A PROFILE OF THE SOUTH AFRICAN CARROT MARKET VALUE CHAIN

2012

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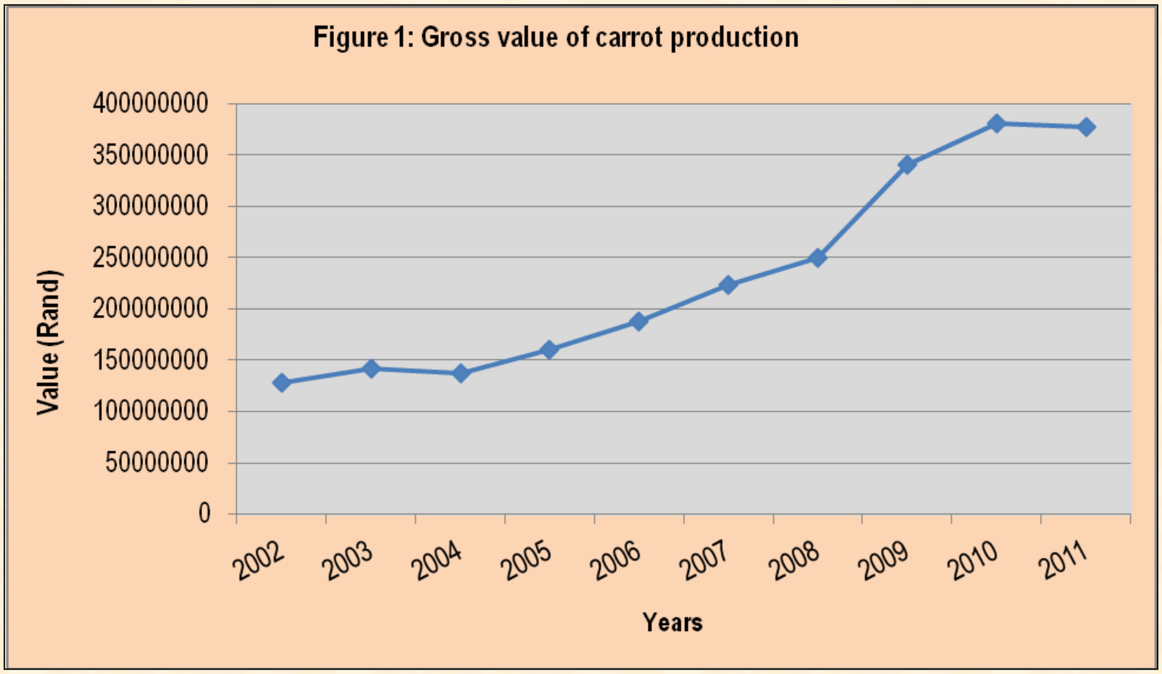
1. DESCRIPTION OF THE INDUSTRY

Carrot is a root vegetable usually orange, white or red, white blend in colour with a crisp texture when fresh. These colours still exist, with orange-red colour being by far the most popular today. The carrot has originated in Asia. The edible part of carrot is the tap root. Carrots are considered one of the major vegetables consumed in South Africa. It is among the top ten most economically important vegetables crops in the world in terms of both area of production and market value. Carrots can be eaten raw, whole, chopped, grated or added to salads, for colour or texture. They are also often chopped and boiled, fried or steamed and cooked in soups and stews, as well as fine baby foods and selected pet foods. Large quantities are also processed either alone or in mixture with other vegetables, by canning, freezing or dehydration.



Source: Statistics and Economic Analysis, DAFF

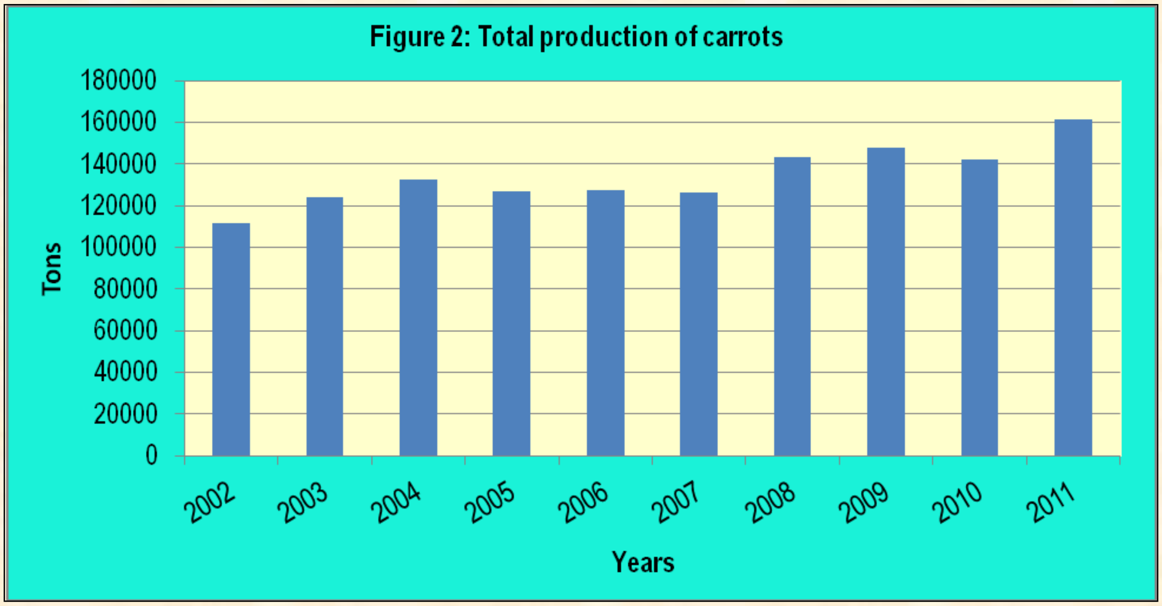
Figure 1 above illustrates the contribution of the carrot industry to the gross value of agricultural production over 10 years. The carrot industry contribution has increased 11% in 2003 when compared to 2002 industry contribution. There was a 3% decrease in gross value in 2004 due to decrease in prices received by the producers in the same year. From 2005 to 2008, the gross value has increased steadily. In 2009, the gross value eased marginally higher by 36% when compared to 2008 gross value. This can be attributed to high production volumes which occurred while the prices were still in favorable position for producers. The highest gross value was recorded in 2010, which was 11% higher when compared to 2009 gross value of production. During 2011, the gross value dropped by 0.9% when compared to the previous year. This can be attributed to a drop in producer prices in the same year.

1.1 Production areas

Although carrots can endure summer heat in many areas, they grow best when planted in cooler climates. It is difficult to establish carrots in summer because heat, rain and early blights are major causes of crop failure and quality reduction. Carrot production is concentrated in the Western Cape, Gauteng, Free State, North West, Kwazulu Natal and Mpumalanga. Globally, China is the largest producer of carrots, followed by Russian Federation, United States of America, Poland and Uzbekistan.

1.2 Production Trends

Figure 2 illustrates the production volume over the past ten years.

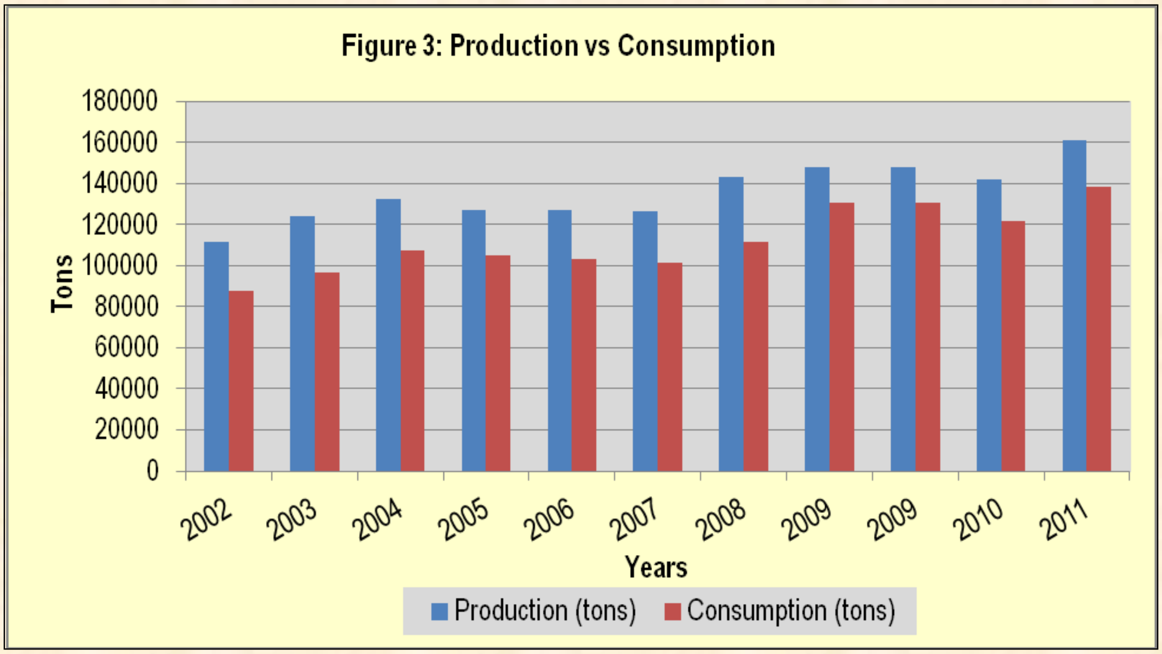


Source: Statistics and Economic Analysis, DAFF

The production has been increasing steadily from 2003 to 2004. Production dropped by 4% in 2005 and increased slightly again by 0.3% in 2006. In 2008, the production increased by 13.5% when compared to 2007. During 2009, carrots production increased by 3% compared to 2008 production year. In 2010, the production volumes decreased by 4% when compared to 2009 production year. The highest carrots production was recorded in 2011 and the production increased by 13.6% when compared to 2010 production year.

1.3 Production vs. Consumption of carrots

Figure 3 below depicts local consumption of carrots compared to the production over the 10 year period. The figure indicates that the production of carrot is higher than the consumption. This indicates that South Africa is self sufficient in terms of carrot production and the surplus is also exported. South African carrots consumption was approximately 112 212 tons in 2011. This represents an 8.4% decrease in consumption compared to 2010. This can be attributed to decreased production volumes in the same year.



Source: Statistics and Economic Analysis, DAFF

2. MARKET STRUCTURE

There is no regulation or restriction in the marketing of carrots. The prices of carrots are determined by market forces of demand and supply. The industry uses local market, informal market, processor and direct selling to wholesalers and retailers. Carrots are also exported to other countries through export agents and marketing companies. South Africa also imports carrots from other countries.

2.1 Domestic market and prices

Table 1 gives the various channels of distribution through which carrots are marketed in South Africa.

