A PROFILE OF THE SOUTH AFRICAN CANOLA MARKET VALUE CHAIN

2020

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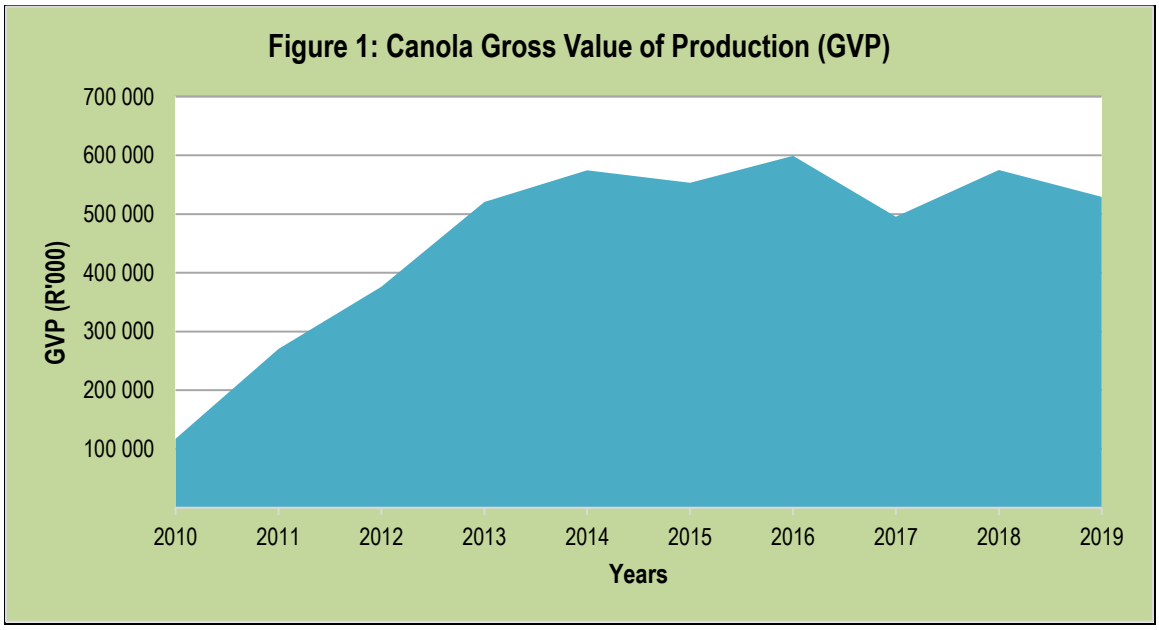
1. DESCRIPTION OF THE INDUSTRY

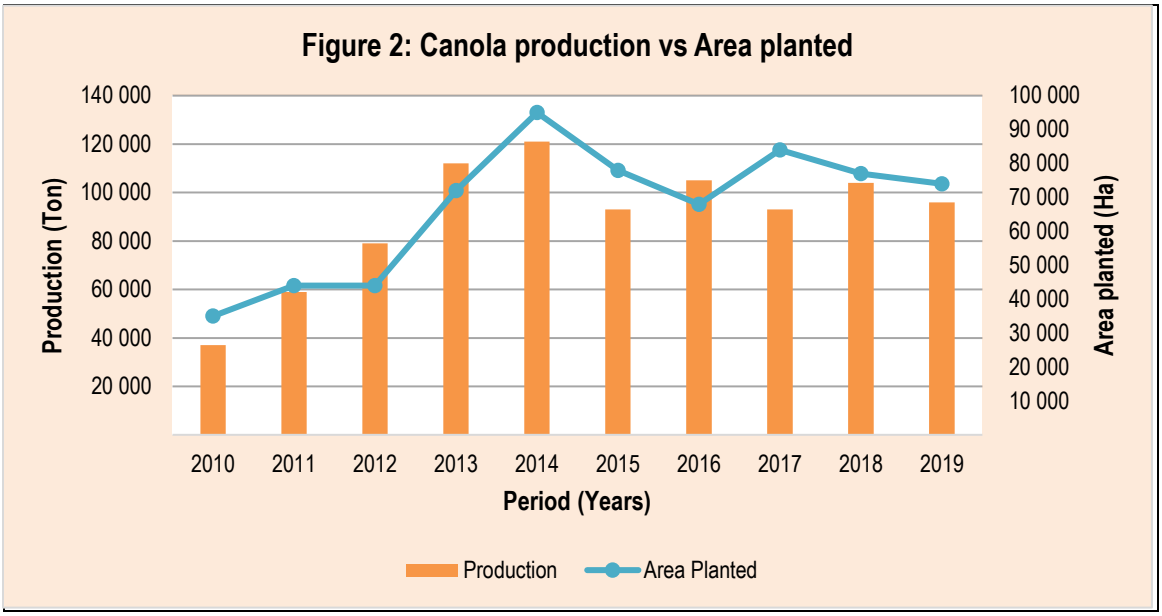
Canola, *Brassica Napus,* (also known as rape seed) is an oilseed crop that is mainly grown in the Southern Western Cape, with farmers in the other areas of South Africa such as North West and Limpopo Provinces also starting to plant Canola. The handling of Canola after being harvested is slightly more labour intensive as a result of the small pips. Road and rail trucks need to be sealed more tightly than other commodities in order to prevent losses in transit. Canola is primarily used for the manufacturing of canola oil and oil cake. The production of canola in South Africa, which on average is between 75 and 89 thousand tons per annum, is usually higher than the demand, although the local consumption requirements for canola has recently increased to around 93 453 tons per year, with the favourable prices being achieved. Canola is a good source of protein in animal feed and large quantities of protein for animal feeds have to be imported every year.



Source: Agricultural Statistics

Figure 1 above shows the gross value of canola production from 2010 to 2019. The gross value of production for canola was the lowest during the beginning of the period under review in 2010. However, from the year 2011, the gross value of canola production continued to show consistent and upward trends until the year 2019. This is attributable to the improved volumes of production as well as slightly improved producer prices during the same period. The highest level of GVP for canola was attained during the year 2016 due to an improved local production coupled with relatively higher prices. The GVP for canola decreased slightly during 2015 marketing season and this can be attributed to severe drought conditions that hampered production levels. During the year 2016, GVP for canola increased to a peak followed by a slight decrease during the 2017 marketing season mainly as a results of reduced production levels. Subsequently, the gross value of canola production continued with increasing trends during the marketing year 2018. The period under review closed with declining gross value of canola production during the year 2019.

Figure 2 and Table 1 below show the area planted to canola and the local production volumes for the past ten years. The period under analysis opened with the lowest area planted and volumes of canola production in 2010, which then further followed by a slight increase in production volume during the year 2011.



Source: Agricultural Statistics

Figure 2 shows that both area planted and volumes of canola production increased significantly between the years 2011 and 2014. This was followed by a drastic decline in both area planted and volume of canola production in 2015 and later increased in 2016 followed by another slight decrease in production volumes during 2017. However, to note is that due to a large increase in area planted during the year 2014, the local canola production peaked at 121 000 tons. This increase is about 227% higher compared to what was harvested during the year 2010 and 8% higher compared to what was produced during the year 2013. The canola production volumes dropped by 11% in 2017 when compared to 2015 and 2016 production season respectively. During the year 2018, canola production closed higher and increased by 11.8% as compared to the year 2017. The period under review closed with a declining trends for both domestic canola production and area planted in 2019.

