

A PROFILE OF THE SOUTH AFRICAN MACADAMIA NUT MARKET VALUE CHAIN

2019



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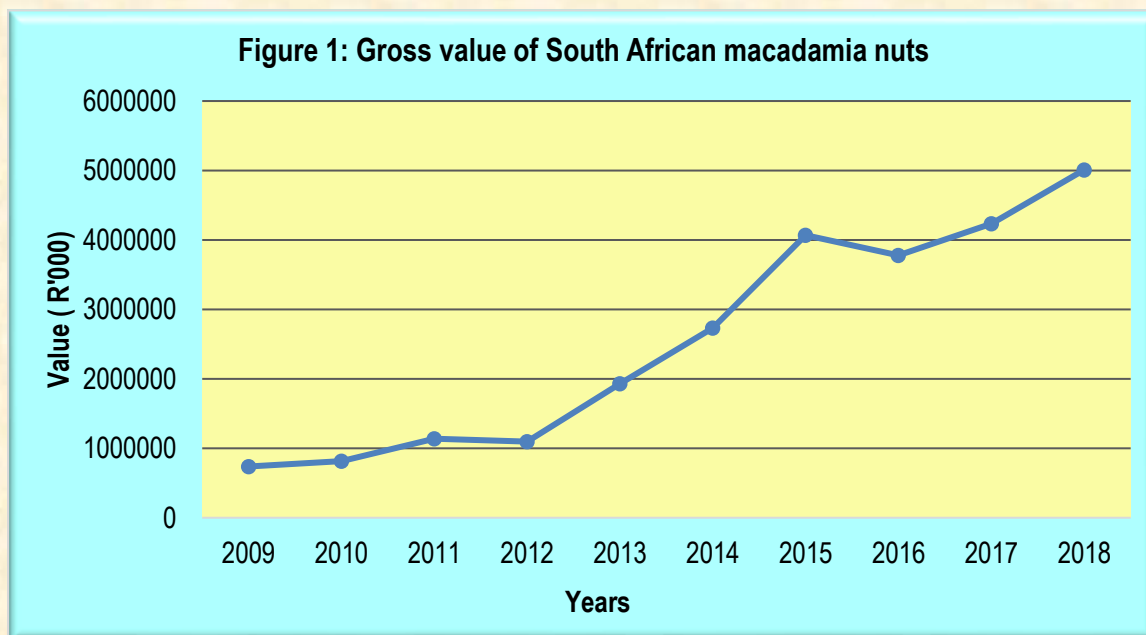
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1. DESCRIPTION OF THE INDUSTRY

Macadamia nuts are quickly becoming an important crop in South Africa and are possibly the fastest growing tree crop industry in the country. South Africa has been named the world's largest macadamia nut producer in the world in 2015 and 2018, thereby surpassing Australia (where they originated) and Hawaii. In 2017 and 2018, South Africa was number one in macadamia nut exports in the world. The nuts are a valuable food crop. Only two of the species i.e. *M. integrifolia* and *M. tetraphylla*, are of commercial importance. Macadamia tree takes five to twelve years to produce nuts and a good tree can produce nuts for 40 years. The trees require a hot subtropical climate without much humidity. In South Africa, KwaZulu-Natal, Mpumalanga and Limpopo are ideal areas. Macadamia nuts are also planted in the Western Cape and Eastern Cape. Macadamias are now widely used in the confectionery, baking, ice cream and snack food industries. Macadamia oil's rich, cushiony skin feel and high oxidative stability make it especially suitable for heavy creams and sun care formulations. Medical research has shown that the consumption of macadamias may significantly lower the risk of heart disease. Macadamia nuts have a sweet taste and are a super source of energy. They also contain large amounts of vitamin A and iron, as well as zinc and calcium. Macadamia nuts are toxic to dogs and ingestion may result in macadamia toxicosis, which is marked by weakness and hind limb paralysis with the inability to stand. The gross value of macadamia nuts is shown in Figure 1 below.



Source: SAMAC and Statistics and Economic Analysis data 2017

Figure 1 above illustrates the contribution of the macadamia nut industry to the total gross value of agricultural production over a 10 year period. A record low industry's gross value was recorded in 2009. This is attributed to a loss of R54 million worth of nuts that were lost due to unsound kernels (SAMAC 2009). In 2010, macadamia nuts gross value increased by 10% compared to gross value in 2009. This can be ascribed to a 21% increase in macadamia prices in the same year. During 2011, the gross value of production increased by 39% in comparison to the previous season value. In 2012,

the gross value decreased by 3.7% when compared to the 2011 gross value. During 2013, the gross value has surged by 75%, when compared to 2012 gross value and this can be attributed to high producer price that occurred in the same year. Gross value grew by 41.7% in 2014, when compared to 2013 and this can be ascribed to 19.7% growth in production output. During 2015, there was a significant increase of 48% in the macadamia nut gross value and this can be ascribed to 2.5% increment in production output and favourable producer price. Macadamia nuts gross value eased lower by 7% in 2016, when compared to 2015 gross value and this can be ascribed to the severe drought that occurred during the same season. In 2017, macadamia nut gross value grew by 12%, relative to 2016 gross value and this can be ascribed to an increase in production output. As of 2018, macadamia nut gross value grew by 18% relative to the previous year (2017) value and this can be attested to 26.7% increment in the domestic production output.

1.1. Employment

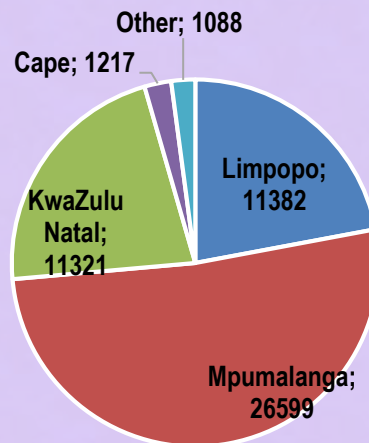
Most of the workforce in the industry is employed seasonally for harvesting and processing from February to August, it is estimated that at least 1 000 permanent job opportunities have been created on macadamia farms over the last decade and another 600 permanent jobs in cracking facilities. In peak season, the industry presently provides employment for approximately 9 000 farm workers and about 12 500 full-time equivalent workers are estimated to be employed by the macadamia industry in South Africa. Since production is expected to continue to rise due to the rate at which new planting are being established, employment creation is expected to continue to grow at a similar pace.

1.2 Production trends

1.2.1 Production areas

In South Africa, macadamia nuts are mainly grown in three provinces. Mpumalanga (Hazyview to Barberton) remains the primary production area, followed by Limpopo (Tzaneen and Levubu), and coast of KwaZulu Natal. In the neighbouring countries, macadamias are produced in Swaziland, Malawi and Zimbabwe. There are close to 700 farmers involved in growing macadamia nuts, with more than 495 that are members of Southern African Macadamia Growers' Association (SAMAC), that are supplied to SAMAC affiliated cracking factories. According to SAMAC, there are 21 macadamia handlers, 18 nurseries and 61 associate members, who are registered with SAMAC. A number of growers are GLOBALGAP and ZIZA accredited and most of the cracking facilities are HACCP and /or ISO 9001 accredited. According to SAMAC, based on the sales data from the nurseries, 90 316 were planted and it is an indication that the macadamia industry in Southern Africa grows by at least 1 900 ha. According to International Nut and Dried Fruit Council (INC), South Africa with 26% share was the world's largest macadamia nut producer, followed by Australia. Macadamia nuts are also grown Kenya, Hawaii, Brazil, United States of America, Israel, China, Swaziland, New Zealand, Viet Nam and Guatemala.

Figure 2: South African macadamia nut production in hectares, 2018

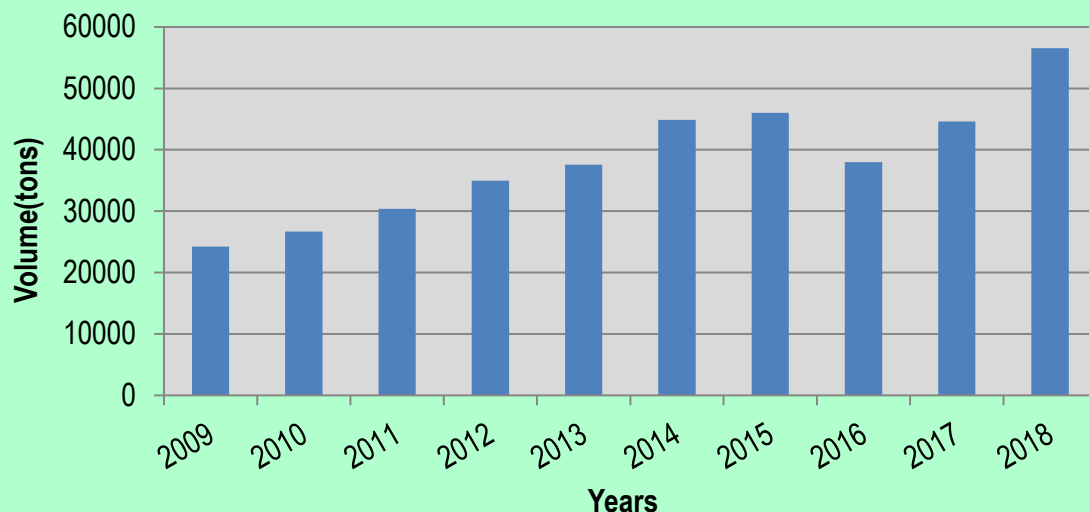


Source: SAMAC data, 2018

*

Figure 2 above illustrates area under macadamia nuts production per province in 2018. According to SAMAC, area under macadamia tree is approximately 44 776 hectares established in Southern Africa. The new plantings ensure that the industry is growing by an estimated 5 962ha annually. In terms of number of trees planted, Mpumalanga has over 2.4 million, followed by Limpopo with over 1.4 million, KwaZulu Natal with approximately 1.1 million and Eastern Cape with 91 506. During 2017, Mpumalanga province has high production output of 24 484 tons, followed by Limpopo with 10 133 tons, KwaZulu Natal with 8 973tons, Western Cape with 542 tons and Eastern Cape with 478 tons. According to SAMAC, Mpumalanga has planted 2 115 new hectares, KwaZulu Natal planted 2 348 new hectares, Limpopo planted 1 249, Cape planted 197 hectares and other provinces have planted 53 hectares during 2019

Figure 3: South Africa's Macadamia nuts production



Source: SAMAC data, 2018

Figure 3 above illustrates the total production of macadamia nuts (Kernel and NIS (Net in Shell) over a 10 year period (also see Table 1 below). During 2009 season, South Africa produced 23 507 tons macadamia (table 1 below). This was a 13.9% increase compared to the previous season. In 2010, production of dry in shell macadamia nuts has increased by 21% when compared to 2009 production year. Production growth is a factor of tree age, climate and production practices. In 2011, output increased by 5.8% in comparison to the 2010 production season. During 2012, output has gone up by 15% when compared to 2011 output. The output figure has increased by 7.5% in 2013, when compared to previous figure. During 2014, production output has gone up by 19.7% in comparison to the 2013 production season. In 2015, there was a slight increase of 2.5% in output, when compared to 2014 output. There was a notable decline of 17.4% in macadamia nut total production output during 2016, in comparison to the previous season (2015) and this can be attributed to a severe drought that occurred during the same season. In 2017, kernel production dropped by 8.3%, Net in Shell production out grew notably by 63% and total production output grew by 17% relative to 2016. As of 2018, there was a 53% increase in Net in Shell production and South Africa's total production grew by 26.7% in comparison to 2017 production season.

Table 1: Macadamia nut production

Year	Kernel	NIS	Total Production
2009	21 004	2503	23 507
2010	24 926	3503	28 429
2012	21 295	13276	34 571
2013	21 179	16321	37 500
2014	26 126	18764	44 890
2015	21 257	22 158	46 000
2016	24 320	13 680	38 000
2017	22 310	22 300	44 610
2018	22 307	34 243	56 550

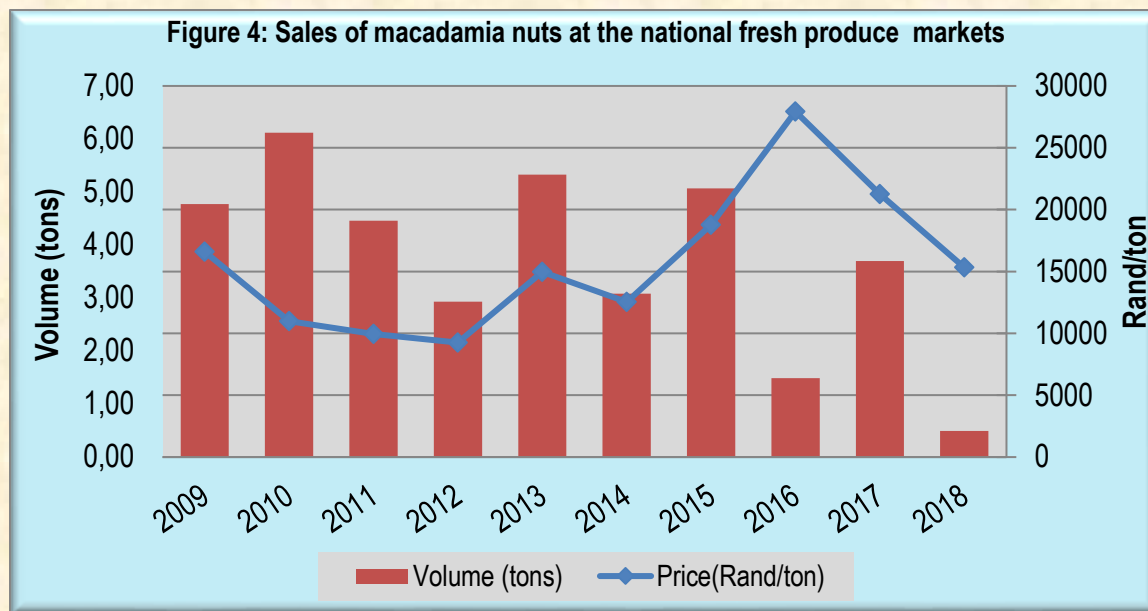
Source: SAMAC data, 2018

2. MARKET STRUCTURE

There is no regulation or restriction on the marketing of macadamia nuts. The prices of macadamia are determined by the market forces of demand and supply, however macadamia nuts are expensive which put some consumer off. The industry is export based with more than 97% of annual production shipped to international markets. Hong Kong (China) and Viet Nam are presently the largest markets for macadamia nuts (in shell) originating from South Africa. United States of America is the primary export market for macadamia nuts (shelled) originating from South Africa. South Africa imports small volumes of Macadamia nuts and this can be attributed to high domestic production.

2.2 Domestic markets

The main buyers of macadamia nuts in South Africa are Spar, Pick 'n Pay and Woolworths. Macadamia nuts are also marketed through National Fresh Produce Markets and directly to processing companies. Volumes of sales of macadamia nuts at the National Fresh Produce Markets (NFPMs) are depicted in Figure 4.



Source: Statistics and Economic Analysis, DAFF

The sales volumes have relatively fluctuated over the years. In 2009, the sales volume at the national fresh produce markets was just above 4.77 tons. In 2010, volumes supplied at the market increased by 28%, which lead to a 33.8% drop in market prices. During 2011 and 2012, macadamia nut prices dropped by 9.4% and 6.9%, respectively, despite a decline in volumes supplied across the markets. This can be attributed to poor uptake of macadamia nuts at the same years. During 2013, market price surged by 61% despite 81.9% increment in volume supplied in the market and this can be attributed to strong demand of macadamia nuts in the same year. In 2014, sales at the fresh produce markets have gone down by 42%. This can be attributed poor uptake at the market and 29.6% increment in macadamia nut exported to the world. Macadamia nut price grew by 49.8%, despite a notable increment of 64.6% in volume supplied at the market and this can be ascribed to the strong demand of macadamia nuts. During 2016, there was a sharp decline of 71% in volume supplied at the market and as a subsequent, the market price increased notably by 48.7% in comparison to 2015 price. In 2017, there was a surge of 148% in macadamia nuts supplied at the market and this has resulted in a 23.8% drop in market price relative to 2016 price. As of 2018, the market price declined sharply by 27.8%, despite a significant 86% decline in macadamia nut volume supplied at the fresh produce market and this can be ascribed to poor demand of macadamia nuts at the market.

3. EXPORTS AND IMPORTS

3.1 Exports

Over 95% of the South African macadamia nut production is exported annually. According to ITC Trademap during 2011, South African macadamia nuts export represented 36.78% of world macadamia nuts exports and it was ranked number 1. During 2012, South Africa's exports represented 28.81% of world exports and it is still ranked number 1. In 2013, South Africa exported 21 696 tons to the world and it is still number one in the world macadamia nut exports. South Africa has commanded 37.1% share of the world exports. During 2014, South Africa was still ranked number 1 in the world macadamia nut exports with 28 125 tons and the exports represent 36.37%

of world exports. In second place is Australia with 14.6% share, followed by the Kenya with 12.1%, Hong Kong with 9.7%, Netherlands with 4.5%, and China with 3.8% share. Kenya has increased competitiveness in terms of macadamia nut exports as during 2013, it commanded 7.7% share of world exports. In 2015, South Africa has continued to lead in macadamia nut export, and it is still ranked number 1 in the world macadamia nuts (for both in shell and shelled) exports. Australia is still in second place of the world macadamia nut exports. During 2016, South Africa's macadamia nuts (in shell) represent 30.8% of the world exports and its ranked number 2 in the world. Shelled macadamia nuts represent 24.8% in the world exports and its ranked number 1 in the world. During 2017, South Africa's macadamia nuts (in shell) represent 40.7% of the world exports and its ranked number 1 in the world. Shelled macadamia nuts represent 26.1% in the world exports and its ranked number 1 in the world. South Africa has improved its competitiveness as in 2016 it was ranked number 2 in the world macadamia nut exports. As of 2018, South Africa was again ranked number 1 in the world macadamia nuts exports and this can be attested to a notable 26.7% increment in the domestic total production output.

