A PROFILE OF THE SOUTH AFRICAN HERBS AND SPICES MARKET VALUE CHAIN 2021

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1. DESCRIPTION OF THE INDUSTRY

Spices are used for flavour, colour, aroma and preservation of food or beverages. Spices may be derived from many parts of the plant: bark, buds, flowers, fruits, leaves, rhizomes, roots, seeds, stigmas and styles or the entire plant tops. The term 'herb' is used as a subset of spice and refers to plants with aromatic leaves. Spices are distinguished from herbs, which are the leaves, flowers, or stems of plants used for favouring or as a garnish. Spices are often dried and used in a processed, but complete state. Spices can be defined as "vegetable products used for flavouring, seasoning and imparting aroma in foods" (FAO, 2005). Herbs are leafy spices, and some, like dill and coriander, can provide both spice seeds and leafy herbs. Many spices and culinary herb plants are widely regarded as having medicinal properties, and there is, therefore, some overlap between them and Medicinal, Aromatic Plants (MAPs). Herbs and spices are used for enriching what we consume and it is the seasoning and flavouring of food that brings out all variety and tapestry of regions, nationalities and continents. Distinctions between herbs and spices can be drawn based on the purposes for which plants are used. Both herbs and spices contain essential oils, which are the flavouring components of extracts, and they are employed in the production of perfumes, cosmetics, toiletries, lotions, hair products, toothpaste and soaps.

Around fifty spice and herb plants are of global trade importance, but many other spices and herb crops are used in traditional cooking, health care, or other applications, in particular regions and traded locally. Pepper is the most important world spice crop. Spices and herbs are grown as trees, shrubs, perennials, annuals, wild and cultivated. Spice and herb plants provide seeds and fruits, leaves and stems, flowers and buds, roots and rhizomes, bark and resins that can all be commercialized in various forms: sold fresh, frozen, dried, whole or ground, distilled into oils or solvent extracted into oleoresins. There is good trade potential for small-scale farmers where growing conditions are favourable and there is a local market demand for spices and herbs. New applications in agriculture include being used as organic pesticides and in veterinary use for insect repellents and safer dips for fleas and ticks.

1.1 Production areas

Major spice production is in the tropics from developing and least developed countries. There is also a huge significant domestic consumption of spices in many spice producing countries. India, China, Pakistan and Turkey are countries known as the source of spices. Indian spices are most sought after globally, given their exquisite aroma, texture and taste (IBEF, 2015). India is the world's largest producer, consumer and exporter. The varying climatic conditions in India provide ample scope for the cultivation of a variety of spices. To remain competitive, the producers are adding value by processing spices into essential oils, oleoresins, powders, especially extracts and blends. The most important spices traditionally traded throughout the world are products of tropical environments. The major exceptions to this group are the capsicums (chilli peppers, paprika), and coriander which is grown over a much wider range of tropical and non-tropical environments.

1.2 Production trend

Estimating world production and trade of herbs and spices is filled with difficulties. In many countries, domestic production statistics are not recorded and export statistics are often included in codes that cover a variety of products. Of the 109 varieties of spices listed by the International Organisation for Standardisation (ISO), India produces more than 65. According to (FAO, 2017) India followed Turkey, Bangladesh, China, Indonesia and Pakistan were the top countries producing herbs and spices. The varying climatic conditions in India provide ample scope for the cultivation of a variety of spices. Almost all Indian states produce spices, with the total area under spice cultivation pegged at around 3.15 million hectares. India commands a formidable position in the world spice trade. According to (IBEF, 2018) India exported 1 028 060 tons of spices and spice products which were valued at around US$ 2 781.4 million during 2017-18. Exports grew by 8% in terms of volume and 6% in terms of value (US dollars). This has exceeded the targeted exports by 100% in volume terms and 105% in value terms (US dollars). The United States is the major importer of Indian spices by value, followed by Vietnam, China, Malaysia, United Arab Emirates, United Kingdom, Germany, Singapore and Saudi Arabia. The spice export basket consists of whole spices, organic, spice mixes, spice blends, freeze, dried, curry powder/mixtures, oleoresins, extracts, essential oils, de-hydrated, spice in brine and other value-added products.

1.3 Consumption

The market in Asia-Pacific is growing at a rapid pace due to the increasing demand for seasoning and spices from many food application segments. In 2014, Europe was the leading market of seasoning and spice, in terms of value and the second largest in terms of volume. Spices are increasingly promoted as a superfood with health benefits. India is one of the countries with high production and consumption of spices in the world. The growing population in developing countries, such as China and India is a major driving force, which is influencing the growth of the Asia-Pacific market of seasoning and spices. The usage of spices and herbs by consumers is increasing, because these products are appreciated as completely natural ingredients, rather than artificial additives.

2. MARKET STRUCTURE

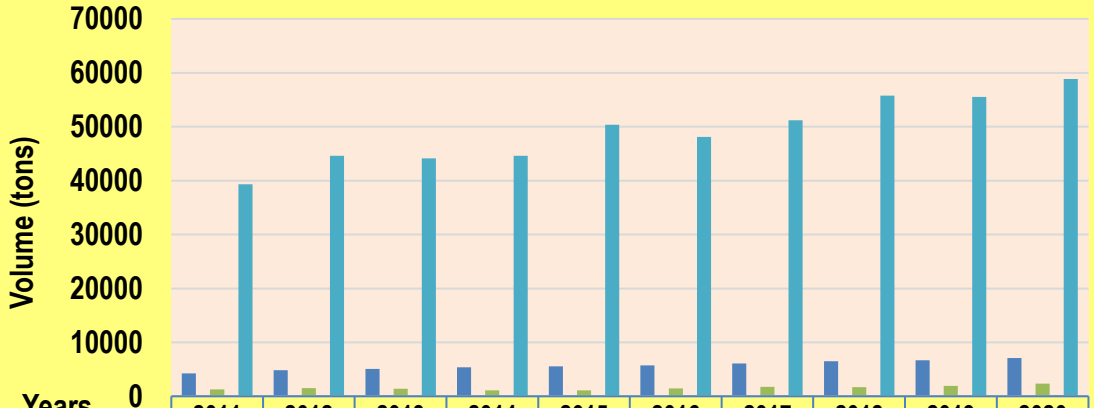
2.1 Domestic markets and prices

Figures 1 to 4 present the sales in volume and prices of herbs and spices sold at National Fresh Produce Markets (NFPMs) from 2011 to 2020.

Figure 1 below illustrates the sales of various spices at the National Fresh Produce Markets (NFPMs). It is clear that high volumes of peppers were sold at the market, followed by the sales volume of chillies, ginger, curry leaves and the least sales were that of paprika. From 2011 to 2012, sales of chillies were stable above 4 000 tons. In 2013 and 2014, chillies sales surpassed 5 000 tons. Ginger sales were mainly stable above 1 000 tons and during 2015 there was a 34.8% increase in sales. Paprika sales were unstable with the lowest volume of 29 tons and the highest volume of 141

tons. Curry leaves sales were mostly stable above 130 tons except in 2014 and there was a substantial increment in curry leaves sales in 2015. During 2016, there was a slight increase of 3.8% in chillies volume supplied at the market, the paprika volume has risen by 38.7% and ginger volume grew by 18% in comparison to 2015 volumes. At the same time, there was a notable drop in curry leaves, and peppers supplied at the fresh produce markets. In 2017, chillies sales were just above 6 100 tons, curry leaves grew by 4.6%, ginger sales have slightly decreased by 1.2%, pepper sales have eased higher by 6.5% whilst ginger sales have dropped slightly by 2.8% relative to 2016 sales volume. As of 2018, ginger sales volume increased by 6.9%, curry leaves sales grew by 21.8%, paprika sales were more by 2.9%, pepper sales eased higher by 8.8% whilst ginger sales declined by 1.2% relative to 2017 average sales. During 2019, chillies sales volume grew by 2.2%, curry leaves sales has gone up by 34%, paprika sales increased by 3.4% whereas pepper sales declined slightly by 4% in comparison to the 2018 sales volume. In comparison to the previous year's (2019) sales volume, chillies sales volume increased by 6.4% in 2020, curry leaves sales volume increased by 22.8%, ginger sales volume increased by 21.9%, paprika sales volume increased significantly by 33.2%, and pepper sales volume increased by 5.9%.

Figure 1: Average volume of spices sold at fresh produce markets



Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Chillies	4215,81	4866,83	5082,11	5391,36	5532,13	5744,54	6110,79	6516,55	6660,67	7089,02
Curry leaves	132,4	172,87	193,76	75,89	169,2	53,19	55,66	67,81	91,03	111,86
Ginger	1294,52	1514	1403,39	1091,45	1091,45	1471,08	1742,79	1721,81	1925,97	2347,96
Paprika	53,63	140,98	109,79	105,09	93,2	129,45	164,83	169,73	175,62	234,09
Pepper	39313	44634,5	44146,6	44631,5	50357,5	48102,9	51214,4	55767,7	55543,3	58833,6

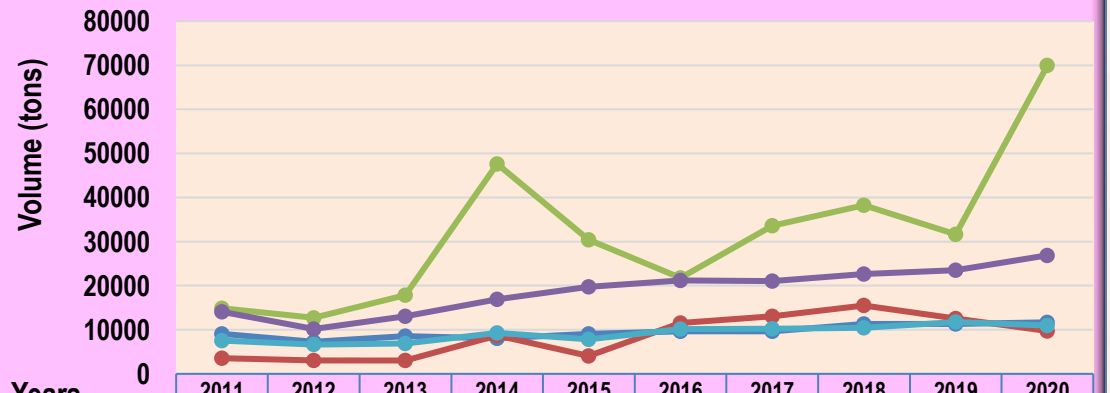
Source: Statistics and Economic Analysis, DALRRD

Figure 2 below illustrates the average prices for spices at the National Fresh Produce Markets (NFPMs) during ten years. Ginger has generally fetched high market prices during the period under review. There was a surge in chillies price during 2014 despite a notable increase in the volume supplied at the market. This can be ascribed to the high demand for chillies in the same year. Paprika was the second spice that has fetched high prices at the market. In 2011, paprika price has notably increased and this can be ascribed to the record low volume supplied at the market. Curry leaves have fetched the least prices however, the price has surged during 2014, due to a significant drop in volume supplied in the market. In the same year, the price of paprika sharply increased due to a

slight drop in volumes. In 2015, the price of curry leaves, peppers and ginger have dramatically dropped compared to the previous year's prices and this can be attributed to significant increases in volumes supplied at the market. In the same year, chillies price has risen by 12.7% despite a 2.6% increase in volume supplied and this can be attributed to strong chillies uptake. Paprika's price has gone up by 16.5%, which can be ascribed to a slight decrease in volumes supplied at the markets.

In 2016, chillies and paprika have traded higher despite the increase in volume supplied at the fresh produce markets and this can be attributed to the strong uptake of these spices. In the same year, the ginger price dropped by 28.5%, which can be ascribed to 18.4% in ginger supplied at the market, whereas curry leaves price surged which can be attributed to a significant 69% drop in curry leaves supplied at the market. During 2017, ginger price eased marginally higher by 54% due to a slight drop in volume supplied, paprika price increased slightly by 0.8% despite a 6% increase in the volume supplied, curry leave prices eased higher by 13.6%and pepper price grew marginally by 0.8% relative to 2016 price. As of 2018, chillies, curry leaves, paprika and pepper average prices eased notably higher despite increases in volume supplied at the market. This can be ascribed to the good uptake of spices at the market. At the same time, ginger price increased by 13.8%, relative to the 2017 price and this can be ascribed to a slight decrement in volume supplied at the market. In 2019, there was a notable decline in the market price for chillies, curry leaves and paprika and these ascribed to an increment in the sales volume during the same season. During the same season, paprika price eased higher by 3.9% despite a 3.4% increase in sales volume and pepper price increased notably by 12.7%, which can be attributed to a 4% decline in sales volume. As of 2020, chillies price has increased by 3.1%, ginger price has surged by 121%, paprika price grew notably by 14,2% whilst curry leaves and pepper prices have declined by 22.3% and 6.1% respectively in comparison to the 2019 market prices.

Figure 2: Average price of spices sold at fresh produce markets

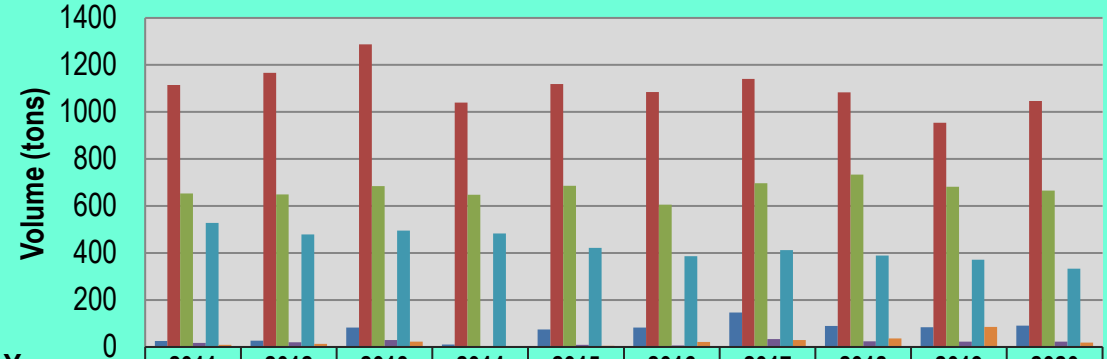


Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Chillies	9088,08	7276,27	8530,89	8028,92	9047,74	9626,26	9667,71	11352,07	11337,49	11691,62
Curry leaves	3553,63	3040,44	3026,2	8722,7	4080,32	11511,9	13080,72	15496,89	12529,38	9725,16
Ginger	14876,36	12722,71	17841,07	47622,56	30418,22	21739,25	33582,26	38243,29	31609,23	69946,44
Paprika	14060,58	10178,12	13045,16	16910,11	19701,61	21192,37	21025,98	22629,04	23527,49	26886,74
Pepper	7535,76	6638,16	6909,17	9297,21	7849,42	10131,61	10211,92	10424,77	11750,67	10981,91

Source: Statistics and Economic Analysis, DALRRD

Figure 3 below illustrates the sales of herbs at National Fresh Produce Markets (NFPMs) between 2011 and 2020. Celery volume was generally stable above 1 000 tons during the period under review. Coriander sales were in second place, followed by parsley sales, which were stable above 500 tons per annum. Basil had high sales volume in 2013, where more than 80 tons were sold at the fresh produce markets. In 2008, just above 20 tons of rosemary were sold at the markets. Thyme was the least herb sold at the fresh produce market and a notable 22 tons were sold during 2013. Sales of basil, rosemary and thyme were fairly unstable. There was a surge in basil sales when comparing 9.92 tons in 2014 and 73.85 tons in 2015. Celery, coriander, rosemary and thyme sales have a slight increase in sales in 2015, while the parsley sales have slightly dropped. During 2016, there was a slight drop in celery, coriander, rosemary and parsley sales volume, when compared to 2015 sales volumes, whilst thyme sales volume has significantly increased from 5.09 tons to 20.68 tons. In 2017, basil sales surged to 146.25 tons, rosemary sales surged to 33.98 tons, coriander sales increased by 14.8%, parsley sales grew by 6.6% and thyme sales have drastically increased by 43.4% relative to 2016 sales. As of 2018, basil sales declined notably by 38%, celery sales volume was down by 5%, rosemary and parsley also experienced declines, whilst thyme and coriander sales volumes have gone up by 20% and 5% respectively. In 2019, there was a surge of 138% in thyme sales volume whereas basil, celery, coriander, parsley and coriander have experienced a slight decline in sales volume. As of 2020, basil sales volume grew by 8%, celery sales increased by 9.7% whereas coriander experienced a 2.3% decrement in sales volume, rosemary sales dropped by 2.4% and parsley sales declined sharply by 77% relative to sales volume supplied at NFPMs in 2019.

Figure 3: Sales of herbs at national fresh produce market



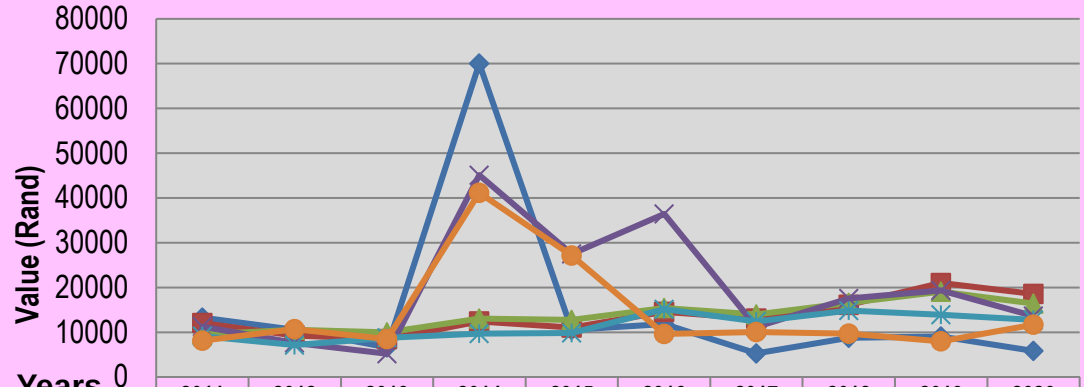
Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Basil	26,03	27,47	82,16	9,92	73,85	82,32	146,29	89,74	84,38	91,2
Celery	1114,05	1166,16	1287,79	1039,7	1119,32	1084,51	1140,3	1083,2	953,36	1045,96
Coriander	653,24	649,18	684,63	647,65	686,1	606,13	696,19	733,48	681,47	665,71
Rosemary	16,78	19,66	28,9	3,36	8,69	6,7	33,98	24,49	22,65	22,09
Parsely	527,17	479	495,77	483,31	421,13	386,24	411,74	388,31	371,13	333,3
Thyme	9,32	13,16	22,26	2,6	5,09	20,68	29,66	35,82	85,35	19,07

Source: Statistics and Economic Analysis, DALRRD

Figure 4 below shows the herbs average market prices from 2011 to 2020. Record low prices for parsley and thyme were recorded in 2013. In 2014, basil, celery, coriander, rosemary, parsley, and thyme prices have surged when compared to 2013 prices and this can be ascribed to a notable drop in herbs volume supplied at the market. Thyme, rosemary and basil prices have significantly dropped

during 2015, while the price of parsley has slightly increased by 1.6% in comparison to 2014 prices. The dramatic drop in prices can be attributed to a notable increase in herbs supplied across the markets. Basil price eased higher despite an 11% increase in volume supplied at the market during 2016, and this can be ascribed to strong basil uptake. At the same time, celery, coriander, rosemary and parsley prices increased notably as the volumes supplied at the markets decreased, while thyme price has drastically dropped by 64% due to a significant increase in the volume supplied at the market. In 2017, basil volume grew significantly by 77%, which resulted in a 55% decrement in price. Celery, coriander, rosemary and parsley volumes have also eased higher, which impacted negatively market price. The thyme volume increased substantially by 43.4% and the price eased higher by 4.3%. This can be attested to strong demand for thyme in the same year. As of 2018, basil celery, coriander, rosemary and parsley market prices rose marginally, which can be ascribed to notable declines in sales volumes supplied at the market. In the same year, thyme price has experienced a decline of 3% due to a 20% increase in the sales volume supplied at the market. In 2019, the surge in thyme sales volume supplied at the fresh produce markets has resulted in a sharp decline of 53% in market price. In the same season, basil price increased by 3.4%, celery price eased higher by 30%, and coriander price has gone up by 15.2% due to a decline in sales volumes supplied at the market. As of 2020, the increase in basil and celery sales volume has resulted in 35% and 11.7% in market prices respectively relative to 2019 prices. At the same time, the decline in coriander, rosemary and parsely sales volume has resulted in a decrement of 13%, 29% and 8.1% in prices and this can be ascribed to poor uptake of the same herbs. Thyme sales volume declined sharply by 77% and as a subsequent, the market price surged by 47%.

Figure 4: Market price of herbs at fresh produce markets

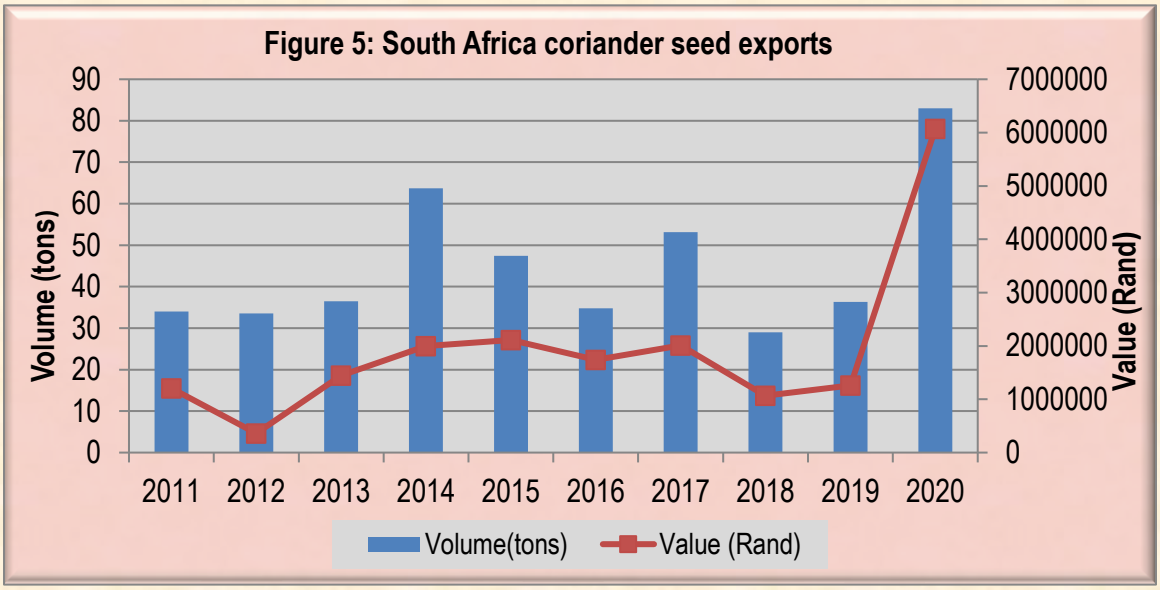


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Basil	13236,64	10525,01	6626,21	70015,13	10532,61	11844,22	5277,12	8725,02	9026,21	5853,28
Celery	12080,29	9250,64	8459,35	12412,45	11075,36	14578,98	13034,27	16104,23	21006,42	18536,63
Coriander	9520,78	10545,95	9993,33	13047,63	12796,03	15425,93	13962,87	16544,58	19065,62	16400,08
Rosemary	11268,89	7594,66	5196,79	45099,33	27484,27	36396,54	11190,89	17550,58	19369,74	13639,53
Parsely	9121,3	7137,82	8786,05	9671,83	9823,64	15143,67	12374,89	14863,17	13882,33	12748,94
Thyme	8122,14	10678,68	8444,62	41149,67	27118,88	9600,11	10018,63	9678,09	7960,11	11723,9

Source: Statistics and Economic Analysis, DALRRD

2.2 South Africa herb and spice exports

South Africa is not a major exporter of herbs and spices. Most herbs and spices have no individual export data on the Trade Map. South Africa's (ginger, saffron, turmeric, thyme, bay leaves, curry, and other spices) exports represent 2% of the world exports during 2020 and their combined ranking in the world exports is still number 11. Uncrushed coriander seed exports represent 0% of the world exports of this product and its ranking in the world is 40, while the crushed coriander seed represents 0.1% of the world exports and its ranking in the world exports is 30. Celery has commanded 0.1% of the world exports and it was ranked number 25 in the world celery export. South African uncrushed pepper exports represent 1% of the world export and its ranking in the world export is 10, while the crushed pepper has commanded 0.4% of the world exports and its ranking in the world is 23. Figure 5 below is an illustration of South Africa's coriander seed exports in the past ten years.



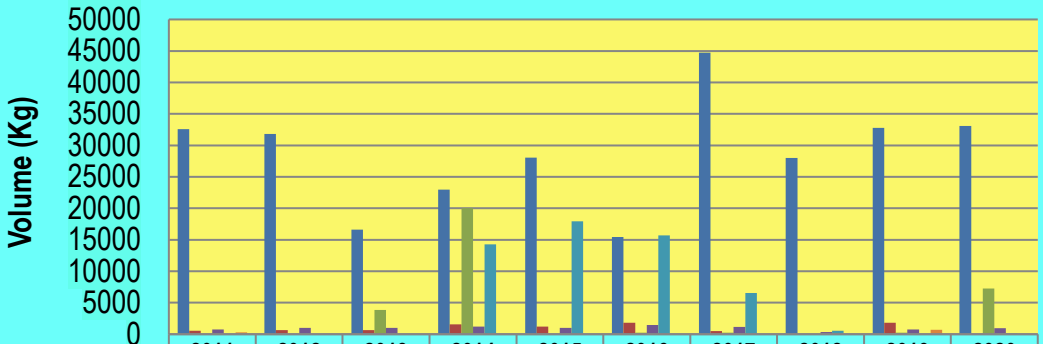
Source: Quantec Easydata

Figure 5 above shows that from 2011 to 2013, South Africa's coriander seed exports were stable just above 33 tons. In 2014, South Africa exported just above 53 tons of coriander seed and this represents a 47% increase as compared to 2013 coriander seed export. The figure further shows that between 2011 and 2015 except for 2012, it was relatively more profitable to export coriander seeds, as compared to the other years. In 2015, coriander seed export has experienced a 25% decrement in comparison to the 2014 exports. During 2016, coriander seed export eased lower by 26.7% and the value of export was 17.6% lower when compared to 2015 export. In 2017, coriander seed grew notably by 34.7%, and it was less profitable to export coriander seed relative to 2016. As of 2018, South Africa's coriander export declined notably by 45% relative to the 2017 export value. In 2019, there was a 25% increment in coriander seed export and it was less profitable to export coriander seeds relative to the 2018 export value. By 2020, coriander seed exports had increased significantly, and it was also very profitable to export coriander seed in comparison to the 2019 export value.

Figure 6 below illustrates South Africa's coriander seed exports to the different regions in ten years. Africa region is the primary export market for coriander seeds from South Africa. From 2011 to 2012, high volumes of coriander seeds were exported to African region. In 2013, there was a 91.8% decline in coriander seeds destined for Africa region. During 2014 notable volume of coriander seeds were exported to Oceania and Asia regions with approximately 14 000kg and 20 000kg respectively. In the same year, the export to Africa, America, and Europe have also increased, while the unallocated export has dropped from 48kg to 9kg in comparison to the previous year's export. In 2015, coriander exports to Africa and Oceania have notably increased, while exports to Asia have dramatically dropped from approximately 20 000kg to 4kg and there were no unallocated exports.

In 2016, Oceania and Africa's regions were the primary export markets for coriander seed exported from South Africa. At the same time, considerable exports were destined for America and Europe regions, whereas export to Asia was insignificant. Africa region was still by far the preferred export destination for Coriander seed from South Africa in 2017. During the same year, there was a notable decrement in export volumes destined for America, Asia, Europe and Oceania regions. As of 2018, the African region was still the preferred market for South Africa's coriander seed export, however, the export volume declined notably by 37% relative to 2017 exports. Exports to other regions were less significant. In 2019, there was a 17% increment in coriander seeds destined for the African region and there was a notable increase in coriander seeds destined for the Americas, Asia and Europe regions. As of 2020, Africa was still a primary export market for coriander seed, export volume to Asia has surged, whilst export to the Americas and Oceania have drastically dropped.

