A PROFILE OF THE SOUTH AFRICAN LITCHI MARKET VALUE CHAIN

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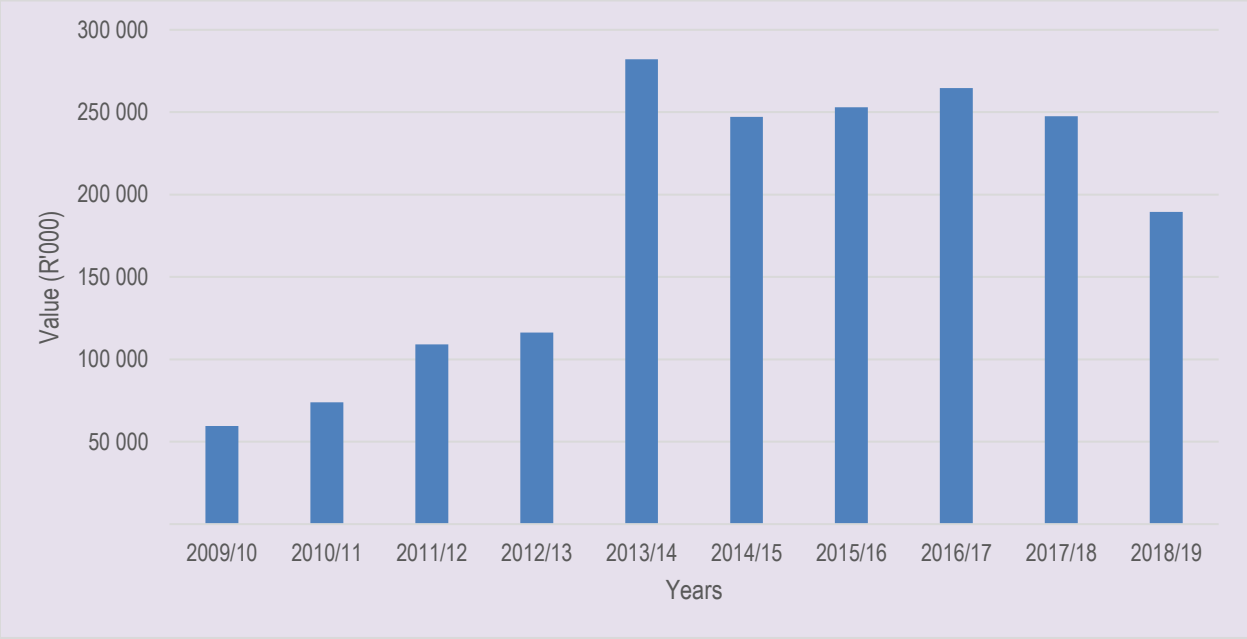
TABLE OF CONTENTS

1. DESCRIPTION OF THE INDUSTRY*

The litchi (*Litchi chinensis*) is indigenous to the south of China where a subtropical climate prevails and mention is made of the fruit in the earliest Chinese literature. The first trees out of the Asian continent were established in the subtropical areas of Hawaii, Florida, California and South Africa in the 19th century. Literature reveals that litchi trees were imported into South Africa from Mauritius in 1876, but some trees had already been noticed in Natal in 1875, which indicates earlier imports. Many different cultivars were established in Kwazulu Natal and later in the Mpumalanga Lowveld and other suitable frost-free areas of the country.

The South African Litchi Growers' Association (SALGA) and the Research and Technical Committee were formed in 1987 to attend to the immediate problems of the litchi industry. The industry is subject to the same problems as the fresh fruit industry in general, namely marketing, logistics, market access and adverse weather conditions such as drought, frost and hail. During the 2018/19 production season, the litchi industry contributed approximately 4.4% (R189 million) to total gross value of subtropical crops (R4.2 billion). Gross value of production for litchis in South Africa for the period 2009/10 to 2018/19is presented in Figure 1.

Figure 1: Gross value of production for litchis, 2009/10 – 2018/19



Source: Statistics and Economic Analysis, DAFF

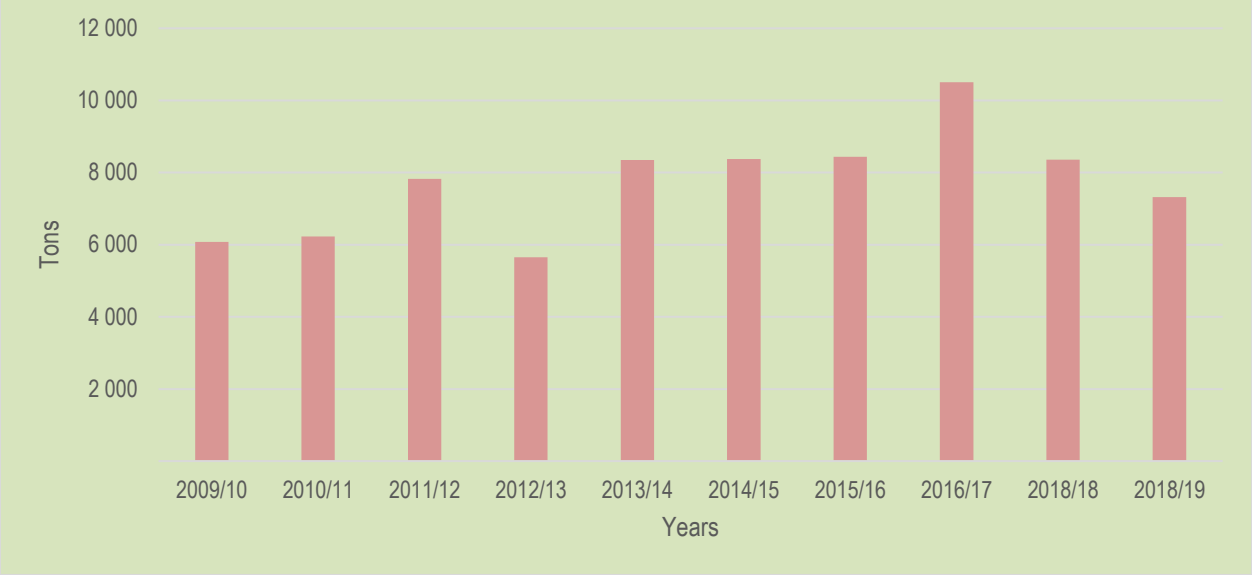
As can be seen in Figure 1 that the gross value of litchis produced in South Africa fluctuated significantly during the past ten years. During the ten years under review the total value of production for litchis reached its highest in 2013/14 at R282 million and was at its lowest in 2009/10 at R59.5 million. Gross value of litchis produced in South Africa has been on a decline over the past three years. In 2018/19, total value of production for litchis was R189 million. This figure was down from R247 million in 2017/18. The total gross value was also 23% lower than the previous season and 218% higher than that of a decade ago (2009/10). The total gross value usually trails the total volume of production.

* Inputs from Tshifhiwa Radzilani of the South African Subtropical Growers' Association (Subtrop) are herewith acknowledged.

1.1 Production volumes

The litchi industry in South Africa is well-established and exhibits a slow trend in terms of new plantings and production. Growth in production volume has been relatively disappointing during the last decade. Total production of litchis for the period 2009/10 to 2018/19 is presented in Figure 2.

Figure 2: Total litchi production 2009/10 – 2018/19



Source: Statistics and Economic Analysis, DAFF

As can be observed in Figure 2, a total volume of 7 323 tons of litchis were produced in South Africa during the 2018/19 production season. The production of litchi has been declining over the past three dropping by 30% increase between the 2016/17 and 2018/19 production seasons. The volume produced in 2018/19 was however, 21% more than the volume produced during the 2009/10 production season. During the ten years under consideration, production peaked in 2016/17 at 10 444 tons and was at its lowest in 2012/13 at 5 648 tons. Litchi has long been known to have a substantial water requirement and is best adapted to a subtropical climate with short, dry and cool but frost-free winters and long hot summers with high rainfall and humidity.

1.2 Production areas

Litchis grow well in especially sandy soils in the cooler subtropical areas. However, the trees also grow and produce well in clay soil in the warmer areas. The litchis require mean winter minimum temperatures below 15°C and mean winter maximum temperatures of 20°C or lower to flower well. Mean summer maximum temperatures should be between 27 and 33°C. There should be low rainfall during winter and high rainfall during summer. The relative humidity should be 50% and higher during the warm summer months.

South Africa's litchi crop is mainly grown in the Limpopo and Mpumalanga province, in particular the Mopani and Malelane region. Kwazulu Natal is another producer of litchi production. Litchi is a minor crop in South Africa and account for an estimated total area of 1 130 ha. Regionally, the most important litchi producing region in Mpumalanga is the hot Lowveld, which produces nearly 60% of all South African litchis annually. The most important litchi producing

areas in Limpopo include Trichardtsdal, Tzaneen, Makhado (Louis Trichardt), and Levubu. Annually, Tzaneen contributes an average of 20% to total Litchi production in South Africa and this includes areas farmed by emerging producers in the province. In Kwazulu Natal, north and south coasts of Kwazulu Natal are the dominant litchi production areas.

1.3 Litchi cultivars planted in South Africa

Litchi cultivars grown in South Africa are divided into three main groups: Mauritius group, Chinese group and the Madras group. The Mauritius group is usually planted in South Africa and produces satisfactory yields as well as good quality fruit. Cultivars in this group include HLH Mauritius (also known as Tai So), Muzaffarpur, Late Large Red, Hazipur, Saharanpur, and Rose-Scented.

The Chinese group produces very poor yields but the fruit is of very high quality. Cultivars in this group include Haak Yip, Wai Chee, Shang Shou Huai, Kontand, Glutinous Rice, and Three Months Red. The Madras group produces colourful red fruit of poor quality and the cultivars include Kafri, Shorts Seedless, Johnstone's Favourite, Emmerson, Durbhanga, Maries, Mooragusha, Madras 19, Hazipur/Saharanpur, Red McLean, Brewster and Bedana.

1.4 Employment

The South African litchi industry plays an important role in terms of job creation for the majority of the people living in rural areas. It is estimated that the industry employs approximately 1 130 combined seasonal and permanent workers. The contribution of the industry is further seen through the dependency of individual members of the households, which is estimated at 4 520 annually.

The Minimum Wage Act 9 of 2019 came into effect in January 2019. The Act applies to all workers and their employers, except members of the South African National Defence Force, the National Intelligence Agency, the South African Secret Service, and volunteers who perform work for another person without remuneration. Under this Act, farm workers are entitled to a minimum wage of R R18.68 per hour. The Act establishes the National Minimum Wage Commission which is tasked to review the national minimum wage make recommendations to the Minister on any adjustment of the national minimum wage.

2. MARKET STRUCTURE

The distribution of the annual litchi crop over the past decade is presented in Figure 3. The South African litchi industry is predominantly export oriented. During the 2018/19 production season 6 631 tons of litchis were exported while processing and local market accounted for 1 307 and 908 respectively. This means that out of a total production of in 2018/19, 79% went to the export market while 16%% went through to the local market market. Approximately 4% was sold through the processing market during the same year. The volumes of litchis delivered to the export markets increased significantly between 2018/19 and seasons.

Litchi production is mostly hampered by inadequate yields due to alternate bearing and high fruit drop during fruit set and early fruit development. Fruit size is affected by insufficient irrigation and fertilisation during critical stages of fruit development. All these factors should be taken into account if farmers are to produce fruits of good quality and size for the market.

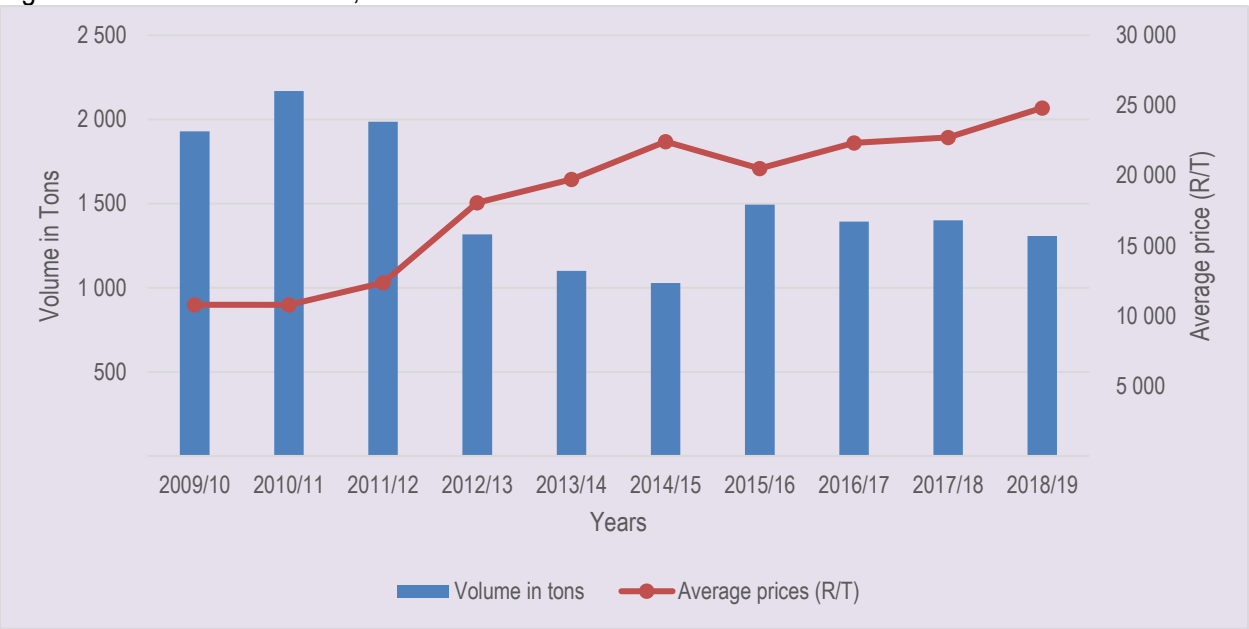
Figure 3: Annual litchi crop distribution, 2009/10 – 2018/19

Source: FruitSA 2020; Quantec, 2020; Statistics and Economic Analysis, DAFF

2.1 Domestic market sales and prices

It is quite a challenging task to obtain a complete picture of the local market, as most of the fruit is sold informally to hawkers and informal traders. However, recorded quantities are sold through agents on the national fresh produce markets (NFPMs), as well as through retailers and processors for the manufacturing of mostly juice. Domestic sales and prices realised at the NFPMs for the period 2009/10 to 2018/19 are presented in Figure 6.