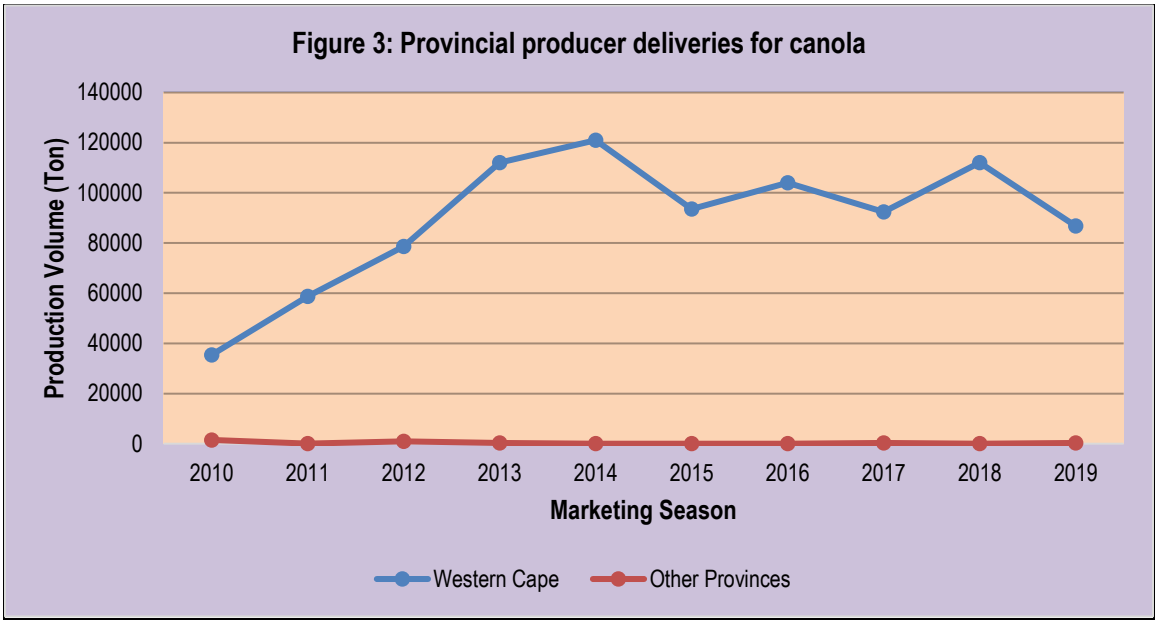
Table 1: Area Planted to Canola and the Local Production

Production Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Area Planted (ha)	34 820	44 000	44 000	72 000	95 000	78 000	68 000	84 000	77 000	74 000
Production (Tons)	36 900	59 000	80 000	112 000	123 000	98 000	105 000	93 000	104 000	96 000

Source: Agricultural Statistics

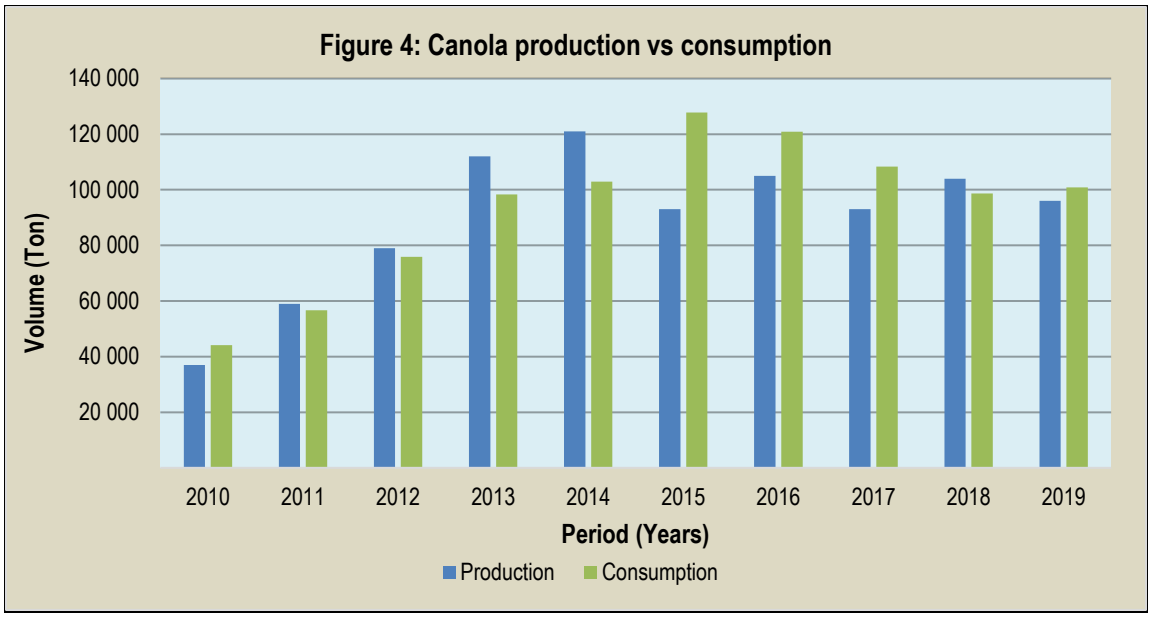
1.1. Production Areas

Canola oil seed crop is mainly grown in the Southern Western Cape, and farmers in the Northern areas such as North West Province and Limpopo are also expanding their agricultural practices towards the planting of canola crop. The South Western Cape is regarded as the commercial production area for canola seed crop because high capacity of canola supply originates from there.



Source: SAGIS

Figure 3 illustrates that Western Cape Province remains the major producer and supplier of canola in South Africa having contributed about 99.6% of South Africa's total canola supply during the year 2019. As a result of the Western Cape being the main producer and supplier of canola, the figure also shows that canola supply trends for the Western Cape, in most situations, reflect the trend for the rest of South Africa. The volume of canola supply from Western Cape begin lower during the opening of the marketing period in 2010 and later increased substantially from 2011/12 marketing season until the highest level were attained during the year 2014/15. This was followed by a slight decrease in canola supply during the 2015/16 marketing season. During 2016/17 marketing season, the supply of canola from Western Cape increased by 11.17% as compared to 2015/16 season. However, the period under review closed with decreasing trends for provincial producer deliveries for canola during the year 2019 and slightly lower as compared to the previous year 2017 and 2018 respectively.



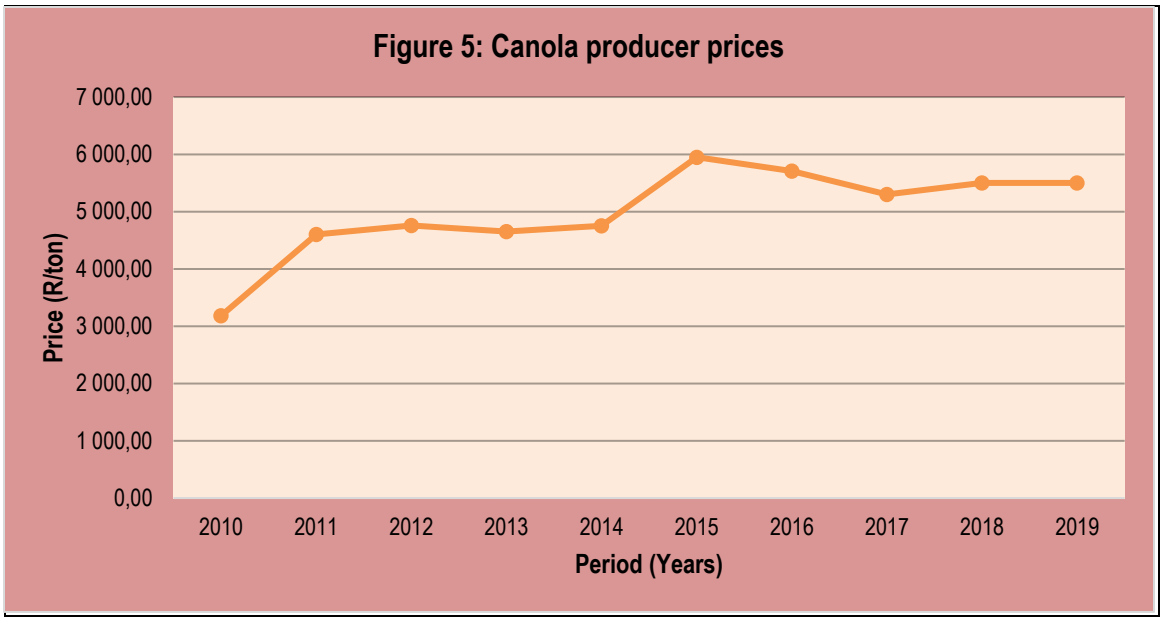
Source: Agricultural Statistics

Figure 4 above indicates that on average domestic canola production in South Africa is somehow below consumption volumes. In the local market, an average of 93 453 tons of canola is processed for various purposes each year, while local production averages 89 thousand tons per year. The figure indicates that the local consumption for canola is slightly above production even though this has not been the case throughout the period under review. There are only few incidences, such as the years between 2011 and 2014, where the local production for canola was more than consumption volumes but in general the local production is slightly lower than the local demand. The domestic canola production was much lower than the domestic consumption between the years 2015 and 2017, resulting in a shortage of 3 517 tons during that particular period. The period under review closed with lower production volumes for canola below the local consumption requirements during the year 2019.

