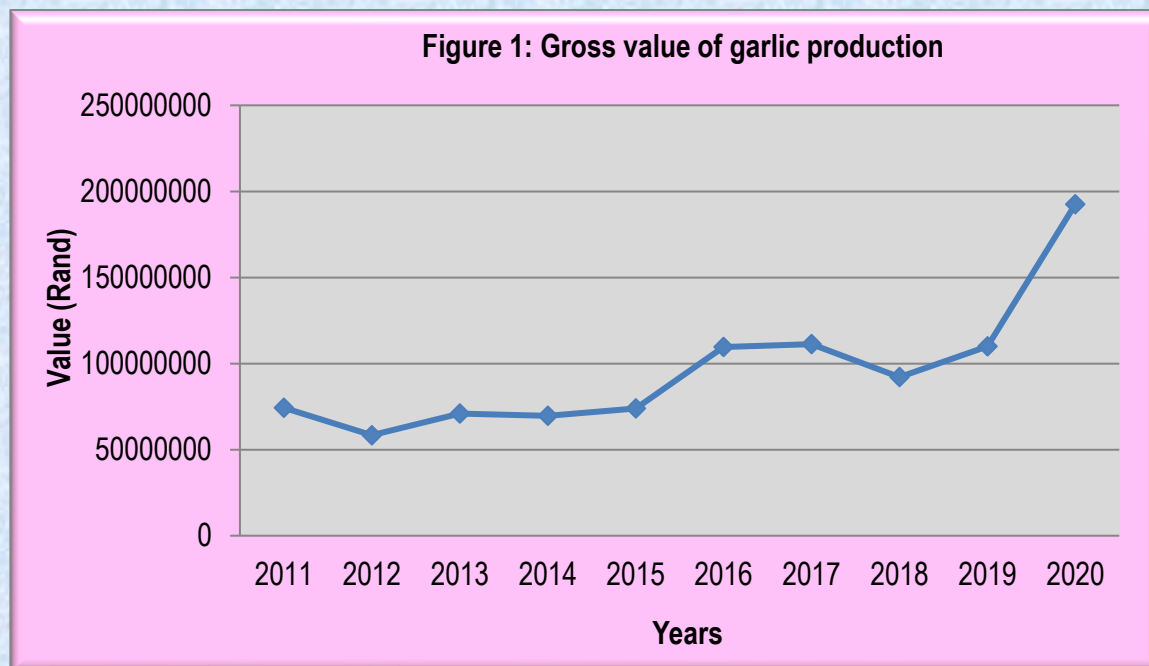
TABLE OF CONTENTS

1. DESCRIPTION OF THE INDUSTRY	3
1.1 Production Areas	4
2. MARKET STRUCTURE	5
2.1 Domestic market and prices	5
2.2 Exports	6
2.3 Share analysis	17
2.4 South African garlic imports	21
2.5 Processing	29
3. MARKET INTELLIGENCE	31
3.1 Tariffs	31
3.2 Non-tariff barriers	34
4. GENERAL DISTRIBUTION CHANNELS	36
5. LOGISTICAL ISSUES	36
5.1 Mode of transport	36
5.2 Cold chain management	37
5.3 Packaging	37
5.4 Storage	37
6. COMPETITIVENESS OF SOUTH AFRICAN GARLIC EXPORTS	37
7. BUSINESS OPPORTUNITIES AND CHALLENGES	39
7.1 Opportunities	39
7.2 Challenges	40
8. ACKNOWLEDGEMENTS	41

1. DESCRIPTION OF THE INDUSTRY

Garlic is a close relative of the onion, which includes leeks, chives and shallots. In size and growth habits, garlic resembles the onion. Garlic has a history of human use of over 7 000 years, and it is native to central Asia. Besides onion, garlic is the most important bulb crop grown almost all over South Asia. Garlic has been used throughout recorded history for both medicinal and culinary purposes. It is widely used for flavouring and seasoning dishes, pickles and sauces. While garlic is produced primarily for food favouring, its uses are also noted for qualities of furthering good health. Large amounts of garlic are produced in China and India. Garlic has become an increasingly popular vegetable in recent years among producers, marketers and consumers. Its long acclaimed nutritional and medicinal values are proving to be valid. Different branches of traditional medicine and scientific studies have pointed to garlic as an antibiotic agent, immunity booster, and blood pressure regulator. Garlic is often kept in oil to produce flavoured oil. However, the practice requires measures to be taken to prevent the garlic from spoiling. More people are discovering its culinary splendour, and producers have found garlic to be a potentially highly profitable crop.

Figure 1 presents the gross value of garlic production from 2011 to 2020.



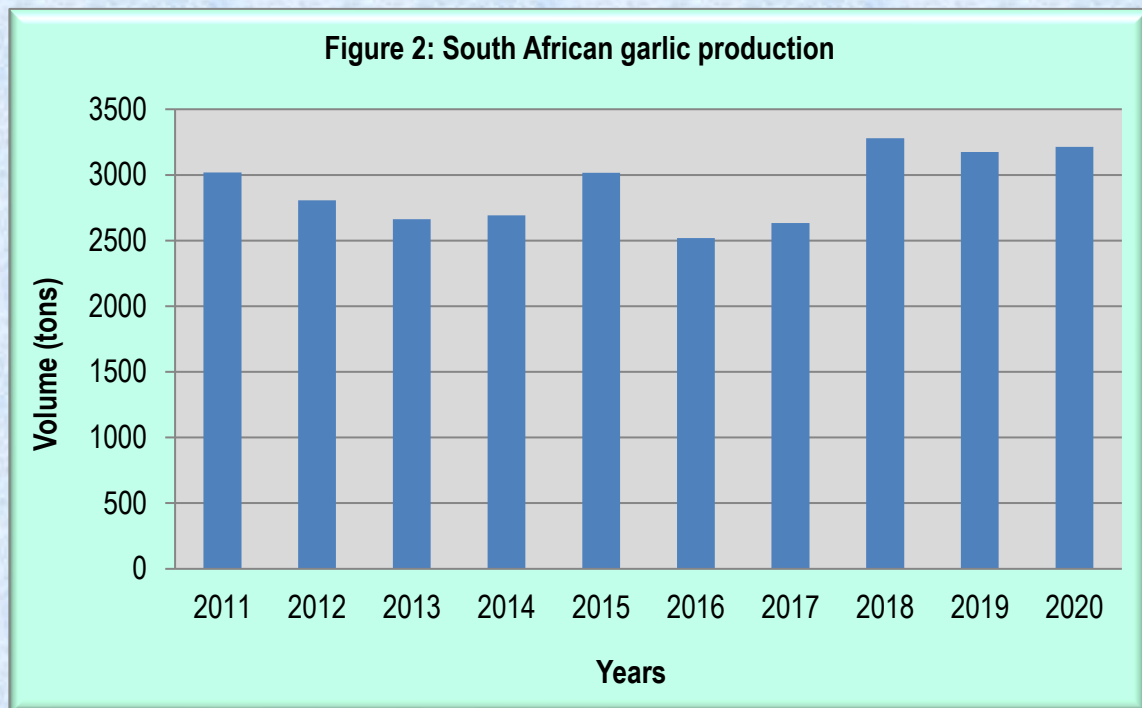
Source: Statistics and Economic Analysis, DALRRD

Figure 1 illustrates the garlic industry contribution to the agricultural gross value during ten years. In 2012, garlic industry contribution declined notably by 21% when compared to the 2011 contribution. This can be attributed to a drop in producer prices in the same production season. During 2013, garlic gross value increased by 21.3% when compared to 2012 gross value and this can be attributed to an increase in producer prices in the same year. In 2014, garlic gross value has dropped slightly by 1.9% in comparison to the 2013 gross value and this can be ascribed to a drop in producer prices during the same year. There was a 6% increase in garlic gross value during 2015 and this can be attributed to a 12% increase in the production output. There was a significant increase of 48% in

garlic gross value in 2016 when compared to 2015 gross value and this can be attributed to good producer price of garlic in the same year. During 2017, there was a slight increment of 1.6% in garlic gross value relative to 2016 gross value and this can be ascribed to a 4.6% increase in production output. As of 2018, South Africa garlic gross value fell notable by 17% in comparison to the 2017 gross value and this can be attributed to a drop in producer prices in the same season. During 2019, South Africa's garlic gross grew by 19.4% relative to 2018 gross value and this can be ascribed to high producer prices that occurred in the same year. As of 2020, South Africa's garlic gross value surged by 75% relative to 2019 gross value and this can be attributed to good consumer prices that occurred in the same year

1.1 Production Areas

As a general rule, conditions suitable for onion production are also suitable for garlic production. The highest quality garlic is produced in the cool, dry regions of South Africa. These production areas include Limpopo province in particular (Polokwane Plateau); North West province, Gauteng; northern, western and southern Free State province; part of KwaZulu Natal; the Western Cape province (in particular the Karoo); as well as parts of the Northern Cape (Douglas area). Globally, China is by far the largest producer of garlic, accounting for over 80% of world output. The second-largest producer is India, followed by Bangladesh, South Korea, Egypt, Spain, the United States of America, Algeria, Uzbekistan, Spain and Ukraine (FAOSTAT 2019). Egypt and Algeria are the only African countries in the top ten of world garlic producers. The total volumes of garlic produced in South Africa during the past ten years are depicted in Figure 2.



Source: Statistics and Economic Analysis, DALRRD

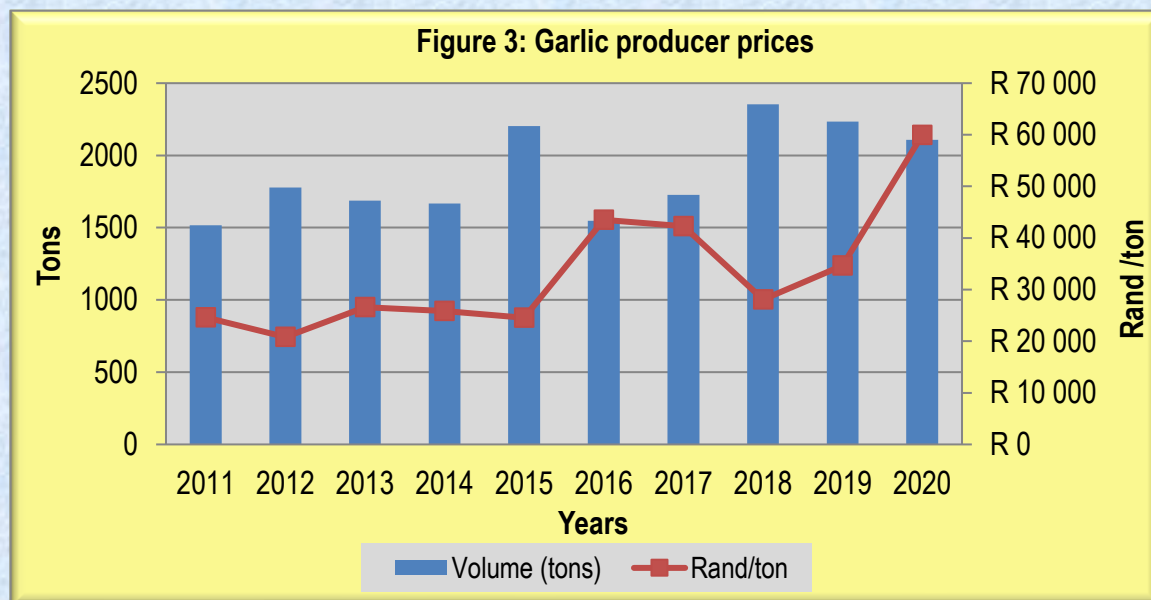
Garlic production has been fairly unstable during the period under review. In 2011 garlic production output was just above 3 018 tons. In 2012, garlic production output dropped slightly by 7% when compared to the 2011 production output. Production volumes dropped further by 5.1% in 2013, in comparison to the 2012 production output. During 2014, production output has gone up slightly by

1% in comparison to the previous year production output. In 2015, there was a 12% increment in production output, when compared to 2014 production output. Garlic production dropped by 16.5% during 2016 when compared to the previous year. In 2017, garlic production output rose by 4.6% in comparison to 2016 production output. As of 2018, there was a 24% increment in garlic production output relative to 2017 production output. As of 2019, South Africa garlic output declined slightly by 3.2% when compared to the previous year (2018) output. In 2020, there was a slight increase of 1.2% in South Africa's garlic output, when compared to 2019 output.

2. MARKET STRUCTURE

2.1 Domestic market and prices

In South Africa, garlic is sold through different marketing channels such as the National Fresh Produce Markets (NFPMs), hawkers, directly to the retailers, restaurants and processors. Garlic is marketed as a fresh product, dehydrated or as certified seed. It is also exported to other countries through export agents and marketing companies. Most of the commercial garlic production is grown under a contract between growers and buyers. South Africa has a limited market for garlic and consumes only 3 000 tons of garlic per annum. Figure 3 illustrates the volumes of garlic sold at the NFPMs as well as prices for garlic during the past ten years.



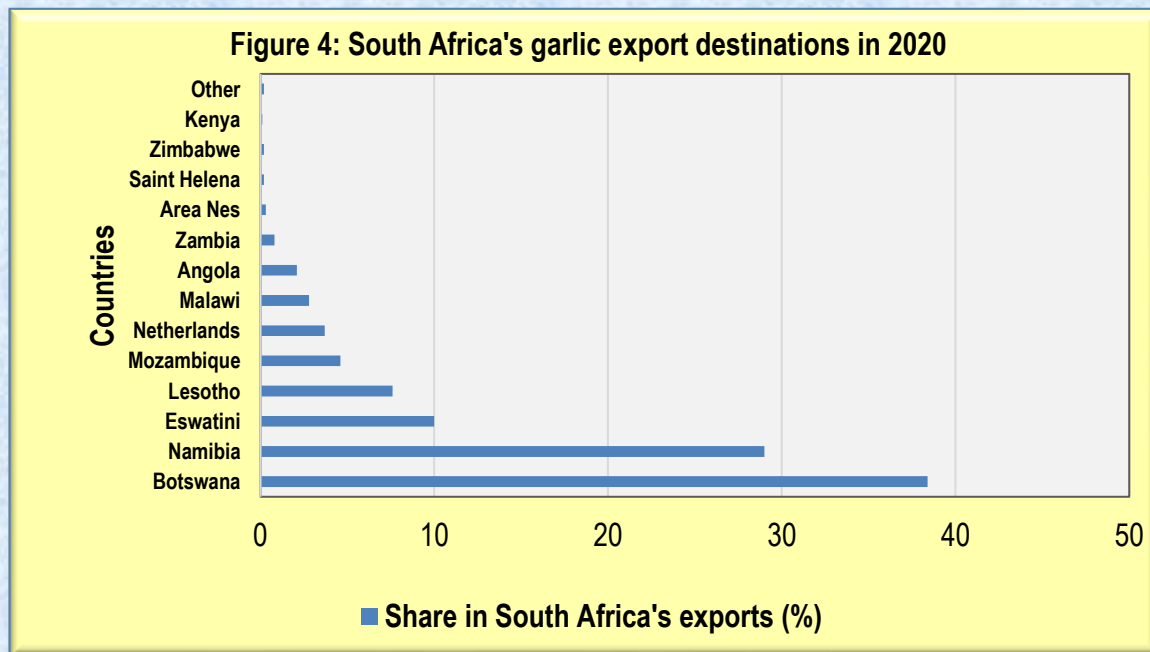
Source: Statistics and Economic Analysis, DALRRD

There were relative fluctuations in the volumes and prices of garlic sold in the major fresh produce markets. The general trend observed is that prices increase substantially when few volumes are supplied to the markets. During 2011, garlic supplied at the fresh produce market was just above 1 516 tons. During 2012, there was a 17% increase in garlic supplied across the markets and this resulted in a 15% drop in market price. Producer prices increased substantially by 27.9% during 2013 and this can be attributed to a slight decrease in garlic supplied at the market. Market price dropped further by 2.9% in 2014, despite a 1.2% drop in garlic volume supplied at the market and this can be ascribed to poor garlic demand in the same year. In 2015, there was a 32% increment in garlic volume supplied at the market and this resulted in a 5% decrease in market price. The was a

notable drop of 29.7% in garlic supplied at the market during 2016, as a result, the market price surged by 77% when compared to 2015 garlic price. In 2017, garlic volume supplied at the market rose by 11.65 and as a subsequent, the market price eased lower by 2.8% relative to the 2016 market price. During 2018, volume supplied at the market increased substantially by 36% and as a subsequent, the market price fell by 33% in comparison to the 2017 market price. As of 2019, garlic volume supplied at the market has dropped by 5% and as a result, the market price increased notably by 23% relative to the 2018 market price. During 2020, there was a 5.7% decrease in volume supplied at the market and as a subsequent, the market price surged by 76% relative to the 2019 price. This can be ascribed to the strong uptake of garlic in the same year.

