

A PROFILE OF THE SOUTH AFRICAN APPLE MARKET VALUE CHAIN

2012

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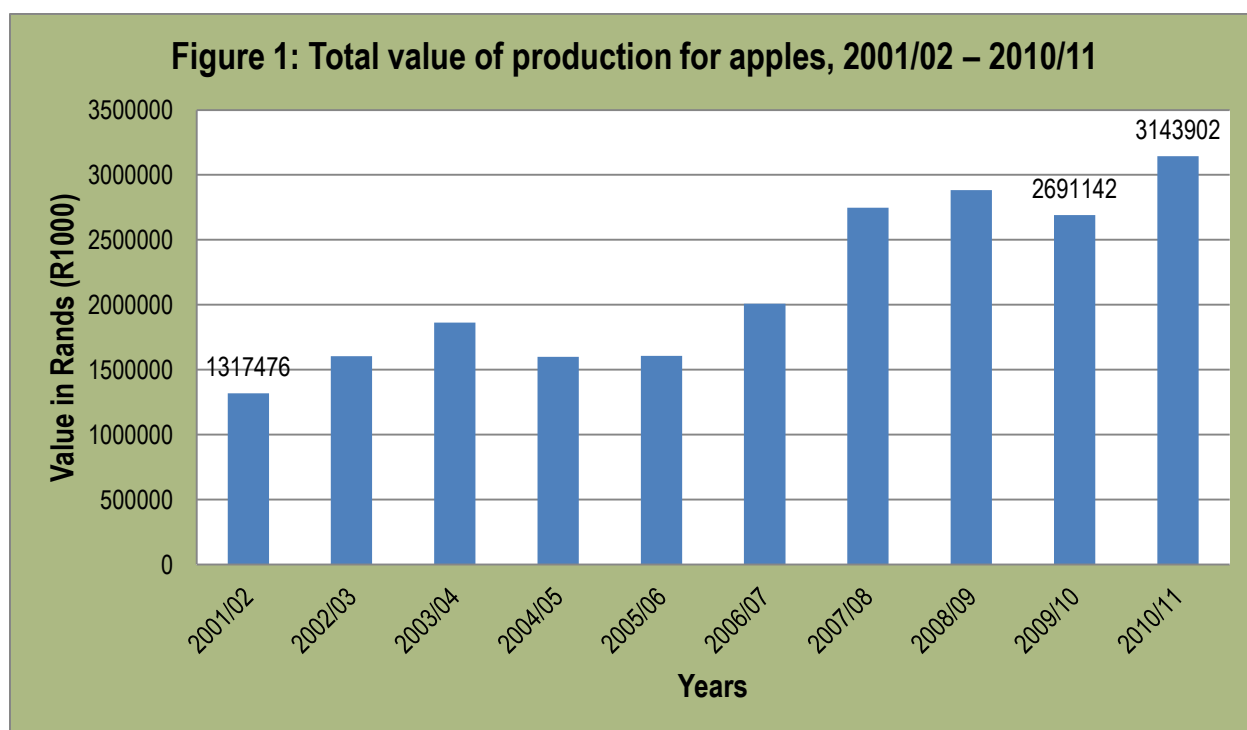
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1. DESCRIPTION OF THE APPLE INDUSTRY

Apples are one of the most important deciduous fruits grown in South Africa, taking into consideration their foreign exchange earnings, employment creation and linkages with support institutions. During the 2010/11 season, apples contributed approximately 33% (R3.1 billion) of the total gross value for deciduous fruits (R9.4 billion) in South Africa. Per capita consumption of deciduous and subtropical fruit in South Africa during 2011 was 24.74 kilograms per year. This represented a 5.6% increase from the 2010 figure of 23.27 kilograms per year.

The South African apple industry is export oriented with approximately half of the apples produced being absorbed by the export market. Majority of South African apples are available in many northern hemisphere countries during their winter and spring seasons. The bulk of these sales to the consumer are by means of contractual agreements via preferred category suppliers to the large supermarket chains. Furthermore, various export companies or agents conduct this business on the basis of consignment sales on behalf of the growers or packers. The industry operates in a deregulated environment where prices are determined by the market forces of demand and supply. Total value of production of apples for the period 2001/02 to 2010/11 is shown in Figure 1.

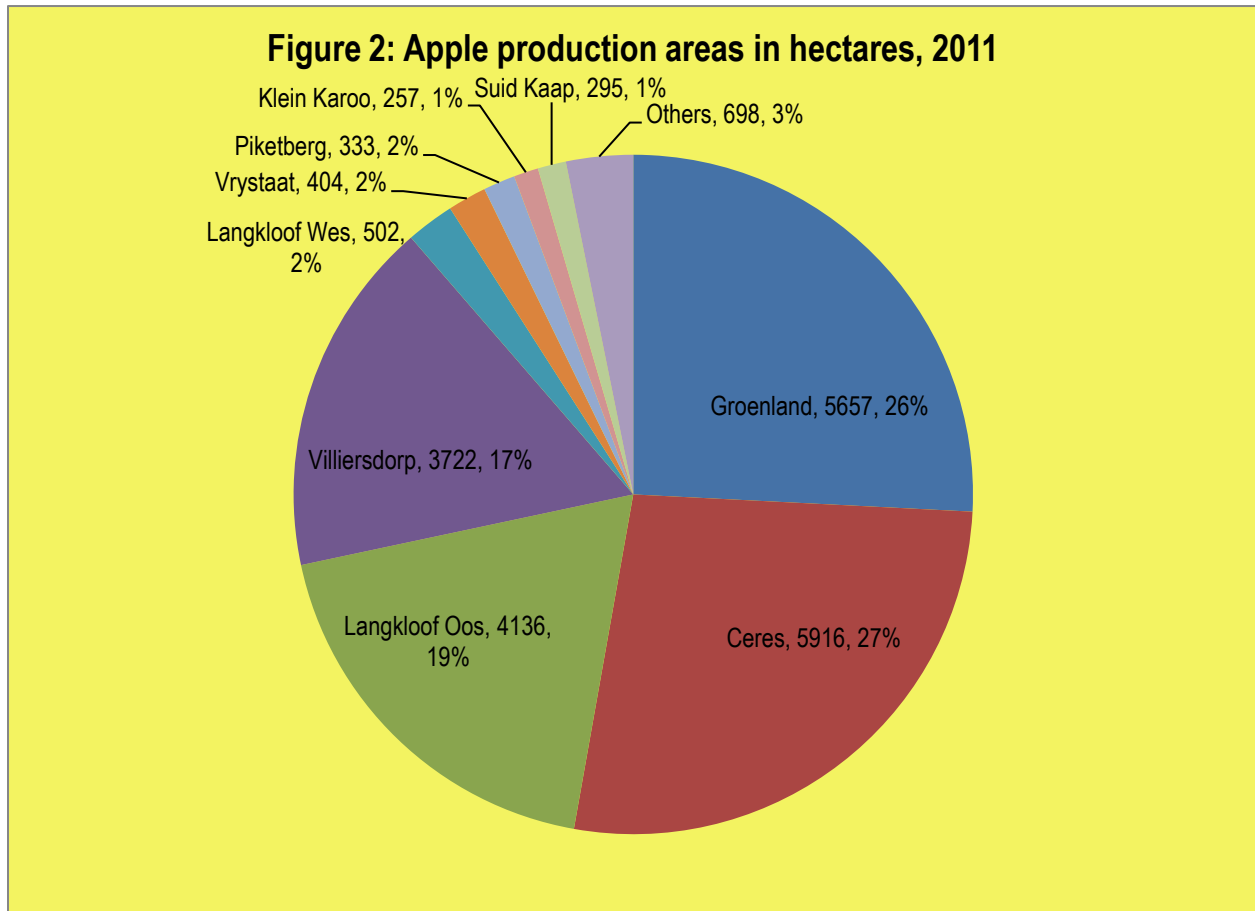


Source: Statistics and Economic Analysis, DAFF

Figure 1 shows that there has been a general increase in the gross value of apples during the last ten years. The only declines during the period under review were recorded during the 2004/05 (14%), 2005/06 (0.5%) and 2009/10 (6.9%) production seasons. This was mainly the result of unfavourable weather conditions (drought and heat waves) in certain parts of the apple producing areas, especially the Western Cape. The total gross value for apples increased by an average of 138% during the ten years under review. The 2010/11 production season also experienced a 15% increase in total gross value when compared to the previous production season (2009/10).

1.1 Apple production areas

South Africa's main apple producing areas are Groenland, Ceres, Villiersdorp (all in the Western Cape) and Langkloof East in the Eastern Cape. The Western Cape Province account for more than half of all the apples produced in South Africa. Apple production areas in 2011 are shown in Figure 2.



Source: Hortgro Tree Census, 2011

Total production area for apples in 2011 was 21 920 hectares. This represents a 1.7% increase from the 2010 figure of 21 553 hectares. Figure 2 above shows that in terms of the area planted to apples in hectares, Groenland accounted for 26% with 5 657 ha, Ceres accounted for 27% with 5 916 ha, Langkloof East accounted for 19% with 4 136 ha and Villiersdorp accounted for 17% with 3 722 ha. Other production areas (excluding Groenland, Ceres, Langkloof East and Villiersdorp) accounted for 11% of total area planted to apples in 2011.

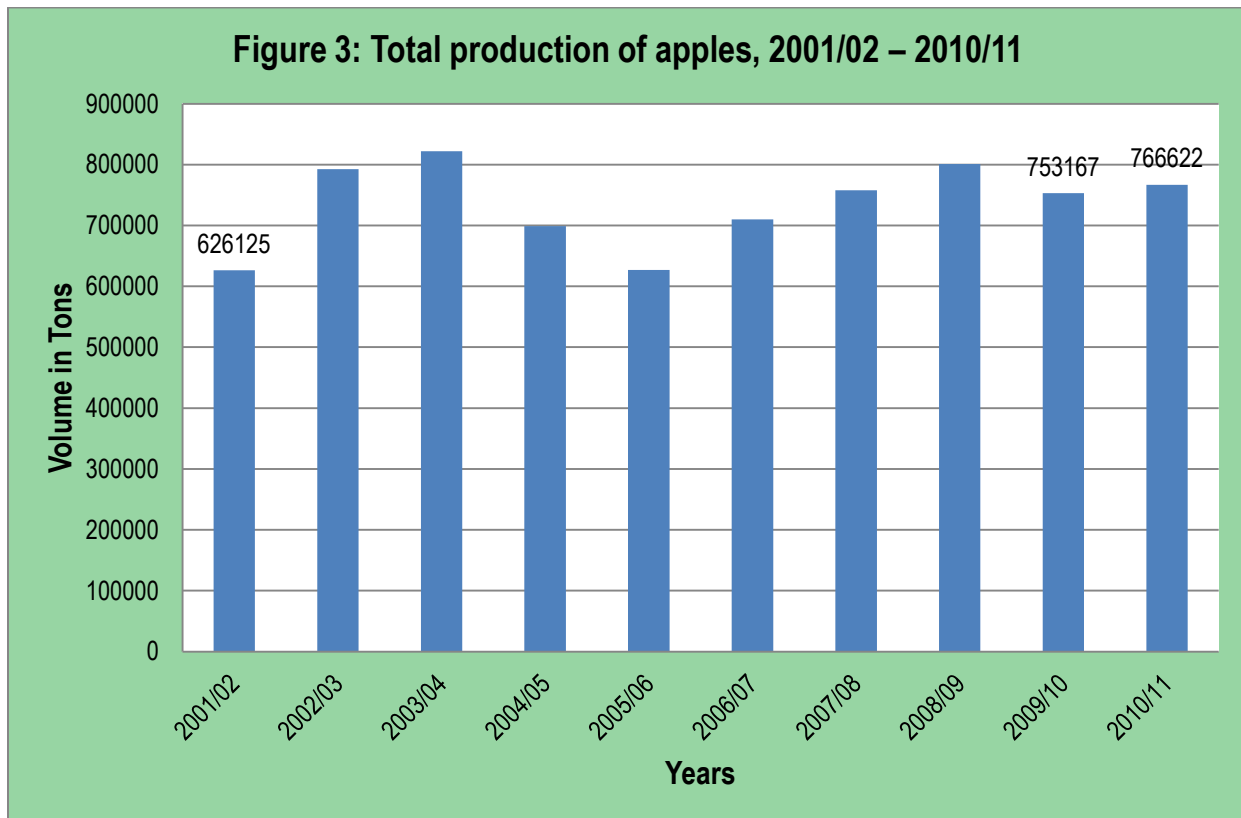
1.2 Apple production

In 2011, the apple orchard age distribution was as follows:

- 2 209 ha (10%) was in the category of 0 – 3 years;
- 3 448 ha (16%) was in the 4 – 10 years category;

- 2 682 ha (12%) was in the 11 – 15 years category;
- 6 311 ha (29%) was in the 16 – 25 years category; and
- 7 270 ha (33%) were older than 25 years.

For sustainable and consistent supply the replacement stock (0 – 3 years) must be kept at 10% or higher. The data above clearly indicate that the South African apple industry is sufficiently replacing its stock. Production units in most of the apple growing areas are over 30 ha. A number of apple growers (units larger than 60 ha) operate their own packing and cold storage operations. Economies of scale, consistency in yield and quality are the key characteristics of these operations. Total production of apples for the period 2001/02 to 2010/11 is shown in Figure 3.



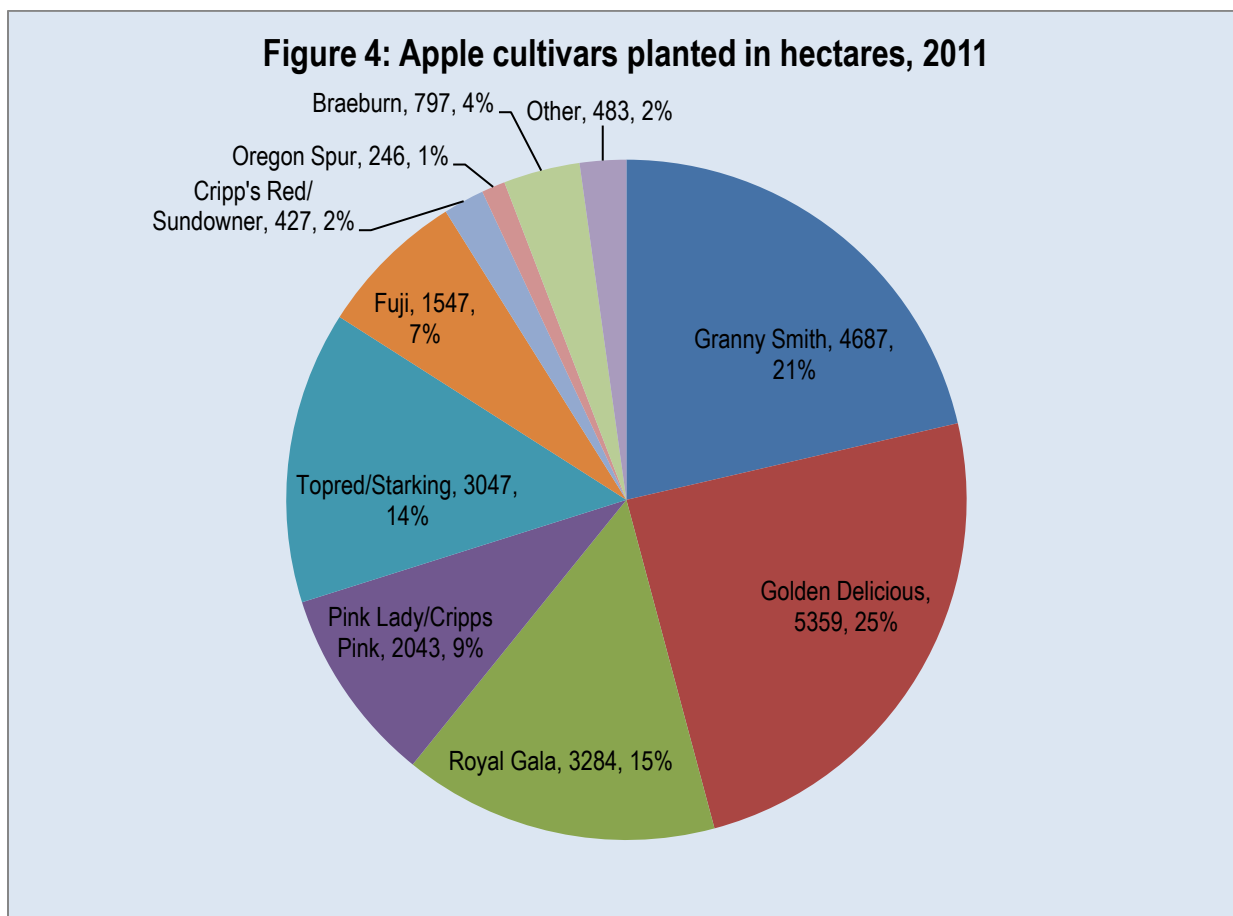
Source: Statistics and Economic Analysis, DAFF

Figure 3 indicates that South African apple production increased from 626 126 tons in 2001/02 to 766 622 tons in 2010/11 and this represents a 22% increase in production tonnages during the last ten years. Production increased by 1.8% between 2009/10 and 2010/11 production season and this increase came after a 6% decline in tonnages produced between the 2008/09 and 2009/10 production seasons. During the period under review production volume was at its highest in 2002/03 at 792 678 tons. The trough was reached in 2001/02 at 626 125 tons.

1.3 Apple cultivars

South Africa's main apple cultivars are Granny Smith, Golden Delicious, Royal Gala, Pink Lady, Fuji and Topred. Figure 4 shows that in 2011, Golden Delicious accounted for 25% (5 359 ha) of the total area

planted, followed by Granny Smith at 21% (4 687 ha) and Royal Gala at 15% (3 284 ha). Topred and Pink Lady follow with 14% (3 047 ha) and 9% (2 043 ha), respectively. Fuji is also an important cultivar grown in South Africa and was planted on 1 547 ha in 2011.



Source: Hortgro Tree Census 2011

1.4 Employment

The apple industry makes an important contribution to direct employment in the apple production and processing. It provides indirect employment for numerous support industries in the areas where apples are grown. In 2011, direct employment within the industry was estimated at 27 493 people with 109 971 dependents. This represents a 1.7 percent increase in the number of people employed in the apple industry between 2010 and 2011. Full-time labourers employed on apple farms are primarily employed for a number of specialist tasks such as pruning of trees. Labour is also required to carry out thinning practices during blooming or during the first four weeks of fruit growth. Other tasks include harvesting, supervision, operational duties in the pack house, irrigation management, scouting for insects and diseases on seasonal basis, tractor or forklift driving and grafting. Seasonal labour is employed on a contractual basis for a fixed period of time with the main purpose of harvesting or fruit packing.

The prescribed minimum wage is used as a baseline for determining basic wages in accordance with the legislation governing conditions of service. Minimum wages for farm workers for the period 1 March 2013 to 1 February 2016 are presented in Table 1. The consumer price index (CPI) is used in the calculation of

annual wage adjustments. The sectoral determination stipulates that the wage increase will be determined by utilizing the previous year's minimum wage plus CPI + 1.5%.