Figure 4: Locals sales for litchi, 2009/10 – 2018/19



Source: Statistics and Economic Analysis, DAFF

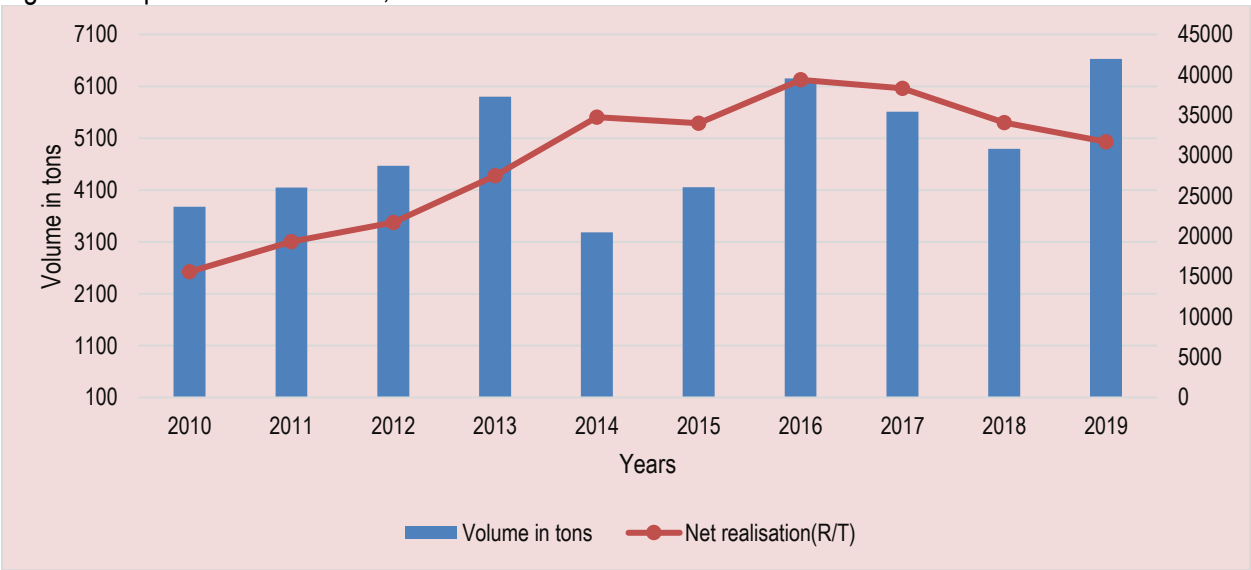
Between the 2009/10 and 2018/19 marketing seasons volumes of litchis sold on the NFPMs declined from 1 929 tons to 1 307 tons, a decline of 32%. The volume of litchis sold through the markets has been unstable significantly during the last decade. The quantities sold at local municipal markets have been on the decline over the past decade while volumes production has recorded increasing trends. This is a clear indication that NFPMs are losing their role as centres of price discovery and the principal marketing channel of fruits and vegetables. The result is direct sales from farms to pack houses and retailers.

At the same time, prices realised at the NFPMs have increased steadily, increasing from R10 787 per ton in 2009/10 to R24 829 per ton in 2018/19, an increase of 130% in the past ten years. The rise in prices has been mainly due to a decline in volumes delivered to the markets. The prices available in the markets over the past ten years demonstrated its responsiveness to supply in the market.

2.2 Exports

The South African litchis production is mostly destined for the export market. Approximately 90% (6 630 tons) of all litchis (7 323 tons) produced in South Africa during 2018/19 marketing season were exported. In 2019the South African litchi industry ranked 19th accounting for 0.8% of the world's exports of litchis. Total volumes and net realisation for South African litchi exports from 2010 to 2019 are presented in Figure 5.

Figure 5: Export volumes of litchi, 2010 - 2019

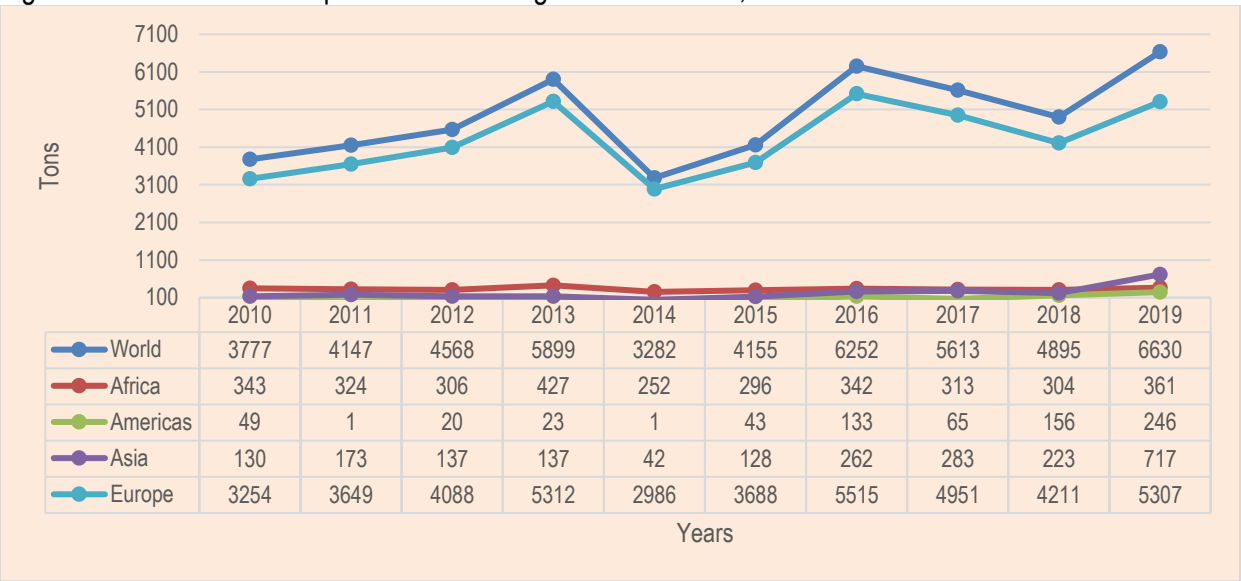


Source: Quantec Easydata

Data from Quantec indicate that volumes of litchis exported by South Africa have been relatively stable over the past ten years. The exceptions were in 2013, 2016 and 2019 when volumes exported were higher. The litchi exports recorded a 35% increase in 2019 as compared to 2018 season. A total volume of 6 630 tons of litchis was exported by South Africa in 2019, approximately 76% more than the exports recorded ten years ago (2010). The export volumes experienced a successive growth between 2011 and 2013, again between 205 and 2016 before recording successive decline between 2017 and 2918.

Prices realised in the export markets have been increasing during the last ten years. Prices increased from R15 583 per ton in 2010 to R31 695 per ton in 2019, an increase of 103%. Prices also decreased by 13% between 2016 and 2018. The decline in prices of litchis might have been due to weaker exchange rate between Rand and other major currencies. Exports of South African litchis to the various regions of the world over the past decade are presented in Figure 6.

Figure 6: Volume of litchi exports to various regions of the world, 2010 - 2019



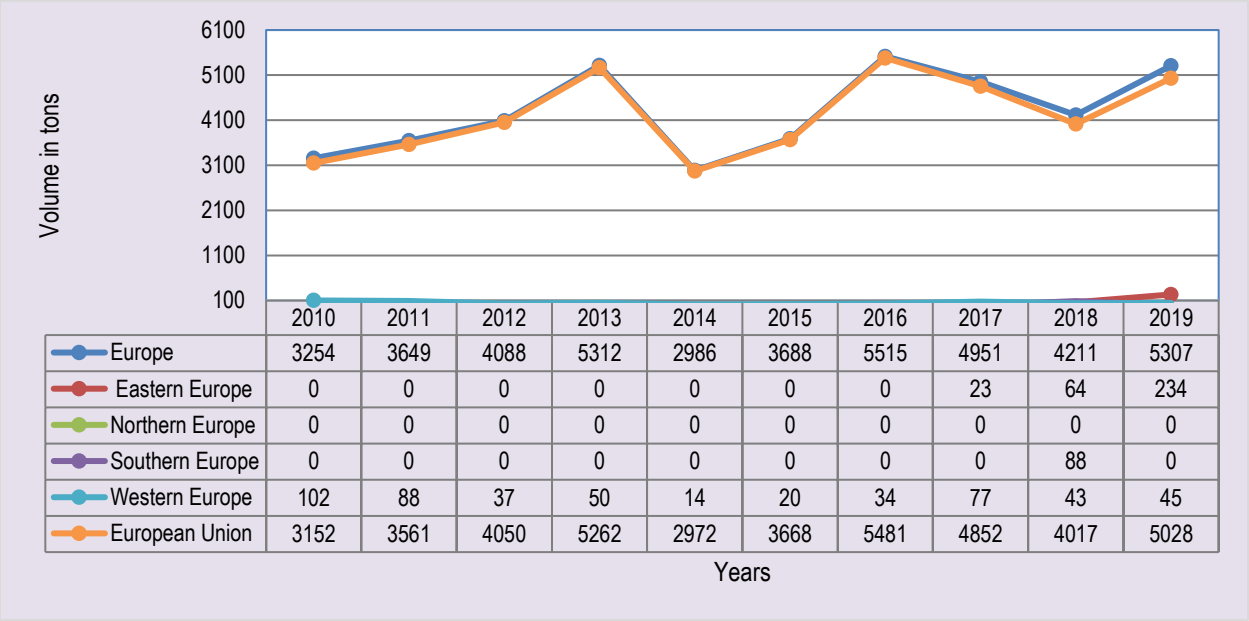
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
World	3777	4147	4568	5899	3282	4155	6252	5613	4895	6630
Africa	343	324	306	427	252	296	342	313	304	361
Americas	49	1	20	23	1	43	133	65	156	246
Asia	130	173	137	137	42	128	262	283	223	717
Europe	3254	3649	4088	5312	2986	3688	5515	4951	4211	5307

Source: Quantec Easydata

It is evident from Figure 6 that during the last decade, almost all of South Africa's exports of litchis were destined for the European market. Exports to Europe accounted for 80% (5 307 tons) of total South African litchi exports 6 630 tons) in 2019. Exports to Africa, the Americas and Asia have been relatively insignificant, collectively accounting for a little over 12% throughout the last decade. Exports to Europe went up from 4 211 tons in 2018 to 5 307 tons in 2019, an increase of 26%. During the period under review, litchi exports to Europe peaked at 5 515 tons in 2016 and were at their lowest in 2014 at 2 986 tons.

Within Europe, South African exports of litchis are mainly distributed between the European Union and Western Europe (see Figure 7). The European Union consists of 25 member states while Western Europe comprises Switzerland, Liechtenstein and Monaco. Annually, over 90% of all South African litchi exports to Europe go to European Union member states while the remainder goes to Western Europe (see Figure 7). The European Union absorbed approximately 95% (5 028 tons) of all South African litchi exports to Europe in 2019 and the remaining 5% (279 tons) was absorbed by Eastern and Western Europe.