2.2 Exports

South Africa is not a major garlic exporter. In 2020, South Africa garlic export still represents 0.1% of world exports for this product, and its ranking in world garlic exports is 26. South Africa has lost its competitiveness in terms of world garlic exports as in 2019, it was ranked number 26 in the world garlic exports. During 2020, South Africa exported garlic, mainly to the following countries: Botswana, Namibia, Eswatini, Lesotho, Mozambique, Netherlands, Malawi, Angola and Zambia. In 2020, Botswana with 38.4% was the main trading partner in garlic exports, followed by Namibia with 29%, Eswatini has recorded 10% of exports and Lesotho has received 7.6% of South Africa's export. China is ranked number one in the world garlic exporters (China is the largest garlic producer in the world) followed by Spain, Argentina, Netherlands, France, Italy, Chile and Egypt respectively. Figure 4 below; illustrate major destinations for South Africa's garlic exports in 2020.



Source: Trademap, ITC

Table 1 below indicates that in 2020, garlic exported to Botswana has increased to 38.4%, Namibia was second recipient with 29%, Eswatini has commanded 10% of exports and Lesotho has received 7.6% of South Africa's garlic exports. South African garlic exports to Botswana have increased by 47% in value between the 2019-2020 periods. South African garlic exports to Namibia have increased by 15% in value and the exports have dropped by 6% in quantity between 2016 and 2020.

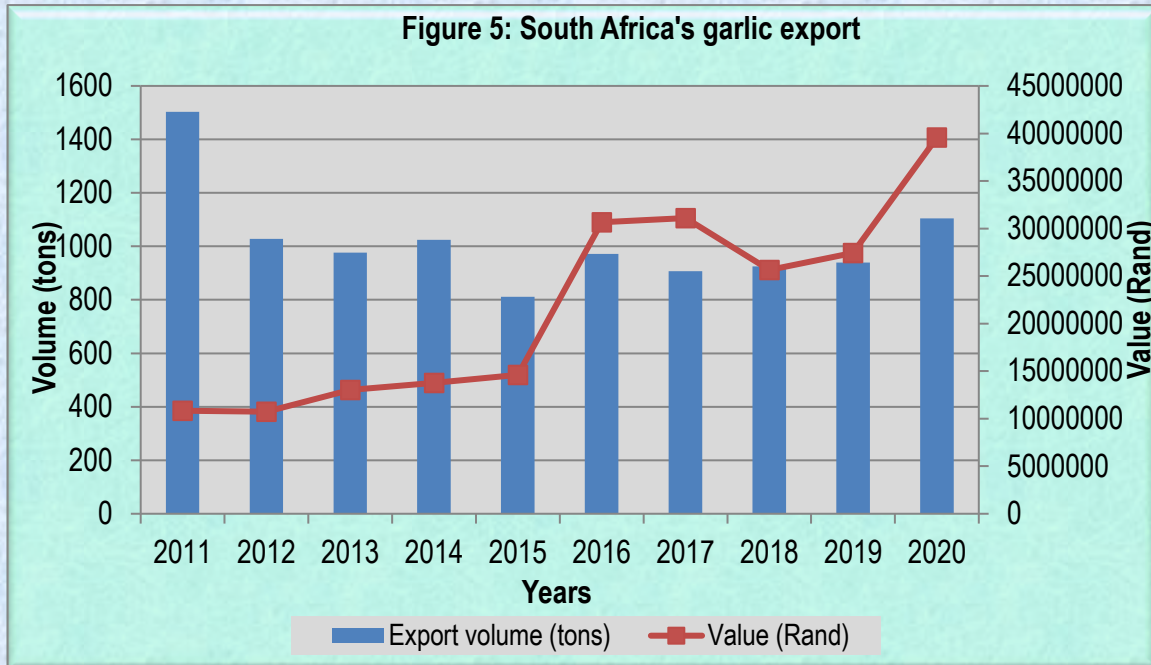
Garlic exports to Mozambique have increased by 26% in value and have gone up by 40% in quantity between 2016 and 2020.

Table 1: South Africa's garlic 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	2418	-6669	100	1106	1	3	27
Botswana	928	928	38.4	235	13	4	47
Namibia	702	702	29	275	15	-6	64
Eswatini	241	241	10	57	18	13	68
Lesotho	183	183	7.6	113	17	2	96
Mozambique	112	112	4.6	216	26	40	-43
Netherlands	90	90	3.7	23	0	-10	-10
Malawi	68	68	2.8	12	5	-2	5
Angola	51	51	2.1	139	-58	-12	274
Zambia	20	20	0.8	9	-22	-31	-72
Area Nes	7	7	0.3	23	75	101	55
Saint Helena	6	6	0.2	1	-7	-13	84
Zimbabwe	4	4	0.2	3	-47	-44	-44
Kenya	2	2	0.1	1			

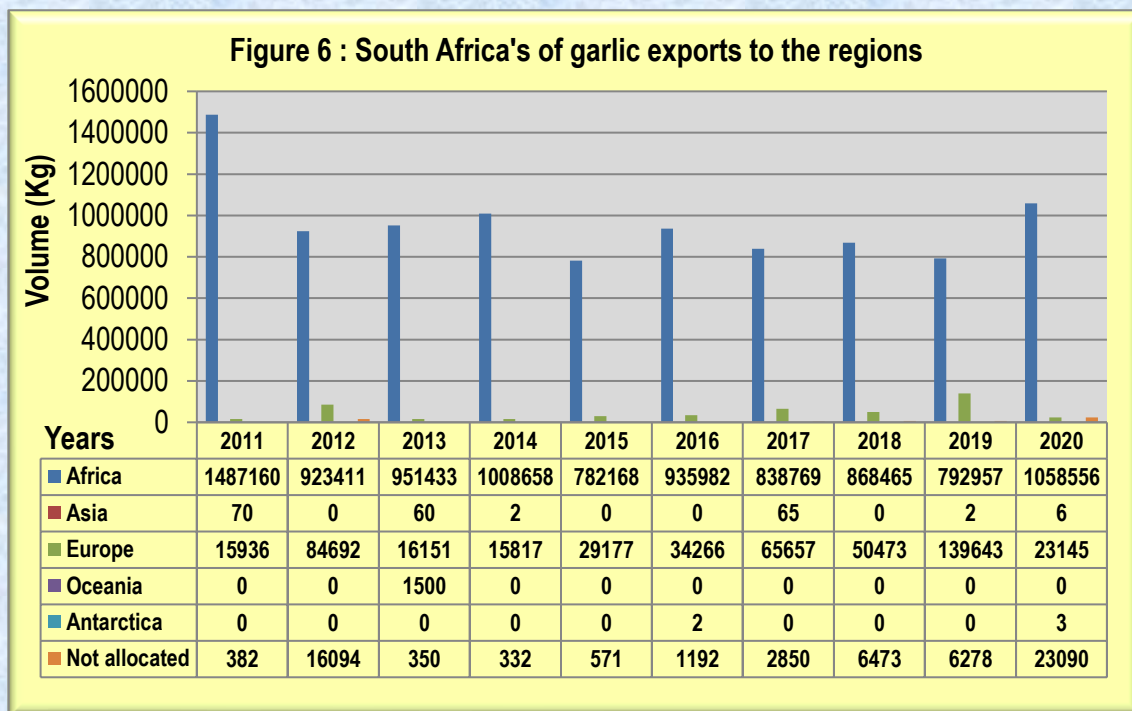
Source: Trademap, ITC

Figure 5 above illustrates garlic exports from South Africa over the past 10 years. In 2011, garlic exports were at a record high of 1 503 tons. In 2012, South Africa's garlic exports decreased by 32% when compared to the 2011 exports. During 2013, South Africa's garlic exports dropped further by 4.9%, which can be ascribed to a 5.1 % drop in domestic garlic output. Garlic exports increased slightly by 4.9% during 2014. There was a 20% decline in South Africa garlic export during 2015, despite a 12% increase in the domestic production output. In 2016, South Africa's garlic export increased notably by 19.6%, in comparison to the previous year garlic export. In 2017, South Africa's garlic export declined by 6.6% relative to the 2016 export volume. From 2009, 2013 to 2015, it was also more profitable to export garlic. It was notably more profitable to export garlic during 2016 when compared to other years. In 2017, it was more profitable to export garlic in comparison to the 2016 export value. As of 2018, South Africa garlic export dropped slightly by 1.9% and it was also less profitable to export relative to 2017 exports. Figure 6 below shows garlic exports to the various regions over the past ten years. During 2019, South Africa garlic export has increased slightly by 1.4% and it was more profitable to export garlic relative to the 2018 export value. As of 2020, South Africa's garlic export grew notably 17% when compared to 2019 export volume. It was relatively more profitable to the export of garlic when compared to the 2019 export value.



Source: Quantec Easydata

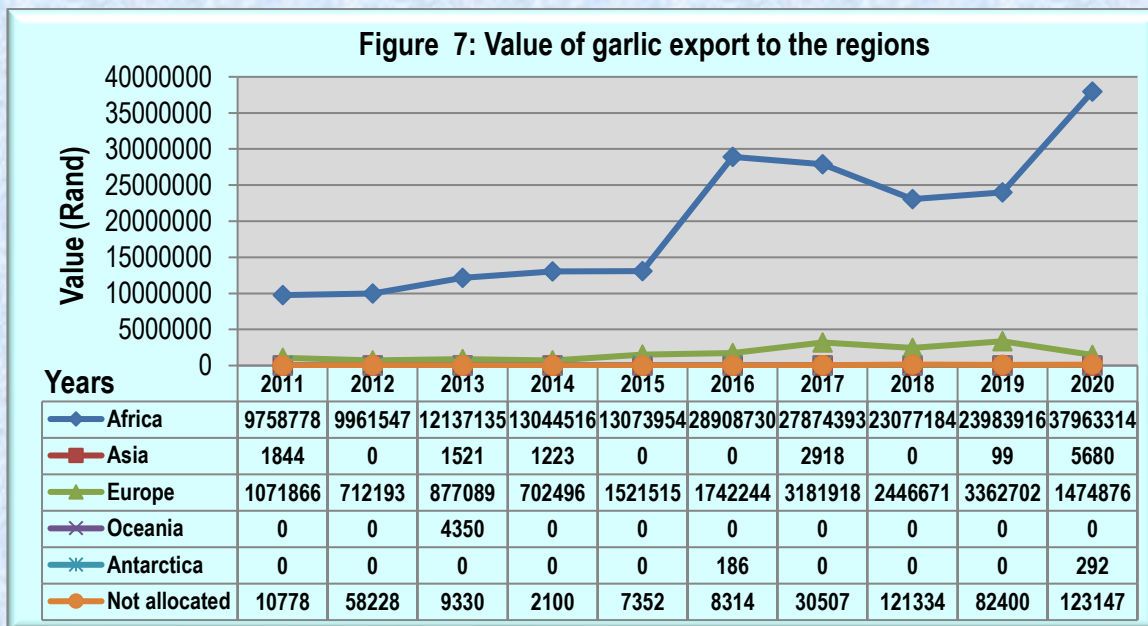
Figure 6 illustrates South Africa's garlic exports to the regions.



Source: Quantec Easydata

It is clear that; African region was the primary export market for garlic originating from South Africa from 2011 to 2020 period. South Africa also exported considerable amounts of garlic to European countries (mainly Switzerland and Netherlands). During 2011, garlic was mainly exported to the

African (Zimbabwe, Zambia, Angola, Mozambique and Malawi) and European regions (Belgium). During 2013, neighbouring African countries (Botswana, Namibia, Angola, Lesotho and Zimbabwe) continued to be the preferred market for garlic exports from South Africa. South Africa also exported considerable garlic to Oceania (Papua New Guinea) and the European (Switzerland and Netherlands) region. At the same time, a notable volume was exported to the Oceania region. In 2014 Africa and Europe remained the most preferred export markets for garlic originating from South Africa. South Africa export to Africa region has dropped by 22.4% during 2015, while the exports to the European region have increased by 84.5% in comparison to 2014 exports. Africa region is still the largest recipient of South Africa's garlic exports and during 2016, the export to this region grew by 19.7% when compared to 2015 exports. At the same time, garlic export destined to the Europe region has increased by 17%. In 2017, the Africa region has continued to be the primary export market for garlic export originating from South Africa however, the export volume has eased lower by 10%. In the same year, there was a notable increment in garlic exports destined to the European region, garlic export to Asia was trivial whilst the unallocated garlic export rose by 139% relative to 2016. As of 2018, the African region was still by far the primary export market for garlic exported from South Africa and approximately 90% of garlic was exported to this region. At the same time, a notable volume was exported to the European region and there was also an increase in unallocated garlic export. In 2019, Africa (Botswana, Mozambique, Namibia, Lesotho and Eswatini) and Europe (the Netherlands and Switzerland) regions were still the primary export market for garlic exports originating from South Africa. At the same time, the unallocated export has declined slightly by 3% relative to the 2018 export. As for 2020, Africa region was still by far the main recipient for garlic exports originating from South Africa and the export volume has increased by 33%, export destined to European region sharply declined by 83% whereas the unallocated exports were incomparably higher to 2019 volume.

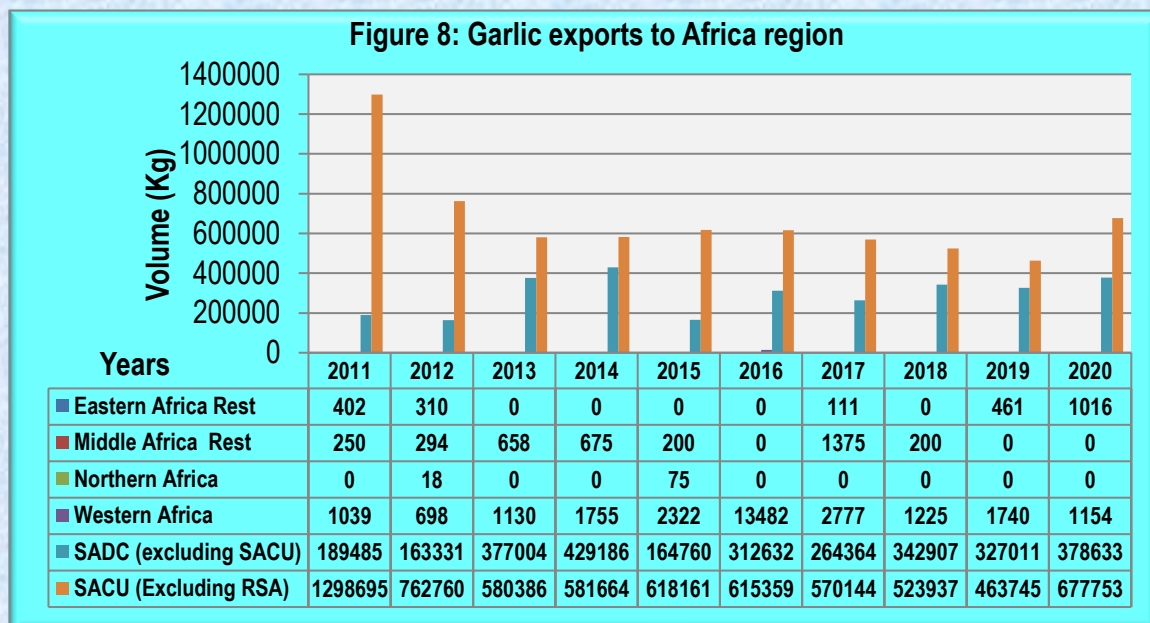


Source: Quantec Easydata

Figure 7 above illustrates the values of garlic exports to the regions. It was more profitable to export garlic to Europe than African region since high values were recorded for fewer volumes exported. High export values were recorded in '2011 for the European regions. During 2012, it was still more profitable to export garlic to the European region. During 2013, it was still more profitable to export