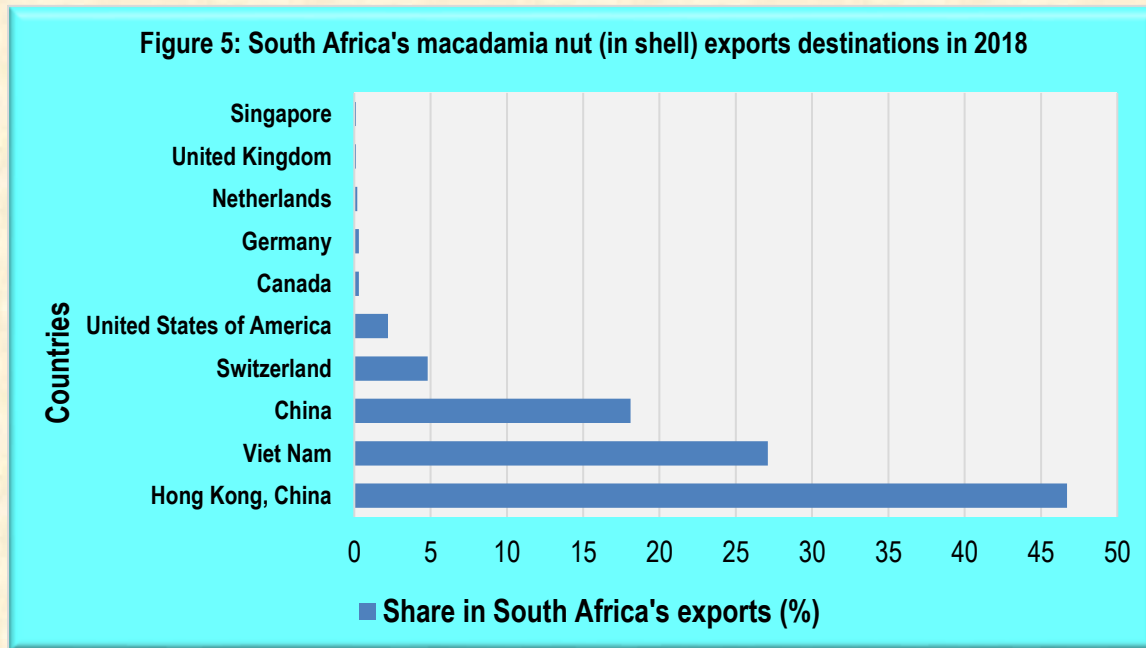
Table 2: South Africa macadamia nut (in shell) exports in 2018

Importers	Value exported in 2018 (USD thousand)	Trade balance 2018 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2018 (tons)	Growth in exported value between 2014-2018 (% , p.a.)	Growth in exported quantity between 2014-2018 (% , p.a.)	Growth in exported value between 2017-2018 (% , p.a.)
World	121281	111596	100	24861	3	2	-6
Hong Kong, China	56579	56579	46.7	13809	-1	0	-31
Viet Nam	32892	32892	27.1	5737	3	-3	-6
China	21983	21983	18.1	3865		29	167
Switzerland	5837	5837	4.8	1000			
USA	2721	2721	2.2	305	-24	-16	173
Canada	320	320	0.3	18	-18	-28	-19
Germany	314	314	0.3	16	-25	-29	-4
Netherlands	210	210	0.2	11	-43	-46	-59
United Kingdom	173	173	0.1	9			15
Singapore	134	134	0.1	25			

Source: ITC Trademap

Figure 5 and table 2 above illustrates South African macadamia nuts (in shell) export destinations in 2018. Hong Kong (China) was still the largest recipient of unshelled macadamia nuts originating from South Africa with 46.7% share, followed by the Viet Nam with 27.1% and there was a notable increase in export destined to China with 18.1% share. South Africa's exports to the United States of America have decreased by 24% in value and 16% in quantity between 2014 and 2018 period. South Africa macadamia nuts export to China has increased by 167% in value between 2017 and 2018 period. Macadamia nut exports destined to Canada, Germany, and the Netherlands were still less significant.

Figure 5 below is an illustration of South Africa's macadamia nut (in shell) export destinations in 2018.



Source: ITC Trade map

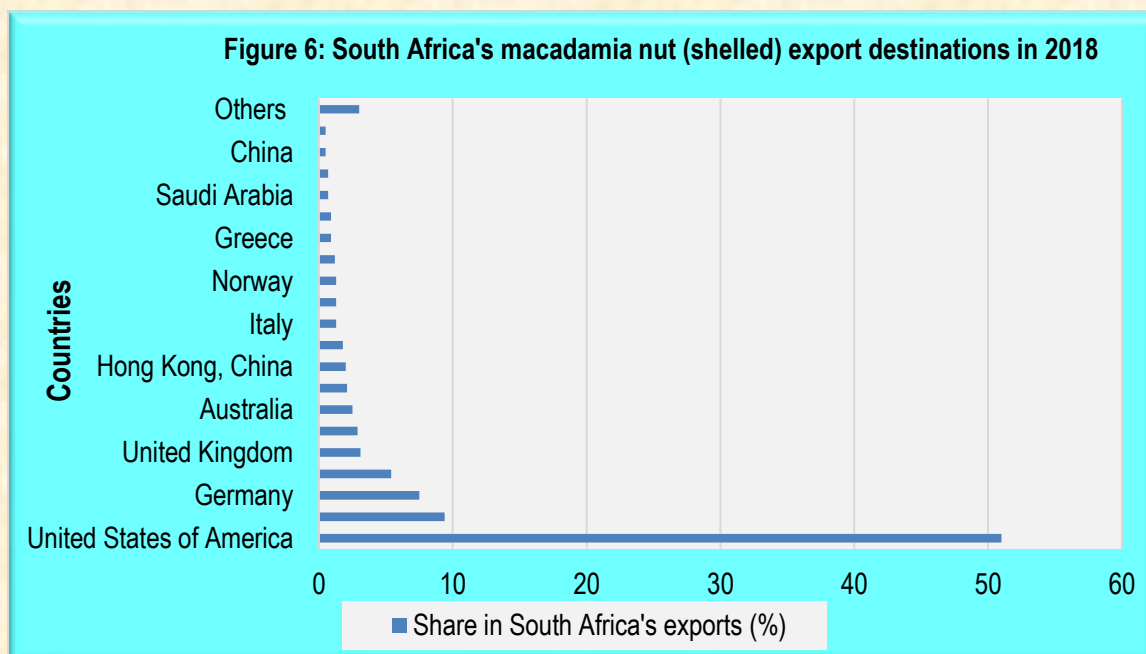
Table 3: South Africa macadamia nut (shelled) exports in 2018

Importers	Value exported in 2018 (USD thousand)	Trade balance 2018 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2018 (tons)	Growth in exported value between 2014-2018 (% , p.a.)	Growth in exported quantity between 2014-2018 (% , p.a.)	Growth in exported value between 2017-2018 (% , p.a.)
World	177640	169347	100	10231	13	11	51
USA	90638	90614	51	5002	15	11	78
Netherlands	16698	16698	9.4	933	4	1	38
Germany	13297	13297	7.5	711	18	13	141
Spain	9623	9623	5.4	561	28	21	53
United Kingdom	5561	5561	3.1	313	6	2	16
Japan	5138	5138	2.9	279	4	-2	55
Australia	4478	4478	2.5	284	10	10	100
Canada	3811	3811	2.1	221	11	9	31
Hong Kong, China	3611	3611	2	320	-12	6	-55
Viet Nam	3111	3111	1.8	376	53	52	-10
Italy	2359	2359	1.3	144	10	6	55

Importers	Value exported in 2018 (USD thousand)	Trade balance 2018 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2018 (tons)	Growth in exported value between 2014-2018 (% p.a.)	Growth in exported quantity between 2014-2018 (% p.a.)	Growth in exported value between 2017-2018 (% p.a.)
Switzerland	2276	2276	1.3	118	14	10	-27
Norway	2271	2271	1.3	117	45	38	105
Taipei, Chinese	2089	2089	1.2	140	5	4	-24
Greece	1633	1633	0.9	80	56	51	99
France	1575	1575	0.9	86	44	39	94
Saudi Arabia	1279	1279	0.7	58	-5	-10	-42
Belgium	1250	1250	0.7	70	62	58	42
China	941	941	0.5	104			
Israel	800	800	0.5	38		27	225

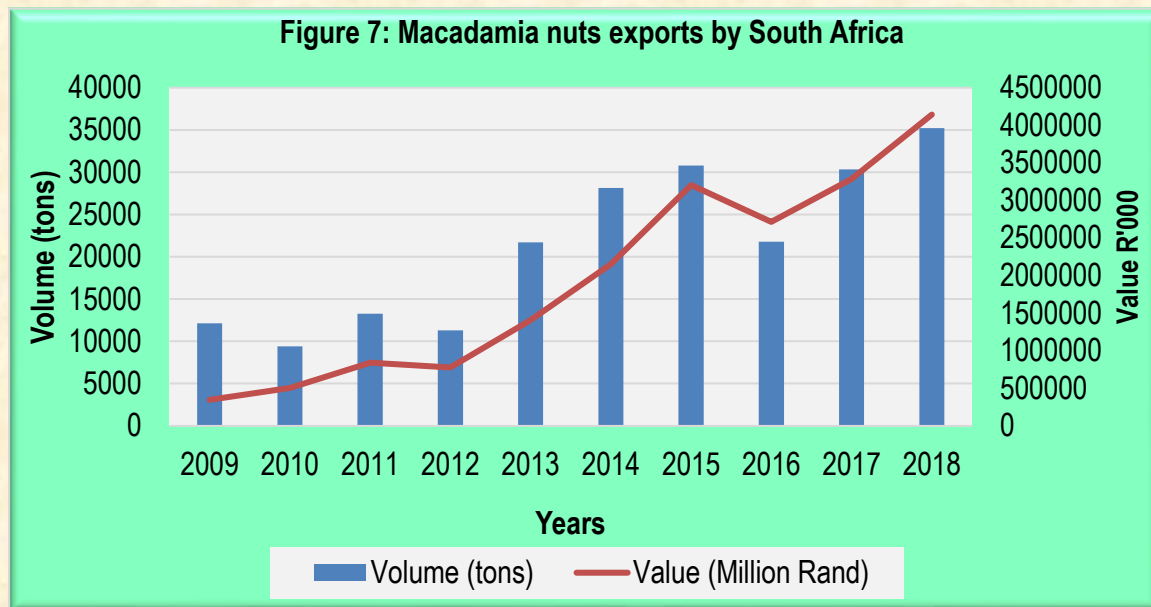
Source: ITC Trademap

Table 3 and Figure 6 below illustrate South African macadamia nuts (shelled) export destinations in 2018. The United States of America is still by far the largest recipient of in shell macadamia nuts originating from South Africa with 51% share, followed by the Netherlands with 9.4%, Germany with 7.5% and Spain with 5.4% share. South Africa's exports to the United States of America have increased by 15% in value and 11% in quantity between 2014 and 2018 period. South Africa also exported a notable share of macadamia nuts to the United Kingdom, Japan and Australia.



Source: ITC Trademap

Figure 7 below shows that in 2010, the exports declined by 22.6% despite an increase in production volumes. It was more profitable to export macadamia nuts in 2010, since high value was recorded for less volume exported. During 2011, macadamia nut exports increased by 42% when compared to the previous season. This can be attributed to a 13.9% increase in domestic production output. In 2011, it was highly profitable to export macadamia nut when compared to other years. During 2012, a macadamia nut export dropped by 14.8% and it was more profitable to export when compared to the previous year. South Africa's macadamia nut exports have surged by 91.9% in 2013, when compared to the previous year exports and this can be attributed to 7.5% increase in the domestic production output. During 2014, South Africa's macadamia nut exports went up by 29.6% in comparison 2013 exports and this can be attributed to the 19.7% increase in domestic production output. Macadamia nut exports have increased by 9.4% when compared to the previous year export. This can be ascribed to 2.5% increment in the domestic output during the same year. During 2016, South Africa's macadamia nut exports eased lower by 29%, which can be attested 17.4% decline in domestic macadamia nuts production output. South African macadamia nut exports grew marginally by 39% in 2017 and this can be attributed to 17% increment in the total domestic production output during the same year. As of 2018, South Africa's macadamia nut exports increased by 16% and it was also more profitable to export macadamia nuts relative to 2017 exports. The increment in export volume can be ascribed to 26.7% increment in the domestic output.



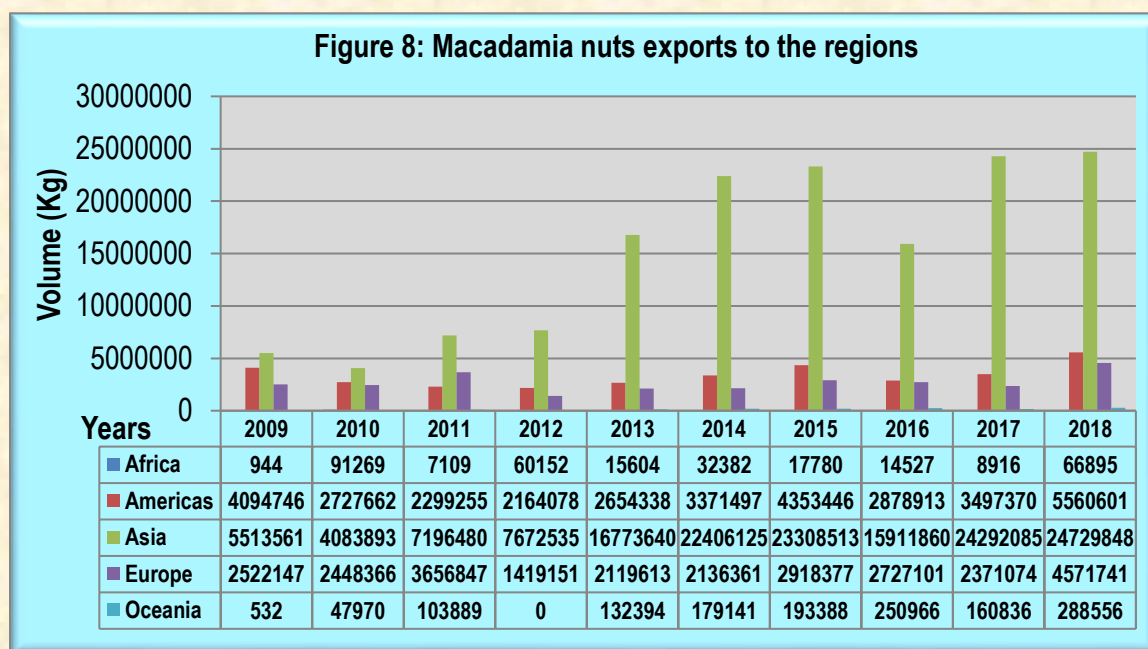
Source: Quantec Easydata

** Macadamia nuts HS code has been separated into shelled and in shell during 2012. To get the total macadamia nuts export shelled and in shell export figures were combined.*

Exports of macadamia nuts to various regions of the world during the ten year period are presented in Figure 8. The below figure indicates that Asia, European and Americas regions were the primary export markets for macadamia nuts exported from South Africa. In 2010, South Africa exported high quantities of macadamia nuts to the Asian region (Hong Kong, China, Japan and Viet Nam) followed by the Americas (United States of America) and European region (Netherlands, Spain, United Kingdom and Germany). During 2011, high quantities of macadamia nuts were exported to the Asian

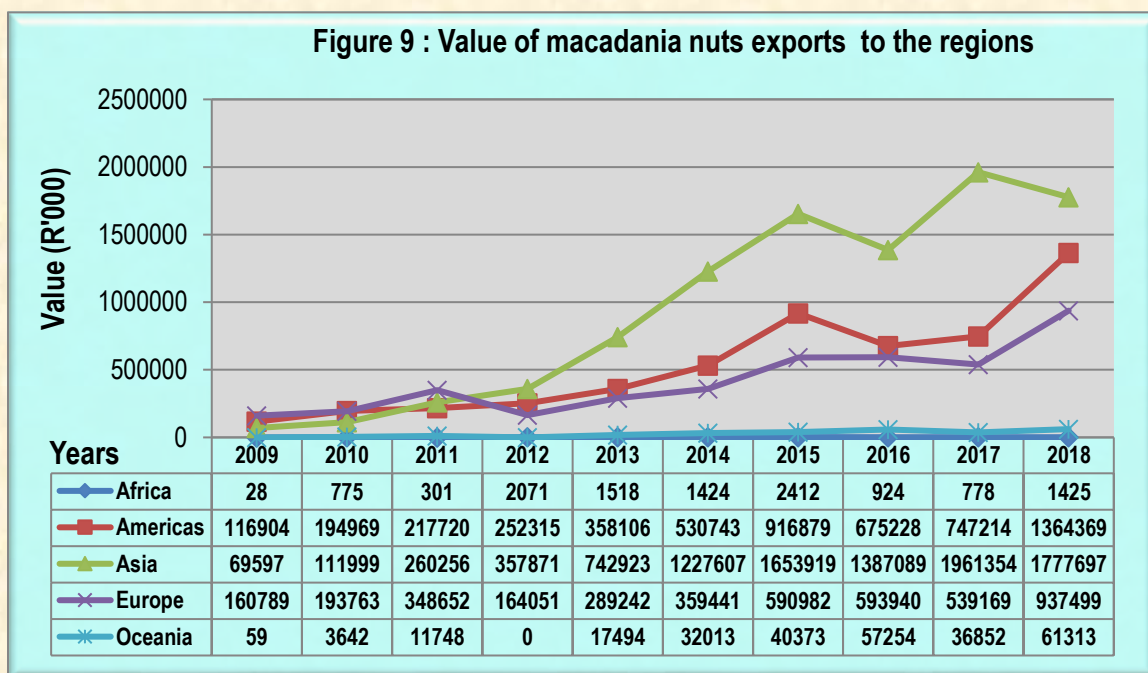
region (Hong Kong, China and Japan), European region (Netherlands, Germany and United Kingdom) and Americas (United States of America). Considerable macadamia nuts were also exported to Oceania region (Australia and New Zealand). In 2012, higher volumes of macadamia nuts were exported to Asia (Hong Kong, China, Japan and Viet Nam). Considerable volumes were also exported to the Americas (United States of America) and Europe (Netherlands, Germany and Spain). During the same year, macadamia nuts to Africa (Angola) have significantly increased when compared to the 2011 exports.