Figure 7: Litchi exports to various regions of Europe, 2010 - 2019

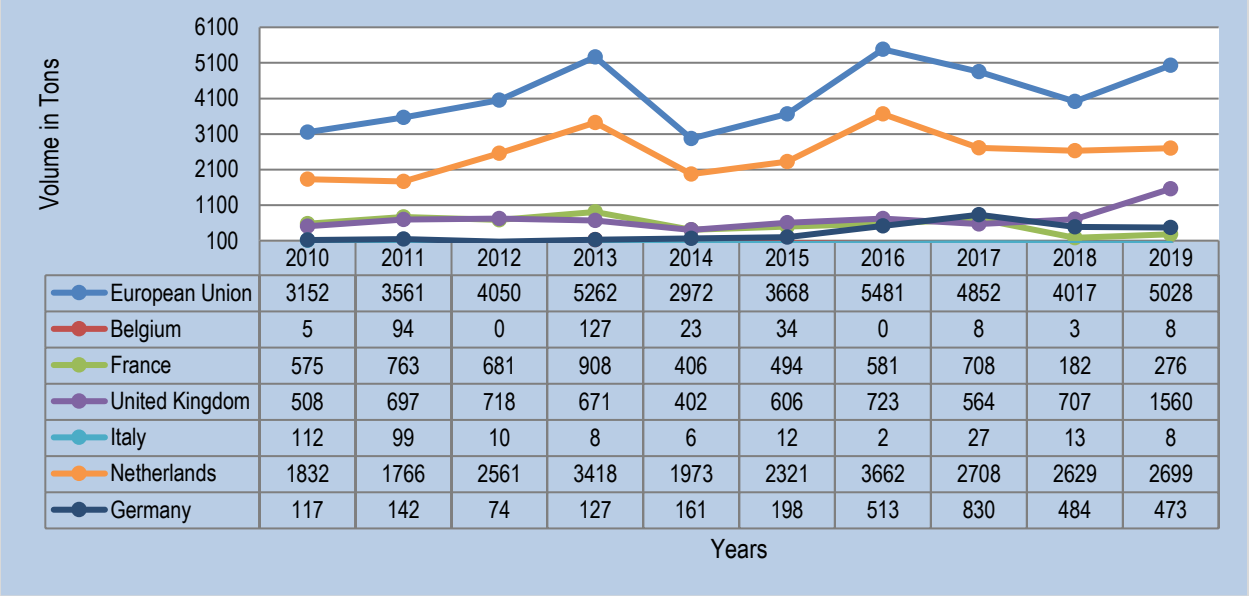


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Europe	3254	3649	4088	5312	2986	3688	5515	4951	4211	5307
Eastern Europe	0	0	0	0	0	0	0	23	64	234
Northern Europe	0	0	0	0	0	0	0	0	0	0
Southern Europe	0	0	0	0	0	0	0	0	88	0
Western Europe	102	88	37	50	14	20	34	77	43	45
European Union	3152	3561	4050	5262	2972	3668	5481	4852	4017	5028

Source: Quantec Easydata

Due to its significance to South African exports of litchis the European Union market is further disaggregated in Figure 8.

Figure 8: Litchi exports to various European Union member states, 2010 - 2019



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
European Union	3152	3561	4050	5262	2972	3668	5481	4852	4017	5028
Belgium	5	94	0	127	23	34	0	8	3	8
France	575	763	681	908	406	494	581	708	182	276
United Kingdom	508	697	718	671	402	606	723	564	707	1560
Italy	112	99	10	8	6	12	2	27	13	8
Netherlands	1832	1766	2561	3418	1973	2321	3662	2708	2629	2699
Germany	117	142	74	127	161	198	513	830	484	473

Source: Quantec Easydata

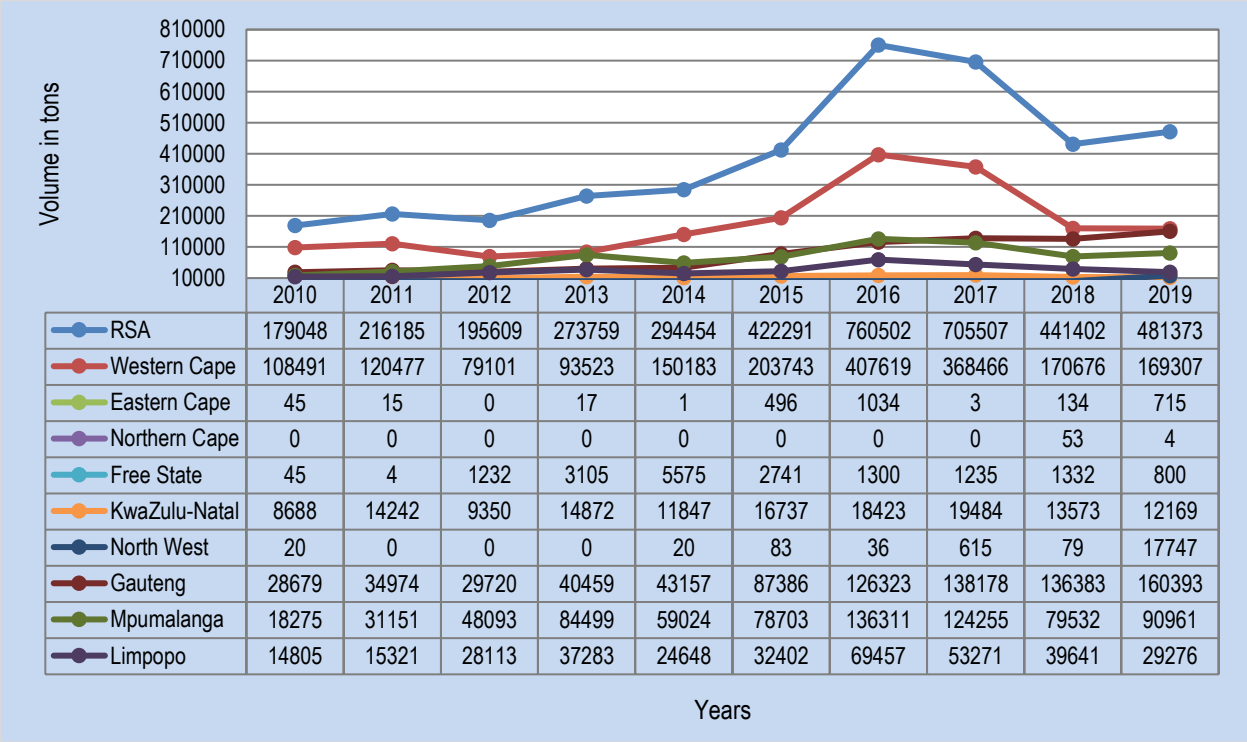
It is evident from Figure 8 that the major importers of South African litchis in the European Union are the Netherlands, United Kingdom and Germany. In 2019 the Netherlands accounted for 54% (2 699 tons) of all South African exports of litchis to the European Union (5 028 tons). It was followed by the United Kingdom, Germany and France at 31%, 9% and 5% respectively (830 tons for UK, 708 tons for Germany and 564 tons for France). During the period under review

exports to the Netherlands peaked at 3 662 tons in 2016 while those to Germany, France and the United Kingdom peaked at 830 (2017) 908 tons (in 2013) and 1 560 tons (in 2019), respectively. The total South African litchi exports to the European Union increased by 25% between 2018 and 2019. The main contributors to the increase were the Netherlands, France and United Kingdom that recorded increases during the same period. Exports into the United Kingdom increased by 121% during the same period.

2.3 Provincial and district export values

Values of litchi exports from each province of South Africa for the period 2007 to 2016 are presented in Figure 11.

Figure 9: Value of litchi exports by provinces, 2010 - 2019



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
RSA	179048	216185	195609	273759	294454	422291	760502	705507	441402	481373
Western Cape	108491	120477	79101	93523	150183	203743	407619	368466	170676	169307
Eastern Cape	45	15	0	17	1	496	1034	3	134	715
Northern Cape	0	0	0	0	0	0	0	0	53	4
Free State	45	4	1232	3105	5575	2741	1300	1235	1332	800
KwaZulu-Natal	8688	14242	9350	14872	11847	16737	18423	19484	13573	12169
North West	20	0	0	0	20	83	36	615	79	17747
Gauteng	28679	34974	29720	40459	43157	87386	126323	138178	136383	160393
Mpumalanga	18275	31151	48093	84499	59024	78703	136311	124255	79532	90961
Limpopo	14805	15321	28113	37283	24648	32402	69457	53271	39641	29276

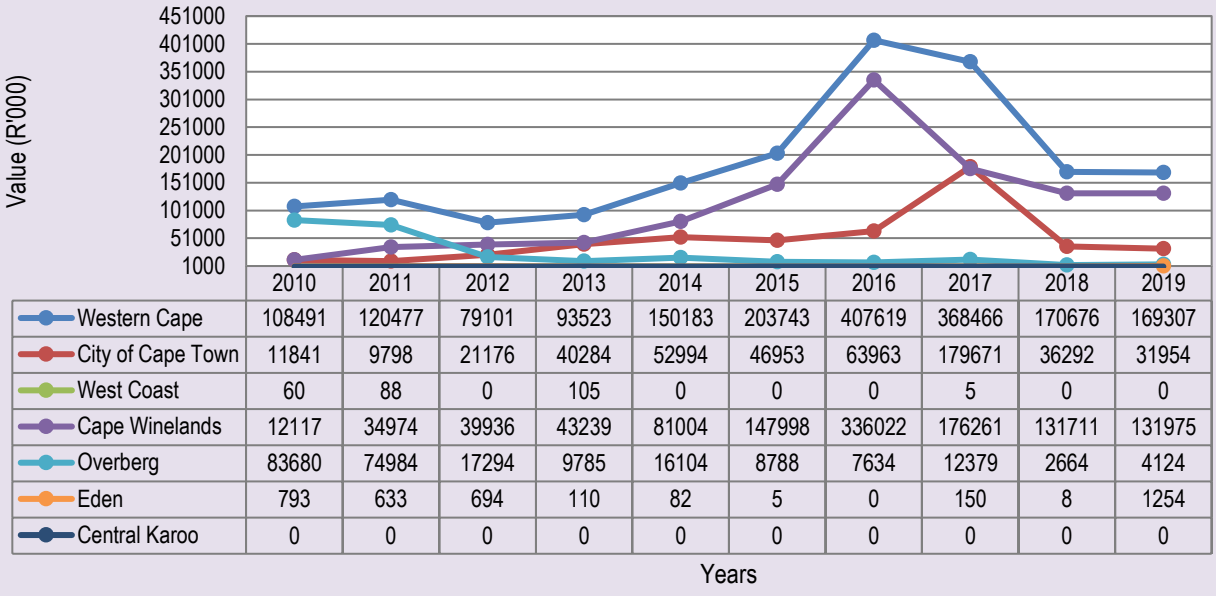
Source: Quantec Easydata

Litchis worth R481 million were exported by South Africa in 2019. The export value was 9% higher than the 2018 export value and 169% higher than the value of litchis exported in 2010. The Western Cape is the leading exporter of litchis in South Africa. The province contributed 35% to total value of South African exports in 2019. Western Cape is followed by Gauteng, Limpopo and Mpumalanga at 33% (for Gauteng), 19% (for Mpumalanga) and 6% (for Limpopo). The Western Cape and Gauteng are not among the major producers of litchis in South Africa but the bulk of South African litchis are exported through these provinces. This is mainly because the two provinces serve as exit points for litchi exports in South Africa. Mpumalanga province, the biggest producer of litchis in South Africa comes in third at 19%. This indicates that the biggest producers of litchis are not necessarily the biggest exporters as litchis leave South Africa via other provinces.

Figures 12 – 20 show the value of litchi exports from the various districts in each of the nine provinces of South Africa. Values of litchi exports by the Western Cape province are presented in Figure 12. The Cape Winelands district is the

leading exporter of litchis in the Western Cape, accounting for 77.9% value of litchi export. The value of the district's exports peaked at over R337 million tons in 2016. The West Coast district recorded no exports in 2018 and 2019. Other major players in the export of litchis in the Western Cape is the City of Cape Town metro. The metro accounted for R31 million in 2019.

Figure 10: Value of litchi exports by Western Cape province, 2010 - 2019

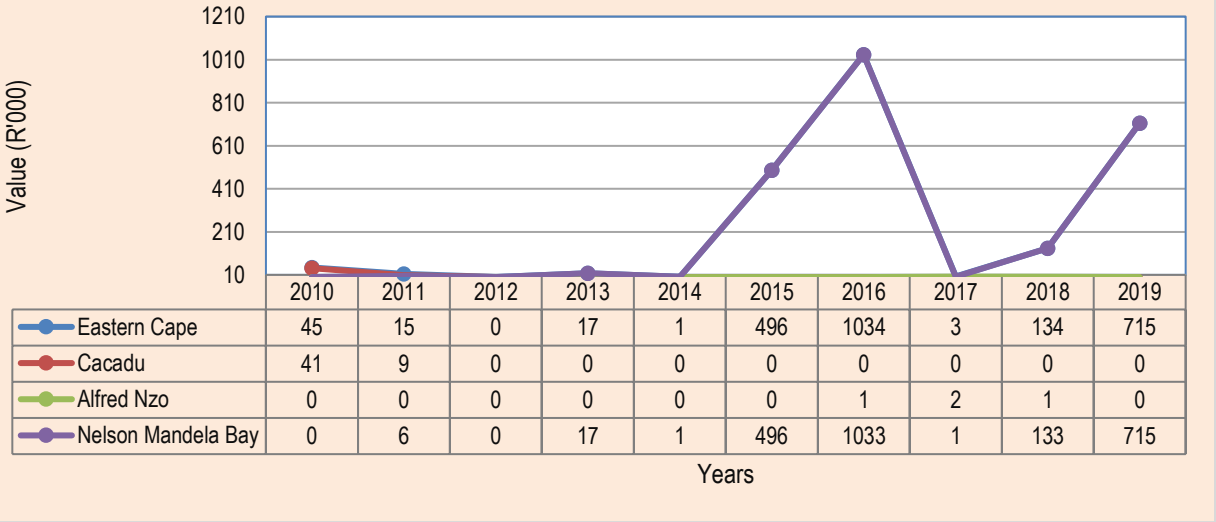


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Western Cape	108491	120477	79101	93523	150183	203743	407619	368466	170676	169307
City of Cape Town	11841	9798	21176	40284	52994	46953	63963	179671	36292	31954
West Coast	60	88	0	105	0	0	0	5	0	0
Cape Winelands	12117	34974	39936	43239	81004	147998	336022	176261	131711	131975
Overberg	83680	74984	17294	9785	16104	8788	7634	12379	2664	4124
Eden	793	633	694	110	82	5	0	150	8	1254
Central Karoo	0	0	0	0	0	0	0	0	0	0

Source: Quantec Easydata

The Eastern Cape province recorded exports of litchis worth R715 thousand during 2019 season. No export recorded by the Eastern Cape between 2012 season (see Figure 13). During 2019 all exports worth R715 000 from Eastern Cape were from Nelson Mandela metro.