Figure 6: South Africa coriander seed exports to the regions



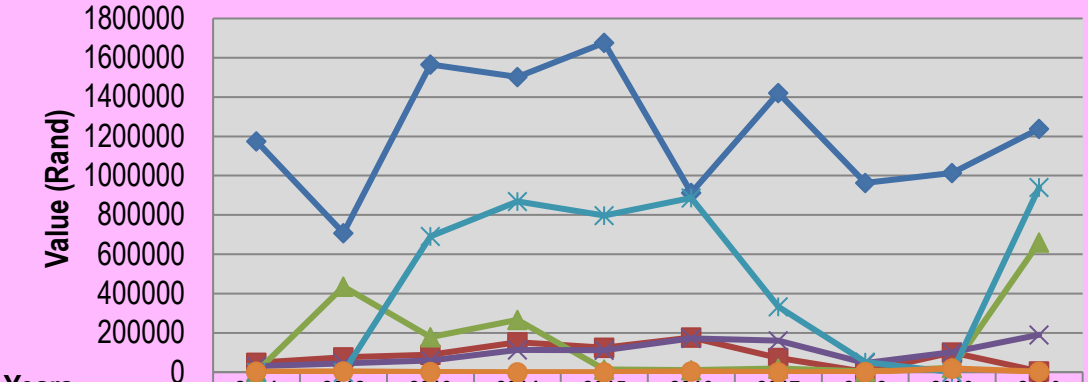
Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Africa	32590	31836	16600	22953	28038	15428	44708	27990	32793	33088
Americas	572	652	652	1544	1194	1837	496	11	1816	45
Asia	57	12	3867	20002	4	252	232	51	226	7254
Europe	734	1021	1027	1229	1028	1467	1165	345	775	950
Oceania	0	0	0	14286	17944	15724	6552	563	0	132
Not allocated	312	17	48	9	0	35	0	9	687	38

Source: Quantec Easydata

Figure 7 below shows South Africa's value of coriander seed exports. High values were recorded mainly for the African region as high volumes were exported to this region. In 2012, Africa export value has notably dropped while the Americas region export value has experienced positive growth. Oceania and Asia's regions have recorded notable export values during 2013. Oceania, Europe and

Asia export values continued to increase in 2014, while Africa export value has dropped when compared to 2013 value. The figure further shows that the export value for the African region has increased by 78.8% in 2015 as compared to the 2014 export value and there was a significant drop in export values recorded for the Asia region. In the same year, export values for Americas, Europe and Oceania have slightly dropped in comparison to the previous year export values. During 2016, it was relatively more profitable to export coriander seeds to Europe followed by America and Oceania, whereas the Africa region was the least profitable market. In 2017, America was by far the most profitable export market for coriander seed originating from South Africa, followed by Europe, Asia, Oceania and Asia region was still the least profitable market. As of 2018, Europe was the most profitable market for coriander seed exported from South Africa, followed by America, Oceania, Asia and Africa was the least profitable market. During 2019, the Europe region was still by far the most profitable export market for coriander seeds exported from South Africa, followed by Asia, America and Africa was still the least profitable market. In 2020, the Oceania market was still by far the most profitable, followed by the European, America and Asia markets whilst export to Africa have fetched low export value.

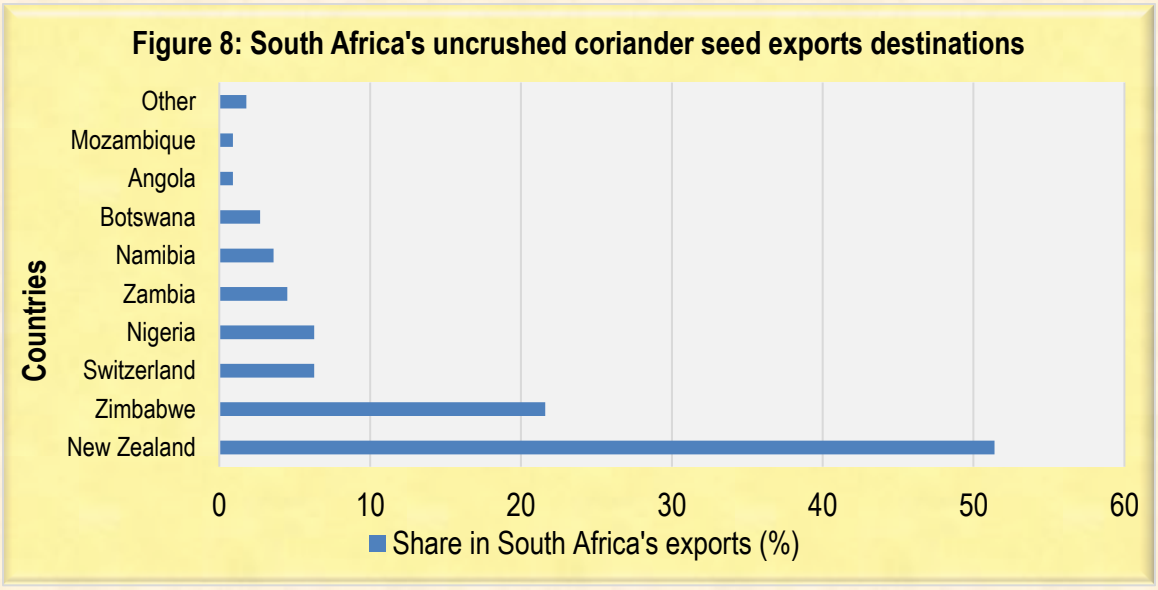
Figure 7: Value of coriander export to the regions



Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Africa	1174451	708259	1566074	1501875	1676443	913152	1421207	963133	1014531	1239087
Americas	47658	76039	88126	152867	125352	176334	72214	1135	100685	4410
Asia	2281	435734	177575	266614	13213	10332	18955	3816	21746	660417
Europe	30417	44342	59471	113577	111456	172113	160393	46735	101441	190351
Oceania	0	0	690815	868109	796885	886420	333334	51805	0	939955
Not allocated	1721	4804	785	0	0	4690	0	661	19142	2054

Source: Quantec Easydata

Figure 8 is an illustration of South Africa's uncrushed coriander seed export destinations in 2020.



Source: ITC Trade Map

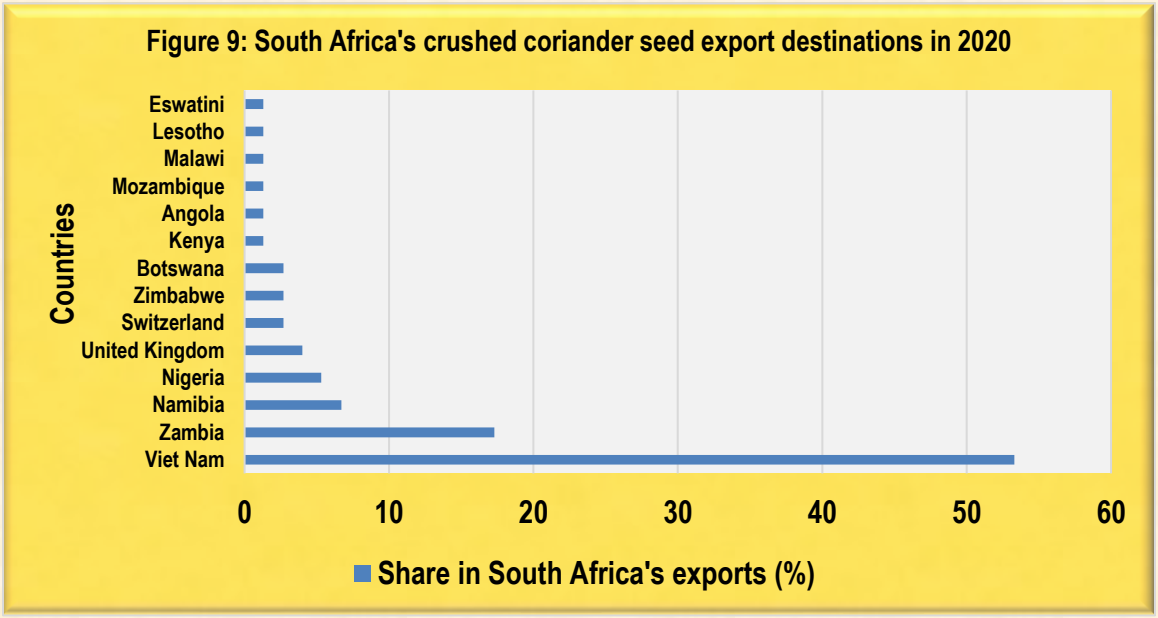
Figure 8 and Table 1 show South Africa's uncrushed coriander seed export destinations and the shares of exports. New Zealand with 51.4% was the primary export market for uncrushed coriander seed originating from South Africa. Zimbabwe is in second place with 21.6%, followed by Switzerland and Nigeria with 6.3% and 6% respectively. A notable share of uncrushed seeds was also exported to Zambia and Namibia. Uncrushed coriander seeds to Zimbabwe have decreased by 18% in value and 13% in quantity during the 2016 and 2020 periods. Uncrushed coriander seed exports to Namibia have increased by 1% in value and the exports have decreased by 20% in quantity between 2016 and 2020 period.

Table 1: Uncrushed coriander seeds export destinations in 2019

Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020 (tons)	Growth in exported value between 2016-2020 (%, p.a.)	Growth in exported quantity between 2016-2020 (%, p.a.)	Growth in exported value between 2019 and 2020 (%, p.a.)
World	111	-3157	100	22	1	-10	385
New Zealand	57	57	51.4	0			
Zimbabwe	24	24	21.6	13	-18	-13	239
Switzerland	7	7	6.3	1	-18	0	196
Nigeria	7	7	6.3	2	9		
Zambia	5	5	4.5	1	-9	0	
Namibia	4	4	3.6	1	1	-20	46
Botswana	3	3	2.7	1	-8	-13	23
Angola	1	1	0.9	0	-15		
Mozambique	1	1	0.9	1	86		

Source: ITC Trade Map

Figure 9 is an illustration of South Africa's crushed coriander seed export destinations in 2020



Source: ITC Trade Map

Figure 9 and table 2 show South Africa's crushed coriander seed export destinations in 2020 and the share of exports to various regions in the world. Viet Nam with a 53.3% share of export is the primary export market for crushed coriander seed originating from South Africa. Zambia is in second place with 17.3%, followed by Namibia and the United Kingdom with 6.7% and 5.3% respectively. A notable share of crushed seeds was exported to the United Kingdom. Crushed coriander seeds to Zambia have increased by 11% in value and 20% in quantity during the 2016 and 2020 periods.

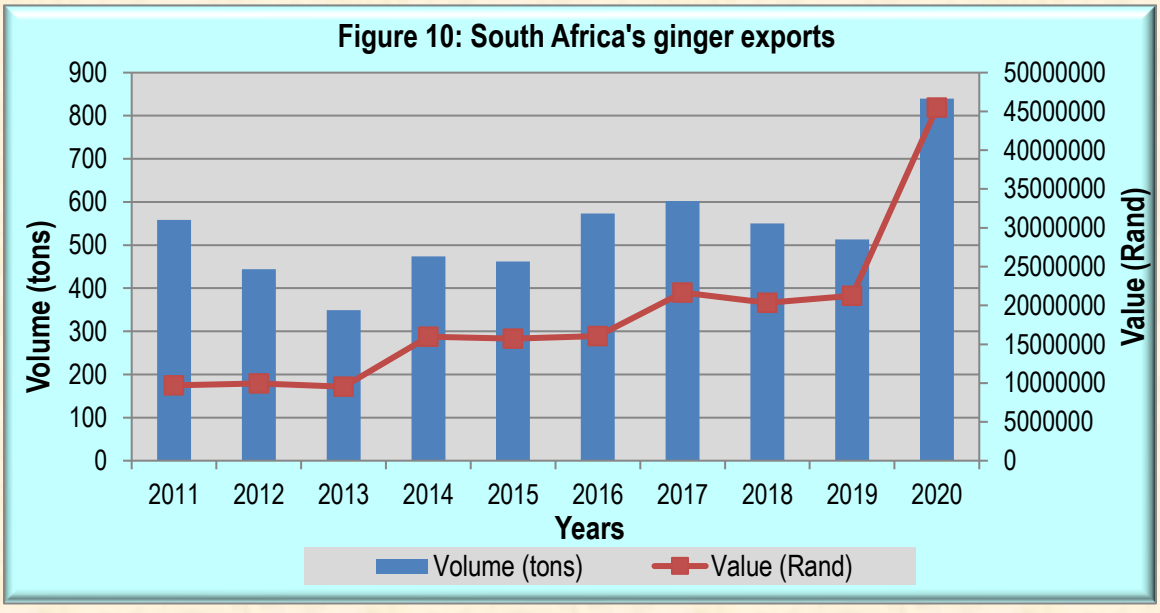
Table 2: Crushed coriander seeds export destinations in 2019

Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020 (tons)	Growth in exported value between 2016-2020 (%, p.a.)	Growth in exported quantity between 2016-2020 (%, p.a.)	Growth in exported value between 2019 and 2020 (%, p.a.)
World	75	-4479	100	20	-4	-4	17
Viet Nam	40	17	53.3	7			
Zambia	13	13	17.3	6	11	20	-52
Namibia	5	5	6.7	2	9	15	19
Nigeria	4	4	5.3	0	102		71
United Kingdom	3	-14	4	0	7		8
Switzerland	2	2	2.7	0			7
Zimbabwe	2	2	2.7	1	16	21	-86
Botswana	2	2	2.7	1	3	0	6

Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020 (tons)	Growth in exported value between 2016-2020 (%, p.a.)	Growth in exported quantity between 2016-2020 (%, p.a.)	Growth in exported value between 2019 and 2020 (%, p.a.)
Kenya	1	1	1.3	0			
Angola	1	1	1.3	0	-4		
Mozambique	1	1	1.3	1	-18	0	
Malawi	1	1	1.3	0	-11		
Lesotho	1	1	1.3	0	68		
Eswatini	1	1	1.3	0	-6		

Source: ITC Trade Map

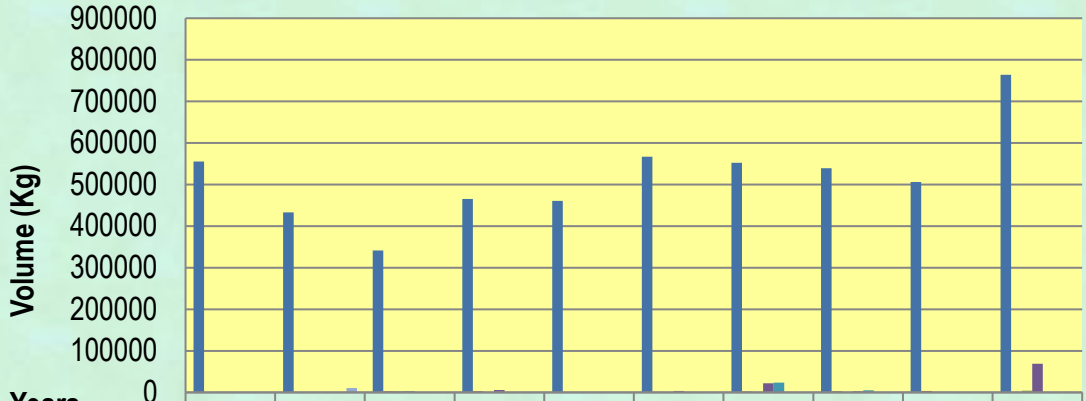
Figure 10 below illustrates South Africa's ginger exports between 2011 and 2020. In 2012, the ginger export fell by 20.4% in comparison to 2011 exports. During 2013, there was a further drop of 21.4% in ginger export as compared to the 2012 export volume. In 2014, ginger export volume has gone up by 35.6% in comparison to the previous year's export. During 2015, there was a slight drop of 2.5% in ginger export, while the export value dropped by 1.6%. It was relatively more profitable to export ginger in 2007, 2009 and from 2012 to 2015. During 2016, South Africa's ginger export eased higher by 24% and it was more profitable to export ginger in comparison to 2015. In 2017, South Africa's ginger export grew by 5% relative to 2016 exports, and it was more profitable to export ginger when compared to the previous year (2016). As of 2018, South Africa's ginger export grow modestly by 8.5% and it was more profitable to export ginger relative to 2017. In 2019, South Africa's ginger export declined slightly by 6.8% and it was more profitable to export ginger relative to 2018 exports. When compared to the previous year (2019), South Africa's ginger exports increased by 63.7% in 2020, and it was substantially more profitable to export ginger in 2020 than it was in 2019.



Source: Quantec Easydata

Figure 11 below shows the South African ginger exports to various regions in the world from 2011 to 2020.

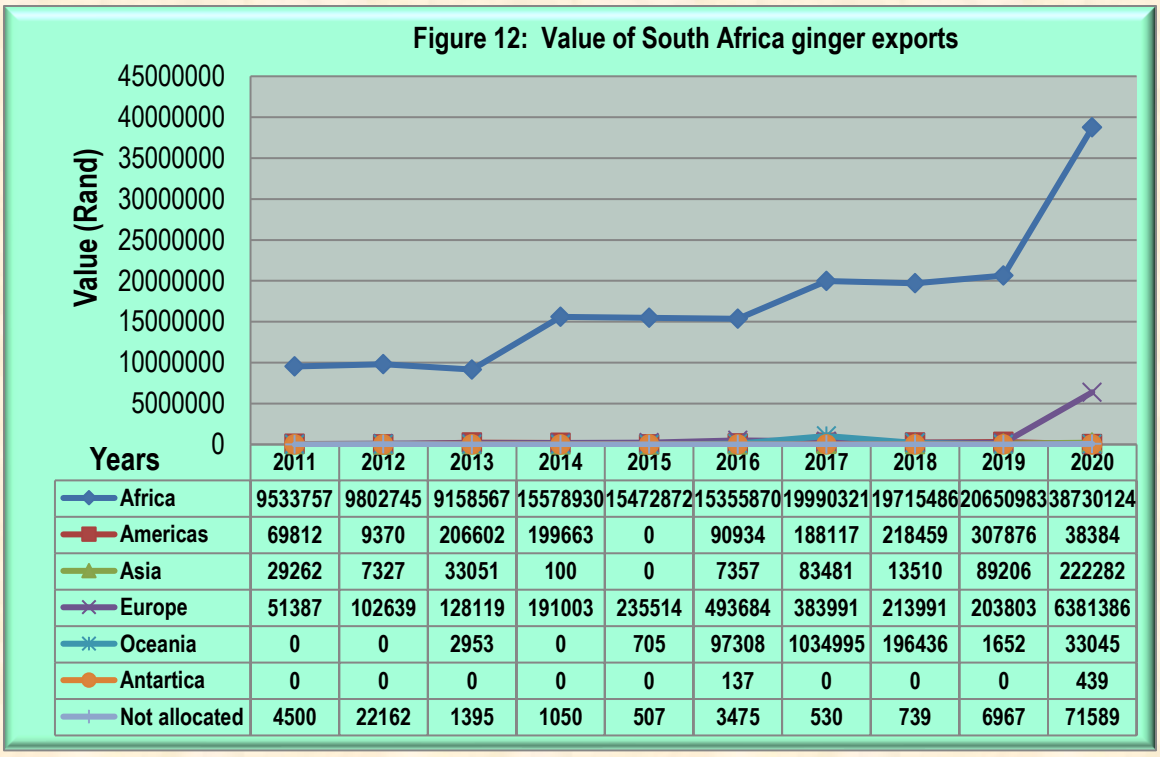
Figure 11: South Africa ginger export to the regions



Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Africa	555157	432660	341234	465036	461053	566779	552521	539438	505908	763596
America	701	78	2775	2907	0	1032	2367	2904	3635	1395
Asia	1533	143	2533	0	0	101	1257	110	1573	4565
Europe	1049	789	2536	5754	619	3644	22122	3084	1514	68718
Oceania	0	0	28	0	20	1446	23624	5020	29	369
Antarctica	0	0	0	0	0	3	0	0	0	3
Not allocated	150	10750	105	166	58	45	52	14	185	1334

Source: Quantec Easydata

Figure 11 above shows South Africa's export markets for ginger in terms of regions from 2011 to 2020. African region is mainly the primary export market for ginger exported from South Africa, followed by Europe and America. In 2011 and 2012, a notable volume of ginger export was not allocated to any region. Export volumes to African regions were incomparably higher in 2010 and 2011. During 2012 and 2013, the export volume dropped. A sizeable volume of 5 754 kg was exported to Europe in 2014. There was a 0.8% decline in African region's export volume in 2015 as compared to 2014 exports. At the same time, there was no ginger export to America, Asia and Antarctica regions, while export volumes to Europe have notably decreased from 5 754Kg to 619 Kg. In 2016, Africa was still the preferred export market for ginger export from South Africa and there was a notable increase in export volume destined for Europe and Oceania regions. As of 2017, Africa region was still by far the primary recipient of ginger export from South Africa however, the export volume decreased slightly by 2.5%. At the same time, there was a notable increment in export volume destined to Europe, Oceania, Asia and Americas regions. In 2018, Africa was still the main recipient of South Africa's ginger exports, exports destined to America, Europe and Oceania were insignificant. As of 2019, South Africa's ginger export destined to African region declined by 6.2% relative to 2018 exports. In the same year, there was a notable increment in exports destined to Americas and Asia region whilst exports destined to Europe and Oceania have experienced a sharp decline in export volume. In 2020, South Africa's ginger export to African, European, and Asian regions surged whereas ginger export to the Americas region has notably dropped in comparison to 2019 exports.



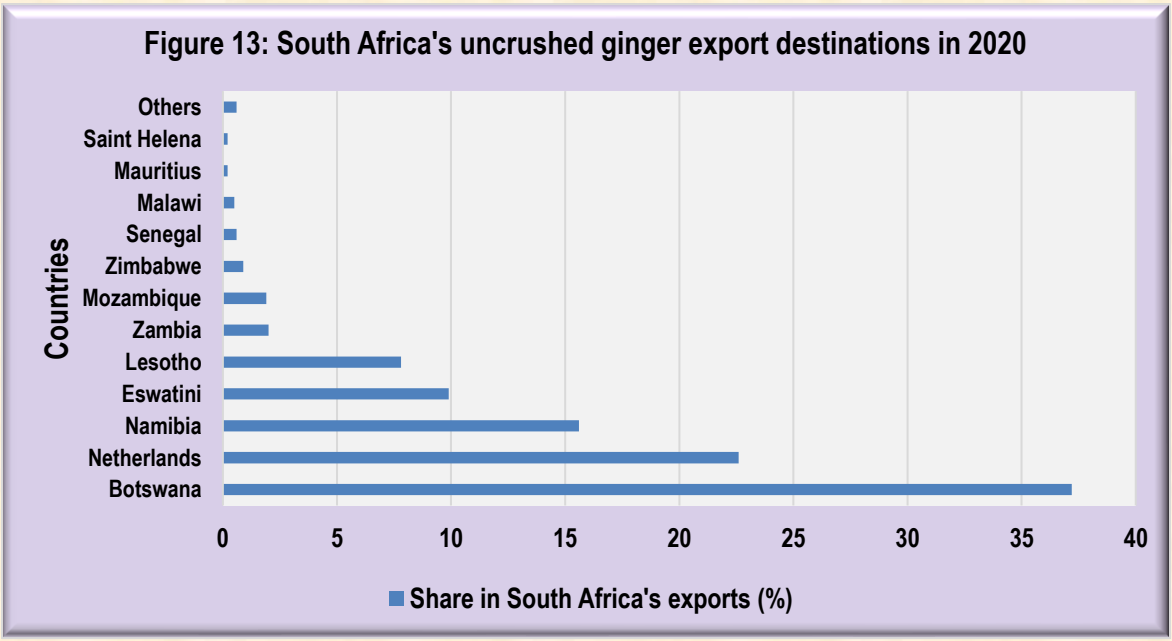
Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Africa	9533757	9802745	9158567	15578930	15472872	15355870	19990321	19715486	20650983	38730124
Americas	69812	9370	206602	199663	0	90934	188117	218459	307876	38384
Asia	29262	7327	33051	100	0	7357	83481	13510	89206	222282
Europe	51387	102639	128119	191003	235514	493684	383991	213991	203803	6381386
Oceania	0	0	2953	0	705	97308	1034995	196436	1652	33045
Antartica	0	0	0	0	0	137	0	0	0	439
Not allocated	4500	22162	1395	1050	507	3475	530	739	6967	71589

Source: Quantec Easydata

The above figure 12 shows the value of South Africa's ginger exports from 2011 to 2020. High export values were recorded for the Africa region as high volumes of ginger were exported to this region. The figure also shows that there was a notable increment in export value recorded for the European region in 2012. There was a significant increase in export values recorded for America, Asia and Europe region during 2013. The highest export value was recorded in 2014 for the Africa region. In 2014, Europe export value has increased while Asia's export value dropped. It was more profitable to export ginger to the American region, followed by Africa and Europe region. In 2015, it was relatively more profitable to export ginger to the European region as compared to export destined to African region. In 2016, the Europe region was still the most profitable export market for ginger exported from South Africa, followed by America and Oceania, whilst Africa region was the least profitable. During 2017, the Americas region remained the most profitable export market for ginger export from South Africa, followed by Asia and Oceania, whereas Africa region was still the least profitable market. As of 2018, Asia was the most profitable export for South Africa's ginger export, followed Europe, America and Oceania whilst the least profitable. In 2019, it was more profitable to export ginger to African region when compared with the 2018 ginger export value. As of 2020, exporting ginger to the Antarctica region was the most profitable option for South Africa, followed by the European region, Oceania region, and African region; exporting ginger to the Asia region was the least profitable option.

Figure 13 and Table 3 below show South Africa's uncrushed ginger export destinations and the country's percentage shares. In 2020, Botswana, Netherlands, Namibia, Eswatini and Lesotho were the primary markets for uncrushed ginger exported from South Africa. A considerable percentage of uncrushed ginger was also exported to Zambia, Mozambique and Zimbabwe. Botswana has commanded 37.2%, the Netherlands has recorded 22.6%, while 15.6% of South Africa's uncrushed

ginger was exported to Namibia between 2016 and 2020 period. Uncrushed ginger exports to Botswana have increased by 47% in value and by 23% in quantity between 2016 and 2020.



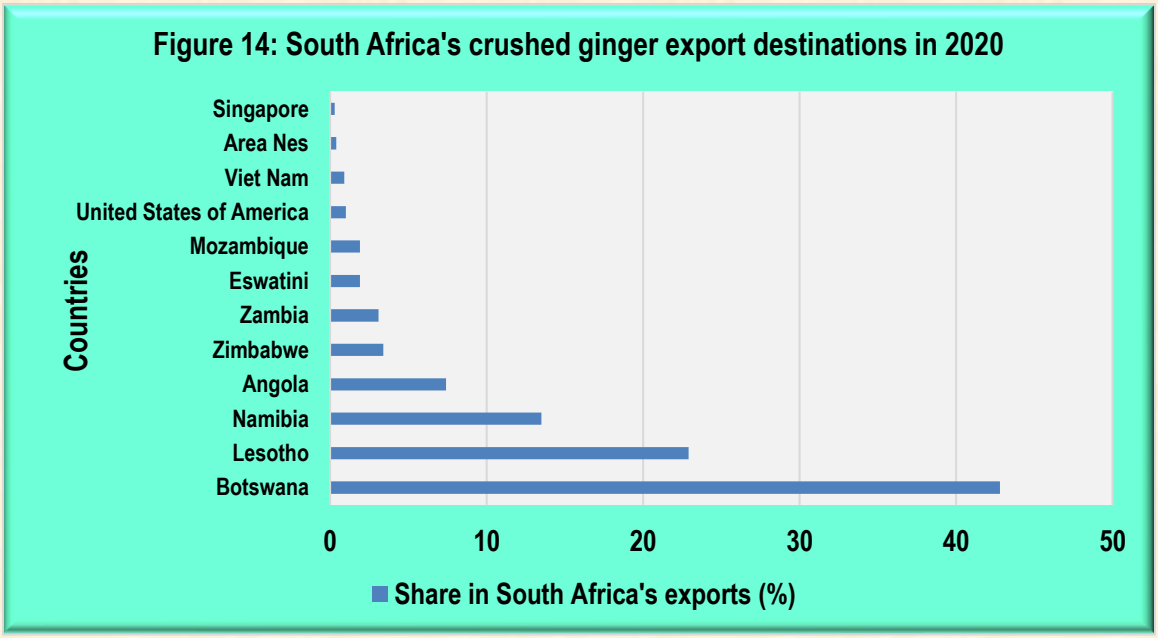
Source: ITC Trade Map

Table 3: South Africa's uncrushed ginger exports destinations in 2020

Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020 (tons)	Growth in exported value between 2016-2020 (%, p.a.)	Growth in exported quantity between 2016-2020 (%, p.a.)	Growth in exported value between 2019-2020 (%, p.a.)
World	1697	-4850	100	475	15	3	159
Botswana	631	631	37.2	194	47	23	107
Netherlands	384	384	22.6	68			
Namibia	265	265	15.6	75	38	16	153
Eswatini	168	168	9.9	37	16	1	154
Lesotho	132	132	7.8	55	14	10	109
Zambia	34	27	2	14	-6	-9	-27
Mozambique	33	-69	1.9	17	-13	-15	28
Zimbabwe	16	16	0.9	2	-40	-50	163
Senegal	11	11	0.6	2	163		
Malawi	9	8	0.5	8	-7	30	48
Mauritius	3	3	0.2	1	3		
Saint Helena	3	3	0.2	1	7	0	131

Source: ITC Trade Map

Figure 14 below is an illustration of South Africa's crushed ginger export destinations in 2020.



Source: ITC Trade Map

Figure 14 above and Table 4 below show South Africa's crushed ginger export destinations and the country's percentage shares. In 2020, Botswana, Lesotho and Namibia were still the primary markets for crushed ginger exported from South Africa. A considerable percentage of crushed ginger was also exported to Angola and Zimbabwe. Botswana has commanded a 42.8% share of exports, and Lesotho and Namibia have recorded 22.9% and 13.5% respectively of South Africa's crushed ginger. Crushed ginger exports to Botswana have increased by 41% in value and by 25% in quantity between the 2016 and 2020 period.