2. MARKET STRUCTURE

2.1 Canola Domestic Producer Prices

Figure 5 and Table 2 below show canola producer prices in Rand/ton given for the production period 2010 to 2019. The canola industry has been experiencing some fluctuations in producer prices for the past ten years due to limited production in the country and less supply in the market. The figure indicates that the period under analysis began with lower-than average producer prices for canola during the year 2010, which later increased in 2011. The highest price was attained during the year 2015 (R5 950/ton) while the lowest (R3 182.04/ton) was experienced during the year 2010.



Source: Agricultural Statistics

The graph also illustrates that canola producer prices have stayed constant above average price since 2015, till the end of the marketing period in 2019. The closing price (during the year 2019) for canola was R5 503/ton, which is 73% higher compared to the opening price during the year 2010 and constant to the canola price attained in 2018. This represents a significant increase in the levels of canola prices over the past ten years.

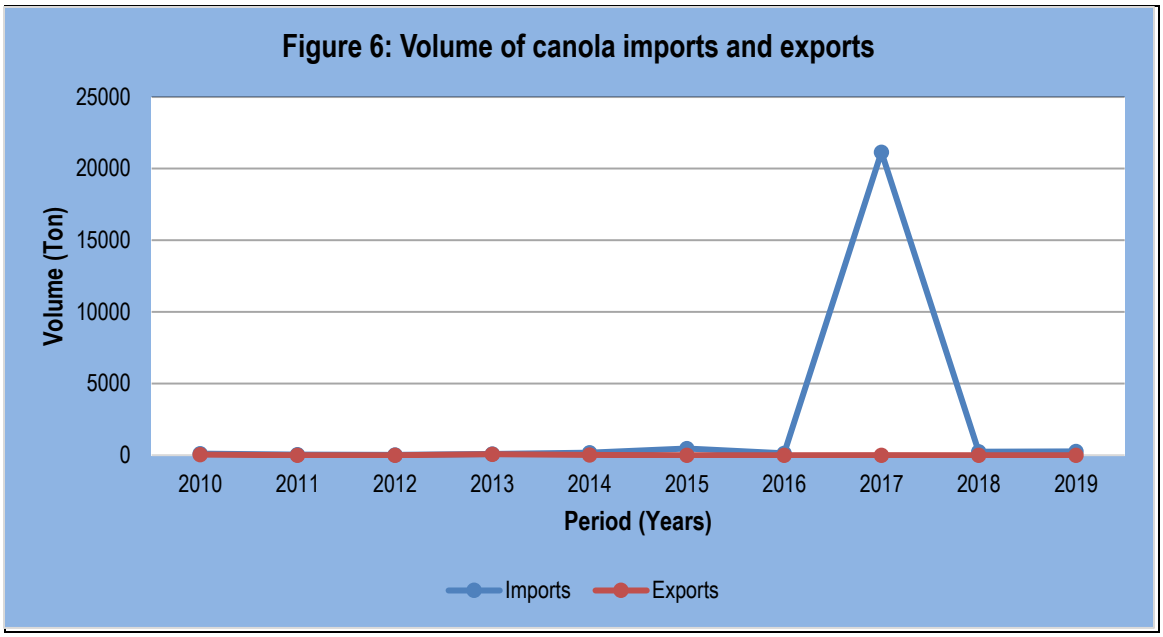
Table 2: Canola producer prices

Production Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Producer Prices (R/ton)	2 700.00	3 449.94	4568.84	4760.66	4750.00	5400.00	5200.00	5 300.00	5 417.34	5503.50

Source: Agricultural statistics

2.2 Imports and Exports

Provided the lower levels of local canola production, South Africa has been a net importer of canola over the past ten years. South Africa has, over the past ten years, exported an average of 15 tons of canola per annum and imported 2 268 tons annually.

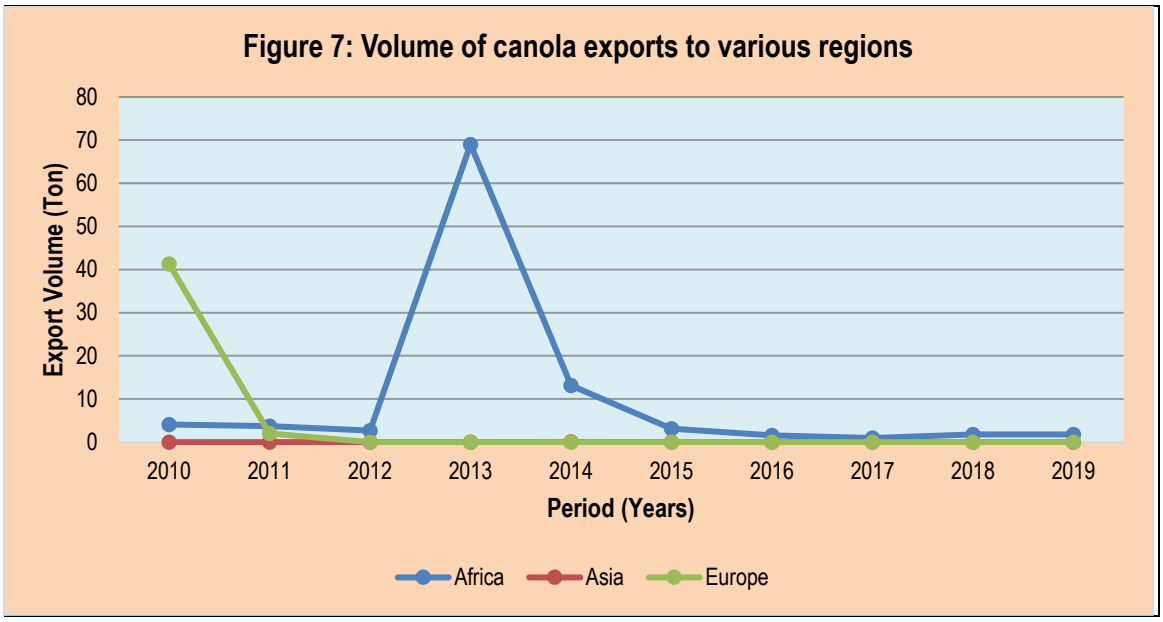


Source: Quantec Easy Data

Figure 6 show that volumes of canola exports from South Africa to other regions were lower and unreliable over the past ten years, mainly as a result of lower levels of local production. 5n terms of imports, the period under review began with relatively lower imports of canola from 2010 up until 2016. The record highs on imports was attained during the year 2017 (21 160 tons), while the lowest was attained in 2012 (21 tons). Both imports and exports of canola remained at moderate levels (below 100 tons) during the years 2011, 2012 and 2013 respectively. In general, as seen in Figure 6, canola trade in South Africa is quite low, owing to lower levels of domestic production and utilization in the country. During the end of the respective marketing season in 2018 and 2019, both canola exports and imports were at relatively low levels compared to the year 2017.