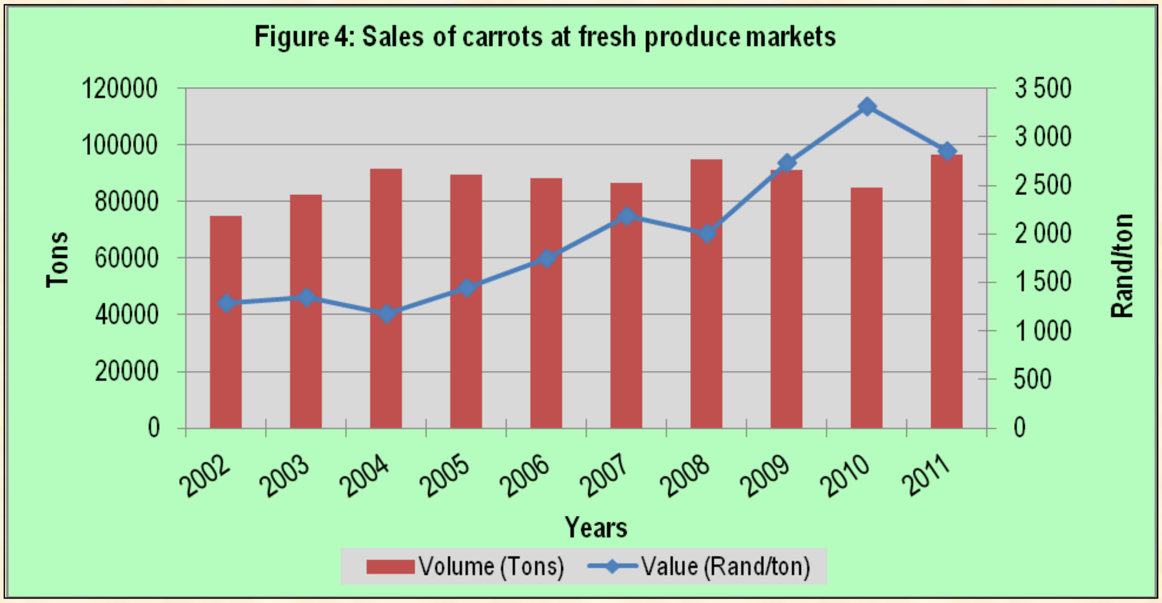
Table 1: Carrots sold through different market channels

Years	National fresh produce markets (Tons)	Exports (tons)	Processing (Tons)
2002	74 970	2 310	21 496
2003	82 268	1 805	25 875
2004	91 409	1 844	23 689
2005	89 355	2 014	20 233
2006	88 244	2 207	21 772
2007	86 725	3 472	21 759

Years	National fresh produce markets (Tons)	Exports (tons)	Processing (Tons)
2008	95 035	4 073	25 689
2009	91 369	3 894	13 337
2010	85 062	4 103	16 104
2011	96 405	5 246	16 993

Source: Statistics and Economic Analysis, DAFF

Table 1 above shows that in 2011, there was a 27.8% increase in exports and 5.5% increase in processed carrots compared to the previous year. National Fresh Produce Markets (NFPMs) remains an important channel for sale of fresh carrots in South Africa. In 2011, 60% of all carrots were distributed through fresh produce markets. The remaining 40% represent direct sales from producers to wholesalers, exports, retailers, processors, informal traders and consumers.

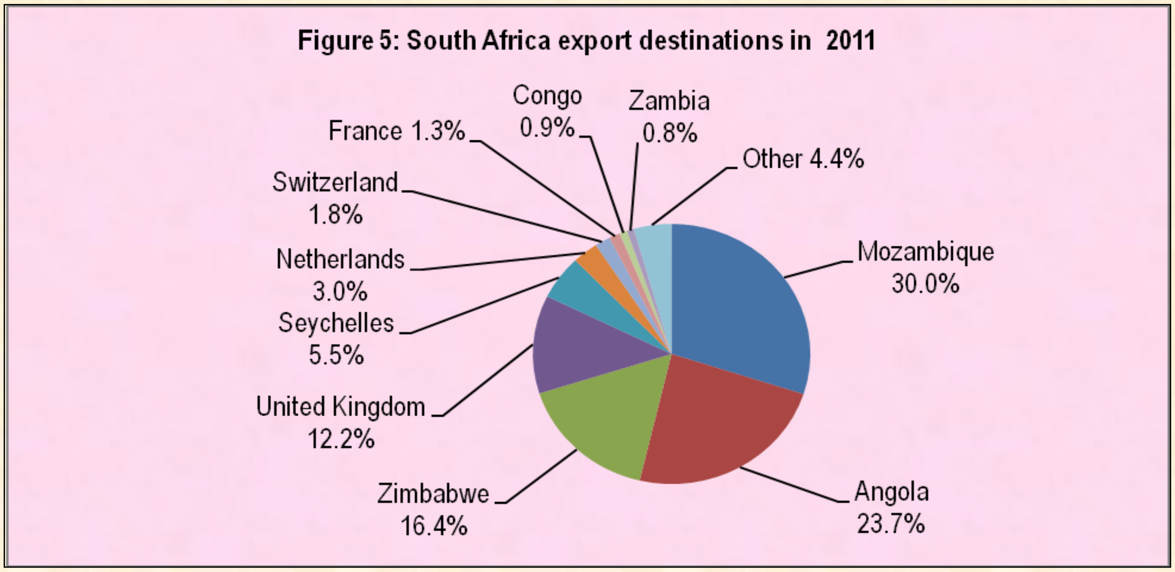


Source: Statistics and Economic Analysis, DAFF

Figure 4 above illustrates the sales of carrots in the national fresh produce markets over the period of 10 years. Carrot volumes and prices were moderately unstable. Prices increased in 2003, despite a 9.7% increase in volume supplied across the markets. This can be attributed to strong uptake of carrots. In 2004, high volumes were supplied to the market and prices declined by 12%. Carrots prices increased steadily from 2005 to 2007 due to slight decline in volume supplied across the markets. In 2008 the prices dropped by 8.3% as volume increased by 9.5%. In 2010 carrots prices increased by 21% as carrots volume dropped by 6.9% across the markets. During 2011, market prices dropped by 13.7% due to a 13.3% increase in volumes supplied across the markets.

2.2 South Africa's Carrots Exports

South Africa is not a major carrot exporter. In 2011, it represented 0.34% of world exports and its ranking in the world was number 27. South Africa's ranking in world carrots exporters has not changed when compared to 2010 rankings. Most of carrots produced were destined for domestic markets. South Africa carrots exports were mostly destined to Mozambique, Angola, Zimbabwe, United Kingdom, Seychelles, Netherlands and Switzerland. Globally China, United States of America, Netherlands, Belgium, Italy, Spain and Australia are major carrot exporters. Figure 5 below illustrates South African carrot export destinations during 2011.



Source: ITC Trade Map

Further details relating to the exports of carrots from South Africa in 2011 are presented in Table 2.

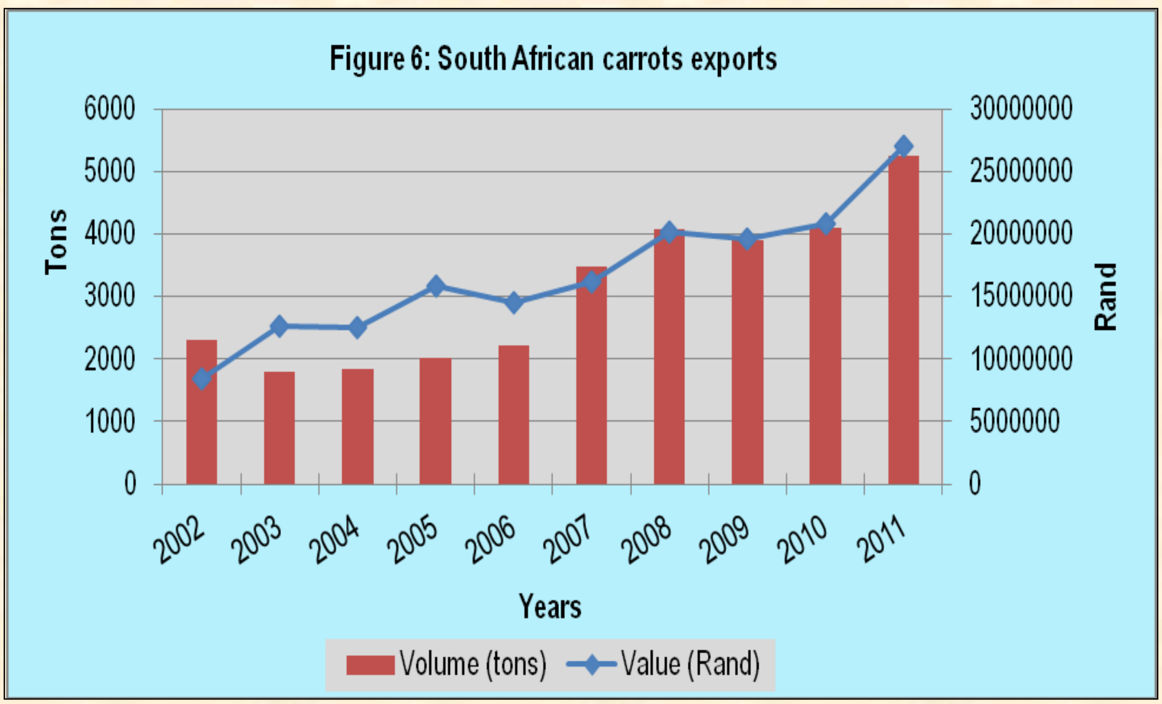
Table 2: South Africa carrot exports in 2011

Importers	Exported value 2011 (USD thousand)	Share in South Africa's exports (%)	Exported quantity 2011 (tons)	Unit value (USD/unit)	Exported growth in value between 2007-2011 (%, p.a.)	Exported growth in quantity between 2007-2011 (%, p.a.)	Exported growth in value between 2010-2011 (%, p.a.)
World	3717	100	5245	709	12	9	31
Mozambique	1114	30	2225	501	48	17	-14
Angola	880	23.7	1355	649	19	15	50
Zimbabwe	609	16.4	774	787	170	112	102
United Kingdom	455	12.2	265	1717	-14	-13	77
Seychelles	204	5.5	182	1121	66	81	1100
Netherlands	113	3	79	1430	-3	-4	41
Switzerland	67	1.8	43	1558	-3	-1	49
France	50	1.3	35	1429	-45	-51	39
Congo	33	0.9	38	868	39	47	18
Zambia	30	0.8	78	385	30	7	329

Importers	Exported value 2011 (USD thousand)	Share in South Africa's exports (%)	Exported quantity 2011 (tons)	Unit value (USD/unit)	Exported growth in value between 2007-2011 (%, p.a.)	Exported growth in quantity between 2007-2011 (%, p.a.)	Exported growth in value between 2010-2011 (%, p.a.)
Germany	28	0.8	16	1750	23	23	460
Kuwait	26	0.7	30	867			
DRC	23	0.6	24	958	6	2	-12
Ghana	23	0.6	41	561	45	46	21
Mauritius	19	0.5	7	2714	-48	-68	19

Source: ITC Trade MAP

Table 2 indicates that during 2011, South Africa exported higher quantities of carrots to Mozambique, Angola and Zimbabwe. Mozambique commanded 30% share of South Africa's carrots export, followed by Angola which commanded 23.7% share and Zimbabwe has commanded 16.4% share. South Africa's carrot exports to United Kingdom have decreased by 14% and13% in value and quantity respectively between 2007 -2011 periods. Netherlands has lost 3% and 4% in value and quantity respectively between 2007 and 2011 period.