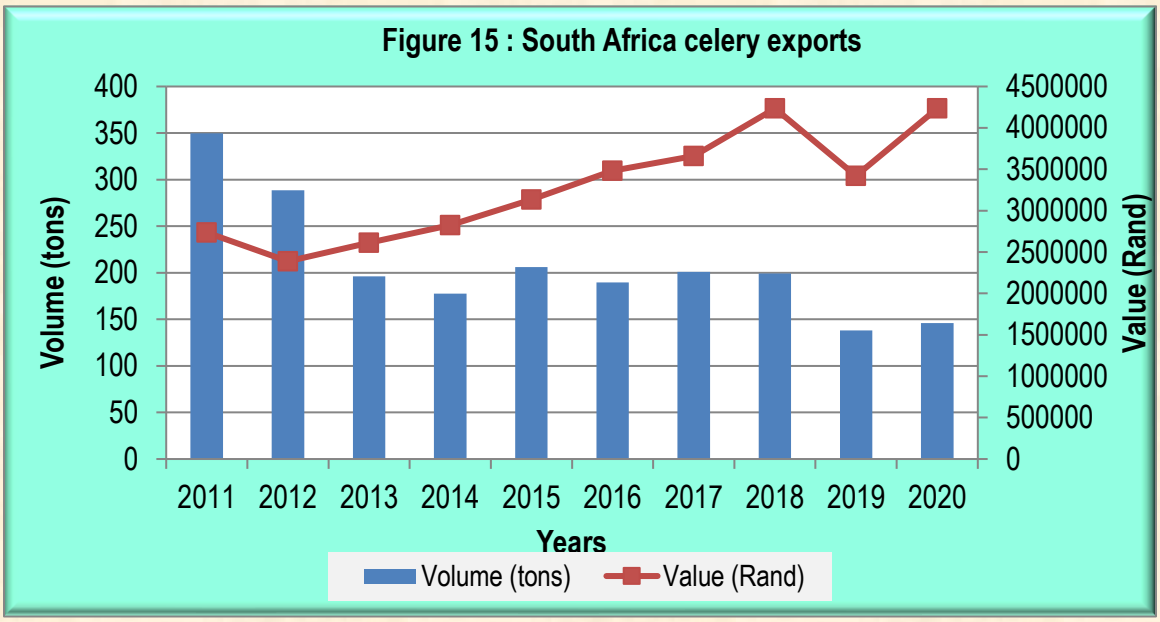
Table 4: South Africa's crushed or ground ginger export destinations in 2020

Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020 (tons)	Growth in exported value between 2016-2020 (%, p.a.)	Growth in exported quantity between 2016-2020 (%, p.a.)	Growth in exported value between 2019-2020 (%, p.a.)
World	1093	-627	100	364	24	11	34
Botswana	468	468	42.8	138	41	25	28
Lesotho	250	250	22.9	96	17	0	3
Namibia	148	148	13.5	61	34	25	317
Angola	81	81	7.4	15	54	20	1355
Zimbabwe	37	37	3.4	17	32	25	134
Zambia	34	34	3.1	9	1	-14	-46
Eswatini	21	21	1.9	7	2	-16	-5

Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020 (tons)	Growth in exported value between 2016-2020 (%, p.a.)	Growth in exported quantity between 2016-2020 (%, p.a.)	Growth in exported value between 2019-2020 (%, p.a.)
Mozambique	21	21	1.9	13	35	26	-18
USA	11	4	1	1	18	0	15
Viet Nam	10	-58	0.9	4			
Area Nes	4	2	0.4	1			
Singapore	3	3	0.3	1			

Source: ITC Trade Map

Figure 15 is an illustration of South Africa's celery exports from 2011 to 2020. The Figure shows that in 2011, South Africa has exported a record high of 349 tons of celery. Since 2012, celery exports have steadily declined and during 2014, celery exports were just above 177 tons. In 2015, South Africa's celery export has increased by 16% to 206 tons. During the period under review, it was generally more profitable to export celery except in 2010. During 2016, celery export has eased lower by 8% when compared to 2015 and it was relatively more profitable to export celery in 10 years. As of 2017, South Africa's celery exports grew by 5.5% relative to 2016 export and it was still relatively more profitable to export celery when compared to other years. In 2018, South Africa's celery export decline slightly to 199 tons and was relatively more profitable to export celery relative to the 2017 export value. In 2019, South Africa's celery export declined by 31% and it was more profitable to export celery when compared to the 2018 export value. South Africa exported 5.8% more celery in 2020, and it was significantly more profitable to export celery than it was in 2019.



Source: ITC Trade Map

Figure 16 is an illustration of South Africa's celery export destinations in 2020.

Source: ITC Trade Map

Figure 16 above and Table 5 below indicate South Africa's celery export destinations and the percentage shares of exports in 2020. South Africa exported high quantities of celery to Botswana, Namibia and Mozambique. Botswana has commanded a 27.1% share of exports, followed by Namibia with 11.9%, Mozambique with 11.2%, the Netherlands with 10.8% and Eswatini with 7.8%. South African celery exports to Namibia have declined by 18% in value and by 32% in quantity between the 2016 and 2020 period. Celery exports to Malawi have increased by 12% in value and 13% in quantity between the 2016 and- 2020 period.

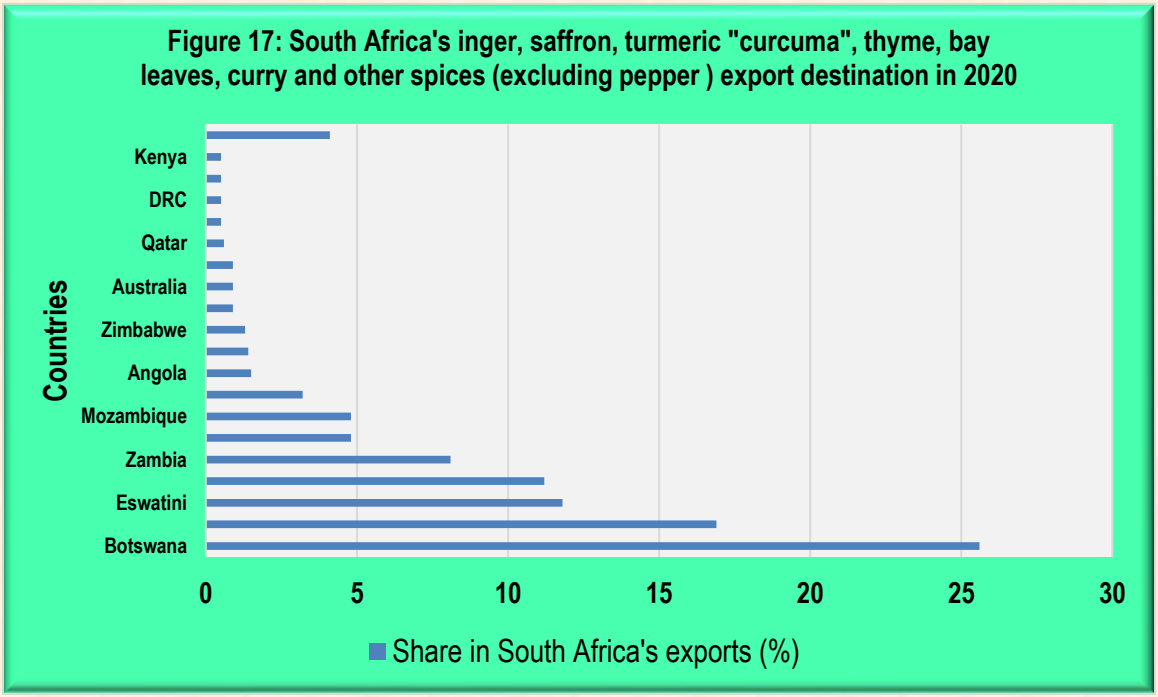
Table 5: South Africa's celery export destinations in 2020

Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020 (tons)	Growth in exported value between 2016-2020 (%, p.a.)	Growth in exported quantity between 2016-2020 (%, p.a.)	Growth in exported value between 2019-2020 (%, p.a.)
World	269	269	100	146	1	-9	13
Botswana	73	73	27.1	34	-3	-9	-21
Namibia	32	32	11.9	17	-18	-32	-11
Mozambique	30	30	11.2	18	-5	-12	22
Netherlands	29	29	10.8	4			
Eswatini	21	21	7.8	12	0	-7	2
Malawi	20	20	7.4	17	12	13	12
Zambia	18	18	6.7	20	52	82	14

Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020 (tons)	Growth in exported value between 2016-2020 (%, p.a.)	Growth in exported quantity between 2016-2020 (%, p.a.)	Growth in exported value between 2019-2020 (%, p.a.)
Lesotho	18	18	6.7	20	11	20	6
France	17	17	6.3	2			
United Kingdom	8	8	3	1			

Source: ITC Trade Map

Figure 17 is an illustration of South Africa's ginger, saffron, turmeric, thyme, bay leaves and curry export destinations in 2020.



Source: ITC Trade Map

Graph 17 above and Table 6 below indicate ginger, saffron, thyme, bay leaves and curry export destinations and the percentage shares during 2020. Botswana, Namibia, Eswatini, Lesotho and Zambia were still the main export markets for ginger, saffron, thyme, bay leaves and curry leaves originating from South Africa. Botswana has commanded a 25.6% share of exports, followed by Namibia with 16.9%, Eswatini with 11.8% and Lesotho with 11.2% share. Ginger, saffron, turmeric, thyme, bay leaves and curry exports from South Africa to Botswana has increased by 5% in value and 7% in quantity between 2016 and 2020 period. Exports to Eswatini have increased by 7% in value and 9% in quantity between 2016 and 2020.

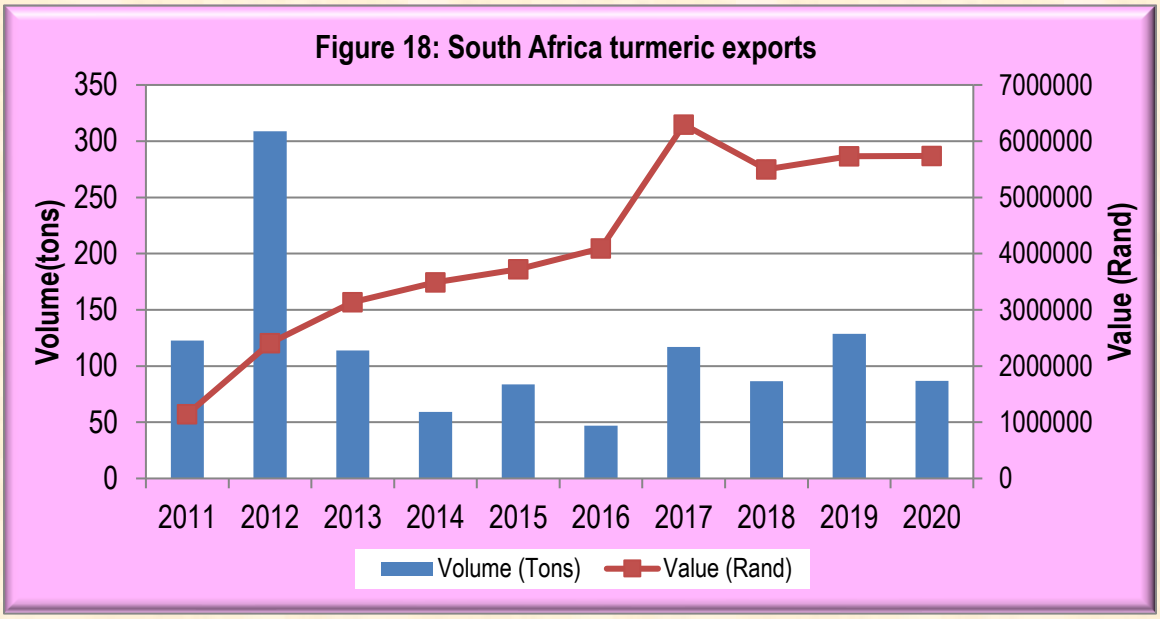
Table 6: South Africa's ginger, saffron, turmeric, thyme, bay leaves & curry export destinations in 2020.

Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020 (tons)	Growth in exported value between 2016-2020 (%, p.a.)	Growth in exported quantity between 2016-2020 (%, p.a.)	Growth in exported value between 2019-2020 (%, p.a.)
World	57170	31478	100	21502	3	1	-6
Botswana	14647	14644	25.6	4979	5	7	3
Namibia	9656	9655	16.9	4076	0	2	-13
Eswatini	6741	6734	11.8	2725	7	9	-6
Lesotho	6377	6373	11.2	2120	3	3	-8
Zambia	4633	4621	8.1	2392	-8	1	-2
United Kingdom	2749	2685	4.8	757	49	41	1
Mozambique	2744	2640	4.8	1410	9	8	-22
United Arab Emirates	1853	1785	3.2	316	32	35	67
Angola	856	856	1.5	524	36	50	-51
Malawi	788	787	1.4	315	7	13	-17
Zimbabwe	747	747	1.3	352	-26	-45	-28
Nigeria	543	-2556	0.9	271	30	-4	942
Australia	534	526	0.9	170	-19	-17	195
Netherlands	500	347	0.9	148	63	92	182
Qatar	366	366	0.6	59	40	33	283
USA	312	293	0.5	43	20	0	-72
DRC	295	295	0.5	118	13	21	-68
Seychelles	293	293	0.5	69	-4	-6	6
Kenya	291	289	0.5	97	-14	-15	0

Source: ITC Trade Map

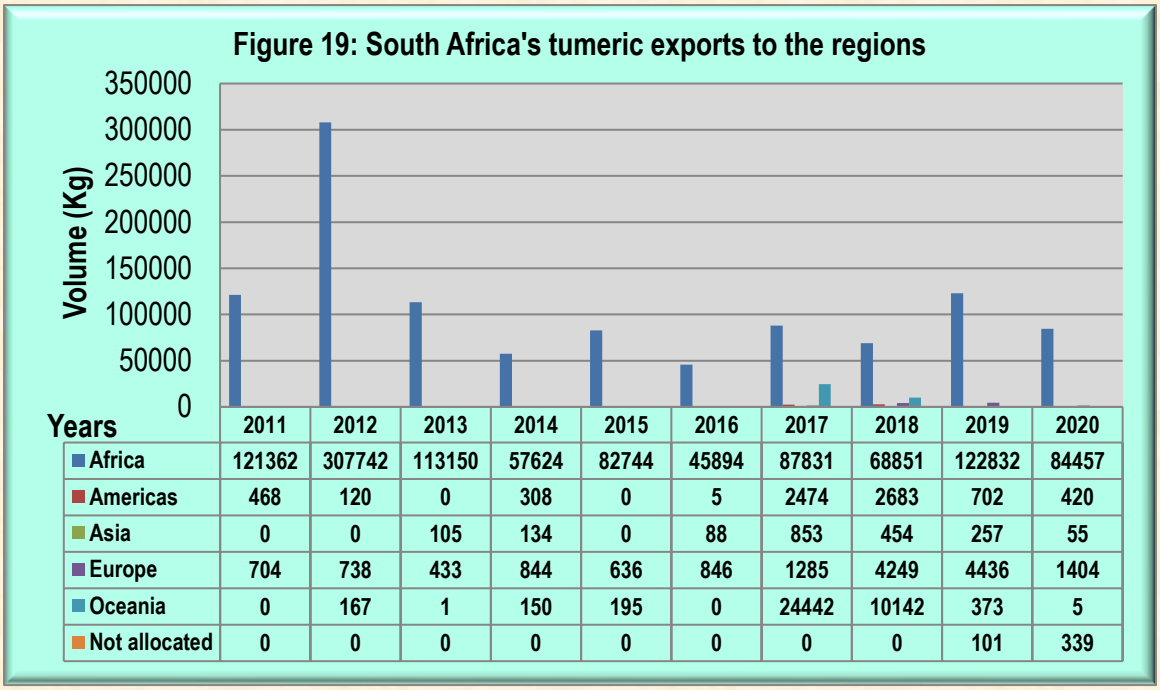
Figure 18 below is an illustration of South Africa's turmeric exports from 2011 to 2020. As of 2011, South African turmeric exports were just above 122 tons. South African turmeric exports rose sharply in 2012 in comparison to 2011 export and in 2013, the turmeric exports drastically dropped. The export volumes of turmeric dropped further by 48% in 2014, when compared to the 2013 export volume. During 2015, South Africa's turmeric exports have increased notably by 42%, when compared to 2014 exports. From 2008 to 2010 and from 2013 to 2015, it was more profitable to export turmeric as high values were recorded for the volume exported. During 2016, turmeric export eased lower by 44% and it was relatively more profitable to export turmeric when compared to 2015. As of 2017, South Africa's turmeric export was incomparably higher when compared to the 2016 export value and it was by far relatively more profitable to export turmeric. During 2018, South Africa's turmeric exports declined by 26% and it was also more profitable to export turmeric relative to the

previous year (2017) exports. In 2019, South Africa's turmeric export grew slightly by 0.3% and it was more profitable to export turmeric relative to the 2018 export value. As of 2020, South Africa has exported 32.6% more turmeric and it was more profitable to export turmeric relative to the 2019 export value.



Source: Quantec Easydata

Figure 19 is an illustration of South Africa's turmeric exports to various regions from ~~2010~~ 2011 to 202~~0~~19.



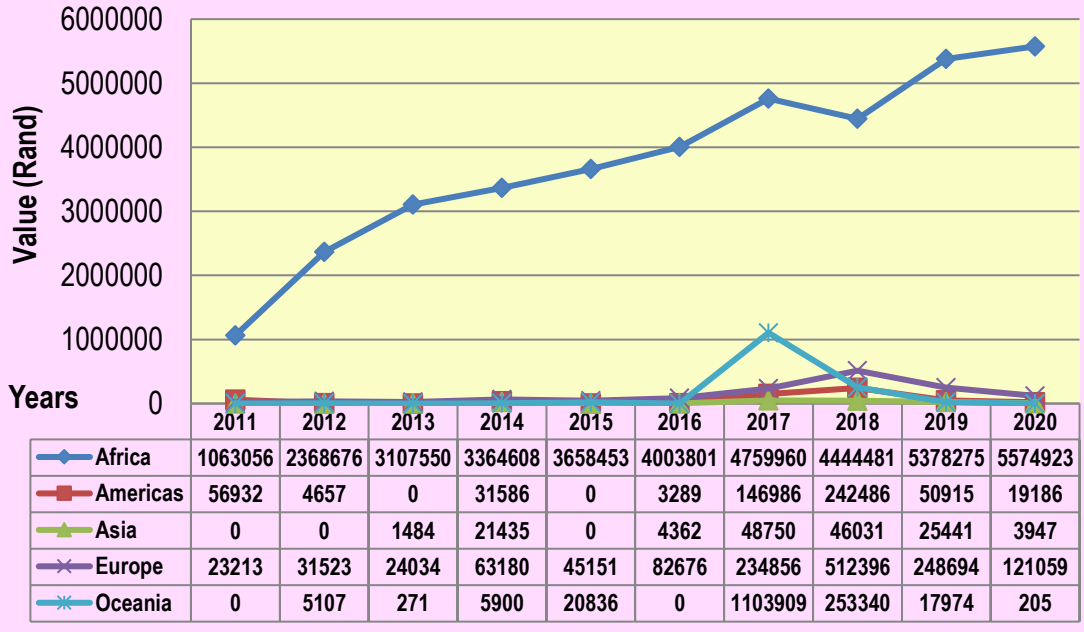
Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Africa	121362	307742	113150	57624	82744	45894	87831	68851	122832	84457
Americas	468	120	0	308	0	5	2474	2683	702	420
Asia	0	0	105	134	0	88	853	454	257	55
Europe	704	738	433	844	636	846	1285	4249	4436	1404
Oceania	0	167	1	150	195	0	24442	10142	373	5
Not allocated	0	0	0	0	0	0	0	0	101	339

Source: Quantec Easydata

Figure 19 above shows South Africa's turmeric exports to various regions. The African region is the primary export market for turmeric exports from South Africa. In 2011, the Africa region was the primary export market for turmeric originating from South Africa, followed by the Americas. In 2013 and 2014, turmeric exports to the African region subsequently declined. The figure also shows that turmeric exports to the African region have increased by 43.6% in 2015 as compared to 2014, while the export to Oceania has slightly increased 150Kg to 195Kg. During 2016, the African region was still the primary export market for turmeric exported from South Africa however, the volume of export has eased lower by 44.5% in comparison to 2015 export. In 2017, turmeric export to Africa region doubled; there was also a substantial increment in export destined to Oceania, Europe and Asia regions. As of 2018, the Africa region was still the main export market for South Africa's turmeric, though the export volume dropped by 21.6% relative to 2017 exports. At the same time, turmeric export destined to Oceania has dropped by 58%, exports to Europe have doubled and exports destined to America grew by 8%. In 2019, South Africa's turmeric exports destined to the African region grew notably by 22.6%, and exports destined to the Americas, Asia and Oceania were insignificant. As of 2020, African region was still the primary export market for turmeric from South Africa, however export volume has decreased by 31% relative to the 2019 export value.

Figure 20 is an illustration of South Africa's turmeric exports between 2011 and 2020.

Figure 20: Value of South African turmeric export to the regions



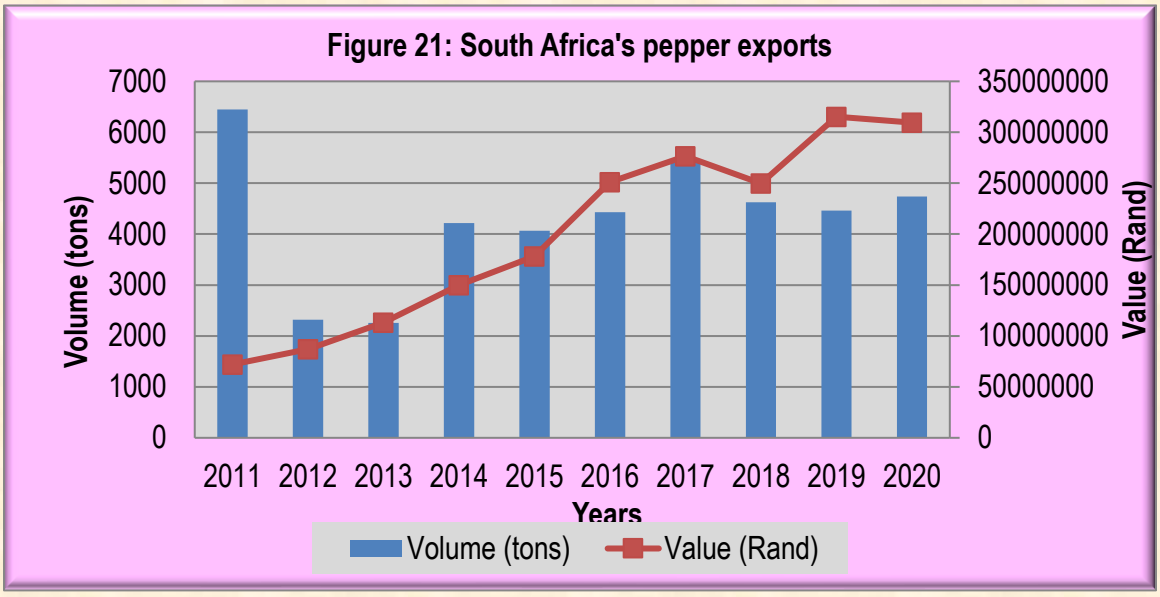
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Africa	1063056	2368676	3107550	3364608	3658453	4003801	4759960	4444481	5378275	5574923
Americas	56932	4657	0	31586	0	3289	146986	242486	50915	19186
Asia	0	0	1484	21435	0	4362	48750	46031	25441	3947
Europe	23213	31523	24034	63180	45151	82676	234856	512396	248694	121059
Oceania	0	5107	271	5900	20836	0	1103909	253340	17974	205

Source: Quantec Easydata

Figure 20 above shows the value of South Africa turmeric between 2011 and 2020. High export values were recorded for the African region as higher volumes were exported to this region. In 2011, Europe was the most profitable turmeric export market. In 2013 exports to Africa fetched higher values compared to the previous year. Asia was by far a more profitable market, followed by America and Oceania during 2014. The figure also shows that turmeric export value to the African region has increased by 5.9% in 2015 as compared to 2014. During the same year, it was more profitable to

export turmeric to Oceania, followed by Europe and exports to Africa region were least profitable. In 2016, African region, it was more profitable to export turmeric in comparison to 2015 exports to the same region. In 2017, the European region was by far the more profitable market for South Africa's turmeric export, followed by the Americas, Asia and Africa market that was least profitable. As of 2018, Europe was the most profitable export market for South Africa's turmeric, followed by Asia and America, whilst the African region was the least profitable market for turmeric export originating from South Africa. In 2019, turmeric exports destined to Africa had fetched a higher value compared to the 2018 export value from the same region. As of 2020, Asia was the most profitable market for turmeric export from South Africa, followed by the exports destined to the European region

Figure 21 below is an illustration of South Africa's pepper exports between 2011 and 2020.



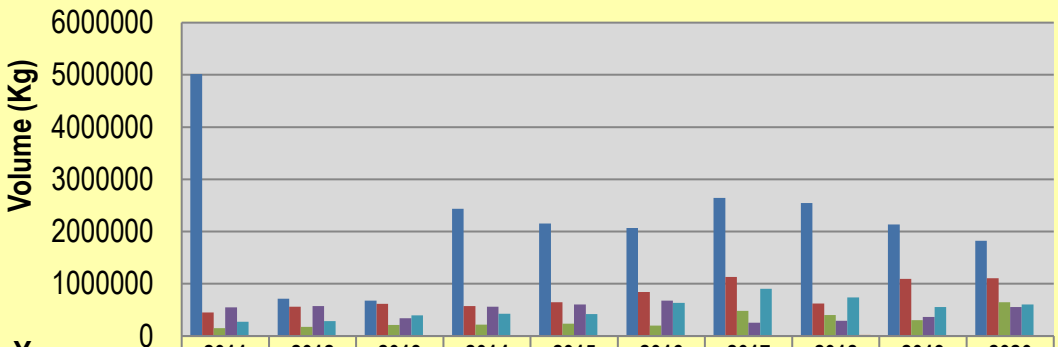
Source: Quantec Easydata

Figure 21 above shows that in 2011, South African pepper exports were 6 445 tons and it was a record high in ten years. In 2012 and 2013 pepper exports have dropped further and in 2014, pepper exports experienced an increase of 87% as compared to 2013 pepper exports. The figure shows that pepper export has slightly gone up by 3.5% during 2015 as compared to 2014 exports. From 2008 to 2009 and from 2012 to 2015, it was profitable to export pepper as high values were recorded for volumes exported. In 2016, South Africa's pepper export grew by 8.9% and the export value was 41% higher in comparison to the 2015 season. South Africa's pepper export has notably increased by 22% during 2017, and it was still profitable to export pepper when compared to other years. As of 2018, South Africa's pepper export decreased by 14% and it was also more profitable to export pepper relative to the 2017 export value. During 2019, South Africa has exported 4.3% more pepper and the export value was higher relative to the 2018 export value. As of 2020, South Africa has exported 6% more pepper and it was less profitable for South Africa to export pepper as compared to the 2019 export value.

Figure 22 below is an illustration of South Africa's pepper exports to various regions between 2011 and 2020. South Africa's primary export markets for pepper were mainly Africa, Europe and America.

Higher volumes of pepper were exported to Africa in 2011. In 2012 and 2013 pepper exports to America, Asia and Oceania gradually increased while the exports to Africa notably dropped during the same period. In 2014, South African pepper exports were mainly destined to Africa, Europe and Oceania regions. In 2015, the pepper export volumes decreased to 2.1 million tons. The figure further illustrates that pepper exports declined by 11.5% during 2015 as compared to 2014 exports. In 2016, the African region was still the primary export market for pepper exported from South Africa. However, the export volume dropped by 4% compared to 2015. At the same time, there was a notable increase in pepper exports to America, Europe and Oceania whilst the pepper export to the Asia region eased lower by 16%. During 2017, Africa region remained the primary export market for South Africa's pepper exports, followed by America, Oceania, Asia and Europe. There was also a notable increase in unallocated pepper exports. As of 2018, Africa region was still by far the primary export destination for pepper exported from South Africa. At the same time, there were notable declines in exports destined to the Americas, Asia and Oceania whereas export destined to Europe grew 13.6% relative to the 2017 export volume. In 2019, South Africa's pepper exports destined to Africa declined by 11%, there was a surge in pepper export destined to the Americas, export to Asia eased lower by 24%, Oceania export dropped by 25% and there was a significant drop in unallocated exports. As of 2020, the African region was still the primary export market for pepper from South Africa. At the same time, there was a notable increase in pepper export destined for Asia, Europe, and Oceania regions.