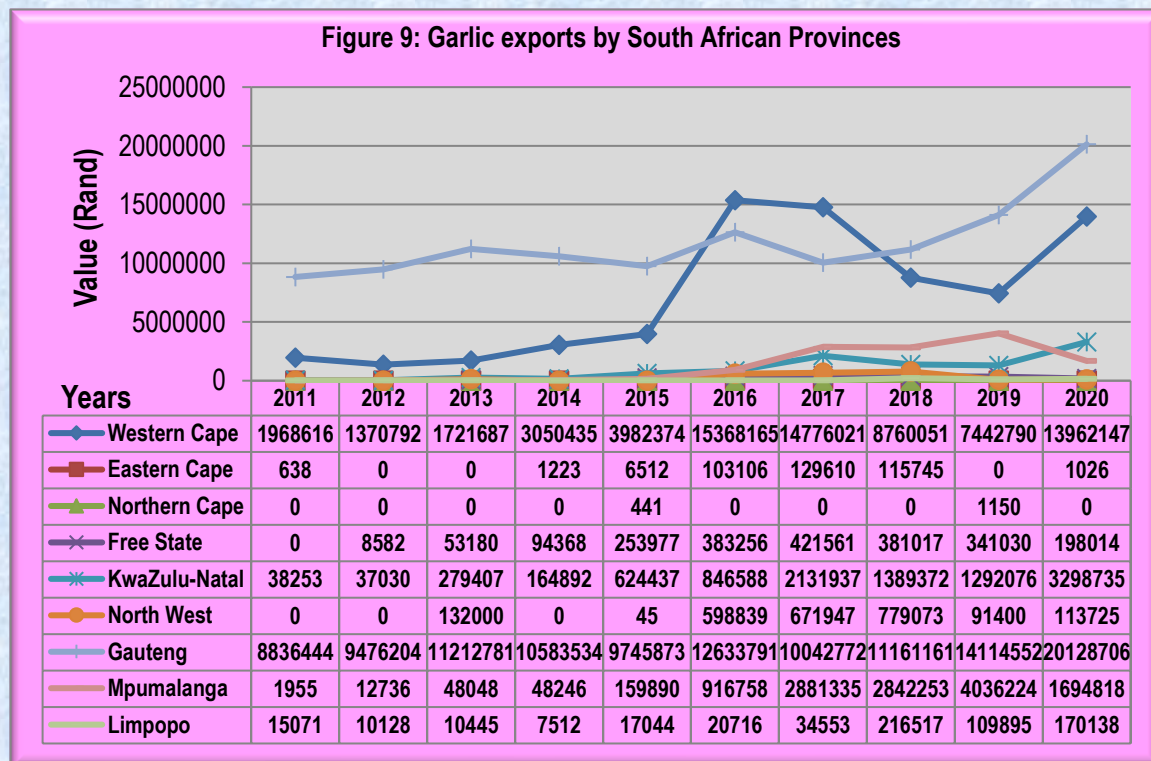
garlic to the European region and unallocated exports had high value. It was less profitable to export garlic to Africa and Asia regions. In 2014, Asia was the most profitable market, followed by Europe, while Africa was still the less profitable market for garlic from South Africa. In 2015 and 2016, Europe was still by far the most profitable market and garlic export destined to Africa region had a lower export value, whilst Antarctica export value was insignificant. Europe has continued to be the most profitable market for garlic exported from South Africa followed by the Africa region, whilst unallocated exports had lesser value. As of 2018, Europe was by far the most profitable market for garlic originating from South Africa and exports to Africa region was less profitable. In 2019, it was more profitable to export garlic to the African region, followed by the European region whereas the unallocated export has registered a lower export value. As of 2020, Europe was still the profitable market for garlic originating from South Africa, whilst exports to Africa had lower value.

Figure 8 below shows the volume of garlic exports destined to Africa region. SADC countries and SACU countries are the primary export markets for garlic originating from South Africa. High garlic volumes were exported to SACU region during 2011. There was a notable increase in garlic volume exported to the SADC region in 2013 and 2014. Garlic export to SACU countries (Botswana, Namibia and Lesotho) has increased while the export to SADC (Zimbabwe, Mozambique, Angola and Malawi) has notably dropped. At the same time, the garlic export destined to West Africa has also increased. In 2016, SADC and SACU countries are still the largest recipients of garlic from South Africa and exports to Western Africa has also notable increased. During 2017, SACU and SADC countries have remained the primary destinations for garlic exports from South Africa, while the export destined to West Africa, Middle Africa and Eastern Africa were less significant. As of 2018, SACU region has commanded more than 64% of garlic export destined for Africa region and export to SADC region increased by 29.7% relative to 2017 exports. During 2019, SACU and SADC countries were still the primary export market for garlic exported from South Africa. The exports to Eastern Africa and Western Africa were less significant. As of 2020, SACU countries remained the primary recipient of garlic from South Africa and the export volume grew by 46% and export destined to the SADC region increased by 15% relative to 2019 volume. At the same time, exports to Eastern Africa and Western Africa were less significant.



Source: Quantec Easydata

Figure 9 illustrate garlic exports by South African Provinces

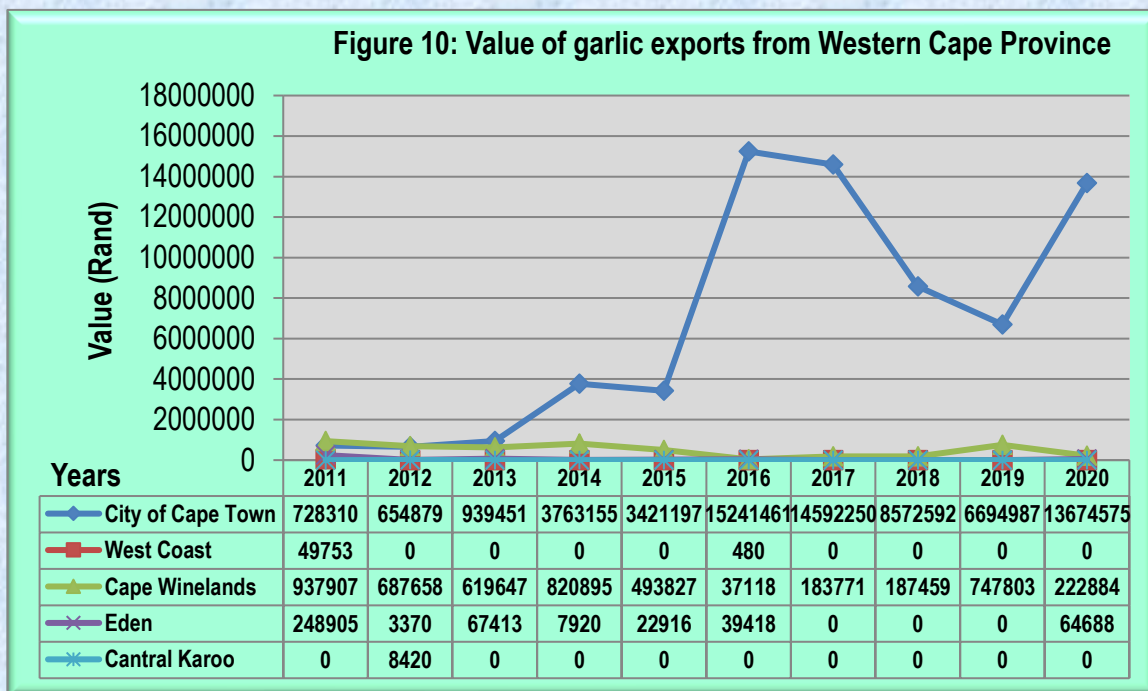


Source: Quantec Easydata

Figure 9 above shows that in 2011 and 2012, Western Cape, Gauteng were the primary exit points for garlic export originating from South Africa. At the same time, KwaZulu Natal, Mpumalanga and Limpopo have contributed to a lesser extent. In 2013, Gauteng export value grew by 18% and Western Cape export increased notably by 25% when compared to 2012 export value. In 2014, KwaZulu Natal, Free State, North West, Mpumalanga and Limpopo have contributed notably to South Africa's garlic exports. As of 2016, there was a surge in Western Cape and Gauteng garlic export values. In the following year (2017), there was a notable drop in Western Cape and Gauteng garlic export values. At the same year, Mpumalanga, KwaZulu Natal and Eastern Cape export values have surged relative to 2016 export values. In 2018, Gauteng and Western Cape were still by far the primary exit point for garlic exported from South Africa, North West and Limpopo export values have notably increased. As of 2019, there was a surge in Gauteng and Mpumalanga export values whilst Western Cape export value has declined by 15% relative to 2018 export value. During 2020, Western Cape and Gauteng remained the primary exit points for garlic exports from South Africa and the export values have increased by 87% and 42% respectively. At the same time, KwaZulu Natal export value surged by 155% and Mpumalanga export value declined sharply by 58% when compared to 2019 export value.

As can be seen from the above figure 10, garlic exports from Western Cape province were mainly from the City of Cape Town municipality, Cape Winelands and Eden district has contributed to a lesser extent. Higher exports from the City of Cape Town can be attributed to the Cape Town harbour, which renders an export exit point. During 2011, Cape Winelands, the City of Cape Town and Eden district were the main exit point for garlic export. In 2012, export values for the City of Cape, Cape Winelands and Eden have dropped. As of 2013, The City of Cape Town continued to lead in garlic

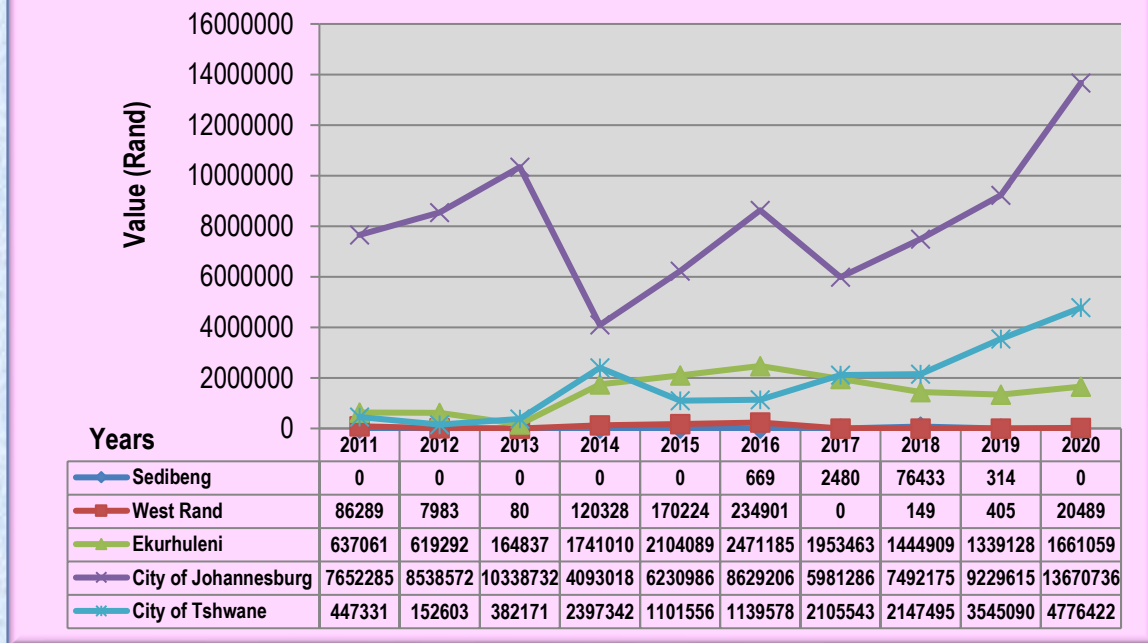
exports from Western Cape and at the same time Cape Winelands export value has slightly dropped. Eden district has substantially increased its garlic export value. City of Cape Town has recorded the highest export value during 2014. Cape Winelands has also increased its export value, whereas Eden export value has significantly dropped. During 2015, there was a notable decline in garlic export values recorded for the City of Cape Town and Cape Winelands, while the Eden export value has notably increased. City of Cape Town garlic export value surged in 2016, while Cape Winelands garlic export value has significantly dropped when compared to 2015 export values. At the same time, Eden garlic export value increased slightly while West Coast has recorded a trivial export value. During 2017, City of Cape Town was still by far the primary exit point for Western Cape garlic export however, the export value eased lower by 4% relative to the 2016 export value. In the same year, Cape Winelands garlic export value was incomparably higher compared to the 2016 value. As of 2018, City of Cape Town export value dropped further by 41%, whereas Cape Winelands export value increased by 2% relative to 2017 export. In 2019, City of Cape Town was still the primary exit point for Western Cape garlic exports however, the garlic export value declined by 21.9% and Cape Winelands export value surged relative to the 2018 export value. As of 2020, City of Cape Town garlic export value surged, Cape Winelands export value declined sharply by 70% and Eden garlic export value was less significant.



Source: Quantec Easydata

Figure 11 illustrates the value of garlic exports from Gauteng province.

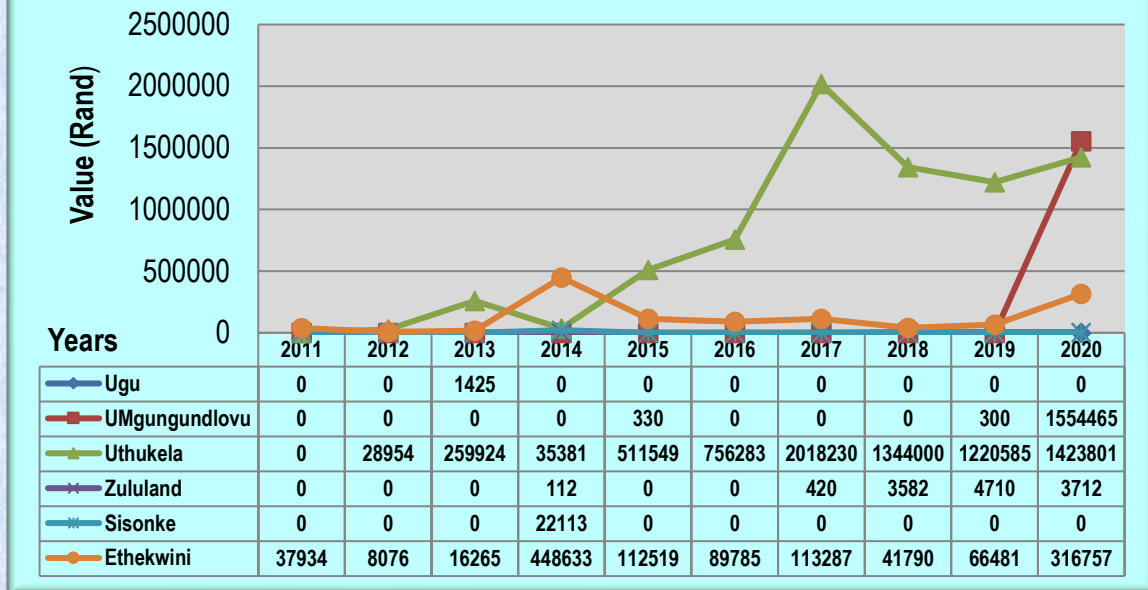
Figure 11: Value of garlic exports from Gauteng Province