Figure 11: Value of litchi exports by Eastern Cape province, 2010 - 2019

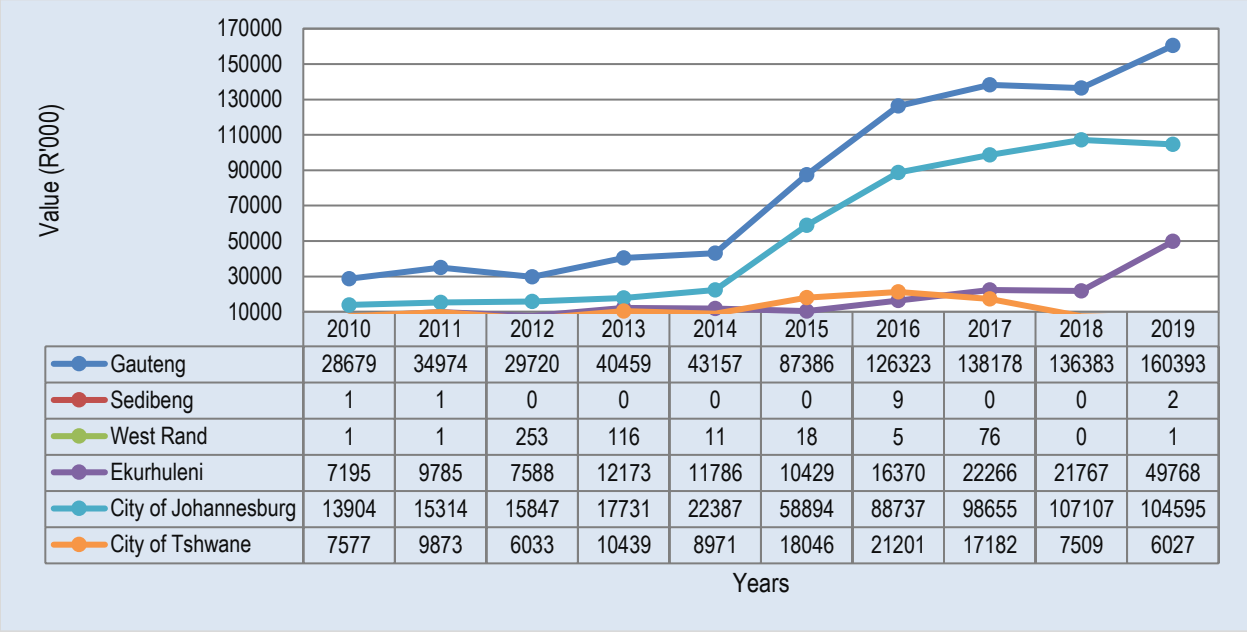


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Eastern Cape	45	15	0	17	1	496	1034	3	134	715
Cacadu	41	9	0	0	0	0	0	0	0	0
Alfred Nzo	0	0	0	0	0	0	1	2	1	0
Nelson Mandela Bay	0	6	0	17	1	496	1033	1	133	715

Source: Quantec Easydata

Values of litchi exports by the Gauteng province are presented in Figure 12.

Figure 12: Value of litchi exports by Gauteng province, 2010 - 2019



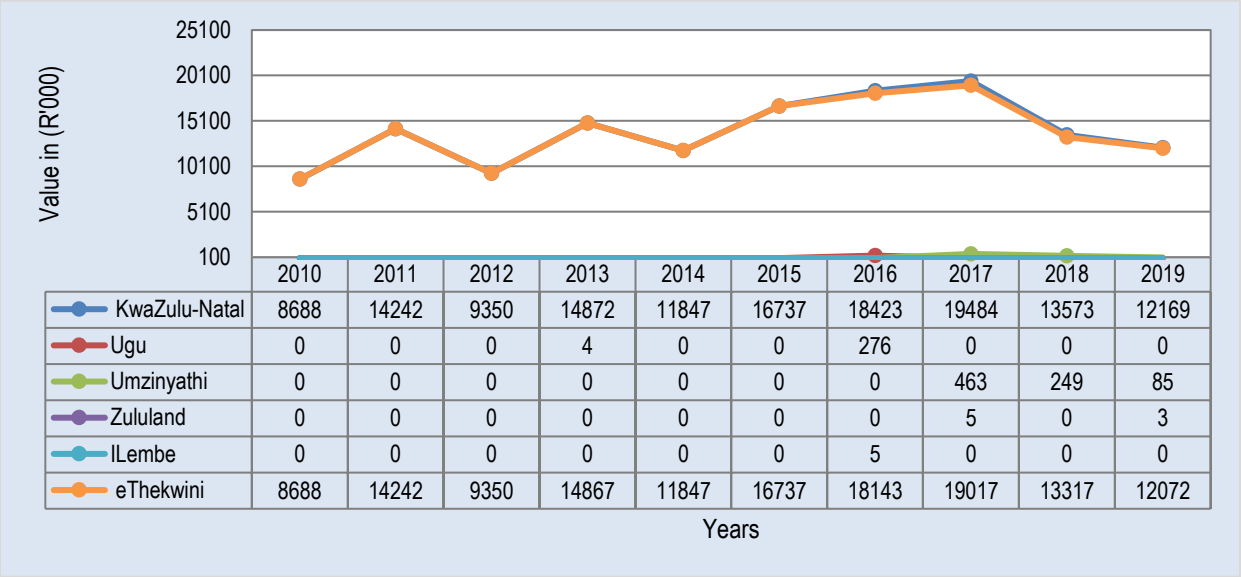
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gauteng	28679	34974	29720	40459	43157	87386	126323	138178	136383	160393
Sedibeng	1	1	0	0	0	0	9	0	0	2
West Rand	1	1	253	116	11	18	5	76	0	1
Ekurhuleni	7195	9785	7588	12173	11786	10429	16370	22266	21767	49768
City of Johannesburg	13904	15314	15847	17731	22387	58894	88737	98655	107107	104595
City of Tshwane	7577	9873	6033	10439	8971	18046	21201	17182	7509	6027

Source: Quantec Easydata

Litchi exports in Gauteng are mainly from City of Johannesburg and Ekurhuleni metropolitan municipalities. High export values for the leading municipalities were recorded in 2015 (for City of Tshwane), 2018 (for City of Johannesburg) and 2019 (for Ekurhuleni). Export values from City of Johannesburg, the leading litchi exporting district in in the past six years, increased from just over R13.9 million in 2010 to over R104 million in 2019. The value of exports from the City of Johannesburg and City of Tshwane declined by 2% and 20% respectively between 2018 and 2019. The value of litchi exports from Ekurhuleni increased by 129% during the same period.

Figure 13 illustrates values of litchi exports by the Kwazulu Natal province. The leading litchi export district in the Kwazulu Natal is the eThekwini metropolitan municipality. The municipality recorded litchi exports worth over R12 million during 2019. High export values for the leading municipality were recorded in 2017. The use of the Durban harbour as an exit point is the main reason for eThekwini municipality being a leader in the export of litchis in Kwazulu Natal. The value of litchi exports from Kwazulu Natal fluctuated strongly during the period under review.

Figure 13: Value of litchi exports by Kwazulu Natal province, 2010 - 2019

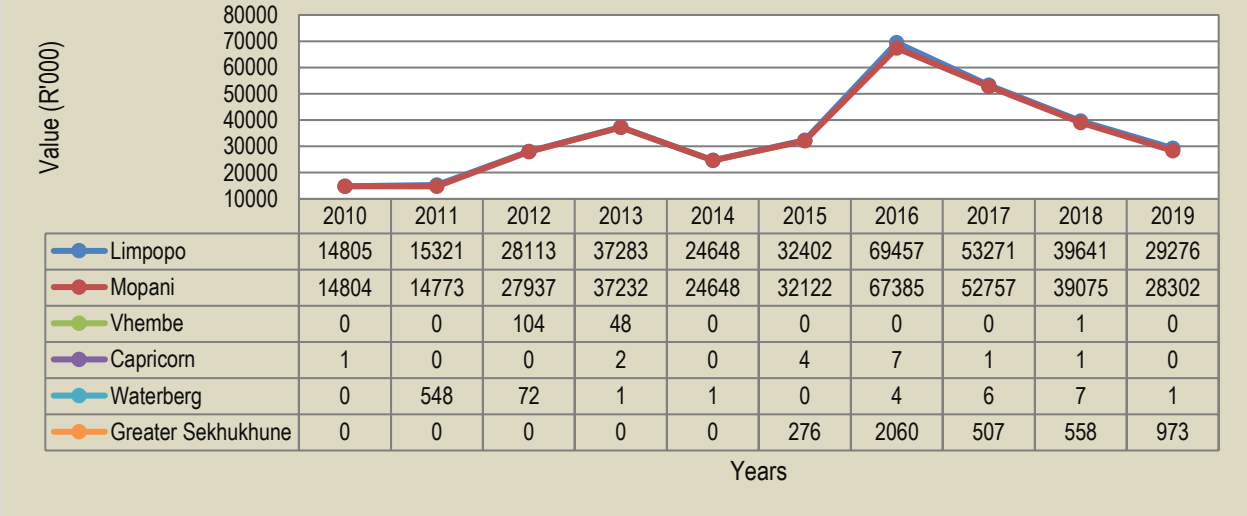


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
KwaZulu-Natal	8688	14242	9350	14872	11847	16737	18423	19484	13573	12169
Ugu	0	0	0	4	0	0	276	0	0	0
Umzinyathi	0	0	0	0	0	0	0	463	249	85
Zululand	0	0	0	0	0	0	0	5	0	3
ILembe	0	0	0	0	0	0	5	0	0	0
eThekwini	8688	14242	9350	14867	11847	16737	18143	19017	13317	12072

Source: Quantec Easydata

Values of litchi exports from the Limpopo province are shown in Figure 16. It is clear from Figure 14 that litchi exports from the Limpopo province are mainly from the Mopani district municipality. High export values for the leading municipality were recorded in 2016. The district recorded litchi exports worth R28 million in 2019. This was down from the R39 million recorded in the previous year (2019). Other municipalities that recorded litchi exports during the past decade were the Waterberg, Capricorn and Sekhukhune districts.

Figure 14: Value of litchi exprots by Limpopo province, 2010 - 2019

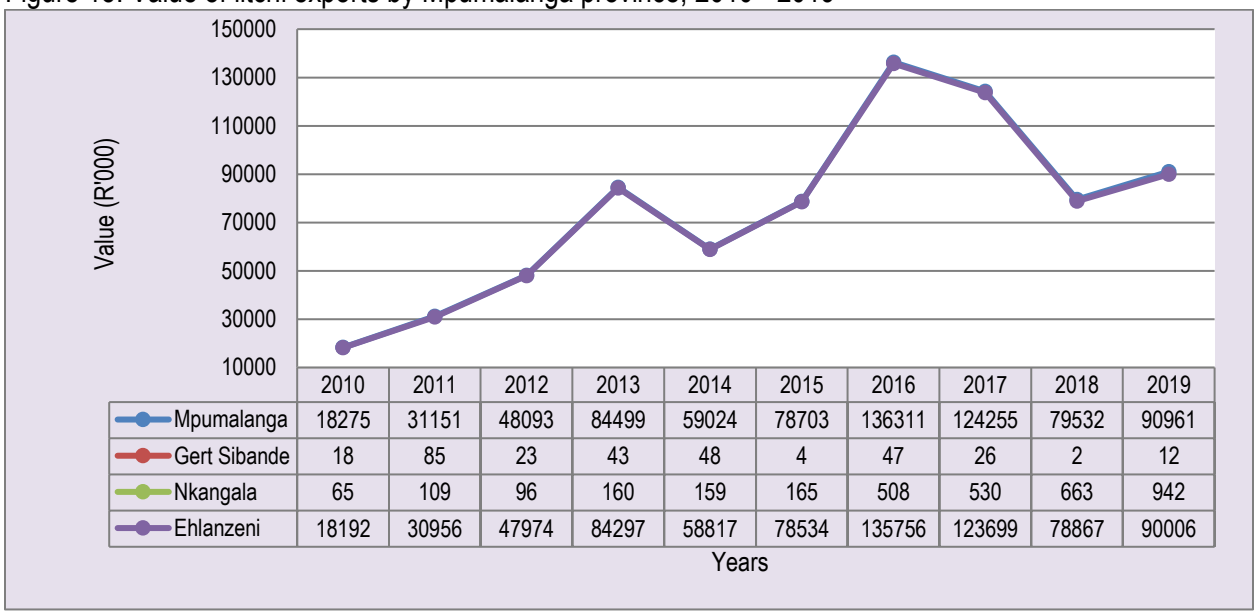


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Limpopo	14805	15321	28113	37283	24648	32402	69457	53271	39641	29276
Mopani	14804	14773	27937	37232	24648	32122	67385	52757	39075	28302
Vhembe	0	0	104	48	0	0	0	0	1	0
Capricorn	1	0	0	2	0	4	7	1	1	0
Waterberg	0	548	72	1	1	0	4	6	7	1
Greater Sekhukhune	0	0	0	0	0	276	2060	507	558	973

Source: Quantec Easydata

Values of litchi exports from Mpumalanga province are presented in Figure 15.