During 2013, Asian region (Hong Kong/China, Japan and Viet Nam) was by far the preferred export market for macadamia nuts originating from South Africa. Notable volumes were exported to Americas (United States of America), Europe (Netherlands, United Kingdom and Germany) and Oceania (Australia) regions. In the same time, the export to African region has significantly dropped when compared to 2012 volumes. In 2014, Asia (Hong Kong, China and Viet Nam), Americas (United States of America) and Europe (Netherlands, Germany, United Kingdom and Spain) regions remained the primary export markets for macadamia nuts originating from South Africa. Exports to the Asian region have accounted for more than 50% of the total exports. At the same time, the exports to Oceania and African regions have also increased when compared to 2013 export figures. During 2015, Asia region (Hong Kong, China and Viet Nam) was still the preferred market for macadamia nut originating from South Africa, followed by Americas (United States of America) and Europe (Netherlands, Germany and United Kingdom). In 2016, Asia continued to be the primary export market for macadamia nuts originating from South Africa, followed by America, Europe and Oceania whilst Africa was still the least preferred market. During 2017, Americas (United States of America) region was the main recipient of South Africa's macadamia nut exports, followed by Asia (Hong Kong, China and Viet Nam), Europe and Oceania, whilst Africa remain the least recipient. As of 2018, Asia region was still by far the primary export market for South Africa's macadamia nuts, followed by Americas, Europe, Oceania and Africa was the least preferred market.



Source: Quantec Easydata

Figure 9 below shows that it was generally more profitable to export macadamia nuts to European and Americas markets. It was less profitable to export macadamia nuts to Asian countries when comparing values and the volumes exported to the Americas and European countries. During 2011, it was more profitable to export macadamia to Oceania, European and Americas regions. The exports to Africa and Asia fetched low values. In 2012, America and European markets continued to be more profitable markets for macadamia nuts originating from South Africa, while the African market remained the less profitable market. During 2013, Europe followed by America region continued to be the most profitable export markets. Asia followed by Africa region were the least profitable markets for macadamia nuts exported from South Africa. In 2014, Europe remained the most profitable export market, followed by Oceania and Americas region. The least profitable export market was Asia followed by Africa region. In 2015, America region was the most profitable export market for macadamia nuts exported from South Africa, followed by Oceania, Europe, Africa and Asia was the least profitable market. During 2016, America was by far the most profitable market for South Africa's macadamia nuts, followed by Europe, Oceania and Asia, whereas, export to Africa region has fetched lower export value. In 2017, Asia was by far the most profitable market for macadamia nut exported from South Africa, followed by Europe, Oceania and America, whilst Africa region continued to fetch lower export values. As of 2018, Americas region was by far the most profitable market for export originating from South Africa, followed by Europe, Oceania, Asia and exports destined to Africa region had lower export value.

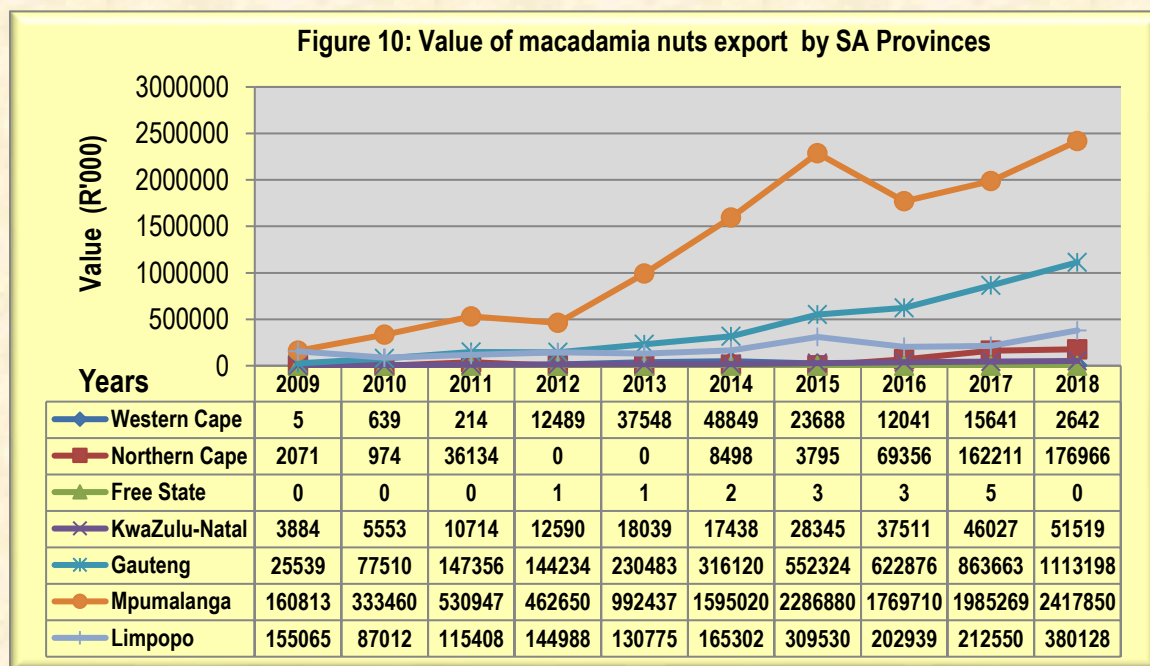


Source: Quantec Easydata

Figure 10 below illustrates the value of macadamia nut exports from South African provinces from 2009 to 2018. The highlights from the figure were Mpumalanga and Limpopo as they are the top exporters of macadamia nuts in South Africa. The value for KwaZulu Natal macadamia nut exports was low despite the province being one of top producers of macadamia nuts. High values of macadamia nuts for Mpumalanga and Limpopo can be attributed to high production volumes from these provinces and the cracking factories situated in these provinces. High export values for

Gauteng can be attributed to export agents and export exit points situated in this province. In 2011, values of macadamia nuts export for Mpumalanga, Northern Cape, Limpopo and Gauteng have increased significantly, when compared to the previous seasons. During 2012, macadamia nuts export values for Western Cape, KwaZulu Natal, Gauteng and Limpopo have increased while export value for Mpumalanga has slightly decreased in the same year. In 2013, export values for Western Cape, Mpumalanga and Limpopo have notably increased, while the export value for Gauteng and KwaZulu Natal has notably dropped when compared to the previous year.

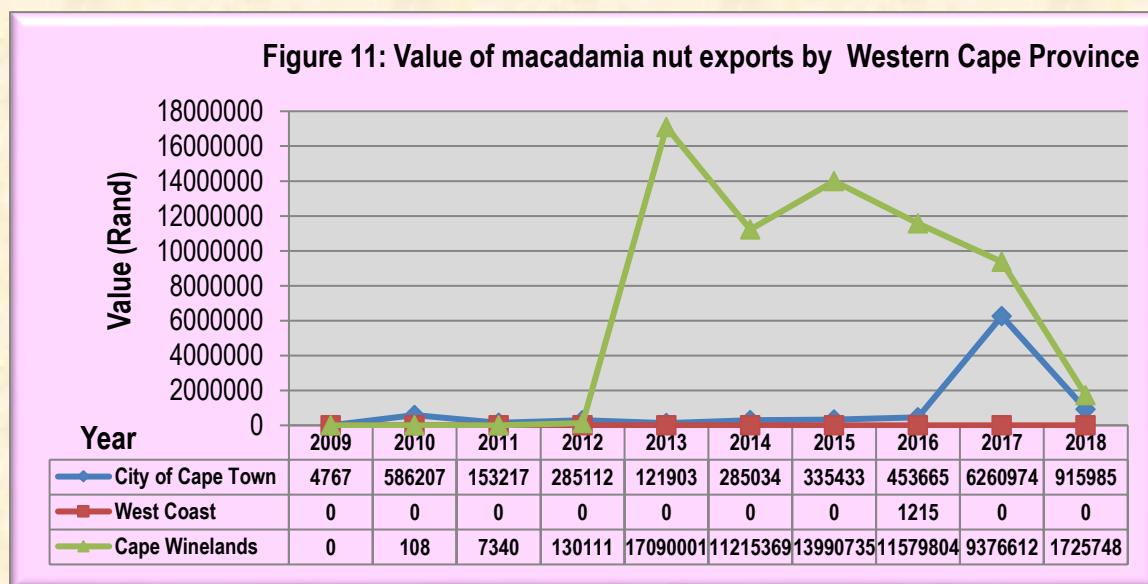
During 2014, Mpumalanga, Limpopo and Gauteng export values have notably increased, while Western Cape and KwaZulu Natal export values have dropped and Northern Cape export value was less significant. In 2015, Mpumalanga province has continued to lead in South Africa's macadamia nut exports and the export value has increased by 47.5%. At the same time, Limpopo, Gauteng and KwaZulu Natal export values have experienced notable increment, whereas Northern Cape export value has dropped by 54%. Free State export value was less significant when compared to other provincial export values. During 2016, Mpumalanga was still by far the primary role player in South Africa macadamia nut exports. However, the export value eased lower by 15% in comparison to 2015 export value. In the same year, Northern Cape and KwaZulu Natal export values increased notably while Limpopo, Gauteng and Western Cape macadamia nut export values experienced decrements. In 2017, Mpumalanga province was still by far the main contributor in South Africa's macadamia nuts with 12% increase, Northern Cape macadamia nuts export value has surged by 134%, Free State has experienced a notable 66% increment, Western Cape export value grew by 29.8% and Gauteng export value increased by 38.6% relative to 2016 export values. As of 2018, Mpumalanga was still by far the primary exit point for macadamia nut export from South Africa, followed by Gauteng province and Limpopo province. In the same season, there was a notable increment in export values recorded for Northern Cape and KwaZulu Natal, whilst Western Cape export value has experienced a notable decrement relative to 2017 exports.



Source: Quantec Easydata

The following figures (Fig. 11 – 16) show the value of macadamia nuts from the various districts in the provinces of South Africa.

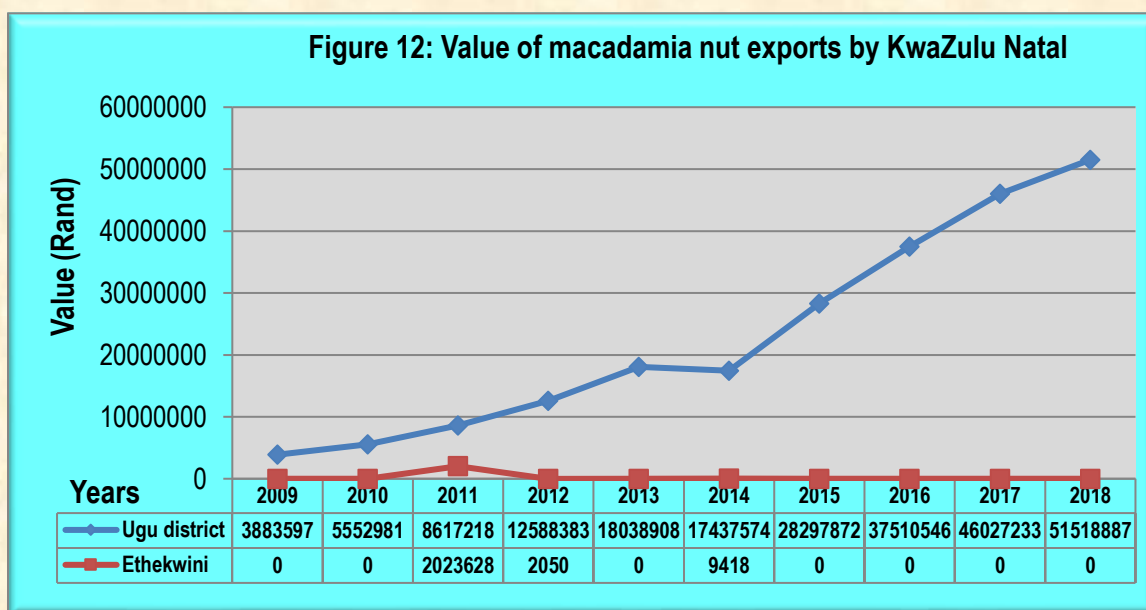
Figure 11 above shows that macadamia nuts from Western Cape Province were exported through the City of Cape Town and Cape Winelands. In 2009, City of Cape Town was the sole exit point for Western Cape macadamia nut export. During 2010, there was a significant increase in macadamia nuts value originating from the City of Cape Town when comparing to 2009. During 2011, export value recorded for the City of Cape Town has dropped significantly while the value for Cape Winelands has improved. In 2012, export value for both City of Cape Town and Cape Winelands districts have increased significantly. During 2013, Cape Winelands export value has surged and the municipality was the main contributor to Western Cape macadamia nut exports. At the same time, the City of Cape Town export value has notably dropped, when compared to 2012 export value. In 2014, Cape Winelands export value has notably dropped while City of Cape Town export value has increased in comparison to 2013. During 2015, Cape Winelands continued to lead in Western Cape macadamia nut exports and the export value has risen by 24% in comparison to the previous year (2014) export value. In the same year, the City of Cape Town export value has also increased by 17.6%. In 2016, Cape Winelands was still the main role player in Western Cape macadamia nuts export, but the export value has eased lower by 17.2% when compared to 2015, City of Cape Town export value has gone up by 35% whilst West Coast has recorded a trivial export value. During 2017, Cape Winelands remained the primary exit point for Western Cape macadamia nut exports. However the export value dropped by 19% relative to the previous year (2016). During the same year, City of Cape Town was incomparably higher relative to 2016 export value. As of 2018, Western Cape export were recorded through City of Cape Town and Cape Winelands, however the overall export value recorded for the province was incomparably lower relative to 2017 export value.



Source: Quantec Easydata

Figure 12 below shows that macadamia nuts from the KwaZulu Natal province were exported from mainly from Ugu district. A notable macadamia nut export value was recorded in 2009 for Ugu district and during 2010; macadamia nut export grew significantly by 49% in comparison to 2009 export value. In 2011, export values recorded for Ethekwini and Ugu districts have increased significantly

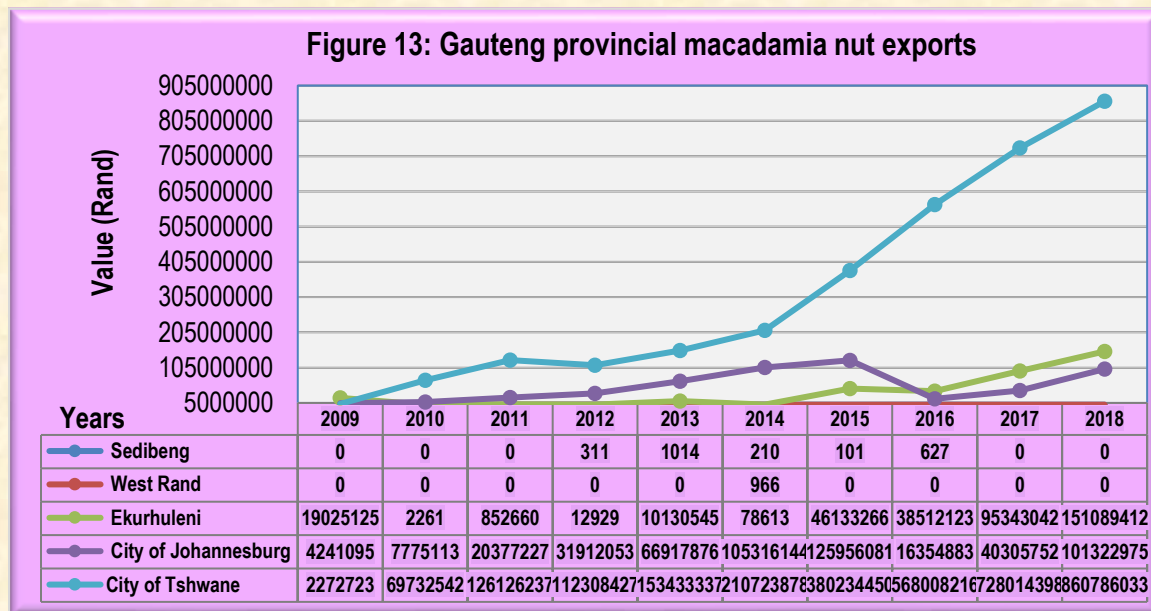
when compared to the 2010 season. During 2012, Ugu continued to record high export value for macadamia nuts originating from the KwaZulu Natal province. In 2013, Ugu district export value surged by 79%, when compared to 2012 export value and there was no export recorded for Ethekekwini district. During 2014, Ugu remained the main contributor to KwaZulu Natal macadamia nut exports, but the value has dropped slightly by 3.3% in comparison to the previous year export value. KwaZulu Natal provincial macadamia nut was solely exported through Ugu district during 2015 and the export value has surged by 62.2% in comparison to the previous year export value. In 2016, Ugu macadamia nut export value grew by 32, 5% in comparison to 2015 export value. During 2017, Ugu has remained the sole contributor towards KwaZulu Natal macadamia nut exports and export value has increased by 22.7% relative to 2016 export value. As of 2018, Ugu was still the primary exit point for KwaZulu Natal macadamia nut exports and the export value has notably increased by 11.9% relative to 2017 export value.