Source: Quantec Easydata

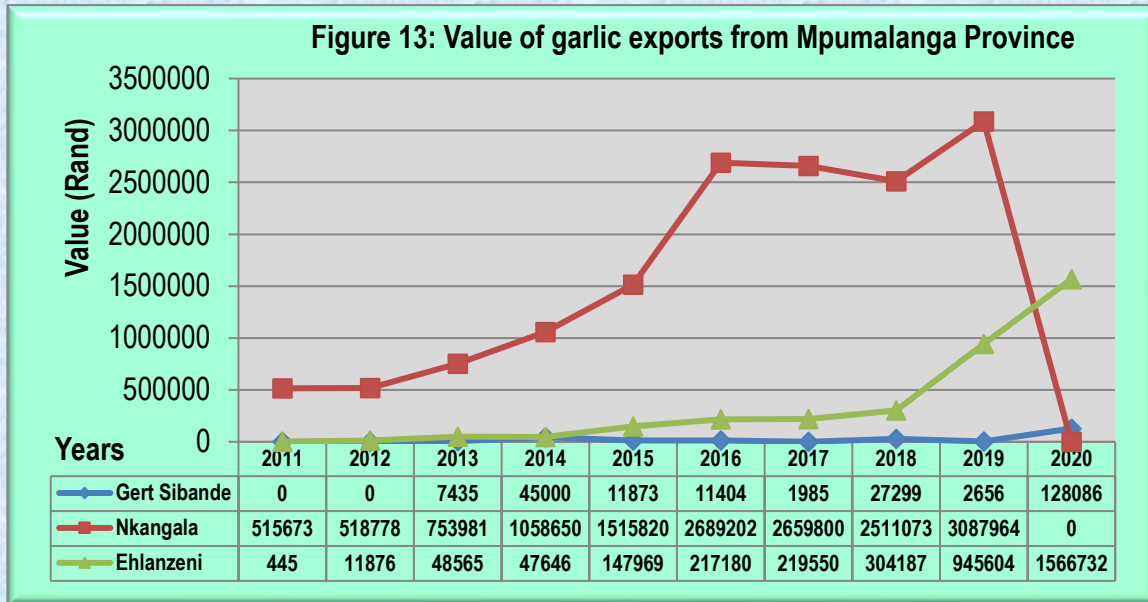
Figure 11 above shows that garlic exports from Gauteng province were mainly from the City of Johannesburg, City of Tshwane and Ekurhuleni. In 2011, City of Johannesburg, Ekurhuleni, City of Tshwane and West Rand were the primary exit point for Gauteng garlic export. In 2012, export values for West Rand, and City of Tshwane have significantly dropped when compared to 2011 export values. The highest export value for Gauteng province was recorded in 2013 and it was through the City of Johannesburg municipality. In 2014, West Rand, Ekurhuleni and City of Tshwane garlic export values have substantially increased their export values when compared to the previous year. In the same year, City of Johannesburg export values has notably dropped. City of Johannesburg, Ekurhuleni and West Rand export values has notably increased in 2015, while the City of Tshwane export value has dropped when compared to the 2014 export values. During 2016, City of Johannesburg export value increased by 38%, City of Tshwane garlic export value has gone up by 3.4% and Ekurhuleni export value has gone up by 17% in comparison to the 2015 export values. City of Johannesburg was still the main exit point for Gauteng garlic exports in 2017 however, the export value notably eased lower by 34%. In the same year, Ekurhuleni export value has decreased by 20.9% whilst City of Tshwane export value has sharply increased by 85% relative to the 2016 export value. As of 2018, City of Johannesburg export value has experienced a sharp increase of 25%, Ekurhuleni export value declined by 26%, whilst West Rand export value was incomparably higher relative to the 2017 export value. In 2019, City of Johannesburg was still the primary exit point for Gauteng garlic export and the export value grew by 23%, City of Tshwane export value increased by 65% and Ekurhuleni export value declined by 7% relative to 2018 export values. As of 2020, City of Johannesburg and City of Tshwane garlic export values have surged, Ekurhuleni export value increased notably 24% relative to 2019 export value.

Figure 12: Value of garlic export from KwaZulu Natal province



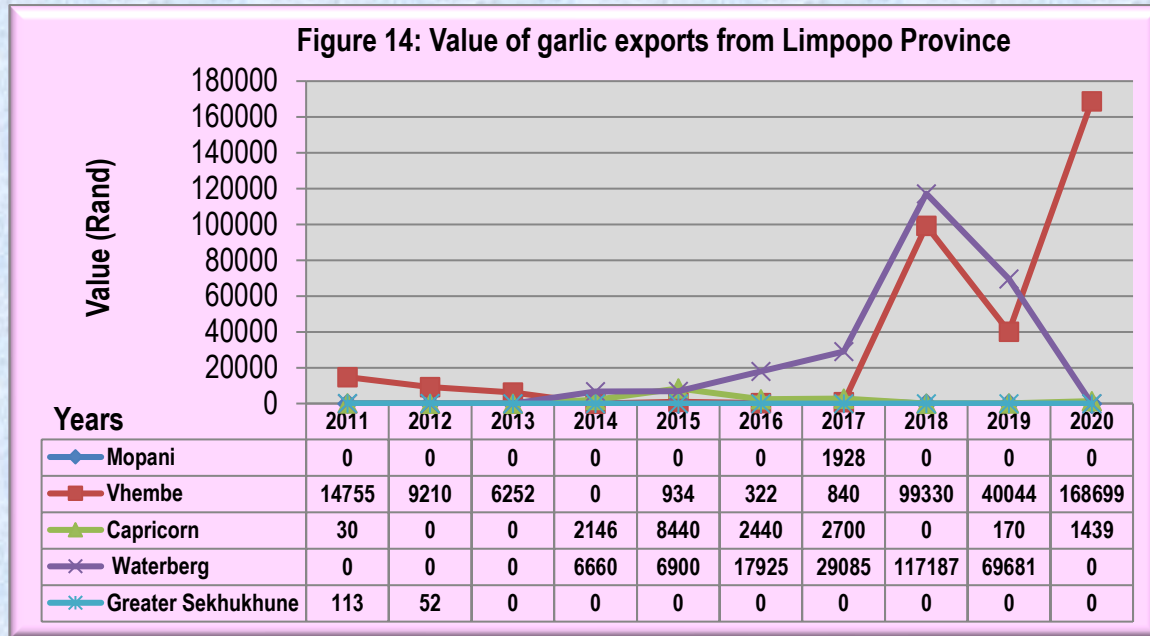
Source: Quantec Easydata

As can be seen from figure 12 above, garlic exports from the KwaZulu Natal province were mainly from the Ethekewini district municipality. In 2011 garlic, export was only from Ethekewini district municipality. During 2012, Uthukela was a leading municipality in terms of garlic exports from KwaZulu Natal, while the exports by Ethekewini have significantly dropped in the same year. In 2013, Uthukela municipality was still the main contributor in garlic export from KwaZulu Natal province and in the same year, Ethekewini export value has notably increased. During 2014, Ethekewini has recorded the highest export in the KwaZulu Natal province and the export value for Uthukela has significantly dropped when compared to the export value of the previous year. In the same year, Sisonke and Zululand contributed to KwaZulu Natal garlic exports for the first time in ten years but Zululand export value was insignificant. Uthukela district has contributed to KwaZulu Natal garlic export during 2015, while Ethekewini export value has significantly dropped by 74.8% when compared to 2014 figures. In 2016, Ethekewini garlic export value dropped further by 20.2%, whereas, Uthukela export value increased to 47.8% when compared to the previous year exports. During 2017, Uthukela district was the primary exit point for KwaZulu Natal garlic exports, followed by Ethekewini and Zululand has recorded a trivial export value. As of 2018, Uthukela was still the primary exit point for KwaZulu Natal garlic export however, the export value was down by 33% and Ethekewini export value declined by 63% when compared to the 2017 export value. During 2019, Uthukela was the primary exit for KwaZulu Natal garlic export however the export value declined by 9% and Ethekewini export value has notably increased by 59% relative to 2018 value. As of 2020, UMgungundlovu was the main exit point for KwaZulu Natal garlic export, followed by Uthukela and Ethekewini export value has surged when compared to 2019 export value.



Source: Quantec Easydata

Figure 13 above shows that garlic exports from Mpumalanga province garlic export were mainly from Ehlanzeni district municipality. In 2012, the province has recorded a notable export value. During 2013, Ehlanzeni export value was incomparably higher, when compared to the 2011 export value. In 2014, Ehlanzeni garlic export value has gone up by 26% in comparison to the 2013 export value and the export was a record high for the Mpumalanga province. Ehlanzeni export value has surged during 2015 and Gert Sibande has contributed for the first time to Mpumalanga garlic export. High garlic export value can be attributed to export destined to the neighbouring Eswatini. In 2016, Nkangala has significantly contributed to Mpumalanga garlic exports, Ehlanzeni garlic export increased by 49% whilst Gert Sibande export value has dropped by 3.9% in comparison to 2015 export values. During 2017, Nkangala has continued to contribute largely to Mpumalanga garlic export and Ehlanzeni export value has slightly increased by 1%, whilst Gert Sibande export value has drastically dropped by 82.5%. As of 2018, Nkangala export value decreased slightly by 5%, Ehlanzeni export value was up marginally by 38.5% and Gert Sibande has contributed significantly to Mpumalanga export value. In 2019, Gert Sibande and Ehlanzeni garlic exports have surged, while Nkangala district has recorded zero garlic trade. As of 2020, Ehlanzeni and Gert Sibande districts were the primary exit point for Mpumalanga garlic export, whilst Nkangala has recorded a zero garlic trade.

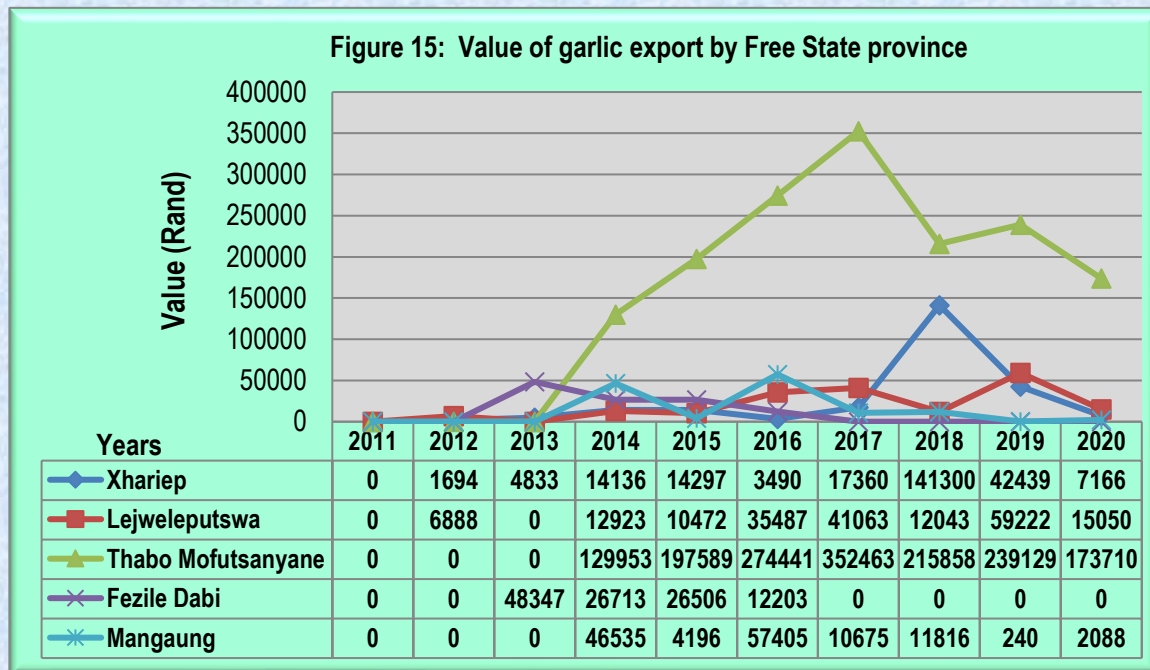


Source: Quantec Easydata

Figure 14 above illustrates that garlic export from Limpopo province was mainly from Vhembe district. In 2011, Vhembe has contributed notably to Limpopo provincial garlic export, whereas Capricorn and Greater Sekhukhune export values were insignificant. In 2012 and 2013, export value for Vhembe has notably dropped. During 2014, Limpopo province has exported garlic through Capricorn and Waterberg districts. In 2015, Capricorn and Waterberg district has recorded an increment in garlic export values in comparison to 2014 values. During 2016, Waterberg garlic export surged, Capricorn garlic export value has notably dropped by 71%, while Vhembe has recorded a trivial export value. In 2017, Waterberg district was the main exit point for Limpopo garlic exports and the export value has increased by 62%. In the same year, Mopani has contributed for the first time to Limpopo garlic export and Capricorn export value has increased by 12%. During 2018, Waterberg and Vhembe districts were the primary exit points and the export values were incomparably higher when compared to 2017 export values. As of 2019, Limpopo garlic was exported through Vhembe and Waterberg districts however the export values have declined by 40% and 59% respectively. Vhembe was still the primary exit point for Limpopo garlic export and Capricorn has recorded a trivial export value.

Figure 15 below shows Free State garlic exports during ten years. In 2011, the province has recorded a zero trade for garlic. During 2012, Free State province exported garlic through Xhariep and Lejweleputswa district municipalities. As of 2013, a high export value was recorded for Fezile Dabi while Xhariep export value was less significant. In 2014, Thabo Mofutsanyane has recorded the highest value for garlic exports value from Free State. In the same year, garlic was also exported through Mangaung, Fezile Dabi and Xhariep. During 2015, Thabo Mofutsanyane has recorded a 52% increment in garlic export value, while Mangaung export value has notably dropped. Thabo Mofutsanyane continued to lead in Free State provincial garlic export and in 2016, the export value has increased by 38.8%. In the same year, Mangaung and Lejweleputswa have also increased their garlic export values while Xhariep and Fezile Dabi export values have experienced a notable decrement. During 2017, Thabo Mofutsanyane was still the primary exit point for garlic export from Free State province and the export value has gone up by 28%. At the same time, Xhariep, Lejweleputswa export values have increased whilst Mangaung district has experienced a notable decline. As of 2018, Lejweleputswa was still the main exit point for Free State garlic exports however,

the export value fell marginally by 70%, Thabo Mofutsanyane export value dropped by 38%, Mangaung export value rose by 10%, whereas Xhariep export value was incomparably higher when compared to 2017 export value. During 2019, Thabo Mofutsanyane was still the primary exit point for Free State garlic export and the export share grew by 10%, Lejweleputswa export share surged, whilst Xhariep and Mangaung export share have declined by 69% and 97%. As of 2020, Thabo Mofutsanyane was still the primary exit point for Free State provincial garlic export however, the was an overall decline in garlic exports from this Province.



Source: Quantec Easydata

2.3 Share analysis

Table 2 below illustrates the provincial shares of garlic exports total South African garlic exports for the past ten years. The trend indicates that Gauteng, followed by Western Cape provinces have commanded the greatest share of garlic exports originating from South Africa during the period under review. North West, Limpopo and Northern Cape also produce garlic, but their export share is less significant because of the province's lack of marketing infrastructure, registered exporters and Agro logistics. The Western Cape, Gauteng and KwaZulu Natal provinces have the advantage of being located near exit points and the registered exporters are based in these provinces. In 2011, Gauteng province has commanded 81.37% and Western Cape has registered 18.12% of South Africa's garlic exports. During 2012, Gauteng continued to increase its share to 86.83%, while the Western Cape province dropped its export share to 12.48%. In 2013, North West province commanded 1.01% of South Africa's provincial garlic exports shares for the first time during the 10 years. During 2014, garlic export share for KwaZulu Natal, Western Cape and Free State have increased whereas, Gauteng export share has dropped to 60.74% share. The increased share for Free State, Mpumalanga and North West can be attributed to increased garlic exports to Lesotho, Swaziland and Botswana. In 2015, Gauteng export share has increased to 65.79%, KwaZulu Natal has recorded 4.28%, while Western Cape export share has dropped to 26.97%. In the same year, there was a slight increment in Eastern Cape, Free State, Mpumalanga and Limpopo export shares. Western Cape increased notably its garlic export share to 49.97% during 2016, whereas Gauteng

garlic export share has significantly dropped to 40.69%. At the same time, North West and Mpumalanga province has experienced notable gains in their garlic export shares, whilst Free State KwaZulu Natal has experience decrement in garlic export shares. In 2017, Western Cape has commanded 47.53%, Gauteng export share has dropped to 32.30%, KwaZulu Natal export has gone up to 6.86% and Mpumalanga has commanded 9.27% of garlic export share. As of 2018, Gauteng was in the lead in South Africa's garlic export and it has commanded 43.52%, Western Cape export share declined to 34.16%, Mpumalanga export share increased slightly to 11.08% and KwaZulu Natal has recorded 5.42% share. In 2019, Gauteng has increased its export share to 51.46%, Western Cape export share dropped to 27.13% and Mpumalanga export share increased slightly to 14.72% relative to 2018 export shares. As of 2020, Gauteng garlic export share dropped to 50.87%, Western Cape export share increased to 35.29%, KwaZulu Natal export share grew to 8.34% and Mpumalanga garlic export share declined to 4.28% compared to 2019 export share.