2.2.1. Canola/rape seed exports

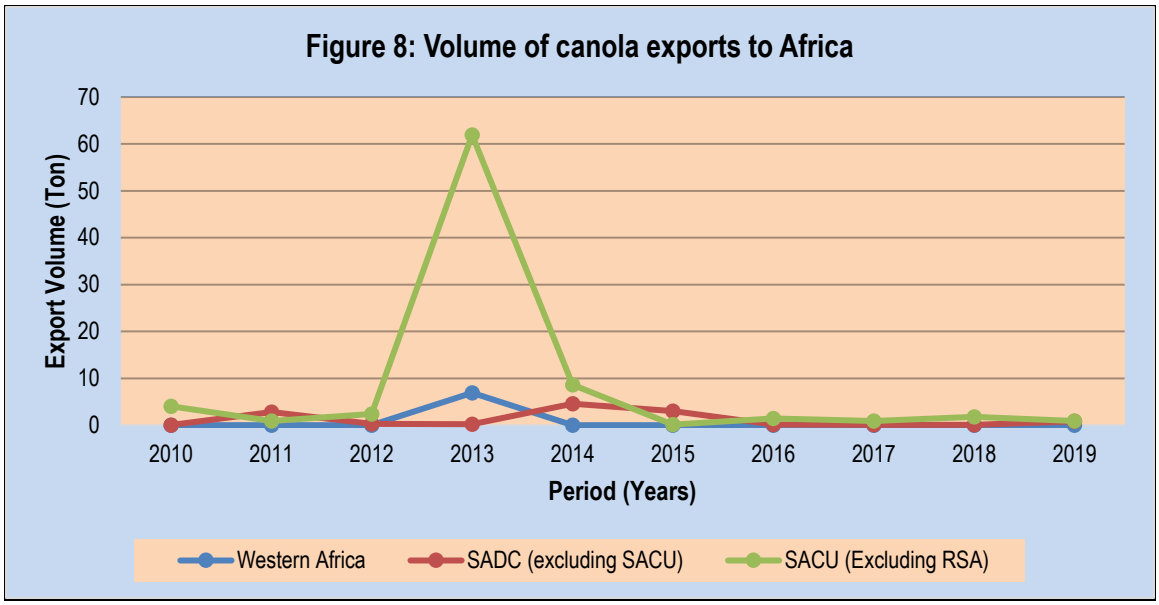
The following figure (Figure 7) shows the volumes of canola exports from South Africa to various regions in the world between the year period 2010 and 2019.



Source: Quantec Easy Data

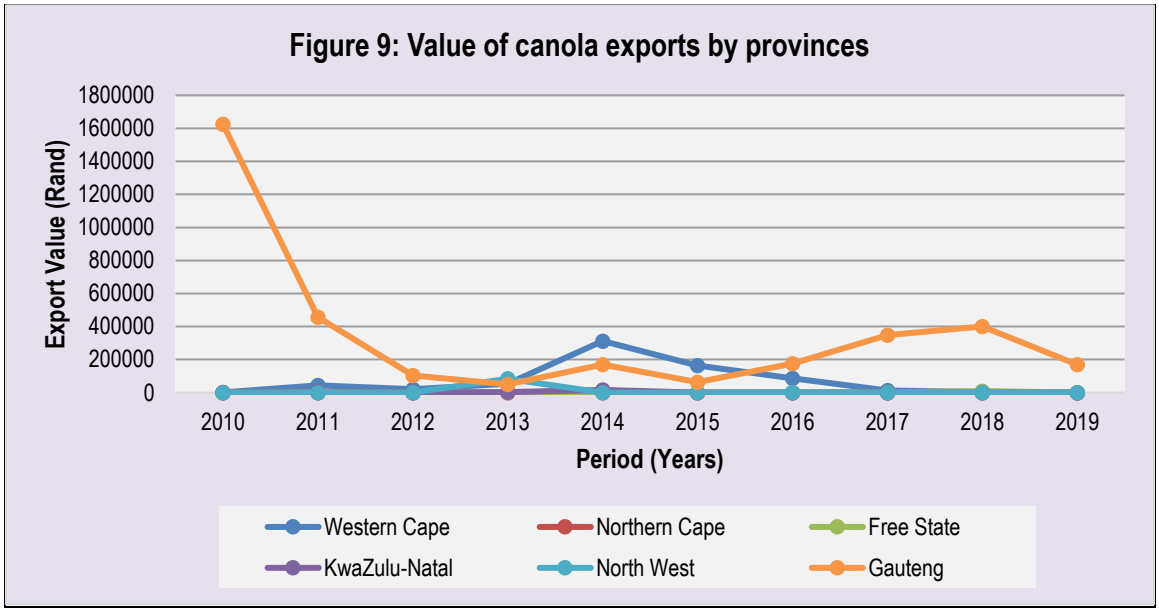
Figure 7 shows the volume of canola exports to various regions in the world between 2010 and 2019. The figure shows that canola exports from South Africa is destined mainly to two continents, Europe and Africa. Furthermore the figure indicates that on average, volumes of canola exports to Europe and Africa were less than 20 tons for the past decade. The figure also shows that the majority of South Africa's canola exports are bound for the African market, whereas exports to Europe remained at low levels throughout the period under analysis South Africa is by far the largest producer of canola in Africa while Europe is the largest producing continent in the world. This explains why most of South Africa's canola exports are destined for other African countries while exports to Europe are minimal. The period under review closed with lower levels of canola exports to both Europe and Africa in 2019.

Figure 8 below provide an overview of canola exports from South Africa to the African region between the period 2010 and 2019. The figure indicates that in Africa, SACU region remained the major market for South African canola throughout the period under analysis, followed by SADC region. Additionally, on the African continent, South Africa also export its canola to the Western Africa, although very much insignificant volumes. In the SADC region, South Africa exports most of its canola to countries such as Mozambique, Zimbabwe, Zambia, DRC and Malawi. The fact that South Africa is in close proximity to these countries, the SADC Free Trade Agreement as well as the fact that South Africa is the only major producer of canola in the SADC gives South Africa an advantage as a supplier of canola in the SADC region. Exports of canola to the African continent were very low for most part of the period under review, and more particularly during the years 2010, 2011 and 2012 where only less than 5 tons was exported. The exports to the continent went slightly higher in 2013 and dropped further to lower levels again in 2014 up until 2017. During the year 2018, South Africa exported about 2 ton to the African continent and mainly to the SACU region. However, the period under review closed with relatively low levels of canola exports to the African region in 2019.



Source: Quantec Easy Data

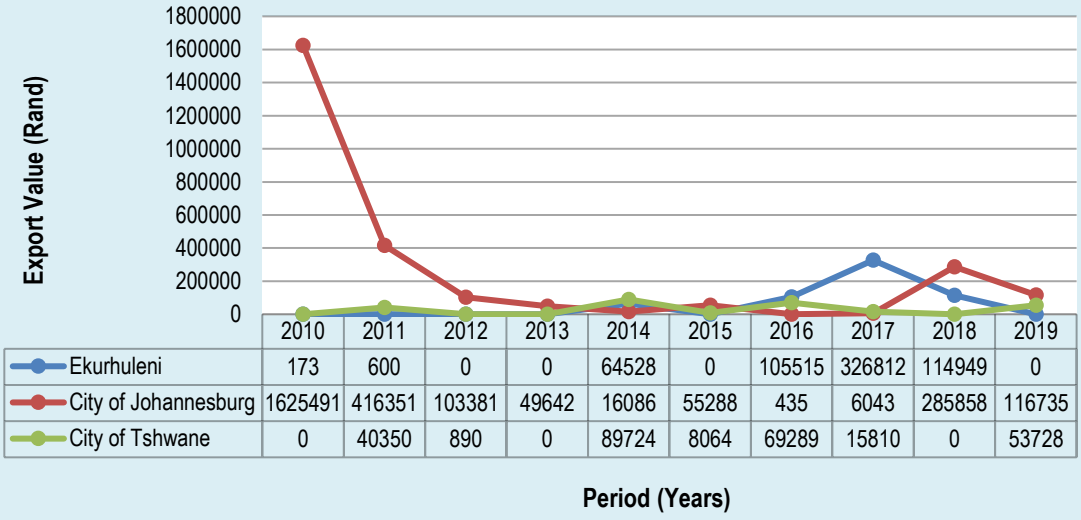
Figure 9 below shows exports of canola by province from 2010 to 2019. The figure shows that Gauteng Province is typically South Africa's leading canola exporter followed by Kwazulu Natal and Western Cape provinces respectively. This is despite the fact that Gauteng Province does not form part of major canola producing regions in the country. On average, the Northern Cape Province has appeared to be the least exporter of canola over the past ten years. The figure further indicates that the values of exports from different provinces were fluctuating throughout the period under analysis. It is also clear from the figure that the exports of canola from both Free State, Kwazulu-Natal and Western Cape were minimal throughout the period under analysis when compared to those originating from Gauteng Province. Canola exports from Gauteng province closed higher and above those originating from other provinces during the marketing year 2019.