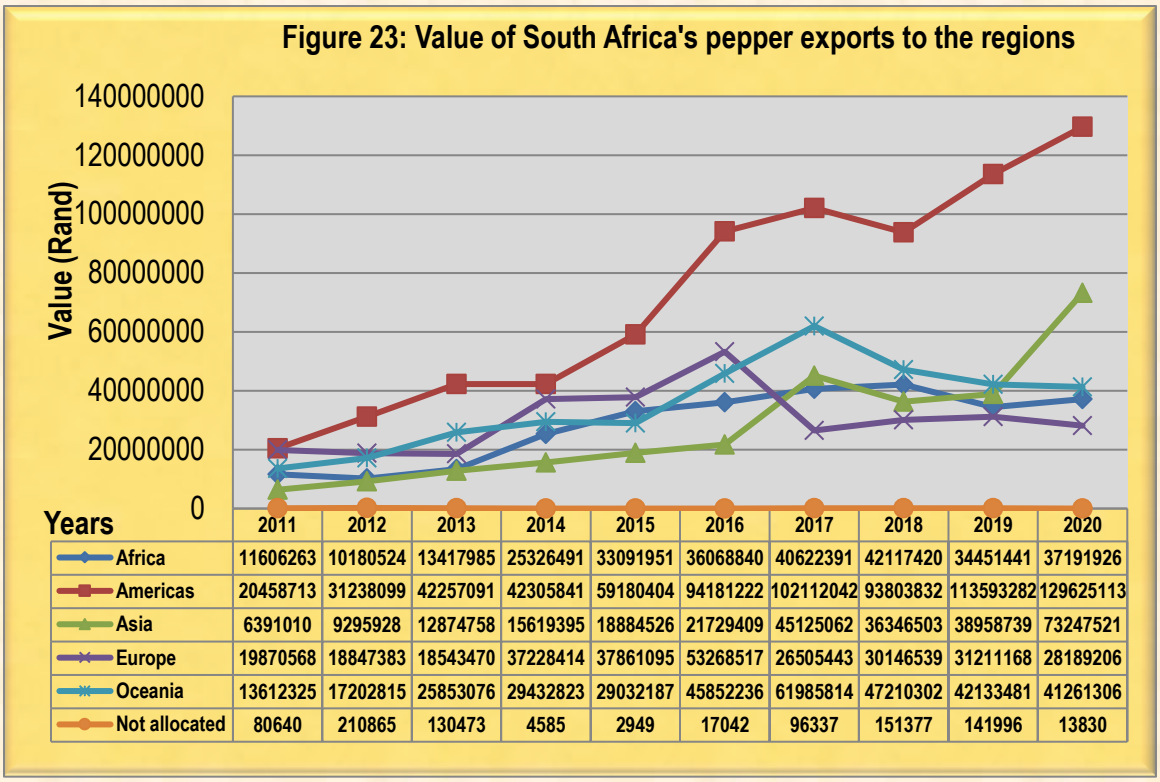
Figure 22: South Africa's pepper exports to the regions



Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Africa	5017868	714997	680001	2435759	2157506	2071010	2642574	2547481	2133786	1821671
Americas	450652	560518	616263	576524	644684	845383	1130067	621685	1097529	1105560
Asia	150836	176451	212206	220221	239946	201086	479088	401444	302645	650247
Europe	548618	574273	341647	563621	602366	675360	255536	290457	363570	554623
Oceania	273393	287482	399124	424025	421792	636728	905741	741720	555830	607063
Not allocated	4195	7887	5390	66	113	1418	10206	22426	9270	269

Source: Quantec Easydata

Figure 23 shows the value of South Africa's pepper exports to the regions between 2011 and 2020.

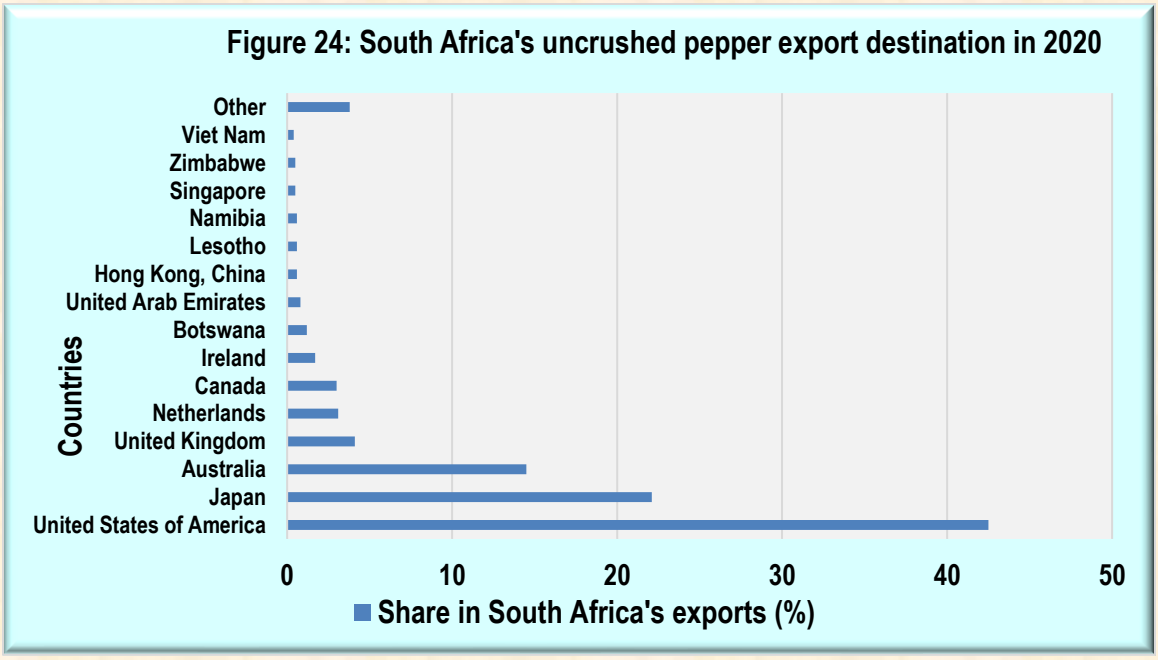


Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Africa	11606263	10180524	13417985	25326491	33091951	36068840	40622391	42117420	34451441	37191926
Americas	20458713	31238099	42257091	42305841	59180404	94181222	102112042	93803832	113593282	129625113
Asia	6391010	9295928	12874758	15619395	18884526	21729409	45125062	36346503	38958739	73247521
Europe	19870568	18847383	18543470	37228414	37861095	53268517	26505443	30146539	31211168	28189206
Oceania	13612325	17202815	25853076	29432823	29032187	45852236	61985814	47210302	42133481	41261306
Not allocated	80640	210865	130473	4585	2949	17042	96337	151377	141996	13830

Source: Quantec Easydata

Figure 23 above is an illustration of the values of South Africa's pepper exports to the regions. It was generally more profitable to export peppers to Oceania, followed by America and Europe. n 2012, it was more profitable to export pepper to Oceania, America and Asia. In 2014, pepper exports to American and Asia regions recorded higher values. The figure further shows that the pepper export value increased notably by 30%, while America's export value has experienced a 39.8% increment. Pepper's export value increased by 30.4% in 2015 as compared to the 2014 export value. It was relatively more profitable to export pepper to the Americas region, followed by Asia and Oceania regions. During 2016, it was still more profitable to export pepper to America region, followed by Asia, Europe and Oceania whereas pepper export to Africa region was less profitable. In 2017, Americas export value grew notably by 8.4%, Oceania and Asia export values have surged by 125% and 107% respectively, whilst Europe's export value has sharply dropped by 50% relative to the 2016 export value. As of 2018, America region was by far the most profitable region for South Africa's pepper export, followed by Europe and Asia while the Africa region was the least profitable export market. In 2019, Asia was by far the most profitable export market for pepper export originating from South Africa, followed by Americas, Europe and Oceania whereas the Africa region was still the least profitable market. As of 2020, Americas followed by Asian region were the most profitable markets for pepper exports originating from South Africa.

Figure 24 and Table 7 show South Africa's uncrushed pepper export destinations in 2020.



Source: ITC Trade Map

In 2020, South Africa exported uncrushed pepper mostly to the United States of America, Australia, Japan and Australia. The United States of America has commanded a 42.5% share of South Africa's uncrushed pepper exports, followed by Japan with 22.1% and Australia with 14.5%. South African uncrushed pepper exports to the world have decreased by 7% in terms of value and 5% in terms of quantity between 2016 and 2020. Uncrushed pepper exports to Japan have increased by 23% in value and 21% in quantity between 2016 and 2020.

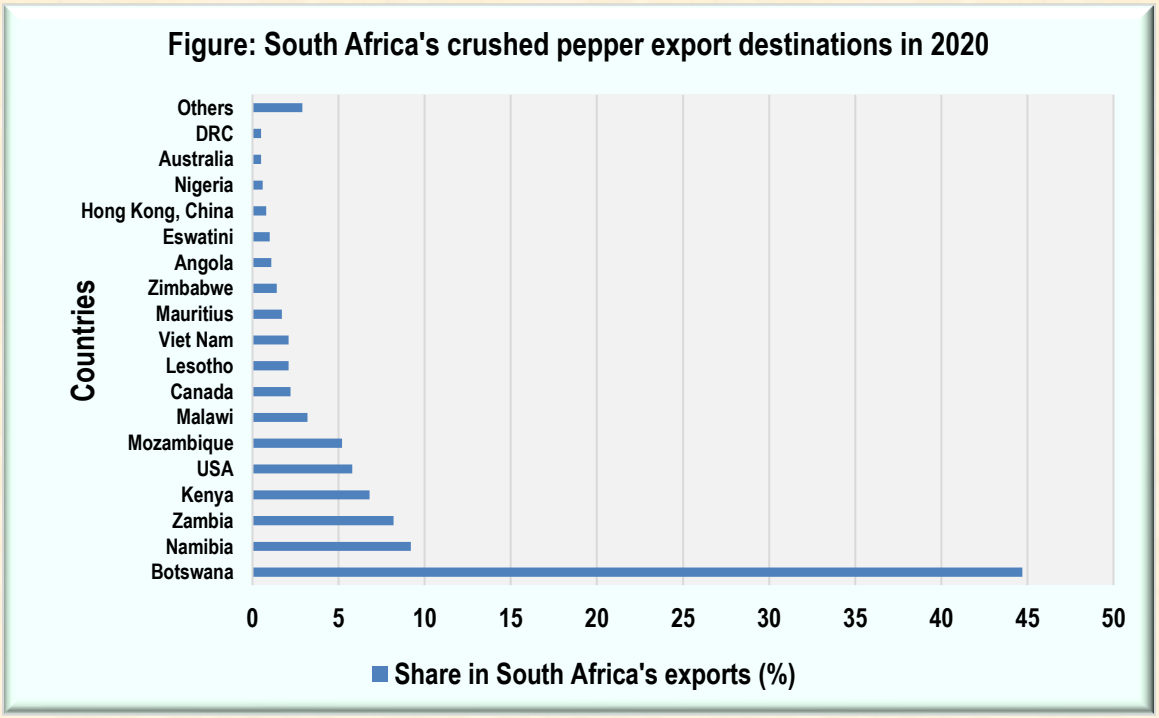
Table 7: South Africa's uncrushed pepper export destinations in 2020

Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020	Growth in exported value between 2016-2020 (%, p.a.)	Growth in exported quantity between 2016-2020 (%, p.a.)	Growth in exported value between 2019-2020 (%, p.a.)
World	17104	10319	100	3347	4	3	8
United States of America	7271	7271	42.5	960	16	16	8
Japan	3780	3780	22.1	541	23	21	63
Australia	2477	2475	14.5	597	-7	-5	-11
United Kingdom	705	704	4.1	275	-23	-10	-19
Netherlands	536	536	3.1	220	3	34	4
Canada	505	505	3	48	-7	-15	-32

Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020	Growth in exported value between 2016-2020 (%, p.a.)	Growth in exported quantity between 2016-2020 (%, p.a.)	Growth in exported value between 2019-2020 (%, p.a.)
Ireland	292	292	1.7	42	24	31	18
Botswana	199	199	1.2	179	27	41	19
United Arab Emirates	142	141	0.8	36	68	75	243
Hong Kong, China	111	111	0.6	15	20	8	32
Lesotho	106	106	0.6	163	15	27	-6
Namibia	96	96	0.6	64	-19	-27	-50
Singapore	85	-119	0.5	8	22	24	66
Zimbabwe	78	60	0.5	36	0	-8	126
Viet Nam	71	-5493	0.4	11	19	38	

Source: ITC Trade Map

Figure 25 shows South Africa's crushed or ground pepper export destinations in 2020.



Source: ITC Trade Map

Figure 25 above shows that during 2020, South Africa exported crushed pepper mostly to Botswana, Namibia, Zambia and Kenya. Botswana commanded a 44.7% share of South Africa's crushed pepper exports, followed by Namibia with 9.2% and Zambia with 8.2%. South African pepper exports to the world have decreased by 17% in terms of quantity between 2019 and 2020. The value of crushed pepper exports to Botswana decreased by 1% in value and 7% in quantity between 2016 and 2020.

Table 8: South Africa's pepper crushed or ground export destinations in 2020

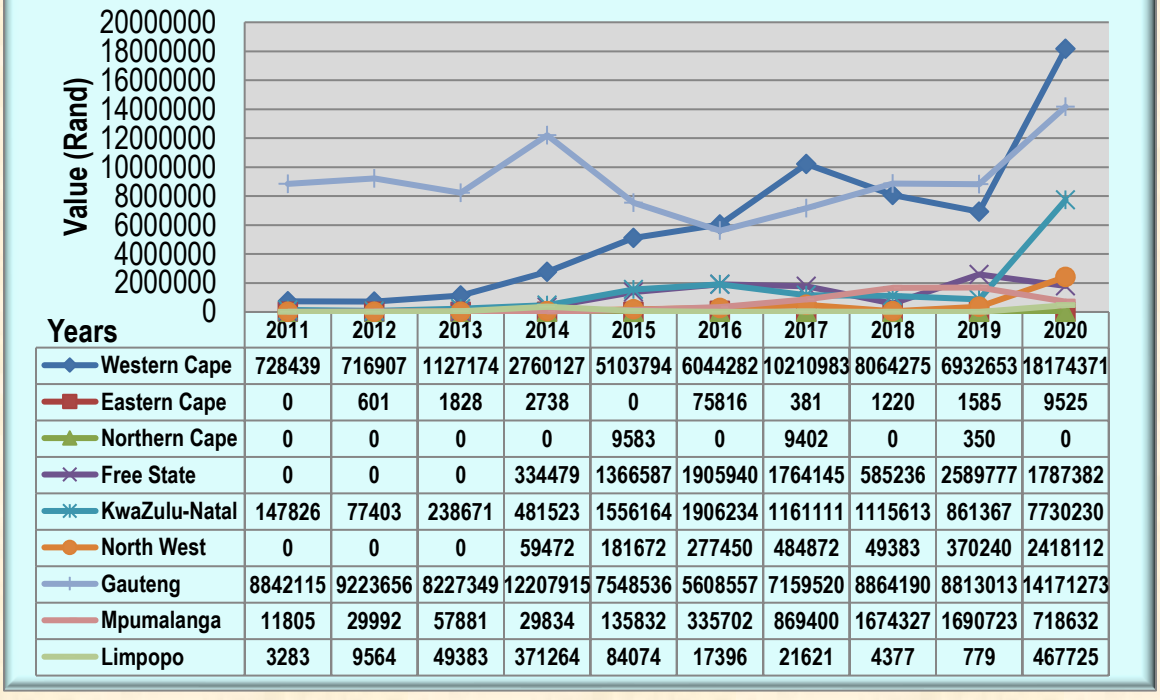
Importers	Value exported in 2020 (USD thousand)	Trade balance 2020 (USD thousand)	Share in South Africa's exports (%)	Quantity exported in 2020 (tons)	Growth in exported value between 2016-2020 (%, p.a.)	Growth in exported quantity between 2016-2020 (%, p.a.)	Growth in exported value between 2019-2020 (%, p.a.)
World	1832	-5315	100	1390	-17	-7	-17
Botswana	818	818	44.7	946	-1	-7	9
Namibia	169	169	9.2	102	-20	-11	-26
Zambia	151	151	8.2	33	-6	2	-22
Kenya	125	125	6.8	8	9	-3	-24
USA	106	105	5.8	92	-51	-22	17
Mozambique	96	96	5.2	94	22	80	0
Malawi	58	58	3.2	10	36	42	86
Canada	40	40	2.2	4	-43	-37	-42
Lesotho	39	39	2.1	48	-7	-6	20
Viet Nam	38	-3117	2.1	7			
Mauritius	31	31	1.7	5	9	5	-7
Zimbabwe	26	25	1.4	6	-39	-44	3
Angola	20	20	1.1	2	-32	-30	-32
Eswatini	18	18	1	9	-14	-24	-41
Hong Kong, China	15	15	0.8	4	-24	-21	-31
Nigeria	11	8	0.6	2	-6	-10	62
Australia	10	3	0.5	7	-22	63	
DRC	9	9	0.5	1	18	-7	-23
Thailand	9	-2027	0.5	2			

Source: ITC Trade Map

Figure 26 below shows South Africa's provincial ginger exports from 2011 to 2020. South Africa exported ginger mainly through Gauteng, Western Cape and KwaZulu Natal. From 2011 to 2013,

Gauteng followed by Western Cape and KwaZulu Natal were the primary exit points for South Africa ginger exports. In 2014, there was a sharp increase in Western Cape, Gauteng, Free State and Limpopo ginger export values. During 2015, Free State ginger export value has notably increased and this can be ascribed to an increase in ginger export to neighbouring Lesotho. During the same year, Mpumalanga and KwaZulu Natal ginger export value have also significantly increased while Northern Cape has contributed for the first time to ginger provincial exports. In 2016, Western Cape and Gauteng were the leading provinces in ginger export, however, Gauteng ginger export value has dropped by 25% in comparison to the 2015 export value. At the same time, there was a significant increase in Free State, KwaZulu Natal, Mpumalanga, and Eastern Cape while Limpopo ginger export value experienced a notable decrement in comparison to 2015. Western Cape was still the primary exit point for South Africa's provincial ginger exports and the export value has increased notably by 68.9% during 2017. At the same time, there were notable increments in Gauteng, North West, Mpumalanga and Limpopo export values whilst KwaZulu Natal and Eastern Cape export values have significantly declined. As of 2018, Gauteng was the primary exit point for South Africa's ginger export and the export value has increased by 23%, Mpumalanga export value has surged by 92% whilst North West export value declined significantly by 89%, Limpopo export value has dropped by 79% and Free State has experienced 66% decrement in export value. In 2019, Gauteng was still by far the primary exit point for South Africa's ginger exports, followed by Western Cape and Free State, North West and Mpumalanga export values have notably increased relative to 2018 export value. As of 2020, Western Cape, followed by Gauteng and KwaZulu Natal provinces were the primary exit point for ginger exports from South Africa. There was a notable decline in ginger export values recorded for Free State and Mpumalanga, whilst the was a surge in export values for Limpopo and North West provinces.

Figure 26: South Africa provincial ginger exports

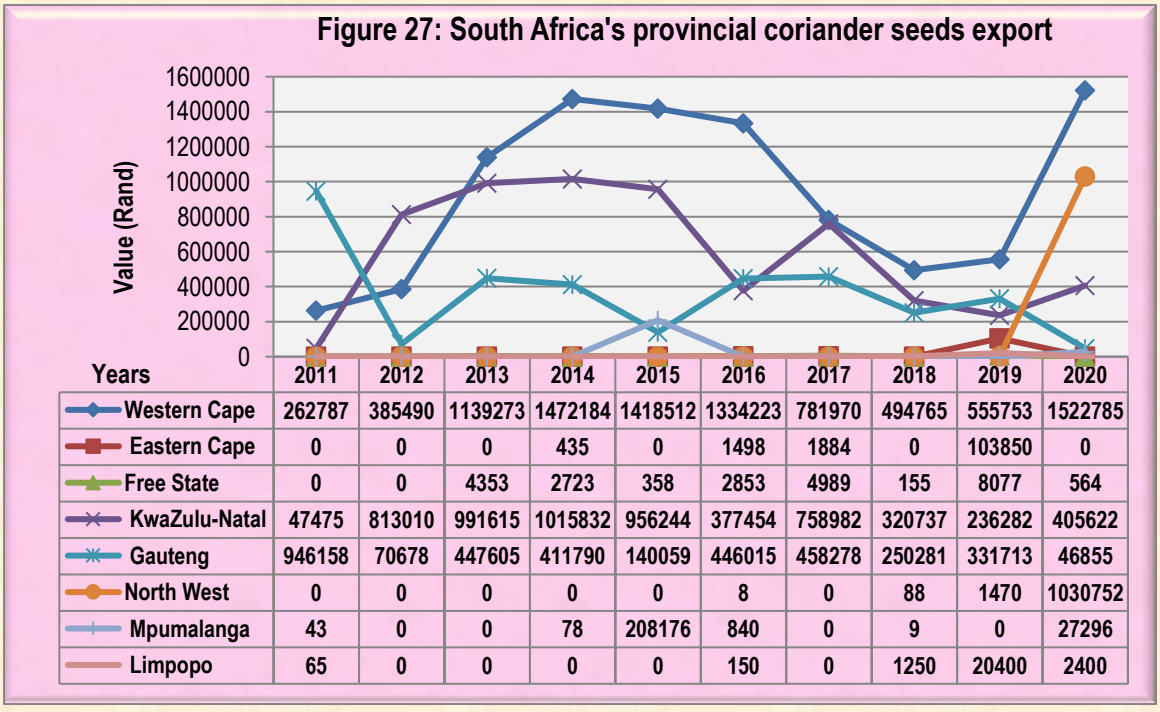


Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Western Cape	728439	716907	1127174	2760127	5103794	6044282	10210983	8064275	6932653	18174371
Eastern Cape	0	601	1828	2738	0	75816	381	1220	1585	9525
Northern Cape	0	0	0	0	9583	0	9402	0	350	0
Free State	0	0	0	334479	1366587	1905940	1764145	585236	2589777	1787382
KwaZulu-Natal	147826	77403	238671	481523	1556164	1906234	1161111	1115613	861367	7730230
North West	0	0	0	59472	181672	277450	484872	49383	370240	2418112
Gauteng	8842115	9223656	8227349	12207915	7548536	5608557	7159520	8864190	8813013	14171273
Mpumalanga	11805	29992	57881	29834	135832	335702	869400	1674327	1690723	718632
Limpopo	3283	9564	49383	371264	84074	17396	21621	4377	779	467725

Source: Quantec Easydata

The figure 27 below illustrates that South Africa exported coriander seeds mainly through the Western Cape and Gauteng. KwaZulu Natal contributed to South Africa's exports to a lesser extent. During 2012, Gauteng export value drastically decreased, while the Western Cape export value notably increased. In 2013, South Africa exported coriander seeds through Western Cape and Gauteng and export values recorded for these provinces have surged in comparison to 2012. Mpumalanga and Eastern Cape contributed for the first time to South Africa's coriander seed exports in 2014, but the export values were trivial. In the same year, Western Cape exports drastically increased, while Gauteng and KwaZulu Natal export values have notably decreased in comparison to 2013 values. The figure illustrates that there was a slight increase of 0.8% of coriander seed exports from Western Cape in 2015, while Mpumalanga has surged which can be attributed to exports destined to the neighbouring Mozambique. At the same time, Gauteng export value has sharply dropped, whereas KwaZulu Natal export value has experienced a significant increment. Western Cape continued to be the primary exit point for South Africa's coriander seed export during 2016. However, the export value dropped slightly by 2.5%. Gauteng's export value has surged by 297% while KwaZulu Natal export value has 83% in comparison to 2015 values. In 2017, Western Cape coriander seed export value declined sharply by 41%, KwaZulu Natal export value has surged by 101%, Gauteng export value grew by 2.7%, whereas Eastern Cape and Free State export values were insignificant. During 2018, Western Cape was still the primary exit point for South Africa's coriander seed export; however, the export value has dropped significantly by 36.7%, KwaZulu Natal export value dropped significantly by 57.7% and Gauteng export value has also declined by 45% relative to 2017 export values. In 2019, South African coriander was exported mainly through Western Cape, Gauteng, KwaZulu Natal and Eastern Cape export values have surged relative to 2018 zero trade value. As of 2020, there was a surge in values of coriander seed export recorded for Western Cape, North West and KwaZulu Natal, whereas export values recorded for Gauteng, Limpopo and Free State have relatively declined when compared to the 2019 export values

Figure 27: South Africa's provincial coriander seeds export

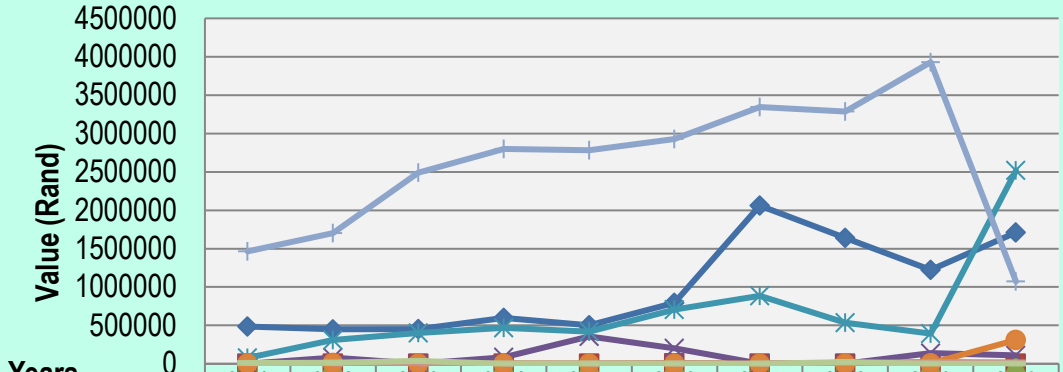


Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Western Cape	262787	385490	1139273	1472184	1418512	1334223	781970	494765	555753	1522785
Eastern Cape	0	0	0	435	0	1498	1884	0	103850	0
Free State	0	0	4353	2723	358	2853	4989	155	8077	564
KwaZulu-Natal	47475	813010	991615	1015832	956244	377454	758982	320737	236282	405622
Gauteng	946158	70678	447605	411790	140059	446015	458278	250281	331713	46855
North West	0	0	0	0	0	8	0	88	1470	1030752
Mpumalanga	43	0	0	78	208176	840	0	9	0	27296
Limpopo	65	0	0	0	0	150	0	1250	20400	2400

Source: Quantec Easydata

Figure 28 shows South Africa's provincial turmeric export destinations between 2011 and 2020.

Figure 28: South Africa's provincial tumeric exports



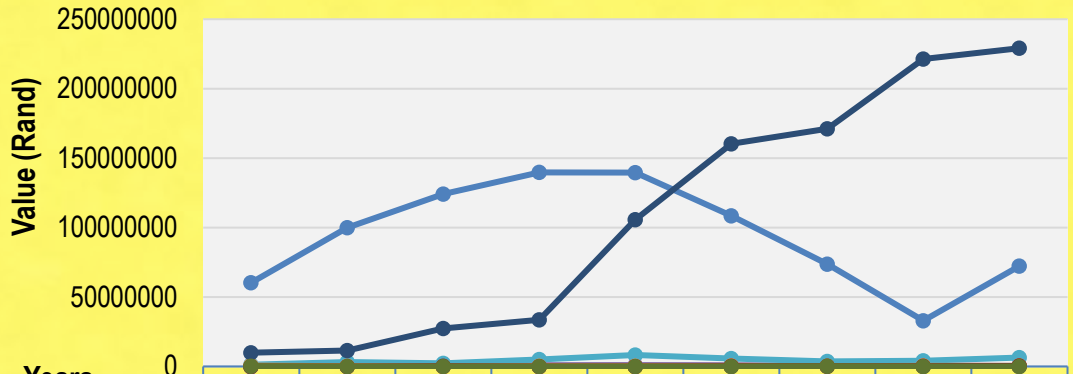
Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Western Cape	486131	449336	451180	596362	501197	794036	2060007	1641830	1223904	1710730
Eastern Cape	0	0	0	0	0	4088	0	192	19335	17
Northern Cape	0	0	0	1751	0	0	0	0	0	0
Free State	182	78601	3344	85326	356017	201217	1686	3178	137915	107677
KwaZulu-Natal	76255	308807	401227	468559	419792	706150	885106	534628	392913	2517638
North West	0	7623	0	0	0	0	3099	2860	6618	310421
Gauteng	1464584	1703958	2489640	2800785	2780321	2929553	3343889	3285424	3929130	1071420
Mpumalanga	4164	2606	3012	576	2046	522	674	7630	22589	16493
Limpopo	8725	12123	36716	0	307	81	0	22992	0	885

Source: Quantec Easydata

Figure 28 above illustrates South Africa's provincial turmeric exports. The figure shows that turmeric was primarily exported through Gauteng, Western Cape and KwaZulu Natal provinces. In 2011, Western and KwaZulu Natal Cape export values went up, while Gauteng and Limpopo export values decreased. Mpumalanga contributed to South Africa's provincial export of turmeric in 2012, but the value was insignificant. In the same year, the Gauteng export value surged when compared to the 2011 export value. During 2013, Gauteng, KwaZulu Natal and Limpopo export values have notably increased in comparison to the previous year's exports. Gauteng province continued to contribute significantly to South Africa's provincial turmeric exports during 2014, Western Cape and KwaZulu Natal export values have also increased. The figure shows that Gauteng turmeric export value has declined by 2.4% and Western Cape export value has dropped by 13.7% in 2015 as compared to 2014 export values. In the same year, Free State and KwaZulu Natal contributed significantly to South Africa's provincial turmeric exports. During 2016, Western Cape and Gauteng were still the primary exit points for turmeric exported from South Africa, KwaZulu Natal's export value has eased higher by 103%, while Free State's export value has gone down by 43% when compared to 2015. In 2017, Gauteng provincial turmeric export value has slightly increased by 5.3%, Western Cape export value has gone up sharply by 52.8%, KwaZulu Natal export value has doubled whilst Eastern Cape, Mpumalanga and Limpopo have registered trivial turmeric export values. As of 2018, Western Cape was still the primary exit point for turmeric exported from South Africa, however, the export was incomparably lower compared to the 2017 export value. In 2019, Gauteng turmeric export value grew by 19.5%, KwaZulu Natal export value declined by 26.5% and Western Cape export value declined

by 25.4% relative to the 2018 export value. At the same time, there was a surge in Eastern Cape, Free State and Mpumalanga export values. As of 2020, Western Cape and KwaZulu Natal provinces were the primary exit point for South Africa's turmeric exports, whereas the export value recorded for Gauteng province has sharply declined compared to the 2019 export value.