Figure 15: Value of litchi exports by Mpumalanga province, 2010 - 2019

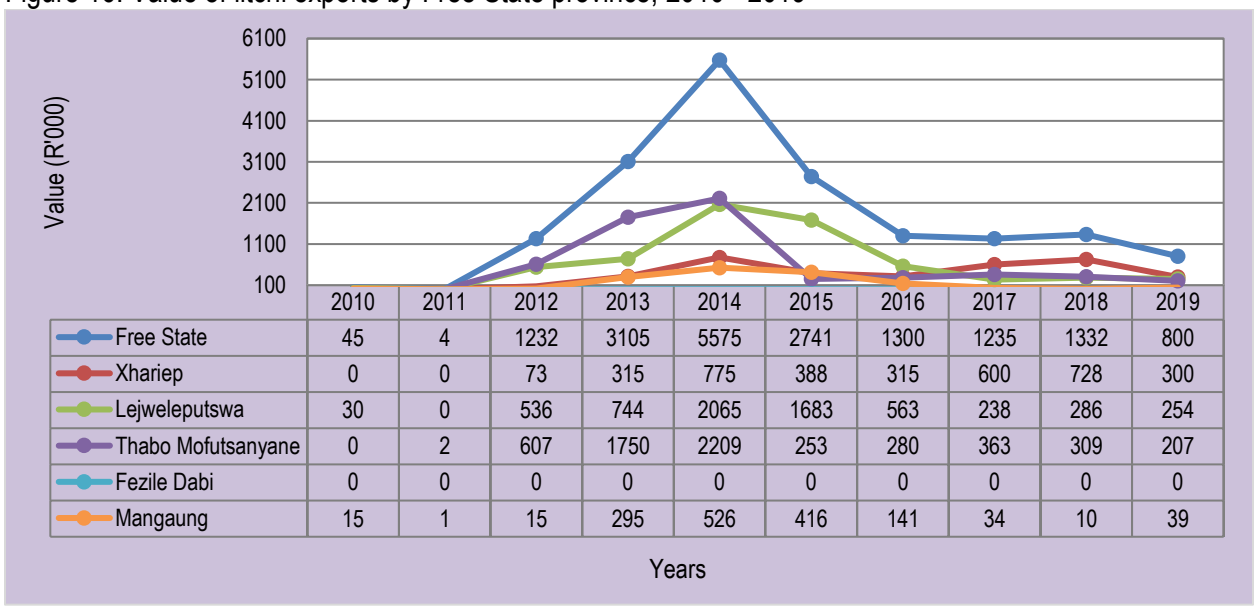


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Mpumalanga	18275	31151	48093	84499	59024	78703	136311	124255	79532	90961
Gert Sibande	18	85	23	43	48	4	47	26	2	12
Nkangala	65	109	96	160	159	165	508	530	663	942
Ehlanzeni	18192	30956	47974	84297	58817	78534	135756	123699	78867	90006

Source: Quantec Easydata

It can be observed from Figure 15 that litchi exports recorded in Mpumalanga province are mainly from the Ehlanzeni district. High export value for the Ehlanzeni district was recorded in 2016. Ehlanzeni district recorded litchi exports worth R90 million in 2019. Figure 16 shows the value of litchi exports by the Free State province.

Figure 16: Value of litchi exports by Free State province, 2010 - 2019



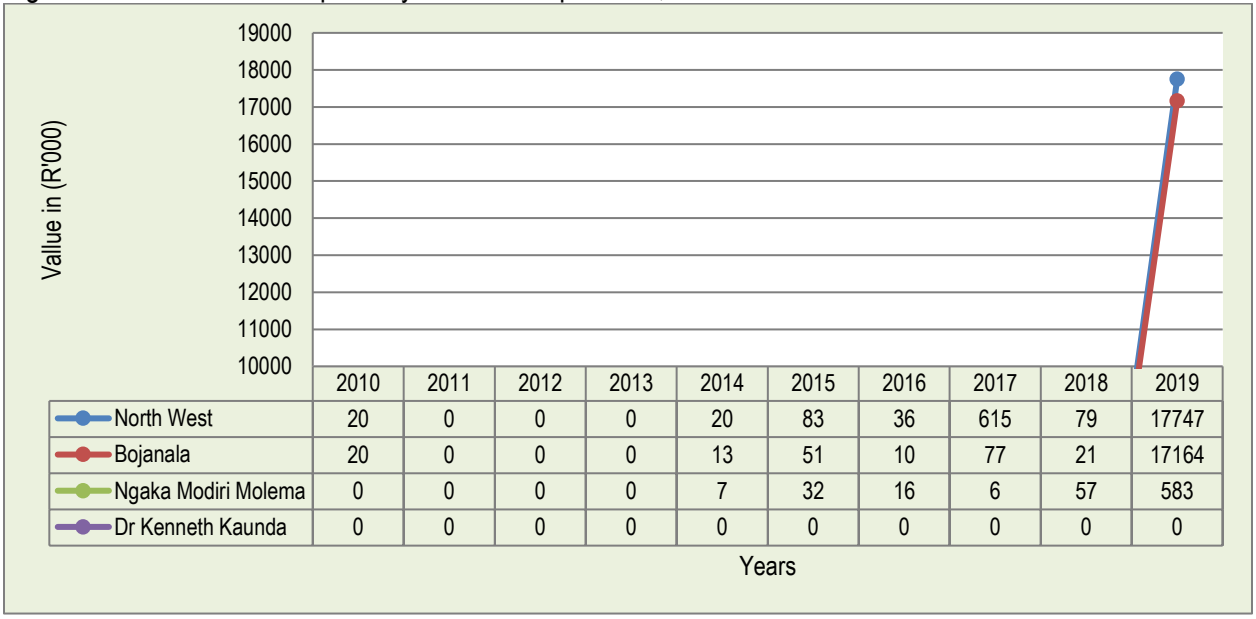
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Free State	45	4	1232	3105	5575	2741	1300	1235	1332	800
Xhariep	0	0	73	315	775	388	315	600	728	300
Lejweleputswa	30	0	536	744	2065	1683	563	238	286	254
Thabo Mofutsanyane	0	2	607	1750	2209	253	280	363	309	207
Fezile Dabi	0	0	0	0	0	0	0	0	0	0
Mangaung	15	1	15	295	526	416	141	34	10	39

Source: Quantec Easydata

The exporters of litchis in the Free State province are Mangaung and Lejweleputswa district municipalities. Export values for the leading municipalities were recorded in 2015. In 2016, Lejweleputswa recorded exports worth R800 thousands and followed by Xhariep with exports worth R300 thousands.

Values of litchi exports by the North West province are presented in Figure 17. Almost all exports of litchis recorded in North West during 2019 were from the Bojanala district. The district exported litchis worth over R17 million in 2019.

Figure 17: Value of litchi exports by North West province, 2010 - 2019



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
North West	20	0	0	0	20	83	36	615	79	17747
Bojanala	20	0	0	0	13	51	10	77	21	17164
Ngaka Modiri Molema	0	0	0	0	7	32	16	6	57	583
Dr Kenneth Kaunda	0	0	0	0	0	0	0	0	0	0

Source: Quantec Easydata

2.4 Share analysis

Table 2 provides an illustration of provincial shares towards the total value for South African litchi exports for the period 2010 to 2019. The Western Cape, Mpumalanga, Gauteng and Limpopo provinces have commanded the greatest share of litchi exports during the past decade. The four provinces collectively accounted for almost 94% of all exports of litchis in South Africa in 2019. The Gauteng province, do not produce litchis but they are the largest contributors (33.3%) in terms of litchi exports. This raises concerns regarding the availability of marketing infrastructure in these provinces that produce a greater proportion of South African litchis and export very little litchis on their own. Western Cape and Kwazulu Natal contributed 35% and 2.5% to the total value of South African exports of litchis in 2019.

Table 2: Share of provincial litchi exports to the total RSA litchi exports (%), 2010 - 2019

Years District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
RSA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Western Cape	57.4	53.3	34.8	25.5	48.2	48.4	53.7	52.2	38.7	35.2
Eastern Cape	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1
Northern Cape	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Free State	0.0	0.0	0.0	0.1	1.8	0.7	0.2	0.2	0.3	0.2
Kwazulu-Natal	4.8	6.6	4.8	5.4	4.3	4.0	2.5	2.8	3.1	2.5
North West	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	3.7
Gauteng	24.9	27.3	37.8	44.7	29.2	32.0	26.9	19.6	30.9	33.3

Mpumalanga	4.6	5.7	8.3	10.7	8.2	7.1	7.3	17.6	18.0	18.9
Limpopo	8.3	7.1	14.3	13.6	8.4	7.7	9.2	7.6	9.0	6.1

Source: Calculated from Quantec Easydata

The shares of district litchi exports to total Western Cape provincial litchi exports are presented in Table 3. In 2019 the leading exporter of litchis in the Western Cape was the Cape Winelands district with 77.9%. It was followed by the City of Cape Town at 18.9%.

Table 3: Share of district litchi exports to the total Western Cape provincial litchi exports (%), 2010 - 2019

Years District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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	6.3	3.5	15.7	21.4	30.8	23.0	15.3	48.8	21.3	18.9
West Coast	0.5	0.2	0.1	2.6	0.7	0.0	0.0	0.0	0.0	0.0
Cape Winelands	12.5	31.7	67.7	66.2	62.6	72.5	82.6	47.8	77.2	77.9
Overberg	80.3	64.5	16.4	9.7	6.0	4.3	1.9	3.4	1.6	2.4
Eden	0.3	0.1	0.1	0.3	0.0	0.2	0.2	0.0	0.0	0.0

Source: Calculated from Quantec Easydata

Table 4 shows the shares of district litchi exports to the total Eastern Cape provincial litchi exports for the period 2010 to 2019. During the last ten years the Eastern Cape only recorded exports of litchi in 2010 from Cacadu municipality and in 2013 and successive years between 2015 and 2019 mainly from the Nelson Mandela metro.

Table 4: Share of district litchi exports to the total Eastern Cape provincial litchi exports (%), 2010 – 2019

Years District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Eastern Cape	100.0	0.0	0.0	100.0	0.0	100.0	100.0	100.0	100.0	100.0
Cacadu	100.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Afred Nzo	0.0	0.0	0.0	0.0	0.0	0.0		62.6	0.5	0.0
Nelson Mandela Metropolitan	0.0	0.0	0.0	100.0	0.0	100.0	99.9	29.9	99.5	100.0

Source: Calculated from Quantec Easydata

The shares of district litchi exports to the total Gauteng provincial litchi exports are presented in Table 5. In Gauteng the contributions of the various districts to total provincial litchi exports are mainly distributed between Ekurhuleni and City of Johannesburg. In 2019, the leading district was Ekurhuleni with 65.2% share. It was followed by the City of Johannesburg at 31.1%. The two districts accounted for 96.2% of the total value of litchi exports recorded by Gauteng during 2019. The City of Tshwane also contributed 3.8% in 2019.

Table 5: Share of district litchi exports to the total Gauteng provincial litchi exports (%), 2010 - 2019

Years District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Years District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
West Rand	0.0	0.0	0.3	0.1	0.4	0.3	0.1	0.1	0.0	0.0
Ekurhuleni	34.5	41.9	48.7	53.5	53.3	42.8	47.1	16.1	16.0	31.1
City of Johannesburg	55.2	49.4	44.5	40.2	37.0	40.0	41.7	71.4	78.5	65.2
City of Tshwane	10.3	8.6	6.4	6.2	9.3	16.9	11.0	12.4	5.5	3.8

Source: Calculated from Quantec Easydata

The leading exporter of litchis in Kwazulu Natal is the eThekwini metropolitan municipality (see Table 6). The remaining of litchi exports (0.7%) recorded in Kwazulu Natal during 2019 was from the Umgungundlovu municipality. The major exports (99.3%) came from eThekwini metropolitan municipality during 2019. Between 2010 and 2015, eThekwini municipality was the only litchi exporter in Kwazulu Natal province.