Table 1: Minimum wages for farm workers in the Republic of South Africa, 2013 - 2015

Minimum rate for the period				Minimum rate for the period			Minimum rate for the period		
1 March 2013 to 28 February 2014				1 March 2014 to 28 February 2015			1 March 2015 to 28 February 2016		
Monthly	Weekly	Daily	Hourly	Monthly	Weekly	Hourly	Monthly	Weekly	Hourly
R2273.52	R524.70	R105.00 ¹	R11.66	Previous year's minimum wage + CPI ² + 1.5%			Previous year's minimum wage + CPI + 1.5%		

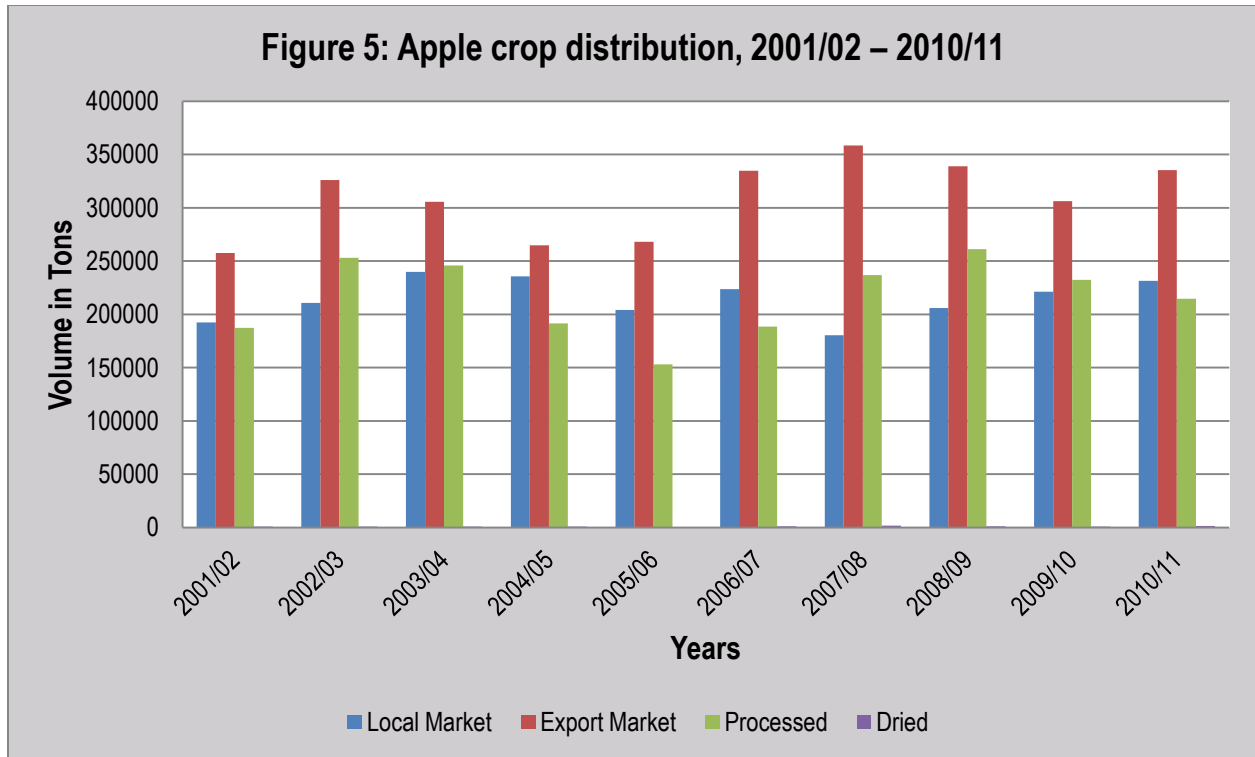
Source: Department of Labour, 2013

2. MARKET STRUCTURE

The distribution of apples across the various markets during the period 2001/02 to 2010/11 is shown in Figure 5. As illustrated in the figure, apple production in South Africa is primarily aimed at both the export and local markets as well as processing. Dried fruit production is relatively insignificant. During the 2010/11 marketing season approximately 43 percent (335 162 tons) of the total crop produced was exported, 28 percent (214 754 tons) was processed, 30 percent (231 285 tons) was sent to the local markets, and the remaining 0.2 percent (1 590 tons) was dried. The local market has been increasing in the last three years, moving from 180 480 tons in 2007/08 to 231 285 tons in 2010/11. The volume of exports also increased between 2009/10 and 2010/11 marketing seasons. The volume of apples processed declined from 261 191 tons in 2008/09 to 214 754 tons in 2010/11. This represents a decline of 18% in two years.

¹ For an employee who works 9 hours per day

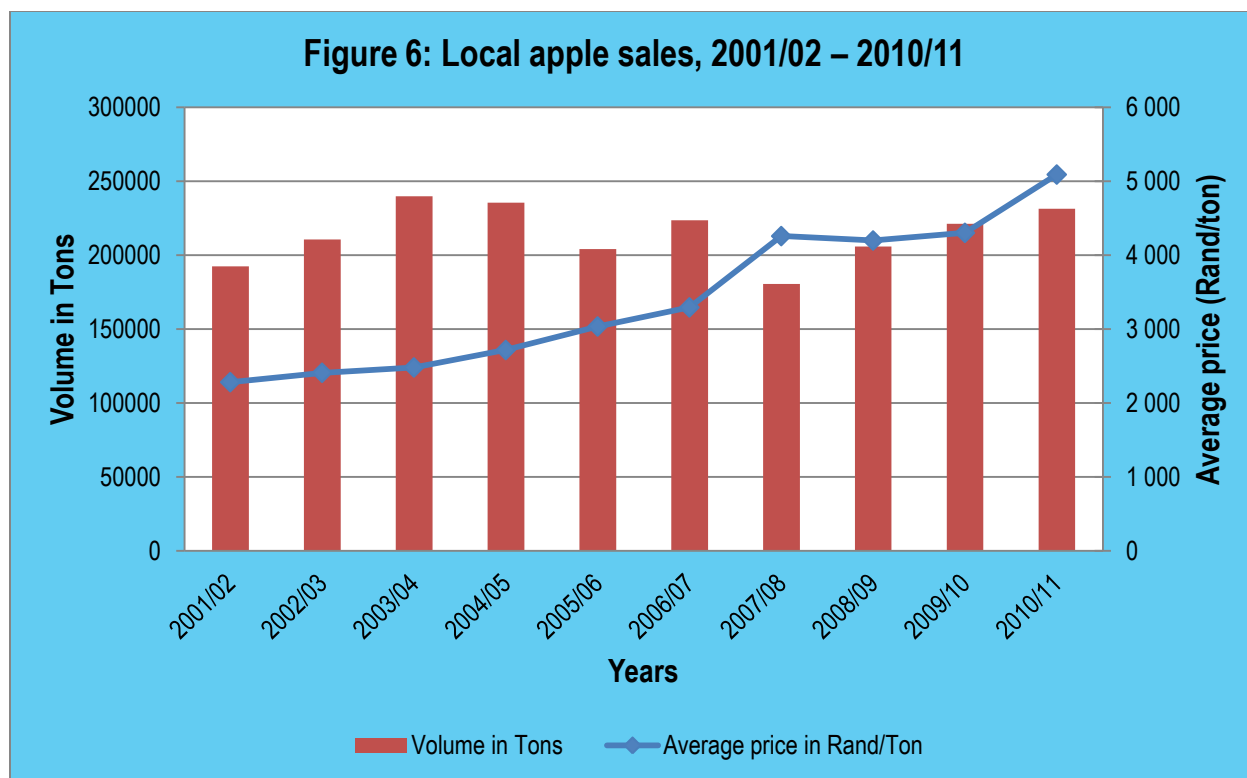
² The CPI to be utilised is the available CPI for the lowest quintile as released by Statistics South Africa six weeks prior to the increment date.



Source: Statistics and Economic Analysis, DAFF; Hortgro, 2011; Quantec Easydata

2.1 Domestic markets and prices for apples

Local apple market volumes and general price trends from 2001/02 to 2010/11 are presented in Figure 6. As illustrated in Figure 6, volumes of apples sold at local markets have been rising since the 2008/09 marketing season. This followed a sharp decline (19%) in 2007/08. The decline was mainly due to an increase in exports during 2007/08. At the same time prices realised at the local markets have been increasing throughout the past decade, and only stabilised during the last three marketing seasons. Between 2009/10 and 2010/11 volumes of apples sold on the local markets went up by 5%. Prices realised in the local markets have also been increasing during the past ten years, moving from R2 282/ton in 2001/02 to R5 089/ton in 2010/11. It is important to note that prices discovered in the local fresh produce markets serve as reference prices in other markets, particularly the processing and drying markets.



Source: Statistics and Economic Analysis, DAFF; Hortgro, 2011

Prices on the local markets are largely influenced by seasonality in production, perishability of produce and the amount of apples exported (availability of apples on the local market). The impact of seasonality is to some extent cushioned by cold storage facilities that ensure regular apple supplies in the local markets. Demand factors such as consumer habits, substitution between products and per capita income also influence prices.

The variability in prices in different markets increases as the distance from the surplus apple producing regions increases. For example, the Cape Town Fresh Produce Market (FPM) which is located in a surplus apple producing region has the lowest price movements, whereas, Johannesburg, Tshwane and Durban FPMs, which are all in deficit apple production regions and distant from the Western Cape, experience more price variability. Price spread amongst the markets also increases as the distance from the surplus region increases.

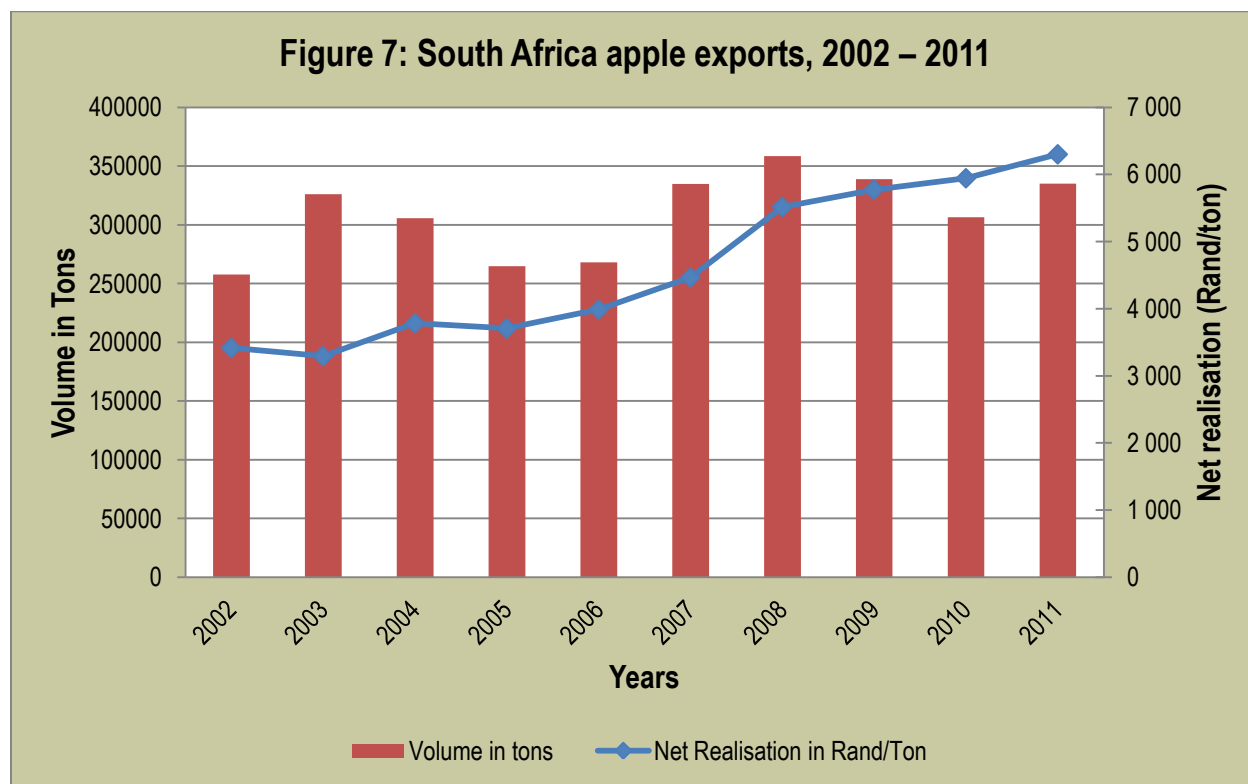
2.2 Apple exports and imports

2.2.1 Exports

South Africa is a relatively small apple grower in terms of global hectares. However, the country is a major volume exporter in global terms. Apples sold in the export markets generate a greater unit price than that achieved on the local market. The volumes and unit values of apples exported by South Africa during the past ten years are presented in Figure 7.

Volumes of apples exported by South Africa have been relatively stable during the past decade, ranging between 250 000 and 350 000 tons and averaging 310 000 tons per annum. The exported quantity

increased by 9% between 2010 and 2011. The increase came after two successive declines in the quantity of apples exported by South Africa. In the meantime, the export net realisation (price) has been increasing during the period under review, moving from R3 416/ton in 2002 to R6 302/ton in 2011. Overall, the export market represents a very significant distribution channel for South African apples. The export market generates a huge amount of revenue for the South African economy.



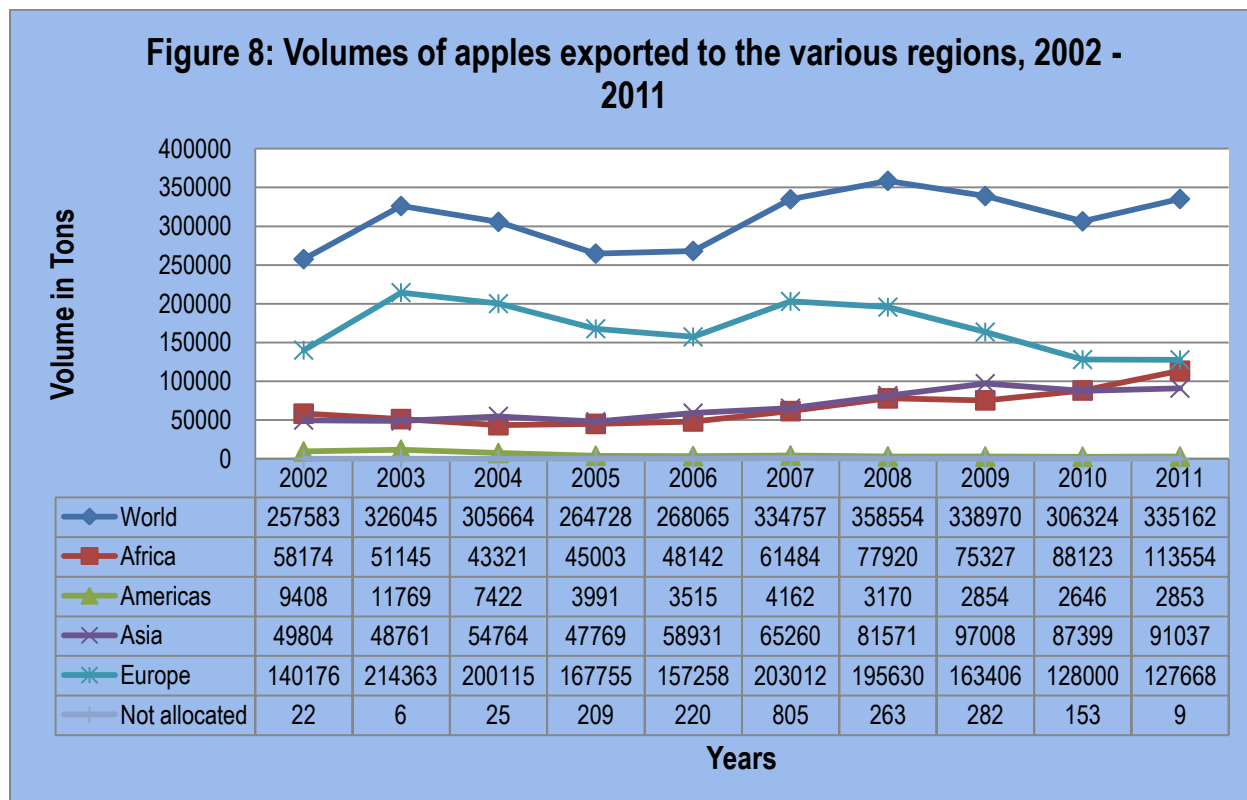
Source: Quantec Easydata

Exports of South African apples to the various regions of the world over the past decade are presented in Figure 8 below.

Figure 8 shows that total South African exports of apples increased from 257 583 tons in 2002 to 335 162 tons in 2011. This represents an increase of 30% during the past decade. It is also evident from Figure 8 that during the past decade most of South Africa's exports of apples were destined for the European, African and Asian markets. In 2011 exports to Europe accounted for 38% (127 662 tons) of total South African apple exports. Europe was followed by Africa and Asia at 34% (113 554 tons) and 27% (91 037 tons) respectively.

It is important to note that exports to South Africa's traditional market (Europe) have been declining during the past five years. It is however interesting to also note that the losses in the traditional market were offset by gains in the Asian and African markets. Exports into the Asian and African markets have been increasing during the past six years. Given their ever increasing population sizes and per capita incomes, the two continents present enormous opportunities for South African apple exports.

During the period under review exports to Europe peaked at 214 363 tons in 2003 while those to Asia peaked at 97 008 tons in 2009. Exports of apples to Africa peaked at 113 554 tons in 2011 and have been increasing over the past decade, moving from 58 174 tons in 2002 to 113 554 tons in 2011, an increase of 95%. Apple exports to the Americas have been declining during the period under review, moving from 9 408 tons in 2002 to 2 853 tons in 2011, a decrease of 70%. Figure 8 clearly indicates that South African apple exporters should pay more attention to the African and Asian markets as these markets are likely to grow even further in the near future.

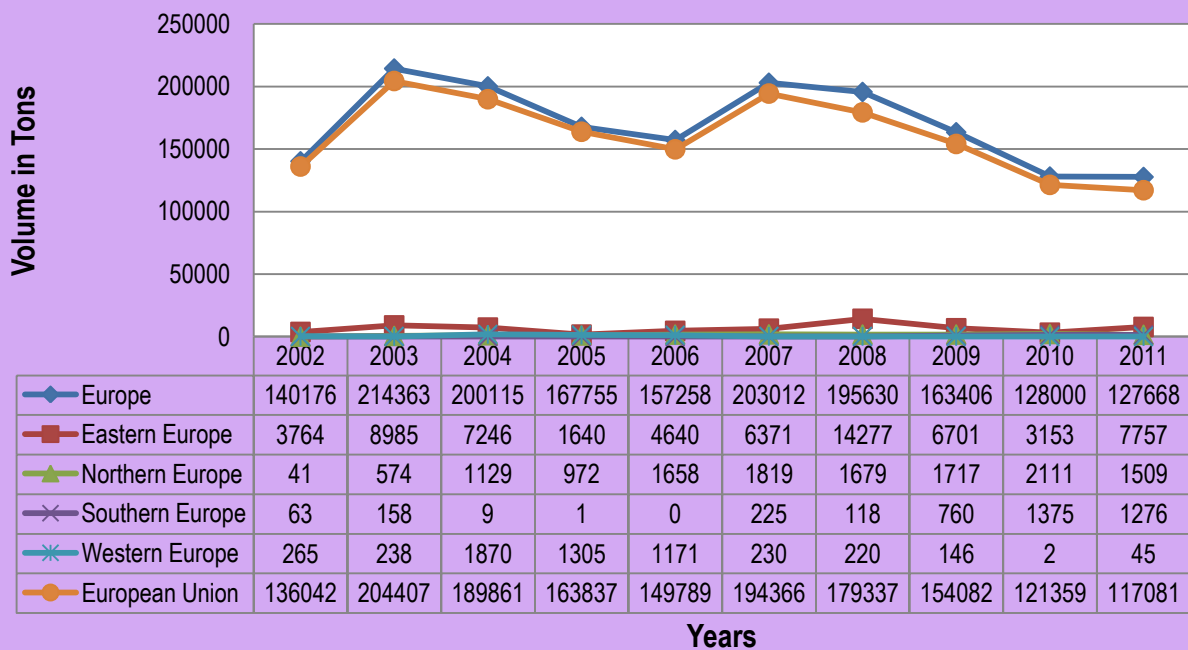


Source: Quantec Easydata

As already highlighted, Europe is still a major destination for South African exports of apples. Volumes of South African apple exports to the different regions of Europe are presented in Figure 9. Within Europe, exports of South African apples are normally distributed between the European Union, Eastern Europe, Northern Europe and Western Europe to a lesser extent. The European Union consists of 25 member states. Eastern Europe comprises Bulgaria, Belarus, Moldova, Romania, Russia and Ukraine while Northern Europe consists of Faeroe Islands, Iceland, and Norway.