Source: Quantec Easy Data

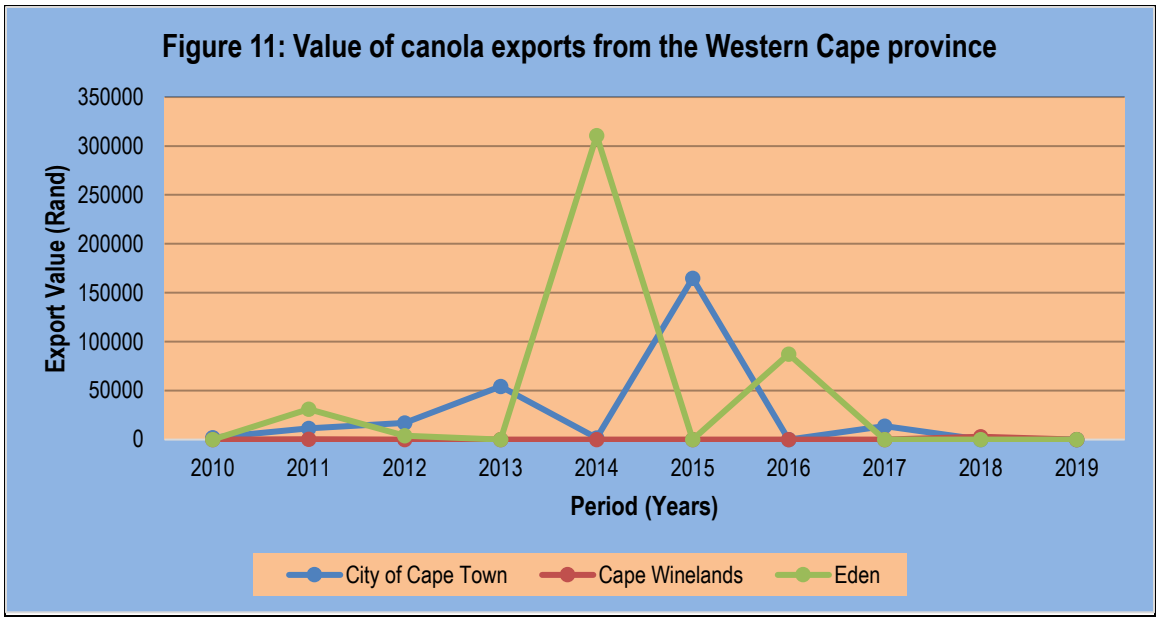
Figure 10 below shows the value of canola exports in Gauteng province from 2010 to 2019. The figure shows that in Gauteng Province, the City of Johannesburg is generally the largest exporter of canola as compared to other districts. In general, exports of canola from Gauteng province were highly volatile throughout the period under analysis. There were no exports of canola reported from Sedibeng district throughout the period under review. The figure further shows that Ekurhuleni and City of Tshwane are also the major exporters of canola in Gauteng province although exports of the product from these two regions have been very low and inconsistent. Figure 10 also shows that between 2016 and 2017, canola exports from both Ekurhuleni and the City of Tshwane rose more than canola exports from the City of Johannesburg. However, during the year 2018, canola exports from the City of Johannesburg were recorded higher above all other regions and this continued till the end of the marketing year 2019.

Figure 10: Value of canola exports by Gauteng province



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ekurhuleni	173	600	0	0	64528	0	105515	326812	114949	0
City of Johannesburg	1625491	416351	103381	49642	16086	55288	435	6043	285858	116735
City of Tshwane	0	40350	890	0	89724	8064	69289	15810	0	53728

Source: Quantec Easy Data

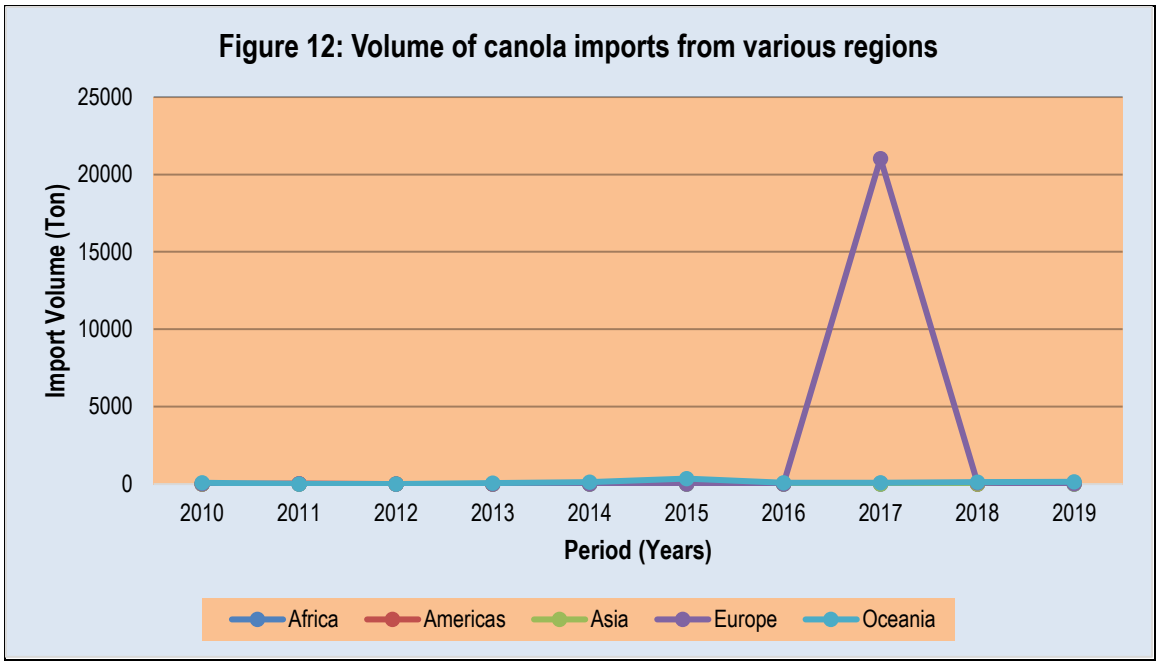


Source: Quantec Easy Data

Figure 11 above indicates the value of canola exports from the Western Cape Province. The figure shows that Eden District and the City of Cape Town are the major exporters of canola in the province. The highest values of canola exports from Western Cape Province were recorded during the year 2014, mainly from Eden District. During the same year exports of canola from City of Cape Town were very low. This was followed by a sharp decline in canola exports from the Western Cape Province in 2015, owing to a decrease in production caused by the occurrences of drought during that year. The marketing season for canola exports closed with very low imports from Eden and the City of Cape Town, while Cape Winelands district experienced an increase in exports of canola, slightly above Eden District and City of Cape Town in 2019.