Table 2: Share of provincial garlic exports to the total RSA garlic exports (%)

Year Provinces	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Western Cape	18.12	12.56	12.79	21.87	26.93	49.78	47.53	34.16	27.13	35.29
Eastern Cape	0.01	0	0	0.01	0.04	0.33	0.42	0.45	0	0
Free State	0	0.08	0.40	0.68	1.72	1.24	1.36	1.49	0	0.50
KwaZulu-Natal	0.35	0.35	2.13	3.68	4.28	2.76	6.86	5.42	4.71	8.34
North West	0.00	0	1.01	0	0	1.95	2.16	3.04	0.33	0.29
Gauteng	81.37	86.83	83.55	60.74	65.79	40.69	32.30	43.52	51.46	50.87
Mpumalanga	0.02	0.12	0.37	0.44	1.08	2.98	9.27	11.08	14.72	4.28
Limpopo	0.14	0.09	0.05	0.06	0.11	0.07	0.11	0.84	0.40	0.43
RSA	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 3: Share of district garlic exports to the total Western Cape provincial garlic exports (%)

Year District	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
City of Cape Town	37.07	48.66	57.76	81.95	86.88	99.50	98.76	97.86	89.95	97.94
West Coast	2.53	0	0	0	0	0	0	0	0	0
Cape Winelands	47.73	51.09	38.10	17.88	12.54	0.24	1.24	2.14	10.05	1.60
Eden	12.67	0.25	4.14	0.17	0.58	0.26	0	0	0	0.46
Western Cape	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 3 above indicates that the City of Cape Town and Cape Winelands have commanded the greatest share of garlic exports from Western Cape province. In 2011, Cape Winelands has registered 47.73%, City of Cape Town commanded 37.07% and Eden commanded 12.67% of Western Cape provincial garlic export. In 2012, City of Cape Town and Cape Winelands increased their export share while Eden export share has dropped from 12.67% to 0.25% share. During 2013, City of Cape Town contributed 57.76% share of garlic export from Western Cape and Cape Winelands has commanded a 38.10% export share. At the same time, the export share for Eden has slightly increased its export share. In 2014, City of Cape Town export share has notably increased

from 57.76% to 81.95% share whereas Cape Winelands export share has dropped to 17.88%. During 2015, City of Cape Town has continued to command high export values, while Cape Winelands export has decreased to 12.54%. Cape Town harbour renders an exit point for garlic exports from Western Cape province. City of Cape Town has advanced its garlic export share and in 2016, it has recorded a 99.50% share of Western Cape garlic export whereas Cape Winelands export share decreased from 12.54% to 0.24%. During 2017, City of Cape Town has continued to lead in Western Cape garlic export share by commanding 98.76% share and Cape Winelands has increased slightly to 1.24% share. In 2018, City of Cape Town garlic export share declined slightly to 97.86% and Cape Winelands has commanded a 2.14% share of exports. As of 2019, City of Cape Town export share declined slightly to 89.95% whereas Cape Winelands export share has increased to 10.05% share. During 2020, City of Cape Town garlic export share grew to 97.94%, Cape Winelands and Eden have commanded insignificant export shares

Table 4: Share of district garlic exports to the total KwaZulu Natal provincial garlic exports (%)

Year District	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Ugu	0	0	0.51	0	0	0	0	0	0	0
UMgungundlovu	0	0	0	0	0.1	0	0	0	0.01	47.12
Uthukela	0	78.19	93.63	6.99	81.93	89.39	94.67	96.7	47.23	43.16
Zululand	0	0	0	0.02	0	0	0.02	0.26	0.18	0.11
ILembe	0	0	0	0	0	0	0	0	0	0
Sisonke	0	0	0	4.37	0	0	0	0	2.57	0
Ethekwini	100	21.81	5.86	88.62	18.02	10.61	5.31	3.00	50.00	9.60
KwaZulu Natal	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 4 shows that Ethekwini district commanded the greatest share of garlic exports from KwaZulu the Natal province. In 2011, Ethekwini has commanded a 100% share of garlic export value exported in KwaZulu Natal province. During 2012, Uthukela commanded a 78.19% share of garlic export value while the Ethekwini export share has dropped significantly when compared to the 100% share it commanded in 2011. In 2013, Uthukela continued to lead in garlic exports by commanding 93.63% of garlic originating from KwaZulu Natal and Ethekwini export share has dropped further to 5.86% during the same year. Ethekwini garlic export share has significantly increased to 88.61%, while Uthukela export share has dropped to 7%. During 2015, Uthukela has recorded the highest export share of 81.93%, while Ethekwini export share has experienced a sharp decline from 88.61% to 18.02%. Uthukela has advanced its garlic export share to 89.39% whereas, Ethekwini export share has dropped further to 10.61% in comparison to the 2015 export share. During 2017, Uthukela has increased further its garlic export share by commanding 94.67% and Ethekwini export share eased lower to 5.31% share. In 2018, Uthukela was still in the lead in KwaZulu Natal export share and it has commanded 96.7% and Ethekwini has registered a 3% share of garlic export. As of 2019, Ethekwini export share has sharply increased to 50% whereas Uthukela export share has drastically declined to 47.23%. During 2020, UMgungundlovu has commanded the greatest share of 47.12% and Uthukela has registered a 43.16% share of KwaZulu Natal garlic export. At the same time, Ethekwini export share dropped drastically from 50% share to 9.60% share.

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

Year District	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sedibeng	0	0	0	0	0	0.01	0.02	0.68	0	0
West Rand	0.98	0.09	0	1.44	1.77	1.88	0	0	0	0.10
Ekurhuleni	6.95	6.65	1.50	20.02	21.90	19.81	19.45	12.95	9.49	8.25
City of Johannesburg	87.00	91.63	94.99	49.83	64.86	69.17	59.57	67.13	65.39	67.92
City of Tshwane	5.07	1.64	3.51	28.70	11.46	9.13	20.97	19.24	25.12	23.73
Gauteng	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 5 shows that the City of Johannesburg has commanded the greatest share of garlic exports from Gauteng province. In 2011, City of Johannesburg commanded 87% and Ekurhuleni district commanded a 6.95% share of garlic by Gauteng province. During 2012, City of Johannesburg increased their export shares to 91.63%, while the City of Tshwane has dropped its export share from 5.07% to 1.64% in the same period. During 2013, City of Johannesburg continued to command a high export share of 94.99% and City of Tshwane export share has slightly increased when compared to the previous year export shares. In 2014, Ekurhuleni and City of Tshwane have notably increased their export shares to 20.02% and 28.70% respectively. In 2015, City of Johannesburg export share has gone up to 64.86%, followed by Ekurhuleni with 21.90% export share and the City of Tshwane export share has declined to 11.46%. City of Johannesburg continued to lead in Gauteng garlic export share by recording 69.17% share, Ekurhuleni and City of Tshwane export shares have slightly dropped to 19.81% and 9.13% respectively. During 2017, City of Tshwane garlic export share has notably increased from 9.13% to 20.97%, whilst City of Johannesburg export share eased lower from 69.17% to 59.57% share. As of 2018, City of Johannesburg export share rose to 67.13%, City of Tshwane has commanded 19.24% and Ekurhuleni has recorded a 12.95% share. During 2019, City of Johannesburg garlic export share dropped slightly to 65.39%, City of Tshwane export share increased to 25.12% whilst Ekurhuleni export share dropped slightly to 9.49% share. In 2020, City of Johannesburg garlic export share has increased slightly to 67.92%, City of Tshwane has commanded 23.73% and Ekurhuleni export share dropped slightly to 8.25% share.

Table 6: Share of district garlic exports to the total Free State provincial garlic exports (%)

Year District	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Xhariep	0	19.74	9.09	6.14	5.65	0.91	4.12	37.08	12.44	3.62
Lejweleputswa	0	80.26	0	0	4.14	9.26	9.74	3.16	17.37	7.60
Thabo Mofutsanyane	0	0	0	56.44	78.08	71.65	83.61	56.65	70.12	87.73
Fezile Dabi	0	0	90.91	11.60	10.47	3.19	0	0	0	0
Mangaung	0	0	0	25.82	1.66	14.99	2.53	3.10	0.07	1.05
Free State	0	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 6 shows that in 2011, Free State province has recorded a zero trade for garlic. In 2012, Lejweleputswa has commanded 80.26% and Xhariep has commanded a 19.74% share of garlic exports. In 2013, Fezile Dabi was to be a leading municipality by commanding a 90.91% share of

garlic exports from Free State province. During 2014, Thabo Mofutsanyane has commanded 56.44%, followed by Mangaung district with 25.82%, Fezile Dabi with 11.60% and Xhariep with 6.14% share of Free State garlic export share. In 2015, Thabo Mofutsanyane export share has increased to 78.08%, Lejweleputswa export share has increased to 4.14% while Mangaung export share has notably dropped to 1.66% Thabo Mofutsanyane export share dropped to 71.65% during 2016, while there was a notable increase in Mangaung and Lejweleputswa garlic export values. Thabo Mofutsanyane has advanced its garlic export share to 83.61%, Xhariep export share increased from 0.91% to 4.12%, whereas Mangaung export share dropped to 2.53% share. As of 2018, Thabo Mofutsanyane export share declined to 56.65%, Xhariep commanded a 37.08% share, whilst Lejweleputswa export share dropped to 3.16%. During 2019, Thabo Mofutsanyane export share increased to 70.12%, Lejweleputswa export share grew notably to 17.37% whereas Xhariep export share declined to 12.44% share. Thabo Mofutsanyane's export share increased to 87.73% in 2020, Lejweleputswa's export share decreased to 7.60%, and Xhariep's export share fell to 3.62%.

Table 7: Share of district garlic exports to the total Limpopo provincial garlic exports (%)

Year District	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Vhembe	99.00	99.44	100	0	5.74	1.56	5.58	45.88	36.44	0
Capricorn	0.20	0	0	24.37	51.86	11.79	7.81	0	0.15	99.15
Waterberg	0	0	0	75.63	42.40	86.65	84.18	54.12	63.41	0.85
Greater Sekhukhune	0.76	0.60	0	0	0	0	0	0	0	0
Limpopo	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

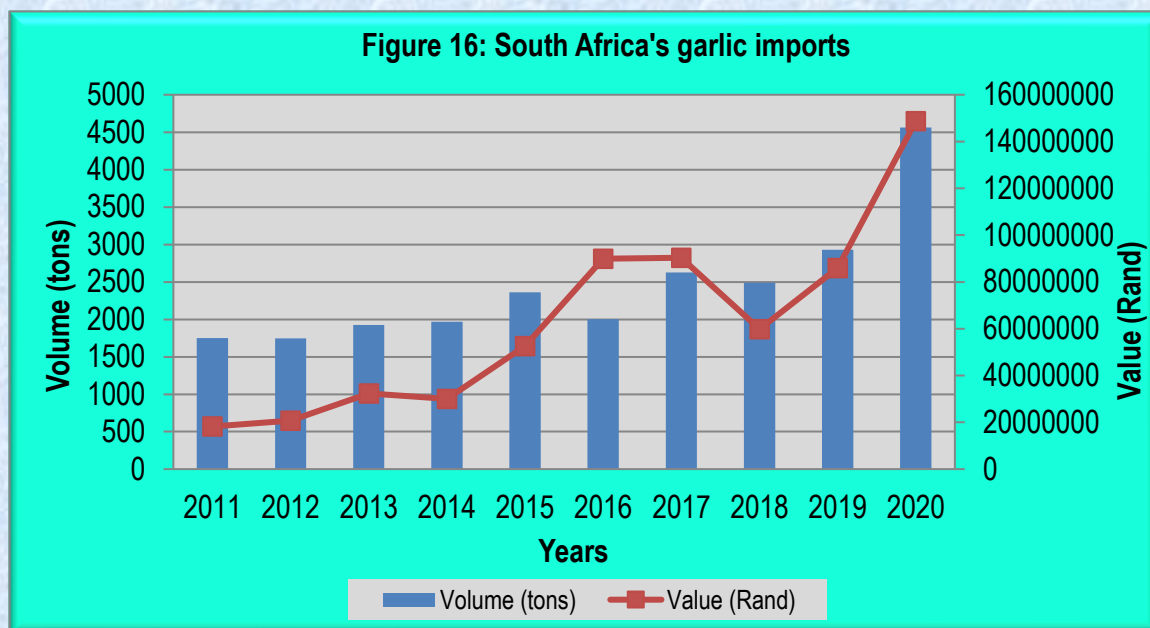
Table 7 above indicates Limpopo provincial garlic export share in ten years. As of 2011, Vhembe has commanded the greatest share of 99%, whereas Greater Sekhukhune export share was insignificant. During 2012, Vhembe continued to lead in garlic export share and 2013, it commanded 100% share of garlic exports from Limpopo province. In 2014, Waterberg commanded a 75.63% share and Capricorn has commanded 24.37% of Limpopo garlic export share. Capricorn export share has increased to 51.86% during 2015, while Waterberg export share has declined to 42.40%. In 2016, Waterberg garlic export share has increased to 86.65% whilst Capricorn garlic export share has notably dropped from 51.86% to 11.79%. Waterberg continued to lead in Limpopo garlic export share by recording 84.18% share, Vhembe garlic export has increased from 1.56% to 5.58%, whereas Capricorn export share dropped to 7.81% share. As of 2018, Waterberg garlic export share declined notably to 54.12%, whereas Vhembe export share increased sharply to 45.88%. During 2019, Waterberg garlic export share has gone up to 63.44% and Vhembe export share dropped to 36.44% share. In 2020, Capricorn has commanded the greatest share of 99.15% of Limpopo provincial garlic export whilst Waterberg garlic export share has declined sharply from 63.41% to 0.85% share.

2.4 South African garlic imports

South Africa is not a major garlic importer and its garlic imports still represent 0.3% of world imports in 2020, and its ranking is still changed to 47 in the world. In 2020, Spain with 65% of import share was still the primary supplier of South Africa garlic imports, China was in second place and it has accounted for 16.6% share of garlic imports. Egypt, India, Viet Nam, Portugal, Argentina and Thailand have supplied South Africa with garlic to a lesser extent. Globally, Indonesia is the biggest

garlic importer, followed by Brazil, the United States of America, Malaysia, Germany, Pakistan, the Russian Federation and France. Figure 16 illustrates garlic imports by South Africa over 10 years.

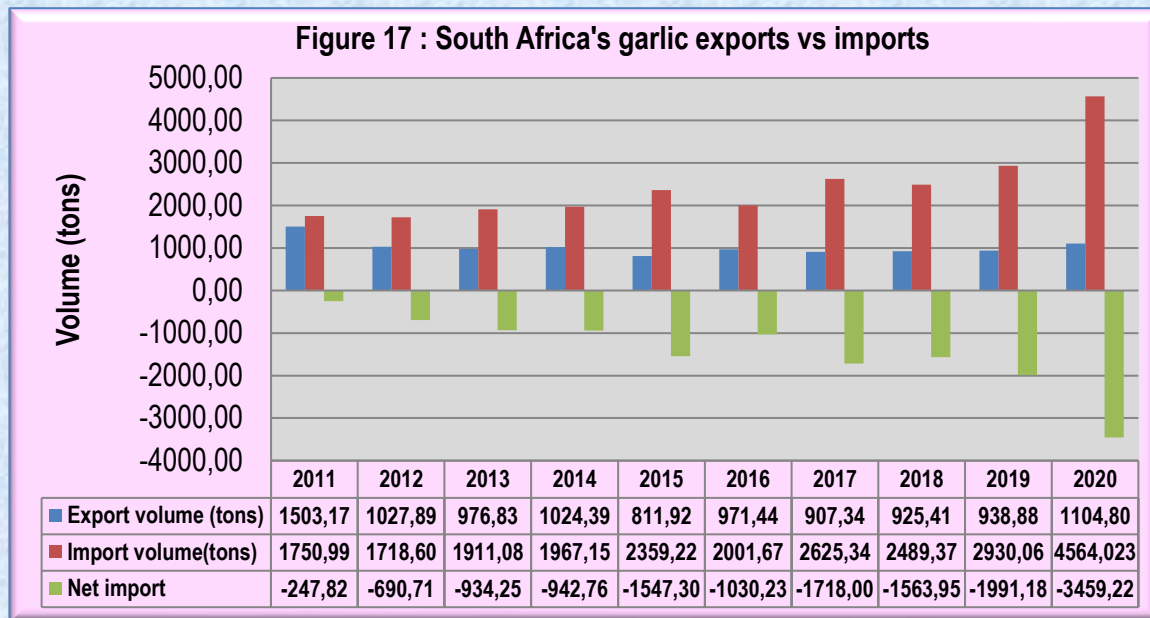
In figure 16 below, South Africa's garlic imports were just above 1 750 tons in 2011. During 2012, garlic import has slightly by 0.3%, despite a 7% decline in the domestic garlic output. In 2013, garlic import increased by 10.3%, when compared to 2012 garlic imports and it was also more expensive to import garlic in the same year. South Africa's garlic imports have gone up by 2% despite a 1% increment in the domestic production output during 2014. There was a notable 19% increase in South Africa garlic import in 2015, despite a 12% increase in domestic garlic production output. During the same year, it was more expensive to import garlic, in comparison to 2014 import. In 2016, there was a 15% decrement in South Africa's garlic imports despite a 16.5% drop in the domestic production output. It was also notably more expensive to import garlic in comparison to other years. During 2017, South Africa's garlic imports grew notably by 31% relative to 2016 imports, despite a 4.6% increment in domestic garlic production output. It was also cheaper to import garlic in comparison to 2016 imports. As of 2018, South Africa garlic import volume fell by 5% and it was relatively cheaper to import garlic when compared to the 2017 import value. During 2019, South Africa's imports rose by 17.7% and it was more expensive to import garlic relative to the 2018 garlic import value. South Africa garlic import has surged by 56% and it was relatively more expensive to import garlic when compared to the 2019 import value.