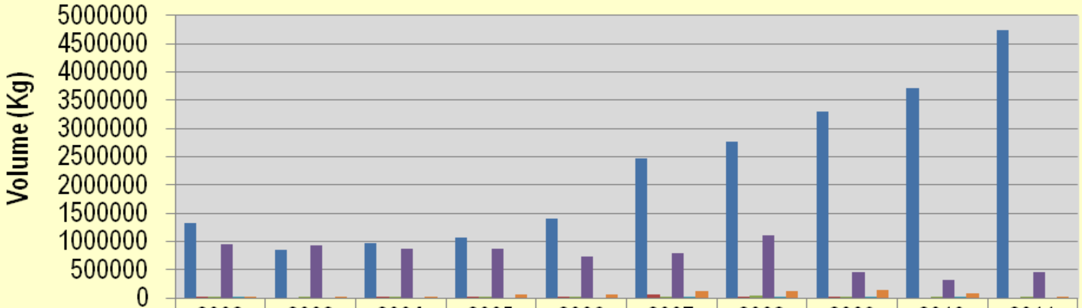


Source: Quantec Easydata

Figure 6 above illustrates carrots exports from South Africa over the past 10 years. From 2002 to 2006, South Africa imported low volumes of carrots.. From 2003 to 2006, the figure shows that it was also more profitable to export carrot since higher export values were recorded for smaller volumes exported. During 2007, carrots exports increased significantly by 57% when compared to

2006, despite 0.8% drop in production output in the same year. In 2009 there was a 4.5% decrease in export volumes despite high production volumes in the same year. In 2010, carrots exports increase by 5% despite 4% decline in production output in the same year. The highest export volume was recorded in 2011 and this can be attributed to the highest production output during the same year.

Figure 7: South African carrots exports to the regions



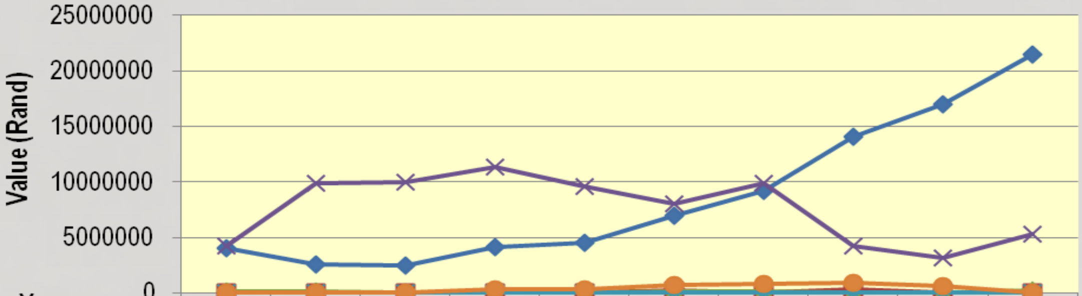
Years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Africa	1325423	859787	969872	1059449	1393570	2461147	2759575	3292727	3708530	4747097
Americas	555	0	45	15	15600	64745	30936	5067	0	0
Asia	28331	15263	4815	19409	416	29079	42431	1296	888	31173
Europe	955359	927314	862946	869203	726438	786237	1105769	456132	314058	460582
Oceania	304	0	0	0	0	10455	4450	1000	1340	0
Not allocated	496	2315	6510	66294	70761	120776	130194	138091	78415	6817

Source: Quantec Easydata

Figure 7 above illustrates South African carrots exports to the regions. As can be seen South Africa exports high quantities of carrots to African region (Mozambique, Angola and Zimbabwe), then followed by Europe countries (United Kingdom and France). The high quantities to Africa can be contributed to cheaper export cost to neighboring countries. From 2006 to 2008, considerable carrots were exported to Americas region. From 2005 to 2010 a fraction of South Africa carrots exports were not allocated. In 2011, South Africa exported high quantities of carrots to Africa and exports to Europe have increased when compared to the previous year. During 2011, considerable volumes of exports were exported to Asian region while the unallocated exports have decline significantly.

Figure 8 below illustrates South Africa's value of carrot exports to the regions. The figure shows that it was more profitable to export carrots to European countries since high values were recorded for less volume exported. High export value was also recorded for African countries due to high volumes exported to that region but, it was less profitable to export to this region. In 2011, it was also more profitable to export to Asia and the value for unallocated exports was high. During 2011, there was no export values recorded for America and Oceania as there were no carrots exports to these regions.

Figure 8: Value of carrots export to the region

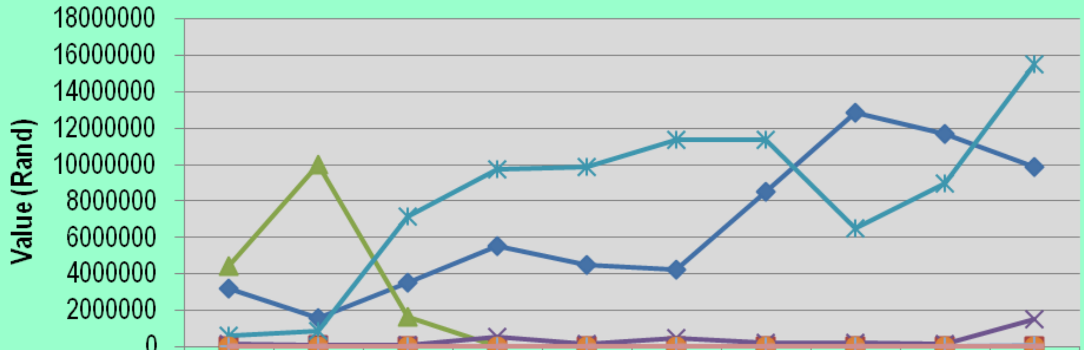


Years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Africa	4087854	2577782	2472521	4102949	4531843	6992151	9239499	1406959	1699657	2150085
Americas	4804	0	82	140	44307	253857	75061	354728	0	0
Asia	108000	123270	25052	73176	4965	129832	139759	13923	9540	200163
Europe	4201045	9892498	9975602	1135576	9593521	7990929	9850162	4250628	3153192	5265184
Oceania	3600	0	0	0	0	22907	17750	2000	16257	0
Not allocated	1867	18409	23191	304970	315431	730770	804232	881129	644161	60968

Source: Quantec Easydata

Figure 9 above illustrates the value of carrot exports by provinces for the past ten years.

Figure 9: Value of carrots exports by South African Provinces



Years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Western Cape	3205368	1596970	3542775	5552023	4492174	4258839	8543018	12850091	11662937	9901788
Eastern Cape	0	67600	0	0	0	0	0	0	0	0
Free State	4463083	10009731	1664448	0	0	0	0	0	0	0
Kwazulu-Natal	154819	76852	122169	525806	135115	476607	206323	243445	170213	1535750
Gauteng	583880	860806	7167035	9759171	9862141	11383277	11377123	6478465	8964711	15476347
Mpumalanga	20	0	20	0	638	1723	0	0	2220	11400
Limpopo	0	0	0	0	0	0	0	0	19646	71238
North West	0	0	0	0	0	0	0	0	0	30643

Source: Quantec Easydata

The highlights of carrot exports were that the Western Cape, Gauteng, Free State and Kwazulu Natal to a lesser extent consistently registered exports during the past ten years. From 2002 to 2004, Free State province has recorded high values of carrots exports and from 2005, the province has recorded zero trade. In 2010 and 2011, Limpopo province has recorded carrots export.

Eastern Cape province recorded carrots export only in 2005. During 2011, North West province recorded carrots exports for the first time and the value recorded for Mpumalanga province has increased significantly. The high export values for Western Cape and Gauteng can be attributed to the export exist points and the registered exporters located in these provinces. The following figures (figure 10-16) shows the value of carrot exports from the various districts in all provinces of South Africa.

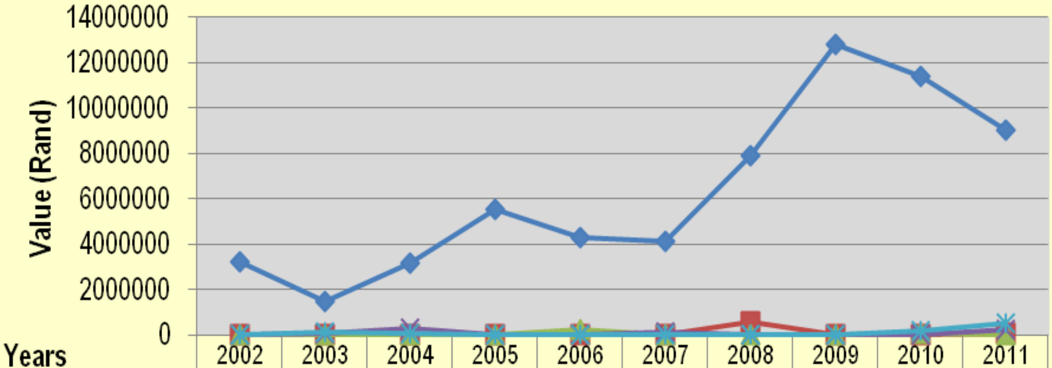


Figure 10: Value of carrot exports by Western Cape Province

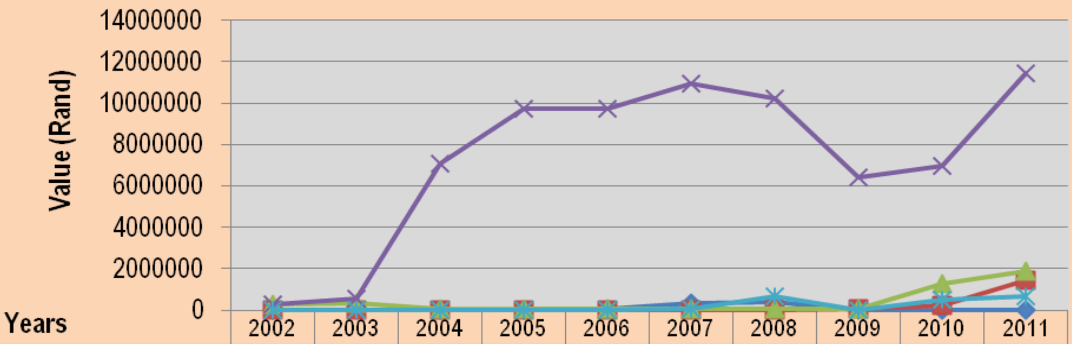
Years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
City of Cape Town	3205368	1451119	3179580	5552023	4279509	4110852	7927333	12831372	11387556	9021373
West Coast	0	0	0	0	0	7260	573919	0	154	58994
Cape Winelands	0	0	0	0	212665	0	0	0	95919	25000
Overberg District	0	44691	301644	0	0	114920	0	0	0	259815
Eden District	0	101160	61551	0	0	25806	41766	18719	179308	536606

Source: Quantec Easydata

Figure 10 above indicates that carrot exports by Western Cape province were mainly from City of Cape Town and Eden district municipalities have contributed to a lesser extent. Cape Winelands has contributed significantly in 2006 and 2010. High carrots exports by the City of Cape Town can be attributed to Cape Town harbour which renders export exit point. The highest export value was in 2009 from City of Cape Town municipality. In 2010, carrots export value for City of Cape Town has decreased by 11% compare to export value in 2009. During 2011, the West Coast, Overberg and Eden districts have increased their contribution to carrots exports from Western Cape.