Source: Quantec Easydata

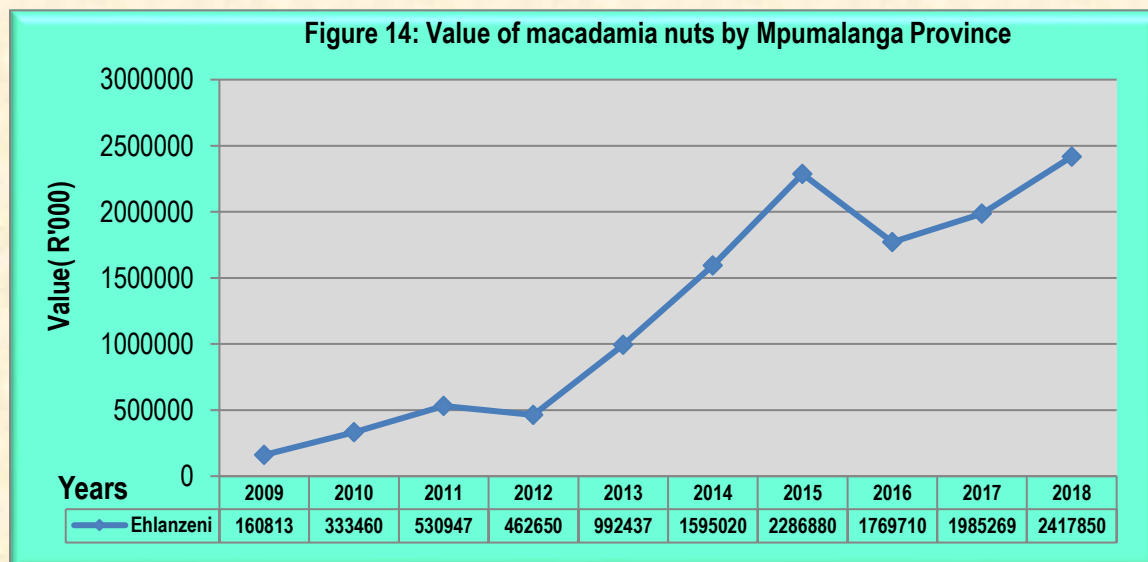
Figure 13 below shows that macadamia nut exports by Gauteng province were exported mainly through Ekurhuleni, City of Johannesburg and City of Tshwane. In 2009, Ekurhuleni was the primary exit point for macadamia export registered for Gauteng province. During 2011, export values for the City of Tshwane and City of Johannesburg have increased significantly, while export value for Ekurhuleni has notably declined, when compared to the 2010 season. In 2012, City of Tshwane and City of Johannesburg continued to dominate in macadamia nut exports originating from Gauteng province. In the same year, Ekurhuleni export value has dramatically dropped relative to 2011 season. During 2013, City of Tshwane had the highest export value in Gauteng export, but the export value for this municipality has notable dropped when compared to 2012. In the same year Ekurhuleni, export value has notably increased. During 2014, City of Tshwane and City of Johannesburg export values have surged, while Ekurhuleni export value has drastically dropped. In the same year, West Rand has contributed for the first time in an six-year period to Gauteng macadamia nut exports but the value was insignificant. In 2015, there was a substantial increase in export values recorded for the City of Johannesburg, Ekurhuleni and City of Tshwane. At the same time, Sedibeng export value was trivial and West Rand has recorded a zero trade for macadamia nut. City of Tshwane export

value has surged during 2016, whilst Ekurhuleni and Johannesburg macadamia nut export values experienced sharp declines when compared to the previous year (2015) export values. City of Tshwane was by far still the main exit point for Gauteng Macadamia nut during 2017, City of Johannesburg and Ekurhuleni have experienced more than 100% increment in export values relative to 2016 export values. As of 2018, City of Tshwane macadamia nut export value increased by 18%, City of Johannesburg surged by 151% and Ekurhuleni has experienced 58% increment in the export value.



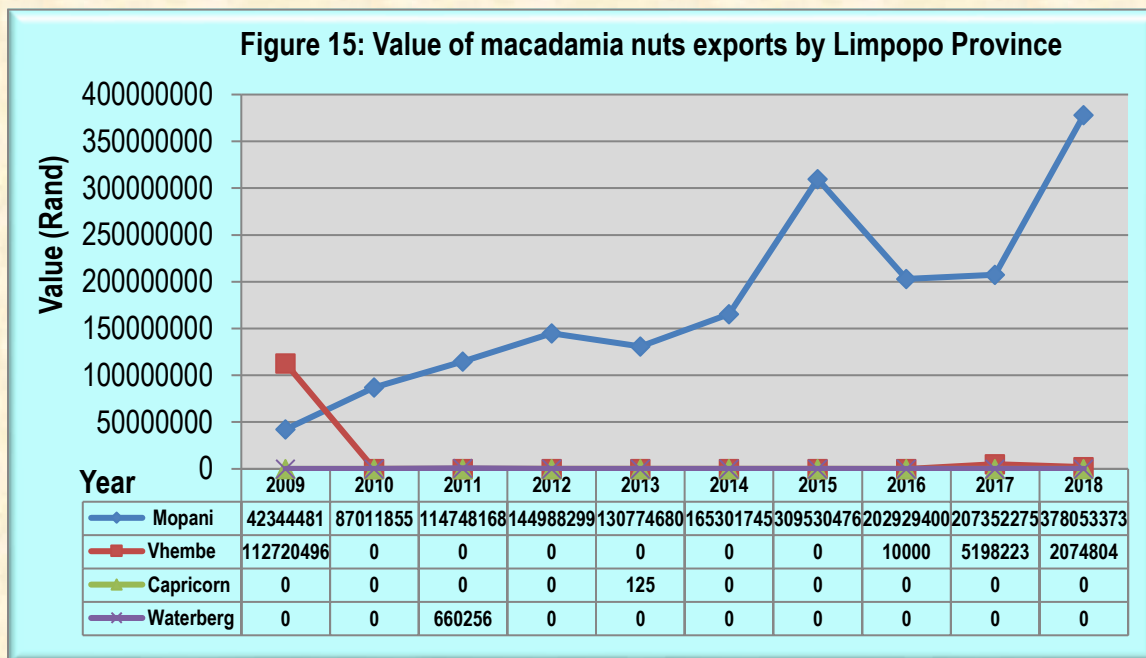
Source: Quantec Easydata

Figure 14 is an illustration of the value of macadamia nut exports by Mpumalanga province.



Source: Quantec Easydata

Figure 14 above shows that macadamia nut exports by Mpumalanga province were exported solely from Ehlanzeni district municipalities. During 2010, Ehlanzeni export value surged by 107%, relative to 2009 export value. High export value were recorded in 2011 and 2012, Ehlanzeni macadamia nut export value has declined by 12% when compared to the 2011 export values. During 2013, Ehlanzeni district export value has surged, in comparison to the previous year export values. Mpumalanga export value recorded for 2014 has increased by 57.8% when compared to 2013 export value. Mpumalanga provincial macadamia nut export value has double during 2015 and this can be attributed to high production volume from this province. In 2016, Ehlanzeni export value has eased lower by 15.6% when compared to 2015 export values. During 2017, there was a 12% increase in Ehlanzeni export value relative to 2016 export value. As of 2018, Ehlanzeni export value has increased further by 21.7%, when compared to 2017 export value.

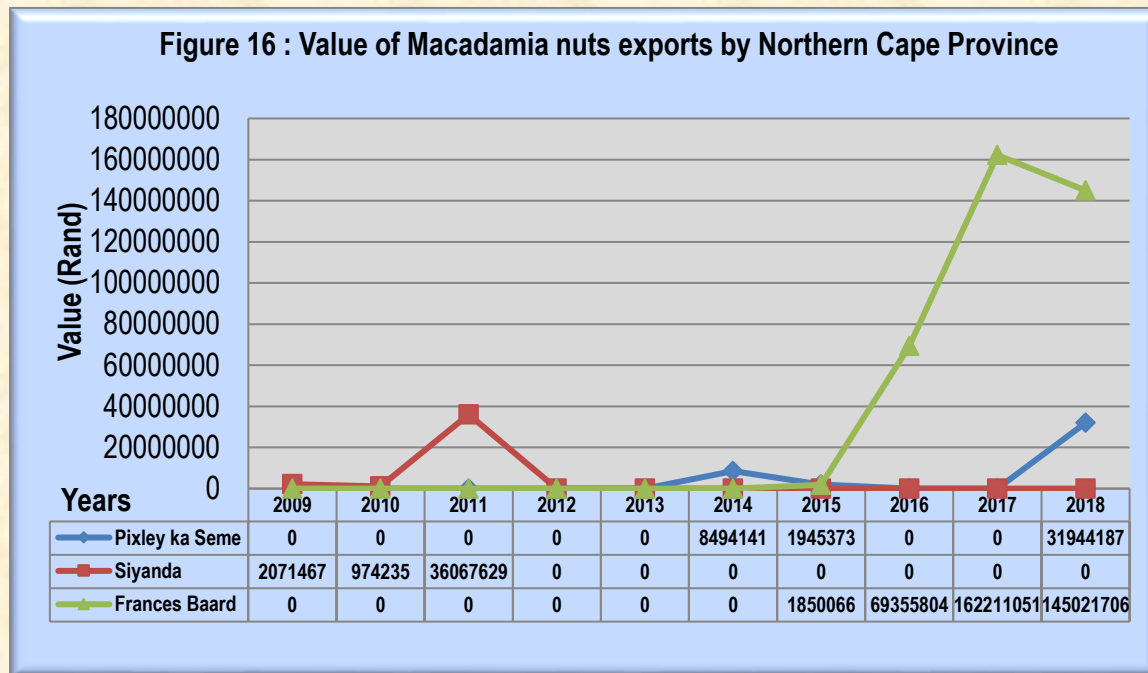


Source: Quantec Easydata

Figure 15 above illustrates that the macadamia nut exports from Limpopo province were exported mostly from Mopani districts and a notable export value for Vhembe district was recorded in 2009. During 2010, Vhembe has registered zero export value and Mopani district export value was incomparably higher relative to 2009 export value. During 2011, export values from Mopani increased drastically, when compared to the 2010 season and Waterberg has contributed notably to Limpopo provincial macadamia nut export. . In 2012, macadamia nuts export values for Mopani continued to increase, when compared to the previous year export value from Limpopo province. During 2013, Mopani was still the main contributor to macadamia nuts exported from Limpopo province and the export value for Mopani district surged when compared to 2012 export value. Mopani export value has surged during 2014, in comparison to the previous year figure. In 2015, the export value recorded for Mopani district increased drastically by 86%. During 2016, there was a significant drop in macadamia nut export values recorded for Mopani and Vhembe has recorded a less significant export value. In 2017, Mopani was still the primary contributor of Limpopo macadamia nut exports and Vhembe macadamia nut export value surged relative to 2016 export value. Limpopo

province is one of the provinces with high macadamia nut production. As of 2018, Mopani district was still by far the primary exit point for Limpopo macadamia nut export and the export value was incomparably higher relative to 2017 export value. At the same time, export value recorded for Vhembe district has declined by 60% in comparison to 2017 value.

Figure 16 is an illustration of the value of macadamia nut exports by Northern Cape province.



Source: Quantec Easydata

Figure 16 above shows the values of Northern Cape province macadamia nut exports. In 2012 and 2013, Northern Cape Province has recorded a zero trade. In 2009 to 2011, Northern Cape has exported macadamia nuts through Siyanda district and the highest value was recorded in 2011. During 2014, Pixley ka Seme district was the only contributor to Northern Cape macadamia nut exports. There was a dramatic drop in Pixley ka Seme export value during 2015, while Frances Baard has contributed significantly for the first time to Northern Cape macadamia nut exports. Frances Baard was the sole exit point for macadamia nut exports from Northern Cape and the export value was incomparably higher in comparison to 2015 export value. In 2017, Frances Baard was still main contributor towards macadamia nut export from Northern Cape and the export value was still incomparably higher relative to 2016 export value. As of 2018, Frances Baard macadamia export value dropped by 10.6% and Pixley ka Seme export value has drastically increased relative to 2017 export value.

3.2 Share analysis

Table 4 below is an illustration of provincial shares towards national macadamia nut exports. In 2010, Mpumalanga commanded 66.01%, Limpopo commanded 17.23% and Gauteng commanded a 15.34% share of macadamia nut exports. During 2012, Limpopo, Gauteng, KwaZulu Natal and Western Cape provinces have slightly increased their export shares, while in the same time

Mpumalanga province export share has slightly dropped. In 2013, Mpumalanga has increased its export share from 59.55% to 70.42% and Limpopo export share has notably dropped to 9.28%. In the same year, Western Cape has slightly increased its export share while Gauteng and KwaZulu Natal export shares has decreased. It is interesting that the high share of export was commanded by the provinces that have high production volumes, which is mostly not a case in most produce. In 2014, Mpumalanga continued to dominate macadamia nut export share by commanding 71.36%. During 2015, Mpumalanga has commanded 71.36% share of South Africa's macadamia nut export share, followed by Gauteng with 17.24% and Limpopo with 9.66% share. Western Cape, Northern Cape and KwaZulu Natal export shares were insignificant. In 2016, Mpumalanga has commanded 65.20% of macadamia nuts export share, Limpopo export share has dropped to 7.48%, Gauteng export share has increased to 22.95% while Northern Cape export share rose to 2.56%. During 2017, Mpumalanga with 60.43% share, was still leading in South Africa's macadamia nut, followed by Gauteng with 26.29% share, Limpopo with 6.47% and Northern Cape export share increased to 4.94%. As of 2018, Mpumalanga export share dropped slightly to 58.37%, Gauteng has commanded 26.87% share, Limpopo export share grew slightly to 9.18% share and Northern Cape registered 4.27% share of South Africa's macadamia nut exports.

Table 4: Share of provincial exports to the total RSA macadamia nut exports (%)

Year Province	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Western Cape	0	0	0.02	1.61	2.66	2.27	0.74	0.44	0.48	0.06
Northern Cape	0.60	0.19	4.30	0	0	0.40	0.12	2.56	4.94	4.27
KwaZulu-Natal	1.12	1.10	1.27	1.62	1.28	0.81	0.88	1.38	1.40	1.24
Gauteng	7.35	15.34	17.53	18.56	16.35	14.69	17.24	22.95	26.29	26.87
Mpumalanga	46.29	66.01	63.15	59.55	70.42	74.14	71.36	65.20	60.43	58.37
Limpopo	44.64	17.23	13.73	18.68	9.28	7.68	9.66	7.48	6.47	9.18
South Africa	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 5 below indicates that Ekurhuleni and City of Johannesburg commanded the greatest share of macadamia nut exports from Gauteng province during the 8-year period. In 2009, Ekurhuleni has commanded 74.49% share, City of Johannesburg registered 16.61% share and Tshwane has commanded 8.90% share of Gauteng macadamia nut exports. City of Tshwane has commanded 89.97% share of Gauteng export share during 2010. In 2011, City of Tshwane commanded the greatest share of 85.59%, followed by the City of Johannesburg with 13.83% share of macadamia nut exports recorded for Gauteng province. In 2012, Ekurhuleni export share has slightly increased while the export share of the City of Tshwane has dropped to 85.59% when compared to 2011 export shares. City of Tshwane has commanded 66.57% of Gauteng macadamia nuts exports share during 2013. In the same year, City of Johannesburg has commanded 29.03% and Ekurhuleni export share has increased to 4.40%. During 2014, City of Tshwane continued to dominate in Gauteng export share, it has recorded 66.66% share, and City of Johannesburg has commanded 33.32% export share. In 2015, City of Tshwane export share increased slightly to 68.84%, while City of Johannesburg export share has dropped from 33.32% to 22.80%. City of Tshwane export share notably increased to 91.19%, City of Johannesburg export share has drastically dropped from 2.63% and Ekurhuleni export share declined slightly to 6.18% share during 2016. During 2017, City of

Tshwane has continue to lead in Gauteng macadamia nut export share by registering 84.29% share and Ekurhuleni export share has slightly increased to 11.04%. As of 2018, City of Tshwane was still the primary exit point for macadamia nuts exported through Gauteng province, however the export share has dropped slightly to 77.33%, City of Johannesburg export share increased to 9.10% and Ekurhuleni export share grew by 13.57%

Table 5: Share of district export to the total of Gauteng provincial macadamia nut exports (%)

Year District	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Ekurhuleni	74.49	0	0.58	0.01	4.40	0.02	8.35	6.18	11.04	13.57
City of Johannesburg	16.61	10.03	13.83	22.13	29.03	33.32	22.80	2.63	4.67	9.10
City of Tshwane	8.90	89.97	85.59	77.87	66.57	66.66	68.84	91.19	84.29	77.33
Gauteng	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easy data

Table 6 below shows that Mopani commanded the greatest share of macadamia nut exports from Limpopo province. In 2009, Vhembe has commanded 72.69% and Mopani has commanded 27.31% share of Limpopo's macadamia exports. Vhembe district is one of the areas producing high quantities of macadamia nuts. During 2010, Mopani has recorded 100% share of Limpopo Macadamia nut export share. In 2011, Mopani export share dropped marginally to 99.43% and Waterberg has registered a trivial export share. From 2012 to 2016, Mopani has commanded 100% share of Limpopo provincial export share. During 2017, Mopani export share dropped slightly to 97.55% and Vhembe has recorded 2.45 % share of macadamia nut exports. As of 2018, Mopani export share has increased to 99.45% and Vhembe export share was insignificant.