Annually (see Figure 9), over 90% of all South African apple exports that goes into Europe go to the European Union member states while the remaining 10% or less goes to the other European regions. The European Union absorbed approximately 92% of the total South African apple exports to Europe in 2011. This clearly indicates the importance of the European Union as a major market for South African apples. Volumes of apple exports to the European Union and other European regions have been declining over the past five years. Between 2010 and 2011 South African apple export volumes to the European Union declined by 4% while those to Eastern Europe increased by 146% during the same period.

Figure 9: Volumes of apple exports to the different regions of Europe, 2002 - 2011

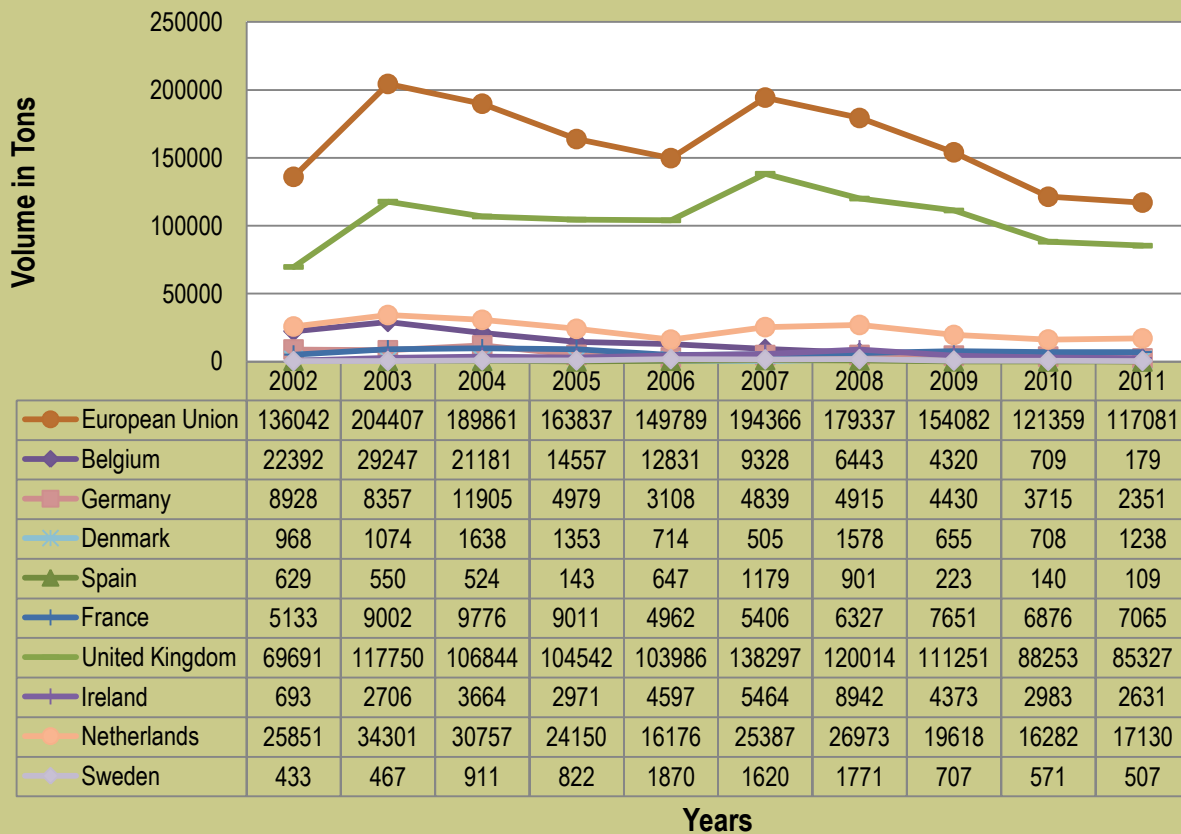


Source: Quantec Easydata

Given the relative importance of the European Union to South African apple exports, volumes of South African apple exports to the different European Union member states during the last decade are depicted in Figure 10. It is important to note that only those countries whose apple imports from South Africa were at least 1 000 tons in at least one year during the period under review are shown in Figure 10.

As can be seen in Figure 10 the major importers of South African apples in the European Union are the United Kingdom and Netherlands. In 2011 the United Kingdom accounted for 73% (85 327 tons) of all South African exports of apples to the European Union while the Netherlands accounted for 15% during the same year. There was however a 3% decline in exports to the United Kingdom between 2010 and 2011. Exports to the UK peaked at 138 297 tons in 2007 while those to the Netherlands peaked in 2003 at 34 301 tons. South African exports of apples to the Netherlands increased by 5% between 2010 and 2011.

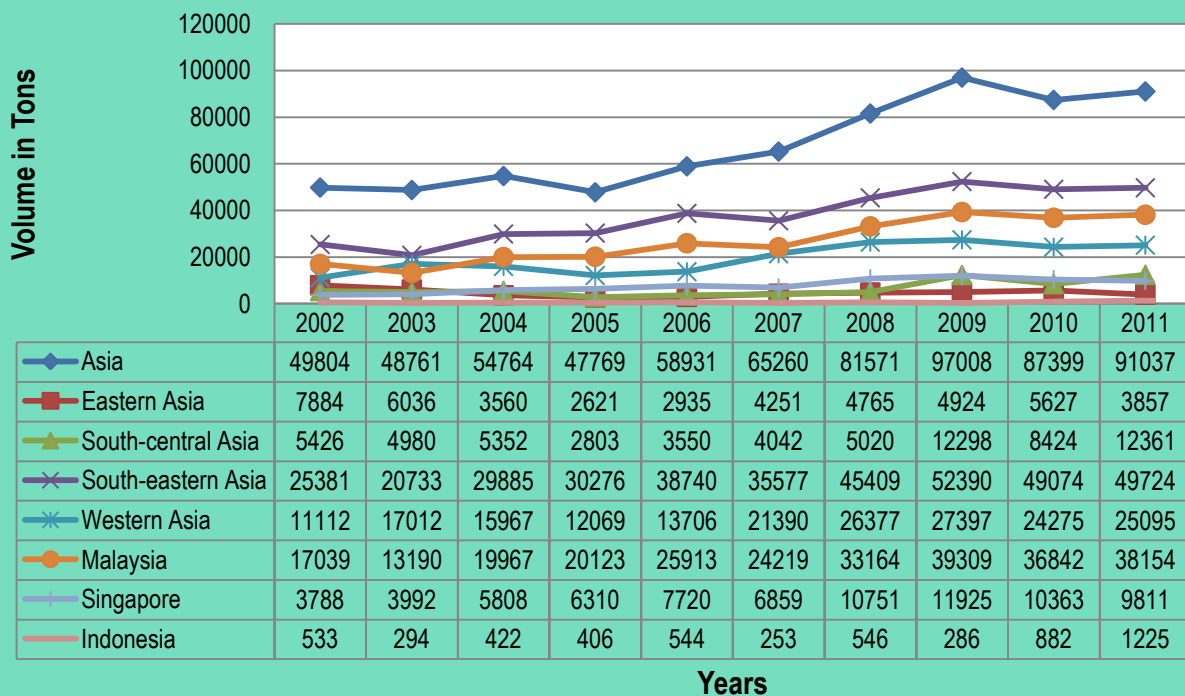
Figure 10: Volumes of apple exports to the different European Union member states, 2002 - 2011



Source: Quantec Easydata

Other important markets for South African apples are found in the Asian continent. Volumes of South African exports of apples to the different regions in Asia are presented in Figure 11. South African exports of apples into Asia have been increasing during the last decade and only declined significantly in 2010 before increasing again in 2011. In 2011, a total of 91 037 tons of apples were exported by South Africa to Asia. As can be seen in Figure 11 exports to Asia increased from 49 804 tons in 2002 to 91 037 tons in 2011. This represents an increase of 83% over ten years. There was however a 10% decline in exports to Asia between 2009 and 2010. Exports however recovered and rose by 4% between 2010 and 2011. Within Asia, the majority of South African apple exports go to South-eastern Asia (55% in 2011). Exports to South-eastern Asia rose by 1% between 2010 and 2011. Western and South-central Asia represented 28% (25 095 tons) and 13% (12 361 tons), respectively of all South African apple exports to Asia in 2011.

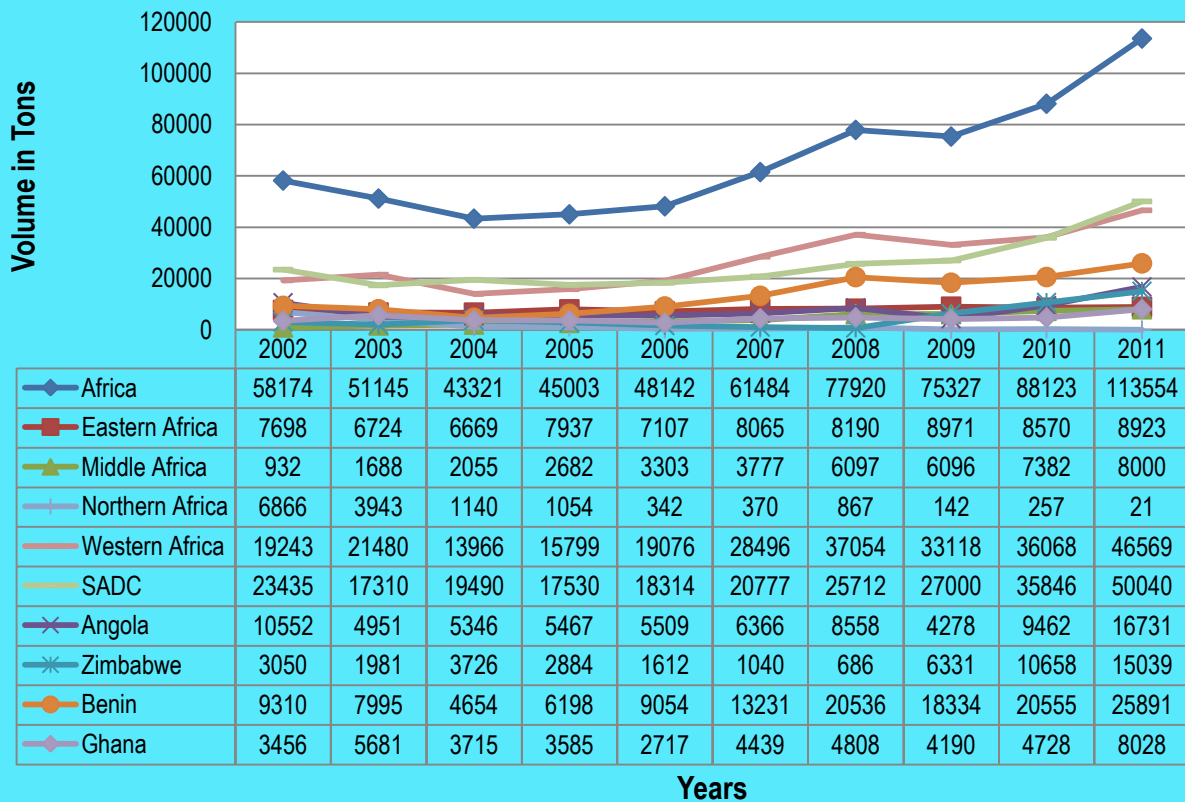
Figure 11: Volumes of apple exports to the different regions and countries of Asia, 2002 - 2011



Source: Quantec Easydata

Exports of South African apples to the African continent during the past ten years are presented in Figure 12. South African exports of apples to Africa also recorded significant increases during the last decade. Export volumes to Africa increased from 58 174 tons in 2002 to 113 554 tons in 2011, an increase of 95% in ten years. Within the continent the major export destinations for South African apples are West Africa and the Southern African Development Community (SADC). During 2011 West Africa accounted 41% (46 569 tons) of all South African apple exports to Africa while the SADC region accounted for 44% (50 040 tons). South African apple exports to East Africa, Middle Africa and Northern Africa have been relatively stable over the past decade, remaining below 10 000 tons in each region between 2002 and 2011. Within West Africa the major markets for South African apples are Benin and Ghana while Angola and Zimbabwe are the major markets for South African apples within SADC.

Figure 12: Volumes of apple exports to the different regions and countries of Africa, 2002 - 2011

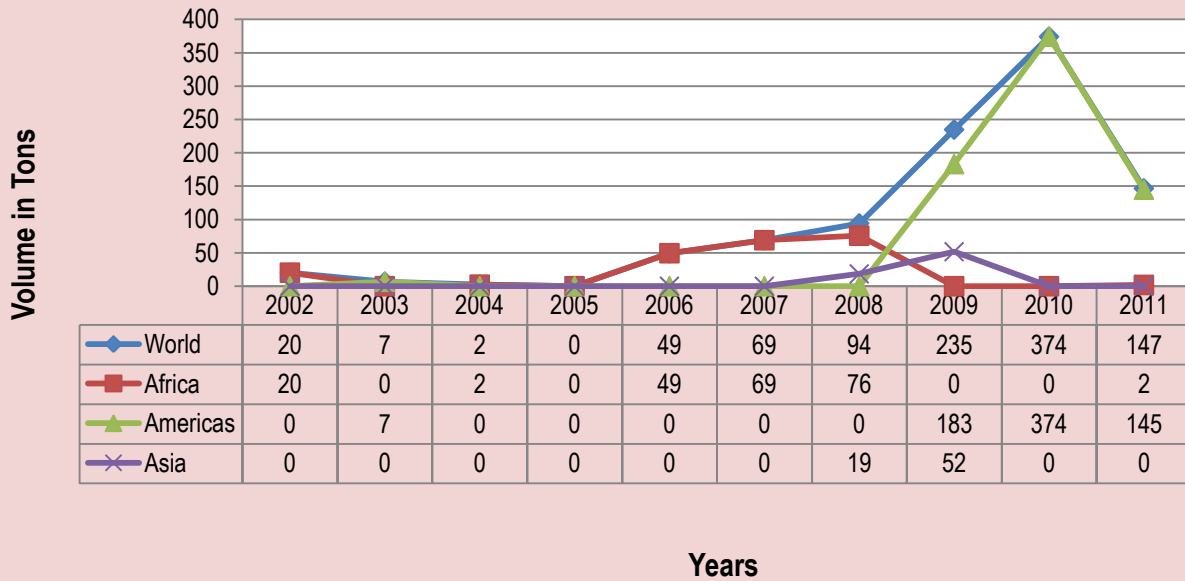


Source: Quantec Easydata

2.2.2 Imports

In 2011, South Africa's imports of apples were insignificant in world terms and its ranking in the world was number 173. Volumes of apples imported by South Africa from different regions of the world during the last decade are presented in Figure 13. It is evident from Figure 13 that South Africa imports less apples than it exports, resulting in trade surpluses in favour of South Africa. It is important to note however that although insignificant, imports of apples by South Africa have increased during the last six years. Imports increased from 49 tons in 2006 to 374 tons in 2010, an increase of 663%. They however went down by 61% in 2011 to 147 tons. All apple imports recorded in South Africa in 2011 were from the Americas (specifically from the USA).

Figure 13: Volumes of apple imports by South Africa from different regions of the world, 2002 - 2011

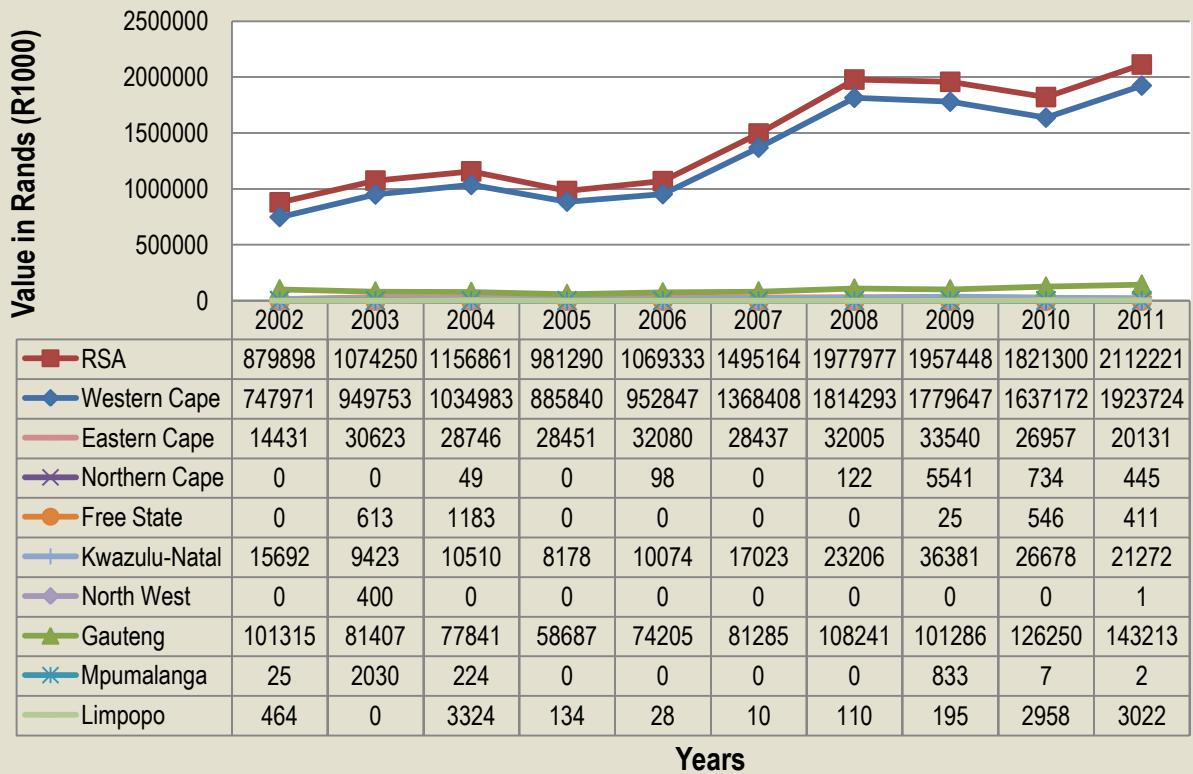


Source: Quantec Easydata

2.3 Provincial and district export values of South African apples

Figure 14 depicts the value of apple exports from each province of the Republic of South Africa during the period 2002 to 2011. All provinces recorded apple exports worth R2.1 billion in 2011. This was up from the R1.8 billion recorded in 2010.