Figure 11 below shows that carrot exports by Gauteng province were mainly from City of Johannesburg. Metsweding, Ekurhuleni and City of Tshwane have contributed to a lesser extent. The highest export value was recorded in 2011 for City of Johannesburg. From 2009 to 2011, there was no exports value recorded in Metsweding district municipality. In 2011, there was a 65% increase in export value from City of Johannesburg district municipality. During 2011, the export value recorded for the City of Tshwane, Ekurhuleni and West Rand have also increased significantly.

Figure 11: Value of carrots exports by Gauteng Province

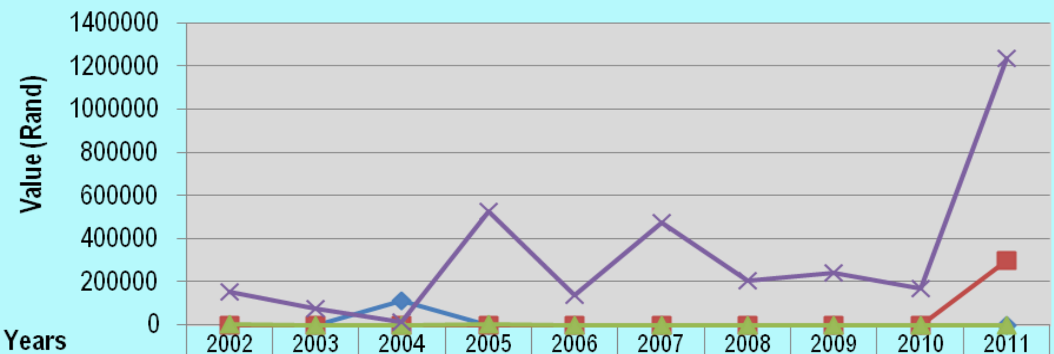


Years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Metsweding	9721	0	0	0	49008	356205	400040	0	0	0
West Rand	0	0	32602	0	0	0	0	33554	223933	1465653
Ekurhuleni	260467	315653	44327	46263	83726	33841	50297	45345	1268677	1888740
City of Johannesburg	304618	544553	7090106	9712908	9729354	10919061	10248835	6388050	6944283	11461923
City of Tshwane	9073	600	0	0	0	74171	677951	11515	527818	660030

Source: Quantec Easydata

The values of carrot exports by the Kwazulu Natal province are presented in Figure 12.

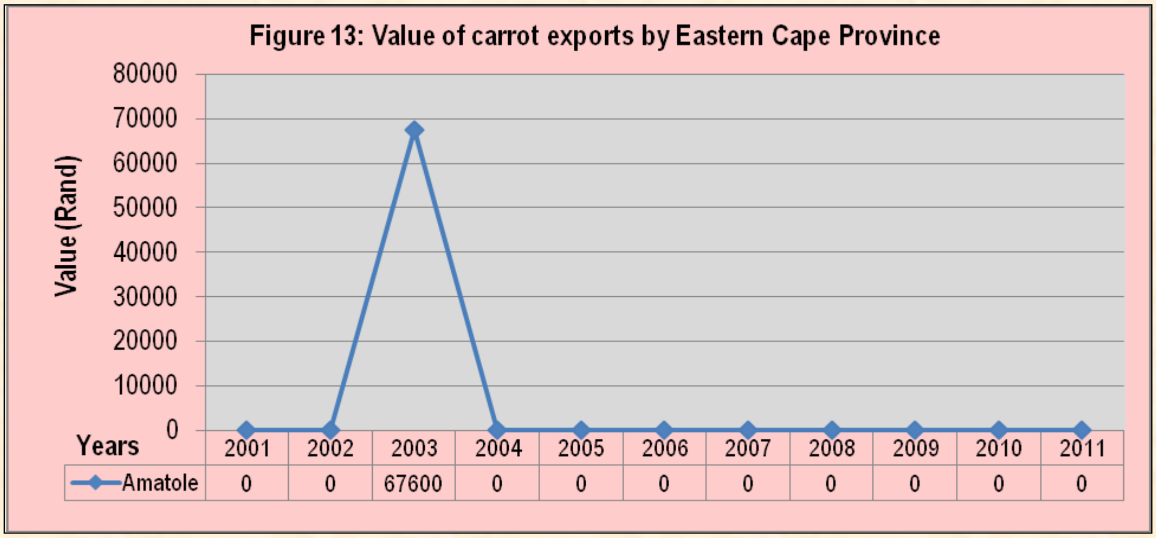
Figure 12: Value of carrots exports by Kwazulu Natal Province



Years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Umgungundlovu	0	0	109416	0	0	0	0	0	0	0
Ugu	0	0	0	0	0	0	0	0	0	299003
Uthungulu	2422	0	209	1382	2	0	0	0	0	0
Ethekwini	152398	76852	12544	524425	135112	476607	206323	243445	170213	1236747

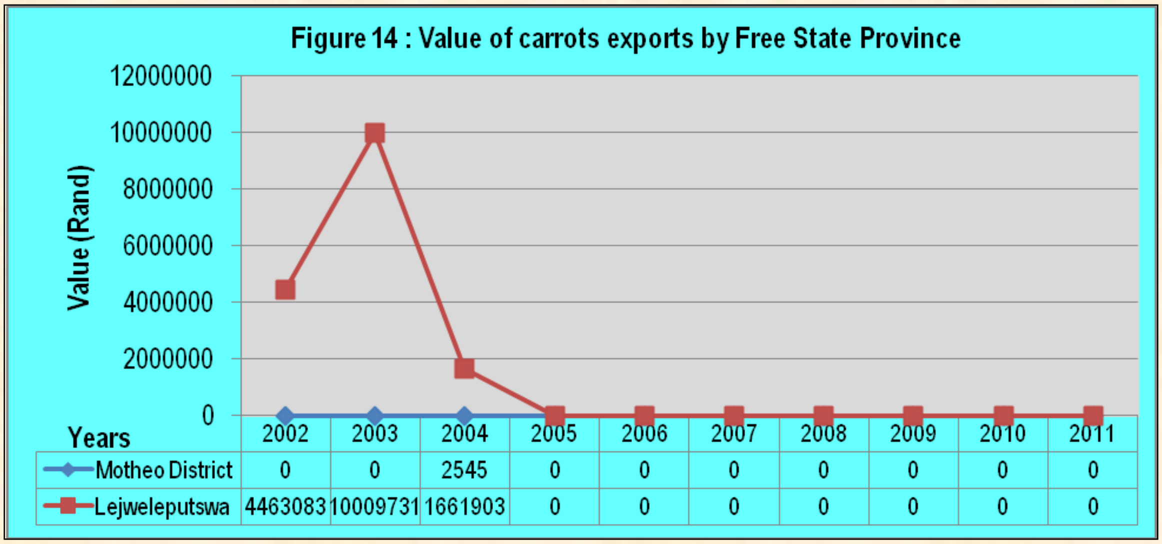
Source: Quantec Easydata

Figure 12 indicates that carrot exports by Kwazulu Natal province were mainly from Ethekwini municipality and Durban harbor renders an export exit point. In 2004, Umgungundlovu district contributed considerably to carrots exports from Kwazulu Natal. The highest export value for Ethekwini was recorded in 2011. During 2011, Ugu district municipality contributed to carrots exports for Kwazulu Natal.



Source: Quantec Easydata

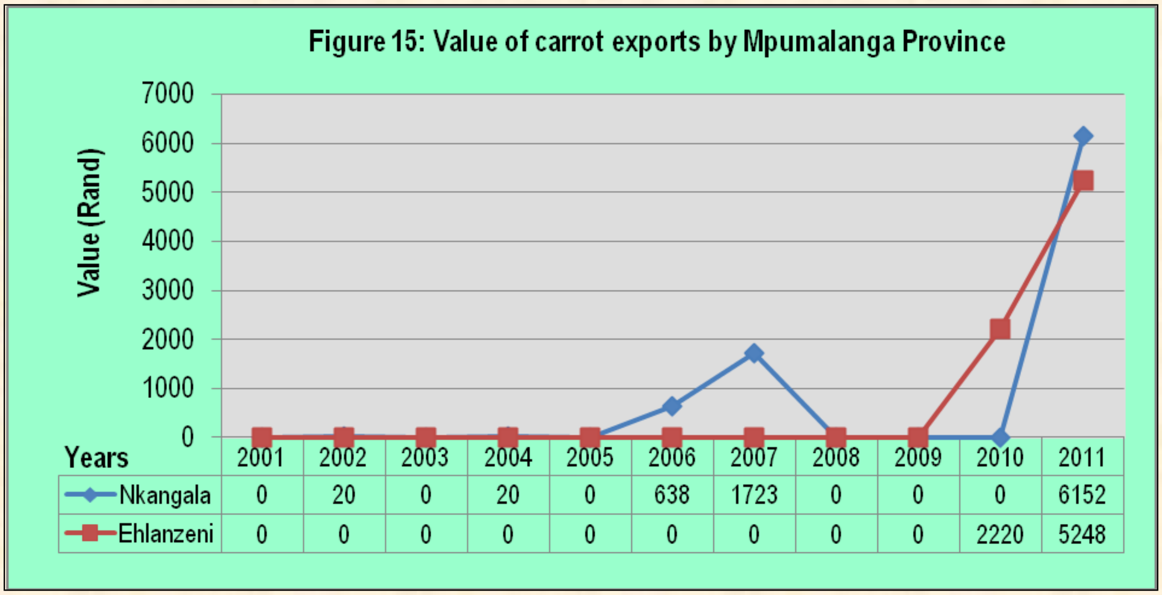
Figure 13 show that carrots exports by Eastern Cape province was in 2003 from Amatole municipality. From 2004 to 2011, there was no export values recorded from Eastern Cape province.



Source: Quantec Easydata

Figure 14 indicates that carrots exports by Free State province were mainly from Lejweleputswa Municipality and the highest export value was in 2003. From 2005 to 2011, there were no carrots exports values recorded for Free State province.