Table 6: Share of district exports to the total of Limpopo Provincial macadamia nut exports (%)

Year District	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Mopani	27.31	100	99.43	100	100	100	100	100	97.55	99.45
Vhembe	72.69	0	0	0	0	0	0	0	2.45	0.55
Waterberg	0	0	0.57	0	0	0	0	0	0	0
Limpopo	100	100	100	100	100	100	100	100	100	100

Calculated from Quantec Easydata

Table 7 below indicates that in 2012 and 2013, Northern Cape province has recorded a zero macadamia nut trade during the period under review. From 2009 and 2011, Siyanda district has commanded 100% share of Northern Cape province. Pixley ka Seme has commanded a 100% share of Northern Cape province export share during 2014. During 2015, Frances Baard has commanded a significant share of 48.74%, while Pixley ka Seme export share has dropped from 100% to 51.26%. In 2016 and 2017, Frances Baard commanded a 100% share of Northern Cape macadamia nuts export share during 2016. As of 2018, Frances Baard macadamia nut export share declined to 81.95% share, whilst Pixley ka Seme export share increased notably to 18.05% share.

Table 7: Share of district exports to the total of Northern Cape provincial macadamia nut exports (%)

Year District	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Pixley ka Seme	0	0	0	0	0	100	51.26	0	0	18.05
Siyanda	100	100	100	0	0	0	0	0	0	0
Frances Baard	0	0	0	0	0	0	48.74	100	100	81.95
Northern Cape	100	100	100	0	0	100	100	100	100	100

Calculated from Quantec Easydata

Table 7 below shows that in 2009, City of Cape Town has commanded 100% share of Western Cape provincial macadamia nuts export share. From 2010 to 2012, the City of Cape Town continued to command high export share, but in 2013, the export share dropped from 68.66% to 0.71%. Cape Winelands has commanded a 99.29% share of Western Cape export shares during 2013. In 2014, Cape Winelands was the main contributor to Western Cape macadamia nut exports and it has recorded 97.52%. Cape Winelands export share has slightly increased to 97.66% and City of Cape Town has recorded 2.34% share during 2015. In 2016, Cape Winelands has commanded 96.22% share, City of Cape Town has registered 3.77% share whilst West Coast has recorded a trivial export share. During 2017, Cape Winelands export share dropped to 59.96%, whereas City of Cape Town has sharply increased to 40.04% share. As of 2018, Cape Winelands export share grew to 65.33%, whereas City of Cape Town export share declined slightly to 34.70% share.

Table 8: Share of district exports to the total of Western Cape provincial macadamia nut exports (%)

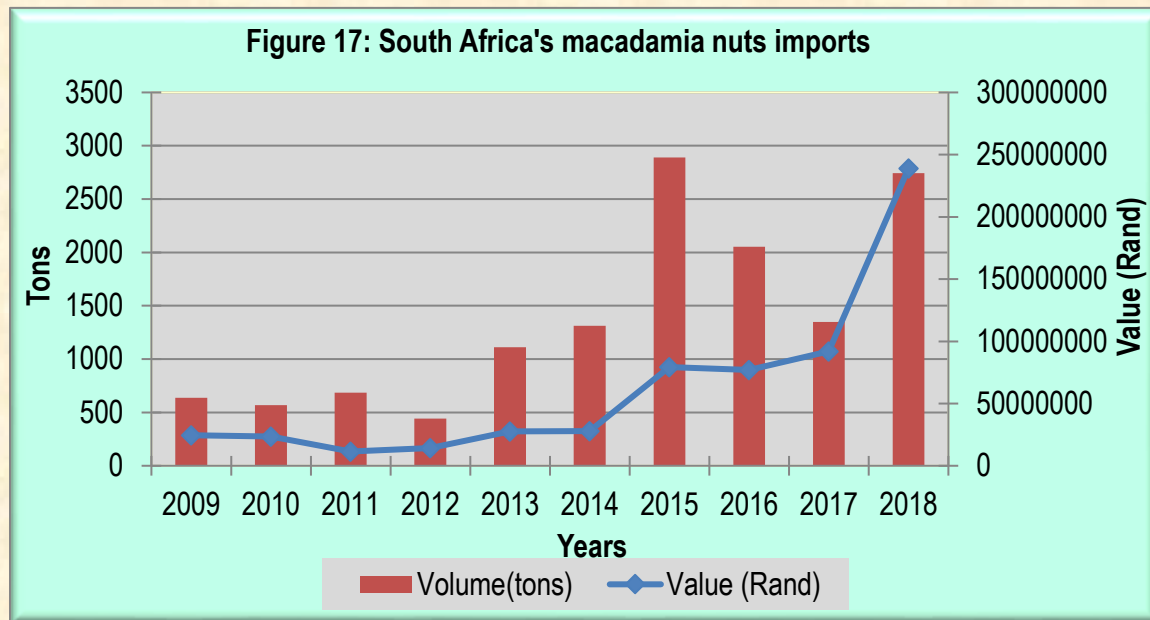
Years District	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
City of Cape Town	100	99.98	95.43	68.66	0.71	2.48	2.34	3.77	40.04	34.70
West Coast	0	0	0	0	0	0	0	0.01	0	0
Cape Winelands	0	0	4.57	31.34	99.29	97.52	97.66	96.22	59.96	65.33
Western Cape	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easy data

3.3 South African Macadamia Nuts Imports

South Africa is not a major macadamia nut importer. South Africa's macadamia nut (in shell) import represented 3.4% of world imports during 2018 and its ranking in the world macadamia nuts imports is still number 4. South Africa's macadamia nut (shelled) import represented 1.5% of world imports during 2018 and its ranking in the world macadamia nut imports was 14. In 2018, Zimbabwe was by far the main supplier of South Africa's macadamia nut imports (in shell) and it has accounted for 65.3% share of imports. In second place was Mozambique, which has supplied 22% of imports, followed by Malawi with 9.3% share of imports. Shelled macadamia nuts were sourced mainly from Malawi, which has supplied 97.6%, Zimbabwe and Singapore have accounted for 1.5% and 0.5% of South Africa's imports respectively. South Africa has also imported macadamia nuts from Zambia,

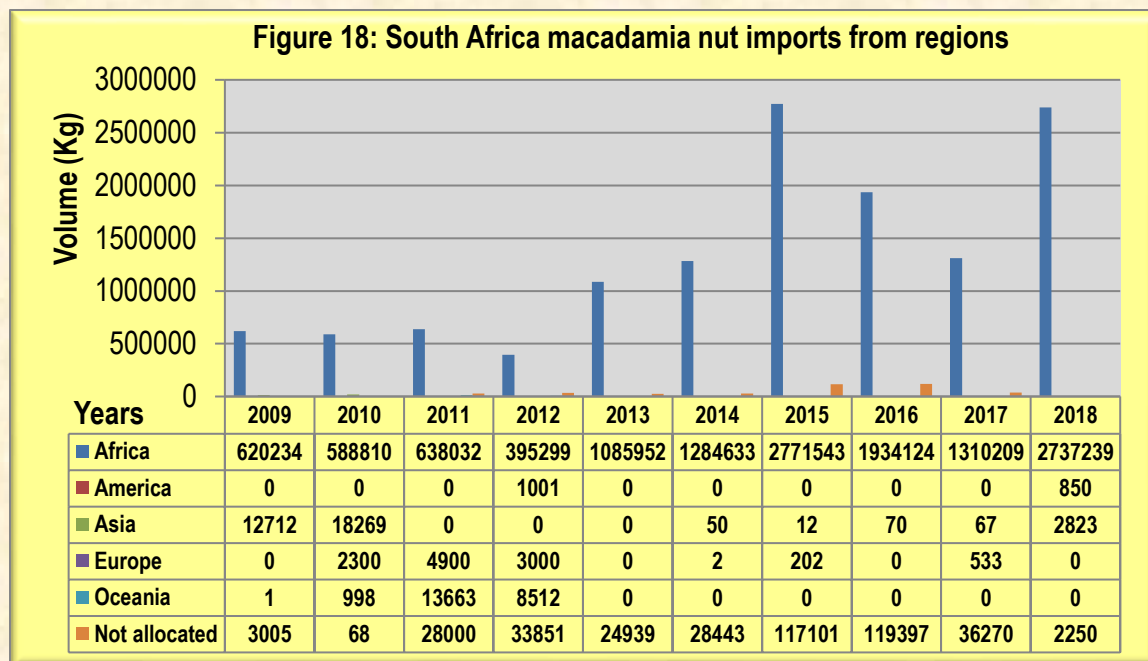
Tanzania and Eswatini. As of 2018, Viet Nam, Hong Kong (China) and United Kingdom are top countries importing macadamia nut (in shell) and the United States of America, Germany, Japan and Netherlands are still the top countries importing macadamia nut (shelled).



Source: Quantec Easydata

* Macadamia nuts HS code has been separated into shelled and in shell during 2012. To get the total macadamia nuts import shelled and in shell import, figures were combined.

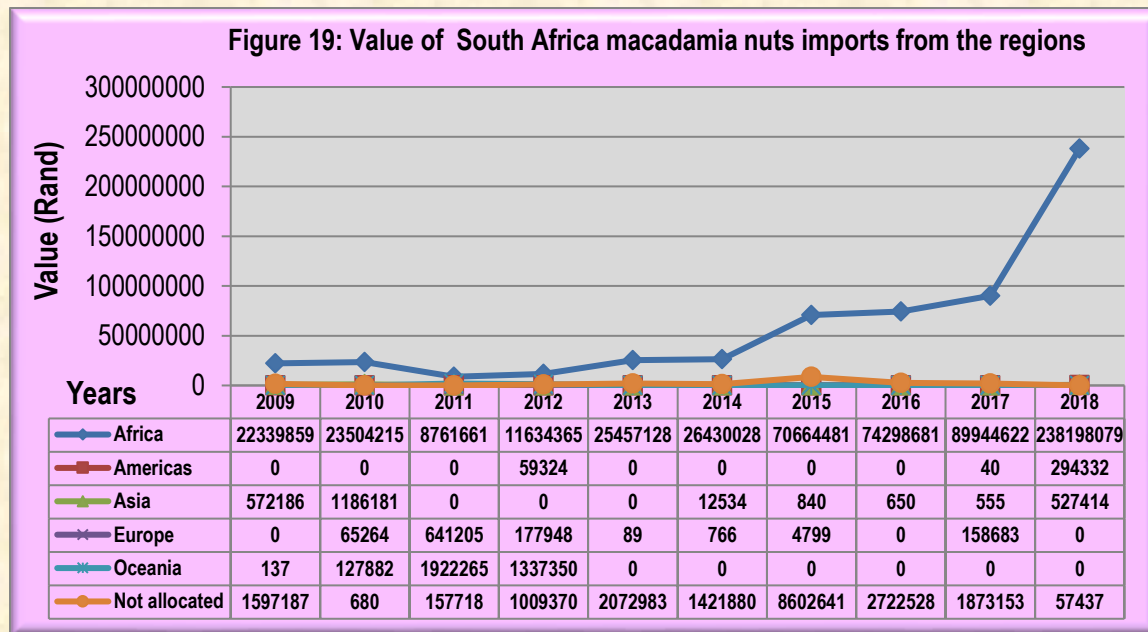
Figure 17 above illustrates South African macadamia nuts imports from 2009 to 2018. South Africa's macadamia nut import was just above 630 tons. During 2010, South Africa macadamia nut imports have declined by 10.6% when compared to 2009 and it was also expensive to import macadamia nuts as high values were recorded for lower volumes imported. South African macadamia nuts increased by 20% during the 2011 production season, when compared to 2010. It was also relatively cheap to import macadamia nuts in the 2011 season. During 2012, South Africa's macadamia nut imports dropped by 37.5%, when compared to 2011 imports. This can be attributed to an increase in domestic macadamia nut production output. South Africa macadamia nut imports surged by 154% during 2013, despite a 7.5% increase in the domestic production output. During 2014, South African imports went up by 18.2% despite a 19.7% increase in the domestic production output. In the same year, it was cheaper to import macadamia nut in comparison to 2013 imports. In 2015, macadamia nut imports have sharply increased from 1,313 tons to 2,889 tons despite a 2.5% increase in the domestic production output. In the same year, it was also more expensive for South Africa to import macadamia nuts as a higher value was recorded for the volume imported. South Africa macadamia nut imports dropped by 28.9% in comparison to the previous year (2015) import volume and it was relatively more expensive to import macadamia nuts. During 2017, South Africa has increased its macadamia nut imports by 34% relative to 2016 imports and it was relatively more expensive to import macadamia nuts. As of 2018, South Africa's macadamia nut import surged by 104%, despite a 26.7% increment in domestic production output and it was relatively more expensive to import macadamia nuts relative to 2017 imports.



Source: Quantec Easydata

Figure 18 above illustrates the regions supplying South Africa with macadamia nuts. South Africa generally imports high volumes of macadamia nuts from African countries (Malawi and Zimbabwe). A fraction of macadamia nuts was imported from Asia (Japan). Notable volumes of macadamia nuts from Europe were recorded from 2010 and 2013. South Africa imported considerable volumes of macadamia nuts from the Oceania region (Australia) during 2011. During 2011, South Africa imported macadamia nuts mainly from Malawi, Zimbabwe, Australia, Mozambique and Netherlands. In 2012, Malawi continued to be the main macadamia nut supplier for South Africa, followed by Australia and Zimbabwe. Malawi supplied 72.6%, Australia 9.5% and Zimbabwe 9% of South Africa's macadamia nut imports. During 2013, South Africa imported macadamia nuts solely from African region. Zimbabwe commanded a 50.2% share, Malawi has commanded 39.9% share and Mozambique has commanded 2.3% share of South Africa's imports.

In 2014, the African region remained the main supplier of macadamia nuts imported by South Africa. Zimbabwe has supplied 74.6% of South Africa macadamia nut imports and Malawi has supplied 9.5%, while Kenya has supplied 5.8% of the imports. During 2015, Africa region was still by far the leading supplier of South Africa's macadamia nut imports, while imports from Europe and Asia regions were trivial. In the same year, there was a sharp increase in unallocated import volume from 28 443Kg to 117 100Kg. In 2016, Africa (Zimbabwe, Mozambique, Malawi and Kenya) region have remained the primary source of South Africa's macadamia nut import, unallocated import has slightly increased by 1.9%, whilst imports from Asia were insignificant. During 2017, Africa (Malawi, Mozambique Zimbabwe, Zambia and Kenya) region was still the main supplier of South African macadamia nut imports, whilst imports from Europe and Asia were insignificant. During the same time, unallocated imports have drastically dropped by 69.6% relative to 2016 import volume. As of 2018, macadamia nuts imports from Africa (Zimbabwe, Mozambique, Malawi and Zambia) region surged relative to previous year (2017) imports, whilst imports from Americas and Asia where trivial.