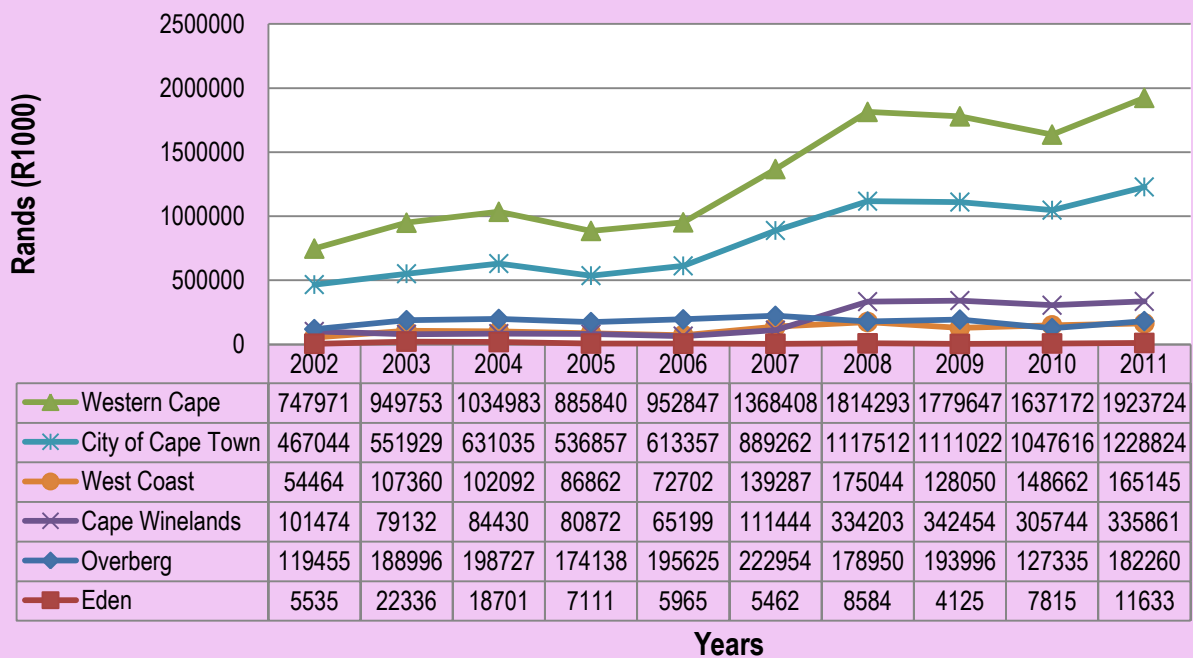
Figure 14: Value of apple exports by provinces, 2002 – 2011



Source: Quantec Easydata

The Western Cape is the leading apple-exporting province in South Africa. Gauteng province also recorded significant values of apple exports during the past ten years. In 2011, the Western Cape accounted for about 90 percent of total South African apple exports while Gauteng accounted for about 7 percent. The remaining 3 percent was shared among the remaining provinces. Apple exports from the Western Cape increased by 19% between 2010 and 2011 while those from Gauteng also went up by 13% during the same period. The following Figures (Figures 15 – 23) show the value of apple exports from the various districts in the nine provinces of South Africa. Figure 15 illustrates values of apple exports by the Western Cape Province.

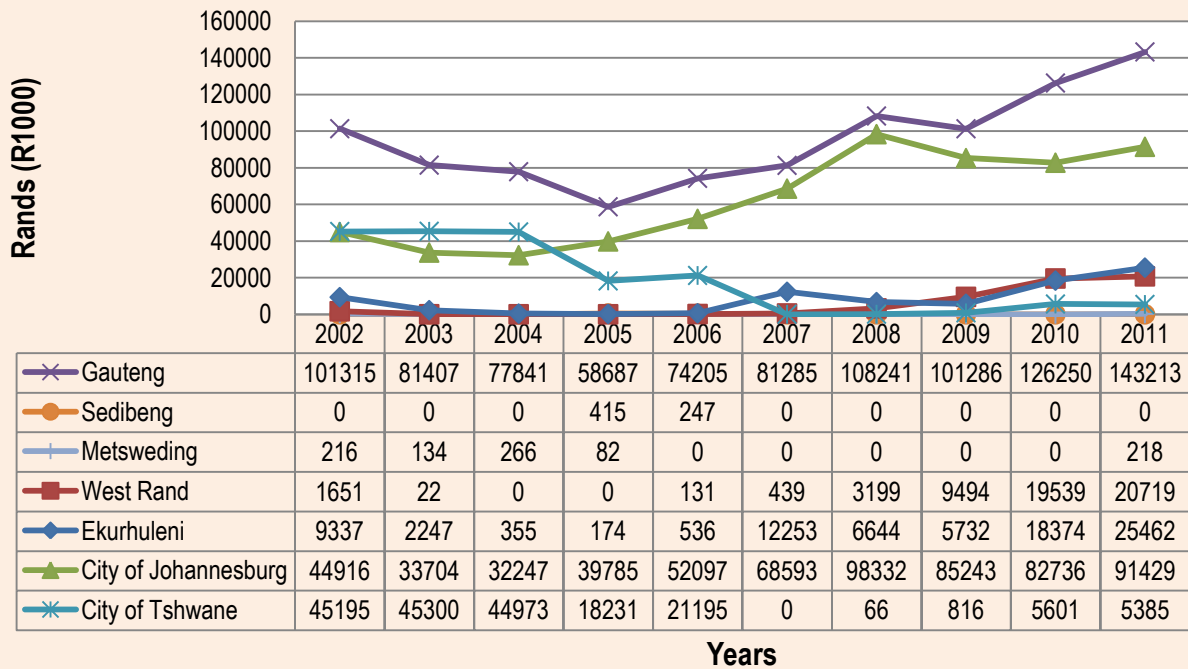
Figure 15: Value of apple exports by the Western Cape province, 2002 – 2011



Source: Quantec Easydata

It is clear from Figure 15 that exports of apples from the Western Cape Province are mainly from the City of Cape Town, Cape Winelands, Overberg and West Coast municipalities. The Western Cape exported apples worth R1.9 billion during 2011. High export values for the leading municipalities were recorded in 2011 (for the City of Cape Town) and 2009 (for Cape Winelands). Between 2010 and 2011 apple exports by the City of Cape Town and Cape Winelands district increased by 20% and 10% respectively. The use of the Cape Town harbour as an exit point may have played a major role in the City of Cape Town being a leader in the export of apples from the Western Cape province. Generally there have been substantial increases in the value of apple exports from the City of Cape Town and Cape Winelands since 2006. Values have however started to decline in 2009 and 2010 before increasing again in 2011. Values of apple exports from the Gauteng province are shown in Figure 16.

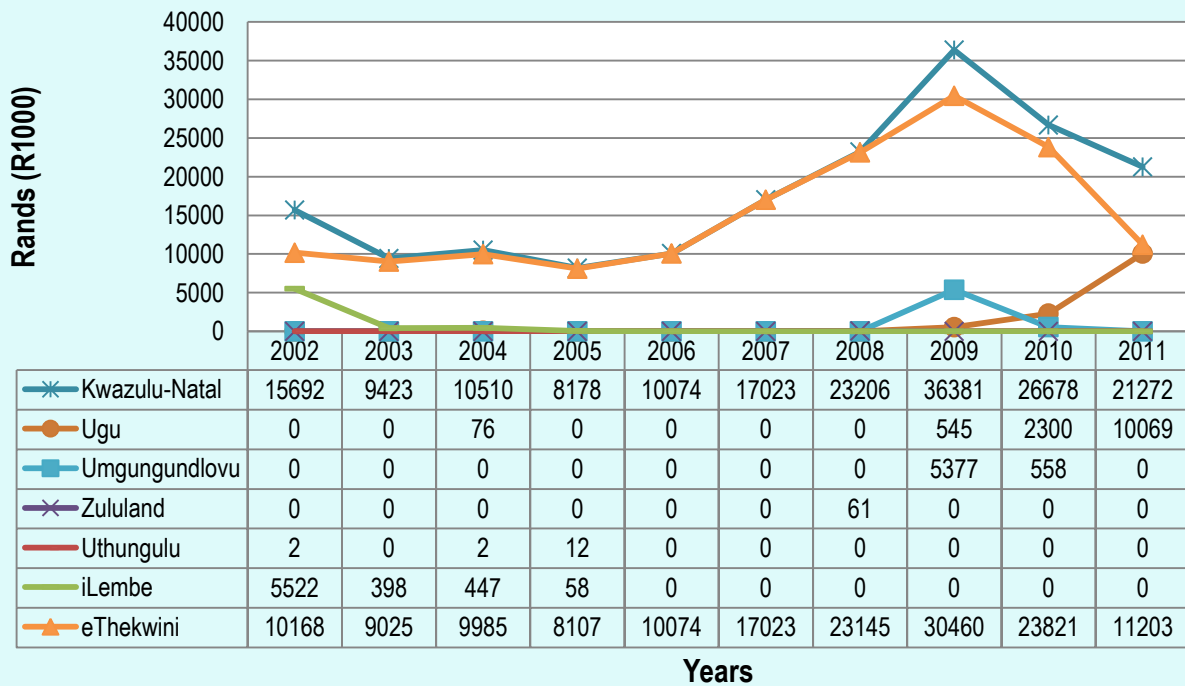
Figure 16: Value of apple exports by Gauteng province, 2002 – 2012



Source: Quantec Easydata

In Gauteng province, there have been fluctuations on the apple export values for the past ten years (see Figure 16). Apples worth over R143 million were exported by Gauteng in 2011. This was up from the R126 million value recorded in 2010. The leading role players are City of Johannesburg, West Rand and Ekurhuleni Metropolitan Municipalities. High export values of the leading municipalities were recorded in 2008 (for the City of Johannesburg) and 2011 for both the West Rand and Ekurhuleni. The value of apple exports has been on a steady decline for the Ekurhuleni Metropolitan Municipality since 2007 before picking up again in 2010 and 2011. At the same time, the value of apple exports has been on a steady increase for the City of Johannesburg until 2008 before dropping in 2009 and 2010 and increasing again in 2011. Apple export values from the West Rand increased by over 15 thousand percent between 2006 and 2011. Values of apple exports from the Kwazulu Natal province are presented in Figure 17.

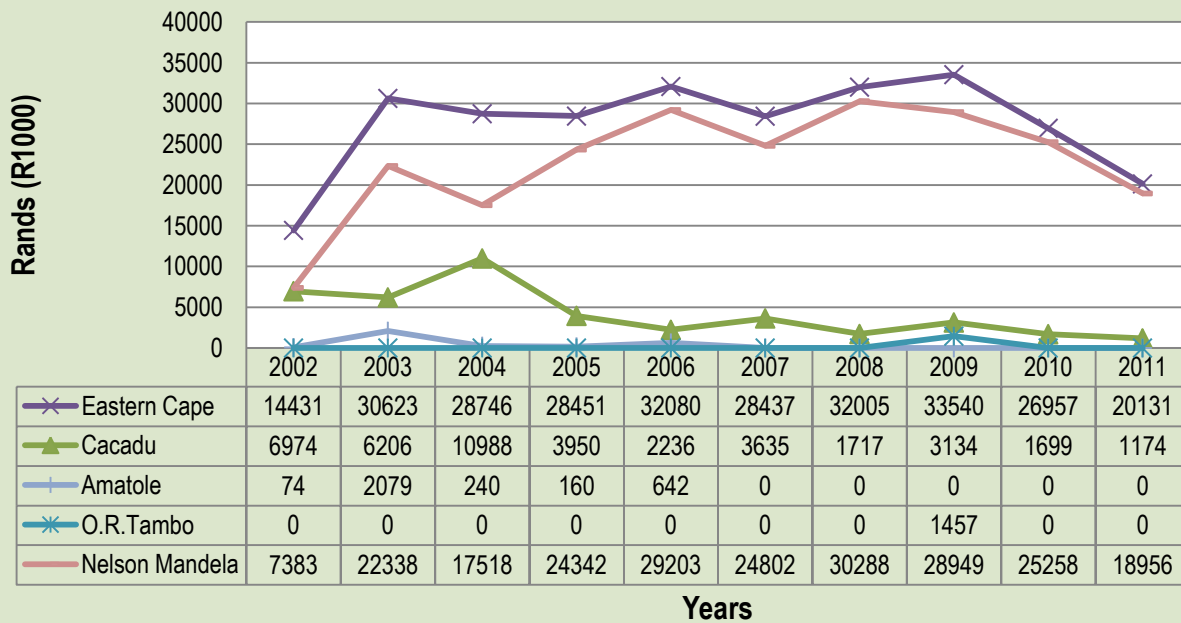
Figure 17: Value of apple exports by the Kwa-Zulu Natal province, 2002 – 2011



Source: Quantec Easydata

Apples worth over R21 million were exported by Kwazulu Natal during 2011 and this was down from over R26 million that was recorded in 2010. Apple exports from Kwazulu Natal province are mainly from the eThekweni Metropolitan Municipality. High export values for the leading municipality were recorded in 2009. The value of exports from the eThekweni has been on the rise since 2005. The municipality however recorded a decline of 22% in 2010 and a further 53% in 2011. Another significant player in the exports of apples from Kwazulu Natal in 2011 was the Ugu district, which recorded apple exports to the value of over R10 million. The use of the Durban harbour as an exit point may have played a major role in eThekweni being a leader in the export of apples from the Kwazulu Natal province. Values of apple exports from the Eastern Cape Province are shown in Figure 18.

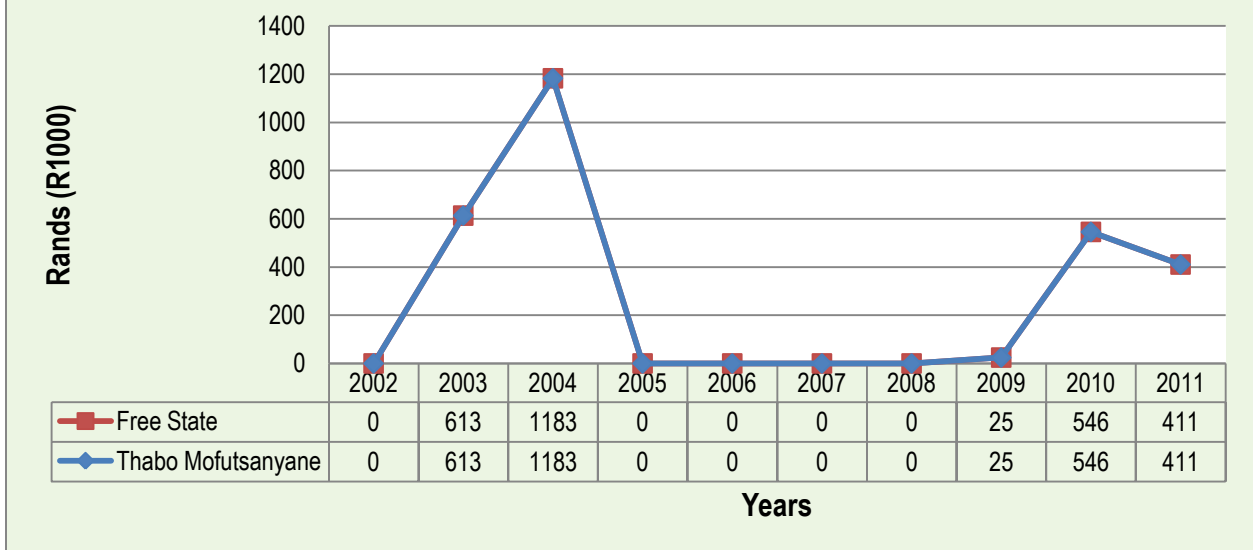
Figure 18: Value of apple exports by the Eastern Cape province, 2002 – 2011



Source: Quantec Easydata

The Eastern Cape reported apple exports worth over R20 million in 2011. This represented a 25% decline from the export value reported by the same province in 2010. It can be observed in Figure 18 that apple exports from the Eastern Cape province are mainly from Nelson Mandela and Cacadu to a lesser extent. High export values for the leading municipalities were recorded in 2008 (for Nelson Mandela) and 2004 (for Cacadu). Apple exports from the Nelson Mandela municipality declined by 25% between 2010 and 2011 while those from Cacadu also declined by 31% during the same period. The value of apple exports from the Cacadu district have been declining since 2004, remaining below R5 000 000.00 annually. The use of the Port Elizabeth harbour as an exit point may have played a major role in Nelson Mandela Metropolitan Municipality being the leader in apple exports from the Eastern Cape Province. Values of apple exports by the Free State province are depicted in Figure 19.

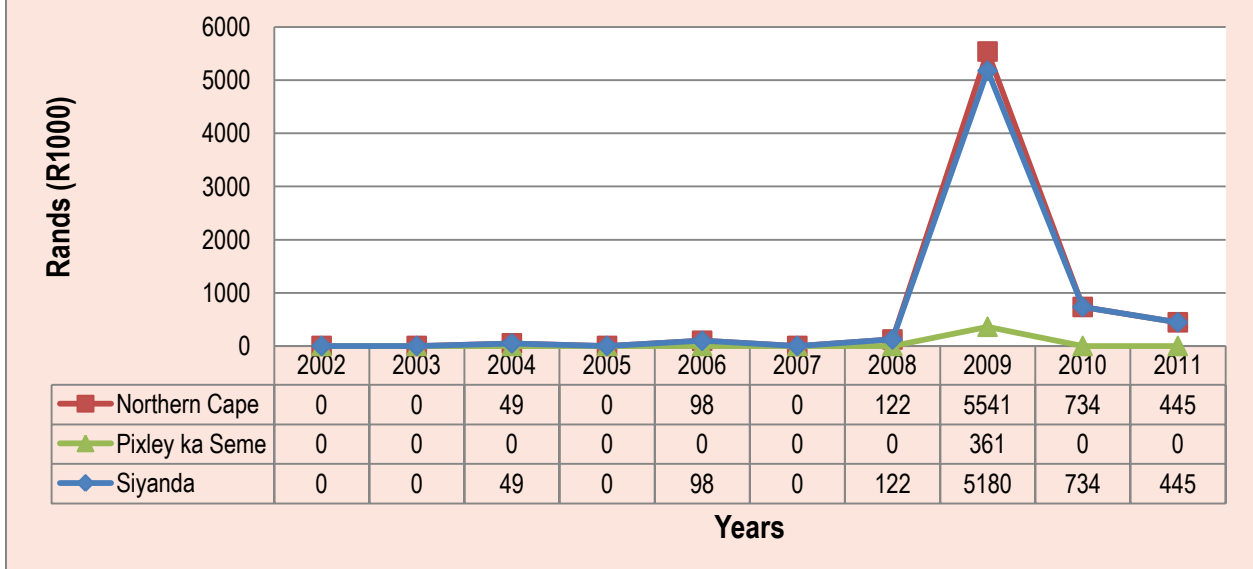
Figure 19: Value of apple exports by Free State province, 2002 – 2011



Source: Quantec Easydata

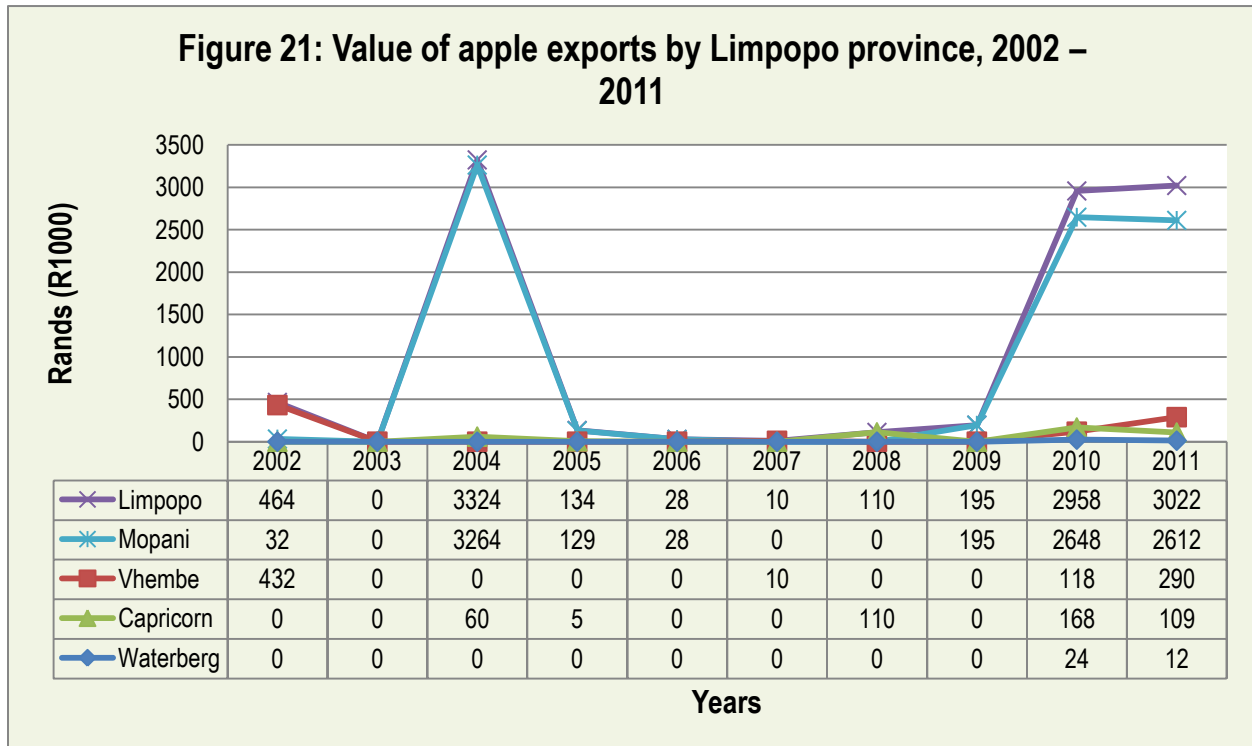
Apples worth R411 000 were exported by the Free State province in 2011 and the export value was 25% lower than that reported in 2010. Exports of apples in the Free State Province are mainly from Thabo Mofutsanyane District Municipality (see Figure 19). The value of apple exports from the district increased by 2 084% between 2009 and 2010 only to decline again in 2011. Values of apple exports from the Northern Cape Province are presented in Figure 20.