Source: Quantec Easydata

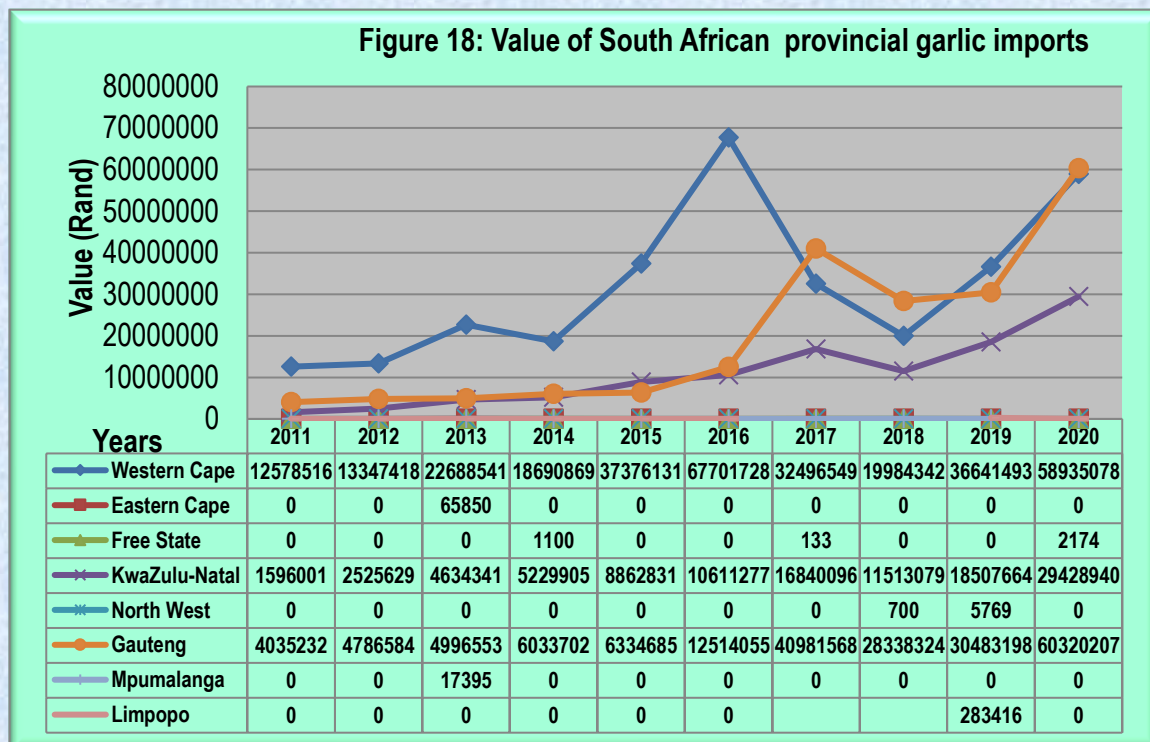
Figure 17 illustrates South Africa's garlic export and imports. Figure below compares volumes of exports and volumes of imports of garlic from 2011 to 2020. For the period under analysis, South African garlic exports were far less than imports except in 2010 and 2011 when the trade balance was low. This means that South Africa consumes more garlic than the country produces. As indicated in Figure 17, South Africa is a net garlic importer. High net imports were recorded in 2015 and 2016. During 2017, South Africa has recorded higher net imports for garlic. As of 2018, South Africa net imports dropped by 8.9% relative to 2017 net imports. As of 2019, South Africa net import rose by 27% when compared to 2018 net import volume. In 2020, the net import was a record high of 3 459

tons in ten years. Figure 17 also illustrates that when domestic output drops, garlic imports increase and this presents an opportunity for domestic producers, as demand is more than the current supply.



Source: Quantec Easydata

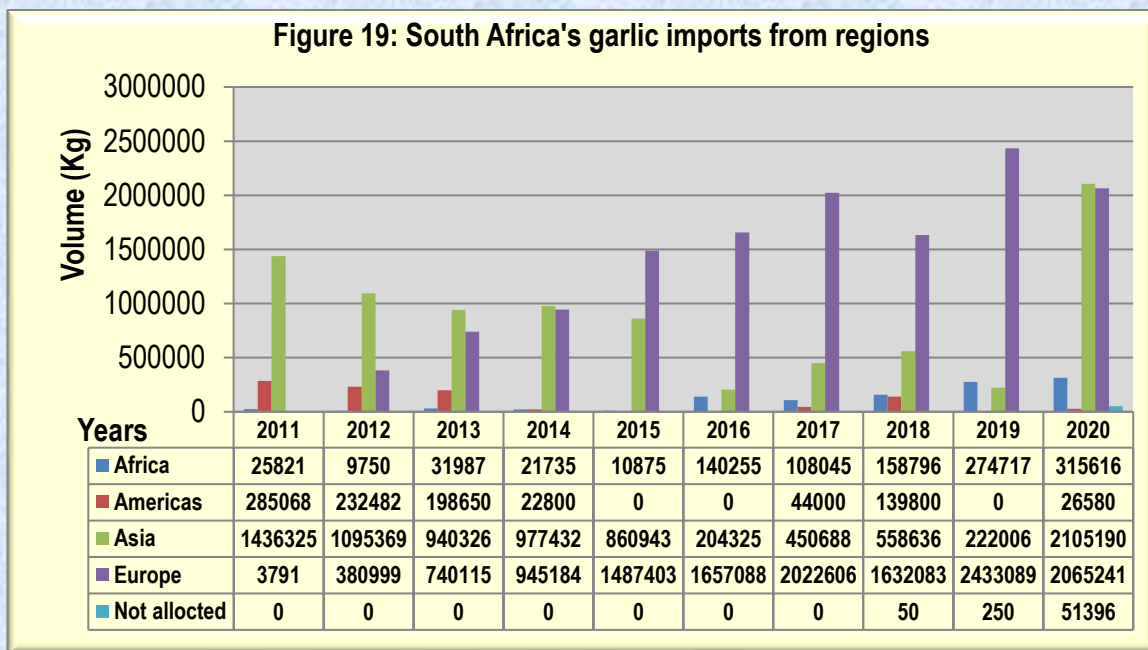
Figure 18 illustrates South Africa's provincial garlic export imports



Source: Quantec Easydata

Figure 18 above illustrates South Africa's provincial garlic imports. South Africa imported garlic mainly through Western Cape, followed by Gauteng and KwaZulu Natal. From 2011 to 2014, import

values for Gauteng and KwaZulu Natal have steadily increased, whereas imports by Western Cape were unsteady and the highest import value was recorded in 2013. Mpumalanga recorded an import value during 2013 and Free State has recorded an import value in 2014 but the value was insignificant. During 2015, Western Cape import value has surged, KwaZulu Natal and Gauteng import values have also increased, in comparison to 2014 import values. In 2016, Western Cape has continued to be the primary entry point for South Africa's garlic imports. KwaZulu Natal and Gauteng import values have also significantly increased. During 2017, Gauteng province was for the time in ten years a primary entry point for South Africa's garlic import, KwaZulu Natal import value has marginally increased by 58.6% whilst Western Cape garlic import value declined sharply by 52% relative to 2016 imports. As of 2018, Western Cape garlic import value has dropped by 38.5%, KwaZulu Natal import value declined by 31.6%, Gauteng import value dropped by 30.8% relative to 2017 import values whereas North West has recorded a trivial import value. During 2019, Western Cape, Gauteng and KwaZulu Natal were still the primary entry points for South Africa's garlic import and Limpopo has also contributed for the first time in ten years. As of 2020, Western Cape, Gauteng and KwaZulu Natal remained the main entry points for South Africa's garlic imports and the import values have surged relative to 2019 import values. At the same time, Free State has recorded a trivial import value.

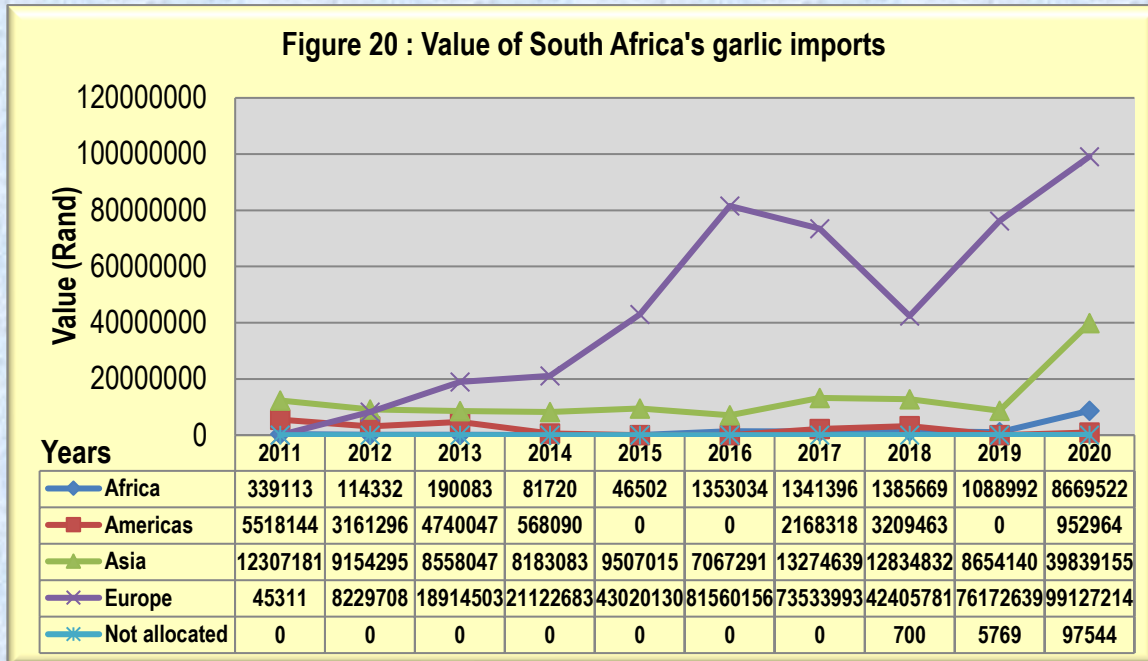


Source: Quantec Easydata

Figure 19 above indicates that garlic imports by South Africa originated mainly from Asia during the 10 years. The top countries producing garlic are located in Asia and the Americas regions. In 2011, South Africa's garlic imports were mainly from Asian, Americas and African regions. During 2012, South Africa sourced garlic mainly in Asia, followed Americas and Europe regions. In 2013, Asia continued to be the main supplier of garlic imports by South Africa, followed by Europe. At the same time imports from the African region has notably increased while the imports from the Americas region has slightly dropped when compared to 2012 garlic imports. South Africa's garlic imports were mainly sourced from Europe and Asia regions during 2014. A record-high volume of garlic was sourced from Europe region during 2015, while import from Asia and Africa region has declined in comparison to 2014 import volumes. In 2016, the European region was the main supplier of South

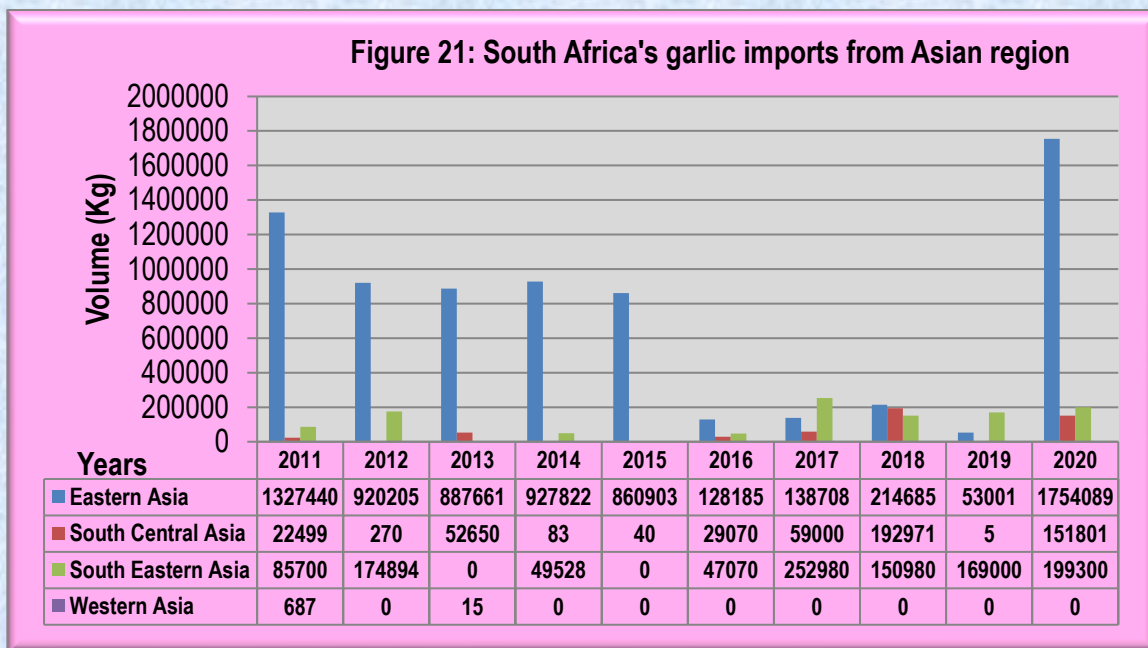
Africa's garlic imports, whereas garlic imports from Asia region dropped notably by 76% in comparison to 2015 import volume. During the same year, Africa region imports increased to a record high volume imported from this region. In 2017, Europe region was still the primary supplier for South Africa's garlic imports and the import volume eased higher by 22%, there was also a surge in garlic import from Asia, America has also supplied a notable volume of garlic while imports from Africa region dropped by 22% relative to 2016 imports. As of 2018, Europe has continued to be the primary source of South Africa's garlic imports however, the import volume has declined by 19% relative to 2017 imports. In the same year, there was a 46.9% increase in garlic sourced from Africa region, imports from America have gone up by 21.7% and import from Asia was 23.9% more, when compared to the previous year (2017) imports. In 2019, Europe region was by far the primary source of South Africa's garlic imports, a notable volume was sourced from Africa and Asia regions. As of 2020, Asia followed by European region remained the main supplier of garlic imported by South Africa. At the same time, there was also a notable increase in garlic volume sourced from Africa, the Americas and unallocated imports.

Figure 20 below illustrates the value of garlic imports for various regions. It is generally more expensive to import garlic from Europe and Americas region. During 2013, it was cheaper to import garlic from African, followed by Asia. At the same time, it was more expensive to import from Europe and the Americas region. In 2014, it was by far more expensive to import garlic from Asia region followed by the Europe region. During 2015, garlic imports from European region (Spain) were relatively more expensive, followed by Asia and garlic from Africa region was much cheaper. It was cheaper for South Africa to import garlic from Africa region, followed by Asia, while it was still expensive to import garlic from Europe region. During 2017, it was relatively more expensive to import garlic from America, followed by Europe and Asia, whereas garlic imports from Africa region was relatively cheaper. As of 2018, it was more expensive to import garlic from Europe, followed by Asia, America and it was cheaper to import garlic from Africa region. In 2019, it was relatively more expensive to import garlic from Asia, followed by Europe region and garlic sourced from Africa region much cheaper. Importing garlic from Europe was comparatively more expensive for South Africa in 2020, followed by garlic sourced from America, Africa and it was much cheaper to imports garlic from Asian region.