Figure 29: Value of South Africa's provincial pepper exports



Years	2011	2013	2014	2015	2016	2017	2018	2019	2020
Western Cape	60292496	99988802	124080097	139719868	139524425	108474355	73629516	32971097	72312788
Eastern Cape	61954	1586	1900	90	162336	251434	360065	275301	368770
Northern Cape	3262	415	2089	4142	2129	969	0	21630	1392
Free State	18813	496803	355229	966558	983856	979837	532991	718746	424150
KwaZulu-Natal	1268082	3100016	2290484	4955533	8251068	5821841	3657769	4209632	6445542
North West	573147	301470	13663	265950	269995	370789	222013	515566	421746
Gauteng	9931814	11578833	27290131	33504450	105831690	160430896	171044757	221469358	229159671
Mpumalanga	5097	57680	216015	76619	43903	94456	173788	269803	319291
Limpopo	113869	38269	18993	13475	70398	21913	155074	38975	4782

Source: Quantec Easydata

Figure 29 above shows the values of South Africa's provincial pepper exports from 2011 to 2020. South Africa exported pepper mainly through Western Cape, Gauteng and KwaZulu Natal provinces to a lesser extent. This can be ascribed to export exit points located mostly in this province. From 2011 to 2015, Western Cape and Gauteng province were the primary exit points for South Africa's pepper exports. During 2015, there was a surge in KwaZulu Natal and North West pepper export values in comparison to the 2014 export value. The increase in export value recorded for North West province can be attributed to a notable 26.85% share of pepper exports destined for neighbouring Botswana. During 2016, Western Cape has continued to be the primary exit point for pepper exported to South Africa, however, the export value has dropped by 2.2%. At the same time, Gauteng export value has surged, KwaZulu Natal, Limpopo and Eastern Cape have also registered notable increases while Mpumalanga pepper export has sharply declined when compared to 2015 export value. In 2017, Gauteng provincial pepper export value has surpassed Western Cape export value for the first time in ten years. In the same period, Eastern Cape, North West, Mpumalanga export values have substantially increased, whilst Mpumalanga and KwaZulu Natal export values have sharply declined relative to 2016 export values. As of 2018, Gauteng was by far the primary exit point for pepper exported from South Africa, and the export value increased by 6.6%, Western Cape export value declined notably by 32%, Mpumalanga and Limpopo export values have surged whilst Free State export value declined by 45% relative to 2017 export value. During 2019, Gauteng export value

was a record high in ten years and the export value grew by 29% relative to the 2018 export value. At the same time, North West export value surged by 132%, Mpumalanga has experienced a 55% increase, Free State export value grew by 34% whilst Western Cape export value sharply declined by 55% when compared to the previous year (2018) export values. As of 2020, Gauteng province was still by far the primary exit point for pepper export from South Africa. At the same time, Western Cape and KwaZulu Natal export values have surged whilst Limpopo and Northern Cape pepper export values have sharply declined relative to 2019 export values.

2.3 South Africa herb and spice imports

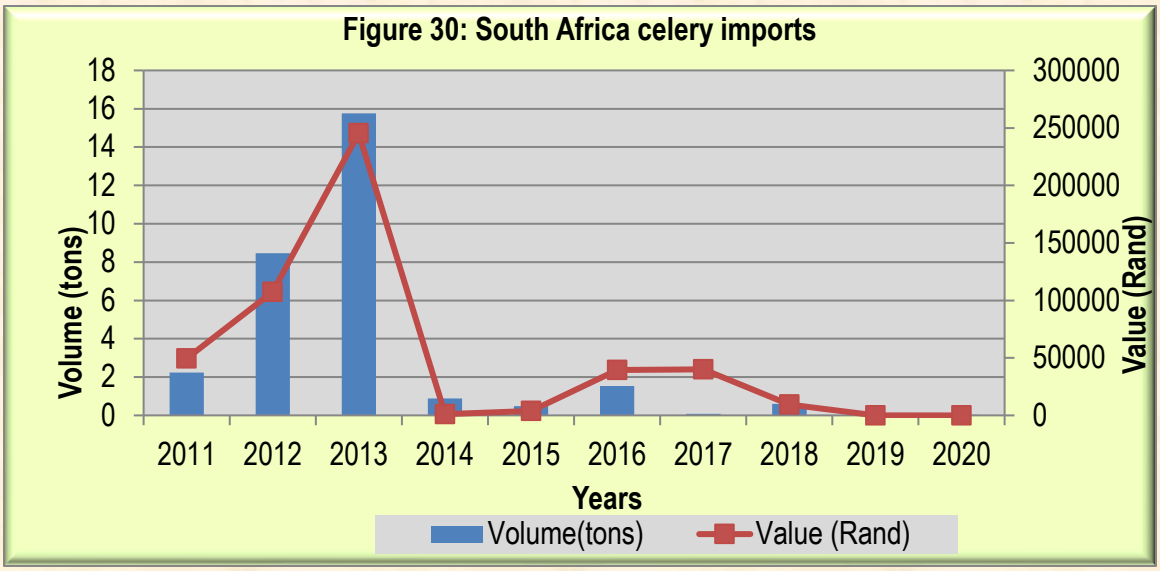
In 2020, South Africa's celery imports represent 0% of the world's celery imports and South Africa is not ranked in the world celery imports. United States of America, Canada, United Kingdom, Germany and the Netherlands are still the top countries importing celery. South Africa's uncrushed coriander seed imports represent 1.5% of the world's uncrushed coriander seeds and its ranking in the world is 19. Morocco supplied 19.5% of South Africa's uncrushed coriander seeds, followed by Bulgaria with 15.5% and Turkey with 15%. Indonesia, Sri Lanka, Malaysia, India and Egypt are the top countries importing uncrushed coriander seeds. South Africa's crushed coriander seeds imports represent 10.3% of the world's crushed coriander seeds and its ranking in the world is still 2. India has supplied 94.5% of South Africa's crushed coriander seeds, followed by Syrian Arab Republic with 1.6% and Bulgaria with 0.7%. In 2020, United Kingdom, United States of America, South Africa, Malaysia and Germany are the top countries importing crushed coriander seeds.

Uncrushed ginger imports represent 0.5% of the world imports and South Africa's ranking in the world imports is 32. China has supplied 41.9% of South Africa uncrushed ginger imports, followed by Nigeria with 39.8% and Thailand with an 8.6% share of imports. United States of America, Netherlands, Japan, and Pakistan command more than 35.5% of the world's uncrushed ginger imports. Crushed ginger imports represent 1% of the world imports and South Africa's ranking in the world imports is 15. India has supplied 51.1% of South Africa crushed ginger imports, followed by Nigeria with 25.1% and China with a 13.5% share of imports. Malaysia, Japan. Germany, United States of America, and United Kingdom commanded more than 62.3% of the world's crushed ginger imports.

South Africa's turmeric represents 1.4% of world imports and its ranking in the world is 16. India has supplied 97.6% of imports and United Kingdom has supplied 0.9% of South Africa's turmeric imports. United States of America, Bangladesh, India, United Kingdom and Germany are the top countries importing turmeric.

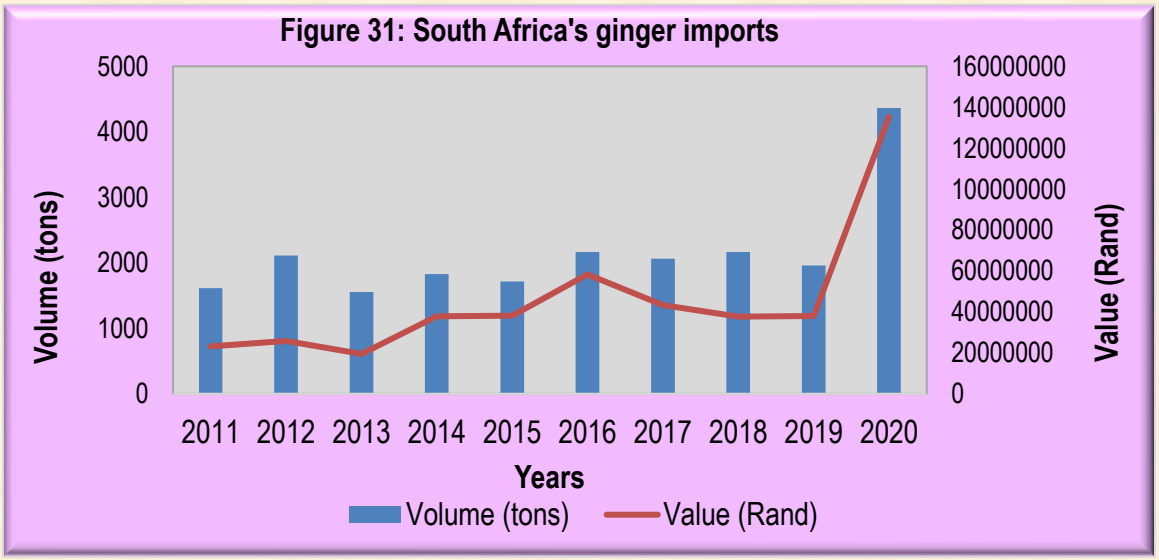
South Africa's uncrushed pepper imports represent 0.6% of the world import and its ranking in the world pepper imports is 32. During 2020, Viet Nam supplied 82% of uncrushed pepper imports, followed by India with 5.2% and Singapore has supplied 3% of the imports. South Africa's crushed pepper imports represent 1.9% of the world import and its ranking in the world pepper imports is 13. During 2020, Viet Nam supplied 44.1% of crushed pepper imports, followed by Thailand with 28.5% and Brazil supplied 15.6% of the imports.

Figure 30 shows South Africa's celery imports between 2011 and 2020.



Source: Quantec Easydata

Figure 30 above shows that South Africa's import of celery was just above 2 tons in 2011. There was a sharp increase in celery imports during 2012 and in the following year, the export volume was a record high in ten years. In 2014, celery imports drastically decreased as compared to the celery imports in 2013. During 2015, celery imports have declined further to 0.5 tons. It was more expensive to import celery in 2009, 2011 and 2014. It was relatively more expensive for South Africa to import celery in 2015, as compared to the 2014 import value. In 2016, South Africa's celery import was incomparably higher when compared to 2015 celery import and it was relatively more expensive to import celery. During 2017, South Africa's celery import has significantly dropped by 94% relative to 2016 imports. It was also expensive to import celery when compared to other years. As of 2018, South Africa's celery import was incomparably higher and it was also relatively cheaper to import celery when compared to 2017. In 2019, South Africa has recorded zero trade for celery imports. As of 2020, South Africa's celery import was insignificant.



Source: Quantec Easydata

Figure 31 above shows that in 2011, South Africa has imported approximately1 611 tons of ginger. In 201, South Africa's ginger imports were just above 2 000 tons. During 2013, there was a 26% decline in ginger imports and during 2014, imports slightly increased to 1 828 tons. It was by far more expensive for South Africa to import ginger during 2014. The figure shows that in 2015, the import volume has slightly dropped by 6.6% in comparison to the 2014 export volume. It was slightly more expensive for South Africa to import ginger in comparison to the 2014 import value. During 2016. South Africa has imported 26% more ginger and it was more expensive to import when compared to 2015 import. As of 2017, South Africa's ginger import has slightly dropped by 4.7% and it was also cheaper to import ginger in comparison to the 2016 import. As of 2018, South Africa's ginger import grew slightly by 4.7% and it was cheaper to import ginger relative to 2017 imports. In 2019, South Africa has imported 9.2% less ginger and it was cheaper to import ginger relative to the 2018 import value. As of 2020, South Africa's ginger import surged and it was relatively more expensive to import ginger relative to 2019.

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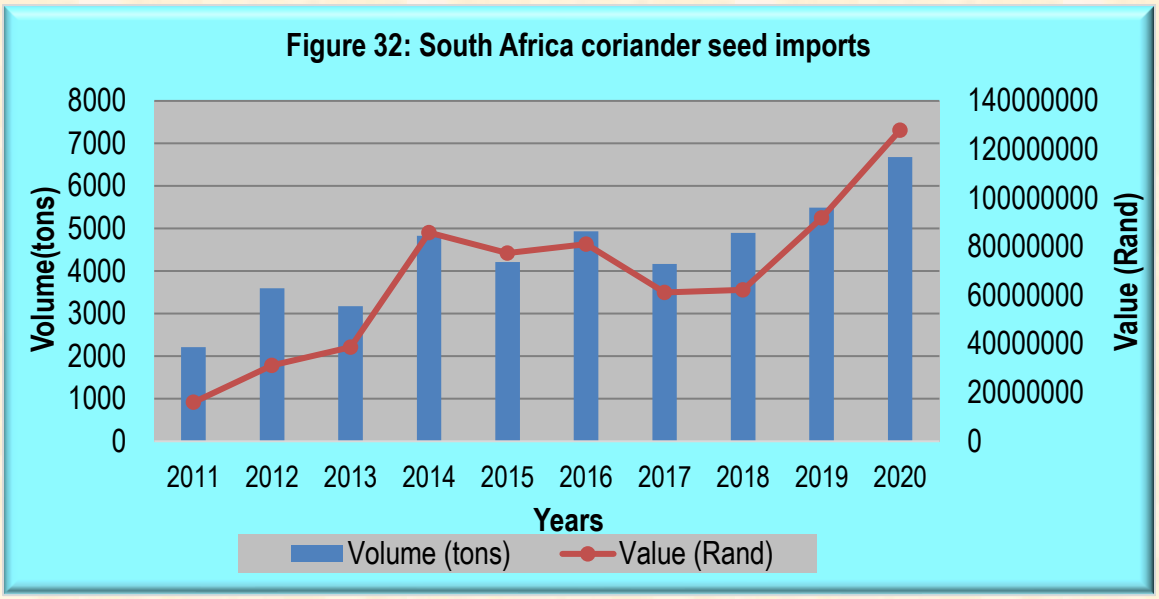
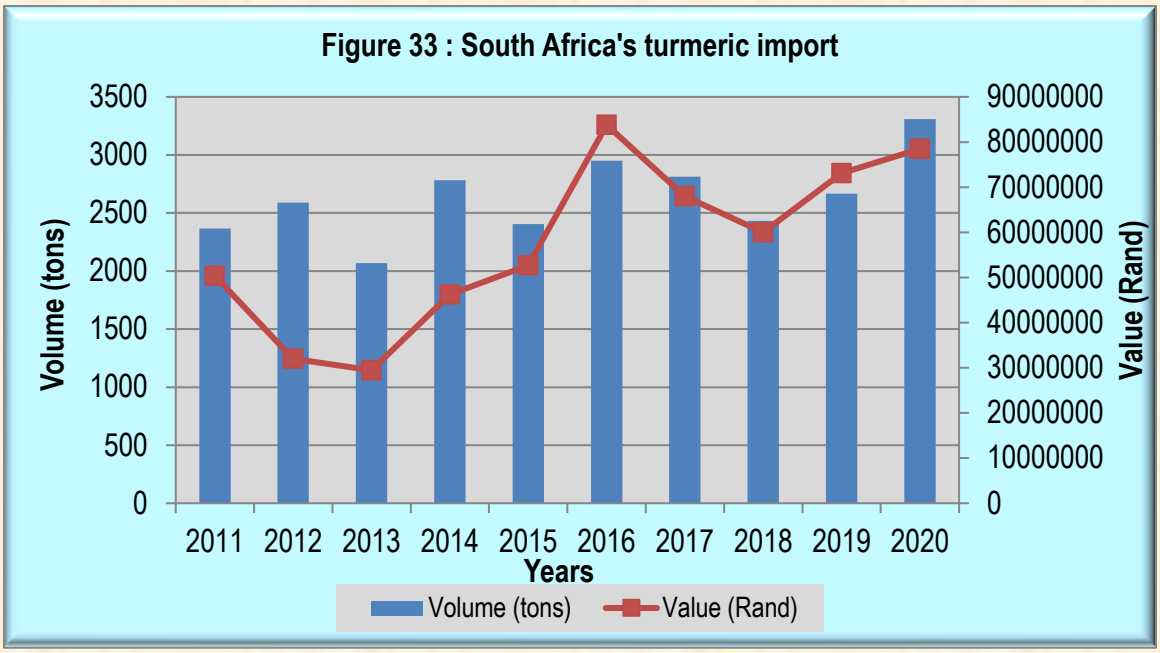


Source: Quantec Easydata

Figure 32 above illustrates that in 2011, South Africa imported just above 2 200 tons of coriander seeds from the world. During 2012, the imports sharply increased by 62% relative and it was a record low in ten years. A high volume of coriander seed import was recorded in 2014 and the imports were 4 827 tons. During 2015, there was a slight decrement of 12.6% in import volume. In 2008 and from 2013 to 2015, it was expensive to import coriander seeds when compared to the other years. South Africa's coriander seed imports have eased higher by 16.9% during 2016 when compared to the previous year (2015). In the same year, it was cheaper to import coriander seeds. As of 2017, South Africa's coriander seed import declined by 15.5% and it was also much cheaper to import coriander seed relative to 2016. In 2018, South Africa's coriander imports grew by 17.5% and during 2019; the imports grew further by 12.6% in comparison to the 2018 import volume. As of 2020, South Africa has imported 21% more coriander seeds and it was more expensive to import coriander seeds relative to the 2019 import values.



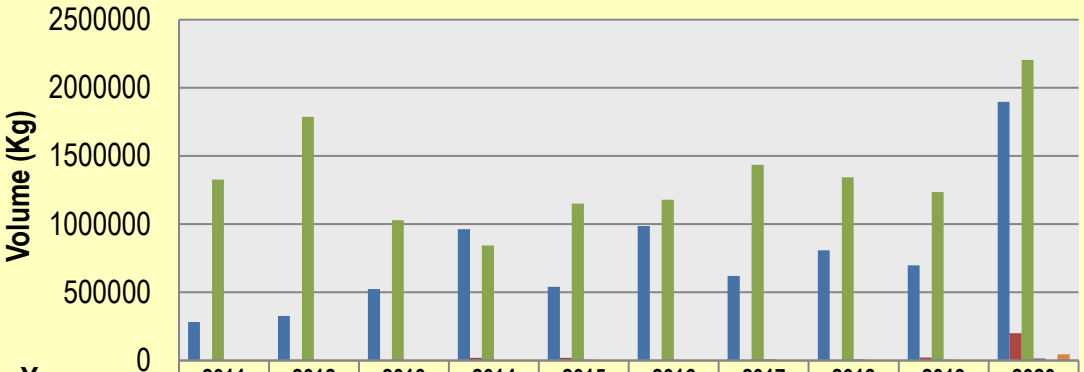
Source: Quantec Easydata

Figure 33 above illustrates that South Africa imported approximately 2 366 tons of turmeric in 2011. In 2012, the import volume dropped by 20% when compared to 2011. Imports dropped further in 2013 and it was cheaper to import turmeric. In 2014, South Africa imported the highest volume of turmeric of 2 781 tons. In 2015, there was a slight decline of 13.5% in turmeric imports in comparison to the 2014 import volume. It was costly for South Africa to import turmeric during 2015 as less volume was imported at a higher value. In 2016, South Africa's turmeric import was 22.7% higher in comparison to 2015 imports and it was relatively more expensive to import turmeric during the same year. There was a 4.7% decline in South Africa's turmeric import during 2017, and it was cheaper to import turmeric relative to the previous year (2016). As of 2018, South Africa's turmeric imports decreased by 13.5% and it was slightly more expensive to import turmeric relative to the 2017 import value. In 2019, South Africa has import 9.6% more turmeric and it was more expensive to import turmeric when compared to the 2018 import value. As of 2020, South Africa has imported 24% more turmeric and it was cheaper to import turmeric as compared to the 2019 import value.

Figure 34 below illustrates ginger imports from the regions from 2011 to 2020. South Africa imported ginger primarily from Asia and Africa. During 2012, imports of ginger from Asia were a record high, when compared to the other years. In 2013, the imports from Africa sharply increased while imports from Asia dropped. In 2014, imports from Asia continued to decline, while imports from Africa continued to increase in comparison to 2013 imports. The figure illustrates the decline of 74.5% in the imports of ginger from Asia in 2015 as compared to 2014. In the same year, the Africa region was the leading source of South African ginger imports, while the Americas region has supplied 19 tons of ginger. Asia and Africa's regions continued to be the primary suppliers of South Africa's turmeric imports, while the imports from the Americas and Europe were trivial. As of 2017, the Asia region was the primary supplier of South Africa's ginger import, followed by Africa region whilst imports from Europe was less significant. As of 2018, Asia was still the primary source of South Africa ginger imports and imports sourced from Africa region grew by 30% relative to 2017 imports. During 2019, South Africa has imported ginger from Asia and Africa region. During the same year,

there was a notable volume of ginger imported from Americas region. As of 2020, Asia followed by African region were by far the primary supplier of South Africa's ginger imports. At the same time, there was a surge in ginger imports from the Americas and European region.

Figure 34: South Africa's ginger imports from regions

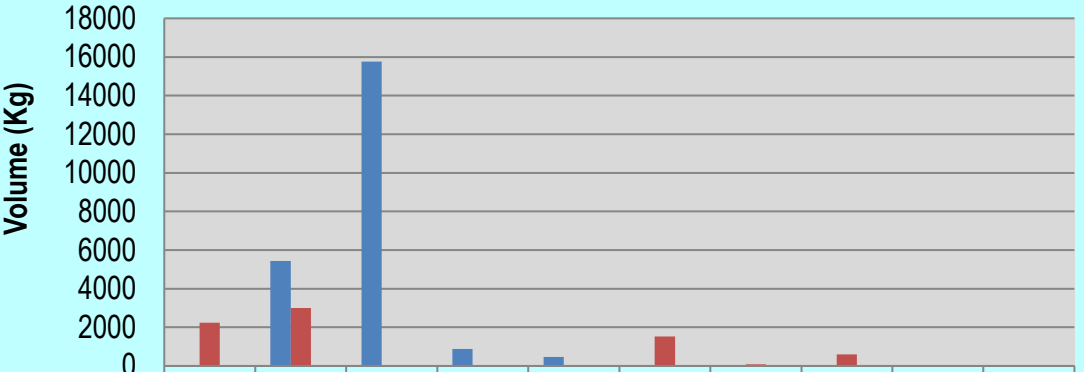


Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Africa	283218	326508	524082	963576	540983	987825	621525	808123	697819	1896403
Americas	252	48	0	19313	18959	271	104	126	21194	201350
Asia	1327095	1786100	1029845	843760	1150420	1178234	1434259	1344446	1234737	2204840
Europe	173	697	2058	1171	5200	277	7089	7485	4659	14148
Oceania	0	0	0	0	0	0	450	300	403	3
Not allocated	10	0	275	395	0	0	50	1956	1879	44789

Source: Quantec Easydata

Figure 35 is an illustration of South Africa's celery imports between 2011 and 2020

Figure 35: South Africa's celery imports from regions

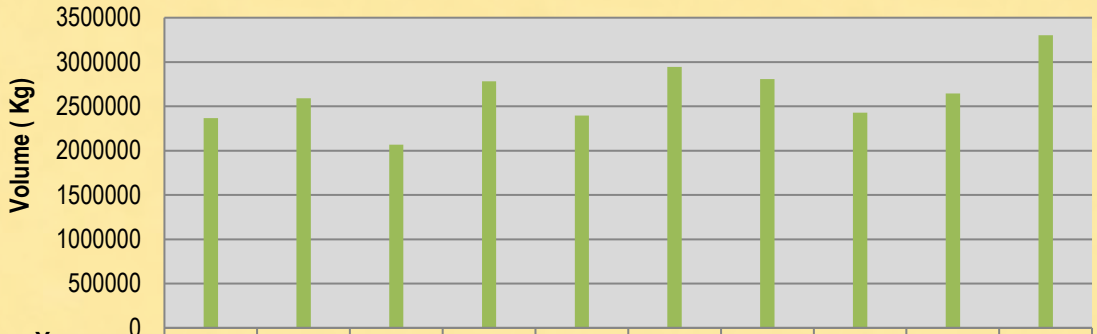


Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Africa	0	5436	15764	885	465	0	0	0	0	30
Asia	2238	3000	0	0	0	1527	85	600	0	0
Europe	0	22	0	0	20	0	0	0	0	0

Source: Quantec Easydata

Figure 35 above shows the sources of South Africa's celery imports between 2011 and 2020 were mainly from Asia and Africa and low import volumes of celery were from Europe. In 2011, South African celery imports were sourced mainly from Asia. There was a notable increase in celery imports from Africa during 2012 and in the following year, the imports from this region increased significantly. In 2014, celery was imported solely from Africa, but the volume had severely dropped by 94% in comparison to 2013. In 2015, imports from Africa region dropped further to 465kg and celery import from Europe was insignificant. In 2016, South Africa has solely imported celery form Asia region. As of 2017, South Africa's celery imports were insignificant and was solely imported from Asia region. In 2018, South Africa celery import was still from Asia region and the import volume was insignificantly higher relative to the 2017 import value. During 2019, South Africa has recorded zero trade for celery. As of 2020, South Africa's celery import was trivial and it was sourced from Africa region.

Figure 36: South Africa's turmeric imports from regions



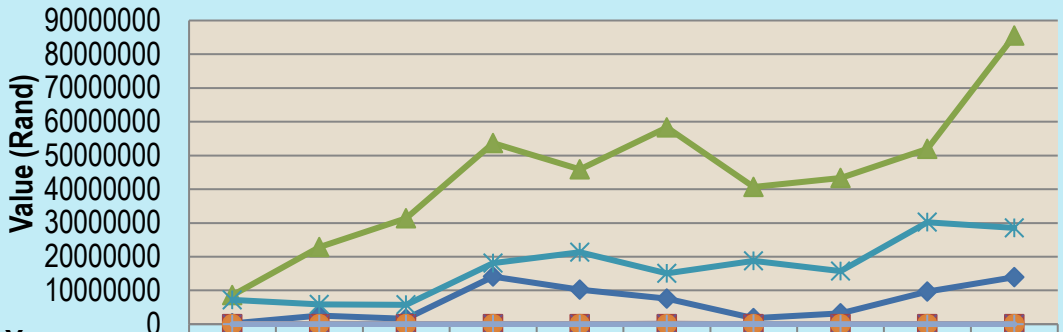
Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Africa	229	290	60	25	0	1520	105	622	8756	1923
Americas	0	0	1	28	386	150	0	7	7	11
Asia	2366140	2588965	2066374	2780541	2395359	2946091	2808973	2428503	2644379	3300953
Europe	77	180	831	843	8034	1955	2729	3251	3983	3285
Oceania	0	0	0	0	0	0	0	0	8874	2500

Source: Quantec Easydata

Figure 36 above shows the various regions that supplied turmeric to South Africa. The figure shows that South Africa imported turmeric mainly from the Asian region. During 2012, there was a notable increase of 9.4% in turmeric imports and in 2013, the import volume dropped by 20%. South Africa imported the highest volume of turmeric in 2014 when compared to 2013.The figure shows that the imports of turmeric from Asia declined by 13.8% in 2015 as compared to 2014. In 2016, Asia region continued to be the primary supplier of South Africa's turmeric imports and the import volume has increased by 23% in comparison to 2015 import. As of 2017, Asia region was still the main source of South Africa's turmeric imports, imports from Europe and Africa regions were less significant. As of 2018, South Africa's turmeric imports sourced from Asia region has dropped by 13.5%, there was also a notable increase in imports sourced from Europe and Africa regions. However, the volume are insignificant when compared to imports from Asia. In 2019, Asia was still the primary supplier of South Africa's turmeric imports and the import value increased by 8.8%. There was also a notable increase in turmeric sourced from Africa and Oceania region. Asia was still the primary source of

South Africa's turmeric imports in 2020 and imports from Africa, Europe and Oceania were less significant.