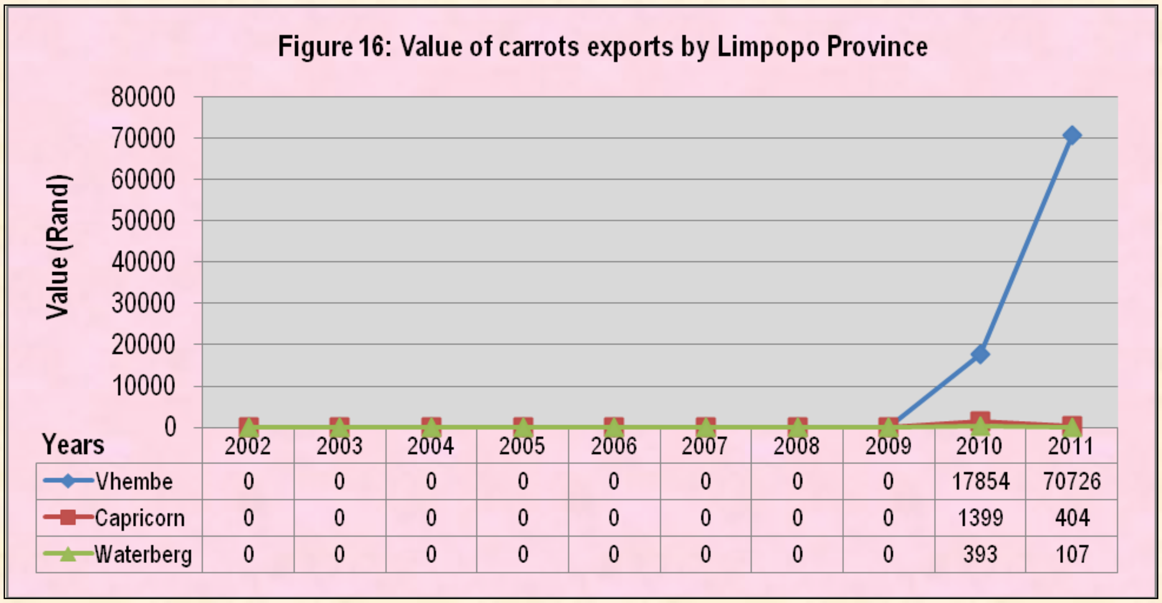
Figure 15 below indicates that carrots exports by Mpumalanga province were mainly from Nkangala district and the highest export value was recorded in 2007. In 2010, the exports from Mpumalanga were from Ehlanzeni district. During 2011, carrots exports were recorded for both Nkangala and Ehlanzeni district municipalities.



Years	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Nkangala	0	20	0	20	0	638	1723	0	0	0	6152
Ehlanzeni	0	0	0	0	0	0	0	0	0	2220	5248

Source: Quantec Easydata

Values of carrots exports by the Limpopo province are presented in Figure 16.



Years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Vhembe	0	0	0	0	0	0	0	0	17854	70726
Capricorn	0	0	0	0	0	0	0	0	1399	404
Waterberg	0	0	0	0	0	0	0	0	393	107

Source: Quantec Easydata

Figure 16 above illustrates that in 2010, Limpopo province recorded carrots export for the first time in 10 year period and the exports originated from Vhembe, Capricorn and Waterberg district municipalities. During 2011, the export value for Vhembe district increased significantly, while the export values for Capricorn and Waterberg districts have dropped significantly.

2.3 Share Analysis

Table 3 below indicates the regional share towards South Africa's carrots exports. African countries commanded greatest share of South African carrots exports followed by European countries. Carrots exports to Americas and Asia were less significant. In 2010, African region has commanded 90.38% which was a slight increase when comparing with 84.55% share recorded for 2009. European commanded 7.26% share of South Africa's carrots exports and this was a significant drop when comparing with 11.71% share in 2009. During 2011, African region commanded 90.50% and European region has commanded 8.78% share of South African carrots exports.

Table 3: Share of regional carrots exports to the total South Africa carrot exports (%)

Years Region	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Africa	57.37	47.64	52.59	52.59	63.15	70.88	67.75	84.55	90.38	90.50
Americas	0.02	0	0	0	0.71	1.86	0.76	0.13	0	0
Asia	1.23	0.85	0.26	0.96	0.02	0.84	1.04	0.03	0.02	0.59
Europe	41.35	51.38	46.79	43.15	32.92	22.64	27.15	11.71	7.26	8.78
Oceania	0.01	0	0	0	0	0.30	0.11	0.03	0.03	0
Not allocated	0.02	0.13	0.35	3.29	3.21	3.48	3.20	3.55	1.91	0.13
World	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 4 below is an illustration of provincial shares towards national carrot exports. The Western Cape and Gauteng provinces commanded the greatest share of carrots exports. Free State province commanded high carrots export shares from 2002 to 2003. The high export shares in Western Cape and Gauteng can be attributed to registered exporters and available ports based in these provinces. In 2010 Western Cape commanded 56.02% and Gauteng commanded 43.06% share of carrots exports. During 2011, Western Cape has dropped its export share to 36.64% while Gauteng has increased its export share to 57.26%. Kwazulu Natal has commanded 5.68% share which is a significant increase when compared to the previous year.

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

Years Province	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Western Cape	38.13	12.66	28.35	35.06	31.00	26.42	42.45	65.66	56.02	36.64
Eastern Cape	0	0.54	0	0	0	0	0	0	0	0
Free State	53.09	79.37	13.32	0	0	0	0	0	0	0
Kwazulu-Natal	1.84	0.61	0.98	3.32	0.93	2.96	1.03	1.24	0.82	5.68
Gauteng	6.95	6.83	57.35	61.62	68.06	70.61	56.53	33.10	43.06	57.26
Mpumalanga	0	0	0	0	0	0.01	0	0	0.01	0.04
Limpopo	0	0	0	0	0	0	0	0	0.09	0.26
RSA	100	100	100	100	100	100	100	100	100	0.11

Source: Calculated from Quantec Easydata

Table 5 indicates that the City of Cape Town commanded the greatest share of carrot exports from Western Cape province. In 2011, Eden commanded 5.42% share of carrots exports, this was an improvement when compare to 1.54% share in 2009. Cape Town harbor renders exit point for carrot exports from these districts. During 2011, City of Cape Town has slightly dropped its market share while Overberg has commanded 2.62% share of Western Cape carrots exports.

Table 5: Share of district carrots exports to total Western Cape provincial carrot exports (%)

Year District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
City of Cape Town	100	90.87	89.75	100	95.27	96.53	92.79	99.85	97.64	91.11
West Coast	0	0	0	0	0	0.17	6.72	0	0	0.60
Cape Winelands	0	0	0	0	4.73	0	0	0	0.82	0.25
Overberg	0	2.80	8.51	0	0	2.70	0	0	0	2.62
Eden	0	6.33	1.74	0	0	0.61	0.49	0.15	1.54	5.42
Western Cape	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 6 shows that City of Johannesburg commanded the greatest share of carrot exports from Gauteng province. In 2010, Ekurhuleni increased its carrots exports share from 0.70% to 14.15%. City of Tshwane has also increased its export share from 0.18% to 5.89%. During 2011, West Rand municipality has commanded 9.47% export share, this was an improvement when compare to 2.50% share in 2010. City of Johannesburg and Ekurhuleni are located near OR Tambo International Airport which renders exit point for carrot exports.

Table 6: Share of district carrots exports to the total Gauteng provincial carrot exports (%)

Year District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Metsweding	1.7	0	0	0	0.50	3.13	3.52	0	0	0
West Rand	0	0	0.45	0	0	0	0	0.52	2.50	9.47
Ekurhuleni	44.6	36.67	0.62	0.47	0.85	0.30	0.44	0.70	14.15	12.20
City of Johannesburg	52.2	63.26	98.93	99.53	98.65	95.92	90.08	98.60	77.46	74.06
City of Tshwane	1.6	0.07	0	0	0	0.65	5.96	0.18	5.89	9.26
Gauteng	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Easydata

Table 7 shows that Amatole commanded 100% share of carrots exports from Eastern Cape province. From 2004 to 2011, Eastern Cape province has recorded zero trade for carrots.

Table 7: Share of district carrots exports to the total Eastern Cape provincial carrot exports (%)

Year District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Amatole	0	100	0	0	0	0	0	0	0	0
Eastern Cape	0	100	0	0	0	0	0	0	0	0

Source: Calculated from Quantec Easydata

Table 8 below indicates that Ethekwini has mainly commanded greatest share of carrot exports from Kwazulu Natal province. From 2009 to 2010 Ethekwini has commanded 100% share for carrots exports. Umgungundlovu has commanded the greatest share of carrots exports in 2004. In 2011, Uthukela has commanded 19.47% share of carrots exports from Kwazulu Natal. The high export share in Ethekwini can be attributed to Durban harbor located in this district municipality.

Table 8: Share of district carrots exports to the total Kwazulu Natal provincial carrot exports (%)

Year District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Umgungundlovu	0	0	89.56	0	0	0	0	0	0	0
Uthungulu	1.56	0	0.17	0.3	0	0	0	0	0	0
Ethekwini	98.44	0	10.27	99.7	0	0	0	100	100	80.53
Uthukela	0	0	0	0	0	0	0	0	0	19.47
Kwazulu Natal	100	0	100	0	0	0	0	100	100	100

Source: Calculated from Quantec Easydata

Table 9 shows that Nkangala commanded 100% share of carrots exports from Mpumalanga province during 2002, 2004, 2006 and 2007. In 2010, Ehlanzeni has commanded 100% share of carrots exports from this province. During 2011, Nkangala commanded 53.96% share and Ehlanzeni commanded 46.04% share of Mpumalanga carrots exports.

Table 9: Share of district carrots exports to the total Mpumalanga Provincial carrot exports (%)

Year District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Nkangala	100	0	100	0	100	100	0	0	0	53.96
Ehlanzeni	0	0	0	0	0	0	0	0	100	46.04
Mpumalanga	100	0	100	0	100	100	0	0	100	100

Source: Calculated from Quantec Easydata

Table 10 below indicates that Lejweleputswa district commanded the greatest share of carrots exports from Free State province. From 2005 to 2011, the province has recorded zero trade in carrots.

Table 10: Share of district carrots exports to the total Free State Provincial carrot exports (%)

Years District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Motheo	0	0	0.15	0	0	0	0	0	0	0
Lejweleputswa	100	100	99.85	0	0	0	0	0	0	0
Free State	100	100	100	0	0	0	0	0	0	0

Source: Calculated from Quantec Easydata

Table 11 shows that Vhembe district commanded 90.88% share of carrots exports from Limpopo province during 2010. Capricorn district has commanded 7.12% share of carrots exports. From 2002 to 2009, the province has recorded zero trade in carrots. In 2011, Vhembe has commanded 99.28% carrot export share.