Source: Quantec Easydata

Figure 21 illustrates South Africa's garlic imports originating from the Asian region.

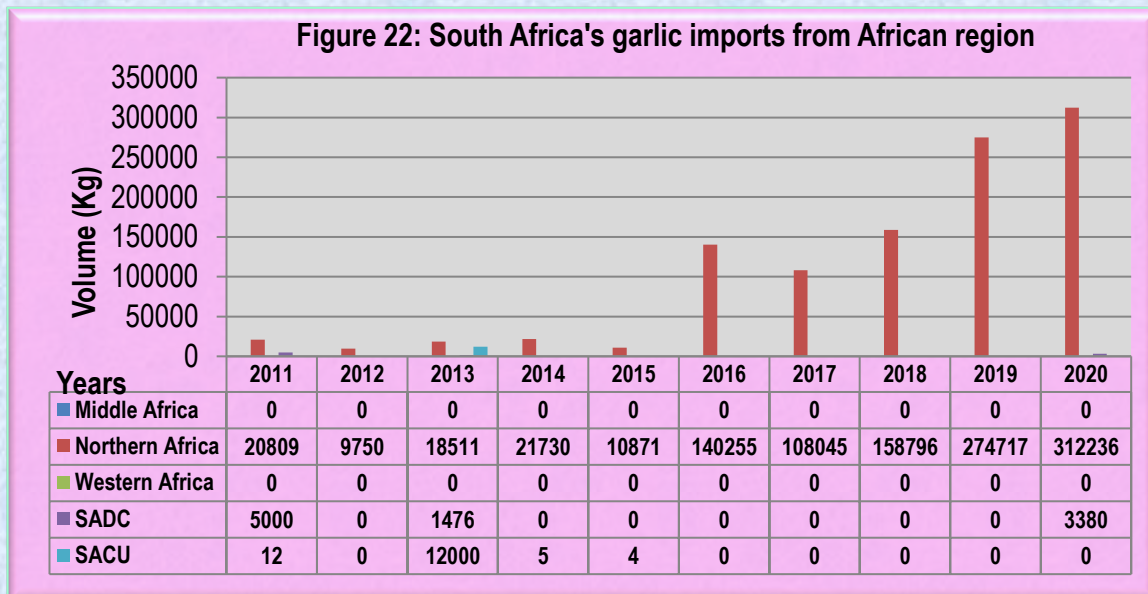


Source: Quantec Easydata

Figure 21 above shows that from the Asian region, South African garlic imports were sourced mainly from Eastern Asia (China, Hong Kong, Taiwan, Republic of Korea and Japan). In South Central Asia, the imports originate from India, Pakistan and Sri Lanka and in South-Eastern Asia from Indonesia, Malaysia, Singapore, Viet Nam and Thailand. In 2011, South Africa imported small volumes of garlic from Western Asia (Israel). During 2012, there were no imports from Western Asia and the imports from South Central Asia were insignificant. During 2013, Eastern Asia (China) continued to supply a

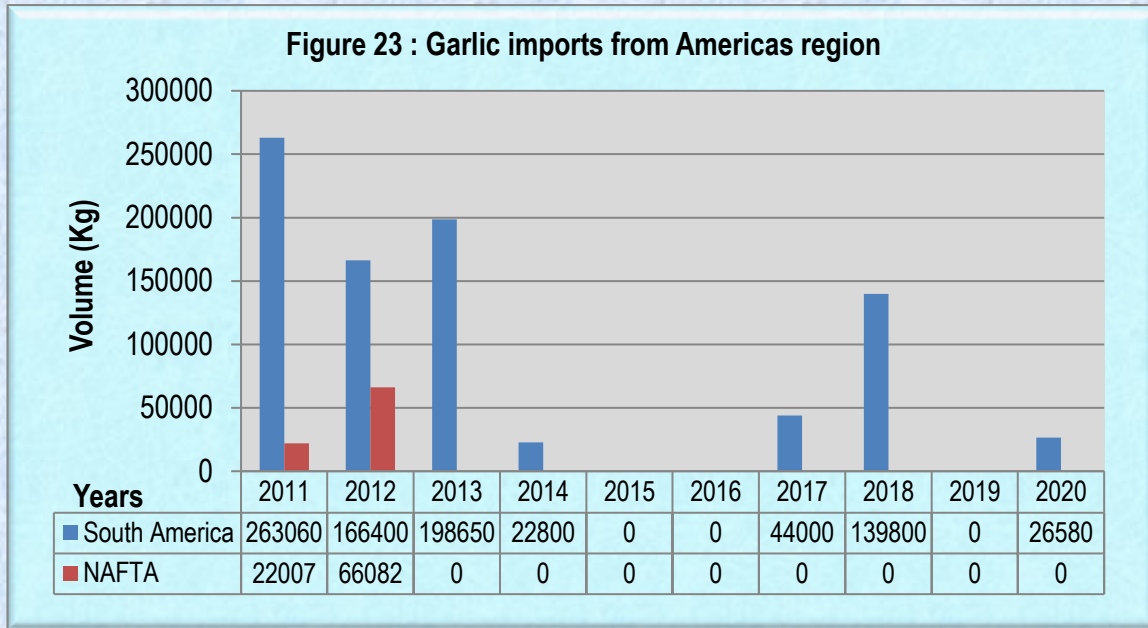
high volume of garlic and South-Eastern Asia (India) has increased its supply of garlic to South Africa. In the same year, garlic imports from Western Asia were less significant. In 2014, South Africa's garlic from Asia was sourced mainly from Eastern Asia (India) and South-Eastern Asia (Malaysia and Vietnam). During 2015, Eastern Asia (China) was still the main source of garlic imported from South Africa. In 2016, from Asia region, South Africa has imported garlic from Eastern Asia, South Central Asia and South Eastern Asia. During 2017, South Eastern Asia (India) was the primary supplier of South Africa's garlic imports, followed by South Eastern Asia (China) and South Central Asia. As of 2018, South Africa's garlic import was mainly sourced from East Asia (India), South Central Asia and South Eastern Asia (Viet Nam and Cambodia). In 2019, South Africa's garlic import from Asia was mainly sourced from South Eastern Asia (India) and Eastern Asia (China). As in 2020, garlic imports from Asia has surged during 2020. At the same time, a notable volume of garlic was also sourced from South Eastern Asia and South Central Asia,

Figure 22 below illustrates South African garlic imports from the African region in 10 years. In 2011, South African garlic imports were sourced from the SADC countries (Zimbabwe and Mozambique). Garlic imports from Middle Africa and Western Africa were insignificant. During 2012, South Africa imported garlic solely from Northern Africa (Egypt). In 2013, South Africa garlic imports were sourced in Northern Africa, SACU and SADC countries. Northern Africa was the main supplier of South Africa's garlic imports in 2014 and 2015, while the import volumes from SACU were insignificant. In 2016, South Africa's garlic import was sourced solely from Northern Africa. Northern Africa (Egypt) was the only supplier of South Africa's garlic imports from Africa region during 2017. As of 2018, Northern Africa (Egypt) was still the sole supplier of garlic imports from Africa region. During 2019, Northern Africa (Egypt) remained the sole supplier of garlic import from Africa region. Northern Africa (Egypt) was still the primary supplier of garlic imports from the African continent in 2019. Import volume from SADC (Botswana) was less significant.



Source: Quantec Easydata

Figure 23 illustrates South Africa's garlic imports originating from the Americas region



Source: Quantec Easydata

Figure 23 above shows that in the Americas region, South Africa imported garlic from South America (Argentina) and NAFTA (the United States and Mexico). In 2010 South Africa's garlic import from Americas region was insignificant. Notable garlic imports from NAFTA were insignificant except in 2011 and 2012. During 2012, South Africa imports were sourced mainly from Argentina, Mexico and the United States. In 2013, South America (Argentina) continued to be the main supplier of garlic sourced from Americas region. During 2014, South Africa imported garlic from South America, but the import volume has substantially dropped in comparison to 2013 import volume. In 2015 and 2016, there were no garlic imports sourced from America region. During 2017, South Africa's garlic import was sourced from South America (Argentina). As of 2018, South America was still a sole supplier of South Africa's garlic imports and the import volume was incomparably higher when compared to the 2017 import value. During 2019, there were no garlic imports sourced from the American region. As of 2020, South Africa has sourced a notable volume of garlic from South America (Argentina)

2.5 Processing

Garlic is a high value crop that can be marketed as being fresh, dehydrated or as certified seed. It is widely used around the world for its strong flavour as a seasoning or condiment. The majority of garlic is dehydrated and used in a variety of processed foods. Garlic bulb can be peeled, sliced, flaked and dried. This can be packaged or processed further as a food spice, vegetable mixtures and sprays. India also produces odourless oil and oleoresin from garlic. Garlic can be used externally for skin problems and fungal infections. Garlic is also claimed to help prevent heart disease (including atherosclerosis, high cholesterol, and high blood pressure) and cancer. Garlic is used to prevent certain types of cancer, including stomach and colon cancers. It is also used as an insect repellent. Garlic is also alleged to help regulate blood sugar levels. Figure 24 below shows different end products after value adding and processing.

Figure 24: Garlic value chain tree explaining its uses

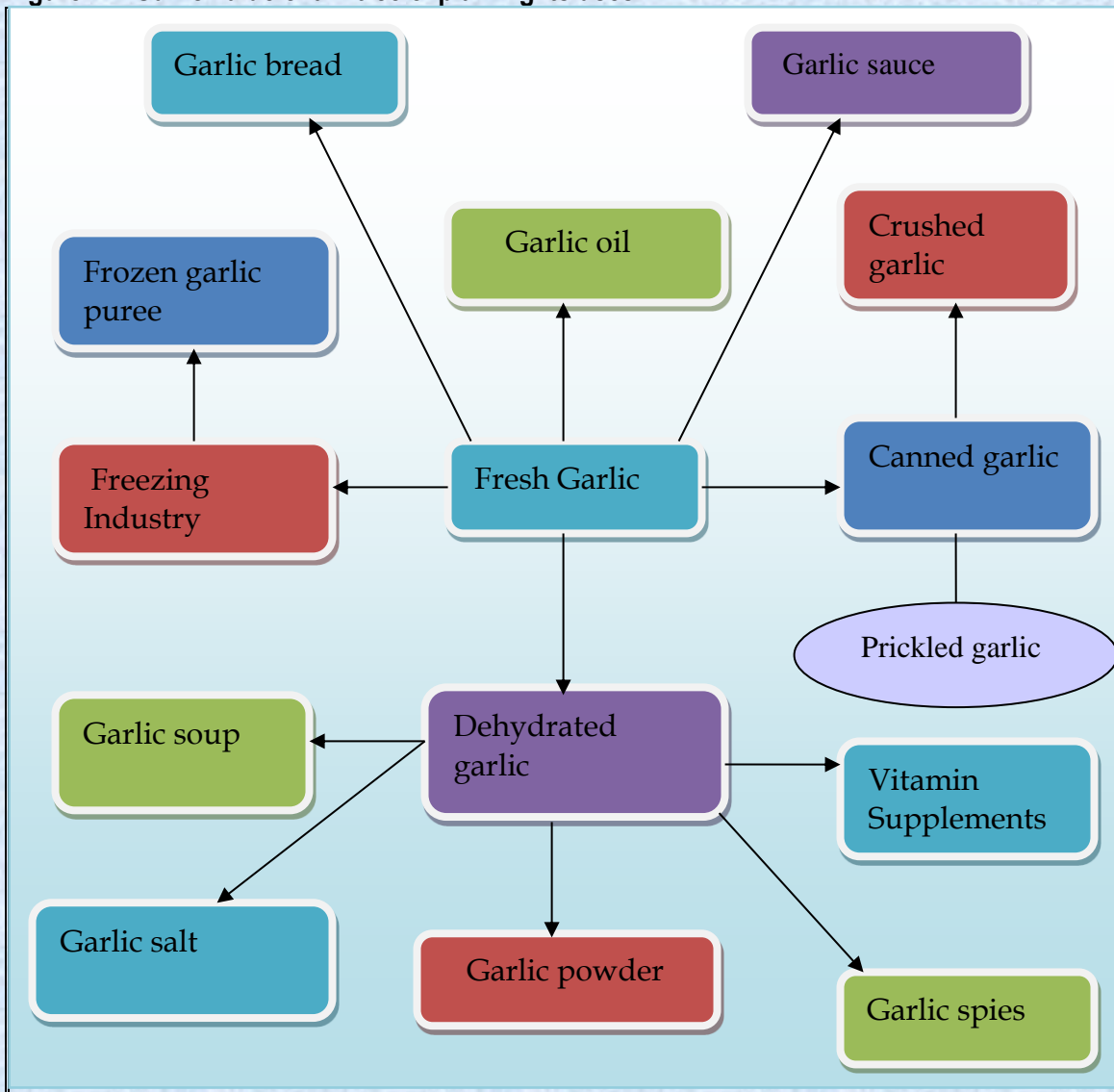
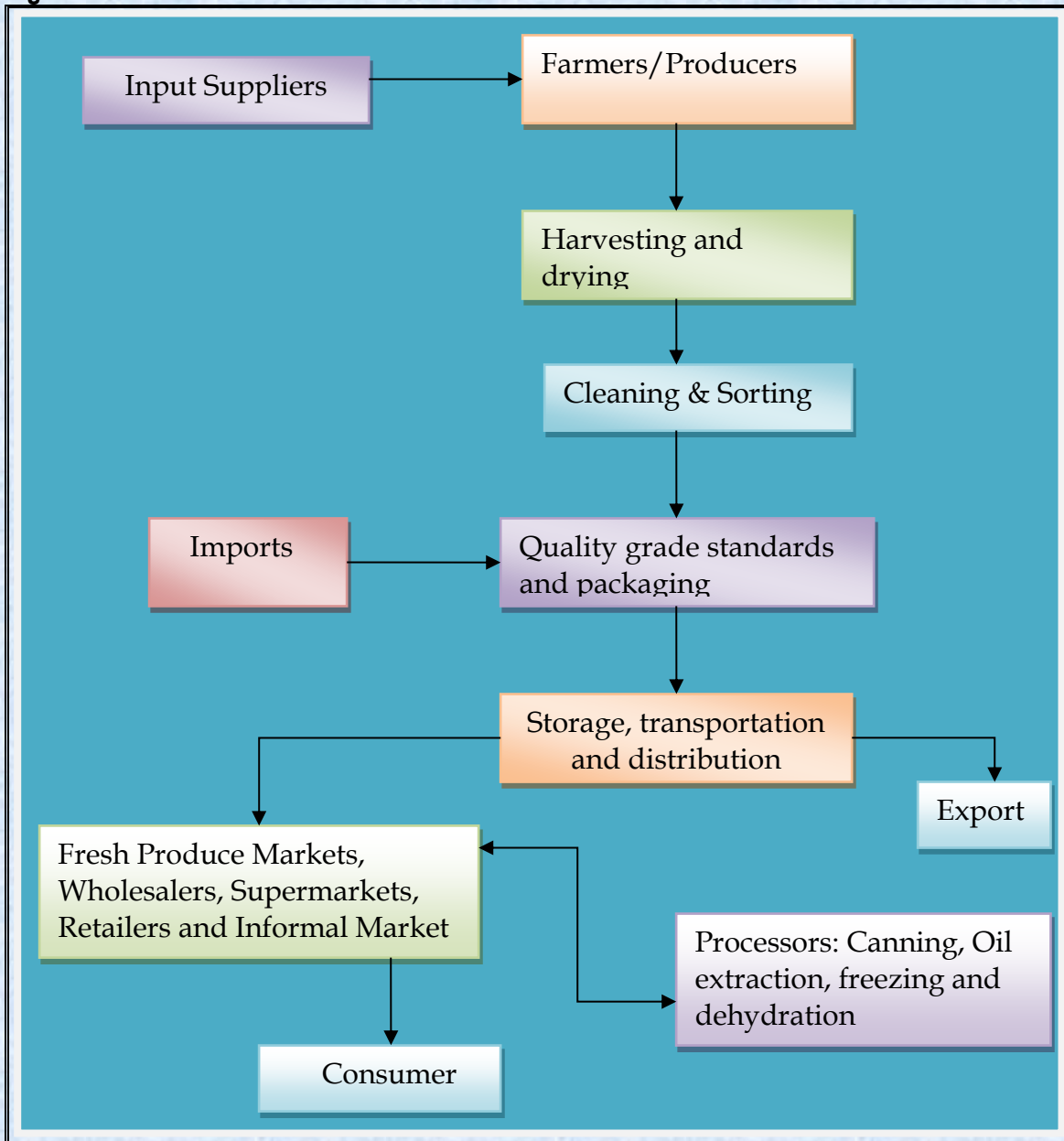


Figure 25: Market value Chain for Garlic



The market value chain for garlic is illustrated in Figure 25 below. The garlic value chain can be broken down into the following levels: the producers of garlic (farmers); pack house owners (dry, cleans, grade and quality control); cold storage and transport facilities (store and transport garlic on behalf of farmers); traders in garlic (market and sell garlic); processors (add value by canning, oil extraction, dehydration and freezing of garlic and process garlic to other usable forms); and end users (consumers).