Figure 37: South Africa's provincial coriander imports



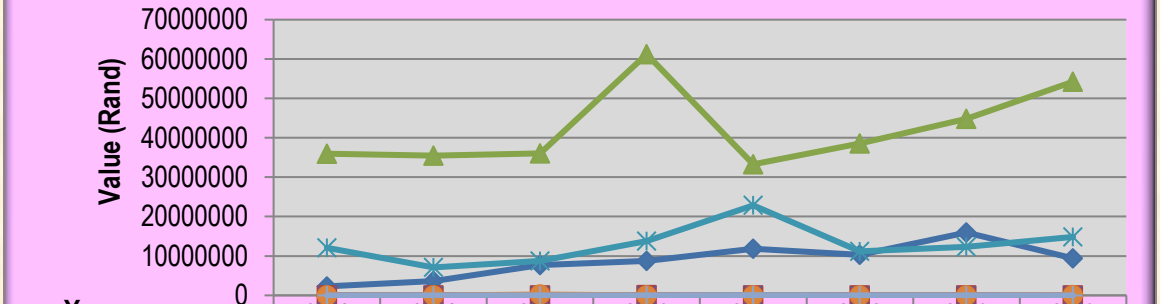
Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Western Cape	240313	2536891	1619428	14090995	10181469	7617411	1770168	3240205	9661550	13912834
Eastern Cape	0	0	8026	0	0	9284	2750	23135	28021	0
KwaZulu-Natal	8592032	22843695	31397512	53667251	45866682	58308439	40638110	43339279	51972890	85512375
North West	0	0	0	5269	0	124001	643	0	0	0
Gauteng	7198280	5875811	5739769	18088983	21321150	15020518	18767840	15693737	30198756	28569465
Mpumalanga	0	0	0	3564	0	5604	10718	0	8054	8653
Limpopo	0	0	0	0	0	0	44529	0	0	0

Source: Quantec Easydata

Figure 37 above shows the entry points of South African coriander seed imports. KwaZulu Natal and Gauteng provinces have recorded high coriander seed import values. In 2012, KwaZulu Natal import value sharply increased relative to 2011 imports. Eastern Cape registered its import value during 2013, but the value was insignificant. Import values for KwaZulu Natal and Western Cape have significantly improved in 2014, while Mpumalanga import value was insignificant. Gauteng province import value of coriander seed has notably increased as compared to the 2014 import value, while KwaZulu Natal and Western Cape import values have experienced decrement. During 2016, there was a notable increase in KwaZulu Natal and North West coriander seed import values, whereas Western Cape and Gauteng import values eased significantly lower in comparison to 2015 import values. As of 2017, KwaZulu Natal was still by far the primary entry point for South Africa's coriander seed import, however, the import value notably declined by 30%. In the same year, Gauteng import value has increased 24.9% and Limpopo has recorded an import value for the first time in ten years. In 2018, KwaZulu Natal was by the primary entry point for South Africa's coriander seed import, the import value has increased by 19%, Western Cape, and Gauteng import values have surged relative to 2017 values. During 2019, KwaZulu Natal, Gauteng and Western Cape were still the primary entry points for South Africa's coriander seed imports. At the same time, Eastern Cape and Mpumalanga have recorded notable import values. KwaZulu-Natal province remained the key entry point for coriander seed imports in 2020, while Western Cape import value surged, and Gauteng import value decreased by 5.3% compared to 2019 import value.

Figure 38 below illustrates that KwaZulu Natal was by far the main entry point of turmeric imports from various regions of the world, followed by Gauteng and Western Cape provinces. KwaZulu Natal import value gradually decreased in 2012 and 2013. The figure also shows that Eastern Cape contributed to turmeric imports in 2011 and 2013, but the import values were insignificant. During 2014, KwaZulu Natal province continued to be the primary entry point of turmeric imports. In the same year, Gauteng and Western Cape import values notably increased in comparison to 2013. The figure shows that in 2015 turmeric imports to Gauteng slightly declined by 1.4% as compared to the 2014 import value.The figure shows that in the same year, turmeric import value for Western Cape has doubled while Gauteng import value has gone up by 35.8% as compared to 2014 import value. In 2016, KwaZulu Natal was by far the main entry point of South Africa's turmeric imports, followed by Gauteng and Western Cape, whilst Eastern Cape import value was less significant compared to the 2015 import value. In 2017, KwaZulu Natal has remained the entry point for South Africa's turmeric imports, however, the import value has sharply dropped by 45,6%, Western Cape import value increased by 35%, Gauteng import value has gone up sharply by 65%and Limpopo has recorded an import value for the first time in 10 years. As of 2018, KwaZulu Natal turmeric import value grew by 15.9%, Western Cape import value has decreased by 13% and Gauteng import value dropped significantly by 51% relative to 2017 import values. During 2019, South Africa has imported turmeric through KwaZulu Natal, Western Cape and Gauteng province; and the import values have increased by 16%, 55% and 10% respectively. KwaZulu-Natal province remained the key entry point for turmeric imports in 2020, Gauteng import value has gone up by 20% whereas Western Cape import value decreased notably by 41% compared to 2019 import value.

Figure 38: Value of South Africa's turmeric imports



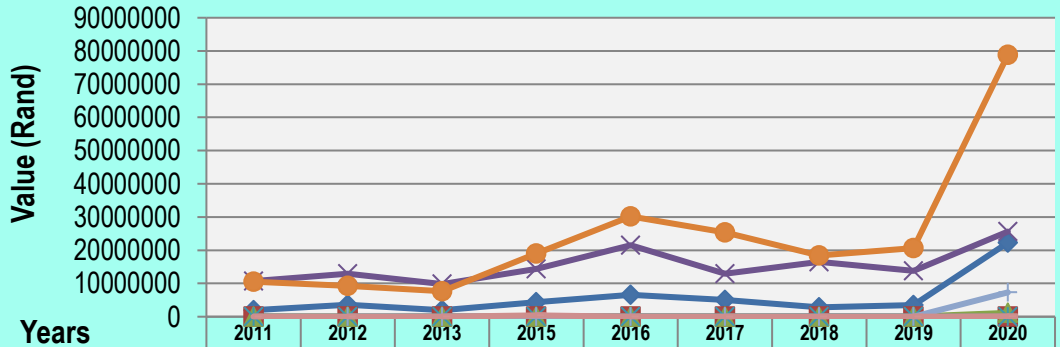
Years	2011	2014	2015	2016	2017	2018	2019	2020
Western Cape	2277184	3619796	7689848	8763302	11832376	10270501	15949869	9373659
Eastern Cape	10862	0	0	23531	0	0	0	0
KwaZulu-Natal	35946924	35504501	36060791	61225053	33274388	38570796	44851541	54269611
North West	13124	0	0	0	12804	0	0	0
Gauteng	12072464	7092196	8719348	13771978	22849769	11176480	12330674	14808121
Mpumalanga	0	1511	210325	0	0	873	0	23532
Limpopo	0	0	0	0	39207	0	0	0

Source: Quantec Easydata

Figure 39 below shows that South Africa imported ginger mainly through Gauteng and KwaZulu Natal. From 2011 to 2013, KwaZulu Natal, Western Cape and Gauteng were the primary entry points

for South Africa's ginger imports. Limpopo province contributed notably to South Africa's import in 2014, while the Western Cape, KwaZulu Natal and Gauteng imports have significantly increased. The figure shows that the ginger import value to Gauteng province decreased to R18 million during 2015, while Eastern Cape and Free State have recorded trivial import values. At the same time, Western Cape ginger import value has increased to R7.4 million. In 2016, there was a surge in ginger import values recorded for Western Cape, KwaZulu Natal and Gauteng provinces. At the same time, Eastern Cape and Free State import values have recorded notable increases in the import values, however, the values were less significant in comparison to other provinces. As of 2017, Gauteng ginger import value decreased by 15.9%, KwaZulu Natal export value dropped by sharply by 40%, Western Cape declined by 23% whereas Eastern Cape and Free State provinces have registered trivial import values. As of 2018, Gauteng was still the primary entry point for South Africa's ginger imports, however, the import value declined notably by 27% relative to 2017 import values. In the same year, KwaZulu Natal import share increased by 27%, Eastern Cape and Free State import values have surged but the import values were insignificant. During 2019, Gauteng, KwaZulu Natal and Western Cape were still the primary entry points for South Africa's ginger imports. Free State ginger import value has doubled when compared to the 2018 import value. Gauteng was still the main entry point for ginger import in 2020, there was also a notable increment in Free State, KwaZulu Natal, Mpumalanga and Limpopo ginger import values.

Figure 39: Value of South Africa's provincial ginger import



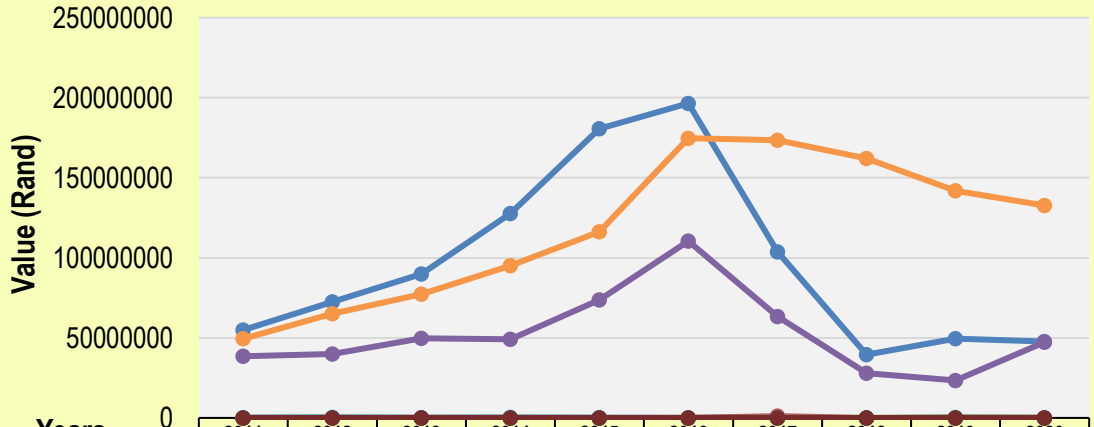
Years	2011	2012	2013	2015	2016	2017	2018	2019	2020
Western Cape	1962722	3551588	1971639	4409539	6542725	5028685	2836572	3517740	22275239
Eastern Cape	1576	0	0	48916	56058	1380	11934	0	0
Free State	0	0	4550	12411	20789	1620	10384	21386	1153713
KwaZulu-Natal	10683059	12947553	9825805	14373081	21542104	12914823	16456277	13827858	25620624
North West	0	0	0	0	0	0	700	0	8150
Gauteng	10497573	9273739	7670577	18965536	30153339	25335706	18391665	20619817	78806880
Mpumalanga		0	0	61	0	0	0	0	7321238
Limpopo	0	0	0	396956	0	0	0	0	81009

Source: Quantec Easydata

Figure 40 below illustrates that Gauteng, KwaZulu Natal and Western Cape provinces were the primary entry points for South Africa's pepper imports. From 2012, Western Cape, KwaZulu Natal and Gauteng provincial pepper import values steadily increased reaching peaks in 2015. During 2016, Western Cape, KwaZulu Natal and Gauteng continued to be the primary entry point for South Africa's pepper imports, Mpumalanga, Eastern Cape, North West and Free State have recorded

insignificant pepper import values. As of 2017, Gauteng province was the primary entry point for South Africa's pepper imports, Western Cape import value has drastically declined by 47%, KwaZulu Natal import value declined by 43%, Eastern Cape and North West import values have drastically increased relative to 2016 import values. During 2018, the overall provincial pepper imports have declined. Gauteng province continued to be the primary entry point for South Africa's pepper import, however, the import value has dropped by 6%, Western Cape value of imports declined by 61.8% and KwaZulu Natal import value decreased significantly by 56% relative to 2017 import value. As of 2019, Gauteng pepper import value declined further by 12.4%, KwaZulu Natal import value dropped by 15.9% whereas Western Cape import value grew notably by 25% relative to 2018 import value. At the same time, Free State and North West have contributed notably to South Africa's pepper import. As of 2020, Gauteng, Western Cape and KwaZulu Natal provinces were the primary entry points for South Africa's pepper imports.

Figure 40: Value of South Africa's provincial pepper imports

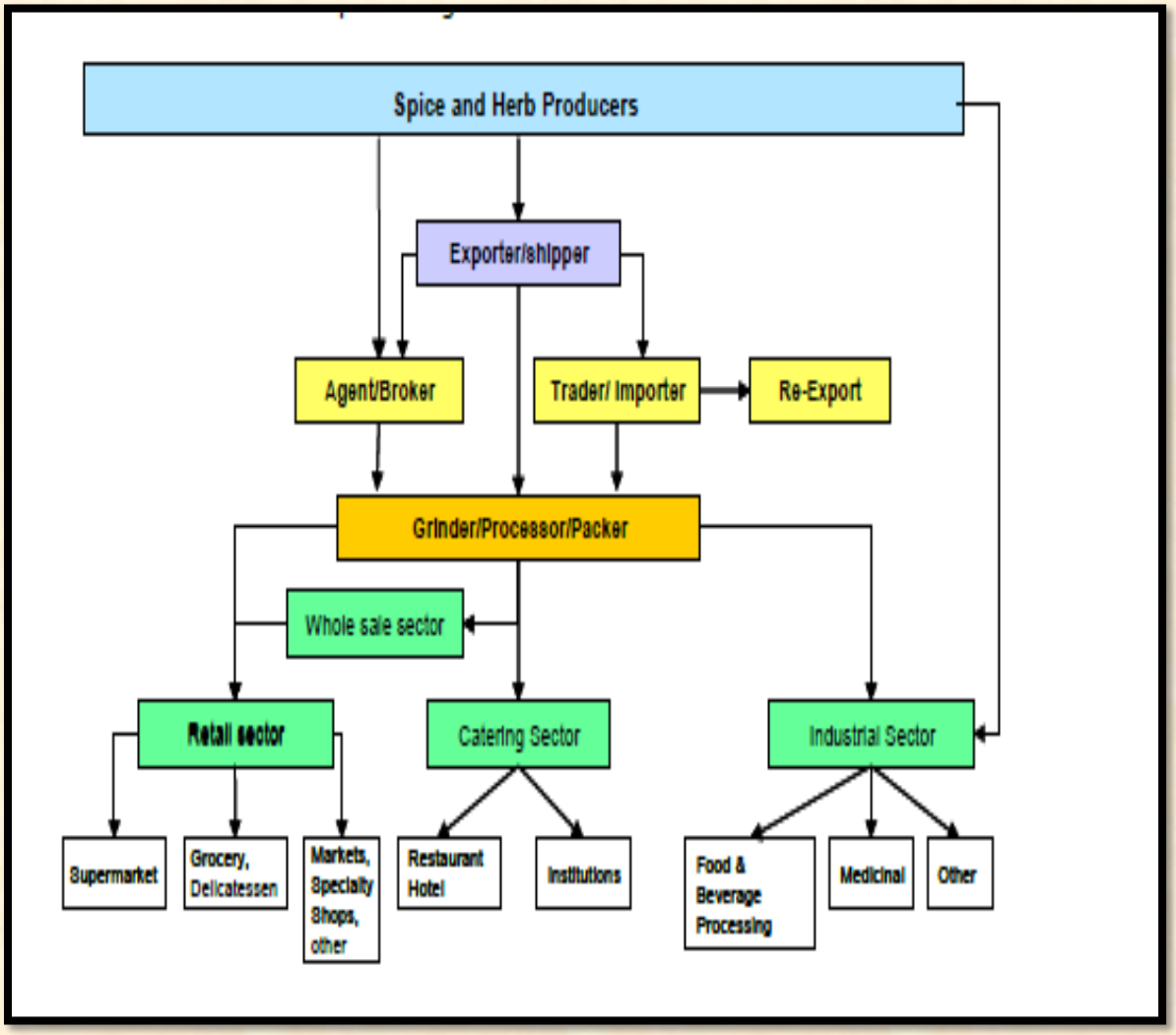


Years	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Western Cape	54951995	72583751	89951431	127673983	180638468	196520466	103737441	39544167	49527388	47659591
Eastern Cape	13404	3141	4339	61	7020	14335	1111764	184	0	150
Free State	0	0	0	6900	2817	3128	18	0	376083	218611
KwaZulu-Natal	38456143	40010358	49661324	49194685	73728154	110457645	63344581	27858575	23420488	47416458
North West	148086	412787	171174	365466	194488	38130	154002	14164	68000	0
Gauteng	49448515	65169414	77336970	95076654	116257263	174772665	173561681	162108186	141907309	132656332
Mpumalanga	7	0	0	3822	0	34605	9810	197	0	0
Limpopo	0	4325	0	0	0	0	0	1051	0	0

Source: Quantec Easydata

3. POST PRODUCTION PROCESS

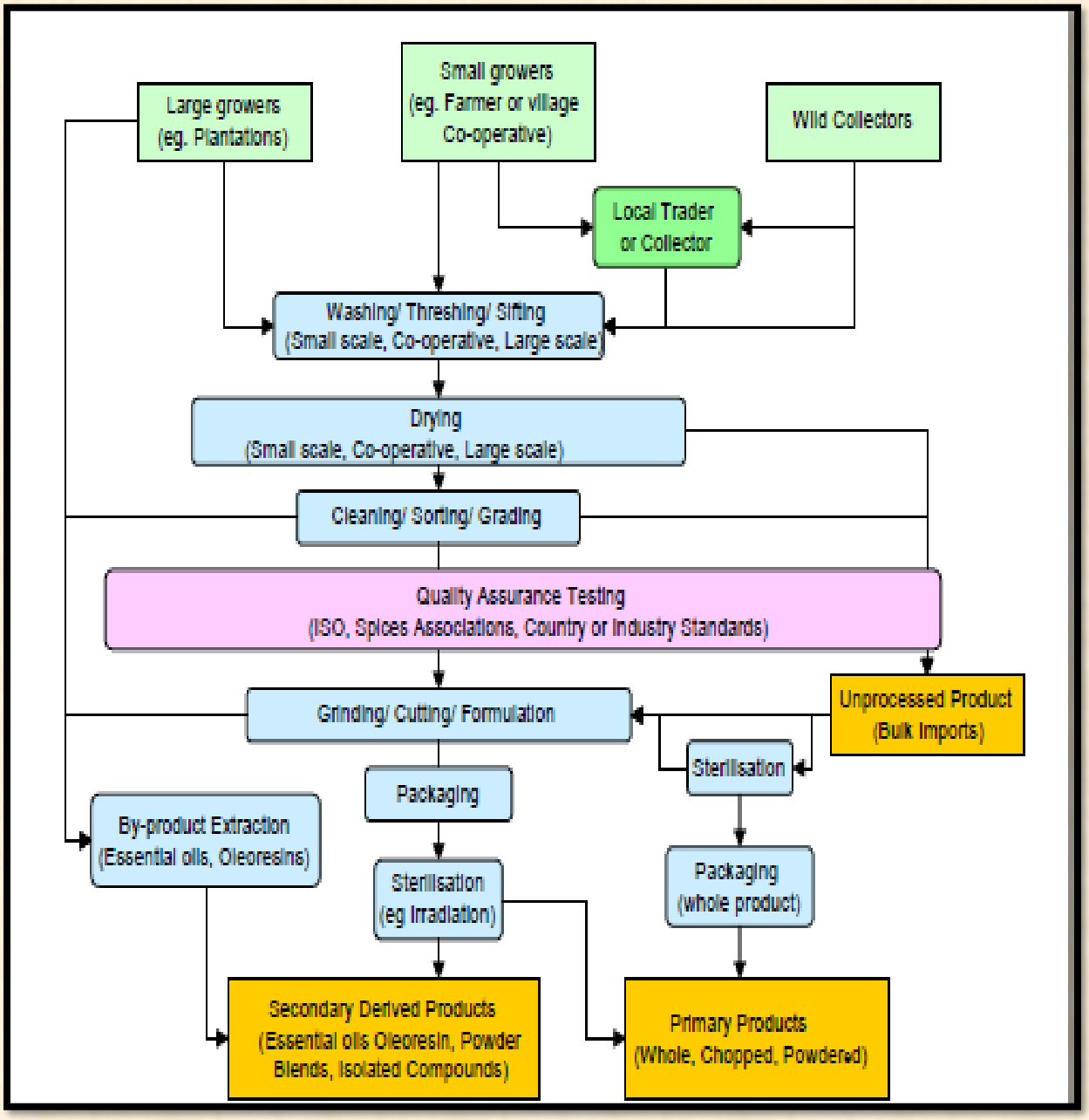
Figure 41: Value Chain for herbs and spice distribution



Douglas et al, 2005

The distribution structure in the spice and herb trade can be divided into lines of supply to the three broad market sectors – industrial, catering and retail (Figure 41). The structure of the supply tree shows there are a number different routes to market, and the most direct is the producer supplying directly to the industrial sector. It is estimated that about 85% of the international trade of herbs and spices is dried and cleaned for use in a crude form without further processing.

Figure 42: Post Harvest Processing and products produced from spices and herbs



Douglas et al, 2005

Spice and herb production can be sub-divided into a number of activities, and although there is a route to market through by-product extraction, most spices and herbs have a series of post-harvest operations, which follows a logical sequence. The post-harvest processing tree shows each stage in the process (Figure 42).

4. MARKET INTELLIGENCE

Market access remains a major impediment to the expansion of trade in agricultural commodities and processed foodstuffs. Many developed countries have tariff escalation structures that stimulate the import of relatively unprocessed agricultural commodities at the expense of processed products. In addition to tariff protection, developed countries have non-tariff barriers that can be used to alter the shape of trade and discourage the importation of processed agricultural products. These non-tariff barriers include sanitary and phytosanitary (SPS) measures, as well as anti-dumping and countervailing duties and safeguards. Tariffs applied by the various countries to herbs and spices originating from South Africa during 2020 are presented from Tables 9 to 13.

4.1 Tariffs

Table 9: Tariffs applied by various export markets to coriander seeds from South Africa.

Country	**Product description (H0909210** crushed or ground **) and (H0909220** neither crushed nor ground**)**	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2019		2020	
Angola	Coriander seeds	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Australia	Coriander seeds	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Seychelles	Coriander seeds	MFN duties (Applied)	10.00%	10.00%	10.00%	10.00%
Brazil	Coriander seeds	MFN duties (Applied)	10.00%	10.00%	10.00%	10.00%
Bangladesh	Coriander seeds	MFN duties (Applied)	25.00%	25.00%	25.00%	25.00%
China	Coriander seeds	MFN duties (Applied)	15.00%	15.00%	15.00%	15.00%
Botswana	Coriander seeds	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Egypt	Coriander seeds	MFN duties (Applied)	2.00%	2.00%	2.00%	2.00%
India	Coriander seeds	MFN duties (Applied)	30.00%	30.00%	30.00%	30.00%
Japan	Coriander seeds	MFN duties (Applied)	6.00%	6.00%	6.00%	6.00%
Kenya	Coriander seeds	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%

Country	Product description (**H0909210** crushed or ground **) and (H0909220** neither crushed nor ground**)**	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2019		2020	
Namibia	Coriander seeds	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
Turkey	Coriander seeds	MFN duties (Applied)	30.00%	30.00%	30.00%	30.00%
Nigeria	Coriander seeds	MFN duties (Applied)	5.00%	5.00%	20.00%	20.00%
United States of America	Coriander seeds	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
United Arab Emirates	Coriander seeds	MFN duties (Applied)	5.00%	5.00%	5.00%	5.00%
Ukraine	Coriander seeds	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
United Kingdom	Coriander seeds	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Viet Nam	Coriander seeds	MFN duties (Applied)	15.00%	15.00%	15.00%	15.00%
Zimbabwe	Coriander seeds	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Zambia	Coriander seeds	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%

Source: Market Access Map

During 2020, South Africa's uncrushed and crushed coriander seed export market was mainly in New Zealand , Zimbabwe, Viet Nam, Switzerland, Namibia, Zambia and Namibia . These countries apply 0% tariff to coriander seeds originating from South Africa. A notable percentage of crushed coriander seed were exported to Nigeria and this market applies a 20% tariff to exports originating from South Africa. Another African market in Kenya I, which has reduce its tariff from 20% to 0%. Botswana received 2.7% of South Africa's uncrushed coriander seed export and it applies 0% Intra SACU tariff. South Africa can look for coriander seed export market in Mozambique which applies 0% tariff to coriander seed originating from South Africa due to SADC preferential tariff. Another lucrative export markets for coriander seed from South Africa is in the United Kingdom, which applies a 0% preferential tariff to coriander seed originating from South Africa and SACU region. India is one of the top producers of coriander seed and its domestic market applies 30% to the coriander seeds originating from South Africa.

Table 10 Tariffs applied by various export markets to celery from South Africa.

Country	Product description (H070940)	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2019		2020	
Angola	Celery (fresh or chilled)	MFN duties (Applied)	50.00%	50.00%	50.00%	50.00%
Botswana	Celery (fresh or chilled)	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
China	Celery (fresh or chilled)	MFN duties (Applied)	10.00%	10.00%	10.00%	10.00%
India	Celery (fresh or chilled)	MFN duties (Applied)	30.00%	30.00%	30.00%	30.00%
Canada	Celery (fresh or chilled)	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Lesotho	Celery (fresh or chilled)	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
Malaysia	Celery (fresh or chilled)	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Malawi	Celery (fresh or chilled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Mauritius	Celery (fresh or chilled)	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Mexico	Celery (fresh or chilled)	MFN duties (Applied)	10.00%	10.00%	10.00%	10.00%
Mozambique	Celery (fresh or chilled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Namibia	Celery (fresh or chilled)	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
Poland	Celery (fresh or chilled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Seychelles	Celery (fresh or chilled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Spain	Celery (fresh or chilled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Eswatini	Celery (fresh or chilled)	Intra SACU rate)	0.00%	0.00%	0.00%	0.00%
Singapore	Celery (fresh or chilled)	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%

Country	Product description (H070940)	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2019		2020	
United Kingdom	Celery (fresh or chilled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
United States of America	Celery (fresh or chilled)	Preferential tariff for AGOA countries	0.00%	0.00%	0.00%	0.00%
Zambia	Celery (fresh or chilled)	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Zimbabwe	Celery (fresh or chilled)	Preferential tariff for South Africa	10.00%	10.00%	0.00%	0.00%

Source: Market Access Map

Botswana, Namibia, Mozambique and Eswatini were still the primary markets for celery exports from South Africa in 2019. Botswana, Namibia and Eswatini apply a 0% Intra-SACU rate for celery exports originating from South Africa. Mozambique export markets apply a 0% preferential tariff for SADC. Zimbabwe's export market has reduced the tariff to 0% thereby complying with SADC-FTA. South Africa has also exported a notable percentage of celery to Malawi, United Arab Emirates, France, Zambia and Angola. Malawi applies a 0% preferential tariff and Lesotho apply a 0% Intra-SACU rate to South Africa's celery exports. Angola is still highly protected by a 50% tariff despite the SADC-FTA. United States of America, Canada and the United Kingdom were the top importers/ markets for celery in 2020 and these countries apply a 0% preferential tariff. South Africa can diversify its celery exports to these countries as these countries apply a 0% tariff to celery exported from South Africa. India and China are the top countries producing herbs and their domestic producers are still protected by 30% and 10% tariffs respectively.

Table 11: Tariffs applied by various export markets to ginger, saffron, turmeric, thyme, bay leaves and curry seeds from South Africa.