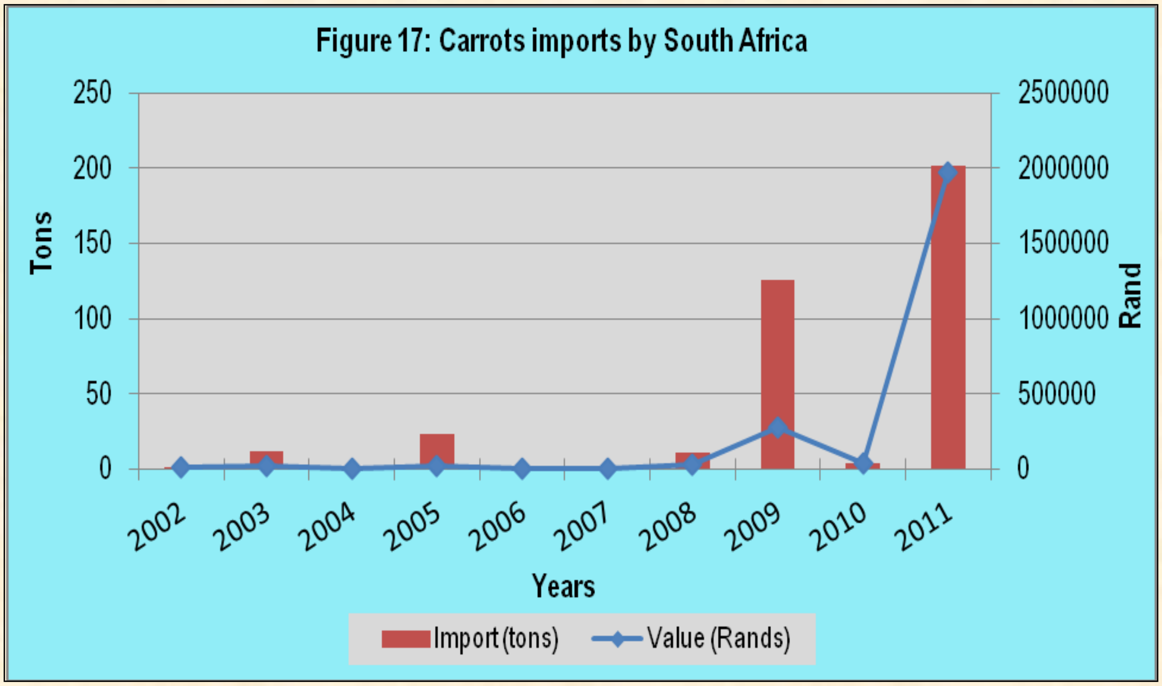
Table 11: Share of district carrots exports to the total Limpopo Provincial carrots exports (%)

Years District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Vhembe	0	0	0	0	0	0	0	0	90.88	99.28
Capricorn	0	0	0	0	0	0	0	0	7.12	0.57
Waterberg	0	0	0	0	0	0	0	0	2.00	0.15
Limpopo	0	0	0	0	0	0	0	0	100	100

Source: Calculated from Quantec Easydata

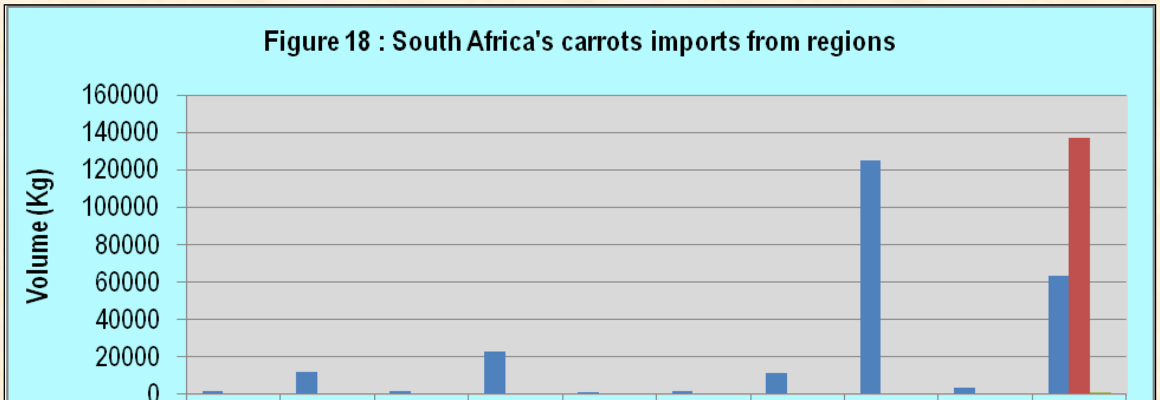
2.4 South Africa's Carrot Imports

South Africa is not a major carrot importer. In 2011, it represented 0.02% of world carrot imports and its ranking in world imports was 95. In 2011, South Africa imported carrots from Kenya, China and Poland. Globally, Russian Federation, Canada, Germany, United States of America, Belgium and France are the major carrots importers.



Source: Quantec Easydata

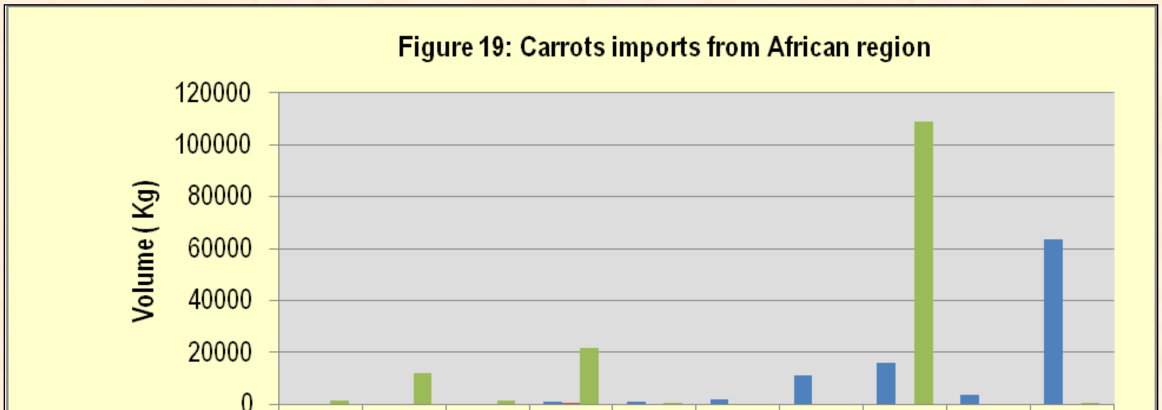
Figure 17 above illustrates South African carrot imports for the past ten years. In 2002, 2004 and 2007, South Africa imported low volumes of carrots. This can be attributed to sufficient domestic production output in the same years. During 2002, 2010 and 2011, it was relatively expensive to import carrots, while in the other years, it was cheaper to import since lesser values were recorded for volume imported. In 2010, carrots imports dropped significantly despite a decline in domestic production output, this can be attributed to high import costs. In 2009 and 2011, South Africa has imported significantly high volumes of carrots despite high production volumes in the same years. This can be attributed to cheaper carrots in imports in the same years.



Years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Africa	1503	11994	1473	23099	989	1758	11231	125115	3756	63708
Asia	0	0	0	126	0	4	0	322	0	137000
Europe	0	46	0	0	0	0	0	0	0	855

Source: Quantec Easydata

Figure 18 above illustrates South Africa's carrot imports from the various regions. Figure 18 indicates that African countries are the main supplier of carrots imported by South Africa. Significant volumes of carrots imports were recorded in 2003, 2005, and 2008 to 2011. In 2010, South Africa imported carrots from African region (Kenya) only. High import from African region can be attributed to cheaper import cost from neighboring countries. During 2011, South Africa imported high volumes of carrots from Asian region (China) and the imports from Europe (Poland) were less significant.



Years	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eastern Africa Rest	0	0	0	1003	924	1758	11231	15999	3756	63568
Western Africa	0	0	0	270	0	0	0	0	0	0
SADC	1503	11994	1473	21826	65	0	0	109116	0	140

Source: Quantec Easydata

Figure 19 show that South Africa imports carrots mainly from Eastern African countries (Kenya) and SADC countries (Zimbabwe, and Zambia).During 2005, South Africa imported carrots from West Africa countries but the imports volumes were less significant. In 2010, there were no carrots imports from SADC countries. In 2011, South Africa imported high volumes of carrots from Eastern Africa countries. South Africa's carrots imports from SADC countries were less significant.

2.5 Processing

Carrot processing includes canning, freezing and dehydration. Carrot can be eaten raw, whole, chopped, grated or added to salads for colour or texture. They are also often chopped and boiled, fried or steamed, and cooked in soups and stews, as well as fine baby foods and select pet foods grated carrots are used in carrot cakes, as well as carrot pudding. The greens are edible as a leaf vegetable, but are rarely eaten by humans. Baby carrots have been a popular ready to eat snack food available in supermarkets. Carrot juice is also widely marketed, especially as a health drink, either stand-alone or blended with other fruits and vegetables. Carrots seed oil is an essential oil extract of the seed from the carrot plant. Carrot seed oil is used as massage oil, in creams and lotions. Figure 20 below illustrate carrot value chain explaining its uses.