Figure 20: Value of apple exports by Northern Cape province, 2002 – 2011



Source: Quantec Easydata

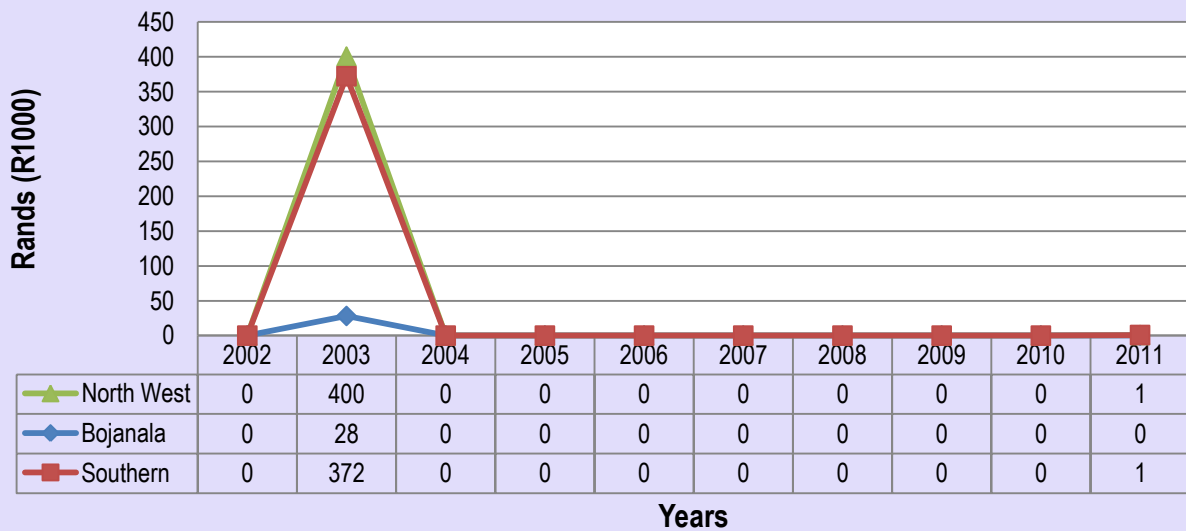
Figure 20 shows that apples worth R445 000 were exported by the Northern Cape in 2011. The export value was 92% lower than the value reported in 2009 (R5.5 million). Apple exports from the Northern Cape Province are mainly from the Siyanda District Municipality. The Pixley ka Seme district Municipality also recorded apple exports to the value of R360 874.00 in 2009. Between 2010 and 2011, apple exports by Siyanda district declined by 39%. Values of apple exports from the Limpopo province are shown in Figure 21.



Source: Quantec Easydata

The Limpopo province reported apple exports worth over R3 million in 2011 and the export value represented a 2% increase in the value reported in 2010. Exports of apples from the Limpopo Province are mainly from Mopani District Municipality (see Figure 21). The Vhembe, Capricorn and Waterberg districts recorded apple exports in 2011 even though the values were insignificant when compared to Mopani. Values of exports from the North West province are shown in Figure 22.

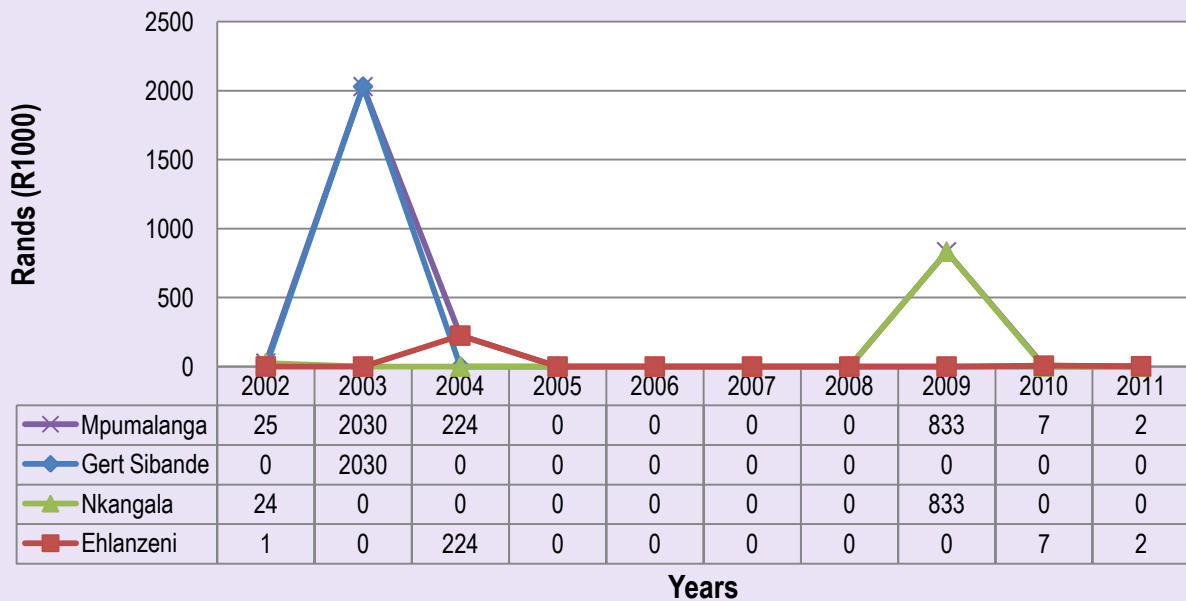
Figure 22: Value of apple exports by North West province, 2002 – 2011



Source: Quantec Easydata

According to Figure 22, apples worth R1 000 were reported by the North West province in 2011. Values of apple exports from Mpumalanga province are depicted in Figure 23.

Figure 23: Value of apple exports by Mpumalanga province, 2002 – 2011



Source: Quantec Easydata

It is clear from Figure 23 that in 2010 and 2011 apple exports from Mpumalanga province were only from the Ehlanzeni district municipality. High export value for the leading district municipality was recorded in 2004. Generally the province registers minimal trade in apple exports.

2.4 Share Analysis

Table 2 is an illustration of provincial shares towards national apple exports. It shows that Western Cape and Gauteng to a lesser extent have commanded the greatest share of apple exports for the past ten years. In 2011, the Western Cape accounted for 91.1% of all South African exports of apples while Gauteng contributed 6.8%. The two leading provinces cumulatively accounted for 97.9% of total value of apples exported in 2011. This is in spite of the fact that Western Cape and the Eastern Cape Province are the leading producers of apples. As explained earlier, this means that the leading export province like Western Cape derive the advantage from its huge production base and from the fact that the registered exporters are based in the Western Cape and that the province has exit points for apple exports.

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

Years Province	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
RSA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Western Cape	85.0	88.4	89.5	90.3	89.1	91.5	91.7	90.9	89.9	91.1
Eastern Cape	1.6	2.9	2.5	2.9	3.0	1.9	1.6	1.7	1.5	1.0
Northern Cape	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Free State	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kwazulu-Natal	1.8	0.9	0.9	0.8	0.9	1.1	1.2	1.9	1.5	1.0
North West	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gauteng	11.5	7.6	6.7	6.0	6.9	5.4	5.5	5.2	6.9	6.8
Mpumalanga	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Limpopo	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.1

Source: Calculated from Quantec Easydata

The accompanying tables (Tables 3 to 11) show shares of the various districts' apple exports to the various provincial apple exports.

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

Years District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Western Cape	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
City of Cape Town	62.4	58.1	61.0	60.6	64.4	65.0	61.6	62.4	64.0	63.9
West Coast	7.3	11.3	9.9	9.8	7.6	10.2	9.6	7.2	9.1	8.6
Cape Winelands	13.6	8.3	8.2	9.1	6.8	8.1	18.4	19.2	18.7	17.5
Overberg	16.0	19.9	19.2	19.7	20.5	16.3	9.9	10.9	7.8	9.5
Eden	0.7	2.4	1.8	0.8	0.6	0.4	0.5	0.2	0.5	0.6

Source: Calculated from Quantec Easydata

Table 3 presents the shares of district apple exports to the total Western Cape provincial apple exports for the years 2002 to 2011. The leading apple export districts in the Western Cape in 2011 are the City of Cape Town (63.9%) and the Cape Winelands (17.5%). Together, the two districts accounted for over 81%

to the total Western Cape provincial apple exports in 2011. The West Coast and Overberg contributed 8.6% and 9.5% respectively during the same year.

Table 4: Share of district apple exports to the total Eastern Cape provincial apple exports (%)

Years District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eastern Cape	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cacadu	48.3	20.3	38.2	13.9	7.0	12.8	5.4	9.3	6.3	5.8
Amatole	0.5	6.8	0.8	0.6	2.0	0.0	0.0	0.0	0.0	0.0
O.R.Tambo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0
Nelson Mandela	51.2	72.9	60.9	85.6	91.0	87.2	94.6	86.3	93.7	94.2

Source: Calculated from Quantec Easydata

The shares of district apple exports to the total Eastern Cape provincial apple exports are presented in Table 4. The Nelson Mandela district is the leading municipality in terms of apple exports for the Eastern Cape, accounting for 94.2 percent of total apple exports from the Eastern Cape in 2011. The remaining 5.8 percent came from the Cacadu district. No apple exports were reported by the Amatole and O.R Tambo districts in the last two years.

Table 5: Share of district apple exports to the total Mpumalanga provincial apple exports (%)

Years District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Mpumalanga	100.0	100.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0	100
Gert Sibande	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nkangala	97.4	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
Ehlanzeni	2.6	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0

Source: Calculated from Quantec Easydata

In 2011 all recorded exports of apples in Mpumalanga province were from the Ehlanzeni District Municipality (see Table 5).

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

Years District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Free State	0.0	100.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0
Thabo Mofutsanyane	0.0	100.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0

Source: Calculated from Quantec Easydata

In 2011 all recorded exports of apples in the Free State province were from the Thabo Mofutsanyane District Municipality (see Table 6).

Table 7: Share of district apple exports to the total Gauteng provincial apple exports (%)

Years District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Gauteng	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sedibeng	0.0	0.0	0.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0
Metsweding	0.2	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.2

Years District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
West Rand	1.6	0.0	0.0	0.0	0.2	0.5	3.0	9.4	15.5	14.5
Ekurhuleni	9.2	2.8	0.5	0.3	0.7	15.1	6.1	5.7	14.6	17.8
City of Johannesburg	44.3	41.4	41.4	67.8	70.2	84.4	90.8	84.2	65.5	63.8
City of Tshwane	44.6	55.6	57.8	31.1	28.6	0.0	0.1	0.8	4.4	3.8

Source: Calculated from Quantec Easydata

The shares of district apple exports to the total Gauteng provincial apple exports are presented in Table 7. In 2011, the City of Johannesburg contributed 63.8% to total Gauteng provincial apple exports. The City of Johannesburg was followed by the Ekurhuleni district at 17.8% and the West Rand at 14.5%, with the remaining 3.8% coming from the City of Tshwane.

Table 8: Share of district apple exports to the total North West provincial apple exports (%)

Years District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
North West	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Bojanala	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Southern	0.0	93.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0

Source: Calculated from Quantec Easydata

In 2011, all recorded exports of apples in the North West province were from the Southern district (see Table 8).

Table 9: Share of district apple exports to the total Limpopo provincial apple exports (%)

Years District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Limpopo	100.0	0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mopani	6.9	0.0	98.2	96.3	100.0	0.0	0.0	100.0	89.5	86.4
Vhembe	93.1	0.0	0.0	0.0	0.0	100.0	0.0	0.0	4.0	9.6
Capricorn	0.0	0.0	1.8	3.7	0.0	0.0	100.0	0.0	5.7	3.6
Waterberg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.4

Source: Calculated from Quantec Easydata

The shares of district apple exports to the total Limpopo provincial apple exports are presented in Table 9. In 2011, the Mopani district contributed over four-fifth (86.4%) to total Limpopo provincial apple exports. The Mopani district was followed by the Vhembe district at 9.6% and Capricorn district at 3.6%.

Table 10: Share of district apple exports to the total Northern Cape provincial apple exports (%)

Years District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Northern Cape	0.0	0.0	100.0	0.0	100.0	0.0	100.0	100.0	100.0	100.0
Pixley ka Seme	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0
Siyanda	0.0	0.0	100.0	0.0	100.0	0.0	100.0	93.5	100.0	100.0

Source: Calculated from Quantec Easydata

In 2011, all exports of apples recorded in the Northern Cape province were from the Siyanda district (see Table 10).

Table 11: Share of district apple exports to the total Kwazulu Natal provincial apple exports (%)

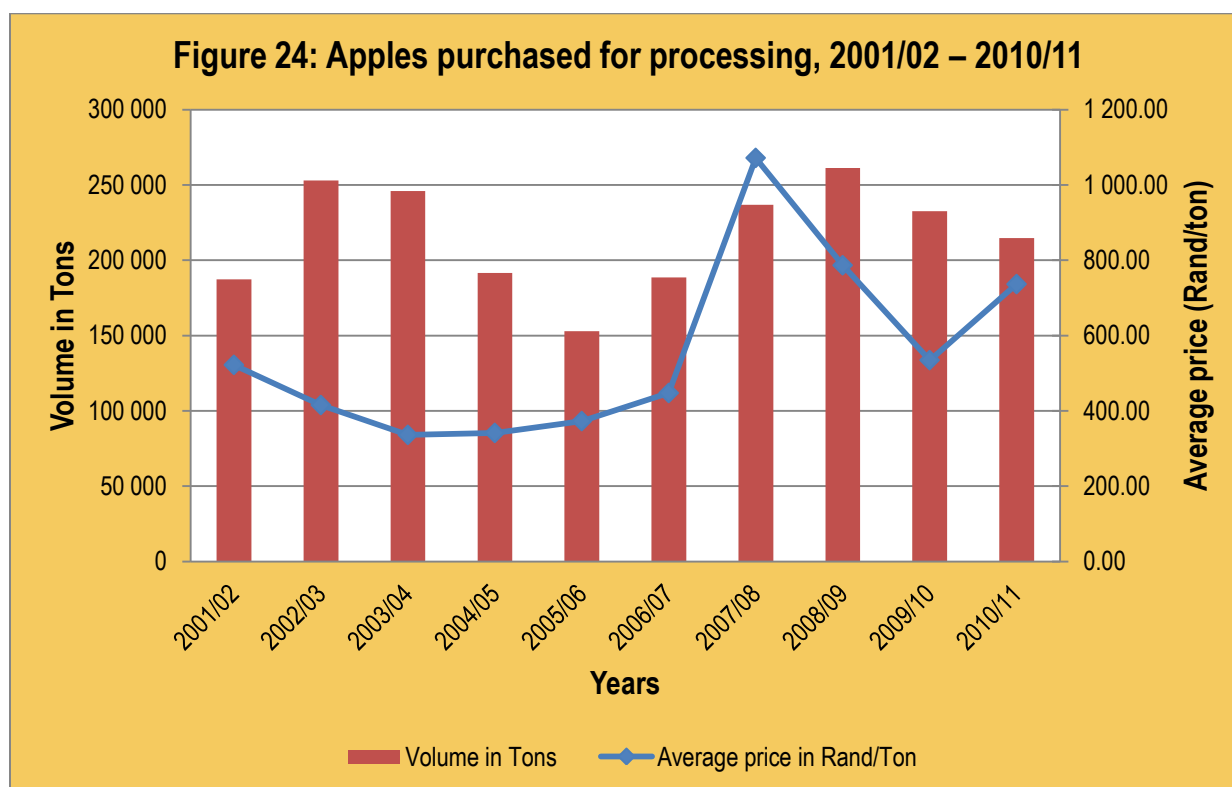
Years District	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Kwazulu-Natal	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Ugu	0.0	0.0	0.7	0.0	0.0	0.0	0.0	1.5	8.6	47.3
Umgungundlovu	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.8	2.1	0.0
Uthungulu	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
iLembe	35.2	4.2	4.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0
eThekwini	64.8	95.8	95.0	99.1	100.0	100.0	99.7	83.7	89.3	52.7

Source: Calculated from Quantec Easydata

Table 11 presents the shares of district apple exports to the total Kwazulu Natal provincial apple exports for the years 2002 to 2011. The eThekwini district is the leading municipality in terms of apple exports from Kwazulu Natal, accounting for 52.7% of total provincial apple exports in 2011. The remaining 47.3% came from the Ugu district.

2.5 Processing

Volumes of apples purchased for processing in South Africa during the last ten years are presented in Figure 24.



Source: Statistics and Economic Analysis, DAFF

The quantity of apples available for sale in a given production season depends on the volume of exports as well as volumes sold in the local markets. Figure 24 indicates that the volume of apples purchased for processing fell by 18% during the last two years. The decline happens at the same time when the volume in the local markets increases (see Figure 5). Figure 24 also shows that prices for apples purchased for processing are generally low and remained below the R1 000/ton mark for a greater part of the last decade.

Virtually all processed apples are subject to post-harvest activities that change their chemical and physical characteristics. These include sorting, cleaning, dividing the commodity into its main component parts, heating, cooling, freezing, soaking, fermenting, compressing, and cutting, shredding, waxing, combing and polishing.

Apples can be canned, juiced and optionally fermented to produce apple juice, cider, vinegar and pectin. Distilled apple cider produces the spirits. Apple wine can also be made. They make a popular lunchbox as well. Apples are an important ingredient in many winter desserts, for example apple pie, apple crumble, apple crisp and apple cake. They are often eaten baked or stewed, and they can also be dried and eaten or re-constituted (soaked in water, alcohol or some other liquid) for later use. Pureed apples are generally known as apple sauce. Apples are also made into apple butter and apple jelly. They are also used cooked in meat dishes.

In the United Kingdom, a toffee apple is a traditional confection made by coating an apple in hot toffee and allowing it to cool. Similar treats in the USA are candy apples (coated in a hard shell of crystallized sugar syrup), and caramel apples, coated with cooled caramel. Apples are eaten with honey at the Jewish New Year of Rosh Hashanah to symbolize a sweet new year.

The hard wood is used for turnery, canes and pipes. Apples are a good detergent food for cleaning teeth. The oil from the seeds is used for cooking and illumination.

3. MARKET INTELLIGENCE

3.1 Competitiveness of South African apple exports

Competitiveness is described as an industry's capacity to create superior value for its customers and improved profits for the stakeholders in the value chain. The driving force in sustaining a competitive position is productivity that is output efficiency in relation to specific inputs with regard to human, capital and natural resources. In 2011 South African apple exports represented 4.14% of world exports and its ranking in world apple exports was number 7.