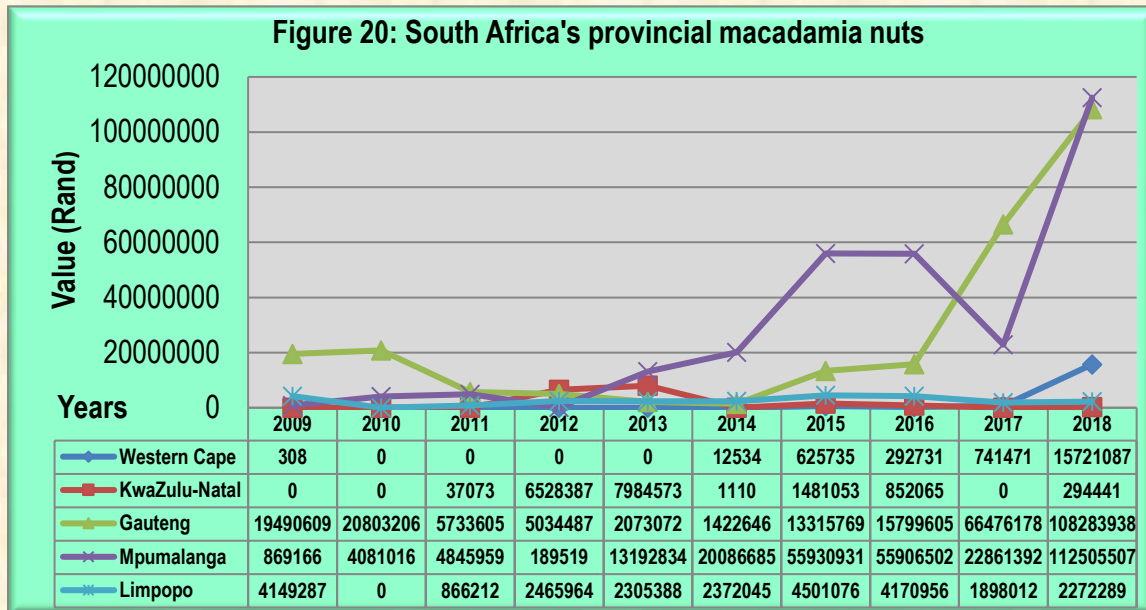


Source: Quantec Easydata

Figure 19 above shows high import value for the African region due to high volumes imported from that region. Import values for Asia and Europe were less significant due to lower import volumes from these regions. In 2010, it was more expensive to import macadamia nuts from Oceania, since high import value was recorded for less volume imported. During 2011, it was cheaper to import from Asia and Africa. In the same year, it was more expensive to import from the Oceania region. In 2012, it was still cheaper to import macadamia nuts from African region while imports from the Oceania region remain relatively expensive. It was cheaper to import macadamia nut during 2013, when compared to 2012 imports. During 2014, it was still cheaper to import macadamia nuts from Africa region. In 2015, the unallocated imports have higher value as compared to imports from Africa region. During 2016, it was more expensive to import macadamia nuts from Africa region in comparison to 2015 import from the same region. In the same year, the unallocated import was cheaper. In 2017, macadamia nuts imported from Africa region were relatively more expensive relative to 2016 imports from the same region. In the same year, it was relatively more expensive to import macadamia nut from Europe region and unallocated has higher value, when compared to 2016 imports. As of 2018, it was relatively more expensive to import macadamia nut from America region, followed by Asia whereas imports from Africa's were relatively cheaper.

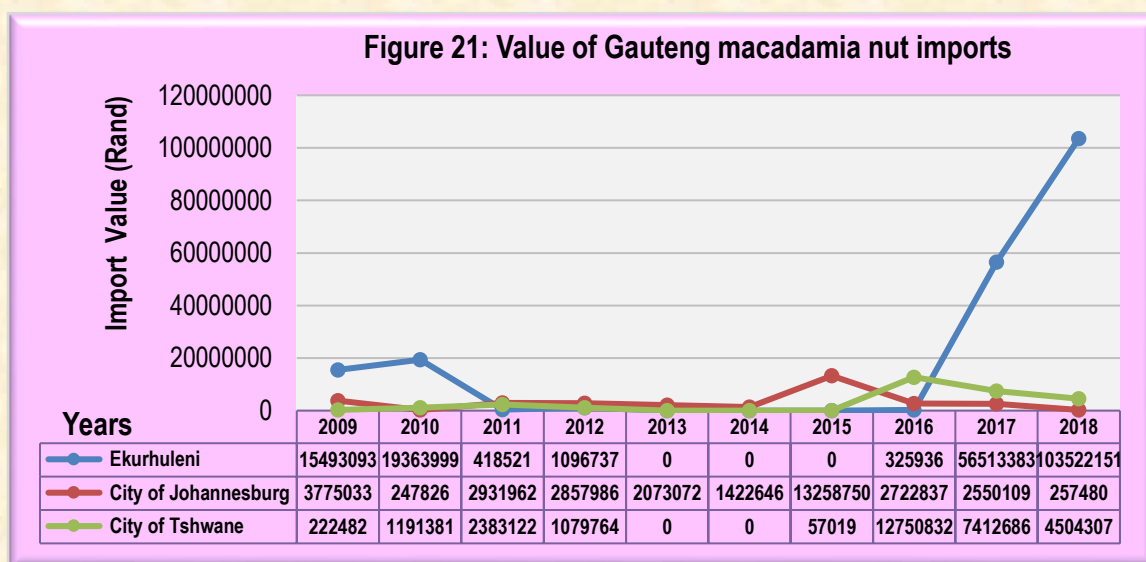
Figure 20 below shows the South African provincial macadamia nut imports by provinces. South African macadamia nuts imports entered the country mainly through Gauteng and Mpumalanga provinces. In 2009 and 2010, Gauteng has recorded high import values. Mpumalanga province has recorded high import value during 2011 and KwaZulu Natal had a higher export value during 2013. In 2014, South Africa imported macadamia nuts through Mpumalanga, Gauteng, Limpopo, KwaZulu Natal and Western Cape. However, the Western Cape and KwaZulu Natal import values were less significant. During 2015, Mpumalanga and Gauteng provinces have continued to be the main entry points for macadamia nuts imported by South Africa. At the same time, Western Cape, KwaZulu Natal and Limpopo import values have significantly increased, in comparison to the 2014 import values. In 2016, Mpumalanga province was still the primary entry point for South Africa's macadamia

nut import and the import value increased notably by 21% as compared to 2015 import value. In the same year, there was a significant decline in Gauteng, Limpopo, KwaZulu Natal and Western Cape import values. Gauteng was still the preferred entry point for South Africa's macadamia nut imports during 2017. Mpumalanga and Limpopo import values have dropped drastically relative to 2016 import values. As of 2018, Mpumalanga was by far the primary entry point for South Africa's macadamia nut imports, followed by Gauteng and Western Cape import value was incomparably higher compared to 2017 import value. At same time, Limpopo import value grew by 19.7% and KwaZulu Natal has recorded a notable import value.



Source: Quantec Easydata

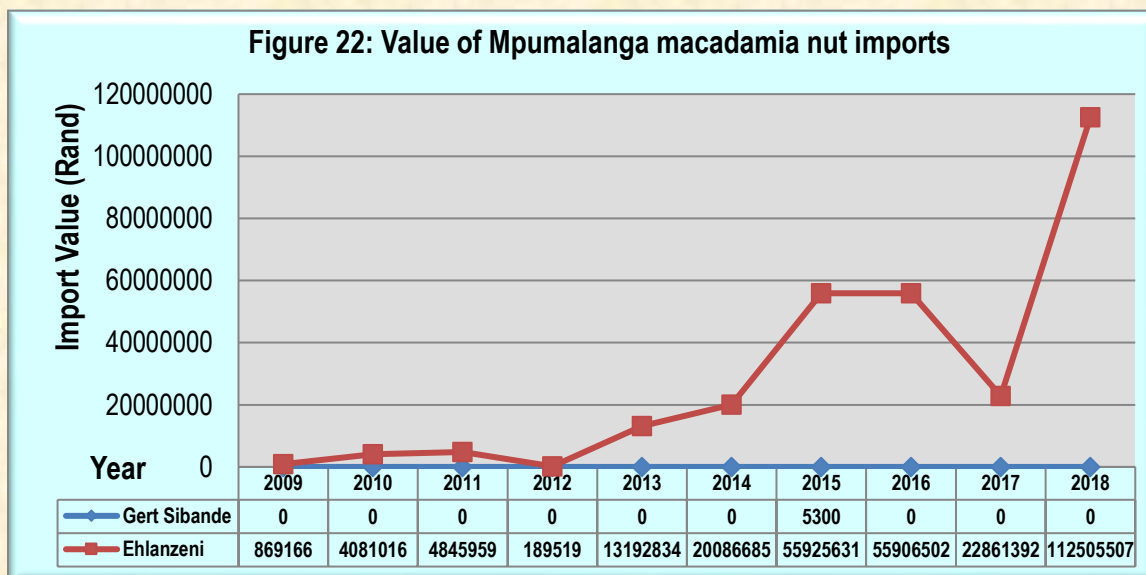
Figure 21 below is an illustration of Limpopo provincial macadamia nut import from 2009 to 2018



Source: Quantec Easydata

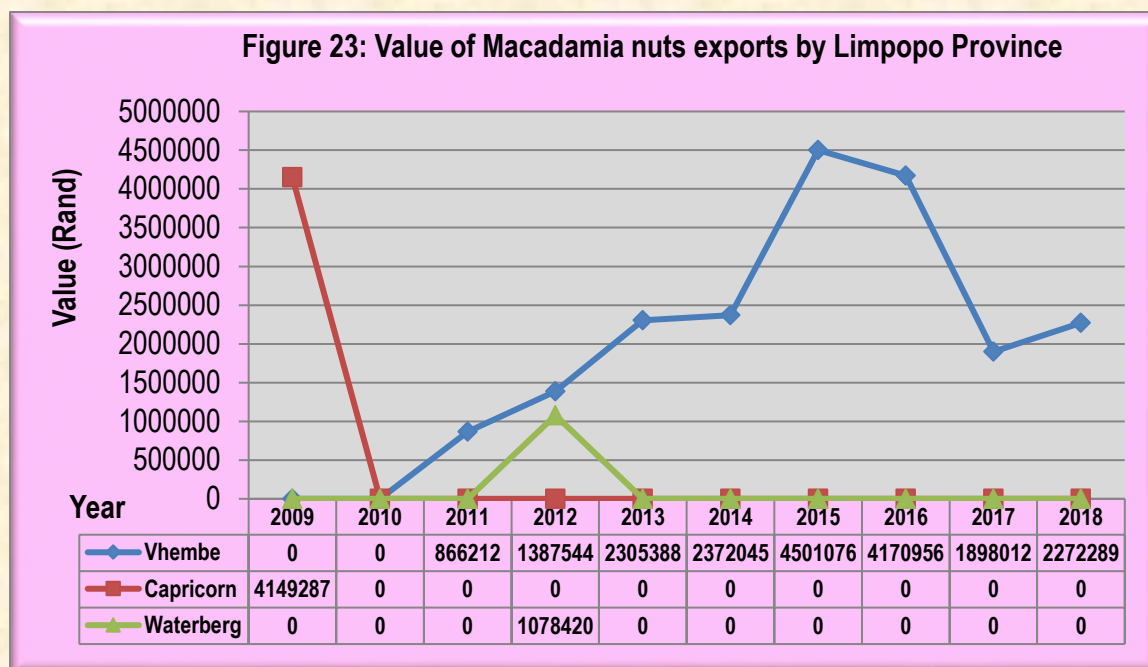
Figure 21 above shows that, in 2009, Ekurhuleni, City of Johannesburg and City of Tshwane have contributed notably to Gauteng macadamia nut imports and during the following year (2010), Ekurhuleni import value has increased notably by 24.9%. Ekurhuleni import value has drastically dropped in 2011, while City of Tshwane import was the main entry point for Gauteng provincial import. As of 2012 to 2014, City of Johannesburg and Ekurhuleni were the main entry points for Gauteng provincial imports and City of Johannesburg import values have experienced a decrease when compared to the previous year import values. In 2016, City of Johannesburg was still the primary entry point for Gauteng macadamia nut imports; however, the import value dropped drastically by 78.8%, Ekurhuleni import value has decreased by 90% whilst City of Tshwane import value was incomparably higher in comparison to 2015 import value. During 2017, Ekurhuleni was the primary entry point for macadamia nut imports by South Africa. The City of Johannesburg import value dropped by 6.3% and City of Tshwane import value has notably dropped by 41.6% relative to 2016 import value. As of 2018, Ekurhuleni was far the primary entry point for macadamia nuts imported through Gauteng province, City of Johannesburg and City of Tshwane import values have notably declined relative to 2017 import values.

Figure 22 below depicts the entry point of Mpumalanga provincial macadamia nut imports. As of 2009 to 2014, Mpumalanga province has imported macadamia nuts solely through Ehlanzeni district and during 2011, there was a notable increment in import value. During 2015, Ehlanzeni district import value has surged when compared to 2014 value. In the same year, Gert Sibande has recorded its first macadamia nut import value but the value was insignificant. In 2016, Ehlanzeni was still the primary entry point for Mpumalanga macadamia nut import and the import value increased by 21% as compared to 2015 value. During 2017, Ehlanzeni import value has drastically dropped by 59% relative to 2016 import value. As of 2018, Ehlanzeni has continued to be the sole entry point for Mpumalanga macadamia nut imports.



Source: Quantec Easydata

Figure 23 below is an illustration of Limpopo provincial macadamia nut import from 2009 to 2018



Source: Quantec Easydata

From figure 23 above, it is clear that Limpopo provincial macadamia nut were imported through Capricorn district during 2009. In 2010, Limpopo has recorded a zero trade for macadamia nuts. In 2011, Mopani was the entry point for Limpopo macadamia nut imports. Capricorn has recorded a notable import value during 2012. From 2013 to 2015, Mopani was the sole entry point for Limpopo provincial imports. During 2016, Mopani district macadamia nut import value has dropped by 21.7% as compared to the previous year (2015) import value. In 2017, Mopani import value declined further by 54.4% relative to 2016 import value. As of 2018, Vhembe district was the sole entry point for Limpopo province macadamia nut imports.

4. PROCESSING

The kernel is the main product from the macadamia nut tree. After harvesting, the husks covering the nuts are removed. The nuts are fried, the shells are cracked, and the kernels are removed to be oil-roasted or dry-roasted. Kernels are commonly sold as snack nuts and chocolate-covered candy. Ice cream manufacturers and the baking industry also use macadamia kernels as an ingredient. The shell and husk also have uses. Shells can be used as mulch, fuel for processing macadamia nuts, planting medium for anthurium culture, plastic manufacture and as a substitute for sand in the sand-blasting process. Husks are used as mulch or composted for fertilizer. Oil can be extracted from culled nuts. The cosmetic industry, especially in Japan, uses the oil in soaps, makeup, sunscreens and shampoos. The remaining press cake might be used for animal feed. The various uses of macadamia nuts are illustrated in Figure 24 while the market value chain is depicted in Figure 24.