Country	Product description (H09101100)	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2019		2020	
Angola	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	50.00%	50.00%	30.00%	30.00%
Canada	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Botswana	Ginger, saffron, turmeric, thyme, bay leaves and curry	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
China	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	15.00%	15.00%	8.00%	8.00%
India	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	30.00%	30.00%	100.00%	100.00%
Qatar	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	5.00%	5.00%	5.00%	5.00%
Kenya	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	25.00%	25.00%	25.00%	25.00%
Malawi	Ginger, saffron, turmeric, thyme, bay leaves and curry	Preferential tariff for South Africa	15.00%	15.00%	0.00%	0.00%
Mauritius	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Mozambique	Ginger, saffron, turmeric, thyme, bay leaves and curry	Preferential tariff for SADC Countries	0.00%	0.00%	0.00%	0.00%
Nigeria	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	20.00%	20.00%	20.00%	20.00%
Namibia	Ginger, saffron, turmeric, thyme, bay leaves and curry	Intra SACU rate	0.00%	0.00%	0.00%	0.00%

Country	Product description (H09101100)	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2019		2020	
Pakistan	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	16.00%	16.00%	16.00%	16.00%
Seychelles	Ginger, saffron, turmeric, thyme, bay leaves and curry	General tariff	0.00%	0.00%	0.00%	0.00%
Eswatini	Ginger, saffron, turmeric, thyme, bay leaves and curry	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
Turkey	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	13.00%	13.00%	13.00%	13.00%
United Kingdom	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
United States of America	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Zambia	Ginger, saffron, turmeric, thyme, bay leaves and curry	Preferential tariff for SADC	0.00%	0.00%	0.00%	0.00%
Zimbabwe	Ginger, saffron, turmeric, thyme, bay leaves and curry	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%

Source: Market Access Map

In 2020, South Africa exported (ginger, saffron, turmeric, thyme, bay leaves and curry) mainly to Botswana, Namibia, Eswatini, Lesotho and Zambia. Botswana, Namibia, Lesotho and Eswatini apply a 0% Intra-SACU rate to (ginger, saffron, turmeric, thyme, bay leaves and curry) exports originating from South Africa. Zimbabwe and Zambia also apply a 0% preferential tariff for South Africa to (ginger, saffron, turmeric, thyme, bay leaves and curry) exports. In 2020, South Africa has also exported (ginger, saffron, turmeric, thyme, bay leaves and curry) to Mozambique, the United Kingdom, Angola, and the United Arab Emirates. Mozambique applies a 0% tariff and Angola still applies a 30% tariff to exports from South Africa. Kenya and China are the top countries in spice production and these markets are protected by 25% and 8% tariffs respectively. India is a top exporter of (ginger, saffron, turmeric, thyme, bay leaves and curry) and its domestic market is still highly protected by a 100% tariff. Nigeria has increased its import of (ginger, saffron, turmeric, thyme, bay leaves and curry) from the world and its domestic producers are protected by 20%.

Table 12: Tariffs applied by various exports markets to pepper from South Africa.

Country	Product description (H090411 Pepper neither crush nor ground) and (090412 crushed or ground)	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2019		2020	
Angola	Pepper	MFN duties (Applied)	10.00%	10.00%	10.00%	10.00%
Australia	Pepper	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Botswana	Pepper	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
Brazil	Pepper	MFN duties (Applied)	10.00%	10.00%	10.00%	10.00%
DRC	Pepper	MFN duties (Applied)	20.00%	20.00%	20.00%	20.00%
China	Pepper	MFN duties (Applied)	20.00%	20.00%	20.00%	20.00%
Germany	Pepper	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
India	Pepper	MFN duties (Applied)	70.00%	70.00%	70.00%	70.00%
Canada	Pepper	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Indonesia	Pepper	MFN duties (Applied)	5.00%	5.00%	5.00%	5.00%
Thailand	Pepper	MFN duties (Applied)	51.00%	51.00%	51.00%	51.00%
Lesotho	Pepper	Intra SACU rate	0.00%	0.00%	0.00%	0.00%
Japan	Pepper	Preferential tariff for GSP countries	0.00%	0.00%	0.00%	0.00%
Mozambique	Pepper	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Malawi	Pepper	Preferential tariff for South Africa	15.00%	15.00%	15.00%	15.00%
Nigeria	Pepper	MFN duties (Applied)	20.00%	20.00%	20.00%	20.00%
Malaysia	Pepper	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Namibia	Pepper	Intra SACU rate	0.00%	0.00%	0.00%	0.00%

Country	Product description (H090411 Pepper neither crush nor ground) and (090412 crushed or ground)	Trade regime description	Applied tariff	Estimated total ad valorem equivalent tariff	Applied tariff	Estimated total ad valorem equivalent tariff
			2019		2020	
Netherlands	Pepper	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Mauritius	Pepper	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Kenya	Pepper	MFN duties (Applied)	25.00%	25.00%	25.00%	25.00%
United Kingdom	Pepper	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
United States of America	Pepper	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Viet Nam	Pepper	MFN duties (Applied)	20.00%	20.00%	20.00%	20.00%
Zambia	Pepper	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Zimbabwe	Pepper	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%

Source: Market Access Map

In 2020, South Africa exported uncrushed pepper mainly to the United States of America, Japan and Australia. South Africa has exported crushed pepper primarily to Botswana, Namibia, Zambia, Kenya and the United States of America. Botswana and Namibia apply a 0% Intra-SACU tariff to pepper exports originating from South Africa. In the other African market, Zambia also applies 0% for South Africa to pepper exports while Kenya is still protected by a 25% tariff. South Africa has exported a notable percentage of uncrushed pepper to the United Kingdom and this market applies a 0% tariff to exports from South Africa. India and Viet Nam are the top countries in pepper production and these markets are protected by 30% and 20% tariffs respectively.

4.2 Non-tariff barriers

One major problem for the industry is to ensure quality standards are maintained by growing and processing clean, high-quality spice that has no contamination. This requires a concerted effort by the growers, processors, and traders to make certain that the products are of the highest standard to meet food hygiene requirements. There is a need to identify the problem areas (e.g. drying methods, or storage) that can have a significant effect on the quality outcome. The adoption of a Hazard Analysis and Critical Control Point (HACCP) system, which focuses on prevention rather than relying mainly on end-product testing, would seem to be a worthwhile advance. The HACCP system provides a science-based and systematic approach to identify specific hazards and measures for their control. It ensures the safety of foods.

There is a need for the production and processing stages for each crop to have individual HACCP procedures developed and adopted to ensure quality standards and to provide an insight into the most hazardous areas likely to affect spice quality. The International Organisation for Standardization (ISO), a worldwide network of national standards institutes working in partnership, develops voluntary technical standards for a wide range of products that are traded internationally. ISO standards for specific spices and essential oils have been formulated and adopted by the technical committees representing the producer nations and are being continually updated. The ISO standards help raise the levels of quality and provide assurance of minimum standards as well as detailing standardized analytical methods. The Codex Alimentarius Commission adopted a Code of Hygienic Practice for Spice and Dried Aromatic Plants in 1995 (CAC/RCP 42-1995). This code details hygienic requirements in the production/harvesting area, in the establishment design and facilities, for personal hygiene, for hygienic processing requirements and the end-products specifications. A comprehensive guide of practical information about the quality parameters and specifications of the common spices imported into the United States spice processing industry is available at The Centre for Food Safety and Applied Nutrition within the USA.

4.2.1 The EU

Exporters from SADC countries need to know the EU market access requirements for spices and herbs. The EU emphasizes standards through legislation, codes, markings, labels and certificates concerning quality, environment, safety & health and labour conditions. Exporters from SADC countries can obtain more information regarding these requirements from *www.cbi.nl/accessguide*. Food legislation, known as the General Food Law, which was initially introduced to ensure that consumers gained more confidence in various food products, can make a potential exporter's life a little more difficult. It includes various provisions on the traceability of food and differs from country to country. It is best to obtain country-specific information, available at *www.europa.eu.int/comm/food/indexen.html*. Documentation and labels of suppliers are also crucial to the food industry, as food travelling across internal borders is required to have this information available for traceability purposes. The most important piece of legislation regarding herbs and spices deals with the maximum levels of aflatoxin that may be present in the product, especially for capsicum, pepper (black, green, white and long pepper), nutmeg, ginger and turmeric. The maximum acceptable levels of aflatoxin are listed in Regulation (EC) 472/2002, which is an amendment of

Regulation (EC) 466/2001, which sets maximum levels for contaminants in foodstuffs. Sampling methods for aflatoxin in spices are available in the Commission Directive 2002/27/EC.

4.2.2 NAFTA

In NAFTA, and particularly the US as the region's most important market for herbs and spices, the existing known non-tariff barriers are the Inspection and Phytosanitary Requirements. The US Department of Agriculture's (USDA's) Animal and Plant Health Inspection Service (APHIS) specifies that all spices and herbs entering the US are subject to a thorough inspection and checks. For example, before being imported 48 Trade Information Brief into the US, shipments of cumin seed from Pakistan packed in jute or burlap bagging must be fumigated with methyl bromide to prevent diseases from potentially entering the country. Contaminated shipments are either sent back, destroyed or decontaminated. Paperwork detailing the country of origin must be presented to the relevant officers at the port of entry for verification of species, as well as a packing list and phytosanitary certificate. Other information required includes the size of the shipment and compliance history. SADC exporters of spices and herbs can obtain more information regarding these requirements from *www.fas.usda.gov/itp/ofsts/us.html*, *http://www.arms.usda.gov.nop* and *www.ioia.net*.

4.2.3 Japan

Japan has very tight controls and many believe that the only successful way to ship agricultural commodities into Japan is through a Japanese agent or wholesaler. Japan places great emphasis on phytosanitary measures and all fresh spices and herbs must go through Plant Quarantine Law procedures. Certain forms of dried spices, including dried turmeric, dried pepper and spices packaged for retail uses are, however, exempt. Spices must also comply with the Food Sanitation Law.

5. LOGISTICAL ISSUES

5.1 Mode of transport

The harvested raw plant material of the spice crop should be transported promptly in clean, dry conditions. The crop may be placed in clean baskets, dry sacks, trailers, hoppers or other well-aerated containers and carried to a central point for transport to the processing facility. All containers used at harvest should be kept clean and free from contamination by previously harvested plant products and other foreign matter. If plastic containers are used, particular attention should be paid to any possible retention of moisture that could lead to the growth of mould. When containers are not in use, they should be kept in dry conditions, in an area that is protected from insects, rodents, birds and other pests, and inaccessible to livestock and domestic animals. Conveyances used for transporting bulk plant materials from the place of production to storage for processing should be cleaned between loads. Bulk transport, such as ship or rail cars, where appropriate, should be well ventilated to remove moisture from plant materials and to prevent condensation.

5.2 Storage

There is a need for quality storage both on-farm and off-farm, with cool stores and warehousing facilities linked to post-harvest crop management. Spices deteriorate rapidly in adverse conditions and should be stored in well-prepared and maintained storage facilities. It is essential the moisture level of the spice to be stored at a safe level before storage. This is usually below 10% moisture. The storehouse should be damp-proof, vermin proof and bird proof and where possible have controlled ventilation and devices to control humidity and temperature. A dehumidifier fitted to a storage room, by keeping the atmosphere always dry, can eliminate mould and insect attacks. The room should be fumigated before storage, the walls whitewashed regularly and the facility kept dry.

5.3 Packaging

Processed plant materials should be packaged as quickly as possible to prevent deterioration of the product and as a protection against exposure to pest attacks and other sources of contamination. Continuous in-process quality control measures should be implemented to eliminate substandard materials, contaminants and foreign matter before and during the final stages of packaging. Processed plant materials should be packaged in clean, dry boxes, sacks, bags or other containers following standard operating procedures and national and/or regional regulations of the producer and the end-user countries. Materials used for packaging should be non-polluting, clean, dry and in undamaged condition and should conform to the quality requirements for the plant materials concerned. Fragile plant materials should be packaged in rigid containers. Whenever possible, the packaging used should be agreed upon between supplier and buyer. Reusable packaging material such as jute sacks and mesh bags should be disinfected and thoroughly dried before reuse, to avoid contamination by previous contents. The International Trade Centre (UNCTAD/WTO) has produced a packaging manual (1999) for dried herbs and spices. This reviews products and relevant packaging standards; explains various types of packaging methods and packaging materials used for handling and storage of such products; outlines current trends and highlights health, safety and environmental issues affecting spice packaging (www.intracen.org).

6. COMPETITIVENESS OF SOUTH AFRICAN HERB AND SPICE EXPORTS.

It is evident from figure 43 below that South Africa's celery exports to Seychelles, United Arab Emirates, Zambia and Lesotho are growing faster than the world imports into these countries and South Africa's performance in these markets is regarded as a gain in the dynamic market. South Africa's celery exports to Malawi and Eswatini are growing slower than the world imports into this country and South Africa's performance in these markets is regarded as a loss in the dynamic market. South Africa's celery exports to Namibia, Mozambique and Botswana are declining while world imports are growing in these countries.

Figure 44 below shows that Botswana was still the largest market for celery exported from South Africa. Prospective markets for exports of celery are mainly Germany, Belgium, and Seychelles. Other smaller markets exist in Canada and Malawi. However, if South Africa has to diversify its celery exports, the most lucrative market exists in Poland and United States America which has increased

their celery imports from the world by 45% and 28% respectively between the 2016-2020 period. Mozambique has experienced negative growth during the 2016-2020 period.

Figure 45 below shows that South African uncrushed ginger exports are growing faster than the world imports into Lesotho, Eswatini and Namibia. South Africa has gained market share in these dynamic markets. South Africa's uncrushed ginger exports to Malawi, Saint Helena and Botswana are growing slower than the world imports into these countries and these markets are regarded as a loss in the dynamic market. South Africa's uncrushed ginger exports to Zimbabwe and Mozambique are declining while world imports are growing into these countries. South Africa's exports to Zambia and Mauritius are growing while the world imports are declining in these markets. South Africa's performance is regarded as again in a declining market.

Figure 46 below shows that Botswana was the largest market for uncrushed ginger exported from South Africa. Prospective markets for exports of ginger are mainly New Zealand, Malawi and Germany. Other smaller markets exist in the United Arab Emirates. However, if South Africa has to diversify its ginger exports, the most lucrative market exists in Switzerland, which has increased its uncrushed ginger imports from the world by 59% between the 2016-2020 period. Mozambique has experienced negative growth during the 2016-2020 period.

Figure 47 below shows that South African crushed ginger exports are growing faster than the world imports into Angola, Mozambique and Botswana. South Africa has gained market share in this dynamic market. South Africa's crushed ginger exports to Spain, the United State of America, Switzerland, Malawi and Namibia are growing slower than the world imports into these countries and South Africa's performance is regarded as a loss in the dynamic market. South Africa's exports to Lesotho, Zimbabwe and Mozambique are growing while the world imports are declining into these countries.

Figure 48 below shows that Botswana and Lesotho were still the largest markets for crushed ginger exported from South Africa. Prospective markets for exports of ginger are mainly in the United States of America and France. Other smaller markets exist in the United Kingdom and Singapore. However, if South Africa has to diversify its ginger exports, the most lucrative market exists in Isreal, Spain and Angola, which has increased their crushed ginger imports from the world by 54%, 49% and 32% respectively between the 2016-2020 period. Zimbabwe, Mozambique, Zambia and Viet Nam have experienced negative growth during the 2016-2020 period.

Figure 49 below illustrates that South Africa's (ginger, saffron, turmeric, bay leaves and curry) exports are growing faster than the world imports into Qatar, Netherlands, Angola, United Kingdom, United State of America and the United Arab Emirates. South Africa has gained market share in these dynamic markets. South Africa's (ginger, saffron, turmeric, bay leaves and curry) exports to Mozambique, Nigeria, Eswatini, Malawi and Seychelles are growing slower than the world imports into these countries and South Africa's performance in these markets is regarded as a loss in the dynamic market. South Africa's (ginger, saffron, turmeric, bay leaves and curry) exports to Australia, Zambia and Zimbabwe are declining while world imports are growing in these countries. South Africa exports to Namibia and the Democratic Republic of the Congo are growing while the world imports are declining into these countries.

Figure 50 below shows that Botswana and Namibia were still the largest markets for ginger, saffron, turmeric, bay leaves and curry exported from South Africa. Prospective markets for exports of ginger, saffron, turmeric, bay leaves and curry are mainly in Mozambique and Netherlands. Other smaller markets exist in Kenya, the United States of America, and the United Arab Emirates. However, if South Africa has to diversify its ginger, saffron, turmeric, bay leaves and curry exports, the most lucrative market exists in Nigeria and Angola, which have increased its (ginger, saffron, turmeric, bay leaves and curry) imports from the world by 32% and 19% respectively between 2019-2020 period. Zimbabwe and Australia have experienced negative growth during the 2016-2020 period.

Figure 51 below illustrates that South African uncrushed seed exports are growing faster than the world imports into Mozambique. South Africa has gained market share in this dynamic market. South Africa's uncrushed coriander seed exports to Botswana, Nigeria and Switzerland are growing slower than the world imports into these countries and South Africa's performance is regarded as a loss in the dynamic market. South Africa's uncrushed coriander seed exports to Zambia and Namibia are growing while world imports are declining into these countries.

Figure 52 below shows that New Zealand and Zimbabwe were the biggest markets for uncrushed coriander seed exported from South Africa. Prospective markets for exports of uncrushed coriander seed are mainly in Australia and Viet Nam. Other smaller markets exist in Switzerland and Argentina. However, if South Africa has to diversify its uncrushed coriander exports, the most lucrative market exists in Nigeria and Ukraine which have increased their uncrushed coriander imports from the world by 618% and 255% respectively between the 2016-2020 period. Egypt, Belgium, Brazil, Germany and Namibia have experienced negative growth during the 2016-2020 period.

Figure 53 below illustrates that South Africa's crushed coriander seed exports to the Lesotho and Zambia are growing faster than the world imports into these countries and South Africa has gained market share in this dynamic market. South Africa's export to Mozambique, Botswana, Zimbabwe, Eswatini and United Kingdom are growing slower than the world imports into these countries and South Africa's performance in these markets is regarded as a loss in a dynamic market. South Africa's crushed coriander seed exports to Malawi are declining faster than the world imports into this country. South Africa crushed coriander seed exports to Angola are growing while the world import is declining into this country.

Figure 54 below shows that Viet Nam was the biggest market for crushed coriander seed exported from South Africa. Prospective markets for exports of crushed coriander seed are mainly in Zimbabwe, Netherlands and Mozambique. Other smaller markets exist in Switzerland, the United Kingdom and Pakistan. However, if South Africa has to diversify its crushed coriander exports, the most lucrative market exists in Bangladesh, which has increased its crushed coriander imports from the world by 108% between 2016-2020 period. Zimbabwe, United Arab Emirates, Australia and Malawi have experienced negative growth during the 2016-2020 period.

Figure 55 below shows that South African uncrushed pepper exports are growing faster than the world imports into Botswana, Lesotho and Ireland. South Africa has gained market share in these dynamic markets. South Africa's uncrushed pepper exports to Zambia are growing slower than the world imports into this country and this market is regarded as a loss in the dynamic market. South Africa's uncrushed pepper exports to Switzerland and United Kingdom are declining faster than the world imports into these countries. South Africa's uncrushed pepper exports to Israel, Belgium,

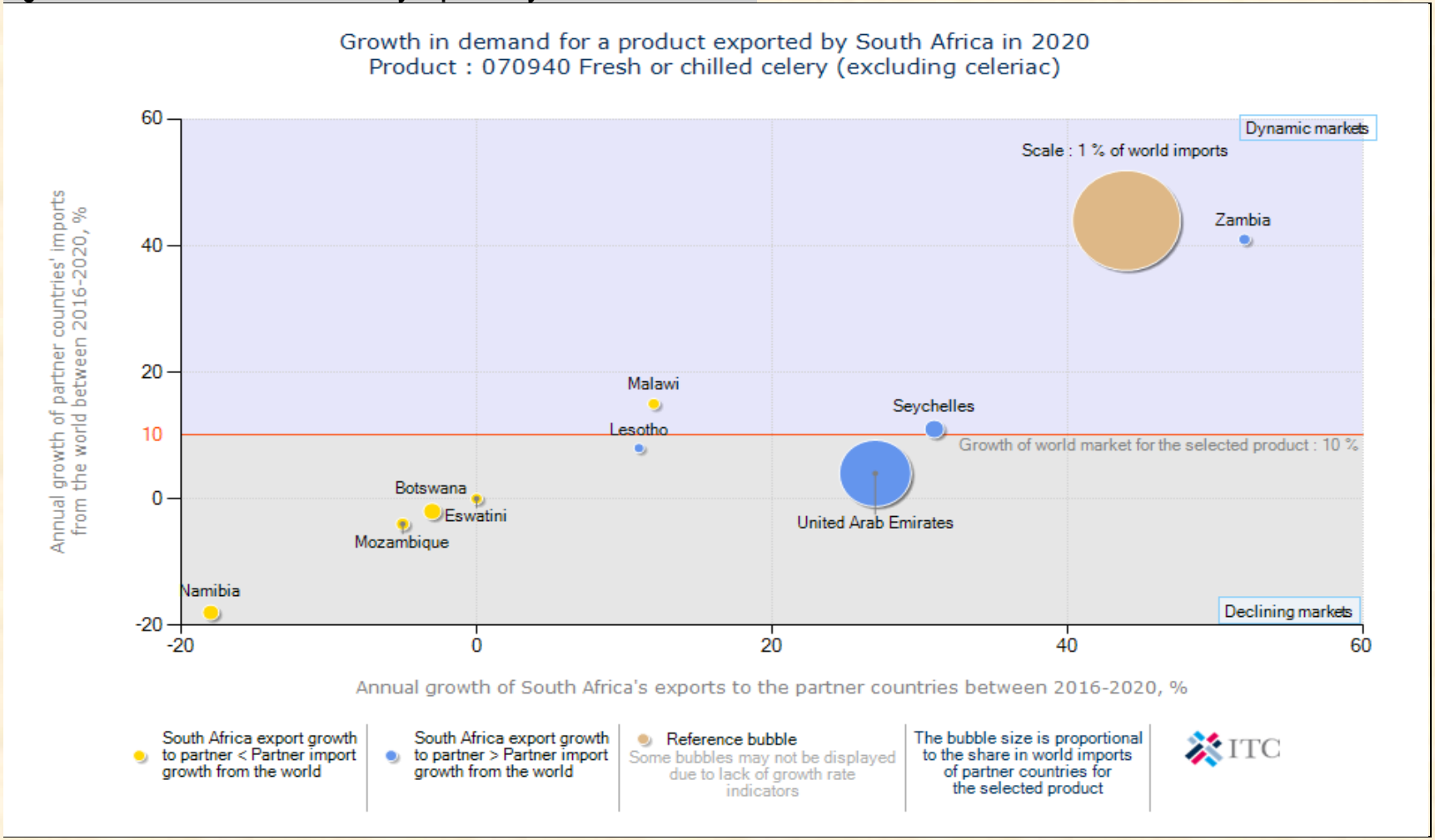
Namibia, Zimbabwe, Singapore, Japan and Hong Kong (China) are growing while world imports are declining in these countries.

Figure 56 below shows that the United States of America, Japan and Australia are the largest markets for uncrushed pepper exported from South Africa. Prospective markets for exports of uncrushed pepper are mainly in Zambia. Other smaller markets exist in Lesotho and Colombia. However, if South Africa has to diversify its uncrushed exports, the most lucrative market exists in Ireland which have increased their uncrushed pepper imports from the world by 17% respectively between 2016-2020 period. Netherlands, Australia, Viet Nam, Israel Switzerland, France and Canada have experienced negative growth during the 2016-2020 period.

Figure 57 below shows that South African crushed pepper exports are growing faster than the world imports into Mozambique and the Democratic Republic of Congo. South Africa has gained market share in these dynamic markets. South Africa's crushed pepper exports to Kenya, Mauritius and Nigeria are growing slower than the world imports into this country and these markets are regarded as a loss in the dynamic market. South Africa's crushed pepper exports to Namibia, Lesotho and Seychelles are growing while world imports are declining into these countries. South Africa's crushed pepper exports to Eswatini, Hong Kong (China), Australia, Zimbabwe, Angola the United States of America and Canada are declining while world imports are increasing into these countries.

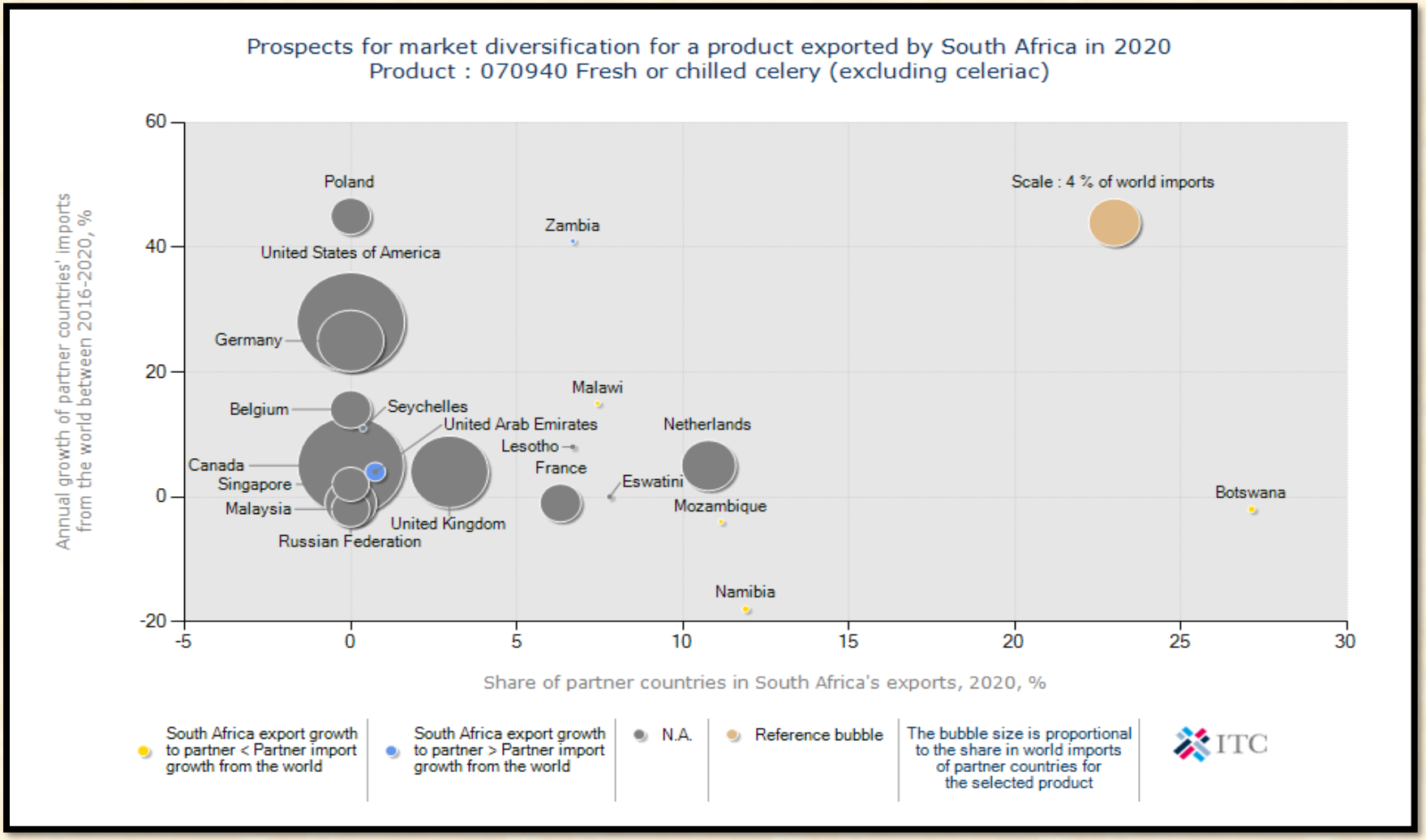
Figure 58 below shows that Botswana with a 44.6% share of exports was still the largest market for crushed pepper exported from South Africa. Prospective markets for exports of crushed pepper are mainly in Kenya and the Democratic Republic of the Congo. Other smaller markets exist in Mozambique and Viet Nam. However, if South Africa has to diversify its crushed pepper exports, the most lucrative market exists in Mauritius and Nigeria, which have increased their crushed pepper imports from the world by 18% between 2016-2020 period. Thailand, Zambia, Namibia and Angola have experienced negative growth during the 2016-2020 period.