3. MARKET INTELLIGENCE

3.1 Tariffs

Table 7 below indicates tariffs applied by various export markets to garlic from South Africa

Table 7: Tariffs for garlic exports

Country	Product description (H070320)	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2019		2020	
Angola	Garlic fresh or chilled	MFN duties (Applied)	50.00%	50.00%	50.00%	50.00%
Botswana	Garlic fresh or chilled	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
China	Garlic fresh or chilled: Bulbs	MNF duties (Applied)	13.00%	13.00%	13.00%	13.00%
Congo	Garlic fresh or chilled	MNF duties (Applied)	20.00%	20.00%	20.00%	20.00%
Argentina	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Indonesia	Garlic fresh or chilled	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Egypt	Garlic fresh or chilled	MFN duties (Applied)	2.00%	2.00%	2.00%	2.00%
Portugal	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%

Country	Product description (H070320)	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2019		2020	
Hong Kong	Garlic fresh or chilled	MFN duties (Applied)	20.00%	20.00%	20.00%	20.00%
India	Garlic fresh or chilled	MFN duties (Applied)	100%	100%	100%	100%
Kenya	Garlic fresh or chilled	MFN duties (Applied)	25.00%	25.00%	25.00%	25.00%
Saint Helena	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Spain	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Lesotho	Garlic fresh or chilled	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
Malawi	Garlic fresh or chilled	Preferential tariff for SADC	0.00%	0.00%	0.00%	0.00%
Algeria	Garlic, onion and shallot	MFN duties (Applied)	30.00%	30.00%	30.00%	30.00%
Mozambique	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Namibia	Garlic, onion and shallot	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
Viet Nam	Garlic fresh or chilled	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Netherlands	Garlic fresh or chilled	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%

Country	Product description (H070320)	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2019		2020	
Eswatini	Garlic fresh or chilled	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
United States of America	Garlic fresh or chilled	Preferential tariff for AGOA countries	0.00%	0.00%	0.00%	0.00%
Zambia	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Zimbabwe	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%

Source: Market Access Map, ITC

During 2020, Botswana, Namibia and Eswatini were the primary markets for garlic exports originating from South Africa. Botswana, Namibia and Eswatini apply an Intra SACU rate of 0% to garlic exports from South Africa. South Africa has also exported garlic to Mozambique, Netherlands, Malawi, Angola, Zambia and Kenya. These countries apply a 0% tariff to garlic exports from South Africa except for Kenya which applies a 25% tariff. In African markets, South Africa can look for more market opportunities in Zambia as applies a 0% preferential tariff to garlic exports originating from South Africa due to the SADC-FTA agreement. Malawi and Mozambique apply 0% preferential tariff. China and India are the top garlic producers in the world and their domestic producers are still protected by 13% and 100% tariffs respectively. Egypt is ranked sixth in South Africa garlic suppliers and it has reduced its tariff to 2%. Algeria is amongst the top countries producing garlic and their domestic producers are protected by a 30% 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.

3.2.1 (b) 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.

3.2.1(c) 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.

3.2.1. (d) 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 a 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 labels to ensure produce 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

3.2. 1(e) 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).

3.2.2 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.

3.2.3 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). 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 produce 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 economic 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).

5.2 Cold chain management

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 require an efficiently controlled supply chain and internationally accepted business standards.

5.3 Packaging

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).

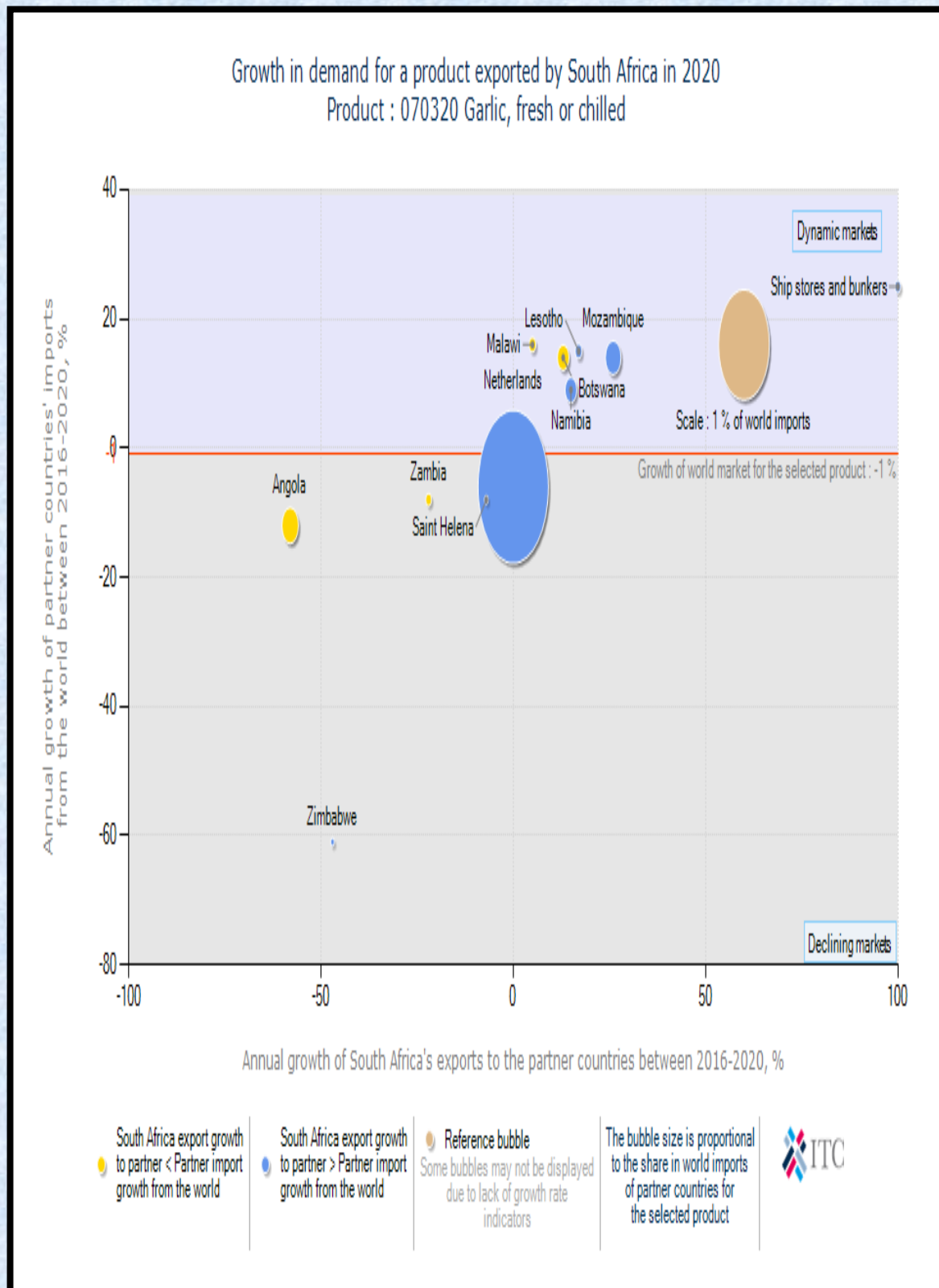
5.4 Storage

Garlic is ready to eat after harvest, curing is only important if you intend to store it. For this reason, many growers who market garlic directly to retail customers do not cure it after harvest. If long-term storage is desired, freshly harvested garlic can be cured by placing it on racks with good airflow. The racks should be placed in a location out of direct sunlight and the weather for approximately 3 weeks or until the outer 2 leaves are completely dry. Many smaller growers spread their bulbs on the wooden floor of a barn to cure. Once cured, trim the tops and roots and clean the remaining soil from the bulb. The cured bulbs should be placed in clean cardboard boxes or burlap bags and stored at 32-35°F and 65-75 percent relative humidity.

6. COMPETITIVENESS OF SOUTH AFRICAN GARLIC EXPORTS

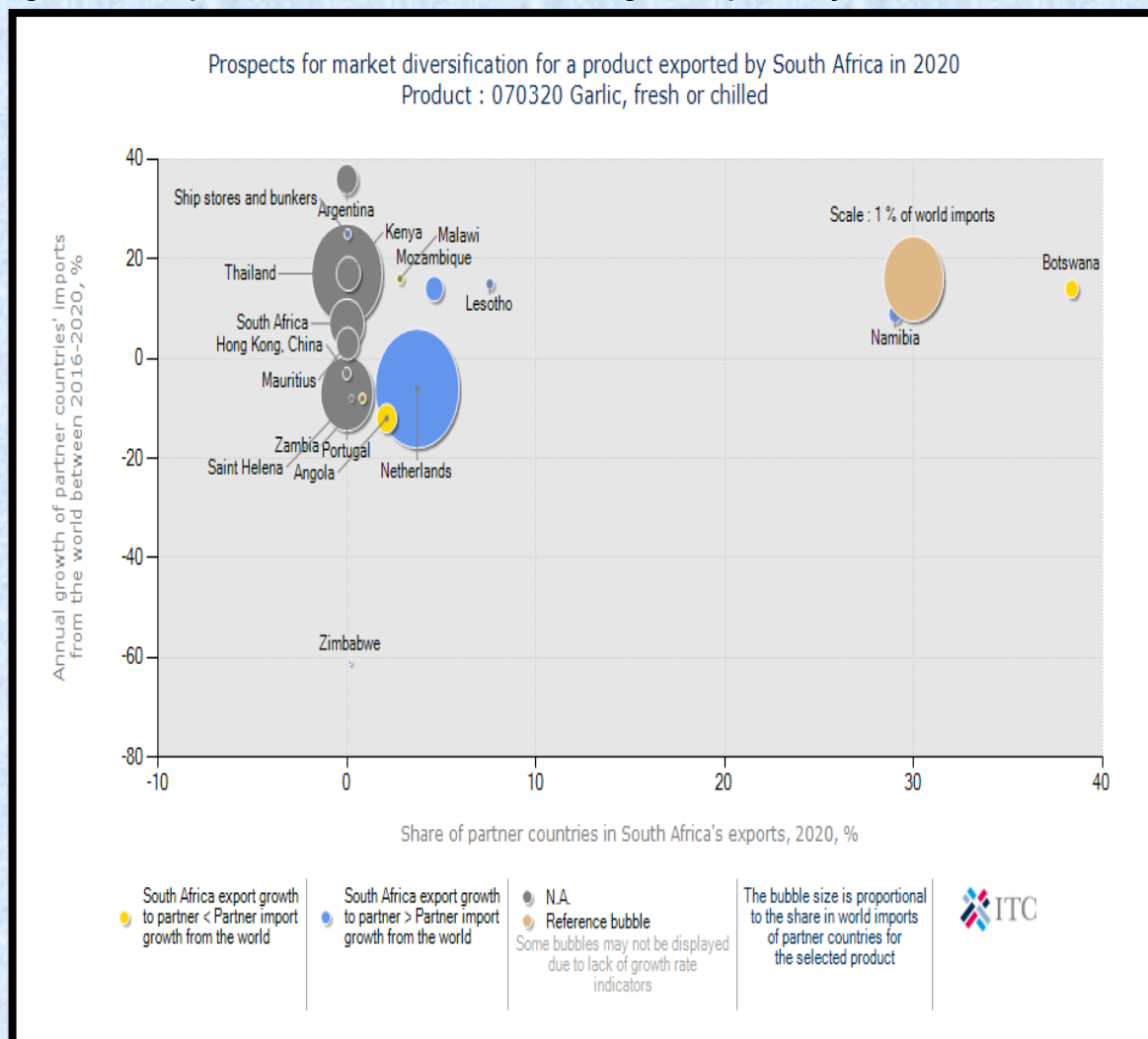
Figure 26 below, shows that South Africa garlic exports are growing faster than the world garlic imports into Lesotho, Mozambique and Namibia. South Africa's performance in those countries can be regarded as a gain in the dynamic markets. South Africa garlic exports to Malawi and Botswana are growing slower than the world garlic imports into these countries. South Africa's Performance is regarded as a loss in the dynamic market. South Africa's garlic imports are growing while the world garlic imports are declining into Saint Helena, Zimbabwe and Netherlands. South Africa's performance is regarded as a gain in a declining market. South Africa 's exports are declining faster than the world imports into Angola.

Figure 26: Growth in demand for garlic exported by South Africa in 2020



Source: Trade Map, ITC

Figure 27: Prospects for market diversification for garlic exported by South Africa in 2020



Source: Trade Map, ITC

Figure 27 above, shows that the primary markets for South Africa's garlic exports were still in Botswana and Namibia during 2020. Prospective markets for garlic exports exist in Mozambique, Malawi and Netherlands. Other smaller prospective markets exist in Mozambique and Mauritius. However, if South Africa is to diversify its garlic exports, the most lucrative markets exist in Thailand and Kenya, which have increased their garlic imports from the world by 17% between the period 2016 and 2020. Netherlands, Zambia, Saint Helena, Angola and France have recorded a negative growth between 2016 and 2020 period.

7. BUSINESS OPPORTUNITIES AND CHALLENGES

7.1 Opportunities

Garlic consumption has increased significantly over the past years. The main uses of garlic are in the culinary field, although it has other uses in the alternative medicine field because of its medicinal

qualities and pesticides and fungicides. Recently there have been some more developments in the human medical field for garlic in which there is a compound, which has been identified as lowering cholesterol. If these developments come to the commercial phase, it could mean a massive increase in garlic production. South Africa is still a net importer of garlic by far, these present an opportunity for farmers to increase domestic production.

7.2 Challenges

Garlic is a high risk, labour intensive crop to grow successfully. Garlic has a specific growing window that has to be adhered to. In order to survive, each garlic producer must strive to obtain maximum yield and quality. Knowledge of the garlic plant, its growth cycle and the factors affecting its growth, yield and quality is thus of utmost importance. Marketing garlic can also be quite difficult for the smaller producer. The market is demanding large, clean unblemished bulbs that are well-graded and well packaged. South African garlic producers also have to compete with cheap garlic imports. In 2019, South Africa garlic net imports grew by 27%, which is a big challenge to the local producer as they cannot compete with cheap irradiated garlic imported. According to Fresh Plaza, garlic growers in South Africa need more room to expand their market share. Their ideal scenario would be for South African garlic to occupy half of the retail shelf space for garlic, and for it to be clearly labelled as such, giving consumers a simple option of non-irradiated South African garlic. High garlic prices entice many local farmers into the industry, but producing high-quality garlic, particularly on one's first try, is difficult.

7.3 Recent news

During the COVID-19 pandemic in 2021, the Competition Commission received numerous complaints from the public alleging that food sellers had raised garlic prices. While wholesale prices for the products climbed due to increasing consumer demand during the second wave, the commission considered the high increases in absolute margins witnessed in some cases were not justified. Big retailers were investigated following a huge increase in garlic and ginger prices in 2021. Pick n Pay retailer was one of the big retailers, which signed a memorandum of understanding with the Competition Commission to set a price cap on garlic. From January 28 to April 1, 2021, the retailer's gross profit margin for ginger and garlic as essential food items has been capped. Other retailers were also edged to set a cap on the garlic prices.

8. ACKNOWLEDGEMENTS

The following industries are acknowledged

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Quantec Easy Data

www.easydata.co.za

Market Access Map

www.macmap.org

Fresh Plaza

www.freshplaza.com

International Trade Centre (ITC)

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