Figure 24: Macadamia Value Chain Tree explaining its uses

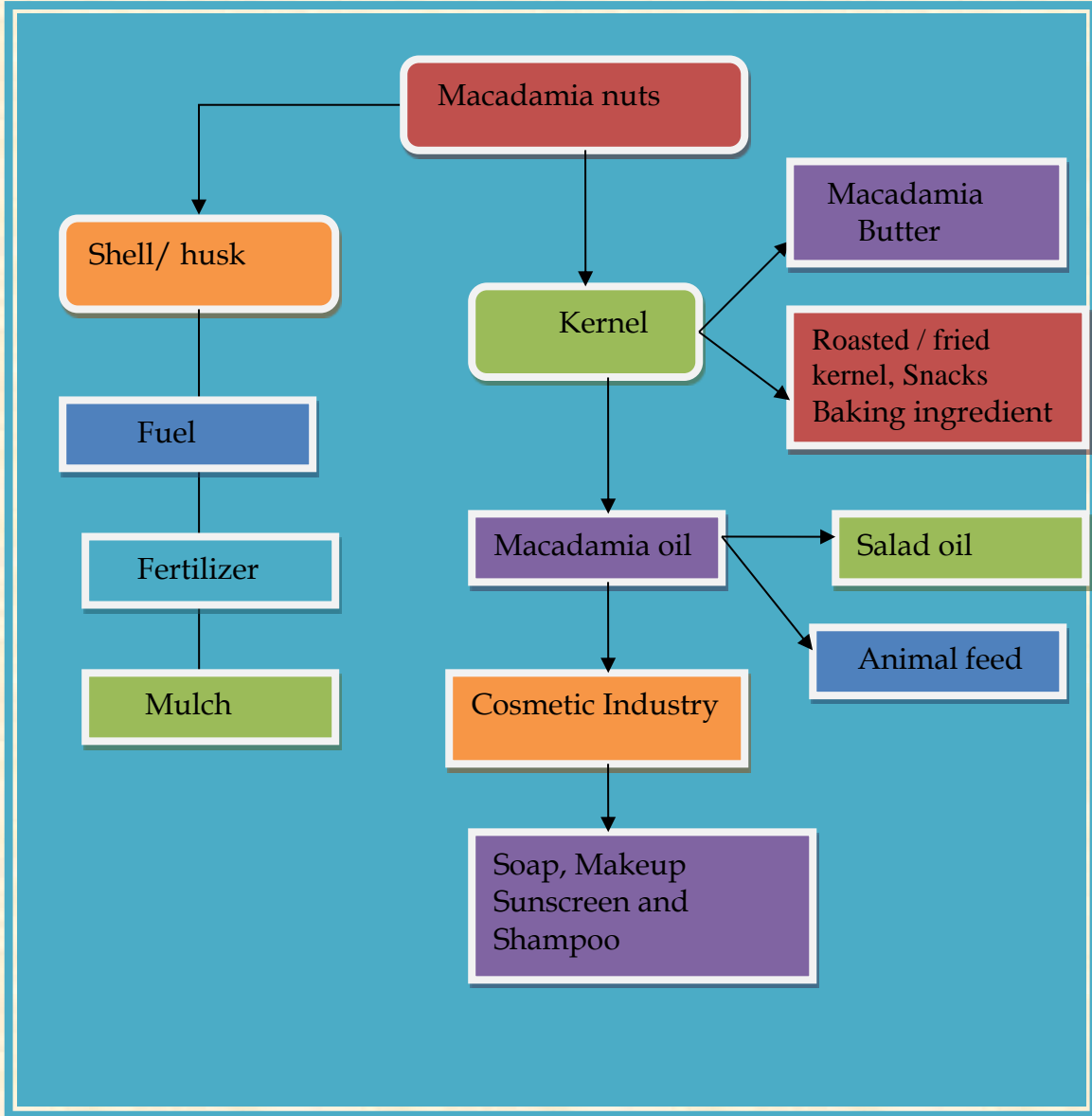
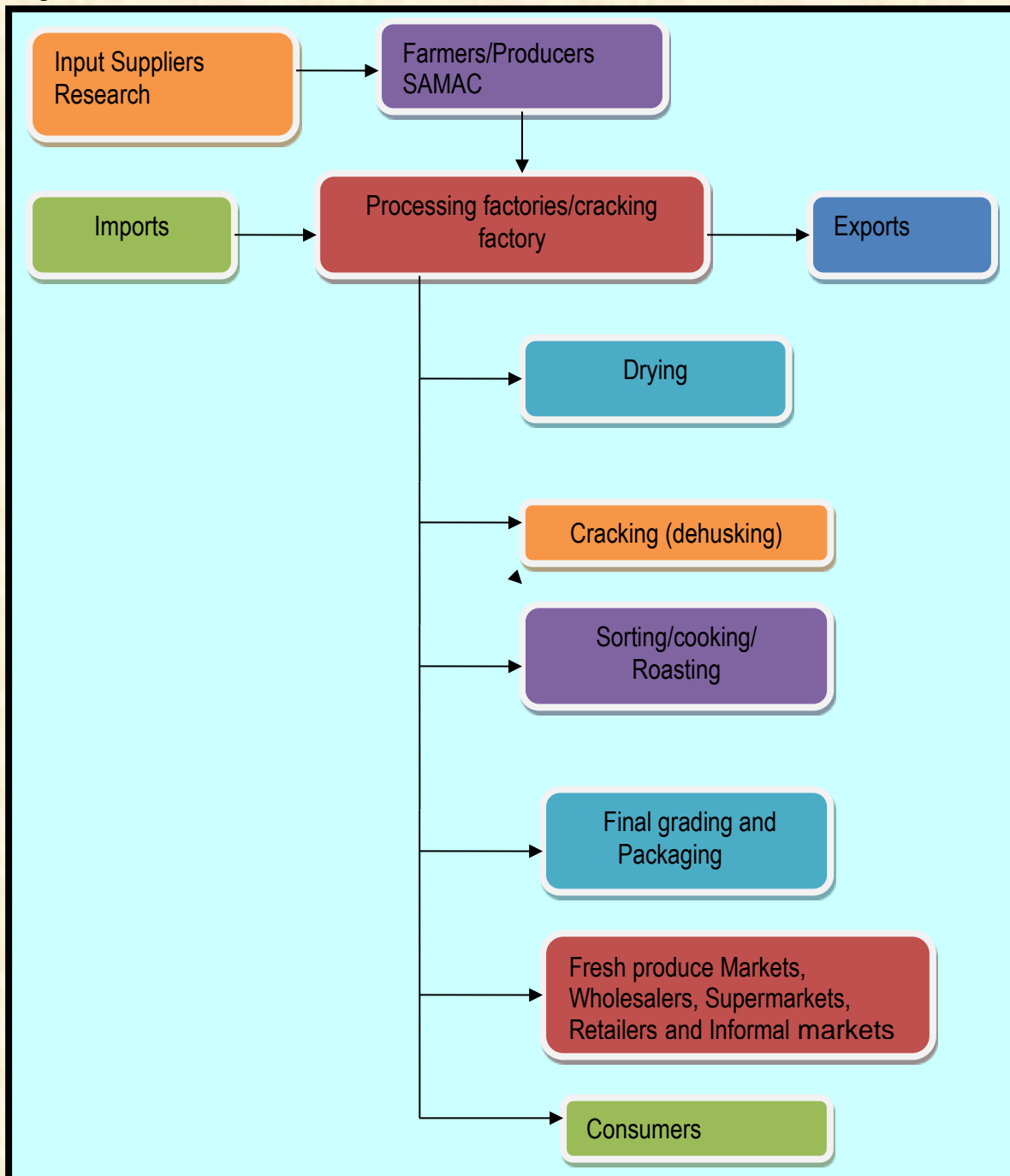


Figure 25: Market value chains for macadamia nuts



Macadamia value chain can be broken down into the following levels: the producer of macadamia nuts (farmers), processing /cracking factory owner (who dry, crack (dehusk), sort, cook, roast, grade, package, store and distribute macadamia nuts). Processing factories also market and sell macadamia nuts to fresh produce markets, wholesalers, supermarkets, retailers and informal markets and then to end users (consumers).

5. LOGISTICAL ISSUES

5.1 Storage

Vacuum packed raw macadamia kernel should be stored in a cool (15°C to 25°C), dry and well ventilated area. Stored under these conditions, raw macadamia kernel, which conformed to all the quality specifications at packing, will maintain this quality for 16 to 18 months without any serious quality deterioration, as they do not need refrigeration. This length of time of quality preservation is of course only achieved if the correct vacuum pouch material is used. Gas flushed (nitrogen or carbon dioxide) vacuum packed macadamias at 1.5% or less MC%, has shown to have a storage/shelf life of 12 to months, at ambient temperature (up to 38 °C).

5.2 Quality

SAMAC Handlers adhere to a minimum standard for macadamia kernel, based on a combination of specifications adapted from the International Nut and dried Fruit Council (INC), UNECE 22 and 23 and internal minimum standard. The standards have been agreed to by all SAMAC. These covered the main quality parameters affecting kernel rancidity (free fatty acids and peroxide value), hygiene (Coliforms and E.Coli) and moisture level (moisture content %). These minimum quality standards have now been extended to include additional quality parameters, providing a more comprehensive definition of quality specifications in line with international trends. The standards have been updated and the detailed standards are available at SAMAC website (<https://www.samac.org.za/standards/>).

5.3 Shelling

For successful shelling, the nuts should be dried to a moisture content of about 1, 5 % to ensure that kernels shrink away from the shells. Therefore, nuts should be dried before shelling. The final drying takes place in large containers through which hot air is circulated. The macadamia nut has a very hard shell, but is easily cracked mechanically between rotating steel rollers. A nutcracker or shelling machine works on the principle that nuts are cracked between a rotating steel roller and a fixed plate. The distance between the roller and the plate is adjustable according to the grading size of the nuts. The kernels of the nuts that have been properly dried drop from the shells when the nuts are cracked.

5.4 Drying

Freshly harvested, dehusked nuts contain 25% moisture and must be dried before they are stored in bulk. Wire frames containing 3 layers of nuts are used for drying. Air must circulate freely between the frames to prevent mould. A fan may be used. The nuts could also be sundried, but if the freshly harvested nuts are exposed to the sun immediately, the shells may crack. These cracks provide access to insects when the nuts are stored. If the nuts are not dried, but immediately stored in bags or other containers, fungal growth could occur.

5.5 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). Macadamia stored in its original, unopened package in a cool, dry environment, it will normally retain that quality for at least a year from its package date. For longer shelf life, the product should be stored under cold storage with low relative humidity. Macadamia kernels can easily deteriorate during handling and repackaging unless certain principles are kept in mind. Unlike other edible nuts, the macadamia kernel requires a storage environment, which is very low in moisture and oxygen. This is best achieved by a combination of gas flushing with food grade carbon dioxide or nitrogen, and partial vacuuming before hermetically sealing the pouch. Only then will a satisfactory shelf life be attained.

The partial vacuum also helps to stop the kernels rubbing during transit and to prevent puncturing of the protective film. Once the package is opened and the kernels are exposed to the atmosphere for several hours they will absorb moisture and begin to lose their "crunch". Even an increase in moisture from 1.5% to 1.8% makes a significant difference to the texture. If stored open to the air the kernel moisture will continue to rise and the eating quality will decrease markedly. If stored under these conditions at room temperature for several weeks their taste will change as rancidity slowly develops. Deterioration may also occur if kernel is packaged in poor quality packaging materials e.g. Polythene or cellophane bags. The shelf life of kernel packed under these conditions may be considerably less than a month before there is a discernible loss of eating quality. The fried or roasted nuts are packed in airtight bottles, tins or plastic containers for consignment and marketing.

6. MARKET INTELLIGENCE

Tariffs applied by the various markets to macadamia nuts originating from South Africa during 2017 and 2018 are presented in Table 9.

Table 9: Tariffs applied by various export markets for macadamia nuts originating from South Africa.

Country	Product description (H0802610) and (H0802620)	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2017		2018	
Australia	Macadamia nuts (In shell and shelled)	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Canada	Macadamia nuts, fresh or dried (In shell and shelled)	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
China	Macadamia nuts, fresh or dried (In shell)	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
	Macadamia nuts (Shelled)	MFN duties (Applied)	24.00%	24.00%	0.00%	0.00%
Belgium	Macadamia nuts, fresh or dried (In shell and shelled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
France	Macadamia nuts, fresh or dried (In shell and shelled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Germany	Macadamia nuts, fresh or dried (In shell and shelled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Luxembourg	Macadamia nuts, fresh or dried (In shell and shelled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Hong Kong	Macadamia nuts, fresh or dried (In shell and shelled)	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%

Country	Product description (H0802610) and (H0802620)	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2017		2018	
Zambia	Macadamia nuts, fresh or dried (In shell and shelled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Mexico	Macadamia nuts, fresh or dried (In shell and shelled)	MFN duties (Applied)	20.00%	20.00%	20.00%	20.00%
Taipei, Chinese	Macadamia nuts, fresh or dried (In shell and shelled)	MFN duties (Applied)	7.50%	7.50%	7.50%	7.50%
Japan	Macadamia nuts, fresh or dried (In shell and shelled)	MFN duties (Applied)	5.00%	5.00%	5.00%	5.00%
		Preferential tariff for GSP countries	2.50%	2.50%	2.50%	2.50%
Viet Nam	Macadamia nuts, fresh or dried (In shell and shelled)	MFN duties (Applied)	30.00%	30.00%	30.00%	30.00%
Kenya	Macadamia nuts, fresh or dried (In shell and shelled)	MFN duties (Applied)	25.00%	25.00%	25.00%	25.00%
Malawi	Macadamia nuts, fresh or dried (In shell and shelled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Netherlands	Macadamia nuts, fresh or dried (In shell and shelled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Spain	Macadamia nuts, fresh or dried (In shell and shelled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Switzerland	Macadamia nuts, fresh or dried (In shell and shelled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
United Kingdom	Macadamia nuts, fresh or dried (In shell and shelled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%

Country	Product description (H0802610) and (H0802620)	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2017		2018	
United States of America	Macadamia nuts, fresh or dried (In shell and shelled)	Preferential tariff for AGOA countries	0.00%	0.00%	0.00%	0.00%
Zimbabwe	Macadamia nuts, fresh or dried (In shell and shelled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Brazil	Macadamia nuts, fresh or dried (In shell and shelled)	MFN duties (Applied)	10.00%	10.00%	10.00%	10.00%
Guatemala	Macadamia nuts, fresh or dried (In shell and shelled)	MFN duties (Applied)	15.00%	15.00%	15.00%	15.00%

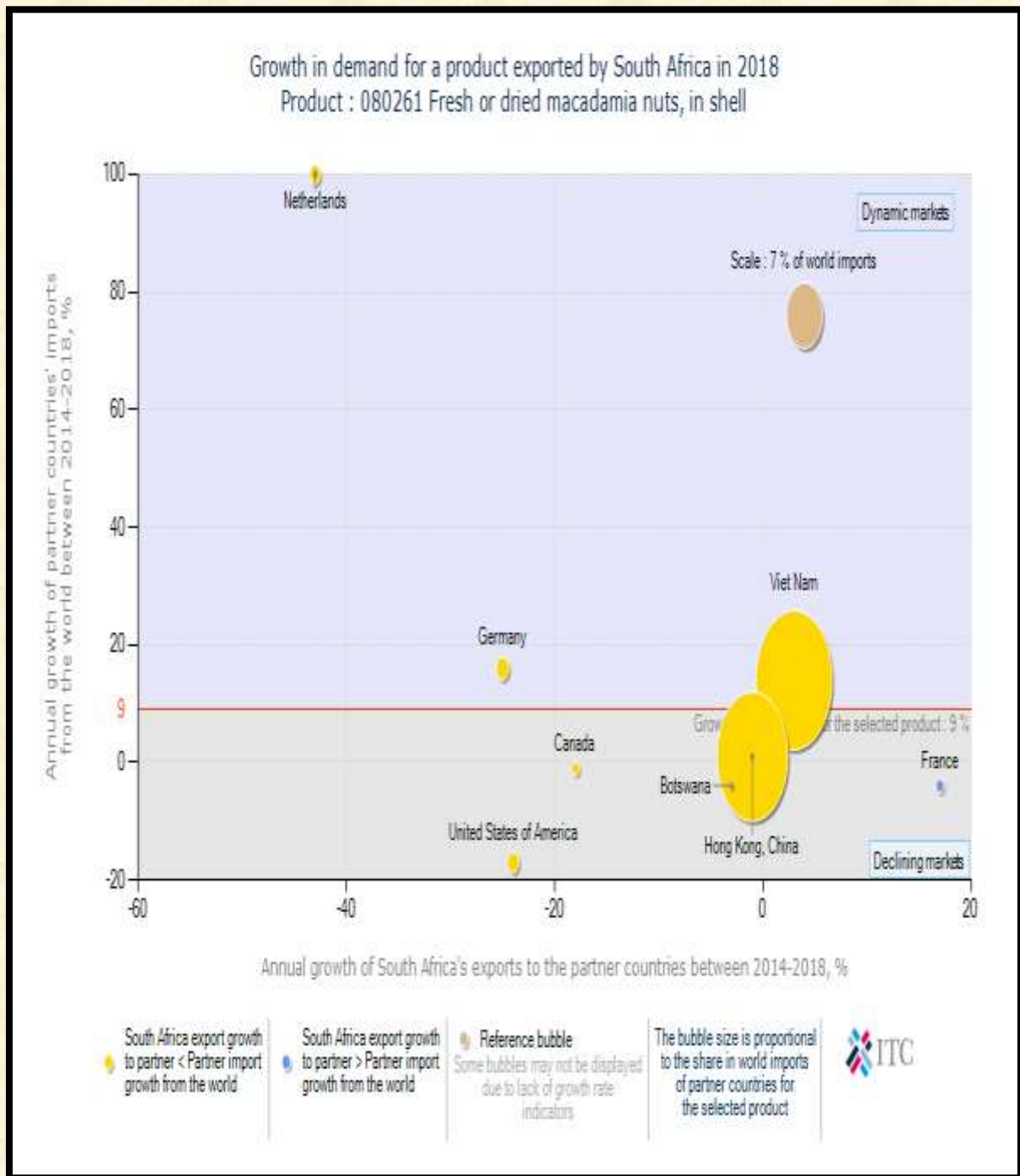
Source: Market Access Map

During 2018, Hong Kong (China), Viet Nam and China were still the biggest export markets for South Africa's macadamia nut (in shell). China applies 0% tariff on unshelled macadamia nuts and Viet Nam still apply 30% tariff on unshelled macadamia nuts originating from South Africa. In the same year, United States of America, Netherlands, Germany and Spain were the primary export markets for shelled macadamia nuts from South Africa. United States of America, Netherlands, Germany and Spain applies a 0% tariff to shelled macadamia nut originating from South Africa. Hong Kong (China) has reduced applied tariff from 24% to 0% tariff to South Africa's shelled macadamia nut exports. The lucrative export markets for macadamia nut are in European countries (France, Germany, Netherlands, Italy and United Kingdom) since the countries apply a 0% preferential tariff to macadamia nuts originating from South Africa. In African market, Malawi has reduced its 15% tariff to 0.00% preferential tariff to macadamia nuts originating from South Africa. Kenya is one of African countries producing macadamia nut and is still protected by 25% tariff; hence, a high tariff can be a measure to protect their domestic producer. Zimbabwe has reduced its tariff from 40% to 0% and thereby complying with SADC-FTA. Chinese Taipei has increase imports of shelled macadamia nuts from South Africa and its domestic market is protected by 7.50% tariff.

7. MARKET COMPETITIVENESS

Figure 26 below illustrates the growth in demand for macadamia nut exports from South Africa in 2018.