Figure 20: Carrot Value Chain Tree explaining its uses

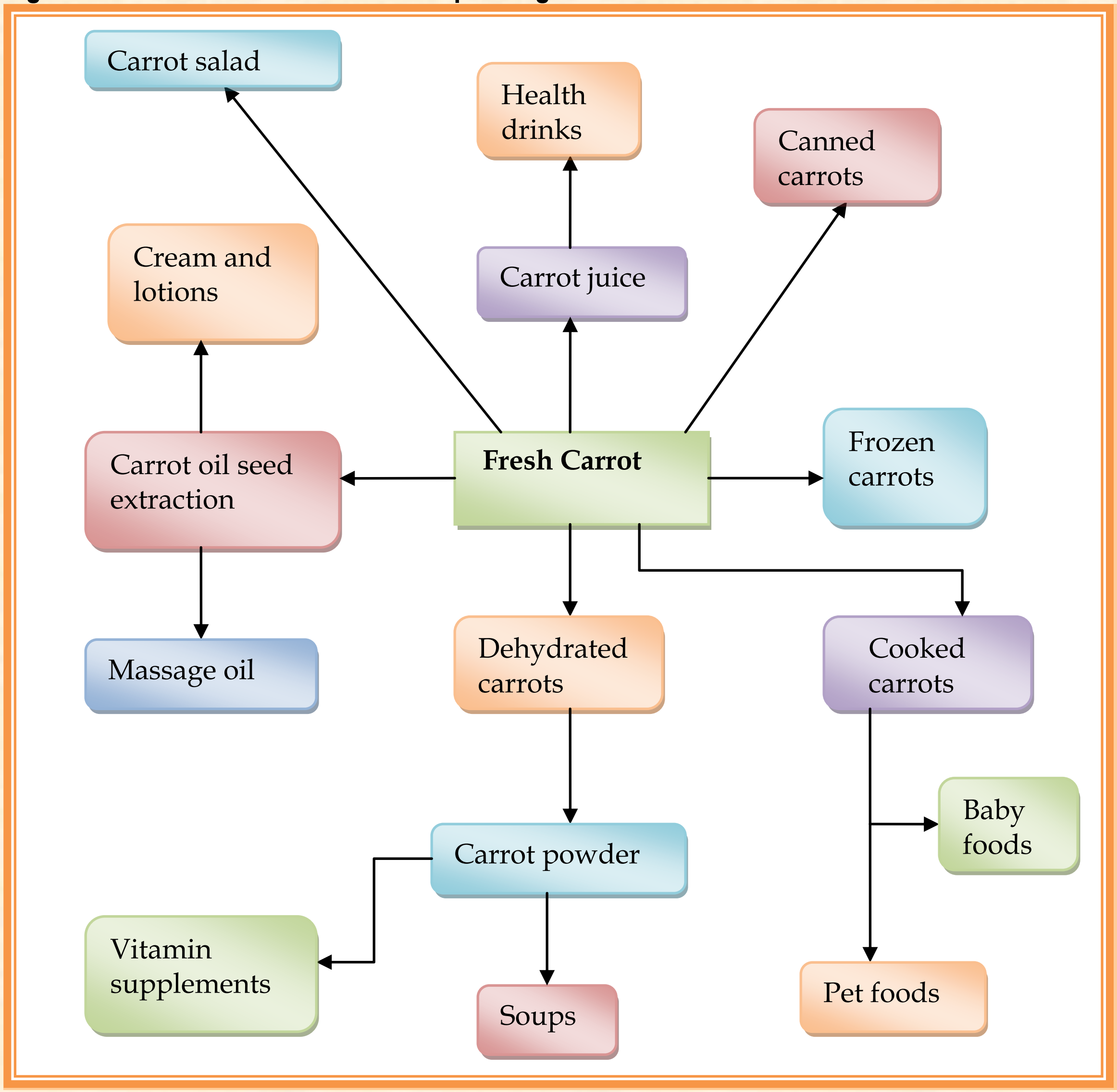
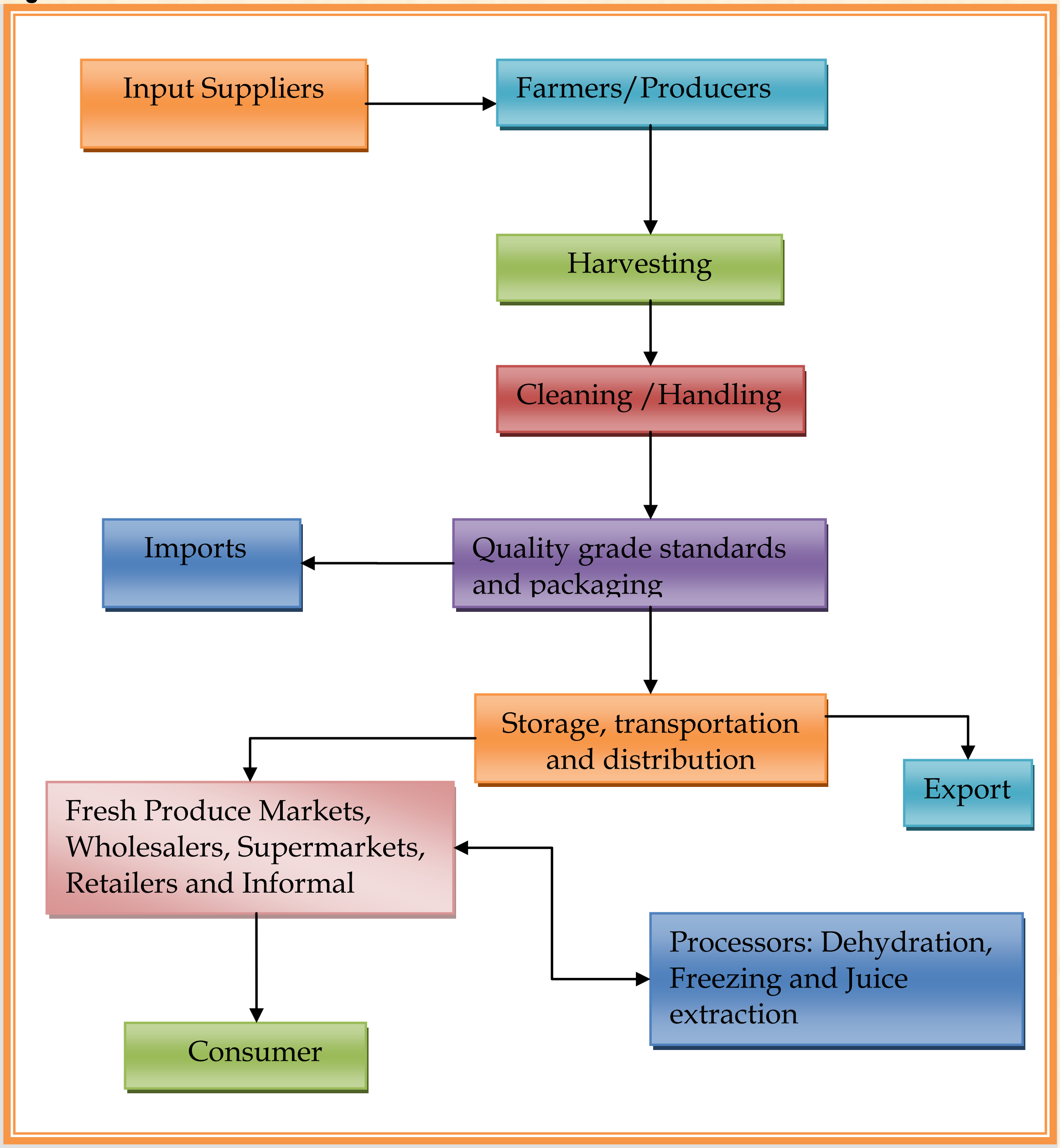


Figure 21 presents the market value chain for carrots. The carrot value chain can be broken down into the following levels: the producers of carrots (farmers); pack house owners (cleans, grade and quality control); cold storage and transport facilities (store and transport carrots on behalf of farmers); traders in carrots (market and sell carrots); processors (add value to carrots and process carrots to other usable forms); and end users (consumers)

Figure 21: Market value chain for carrots



3. MARKET INTELLIGENCE

3.1 Tariffs

Tariffs applied by the various markets to carrots originating from South Africa during 2010 and 2011 are presented in Table 12.

Table 12: Tariffs applied by various export markets to carrots originating from South Africa.

Country	Product description (H0706100)	Trade regime description	Applied tariff	Estimated total ad volorem equivalent tariff	Applied tariff	Estimated total ad volorem equivalent tariff
			2010		2011	
Angola	Carrots and turnips fresh or chilled	MNF duties (Applied)	15.00%	15.00%	15.00%	15.00%
Canada	Carrots and turnips fresh or chilled	MNF duties (Applied)	$16.5/ton	8.00%	3.35%	3.35%
China	Carrots and turnips fresh or chilled	MNF duties (Applied)	13.00%	13.00%	13.00%	13.00%
Spain	Carrots and turnips fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
France	Carrots and turnips fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Ireland	Carrots and turnips fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Italy	Carrots and turnips fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Japan	Carrots and turnips fresh or chilled	MNF duties (Applied)	3.00%	3.00%	3.00%	3.00%
Kenya	Carrots and turnips fresh or chilled	MNF duties (Applied)	25%	25%	25%	25%
Congo	Carrots and turnips fresh or chilled	MNF duties (Applied)	30.00%	30.00%	30.00%	30.00%
Mozambique	Carrots and turnips fresh	Preferential tariff for	15.00%	15.00%	15.00%	15.00%

Country	Product description (H0706100)	Trade regime description	Applied tariff	Estimated total ad volorem equivalent tariff	Applied tariff	Estimated total ad volorem equivalent tariff
			2010		2011	
	or chilled	South Africa				
Netherlands	Carrots and turnips fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Seychelles	Carrots and turnips fresh or chilled	General tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Switzerland	Carrots and turnips fresh or chilled	MNF duties (Applied)	$34.92/ ton	6.96%	$34.92/ ton	6.96%
Thailand	Carrots and turnips fresh or chilled	MNF duties (Applied)	40.00%	40.00%	40.00%	40.00%
United Kingdom	Carrots and turnips fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
United States of America	Carrots and turnips fresh or chilled	MNF duties (Applied)	14.90%	14.90	14.90%	14.90
Zambia	Carrots and turnips fresh or chilled	Preferential tariff for South Africa	5.00%	5.00%	5.00%	5.00%
Zimbabwe	Carrots and turnips fresh or chilled	MNF duties (Applied)	40.00%	40.00%	40.00%	40.00%

Source: Market Access Map

The most lucrative export markets for carrots from South Africa are Seychelles, United Arab Emirates and European markets since these countries apply zero tariff to exports of carrots originating from South Africa. European markets (Austria, France, Germany, Ireland, Netherlands and United Kingdom) a preferential tariff of 1.40% was reduced to 0.00% in 2010. South Africa has Free Trade Agreement (FTA) with European countries. The African markets in Zambia applies 5% preferential tariff. During 2011, Mozambique, Angola and Zimbabwe were the biggest markets for South African carrots exports. These markets are highly protected by high tariff of 15%, 15% and 40% respectively, in spite of the existence of the SADC-FTA. China is the largest carrots producer and its domestic market is protected by a 13% tariff.

3.1 Non tariff barriers

3.1 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.

3.1.1 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 labeling 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.

3.1.2 Product legislation: phytosanitary regulations

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

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

3.1.3 Product legislation: packaging

The EU commission lays downs 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.

3.1.4 Non-legal market requirements: social and environmental accountability

To access a market, importers must not only comply with the legal requirements set out above, but also with market requirement s 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 successful. 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 and EU label for identifying food produced according to EU organic standards in the directive EEC 209/91

3.1.5 Consumer health and safety requirements

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

3.2 The United States

The USDA has quality standards for vegetables that provide a basis for domestic and international trade and promote efficiency in marketing and procurement. At the same time the USDA issues quality certificates based on these standards and a comprehensive grading system. Graders are located around the country at terminal markets. These certification services, which facilitate the ordering and purchasing of products by large-volume buyers, assure these buyers that the product they purchase will meet the terms of the contract in terms of quality, processing, size, packaging and delivery.

3.3 Asian Market Access

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

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

4. GENERAL DISTRIBUTION CHANNELS

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

5. LOGISTICAL ISSUES

5.1 Mode of transport

The transportation of vegetables falls within two categories – ***ocean cargo*** and ***air cargo*** – with ocean cargo taking much longer to reach the desired location but costing considerably less. Of course, the choice of transportation method depends, for the most part, on the fragility of the 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 lead 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). For some products, in order to reach the destination market with an acceptable degree of freshness, air transport is the only option (asparagus, for example, is flown from Peru to the sufficient to cover the transport costs, and collective agreements between farmers of different commodities with different harvest periods can become particularly important.