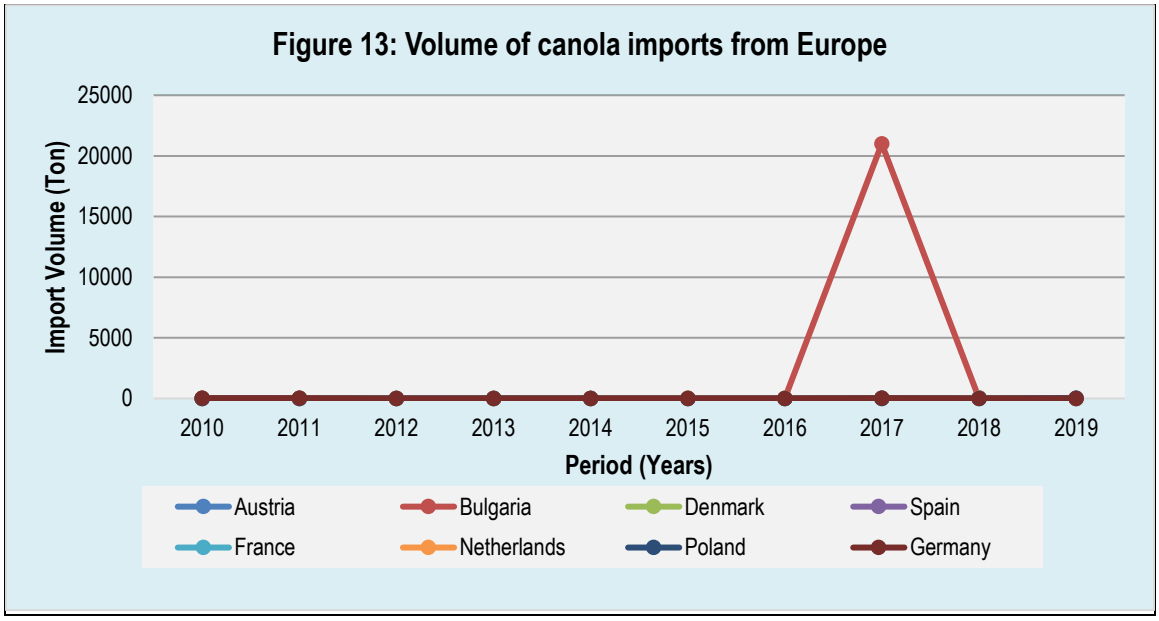
2.2.2 Canola/Rape Seed Imports

Figure 12 below shows that South Africa imports canola/rape seed mainly from Europe and Oceania while imports from Africa were very low over the period under analysis. Europe's competitive advantage rests on the fact that Europe is the biggest producing continent for canola in the world. The figure also shows that canola imports from various regions fluctuated considerably over the period under analysis, with the biggest volumes of imports occurring in 2017, primarily from Europe. The Figure also indicates that imports from Europe were consistent at moderate levels for the entire period under review, with the exception of the years 2012, 2013 and 2014. Between the years 2013 and 2016, South Africa imported greater volumes of canola from Oceania than any other region. The marketing year 2019 closed with very low levels of canola imports originating from various regions, with imports from Oceania topping those from other regions.



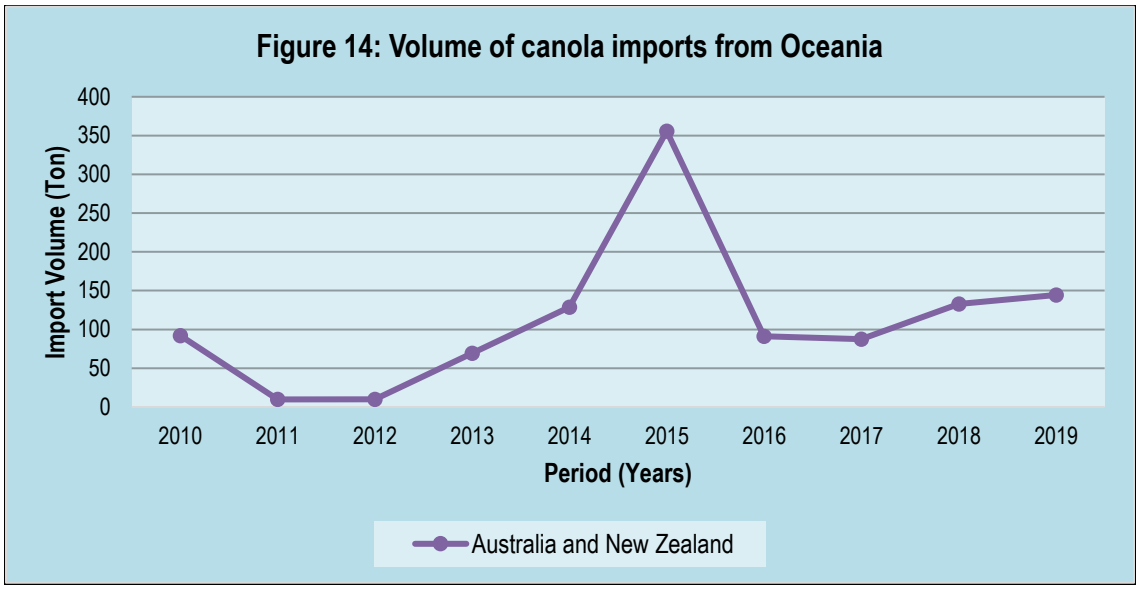
Source: Quantec Easy Data

Figure 13 below indicates that South Africa's canola imports from Europe originate mainly from the European Union countries such as Germany, Bulgaria, Netherlands, Denmark, France, Spain and Austria. It is also clear from the figure that most of canola imports from the EU originate mainly from Germany and Bulgaria. Generally, South Africa's canola imports from Europe were low and erratic throughout the period under analysis. Notable amount of canola imports from Europe were recorded during the year 2017, originating mainly from Bulgaria. The period under review closed with the low levels of canola imports from the EU in 2018.



Source: Quantec Easy Data

Figure 14 indicates that South African canola imports from Oceania originate mainly from the Australia and New Zealand. South Africa's canola imports from this region were somewhat moderate at the beginning of the period under review in 2010. This was followed by a slight decline in the volume of canola imports from this region in 2011 and 2012. Imports of canola increased from the year 2013 until a peak was attained in 2015 and this was followed by drastic decrease up to moderate levels in 2017. The period under analysis closed with increasing volumes of canola imports from Australia and New Zealand in 2019.



Source: Quantec Easy Data

3. MARKET INTELLIGENCE

3.1. Trade Competitiveness

Table 5: List of Importing Countries for canola exported by South Africa in 2019

Importers	Exported value 2019 (USD thousand)	Share in South Africa's exports (%)	Exported quantity 2019(Tons)	Unit value (USD/unit)	Exported growth in value between 2015-2019 (%, p.a.)	Exported growth in quantity between 2015-2019 (%, p.a.)	Exported growth in value between 2018-2019 (%, p.a.)
World	72	100	3	24000	40	0	125
Netherlands	39	54.2	1	39000	0	0	0
Lesotho	27	37.5	2	13500	131	32	14
Zambia	3	4.2	1	3000	0	0	0

Source: ITC Trade Map

Table 5 indicates that during the year 2019, South Africa exported canola mainly to Netherlands, Lesotho and Zambia. During the same year, Netherlands and Lesotho were the destination for about 54% and 37% of South Africa's total canola exports respectively. The table further indicates that South African canola exports to the world increased by 125% in value terms between the years 2018 and 2019.

The following table (Table 6) shows the list of supplying countries for the canola imported by South Africa in 2019.