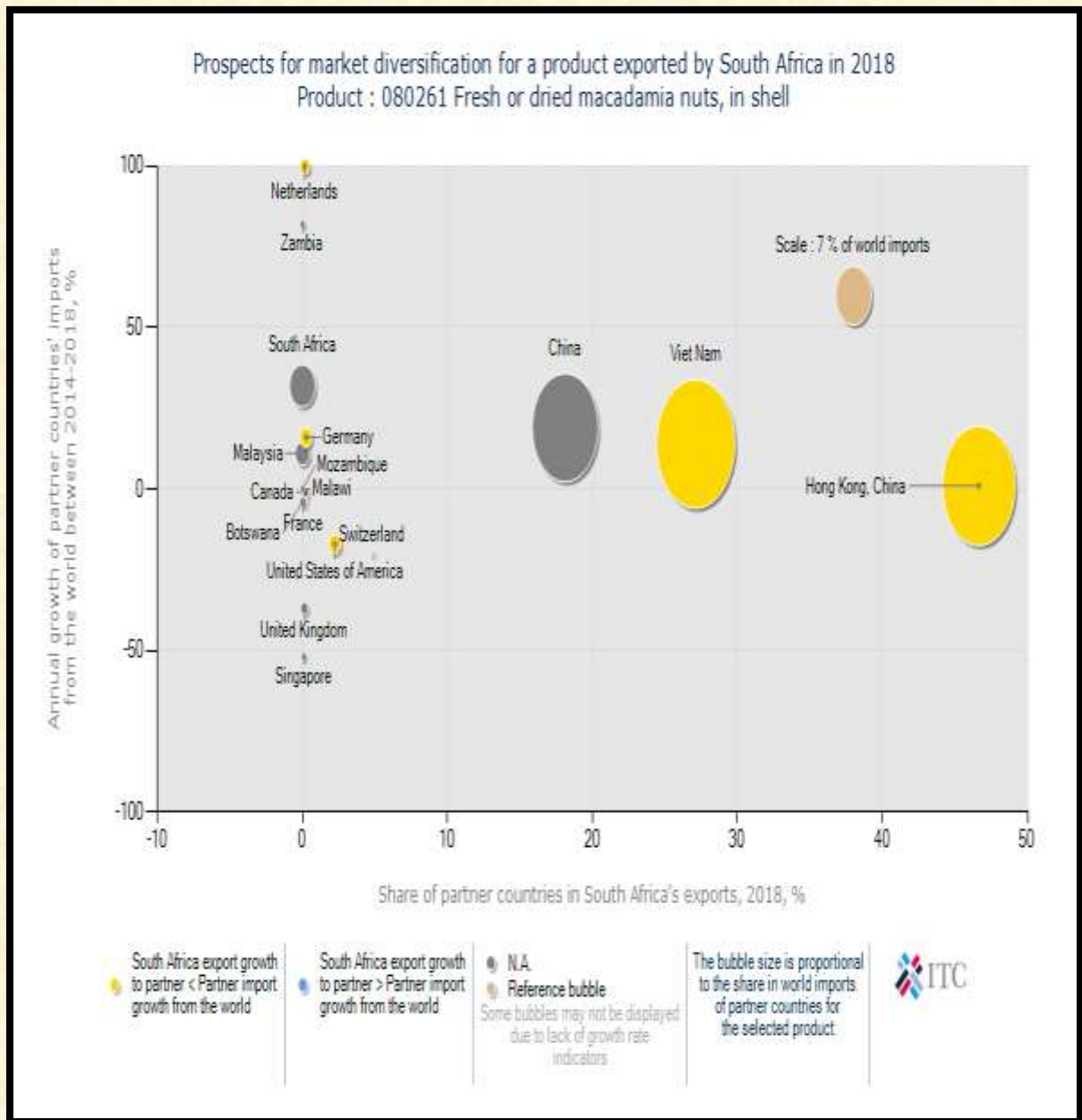
Figure 26: Growth in demand for macadamia nuts (in shell) exports from South Africa in 2018



Source: ITC Trade Map

Figure 26 above shows that South Africa's macadamia nuts (in shelled) exports to Netherlands, Germany and Viet Nam are growing slower than the world imports into these countries. South Africa's performance in these markets is regarded as a loss in the dynamic market. South Africa's exports to France and Botswana are growing while the world imports to these countries are declining. South Africa's performance is regarded as a gain in declining markets. Prospects for market diversification South Africa's macadamia nuts exports are declining faster than the world imports into United States of America and Hong Kong, China for macadamia nuts (in shell) exported from South Africa during 2018 are depicted in Figure 27.

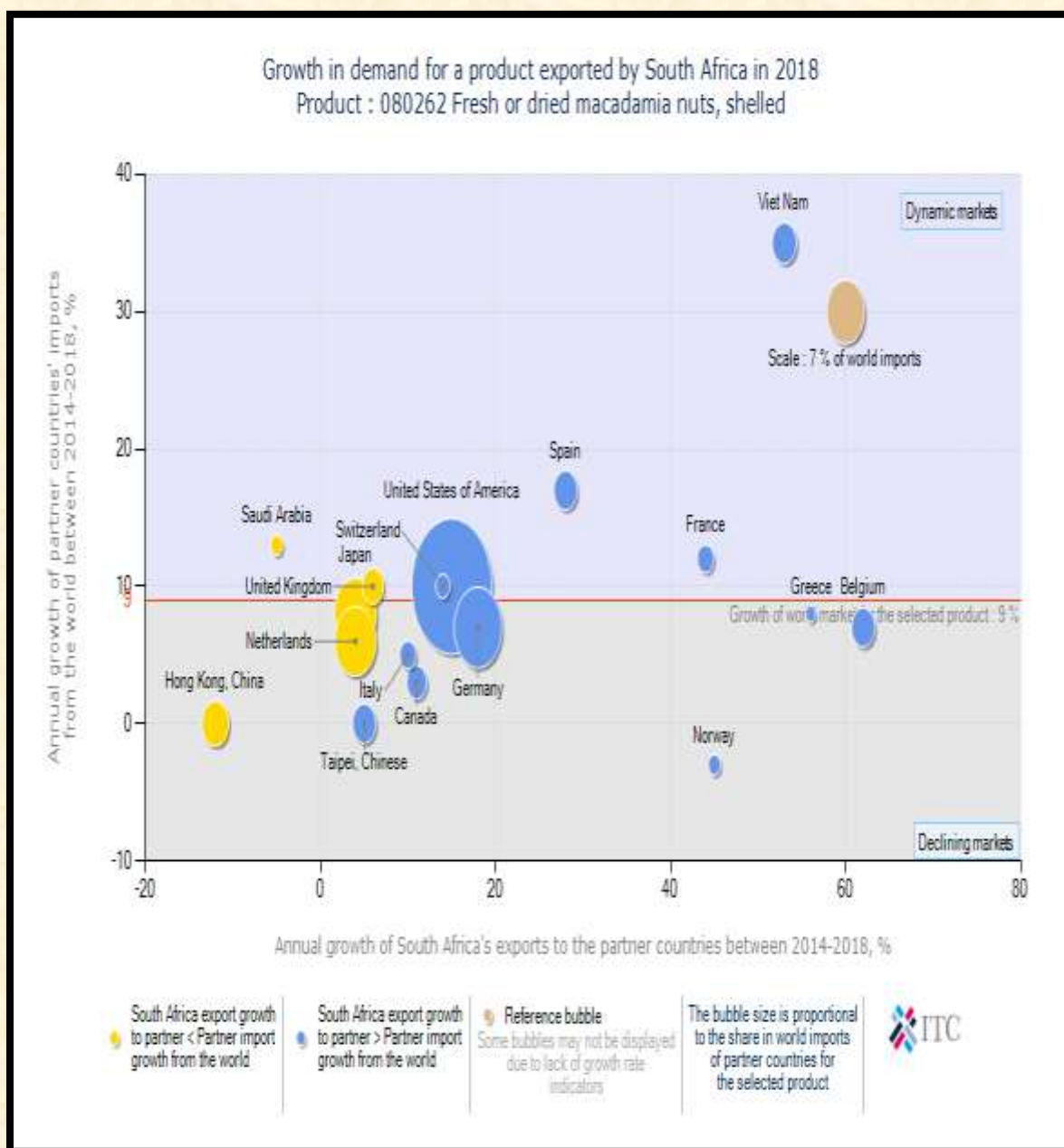
Figure 27: Prospects for market diversification for macadamia nuts (in shell) exported by South Africa in 2018



Source: ITC Trade Map

Figure 27 above shows that Hong Kong (China) and Viet Nam are still the biggest export markets for macadamia nuts (in shell) from South Africa. Other market exists in China, Germany and Malaysia. However, if South Africa is to diversify its macadamia nut exports the most lucrative markets exist in Netherlands and Zambia, which have increased their macadamia nuts imports from the world between 2014 and 2018. Netherlands has experienced an annual growth rate of 184% and Zambia has experienced 82% annual growth rate. Singapore, United Kingdom, United States of America and Switzerland have experienced a negative growth between 2014 and 2018.

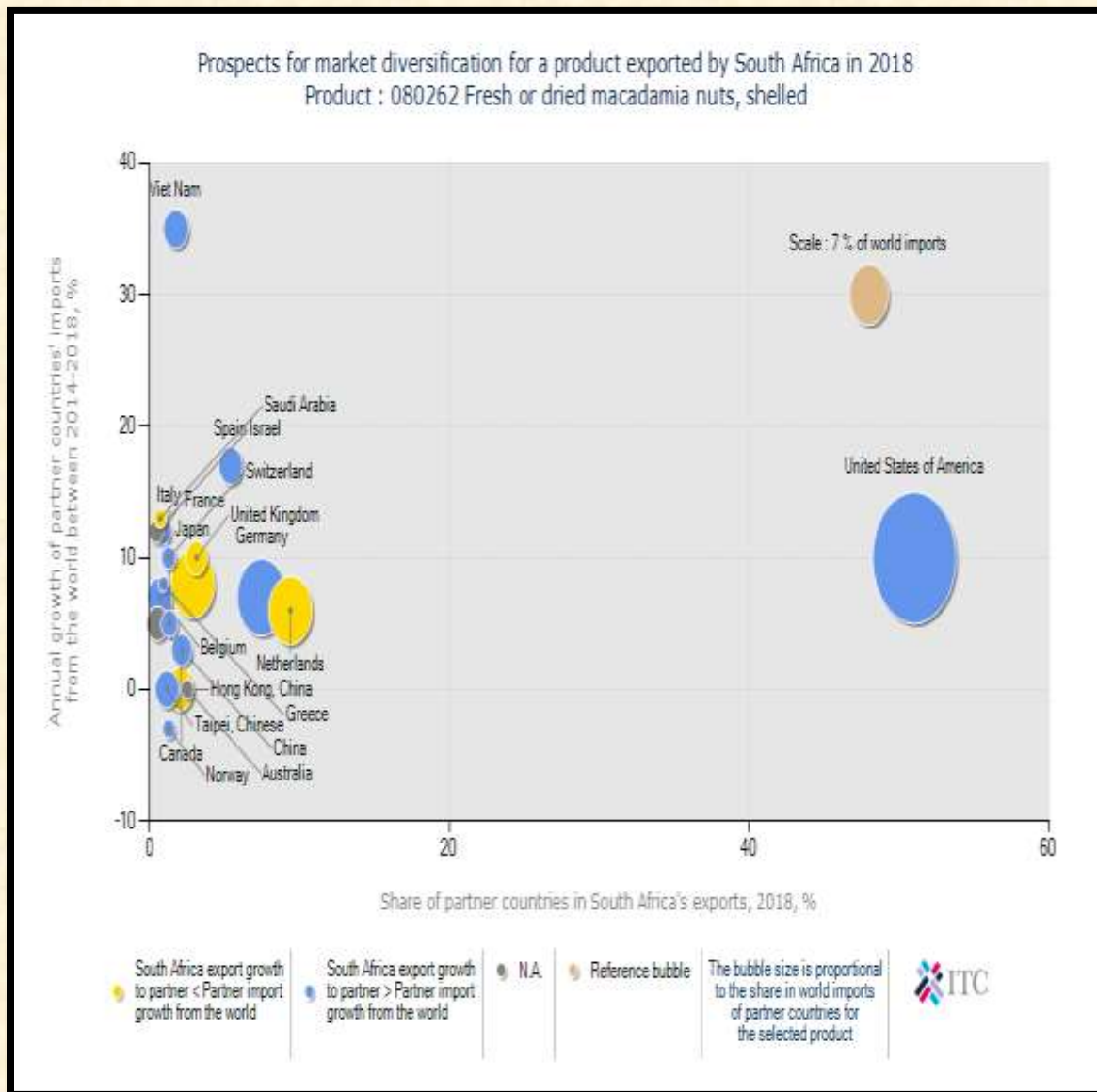
Figure 28 below illustrates growth in demand for macadamia nut (shelled) exports from South Africa in 2018.



Source: ITC Trade Map

Figure 28 above shows that South Africa's macadamia nuts (shelled) exports to Viet Nam, France, Greece, Switzerland, Belgium, Spain, United States of America and Germany are growing faster than the world imports into these countries. South Africa's performance is regarded as a gain in the dynamic markets. South Africa's macadamia nuts to Japan, Saudi Arabia and United Kingdom are growing slower than the world imports into these countries. South Africa's performance in these markets is regarded as a loss in the dynamic markets. South Africa's exports to Norway are growing while the world imports to this country are declining. Prospects for market diversification for macadamia nuts exported from South Africa during 2018 are depicted in Figure 29.

Figure 29: Prospects for market diversification for macadamia nuts (shelled) exported by South Africa in 2018



Source: ITC Trade Map

Figure 29 above shows that United States of America was still the biggest export markets for macadamia nuts originating from South Africa. Other markets exist in Italy, Netherlands, Spain, Saudi Arabia, Switzerland and Israel. However, if South Africa is to diversify its macadamia nut exports the most lucrative market still exist in Viet Nam, which has increased its macadamia nuts imports from the world between 2014 and 2018. Viet Nam has experienced an annual growth rate of 35% between 2014 and 2018. Norway has experienced a negative growth between 2014 and 2018.

8. INDUSTRY ORGANIZATION

The macadamia nut industry is formally organized through the Southern African Macadamia Growers' Association (SAMAC). There are close to 700 farmers involved in growing macadamia nuts, with more than 650 that are members of Southern African Macadamia Growers' Association (SAMAC). The association is comprised of macadamia nut growers, processors and marketers. The association is funded by its grower members who pay a production levy, which is collected by the processors. SAMAC uses the funds collected to finance research and the dissemination of research results to growers, processors and marketers. SAMAC is also a member of the INC (The International Nut and Dried Fruit Council) where it has the opportunity to interact with international macadamia role players and other various key role players within the International nut trade. The global contacts and cooperation have further developed through the participation in the seven and eight International Macadamia Symposia that have taken place since its inception in 1999. South Africa has since hosted three Symposia in 1999, 2009 and 2015.

9. OPPORTUNITIES

The macadamia industry has grown significantly in the past few years due to increased demand for nuts, increase in healthy living, consumer demand for vegan gluten free and natural foods. The volume of macadamia nuts exported have also grown tremendously over the past few years and is expected to increase in the future. South Africa is tapping into new markets in China and Hong Kong. A number of major growers have already received accreditation for Global GAP and the rest of the industry is aware of the need to follow fast in their footsteps. Every effort is being made by the industry to keep pace with, or even ahead of international demands in terms of quality standards, including the judicious use of chemicals at farm level. A number of growers are GLOBALGAP and SIZA accredited and most of the cracking facilities are HACCP and /or ISO 9001 accredited. Worldwide demand for macadamia nuts exceeds supply and the market is expected to grow. The use of macadamia nut as an ingredient in confectionary and baking presents a huge opportunity. After hundreds of years of quite use, word of the astounding benefits of Omega 7 fatty acids has finally reached the Western world. Omega 7 fatty acid is reported to have numerous benefits including skin health, support of a healthy weight, cardiovascular health, mucus membrane support and gastrointestinal health. According to *Musclefood*, macadamia nut has been classified among the 17 super foods of 2017. According to SAMAC, the kernel market is gaining more prominence and this can be attributed to higher processing capacity due to recent processing facility upgrades in South Africa.

10. THREATS

The macadamia industry suffers a high incidence of local and organized theft. Factors' influencing unsound kernel percentage in South Africa is stink bug damage, kernel discolorations and kernel immaturity. The stink bug damage is prevalent. Factors that affect nut quality have to be addressed on a continual basis. The integrated pest management is still the most responsible, efficient and cost effective way to control damage caused by these insects. China has introduced an anti-corruption programme, which is aimed at addressing banquets, gifts, trade channels and duties. The biggest importer of South Africa's macadamia nuts has been convicted of bypassing import duties and smuggling the nut into China during 2015. China is the biggest recipient of South Africa's macadamia nut exports. According to Farmers Weekly, the popularity and profitability of macadamia have resulted in a double-edged sword, with theft of the produce becoming increasingly rampant. According to Lizel Pretorius, CEO of Macadamias South Africa, it appears as the syndicates are working together, and that the crime starts at the farm gate and travels all the way up in the value chain, aiding a broader crime industry. Macadamia nuts have a long shelf life and it is easy to store and move the stolen goods in different times.

11. OTHER CHALLENGES

South African macadamia industry indicates that land claims are one of their major issues that raise uncertainties for farmers. Land, as a political and social issue, dates back from the Native Land Act of 1913, which dispossessed blacks and exploited their social domination to the land. The current government of the Republic of South Africa imposed an obligation to land reform by facilitating restorative land justice, increasing access to land and improving tenure security. These pose challenges to farmers in terms of investing on the land. Farmers are planting more trees, but there are no market development initiatives to address the growing supply of macadamia nut. The industry is playing catch up in terms of health research.

12. SAMAC AFFILIATED MACADAMIA HANDLERS/ MARKETING COMPANIES

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13. ACKNOWLEDGEMENTS

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SAMAC (South African Macadamia Growers' Association)

www.samac.org.za

Quantec Easy Data

www.easydata.co.za

Market Access Map

www.macmap.org

International Trade Centre

www.trademap.org

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