Table 6: Share of district litchi exports to the total Kwazulu Natal provincial litchi exports (%), 2010- 2019

Years District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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	0.0	0.0	0.0	0.0	1.5	2.4	0.0	0.0
Umgungundlovu	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.7
Uthukela	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
eThekwini	100.0	100.0	100.0	100.0	100.0	100.0	98.5	97.6	98.1	99.3

Source: Calculated from Quantec Easydata

Table 7 presents the shares of district litchi exports to total Limpopo provincial litchi exports for the period 2010 to 2019. The leading litchi export district in Limpopo is Mopani. The district accounted for all (96.7%) litchi exports recorded in Limpopo in 2019. The remaining litchi exports were recorded by Sekhukhune district.

Table 7: Share of district litchi exports to total Limpopo provincial litchi exports (%), 2010 -2019

Years District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Limpopo	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mopani	0.0	100.0	96.4	100.0	100.0	99.1	95.8	99.0	98.6	96.7
Vhembe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capricorn	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Waterberg	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greater Sekhukhune	0.0	0.0	0.0	0.0	0.0	0.9	4.2	1.0	1.4	3.3

Source: Calculated from Quantec Easydata

In 2019, the Ehlanzeni district contributed almost all (99.5%) exports of litchis from Mpumalanga province (see Table 8).

Table 8: Share of district litchi exports to total Mpumalanga provincial litchi exports (%), 2010 - 2019

Years District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Mpumalanga	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gert Sibande	0.7	0.1	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0
Nkangala	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.8	1.0
Ehlanzeni	99.3	99.9	99.9	99.8	100.0	100.0	99.5	99.6	99.2	99.1

Source: Calculated from Quantec Easydata

The leading export district for litchis in the Free State is the Thabo Mofutsanyane district (see Table 9). All litchi exports recorded in the Free State in 2012 and 2013 were from the Xhariep district municipality. However, in 2014, the litchi exports recorded were from Thabo Mofutsanyane and Mangaung district municipalities. In 2015, Lejweleputswa district was the leading contributor to Free State province's litchi export. In 2019, Xhariep was the main contributor to litchi exports from the Free State province at 37.5%. It was followed by Lejweleputswa (31.8%) and Thabo Mofutsanyane districts (25.9%)

Table 9: Share of district litchi exports to total Free State provincial litchi exports (%), 2010 -2019

Years District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Free State	0.0	0.0	100.0	100.0	0.0	100.0	100,0	100.0	100.0	100.0
Lejweleputswa	0.0	0.0	0.0	0.0	0.0	61.4	24.3	19.3	21.4	31.8
Xhariep	0.0	0.0	100.0	100.0	14.7	14.1	43.3	48.6	54.6	37.5
Thabo Mofutsanyane	0.0	0.0	0.0	0.0	11.9	9.5	21.6	29.4	23.2	25.9
Mangaung	0.0	0.0	0.0	0.0	73.2	14.9	10.8	2.7	0.8	4.8

Source: Calculated from Quantec Easydata

The shares of district litchi exports to total North West provincial litchi exports are presented in Table 9. Almost all (97%) litchi exports recorded in the North West province during 2019 were from the Bojanala district. .

Table 10: Share of district litchi exports to total North West provincial litchi exports (%), 2010 - 2019

Years District	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
North West	100.0	0.0	0.0	0.0	100.0	100.0	100.0	100.0	100.0	100.0
Bojanala	100.0	0.0	0.0	0.0	100.0	2.1	2	12.6	27.1	96.7
Dr. Kenneth Kaunda	0.0	0.0	0.0	0.0	0.0	0.0	94.6	0.9	72.9	3.3
Ngaka Modiri Molema	0.0	0.0	0.0	0.0	0.0	97.9	3.4	86.5	0.0	0.0

Source: Calculated from Quantec Easydata

2.5 Imports

South Africa is not a major importer of litchis, indicating that the country is self-sufficient in terms of litchis. In 2019 South Africa imported a total of 124 tons of litchis worth over R1.6 million. Approximately 92% (114 tons) of the total litchi imports came from Mozambique, while 8% (9 tons) came from Madagascar. South Africa's imports represented 0.01% of world litchi imports in 2019 and its ranking in the world was number 99. Litchi imports decreased from 740 tons in 2018 to 600 tons during 2019, a 19% decrease.

2.6 Litchi harvesting and post-harvest treatment

2.6.1 Harvesting

Picking of litchis must be done selectively during the early season to ensure that only mature fruit are harvested. Picking must then be repeated at regular intervals during the harvest season. Whole clusters are picked from trees when uniform ripeness is achieved. When removing litchis from the tree, approximately 3mm of the pedicel must remain on the fruit to prevent skin splitting. Harvesting must take place during the coolest part of the day, whenever possible. In practice however, this is sometimes not possible due to large quantities of fruit that ripen at the same time. This is also dependent on the number of labourers available as well as the size of the crop.

It is critical to keep harvested fruit and loaded vehicles out of the sun in order to minimise heating as this causes premature browning of the skin. During transport, loaded vehicles may be covered with wetted hessian material or light coloured tarpaulins to prevent heating and sun injury. Litchis must not be picked wet and care must be taken to ensure that the fruit have dried sufficiently in the morning before harvesting commences. Like any other fruit, litchis are firstly sorted in terms of size after harvesting. Export fruit must have a minimum diameter of 30mm and all low quality fruit must be removed. Specific quality standards must be met depending on the market to be serviced. The quality criteria include dark blemishing, insect damage, torn fruit, undeveloped and double fruit, mould infections, and incompletely sulphured fruit.

2.6.2 Post-harvest treatment

The pericarp of the litchi fruit deteriorates rapidly once harvested. The fruit loses its red colour and turns brown within a few days at room temperature. Skin browning is responsible for loss of aesthetic attraction and low temperature is essential to prevent this. Low temperature entails keeping the fruit at 1˚C and is the most effective means of facilitating long-term storage as it prevents excessive moisture loss and help fruit retain skin colour. Mould may however still develop and any break in the cold chain will speed up the oxidation reactions. Unfortunately, cold storage alone is not enough to retain the colour and prevent spoilage in fruit and some producers effectively use a combination of low temperature, high humidity and plastic packaging to control browning on fruit sold on local markets.

2.6.3 Litchi drying

As with other agricultural crops, it is important to develop processed products if additional marketing opportunities are to be created. Intact dried litchis are a well-known commodity in China and vast quantities are annually processed for the Chinese market. In South Africa the cultivar found to dry into a tastier dried product is McLean's Red. A drying temperature around 55˚C for approximately 3 weeks is the most appropriate drying regime. Fruit with a moisture content of 20 – 30% has a raisin-like taste. The characteristics of the international processed fruit market and the fresh fruit export orientation of the local industry indicate it most sensible to develop a high quality product aimed at the local

tourist market as well as export markets. The dried product must be appropriately packed and labelled to ensure attractiveness in the eyes of the final consumers.

3. GROWTH, VOLATILITY & STABILITY ANALYSIS

Table 12 presents the results of growth and coefficient of variation estimations. They were calculated using yearly statistics and covered the same ten-year period under review beginning in 2010 and ending in 2019. The coefficient of variation is a measure of volatility or stability. When the coefficient of variation is less than one, the variable in question is said to be relatively stable, meaning that there were minimal changes. When the coefficient of variation is more than one, it is said to be volatile, meaning there were major changes during the period under review.

Table 1: Litchi industry growth rates & variation coefficients (2010 – 2019)

Category	Subcategory	Growth Rate (%)	Coefficient of Variation
Production	Gross Value (GV)	12.27	0.47
	Volume	1.88	0.18
Sales at NFPMs	GV/Price	8.69	0.28
	Volume	-3.82	0.25
Export	Gross Value	7.36	0.27
	Volume	5.79	0.22
Import	Gross Value	1.76	0.52
	Volume	0.21	0.26

Source: Calculated from data from Statistics and Economic Analysis, DAFF and Quantec

As shown in Table 12 above, the litchi industry experienced a positive growth rate from 2010 to 2019 in terms of values while with the exception of production volumes of sales at the NFPMs and exports volumes which experienced negative growth over the same period.

Table 12 also shows various levels of volatility at different levels of the litchi industry's yearly figures over the same period (2010 to 2019). Low volatility was indicated by the coefficients of variation that were less than one (<1). All variables have values less than 1, which means that on a weighted variance scale, they displayed minimal changes during the ten years under review.

4. MARKET INTELLIGENCE

In South Africa the earliest HLH Mauritius fruit is usually harvested during early- to mid-November. This is in direct competition with Madagascar's production, which is marginally earlier than that of South Africa. Given the fact that both countries export litchis mainly to Europe, there is therefore a scramble to reach the European market with air-freighted fruit from South Africa and Madagascar. In spite of air-freight costs being over eight times higher than sea-freight, good returns can be made earlier in the season. Air exports can account for up to 25% of South African litchi exports during certain years. The average distance of importing countries is 6 727 km and the export concentration is 0.1

However, as soon as volumes reach the European market with the first sea shipments, prices drop rapidly. It takes about 2 days for South African litchis to reach France by air. The fruit reaches the same destination in approximately 26 days by sea. In the European Union, South African litchis have gained a significant market share in Netherlands and United Kingdom while losing greatly in the Irag market. Exports into the United Kingdom market increased from 0 tons in 2010 to 1 559 tons in 2019, an increase of 100%. Countries such as Vietnam, Thailand and China are increasing their market shares in world markets in which South Africa is losing.

The distance to the EU, 11 200 km, is a major constraint affecting South African exports. Due to the amount of time that the fruit spend en route when transported via sea, the impact of extended storage time can be highly significant when it comes to quality, and it is up to the producer/exporter to ensure that adequate controls are in place. In 2019 South Africa's litchi exports represented 0.8% of world exports and its ranking in the world was number 19. Growth in demand for South African litchis in 2019 is depicted in Figure 20.

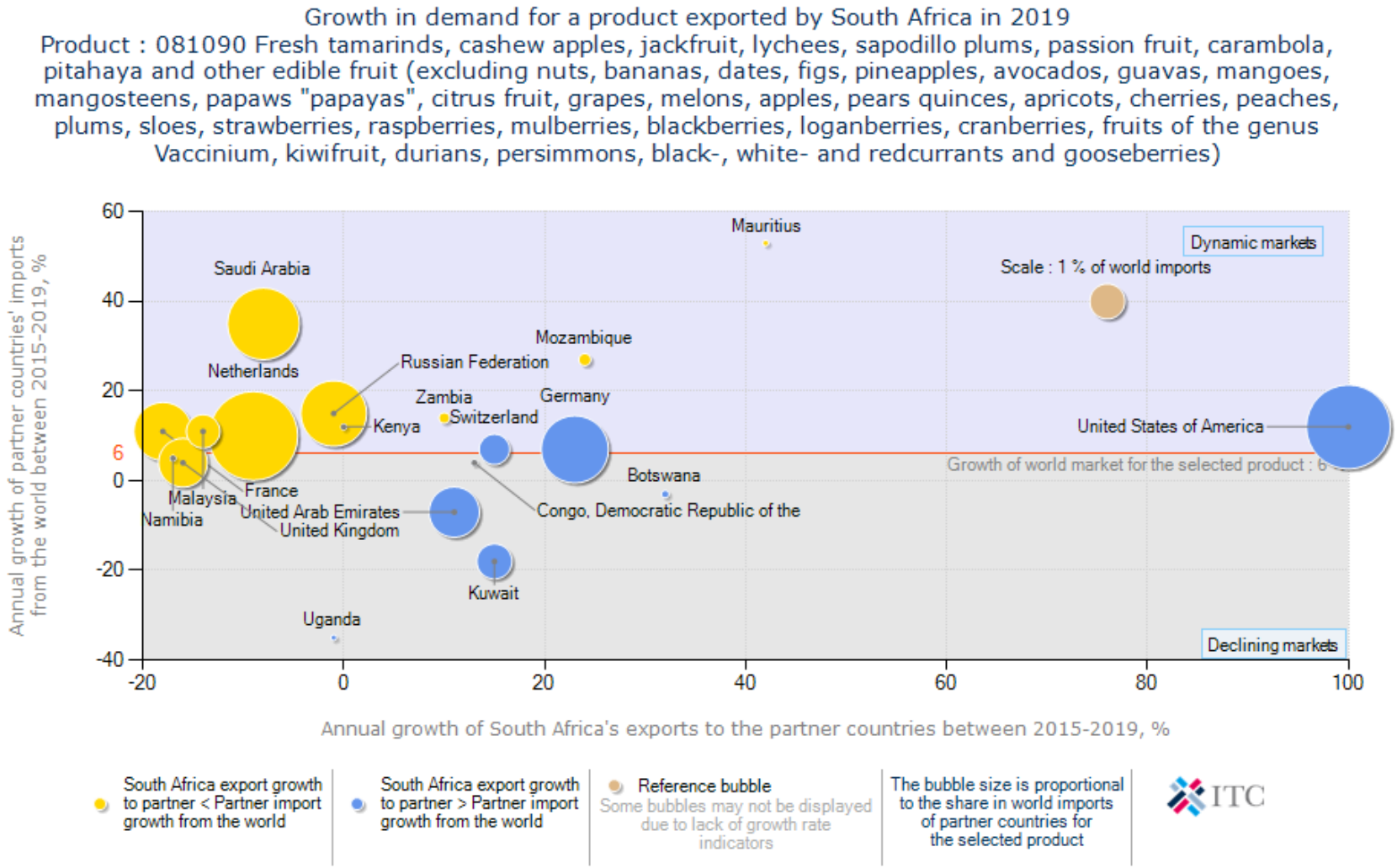
It is evident from Figure 20 that South African exports of litchis are growing faster than the world imports in Switzerland, Germany and United States of America. South Africa's performance in these markets can be regarded as gains in dynamic markets.