Table 6: List of Exporting Countries for Canola Imported by South Africa in 2019

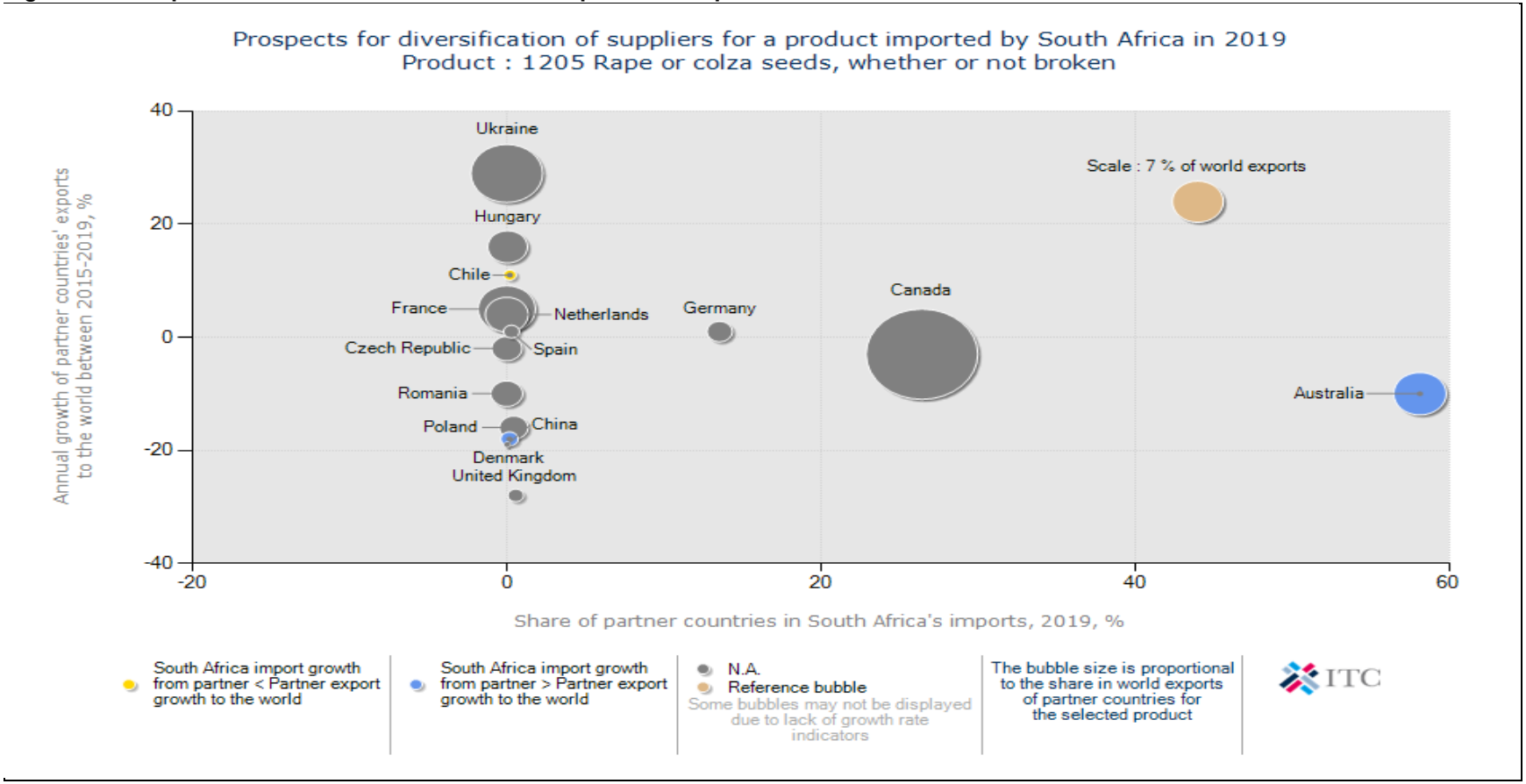
Exporters	Imported value 2019 (USD thousand)	Share in South Africa's imports (%)	Imported quantity 2019 (Tons)	Unit value (USD/unit)	Imported growth in value between 2015-2019 (%, p.a.)	Imported growth in quantity between 2015-2019 (%, p.a.)	Imported growth in value between 2018-2019 (%, p.a.)
World	4021	100	374	10751	8	3	76
Australia	2338	58.1	200	116900	-1	-9	104
Canada	1063	26.4	85	12506	0	0	0
Germany	545	13.6	40	13625	0	0	0
United Kingdom	23	0.6	9	2556	0	0	190
Poland	18	0.4	30	600	0	0	0
Spain	12	0.3	6	2000	0	0	-60
Chile	8	0.2	0	0	-56	0	-91
Denmark	7	0.2	2	3500	37	-16	-95

Source: ITC Trade Map

Table 6 and Figure 14 indicate that in 2019 South Africa imported canola mainly from countries such as Australia, Canada, Germany, United Kingdom, Poland and Spain. It is clear from the figure and the table that Australia remained the greatest exporter of canola to South Africa during the year 2019. During the same year, Australia accounted for 581% of South Africa's total canola imports followed by Canada and Germany with 26.4%, and 13.6% respectively. The canola imports from the rest of the world into South Africa increased by 8% in value and increased by 3% in quantity between the years 2015 and 2019 respectively. Figure 14 also indicates that if South Africa wishes to diversify its canola imports market the prospective markets exist in Denmark, Poland, Chile, France, Romania and Ukraine.

With regard to import tariffs, South Africa applies a duty to an amount 9% of the FOB price on imports of canola, except in situations where there is a bilateral agreement between South Africa and the supplying nation(s).

Figure 14: Prospects for Diversification of Canola/Rape Seeds Imports



Source: ITC Trade Map

4. THE USES OF CANOLA SEED

Canola is primarily used for manufacturing of the following:

- Canola oil (Crude oil and Bottled oil-used as a salad and frying oil, in margarines, shortenings and in foods that contain vegetable oil such as baked goods, potato chips, French fries, etc.).
- Canola oil Biodiesel
- Canola based mayonnaise
- Canola oil cake and
- Canola meal (is the by-product of canola oil processing, used as a high protein feed ingredient in the rations of Animals).

4.1. Versatile Uses for Canola Oil

Canola oil is one of the healthiest and most versatile cooking oils available to home cooks and professional chefs alike. It is light, clear and mild, making it ideal for cooking, fondues, stir-frying, baking, salads and marinades. It is internationally highly recommended for great-tasting, healthy recipes.

4.1.1 Excellent for cooking

- Canola oil doesn't transfer food flavours in fondues or deep fryers (strain oil before re-using).
- Canola oil can be heated to a higher temperature than other oils before it starts to smoke.
- Canola oil drains more thoroughly than melted shortening.

4.1.2 Better for Baking

- Canola oil can replace other types of fat or oil in baking to lower the saturated and trans-fat content of the baker's recipes.
- Canola oil can also be used to grease cake pans and cookie sheets.

4.1.3 Great for Salads

- Canola oil remains clear and free running when stored in the refrigerator.
- Canola oil doesn't separate from other salad dressing ingredients.
- Canola oil helps to blend ingredients in salad dressings together.

Canola is a good source of protein in animal feed and because of less canola production in the country large quantities of protein for animal feeds have to be imported sometimes every year.

5. CANOLA VALUE CHAIN TREE

- The following diagram (Diagram) 27 represents the various products and by-products that can be or are derived from Canola seed. After harvest canola seed is took to the cleaning process which is then followed by the seed crushing or processing. During the processing stage canola seed are refined to canola oil and the products that can be derived from this process are, canola crude oil, canola bio-diesel and canola meal.

- Canola meal is the by-product of canola oil processing, used as a high protein feed ingredient in the rations of Animals and also preferably used a fertilizer especially for organic farming. The canola oil produced from the canola seed processes can be used for the cooking oil, canola oil cake, and canola margarine and also in salad dressing. The use of canola oil is increasing steadily among health conscious consumers around the world due to its lowest content of saturated fatty acids (5 to 8%) among edible oils.