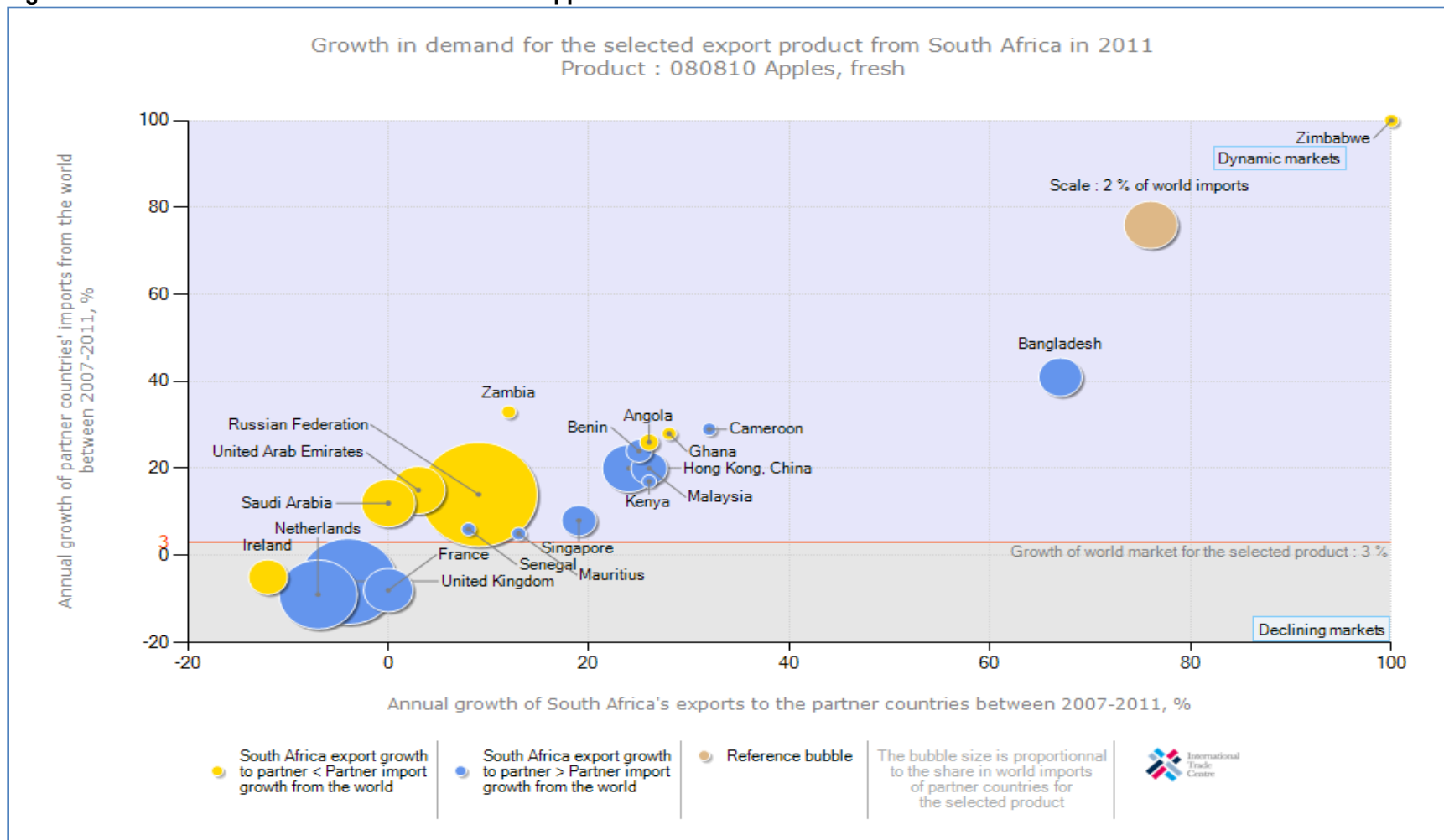
As depicted in Figure 25 below, South African apple exports are growing faster than the world imports in Bangladesh, Cameroon, Kenya, Malaysia, Hong Kong, Benin, Singapore, Mauritius, and Senegal markets. South Africa's performance in these markets can be regarded as gains in dynamic markets.

South African apple exports are growing while the world imports are declining the France, United kingdom and Netherlands markets. South Africa's performance in these markets can be regarded as gains in declining markets and should be viewed as an achievement in adversity.

At the same time, South African apple exports have declined faster than the world imports in the Irish market. South Africa's performance in this market can be regarded as a loss in a declining market.

South African apple exports are declining while the world imports are growing in Zimbabwe, Ghana, Angola, Zambia, Russia, United Arab Emirates, and Saudi Arabia markets. These markets are dynamic and South African performance should be regarded as an underachievement.

Figure 25: Growth in demand for the South African apples in 2011



Source: TradeMap, ITC

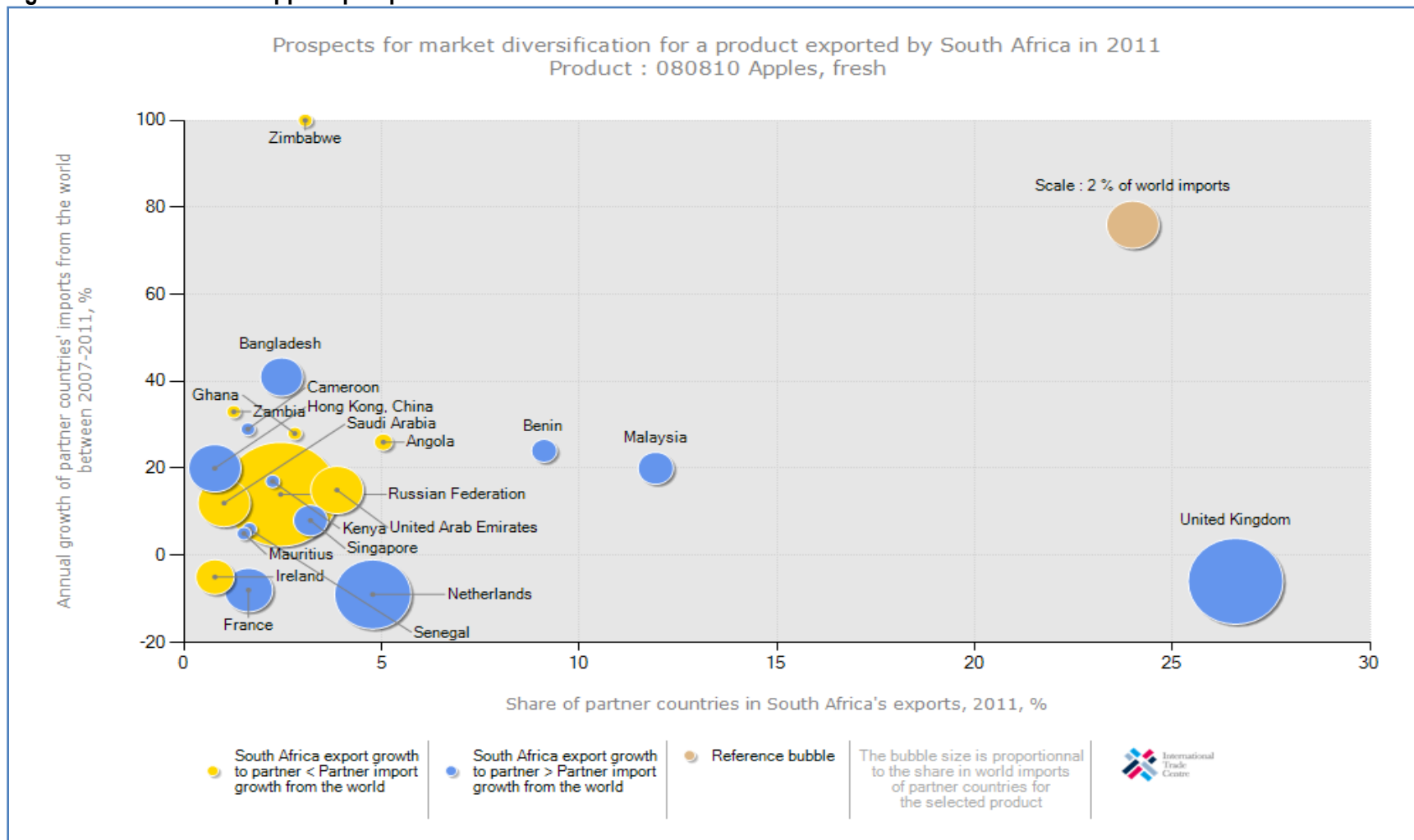
Figure 26 below illustrates prospects for market diversification by South African apple exporters. The United Kingdom, Malaysia and Benin held a bigger market share of South African apple exports in 2011. Approximately 27% of South Africa's total exports of apples were destined for the UK in 2011.

In terms of market size, the Russian Federation was the largest apple market in 2011 with just over \$756 million (1 157 724 tons) worth of apple imports, or roughly 10.7% of the world apple market. Second was Germany with just over \$661 million (657 276 tons) worth of apple imports, or roughly 9.4% market share followed by the UK with just over \$510 million (459 501 tons) worth of apple imports, or roughly 7.2% market share and the Netherlands with just over \$325 million (290 129 tons) worth of apple imports, or roughly 4.6% market share.

Whilst four countries dominate world apple imports, it is interesting to note that countries like Zimbabwe, together with Bangladesh and Ghana have experienced higher annual growth rate from 2007 – 2011 in value terms (see Figure 26). Zimbabwe experienced an annual growth rate of just under 113%. Second was Bangladesh with 41% annual growth rate. Bangladesh is followed by Ghana at around 28% annual growth rate. It is important to note that growth by all the mentioned countries has been from a low base. These countries represent possible lucrative markets for South African apple producers and exporters.

It is also important to note that imports of apples from the world to countries such as the United Kingdom, Netherlands, France, and Ireland has declined from 2007 – 2011 and as a result those countries has recorded a negative growth rate.

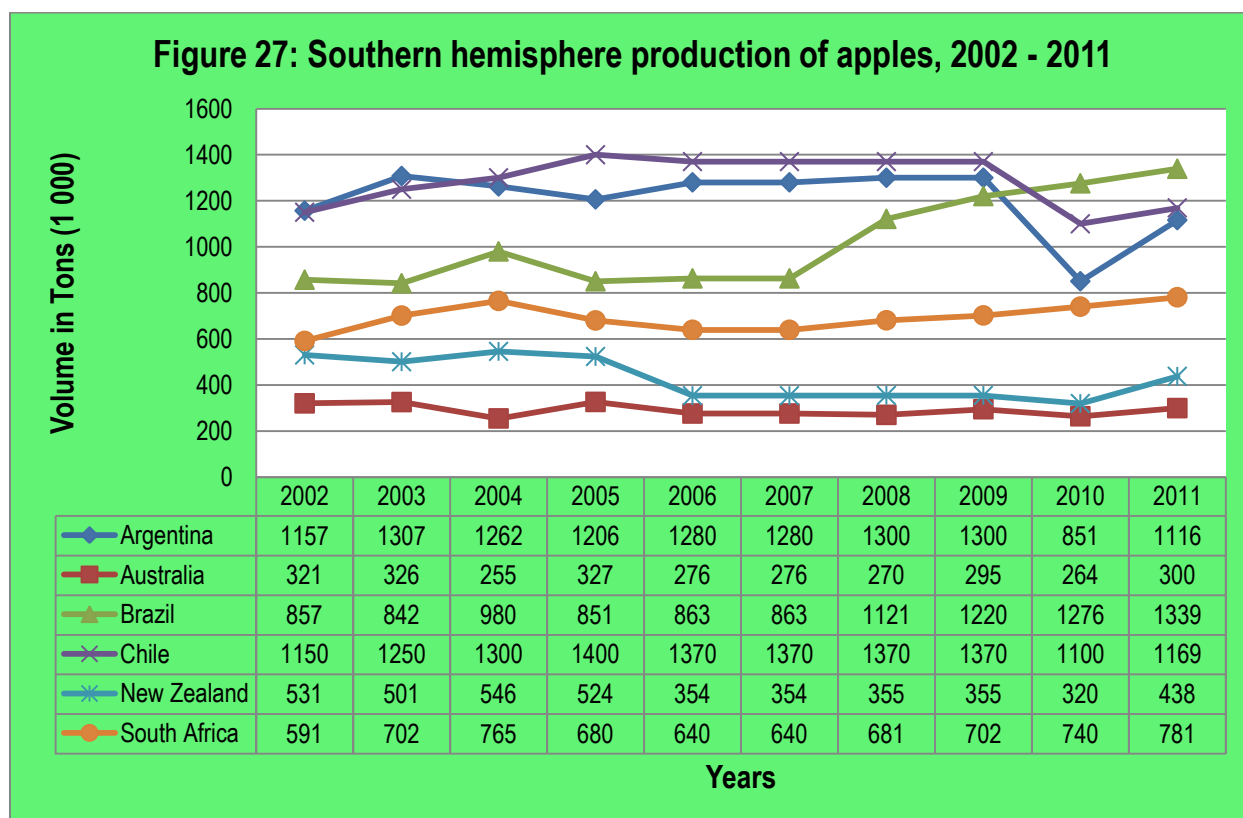
Figure 26: South African apples' prospect for market diversification in 2011



Source: TradeMap, ITC

3.2 South Africa vs. Southern hemisphere production

Figure 27 represents southern hemisphere production of apples. Approximately 5 142 724 tons of apples were produced in the southern hemisphere during 2011. It is clear that South Africa was the fourth largest producer (15.2% in 2011) of apples in the southern hemisphere after Brazil, Chile and Argentina. Production in most of the southern hemisphere countries has been fairly stable over the past ten years. The total volume of production in all southern hemisphere countries appearing in Figure 27 increased between 2010 and 2011.



Source: FAOSTAT

The fact that a country can produce a large output does not necessarily mean it will be a big net exporter as this depends on the size of the domestic market and whether excess produce is harvested. In the case of Brazil, the third largest producer of apples in the southern hemisphere, the domestic market is so large that the country exports relatively little. Brazil contributed 5.14% to the total southern hemisphere apple exports in 2011, as can be seen in Table 12 below.

3.3 South Africa vs. Southern hemisphere exports in 2011

It can be observed from Table 12 that South Africa was the largest exporter (35.41%) of apples in the southern hemisphere in 2011. It was followed by New Zealand and Argentina at 34.40% and 24.71% respectively.

Table 12: Southern hemisphere exports of apples, 2011

Country	Export - Quantity in Metric Tons (MT)	Contribution to Southern Hemisphere Exports (%)
World exports	7 219 007	
Southern Hemisphere	946 410	100.00
Chile	801	0.08
Argentina	233 867	24.71
Brazil	48 666	5.14
South Africa	335 162	35.41
New Zealand	325 553	34.40
Australia	2 361	0.25

Source: Trademap, ITC

South Africa's main competitors from the southern hemisphere in the EU market for apple exports are New Zealand and Argentina. Argentina exports primarily within the South American markets (particularly Brazil), EU countries (mainly Netherlands and Belgium) and the rest of European countries such as Russia. New Zealand exports apples primarily to the EU countries (mainly Netherlands and Germany), North America (particularly USA) and Far East (mainly Hong Kong and Taiwan).

Australia produces primarily for local markets and exports very little (0.25% of total southern hemisphere exports in 2011). All the major apple exporting countries in the Southern hemisphere are now shifting their focus to Asia due to falling incomes in Europe.

4. MARKET ACCESS

Barriers to trade can be divided into tariff barriers (including quotas, ad valorem tariffs, specific tariffs and entry price systems) and non tariff barriers (sanitary and phytosanitary measures, labels, etc). The main markets for fruit (including apple) employ various measures, both tariff and non tariff to protect the domestic industries. Whilst many of the non tariff measures can be justified under the auspices of issues such as health and standards, the tariff measures are increasingly under the scrutiny of the World Trade Organization (WTO), and as such are gradually being phased out. Nevertheless, exporters need to be aware of all the barriers that they may encounter when trying to get their produce on foreign shelves.

4.1 Tariffs, quotas and the price entry system

Tariffs are either designed to earn government revenue from products being imported or to raise the price of imports so as to render local produce more competitive and protect domestic industries.

Quotas can be used to protect domestic industries from excessive imports originating from areas with some form of competitive advantage (which can therefore produce lower cost produce). Tariffs and quotas are often combined, allowing the imports to enter at a certain tariff rate up to a specified quantity. Thereafter, imports from that particular region will attract higher tariffs, or will not be allowed at all. This phenomenon is referred to as tariff-rate quotas (TRQs).

The entry price system, which is used in many northern hemisphere markets, makes use of multiple tariff rates during different periods when domestic producers are trying to sell their produce, and lower the tariffs during their off-season. Alternatively, the tariff rate can be a function of a market price – if the produce

enters at a price which is too low (and therefore likely to be too competitive), it qualifies for a higher tariff schedule.

Whilst tariff regulations can be prohibitive and result in inferior market access, it is often the non-tariff barriers that restrict countries like South from successfully entering the large developed markets. Many of these barriers revolve around different types of standards, including sanitary and phytosanitary standards (SPS), food health and safety issues, food labelling and packaging, organic produce certification, quality assurance and other standards and grades. Table 13 presents tariffs applied by top-ten export markets to apples originating from South Africa during 2011. It is important to note that two European Union (EU) member states (United Kingdom and Netherlands) were in the top-ten list. Tariffs applied by these countries are therefore reported together as EU tariffs and not individually.