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

At the same time South African litchi exports have declined faster than world imports in Kuwait and UAE. South Africa's performance in these markets can be regarded as losses in declining markets.

South Africa's litchi exports have been declining while world's imports are increasing faster Saudi Arabia and Mozambique. South Africa's performance in these markets can be regarded as underachievement.

Figure 18: Growth in demand for South Africa litchis in 2019



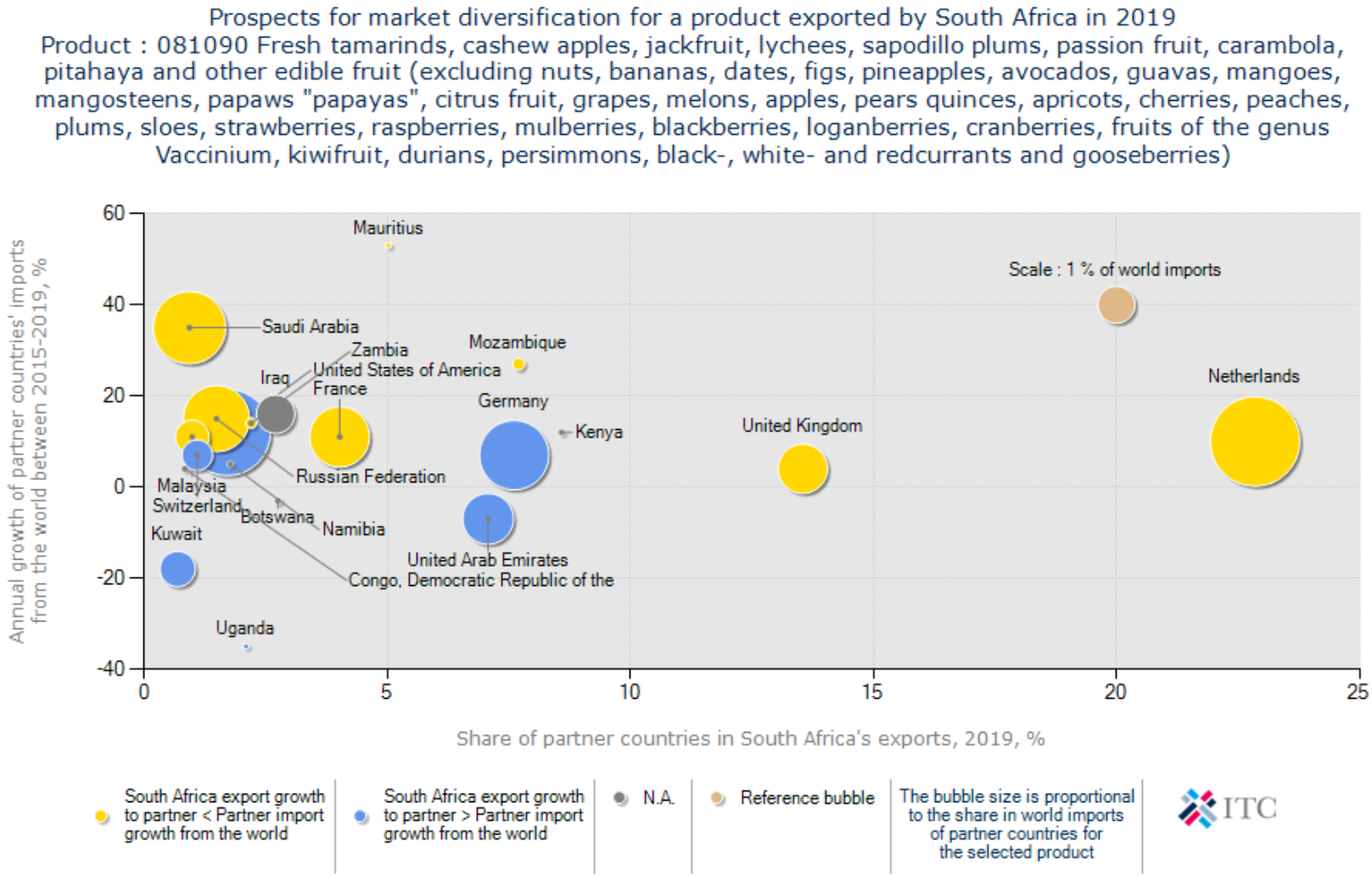
Source: TradeMap, ITC

Prospects for market diversification by South African litchi exporters are illustrated in Figure 22. The United Kingdom, Netherlands and Kenya hold a bigger market share of South African exports of litchis. In terms of market size, China was the largest litchi importer in 2019 with just over US$918 million (961 million tons) worth of litchi imports, or roughly 26.9% of the world litchi market. Second was Netherlands with just over US$238 million (78 768 tons) worth of litchi imports or roughly 7% market share. USA is followed by Netherlands with just over $216 million (222 477 tons) worth of litchi imports or roughly 6.3 market share. It is interesting to note that exports of litchi in China fetch lower unit prices (USS$855 per ton), than in Netherlands ($3 023 per ton).

Whilst three countries dominate world litchi imports, it is interesting to note that countries like Oman together with Mauritius and Portugal experienced higher annual growth rates in terms of litchi imports from 2015 – 2019. Oman experienced an annual growth rate of 100% while Mauritius and Portugal experienced annual growth rates of 51% and 26% respectively. These countries represent future potential markets for South African litchi exports.

It is also important to note from Figure 21 that litchi imports from the world to countries such as Malaysia, Seychelles and Canada have declined between 2015 and 2019 and as a result, these countries have recorded negative growth in terms of litchi imports from the world.

Figure 19: South African litchis' prospects for market diversification in 2019



Source: TradeMap, ITC

5. MARKET ACCESS

Under the World Trade Organisation (WTO) market access for goods means the conditions, tariff and non-tariff measures, agreed by members for the entry of specific goods into their markets. Tariffs commitments for goods are set out in each member's schedules of concessions on goods. The schedules represent commitments not to apply tariffs above the listed rates, also known as bound rates. 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 fruits (including litchi) employ 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 WTO. Tariffs on all agricultural products are now bound. Almost all import restrictions that did not take the form of tariffs, such as quotas, have been converted to tariffs through a process called tariffication. This has made markets more predictable for agriculture. Previously more than 30% of agricultural produce had faced quotas or other import restrictions. The percentage is now under five. Nevertheless, exporters need to be aware of all the barriers that they may encounter when trying to get produce onto foreign shelves.

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 12 presents tariffs applied by the leading export markets to litchis originating from South Africa in 2019. Tariffs applied by European Union member states to litchis originating from South Africa are clustered into one category under European Union. During 2019 the EU member states appeared in the list of leading markets were the Netherlands, United Kingdom, France, Italy, Germany, Russia, Belgium, Switzerland and Spain.

Table 13: Tariffs applied by leading export markets to litchis from South Africa in 2019

COUNTRY	HS CODE	PRODUCT DESCRIPTION	TRADE REGIME	APPLIED TARIFFS	TOTAL AD VALOREM EQUIVALENT TARIFF
European Union	0810907530	Fresh tamarinds, cashew apples, leeches, jackfruit, sapodillo plums, passion fruit, carambola and pitahaya	MFN duties (Applied) Preferential tariff for South Africa	8.80% 0.00%	8.80% 0.00%
	0810907550	Fresh tamarinds, cashew apples, leeches, jackfruit, sapodillo plums, passion fruit, carambola and pitahaya	MFN duties (Applied) Preferential tariff for South Africa	8.80% 0.00%	8.80% 0.00%
	0810907560	Fresh tamarinds, cashew apples, leeches, jackfruit, sapodillo plums, passion fruit, carambola and pitahaya	MFN duties (Applied) Preferential tariff for South Africa	8.80% 0.00%	8.80% 0.00%
	0810907590	Fresh tamarinds, cashew apples, leeches, jackfruit, sapodillo plums, passion fruit, carambola and pitahaya	MFN duties (Applied) Preferential tariff for South Africa	8.80% 0.00%	8.80% 0.00%
USA	08109046	Fruit, not elsewhere specified or included, fresh	MFN duties (Applied) Preferential tariff for GSP countries	2.20% 0.00%	2.20% 0.00%
Egypt	08109000	"Fresh tamarinds, cashew apples, jackfruit, leeches, sapodillo plums, passion fruit, carambola, pitahaya and other edible fruit (excl. nuts, bananas, dates, figs, pineapples, avocados, guavas, mangoes,	MFN duties (Applied)	10.00%	10.00%

COUNTRY	HS CODE	PRODUCT DESCRIPTION	TRADE REGIME	APPLIED TARIFFS	TOTAL AD VALOREM EQUIVALENT TARIFF
		mangosteens, papaws papayas"", citrus fruit, grapes, melons, apples, pears quinces, apricots, cherries, peaches, plums, sloes, strawberries, raspberries, mulberries, blackberries, loganberries, cranberries, fruits of the genus Vaccinium, kiwifruit and durians)"""			
Singapore	08109020	Lychees fresh	MFN duties (Applied)	0.00%	0.00%
United Arab Emirates	08109090	Other fruit, fresh: Other: Other	MFN duties (Applied)	0.00%	0.00%
Switzerland	08109092	Autres fruits, frais: durians: autres: fruits tropicaux	Preferential tariff for SACU countries	0.00%	0.00%
	08109098	Other fruit, fresh: other: other	Preferential tariff for SACU countries	0.00%	0.00%
Seychelles	08109090	Fruits, fresh nes	General tariff	15.00%	15.00%
Kenya	08109000	Other fruit, fresh: Other	MFN duties (Applied)	25.00%	25.00%
Mozambique	08109000	"Frutas frescas (excepto frutas de casca rija, bananas, tâmaras, figos, ananases ""abacaxis"", abacates, goiabas, mangas, mangostões, papaias ""mamões"", citrinos, uvas, melões, melancias, maçãs,	Preferential tariff for South Africa MFN duties (Applied)	0.00% 20.00%	0.00% 20.00%

COUNTRY	HS CODE	PRODUCT DESCRIPTION	TRADE REGIME	APPLIED TARIFFS	TOTAL AD VALOREM EQUIVALENT TARIFF
		pêras, marmelos, damascos, cerejas, pêssegos, ameixas, abrunhos, morangos, framboesas, amoras, amoras-framboesas, airelas, mirtilos, frutas do género ""Vaccinium"", kiwis e duriangos)"			
Hong Kong	08109010	Other fruit, fresh: Other: Lychees	MFN duties (Applied)	0.00%	0.00%

Source: Market Access Map, ITC

As can be seen in Table 12, South African litchis enjoyed free market access in all the top ten markets during 2014. South Africa has a preferential trading agreement with the European Union through the trade chapter in the Trade Development and Cooperation Agreement (TDCA). The review of the agreement under the auspices of the Economic Partnership Agreement (EPA) negotiations between SADC and the EU broadened the scope of product coverage. The agreement covers countries such as the Netherlands, France, United Kingdom, Germany, Belgium, and Italy. It can be observed from the table above that South African litchis enter the European Union duty-free. The United States of America also has a preferential tariff for GSP countries for which South African litchis qualify. Egypt, Seychelles and Kenya impose tariffs of 10%, 15% and 25% ad valorem respectively to litchis originating from South Africa. Mozambique also applies a preferential tariff to litchis from South Africa through which South African litchis enter duty-free. Switzerland also has a preferential trade agreement with SACU member states through which litchis from SACU member states enter Switzerland on a duty-free basis. South African litchis also enter Singapore, United Arab Emirates and Hong Kong on a duty-free basis.

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.

6. DISTRIBUTION CHANNELS IN EXPORT MARKETS

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 fruits 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.

Some 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 (EUREGAP, etc.) and the year round availability of fruit, the planning of long term contractual relationships is expected to increase.

7. LOGISTICS

7.1 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 that have special capabilities in handling fruit produce (for example Durban's new fruit terminal).