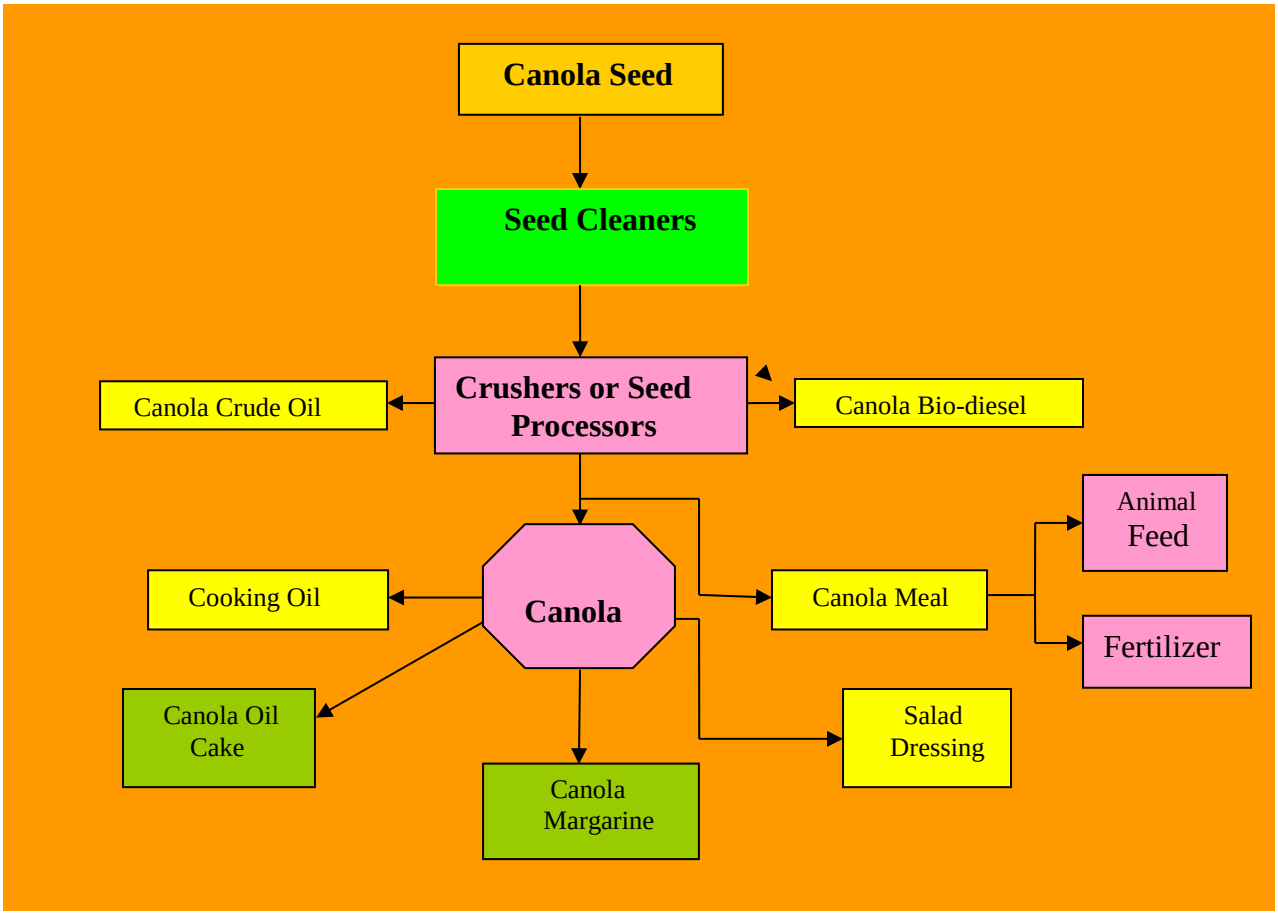


Diagram 27: Canola Seed Value Chain Tree

Canola oil is preferred by food professionals and processors because of its nutritional profile and high smoke point. Canola oil has become even more valuable with high oleic varieties that reduce the need for hydrogenation. This oil is the healthiest of all commonly used cooking oils. It is lowest in saturated fat, high in cholesterol, lowering mono unsaturated fat and the best source of omega-3

fats of all popular oils. It is light, clear and mild, also highly versatile and suitable for use in salads, baking, stir-frying and deep-frying.

6. CANOLA SEED PROCESSING

After Canola seeds are harvested by farmers in the area, it is stored in silos for production and refining. The final product is bottled and branded with a B-Well label, for a premium class product on the shelves of a variety of retail outlets. Although some of the cultivar in North America is genetically modified, local crop contains no genetically modified materials (GMO's).

Canola seed undergoes several stages of preparation before it can reach the final consumers as a processed product. The following diagram below explains the canola seed processing stages after harvesting periods.

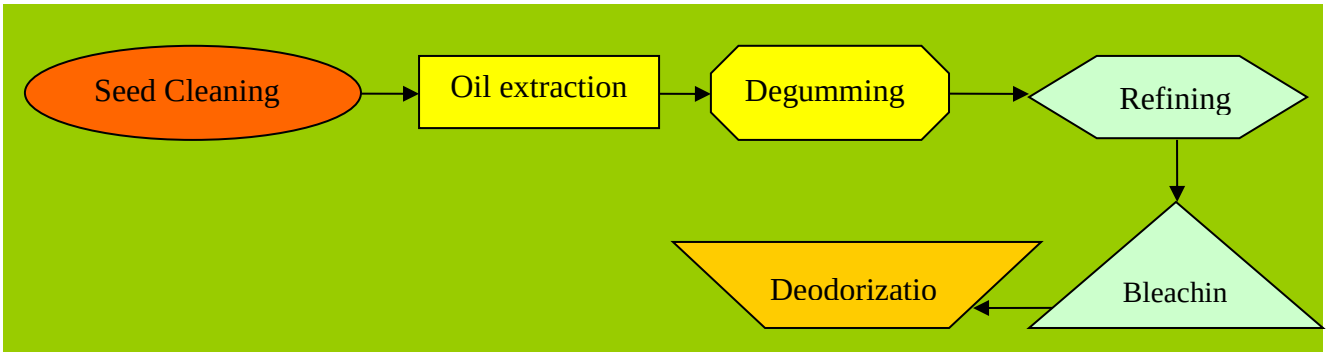


Diagram 28: Canola Seed Processing

6.1 Cleaning seeds

Before processing, canola seeds undergo cleaning to reduce the presence of any foreign materials. These materials (referred to as docage) consist mainly of damaged canola seed together with weeds. The presence of damaged canola seed has been shown to be detrimental to the quality of the extracted oil and should be reduced as much as possible before oil extraction.

6.2 Oil extraction

Once cleaned, canola seeds are rolled or flaked to fracture the seed coat and rupture the oil cells. The production of thin flakes (0.2-0.3mm thick) is extremely important as high surface to volume ratio is critical during oilseed processing. Flaked canola seeds generally undergo mild pressing to reduce the oil content from 42 to 16-20%, while compressing the grain flakes into large cake fragments. Canola cake fragments are solvent-extracted with normal hexane to remove the remaining oil. This is achieved by counter current movement of the cells of pressed canola cake and hexane, thus interfacing the oil in the flake or cake with a rich solvent-oil solution. The solvent is recovered from the oil.

The solvent-extracted oil is combined with the pre-pressed oil to form the crude oil fraction. The crude oil contains a variety of minor constituent that must be by a series of unit processing steps including degumming, alkali refining, bleaching and deodorization.

6.3 Degumming

Conventional degumming is carried out in most plants by treating the crude oil with steam. This process precipitates the water-hydrated phospholipids, which are then removed by centrifugation. The major drawback to this type of degumming process is that it only removes hydratable phospholipids and still leaves 150 to 250ppm of phosphorus in the oil.

6.4 Refining

The crude degummed oil is then subjected to refining, which removes free fatty acids, phospholipids, colour bodies, iron and copper, as well as some sulphur compounds. The major type of refining is alkali refining, although there is a shift toward physical refining due to fewer environmental problems associated with the latter process. In physical refining the free fatty acids from canola oil is begin removed by steam distillation.

6.5 Bleaching

Before hydrogenation or deodorization, canola oil is bleached with acid-activated bleaching clay under vacuum. In this process the perfect colour of the oil is retrieved to use as salad- or cooking oil.

6.6 Deodorization

Any free fatty acids or odiferous or flavour degradation products remaining in the oil are removed by deodorization. This involves steam distillation under vacuum. Most plants use a deodorizing system that is comprised of large cylindrical tank or shell through which oil is pumped in and passed through a series of trays where it is de-aerated and successively deodorized with sparging steam. The oil is then cooled, pumped through a polishing filter, and sparged with nitrogen

Table 10: Canola Seed suppliers in South Africa

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