Table 13: Tariffs applied by various export markets to apples (fresh) originating from South Africa, 2011

COUNTRY	HS CODE	PRODUCT DESCRIPTION	TRADE REGIME	APPLIED TARIFFS	TOTAL AD VALOREM EQUIVALENT TARIFF
European Union	0808101000	Fresh cider apples, in bulk, from 16 September to 15 December	MFN duties (Applied)	0.00%	0.00%
	080810801001	Fresh apples (excl. cider apples, in bulk, from 16 September to 15 December) : Cider apples. If the declared price is higher than or equal to 56.8 EUR/100 kg	MFN duties (Applied)	4.00%	4.00%
	080810801002	Fresh apples (excl. cider apples, in bulk, from 16 September to 15 December) : Cider apples. If the declared price is higher than or equal to 55.7 EUR/100 kg	MFN duties (Applied)	6.40% + 14.52 \$/Ton	7.60%
	080810801003	Fresh apples (excl. cider apples, in bulk, from 16 September to 15 December) : Cider apples. If the declared price is higher than or equal to 54.5 EUR/100 kg	MFN duties (Applied)	6.40% + 30.36 \$/Ton	8.90%
	080810801004	Fresh apples (excl. cider apples, in bulk, from 16 September to 15 December) : Cider apples. If the declared price is higher than or equal to 53.4 EUR/100 kg	MFN duties (Applied)	6.40% + 44.88 \$/Ton	10.10%
	080810801005	Fresh apples (excl. cider apples, in bulk, from 16 September to 15 December) : Cider apples. If the declared	MFN duties (Applied)	6.40% + 59.40 \$/Ton	11.30%

COUNTRY	HS CODE	PRODUCT DESCRIPTION	TRADE REGIME	APPLIED TARIFFS	TOTAL AD VALOREM EQUIVALENT TARIFF
		price is higher than or equal to 52.3 EUR/100 kg			
	080810801006	Fresh apples (excl. cider apples, in bulk, from 16 September to 15 December) : Cider apples. If the declared price is higher than or equal to 0 EUR/100 kg	MFN duties (Applied)	6.40% + 314.16 \$/Ton	32.30%
	080810809001	Fresh apples (excl. cider apples, in bulk, from 16 September to 15 December) : Other. If the declared price is higher than or equal to 56.8 EUR/100 kg	MFN duties (Applied)	4.00%	4.00%
	080810809002	Fresh apples (excl. cider apples, in bulk, from 16 September to 15 December) : Other. If the declared price is higher than or equal to 55.7 EUR/100 kg	MFN duties (Applied)	6.40% + 14.52 \$/Ton	7.60%
	080810809003	Fresh apples (excl. cider apples, in bulk, from 16 September to 15 December) : Other. If the declared price is higher than or equal to 54.5 EUR/100 kg	MFN duties (Applied)	6.40% + 30.36 \$/Ton	8.90%
	080810809004	Fresh apples (excl. cider apples, in bulk, from 16 September to 15 December) : Other. If the declared price is higher than or equal to 53.4 EUR/100 kg	MFN duties (Applied)	6.40% + 44.88 \$/Ton	10.10%
	080810809005	Fresh apples (excl. cider apples, in bulk, from 16 September to 15 December) : Other. If the declared price is higher than or equal to 52.3 EUR/100 kg	MFN duties (Applied)	6.40% + 59.40 \$/Ton	11.30%
	080810809006	Fresh apples (excl. cider apples, in bulk, from 16 September to 15 December) : Other. If the declared price is higher than or equal to 0 EUR/100 kg	MFN duties (Applied)	6.40% + 314.16 \$/Ton	32.30%
Malaysia	08081000	Fresh apples	MFN duties (Applied)	5.00%	5.00%

COUNTRY	HS CODE	PRODUCT DESCRIPTION	TRADE REGIME	APPLIED TARIFFS	TOTAL AD VALOREM EQUIVALENT TARIFF
Benin	0808100000	Pommes, poires et coings, frais.: Pommes	MFN duties (Applied)	20.00%	20.00%
Angola	08081000	Maças, frescas	MFN duties (Applied)	10.00%	10.00%
United Arab Emirates	08081000	Apples, pears and quinces, fresh: Apples	MFN duties (Applied)	0.00%	0.00%
Singapore	08081000	APPLES FRESH (TNE)	MFN duties (Applied)	0.00%	0.00%
Zimbabwe	08081000	Fresh apples	MFN duties (Applied)	40.00%	40.00%
Ghana	0808100000	Fresh apples	MFN duties (Applied)	20.00%	20.00%
Bangladesh	08081010	Apples, fresh, wrapped/canned upto 2.5kg	MFN duties (Applied)	25.00%	25.00%
	08081020	Apples, fresh, nes	MFN duties (Applied)	25.00%	25.00%
Russia	0808101000	Apples, pears and quinces, fresh: Apples: No description at level 10	General tariff(MFN)	264.00 \$/Ton	31.39%
	0808108001	Apples, pears and quinces, fresh: Apples: No description at level 10	General tariff(MFN)	132.00 \$/Ton	15.69%
	0808108002	Apples, pears and quinces, fresh: Apples: No description at level 10	General tariff(MFN)	132.00 \$/Ton	15.69%
	0808108003	Apples, pears and quinces, fresh: Apples: No description at level 10	General tariff(MFN)	132.00 \$/Ton	15.69%
	0808108004	Apples, pears and quinces, fresh: Apples: No description at level 10	General tariff(MFN)	264.00 \$/Ton	31.39%

Source: Market Access Map, ITC

The European Union operates an entry price system for apples originating from South Africa. As can be seen in Table 13, the system makes use of multiple tariff rates during different periods. The tariffs are higher when producers in the European Union member states are harvesting and selling their produce and they are lower during the off-season. It appears that apples are one of the products that were not included when the TDCA was negotiated; hence South African apples enter the EU market at MFN duties. The African countries in the top-ten list also impose higher tariffs (10% and above) on apple imports from South Africa. Apple exports from South Africa enter Singapore and the United Arab Emirates free of duty. South African apples face the highest tariff in Zimbabwe at 40%. Malaysia imposes a 5% tariff on South African apples while Russia imposes tariffs ranging from 15% to 31%.

In reality, the tariffs are likely to be far lower for South Africa when considering the preferential agreements, but at the same time, most tariff structures are particularly complex, with quotas, seasonal tariffs and

specific tariffs (an amount per unit rather than a percentage of value) all contributing to many different tariff lines and often higher duties payable than one might have anticipated initially. One must also bear in mind that most tariffs are designated to protect domestic industries, and as such are likely to discriminate against those attempting to compete with the domestic producers of that country.

4.2 European Union (EU)

The EU has a seasonal tariff structures which are highest during the European peak harvesting seasons (the price entry system), quotas and specific tariffs, and various policies that allow, amongst other things, government organizations to purchase produce should supply rise too quickly (and thereby maintain prices), and then release this excess back onto the market as and when supply drops again. The immediate implication of these policies for South Africa is that an opportunity exists to supply apples to the European market in the off season periods, as the produce will not compete directly with the European producers and thus would not be liable to a whole array of tariffs and other protective mechanisms.

There are other non-tariff barriers, including the phyto-sanitary and food health regulations laid down by the EU legislation, marketing standards and certificates of conformity, and the ever changing demand patterns of the EU consumers.

4.2.1 Tariff barriers

The EU applies a system known as entry price system. With this system, the EU establishes an 'entry price' at which produce may enter the EU market, which is not only based on the market price for the current year (demand and supply) and for previous years, but also on the prices of the domestic producers (prices they need to maintain profitability). It is calculated by the regulatory authorities so that it can be used in combination with tariffs and quotas to aid EU's attempts at protecting its agricultural system. The entry price is the minimum price at which produce may enter the market. If the price of the produce is lower than its calculated price, it is liable to have duties imposed upon it over and above any duties/quotas it might originally attract. Agricultural duties are applied as follows:

- When the value of the imported party is between 92% and 94% of the entry price, 8% of the entry price will be added to the normal customs duty.
- When the value of the imported party is between 94% and 96% of the entry price, 6% of the entry price will be added to the normal customs duty.
- When the value of the imported party is between 96% and 98% of the entry price, 4% of the entry price will be added to the normal customs duty.
- When the value of the imported party is between 98% and 100% of the entry price, 2% of the entry price will be added to the normal customs duty.

There are tariffs applicable over and above the entry price tariffs, depending on the produce, where it originates from and whether that country has any preferential trading agreements with the EU.

4.2.2 Non tariff barriers

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

4.2.2.1 Legal requirements

i) Product legislation: quality and marketing

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

General Food Law which 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 Points, or HACCP), and it is laid out under regulation EC 178/2002.

EU Marketing Standards which govern the quality and labelling of fruit are laid out in the Common Agricultural Policy (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 will not be sold on the EU markets.

Certificate of Conformity must be obtained by anyone wishing to export and sell fruits in the EU, if that fruit falls under the jurisdiction of the EU marketing standards.

Certificate of Industrial Use must be obtained if the fruit is to be used in further processing.

Maximum Residue Limits (MRL) of various pesticides allowed.

ii) Product legislation: phyto-sanitary regulations

The international standard for phyto-sanitary 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 of 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 fruit products upon arrival in the EU. This inspection consist of physical examination of a consignment deemed to have a level of phyto-sanitary risk, identification of any harmful organisms and certification of the validity of any phyto-sanitary 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.

iii) Product legislation: packaging

The EU Commission lays down rules for materials that come into contact with food and which may endanger people's health or bring about an unacceptable change in the composition of the foodstuffs. The framework legislation for this is 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 phyto-sanitary controls and may need to undergo heat treatment, fumigation, etc.

4.2.2.2 Non-legal requirements

To access the market, importers must not only comply with legal requirements set out above, but must also with market requirements and demands. For the most part, these revolve around quality and the perception of European consumers about environmental, social, health and safety aspects of both the products and the production techniques. Whilst supplying fruit 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 accountability** is becoming important in the industry, not only amongst consumers, but also for retail outlets and wholesalers. The Social Accountability 8000 (SA 8000) certification is a management system based on International Labour Organization (ILO) conventions, and deals with issues such as child labour, health and safety, and freedom of association, and requires an on-site audit to be performed annually. The certificate is seen as necessary tool for accessing any European market successfully.

ii) **Environmental issues** are becoming increasingly important with European consumers. Consumer movements are lobbying against purchasing non-environmentally friendly or non-sustainable produce. To this end, both governments and private partners have created standards (such as ISO 14001 and GLOBALGAP) and labels to ensure that produce adhere to particular specifications.

Although eco-labels (for example, the EU Eco-label, the Netherlands Milieukeur, the German Blue Angel and the Scandinavian White Swan) are voluntary, they can afford an exporter a marketing edge, as consumers wishing to purchase environmentally sound produce demand products that are easily recognizable.

Another important emerging label is Fairtrade, and includes those labels offered by Max Haavelaar Foundation, TransFair International and the FLO (Fairtrade Labelling Organization). Recently a 'universal' logo was adopted based on international fair trade standards developed by FLO, which covers amongst other things, minimum quality and price, various processing requirements, compensation of small farmers that covers sustainable production and living standards, and contracts that allow for long term planning and development.

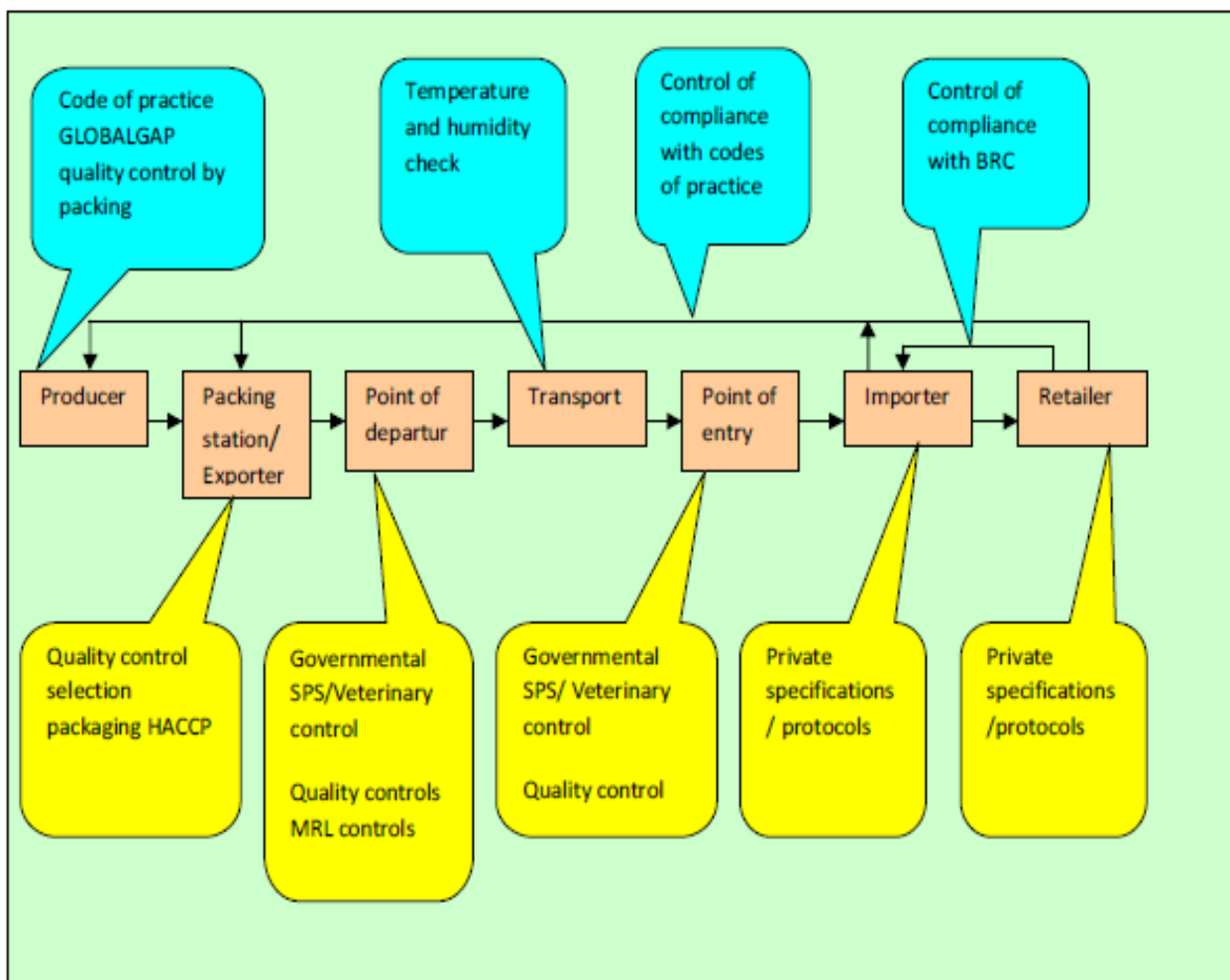
4.2.2.3 Consumer health and safety requirements

Increasing consumer conscience about health and safety issues has prompted a number of safety initiatives in Europe, such as GLOBALGAP (formerly 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 producers and working methods) which is certified by the International Standards Organization (ISO).

The development of public and private standards involves interventions at multiple points along the value chain. An illustration of the multiple points and multiple standards that are applied for fresh fruit and vegetables and for fish is shown in Figure 28. There are controls by different agents carried out in different ways at different points along the value chain in response to the requirements of private sector companies, coalitions of private-sector standards setters and public agencies. Standards in agribusiness value chains

operate, by definition, at multiple points. They are created, adopted, applied and verified by different actors (enterprises and institutions) at different points in the value chain.

Figure 28: Food safety and quality control in the fruit and vegetable supply chains



Source: UNIDO

4.3 United States of America (USA)

4.3.1 Tariff barriers

South African exporters have completely free access to the USA markets under the Generalized System of Preference (GSP), the GSP for LCDs (Least Developed Countries) or the African Growth and Opportunity Act (AGOA). South African exporters must always compare with what Chile (the main supplier of fruit to the USA and South Africa's potential rival) must pay in terms of tariff duties when exporting fruit to the USA. Chile's access to the USA fruit market is considered to be highly preferential under its own Preferential Trade Agreement (PTA).

4.3.2 Non tariff barriers

The USA's phytosanitary regulation is conducted by Animal and Plant Health Inspection Service (APHIS), which is divided into nine sub-sections. Plant Protection and Quarantine (PPQ) and Veterinary Services (VS) are responsible for issuing permits for commodities and determining whether a commodity can be

imported. The Policy and Program Development (PPD) division works with both these divisions in determining long term plans and procedures.

Some products can get pre-clearance from International Services (IS) personnel stationed in the country of origin, either at exporting terminals or site inspections. The PPQ's main focus is to prevent the spread of diseases and pests into the USA's agriculture resources, and it has personnel stationed at all airports, seaports and border stations that check imported cargo and oversee the quarantine process. Exporters or importers must make a request to export/import a commodity, provide as much information as possible on the product, its region of origin and its status that is whether there are restrictions or regulations governing that particular product from that particular region before a permit is issued, along with the conditions of importation (disinfection treatment) or mitigation measures. Denials can be challenged and governments and companies can request a change in the status of a prohibited commodity (an investigation must be performed by the PPQ scientific team), as long as sufficient conditions have changed or a risk assessment has not been conducted within the last 10 years.

Most approved commodities can enter with inspection alone, but some may have to undergo mitigating measures including post-harvest treatments (hot/cold temperature treatments, irradiation or fumigation, depending on the requirements and which particular treatment is least harmful). The establishment of specifically and maintained pest-free areas in a country (which obviously requires extensive co-operation between the country's plant health services and APHIS IS division) or systems approaches (field surveys, random inspections or various on site treatments).

In addition to phyto-sanitary regulations, the USDA Food Safety Inspection Services (FSIS) regulates sanitary practices in the packing of food products, while the Food and Drug Administration (FDA), which is part of the US Department of Health, regulates packaging and labelling. The HACCP protocol is used extensively. The USDA quality standards for fruits and vegetables provide basis for domestic and international trade and promote efficiency in marketing and procurement.

5. DISTRIBUTION CHANNELS

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

They will also market the goods under their own name or on behalf of the member, which includes taking care of labelling, bar-coding, etc. Most of the time, export organizations will enter into collective agreements with freight forwarders, negotiating better prices and services (more regular transport, lower peak season prices, etc). Some countries have institutions that handle all the produce (membership compulsory) and sell only to a restricted number of selected importers.

Agents will establish contacts between producers/export organizations and buyers in the importing country, and will usually take between 2% and 3% commission. In contrast, an importer will buy and sell his/her own

capacity, assuming the full risk (unless on consignment). They will also be responsible for clearing the produce through customs, packaging and assuring label/quality compliance and distribution of the produce. Their margins lie between 5% and 10%. The contract importers of fruit combines market and distribute the produce of the combines, clear it through customs and in some cases treat and package it.

Only few exporters have long term contracts with wholesale grocers who deliver directly to retail shops, but with the increasing importance of standards (EurepGap, etc) and the year round availability of fruit, the planning of long term contractual relationships is expected to increase.

6. LOGISTICS

6.1 Mode of transport

The transport of fruits falls into two categories namely ocean cargo and air cargo. Ocean cargo takes much longer to reach the desired location but costing considerably less. The choice of transportation method depends, for most parts 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 transport have improved considerably. With the increased exports by South Africa, the number and the regularity of maritime routes have increased. These economies of scale could benefit South Africa if more producers were to become exporters and take advantage of the various ports which have special capabilities in handling fruit produce (for example, Durban's new fruit terminal).

6.2 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, onto actual shipping vessels and containers, and finally on to the importers and distributors that must clear the produce and transport it to the markets/retail outlets. For every 10 Degree Celsius increase above the recommended temperature, the rate of respiration and ripening of produce can increase twice or even thrice. Related to this are increasing important traceability standards which require an efficient controlled supply chain and internationally accepted business standards.

6.3 Packaging

Packaging can also play an important role in ensuring safe and efficient transport of a product and conforming to handling requirements, uniformity, recyclable material specifications, phyto-sanitary requirements, proper storage needs and even attractiveness for marketing purposes.

The business panel of any carton (including printed carton labels) should comply with the requirements as established by the EU or any other regulations that are specified by a target market. Producers are advised to present their designs to the Perishable Products Export Control Board (PPECB) before they can order any cartons from a manufacturer. The following is normally required:

- Class I or II
- Fruit type
- Carton depth
- Country of Origin: "Produce of South Africa"

- Complete address of exporter or producer
- Name of variety
- Content of carton: “14 x punnets or bags”
- PUC or PHC code: Registered producer – or Pack House Code with DAFF
- Date code
- Food safety accreditation number: Global Gap, Nature’s Choice registration number, etc

7. ORGANIZATIONAL ANALYSIS

7.1 Producer and associated organizations

Grower participation and control of their interests in the industry are structured by means of fruit type producer associations (Section 21 companies), as illustrated on Figure 29. The industry consists of Hortgro Services as its mouthpiece. Hortgro Services is responsible for administrative services and financial administration, as well as operational industry services such as transformation and training, information, communication and social programmes.

Hortgro Services comprises of its members, affiliated members and service entities. The members are the South African Apple and Pears Producers Association (SAAPPA), South African Stone Fruit Producers Association (SASPA), Dried Fruit Technical Services (DFTS), Protea Producers of South Africa (PPSA), South African Cherry Growers’ Association (SACGA), and the South African Olive Industry Association.