7.2 Cold chain management

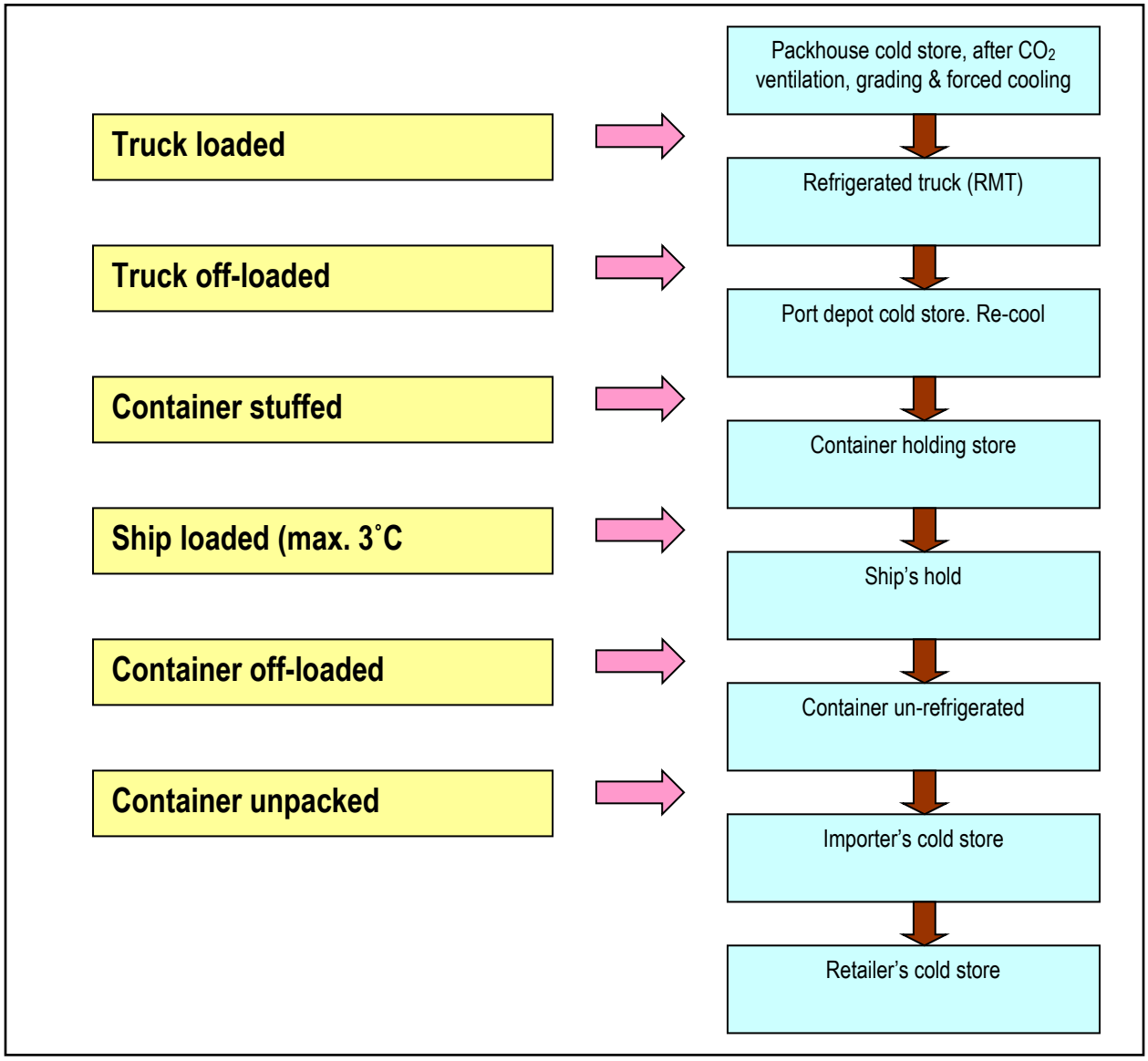
Cold chain management is crucial when handling perishable products, from the initial packing houses to the refrigerated container trucks that transport the produce to the shipping terminals, through to the storage facilities at these terminals, onto actual shipping vessels and containers, and finally on to the importers and distributors that must clear the produce and transport it to the markets/retail outlets. Related to this are increasing important traceability standards which require an efficient controlled supply chain and internationally accepted business standards.

It must be borne in mind that the main South African litchi production areas are over 1 000 km from the nearest suitable port, Cape Town. Careful controls are therefore required at all points in the cold chain. For example, fruit pulp temperatures are measured at packhouses by Perishable Products Export Control Board (PPECB) inspectors prior to loading into refrigerated motor trucks (RMTs). The RMTs themselves must meet the following standards:

- Registered with PPECB (thermocouple in delivery);
- Correct air circulation system used;
- Temperature control system and calibration approved;
- Temperature recorders and thermocouples functional;
- Integrity of insulation tested regularly;
- Cleanliness;
- Pre-cooling of product and cargo box recorded;
- Procedure of loading monitored;
- Written instructions given;
- Communication of delays, temperature deviations, etc.

The cold chain, as applied for exports of litchis from South Africa, is illustrated in Figure 23. It is unfortunate that in spite of all measures put in place, many problems still arise. For example, if temperatures rise above the required levels when products are being transported, this could lead to delays while products are re-cooled. Re-cooling is an additional expense and significant weight loss occurs in the re-cooled fruit. This results in soft fruit which is susceptible to fungal attack. In order to monitor such problems, the Subtropical Fruit industries persuaded the PPECB to appoint a technical officer who monitors port problems and reports back directly to the relevant industries.

Figure 23: The cold chain (1˚C - 2˚C) as applied for South African exports



Source: ARC-ITSC

7.3 Packing and palletizing

Export fruit are packed in 2 kg (plus an additional 100 g added to cover weight loss for airfreight and 150 g for sea freight) cartons. The cartons must be well ventilated to ensure the gradual dissipation of SO_2 from the pericarp and the pulp. The size and layers within the pallet are normally specified by the exporter. The Capespan pack-house guide prescribes pallet dimensions of 1 114 x 1 110 mm.

Wooden pallets should be dry and free of bark and mould growth, as this may pose a phyto-sanitary risk to importing countries. Twenty four boxes are parked per layer and each pallet consists of 18 layers, resulting in 432 boxes per pallet. After palletization, each individual pallet is force cooled to ensure that the boxes in the middle of the pallet are cooled too and kept at 1˚C. If not properly cooled, fruit in the middle of the pallet may spoil. The cold chain from the

pack-house, road transport and shipping must be maintained to ensure the landing of a high quality product to the consumer. Any break in the cooling chain may lead to fungal infection of a whole consignment.

8. ORGANISATIONAL ANALYSIS

8.1 The South African Subtropical Growers' Association (Subtrop)

As an association of associations, the South African Subtropical Growers' Association (Subtrop) manages the affairs of the South African Avocado (SAAGA), Mango (SAMGA), Macadamia (SAMAC), and Litchi (SALGA). The member associations have a voluntary membership that account for 85% of South Africa's avocado, mango, litchi, and macadamia production. Activities of the association are funded by its members through levies on local and export market sales. To this end, the association is involved in the following activities:

- Technical support and advisory services to its growers (play an important role in coordinating events such as study groups in order to assist growers to more efficient in their operations);
- Coordination of appropriate technical and market research;
- Provision of relevant market information with specialisation in areas such as export information and event management;
- Local and export market development through generic promotion;
- Liaison with government and other bodies both locally and abroad.

Although Suptrop is principally funded by growers other role players such as export companies are also members. Subtrop and other industry associations (CGA, Hortgro, SATI, and FPEF) recently formed an umbrella non-profit organisation for fruit industry in South Africa called Fruit South Africa (FSA). The organisation is aimed at representing all fruit organisations and address common issues in the fruit industry.

8.2 Strength, Weakness, Opportunities and Threats (SWOT) analysis

Some of the strengths, weaknesses, threats and opportunities of the litchi production sector in South Africa are presented in Table 13. Generally, the litchi industry can still expand and new markets be opened and exploited if sound fruits of the highest quality are produced and marketed.

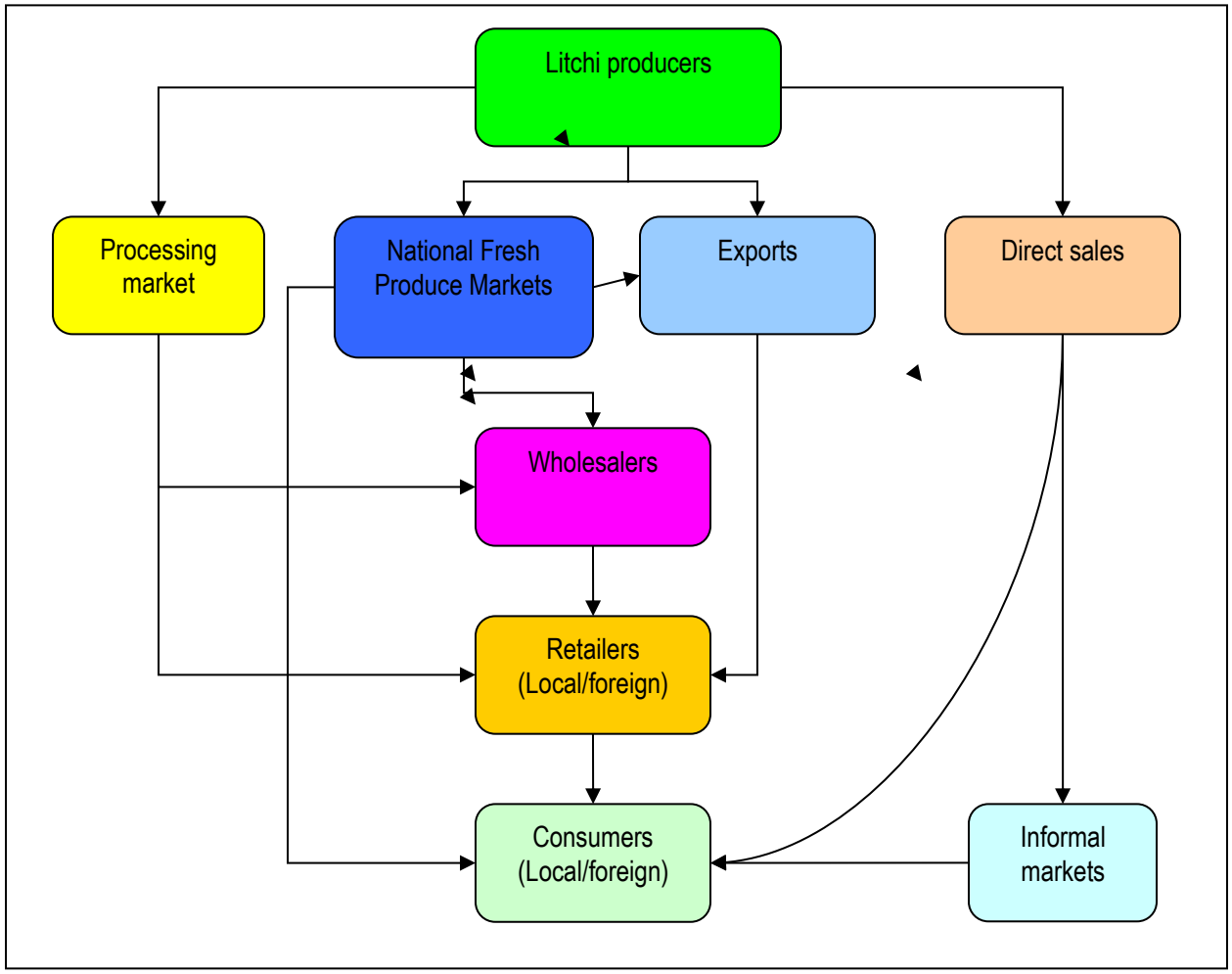
Table 14: SWOT analysis for litchis

Strengths	Weaknesses
• Generic promotion of the South African litchis through the quality mark (SALGA Quality Approved Litchis) has been successful. • The industry's export operations and leading players are well established. • Cooperation amongst the leading exporters has ensured that there is a constant supply to meet the basic requirement by the market. • The South African litchi industry has a strong reputation in major international markets. • The willingness by both the farmers and export agents to make available funds for market research.	• Production is largely dependent on climatic conditions which can only be partially manipulated by man through irrigation. • Relatively high input, labour and capital costs.
Threats	**Opportunities**
• Intense competition from Madagascar, Mauritius and Reunion in the lucrative European markets. • Port abilities and shipping cycles still pose a threat as delays can drastically reduce shelf life of litchis	• There is a strong demand in the Netherlands and the rest of Europe in their summer months. • Increasing demand from the canning sector present a potential for growth. • Thorough and continuous research by SALGA may lead to improved and better quality cultivars.

8.3 The litchi value chain

Figure 24 below shows the litchi value chain in South Africa. The main actors in the chain include input suppliers, litchi producers, processing companies (mainly juice and concentrates manufacturers and drying companies), national fresh produce markets (NFPMs), exporters (including agents), retailers (both local and foreign), hawkers (informal markets), wholesalers, and, most importantly final consumers. Some of the major players in the litchi value chain are discussed briefly below.

Figure 24: The litchi value chain



8.3.1 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.

8.3.2 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.

8.3.3 Fresh produce markets

FPMs are the dominant player and form of wholesaling in the South African litchi 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.

8.3.4 Retailers

South African litchi 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 litchi sales are at predetermined prices and are typically individually or in small packages.

7.3.5 Processors

As explained earlier, the processing of litchis mainly consists of canning, juice manufacturing and drying.

8.3.6 Cold storage operators and transporters

Cold storage operators are responsible for receiving, handling, cooling the litchis 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 flatbed 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.

8.3.7 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.

8.3.8 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 phytosanitary 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.

8.3.9 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.

9. ACKNOWLEDGEMENTS

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9.1 South Africa Subtropical Growers' Association/ South African Litchi Growers' Association
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9.3 National Department of Agriculture, Forestry and Fisheries
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www.daff.gov.za

9.4 International Trade Centre
www.trademap.org/ www.macmap.org

9.5 Quantec
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