5.2 Cold chain management

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^{o}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

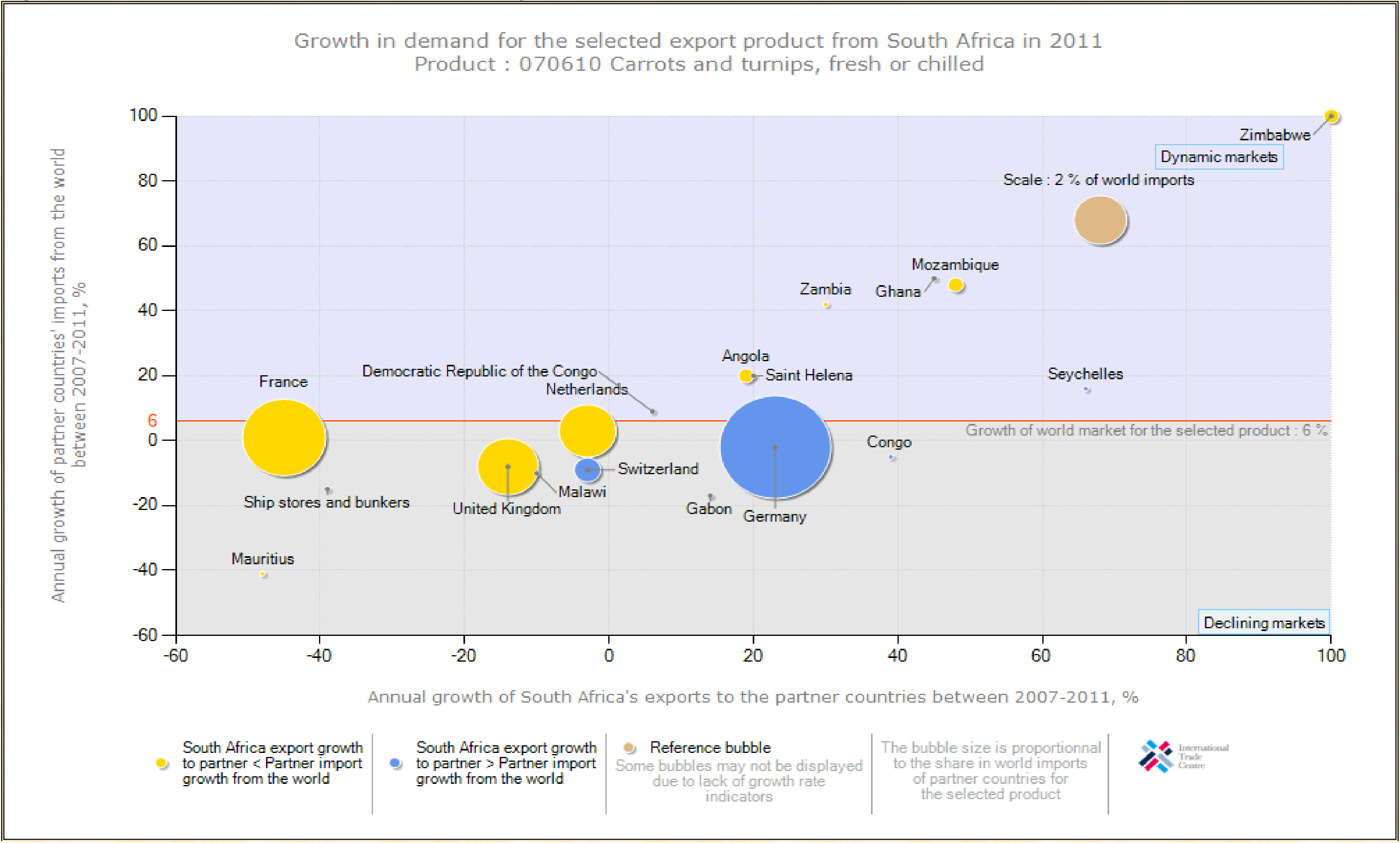
Packaging also plays a vital role in ensuring safe and efficient transport of a product and conforming to handling requirements, uniformity, recyclable materials specifications, phytosanitary requirements, proper storage needs and even attractiveness (for marketing purposes).

6. COMPETITIVENESS OF SOUTH AFRICAN CARROTS EXPORTS

Figure 22 below shows that South African carrot exports are growing faster than the world imports into Seychelles. South Africa's performance in those markets can be regarded as gains in dynamic markets. South Africa's carrots exports are growing slower than the world imports into Zimbabwe, Mozambique, Ghana, Angola, Zambia and Saint Helena. South African carrots exports into Zambia, Democratic Republic Congo, France and Netherlands are declining while the world imports into these countries are growing.

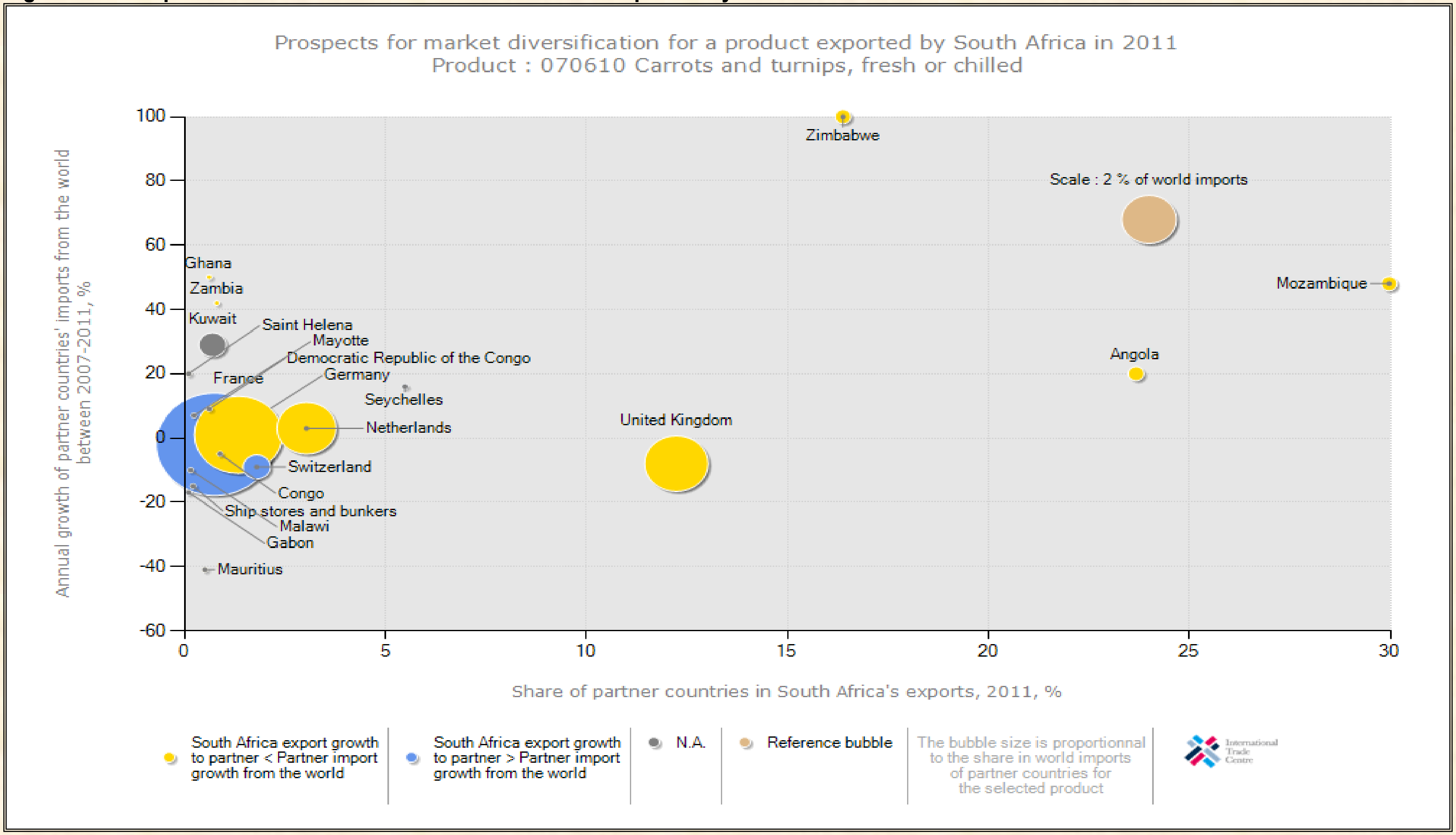
South African carrots exports are declining faster than the world imports into Mauritius, United Kingdom, Malawi and Switzerland. South African exports into Gabon, Germany and Congo are growing while world imports are declining into these countries. South Africa's performance in these countries can be regarded as a gain in a declining market.

Figure 22: Growth in demand for carrots exported by South Africa in 2011



Source: ITC calculations based on COMTRADE statistics.

Figure 23: Prospects for market diversification for carrots exported by South Africa in 2011



Source: ITC calculations based on COMTRADE statistics

Figure 23 above, shows that the prospective exports markets for carrots from South Africa. Mozambique, Angola and Zimbabwe hold a bigger share of South African carrots exports. Prospective markets exist in Kuwait, and Saint Helena. In Africa markets exist in Seychelles and Democratic Republic of Congo. However, if South Africa is to diversify its carrots exports the most lucrative markets exists in Zimbabwe, Ghana and Zambia which have increased their carrots imports by 170%, 50% and 42% respectively from the world between 2007-2011 period. Carrots imports from the world to Congo, Mauritius and Gabon have declined and these countries have recorded a negative growth rate from 2007 and 2011 period.

7. OPPORTUNITIES AND CHALLENGES

7.1 Opportunities

Carrots have found increasing favour among consumers. Several health benefits have promoted marketing this vegetable as a convenient and good tasting snack food or juice product. Carrots are popular as snacks, side dishes, salads ingredients, juice mixtures and dessert mixtures (e.g. carrot cake and carrot pudding). The rise of the fresh cut industry has meant some of the misshapen and other wise imperfect carrots have an alternative profitable outlet. Carrot that would not have made the grade in a standard pack of fresh carrots do not have to be sent to freezers or canners to be cut, diced or juiced. Today, the cutting and peeling process for various fresh-cut carrot products allows a majority of the raw carrots destined for the fresh market to become fresh market products. As a way of minimizing post harvest losses carrots are also utilized as animal fodder.

7.2 Challenges

The major concern is the production of a disease-free high quality clean carrot root. Other essential part of carrot production and marketing is the need to define the quality standards necessary for consumer acceptance. Product physical defects can be readily measured, but the flavor and sweetness characteristics must be defined and the parameters affecting these important factors understood. Numerous root diseases affect carrot but proper cultural practices can keep them under control. Carrot growers also face strong market competition from the national and international producers.

8. ACKNOWLEDGEMENTS

The following organizations are acknowledged

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Quantec Easy Data
www.easydata.co.za

Market Access Map
www.macmap.org
www.trademap.org

Economic Research Service/USDA

www.wikipedia.co.za