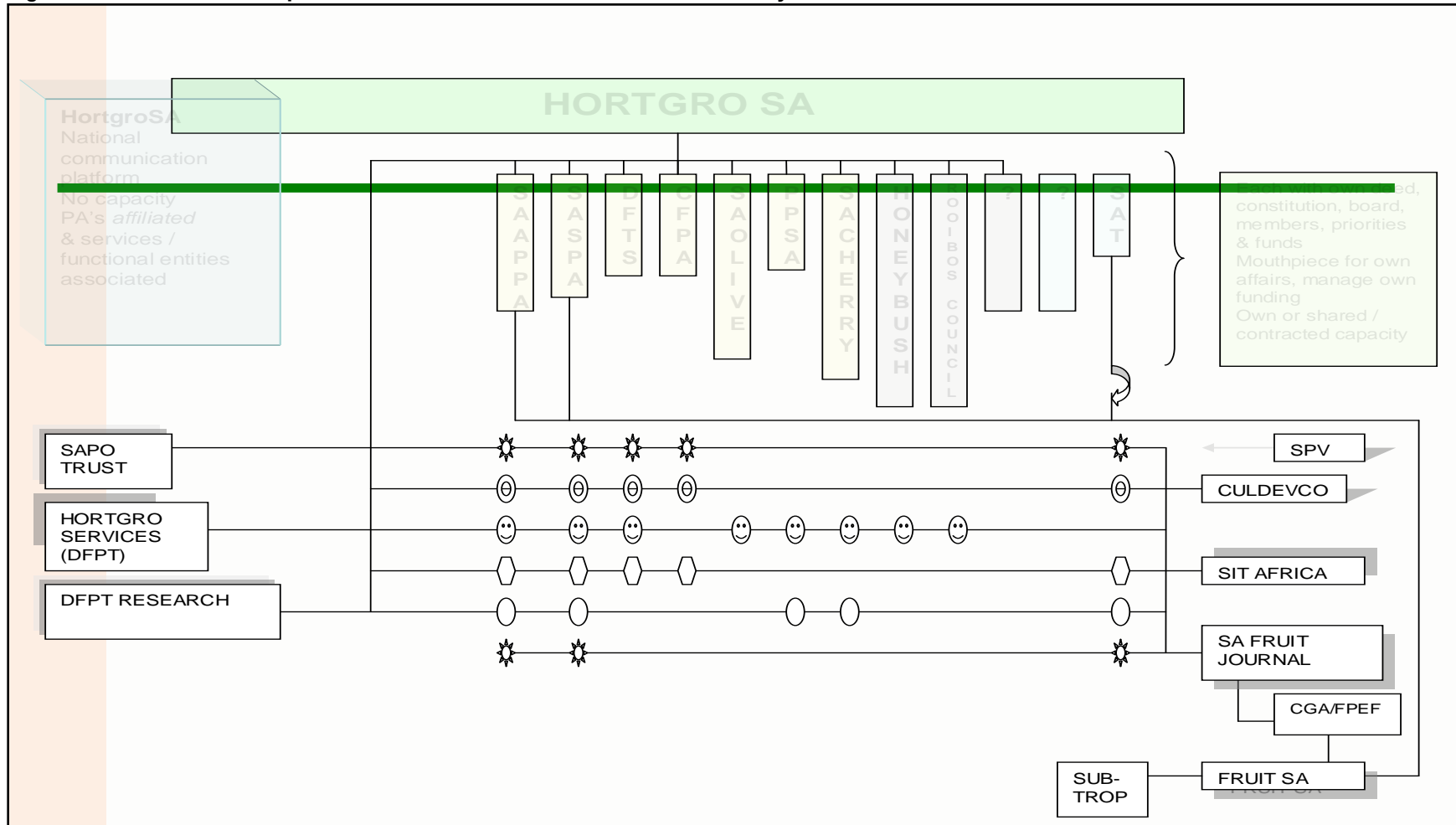
The affiliated members are Rooibos Tea Producers Association, Pomegranate Producers Association, Cape Flora, South African Honeybush Tea Association (SAHTA), South African Bee Industry Organisation, South African Berry Producers Association.

The service entities are Fruitgro Science (DFPT Research), South African Plant Improvement Organisation (SAPO) Trust, Cultivar development Company (CULDEVCO), Sterile Insect Technique (SIT) Africa, Entomon Technologies and the SA Fruit Journal.

The main association responsible for the apple industry is the South African Apple and Pear Producers Association (SAAPPA). It is a Section 21 company and its objectives are as follows:

- To rationalize and promote the production and marketing of apples and pears, apple and pear products.
- To support and assist the development of the Association’s decision-making systems and structures.
- To encourage and pursue constructive dialogue and mutual cooperation with government and other role players in order to promote the interest of the Association and its members.
- To foster mutual trust and long term relationships among role players and stakeholders.
- To establish and promote a reciprocal information system and promote the maintenance of responsible and sustainable production and marketing practices.

Figure 29: Structure of the producer interest in the deciduous fruit industry



Source: Hortgro

7.2 Strengths, Weaknesses Opportunities and Threat analysis

Some of the strengths, weaknesses, threats and opportunities of the apple production sector in South Africa are the following:

Strengths	Weaknesses
<ul style="list-style-type: none"> • The industry's export operations and leading players who account for approximately 80% of the overall exports are well established. • An efficient export infrastructure exists and market access has been improved. • The South African apple industry is known for excellent overall quality for fruit (strong reputation in major international markets). • Sound communication mechanisms to majority of industrial participants. • High level of investment in current technology within pack houses and cold chain facilities. • Industry has all traceability systems in place, as required by accreditation protocols. 	<ul style="list-style-type: none"> • Production is largely dependent on climatic conditions which can only be partially manipulated by man through irrigation. • Deteriorating research infrastructure and capacity may limit new technology development in the future. • Saturation of traditional export markets. • Reliance on the UK and EU as main export market. • Relatively high input and capital costs. • An element of fragmentation in the industry. • Lengthy supply chain beyond the pack house. • Lack of industry control on efficiency and productivity in supply chain beyond farm gate and pack house door. • Poor skills and knowledge of the new entrants. • Delays due to degradation of the supporting infrastructure within the supply chain (handling facilities at ports, roads and energy supply).
Threats	Opportunities
<ul style="list-style-type: none"> • Increased competition from the Southern Hemisphere counterparts like Chile, Brazil, Argentina and Australia. • Oversupply of fruit into established export markets. • Availability and cost of irrigation water. • Impact of climate change especially in the Western Cape. • Inflation rate with regard to cost of labour and farming and also packing prerequisites. • Currency variability. 	<ul style="list-style-type: none"> • Market access initiatives to the Middle East, Asia (India, Indonesia) and China. • Increasing demand for fresh apples in Africa. • Potential for increased local market consumption.

7.3 Strategic challenges

7.3.1 Labour markets

The critical need for labour at harvest time offers seasonal work to unemployed persons in the immediate vicinity of plantations. In most countries, workers migrate from one region to another as the harvest season

progresses from early to late. However, in the local scenario, labourers lack mobility as well as skills to find work outside crop harvesting.

A major challenge in terms of labour is the lack of skilled labour. At the same time, farm wage levels do not attract skilled or qualified people to undertake menial and hard work. Smaller producers, who pay comparatively lower wages, are more exposed than the larger producers to the threat of labour shortages.

7.3.2 Infrastructure

Some of the infrastructural challenges are as follows:

- Lack of storage capacity at certain times of the year, when apples and other fruits are being harvested (mid January until end of February).
- Hygiene and micro-bacterial quality of water available for use in pack houses and domestic purposes on farms.
- Poor or no communication between the agricultural sector and service providers in terms of planning and future expansion on issues such as energy and transport.
- Transport from the pack house to the market – road, ship or rail.
- Logistical systems which are not applied at full efficiency.
- Inefficient handling operations at South African ports, giving rise to costly delays and breaks in the cold chain.

7.3.3 Other challenges

Producers are being confronted with more regulations to control the production from farm to fork. These include regulating soil, air, water, chemical, labelling and safety. On the retailing side pressure mounts to introduce measures for increased traceability of products. The consumer wants a safe product produced with socially acceptable environmentally friendly production methods. Combined with this many consumers are up in arms about GMO's and the USA government is introducing a bio terrorism act that will put even more pressure on exporters to the USA.

Competition for scarce natural resources (land and water) is putting continued pressure on good farmland that can otherwise be used for agricultural purposes.

There is a threat of climate change particularly in the Western Cape Province. Production of apples and other fruits could be adversely affected by the warming of the winter season due to rising average temperatures and subsequent loss in chilling hours. Lack of winter chilling gives rise to delayed foliation and the problem of small fruit of poor quality. Increased average maximum temperatures in January and February may result in poor colour development. The risk of sunburn is also increased.

7.4 Opportunities

The promotion of the consumption of apples and other fruits should be implemented. Per capita consumption of apples at 4kg, in comparison to Asia's 13.25kg and the EU's 17.6kg highlights the scope for possible increase in sales of the local market.

7.5 Empowerment issues and transformation in the sector

According to Hortgro Services, transformation in the deciduous fruit industry has four focus areas. These are economic development, the Deciduous Fruit Development Chamber (DFDC), networking and agri-villages.

With regards to economic development, Hortgro Services serves as an implementation agent of CASP grants for the Western Cape Department of Agriculture. This provides an opportunity for Hortgro to provide matching funds for the implementation of targeted transformation projects in the province. The main focal point of economic development is the tree project. The tree project aims to increase production or footprint for Black Economic Empowerment (BEE) farmers.

To overcome transformation challenges and encourage it, the Deciduous Fruit Development Chamber (DFDC) was established as a national support structure for emerging deciduous fruit farmers. The DFDC provides space for incubator interactions that guide the business and technical assistance to emerging fruit farmers. The DFDC aims to fulfil a dynamic capacity building and advocacy role and to exert pressure in order to mobilise resources from various quarters, including government and the donor community.

Networking entails the building of relationships and networks in order to enhance the procurement of funds and other resources to help with the transformation process. This includes building working relations with all commercial banks and other DFIs and parastatals such as the Land Bank, Industrial Development Corporation (IDC), the Agricultural Research Council (ARC), and other industry stakeholders.

Agri-villages focus specifically on the provision of housing for farm workers and their families. Hortgro Services has committed itself to participating in organised agricultural initiatives to explore the following options as possible solutions to farm worker housing:

- On-farm housing without ownership rights.
- Off-farm housing without ownership, e.g. renting.
- Off-farm housing with ownership.

8. APPLE SUPPLY VALUE CHAIN

The supply value chain is a complex linkage of various production and operational role-players (see Figure 30). Key stakeholders include producer organisations, organised labour, NOGs, financial institutions, government, exporters and other traders. The following discussion focuses on the main segments of the apple value chain.

8.1 Suppliers of inputs and farming requisites

Fruit farming is a large user of specialised inputs and sophisticated agricultural chemicals. Input suppliers ensure that all inputs needed by farmers for successful production, including farm equipment, pesticides, insecticides and others, are always available at reasonable prices so as to ensure a competitive fruit industry in South Africa.

8.2 Producers

The core business of producers is to produce a high quality crop within “Good Agricultural Practice” protocols. Consistency, reliability of supply and producing varieties as demanded by the markets at affordable prices are also important facets of the producer’s responsibility and business activities.

8.3 Fresh produce markets

FPMs are the dominant player and form of wholesaling in the South African apple and fresh fruit and vegetable (FFV) sector. However other wholesale forms do exist including independent wholesalers, contract buyers, supermarkets, wholesaling subsidiaries, as well as farmer sales direct to retailers and to consumers.

Being the largest wholesalers, the FPMs have emerged as the FFV price-setters or, as nicknamed, the “fresh produce stock exchange”. The prices at the FPMs are arrived at through a bargaining process mediated by market agents who have a dual objective to collect the best prices (and hence commission) for sales while ensuring that the highly perishable stocks are cleared. These prices are then used as reference prices even in private transactions outside the FPMs.

8.4 Retailers

South African apple retailers exist in both the formal and informal sectors. In the former this includes formally registered retail chains, supermarkets and neighbourhood stores. The latter covers tuck shops (*sphaza*), and hawkers. In this environments apples sales are at predetermined prices and are typically individually or in small packages.

8.5 Processors

As explained earlier, the processing of apples consists of canning, drying and juice manufacturing. There is also a set of further processors not captured in the group above. These entities use apples (and apple products) in food preparations. This includes caterers, hospitality and other institutions such as corporates, government institutions like hospitals, prisons, etc.

8.6 Cold storage operators and transporters

Cold storage operators are responsible for receiving, handling, cooling the apples to the required temperature and for ensuring that the correct fruit is loaded out according to the exporter’s specifications into a truck or container that has been approved or registered by Perishable Produce Export Control Board (PPECB). A flat bed truck or other non-approved vehicle may be used in journeys shorter than two hours in total.

Transporters perform a key link in the fresh fruit supply chain by facilitating the physical transfer of the products between parties such as the producer, cold store and terminal operator. Transporters are responsible for maintaining the cold chain during transit.

8.7 Exporters

The core business of exporters is to market and sell the fruit of primary producers at the best market price that they are able to negotiate. In order to realize this, the exporter needs to communicate with many of the role players in the logistics chain (cold stores, transporters, shipping lines, port terminals, clearing and forwarding agents, PPECB, regional producers associations and special market inspectors, etc). It is the exporters' responsibility to manage the cold chain, handle the fruit in an acceptable manner and, they are accountable for the quality of fruit that reaches the destination market.

The main organisation that handles the export of fruits in South Africa is the Fresh Produce Exporters' Forum (FPEF). The FPEF was registered in 1998 as a non-profit organisation and its membership is voluntary and open to all companies that export fresh fruit from South Africa. The FPEF's mission is to create, within free market principles and a deregulated environment, a prosperous but disciplined fruit export sector. It was established mainly to provide leadership and services to its members and the international buying community. The forum sees itself as the international community's gateway to providing South Africa's finest quality produce from highly reputable South African exporters.

8.8 PPECB

In terms of the PPECB Act (Act 9 of 1983) the PPECB is responsible for the "control of perishable products intended for export from the Republic of South Africa". This mainly involves the control of the cold chain (including the shipping process). PPECB also acts as a government "assignee" in terms of the APS (Agricultural Products Standards) Act (Act 119 of 1990) and is responsible for the "control over sale and export of agricultural and related products". PPECB controls (and certifies) that the quality standards of these products are met. The National Department of Agriculture, Forestry and Fisheries (DAFF) issues the phyto-sanitary certificates.

All PPECB and other inspection regulations, protocols or requirements must be met and adhered to. The Information and Communication Procedure (ICP) must therefore be seen in conjunction with the PPECB Act and its regulations, the APS Act, as well as those temperature and other specialized handling protocols and procedures as established by PPECB in conjunction with the industry. As more emphasis is placed on food safety and customers are demanding higher standards of quality, PPECB and other inspection bodies play an increasingly important role in the export of fresh produce from South Africa. PPECB may make the following information available to exporters and producers on request:

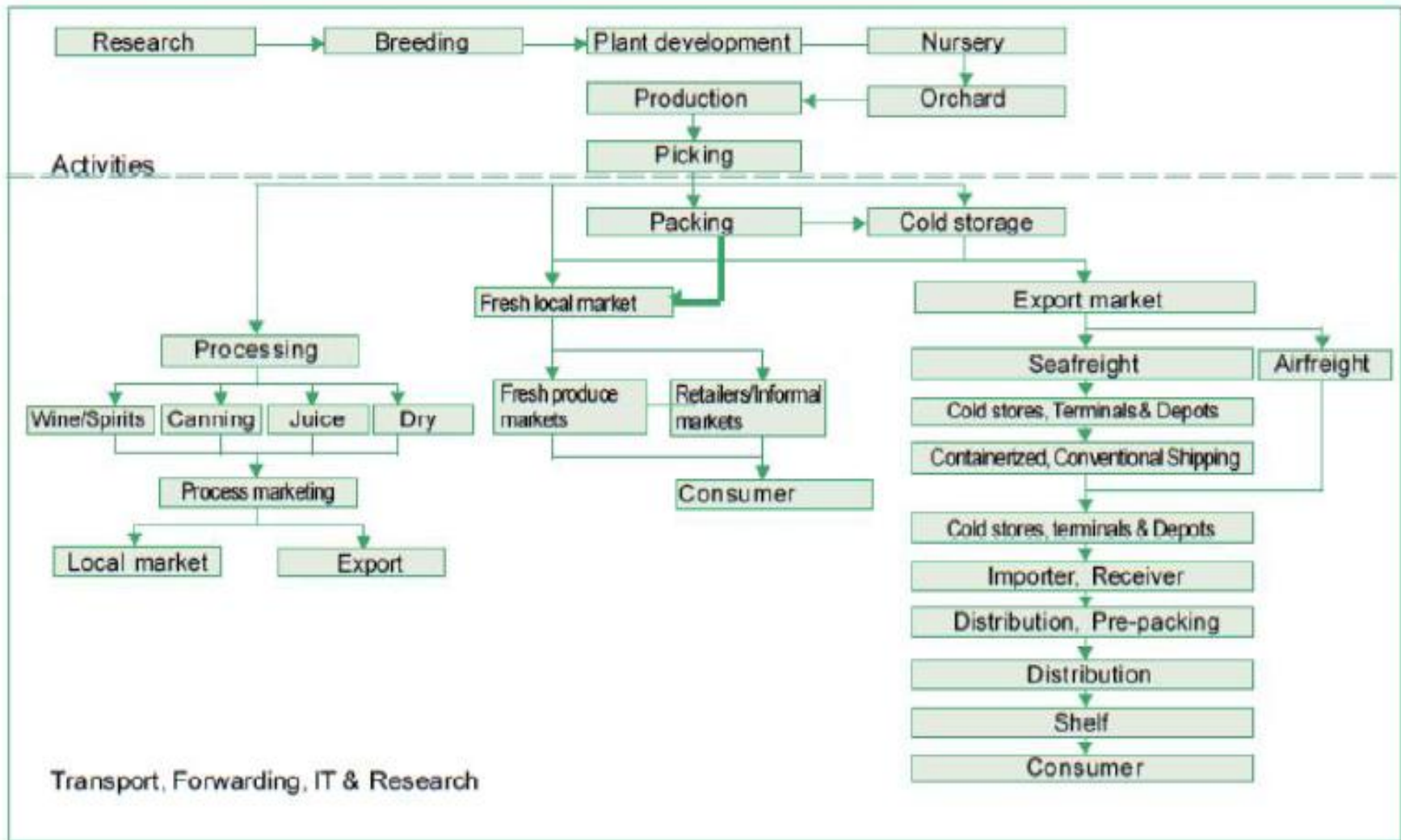
- Packed volumes
 - ✓ Inspected and approved for export
 - ✓ Inspected and rejected for export
- Product quality
 - ✓ Reasons for rejection
- Shipped volumes
 - ✓ This information is available on a product and destination region level
- Cold chain information
 - ✓ Vessel carrying instructions (temperature letter, vessel temperature log, statements of facts, deviations, etc.

The information outlined above is available in varying degrees of detail.

8.9 Terminal and port operators

Terminal operators must inform exporters, PPECB and other relevant parties in the supply chain such as transporters, producer associations, producers and cold stores about port related delays such as labour strikes, wind delays, plug-in congestion and other traffic congestion in the port that will impact on the flow of fresh produce into and out of the harbour. The South African Port Operations (SAPO) container terminal reports to shipping lines.

Figure 30: The deciduous fruit and table grape supply value chain



Source: OABS

9. ACKNOWLEDGEMENTS

The following industries/organizations are acknowledged.

9.1 South African Apple and Pear Producers Association

P. O. Box 163
Paarl
7622
Tel: (021) 870 2900
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www.hortgro.co.za

9.2 National Department of Agriculture, Forestry and Fisheries

Directorate: Statistics and Economic Services
Private X 246
Pretoria
0001
Tel (012) 319 8454
Fax (012) 319 8031
www.daff.gov.za

9.3 Optimal Agricultural Business Systems (OABS)

P. O. Box 163
Paarl
7622
Tel: (021) 890 2953
Fax: (021) 890 2915
www.oabs.co.za

9.4 National Agricultural Marketing Council (NAMC)

Private Bag X 935
Pretoria
0001
Tel (012) 341 1115
Fax: (086) 626 4769
www.namc.co.za

9.5 International Trade Centre (ITC)

www.intracen.org

9.6 United Nations Industrial Development Organization

www.unido.org

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