Figure 43: Growth in demand for celery exported by South Africa in 2020



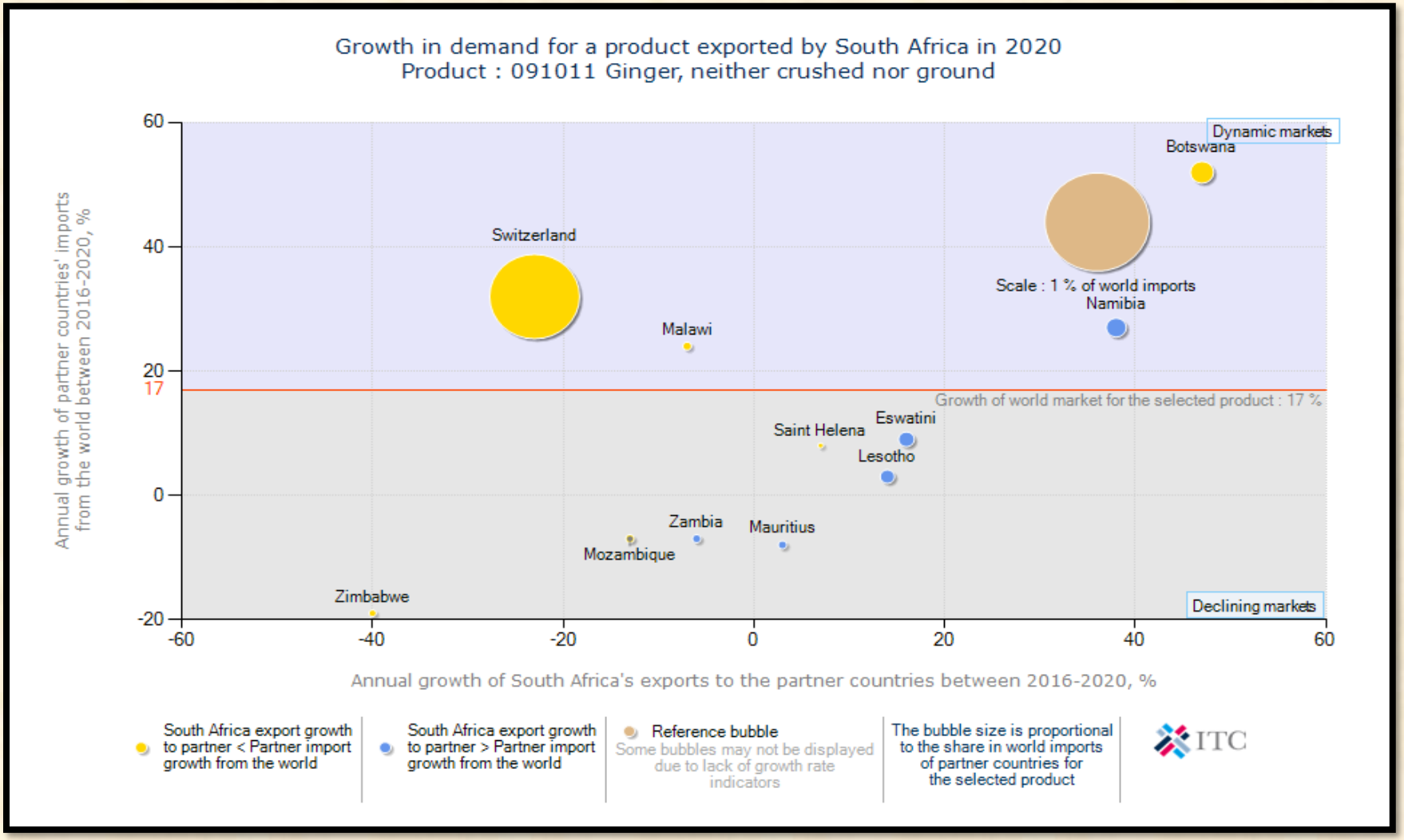
Source: ITC Trade Map

Figure 44: Prospects for market diversification for celery exported by South Africa in 2020



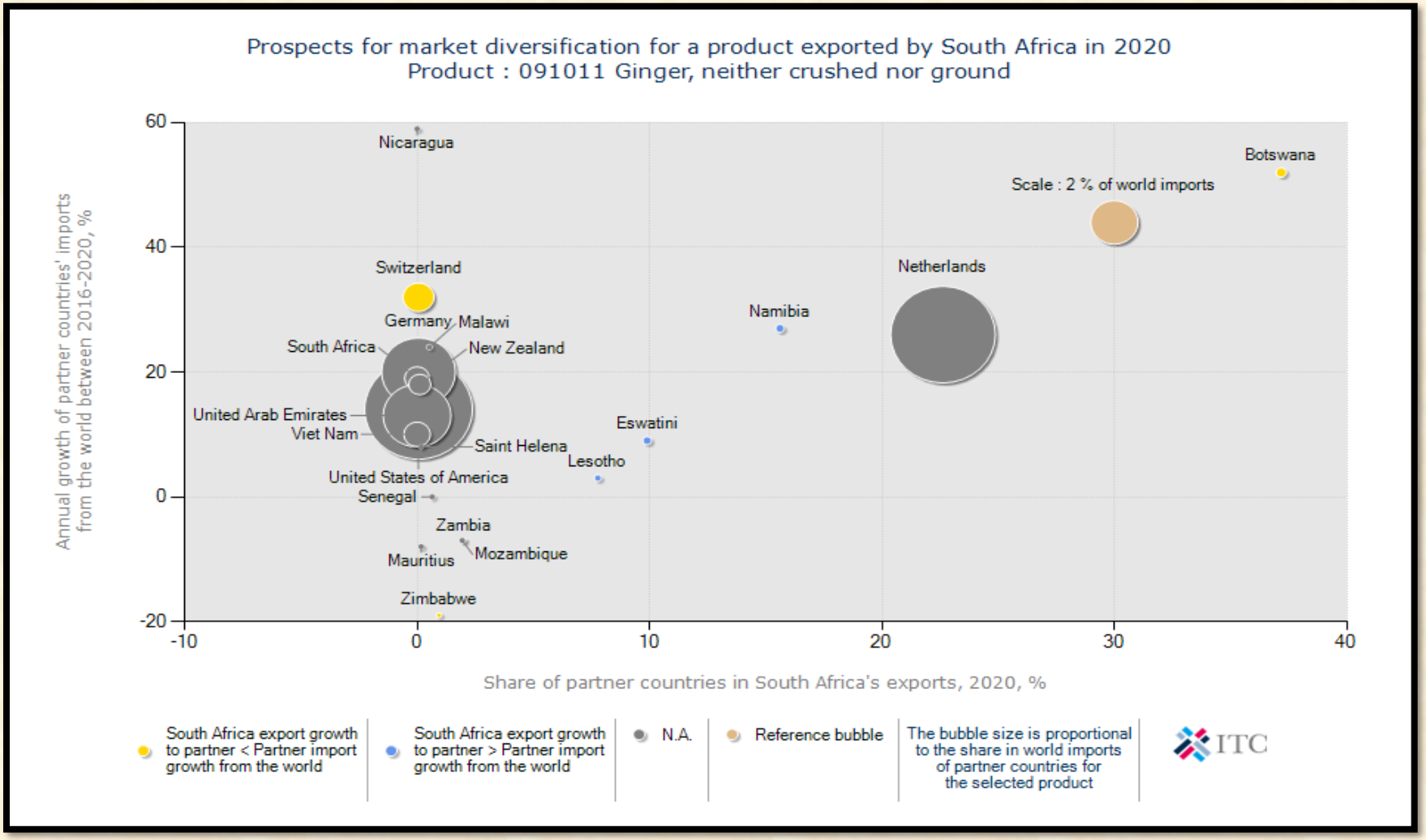
Source: ITC Trade Map

Figure 45: Growth in demand for uncrushed ginger exported by South Africa in 2020



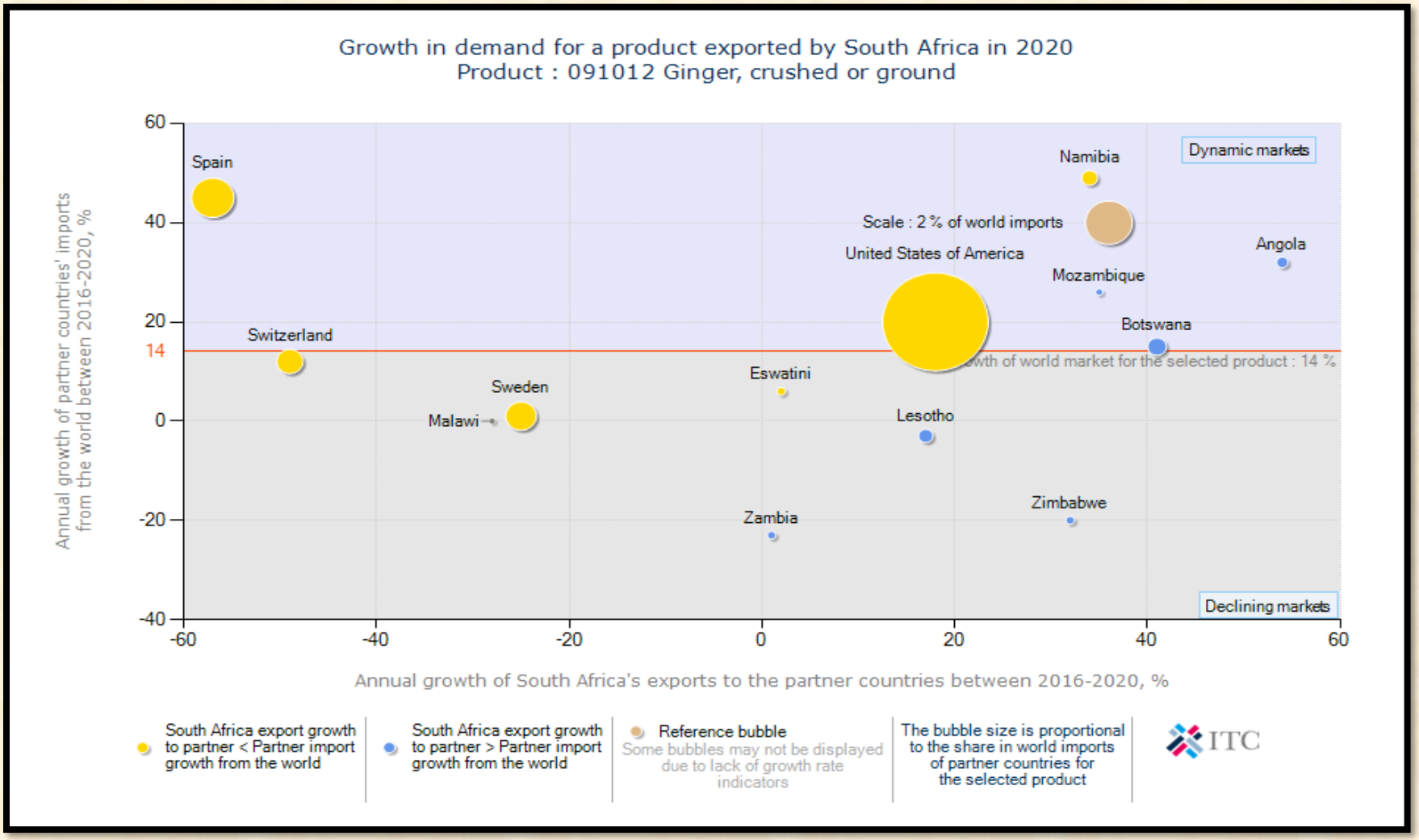
Source: ITC Trade Map

Figure 46: Prospects for market diversification for uncrushed ginger exported by South Africa in 2020



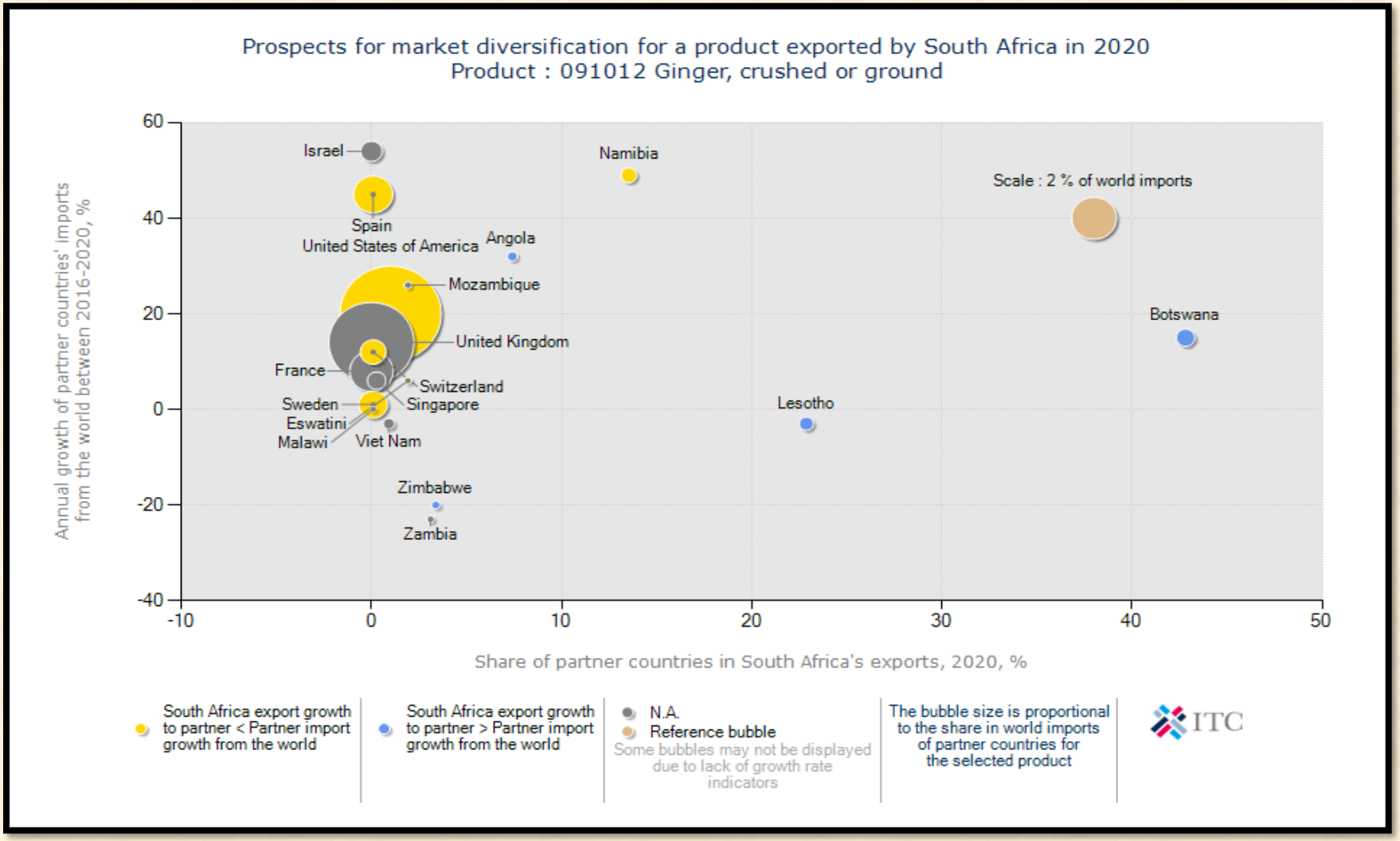
Source: ITC Trade Map

Figure 47: Growth in demand for crushed ginger exported by South Africa in 2020



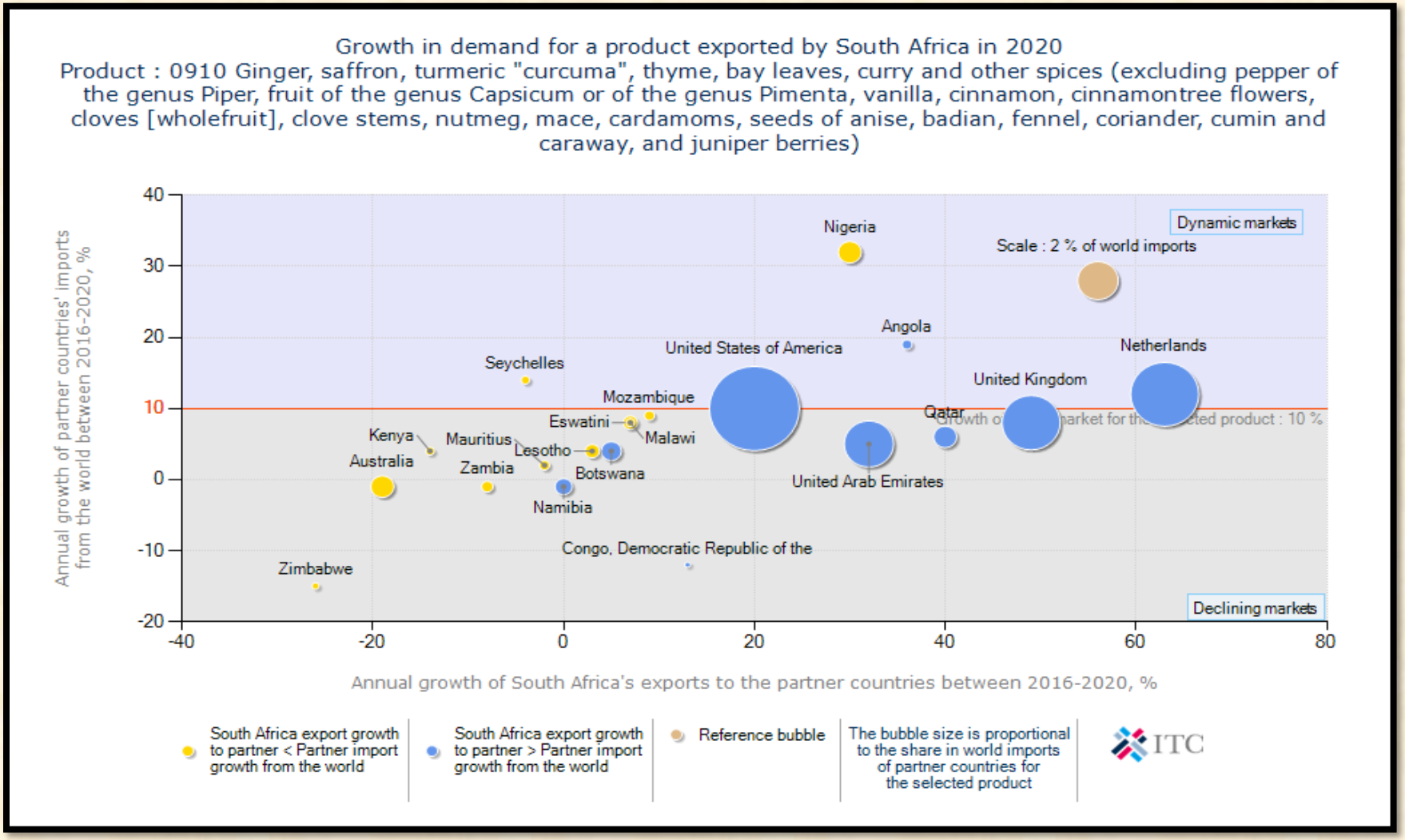
Source: ITC Trade Map

Figure 48: Prospects for market diversification for crushed ginger exported by South Africa in 2020



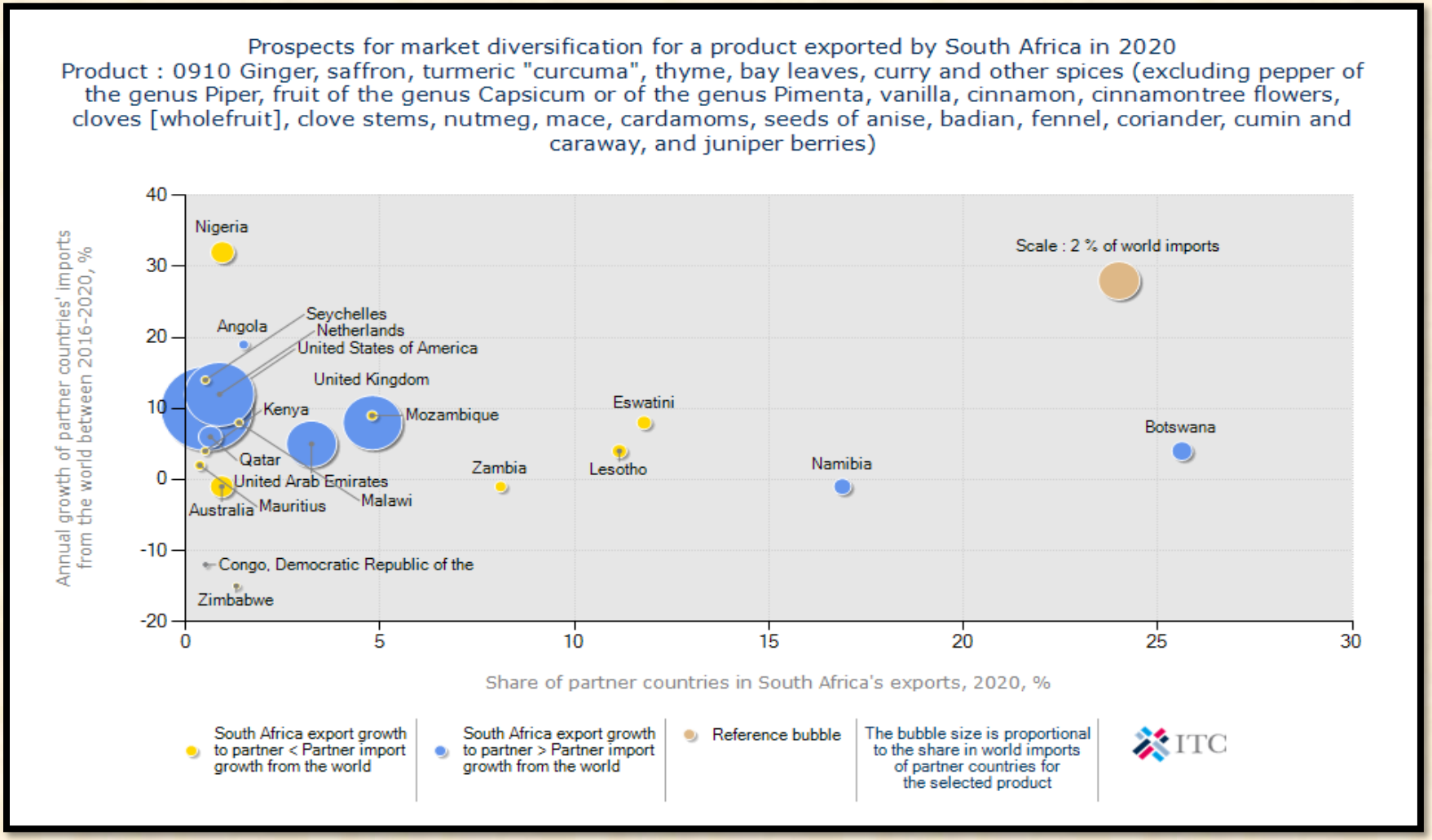
Source: ITC Trade Map

Figure 49: Growth in demand for ginger, saffron, turmeric, bay leaves and curry exported by South Africa in 2020



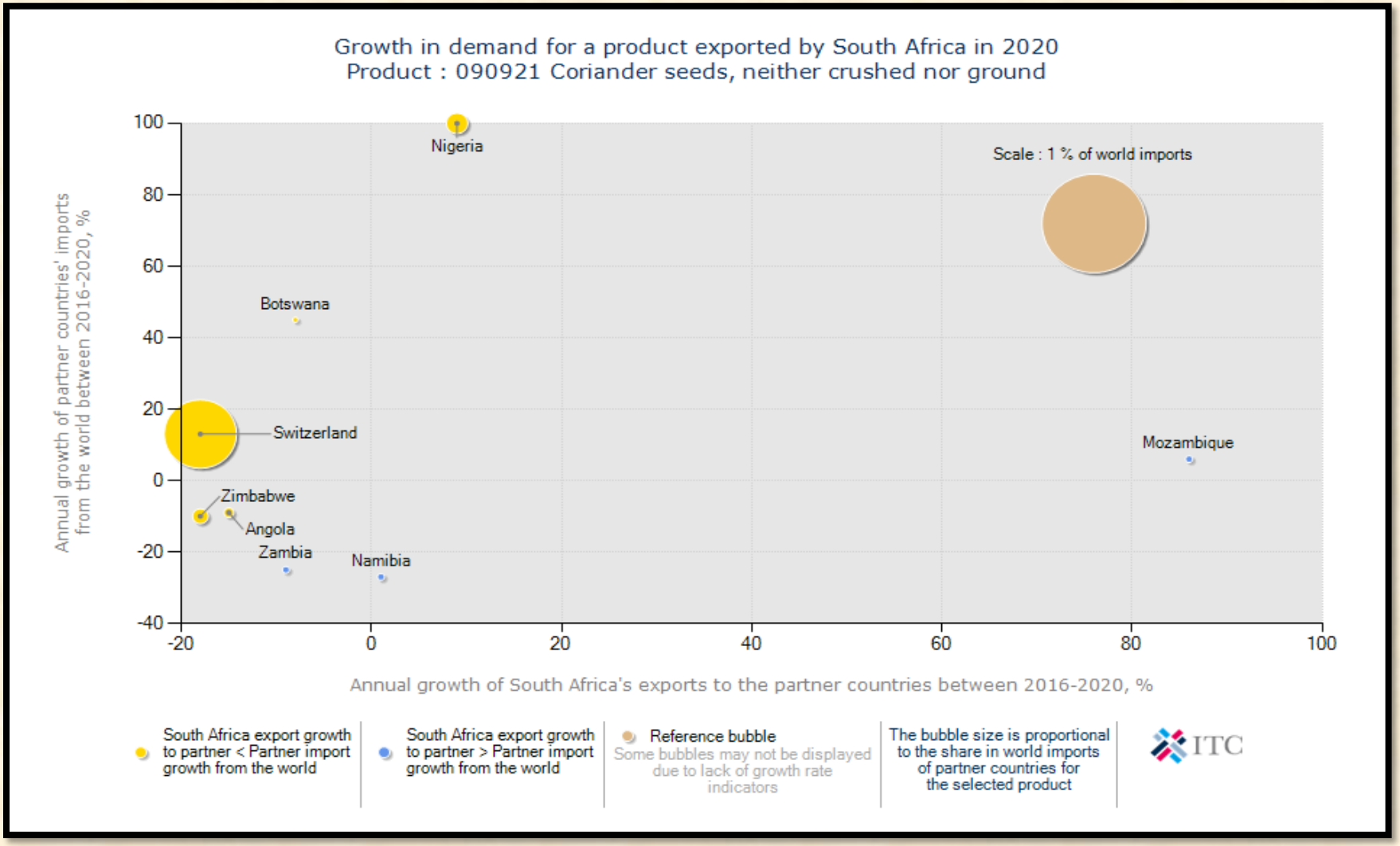
Source: ITC Trade Map

Figure 50: Prospects for market diversification for ginger, saffron, turmeric, bay leaves and curry exported by South Africa in 2020



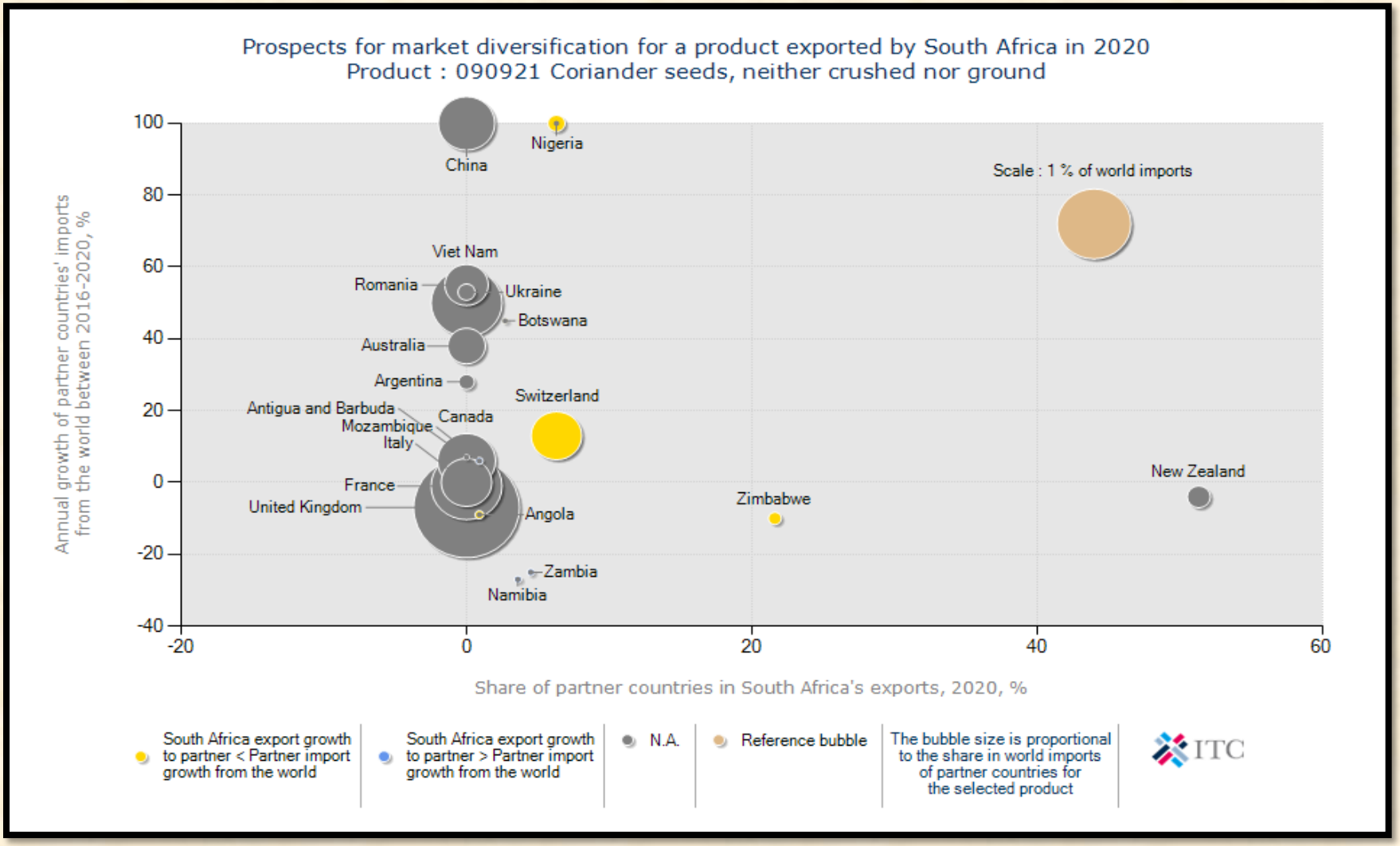
Source: ITC Trade Map

Figure 51: Growth in demand for coriander seeds, neither crushed nor ground exported by South Africa in 2020



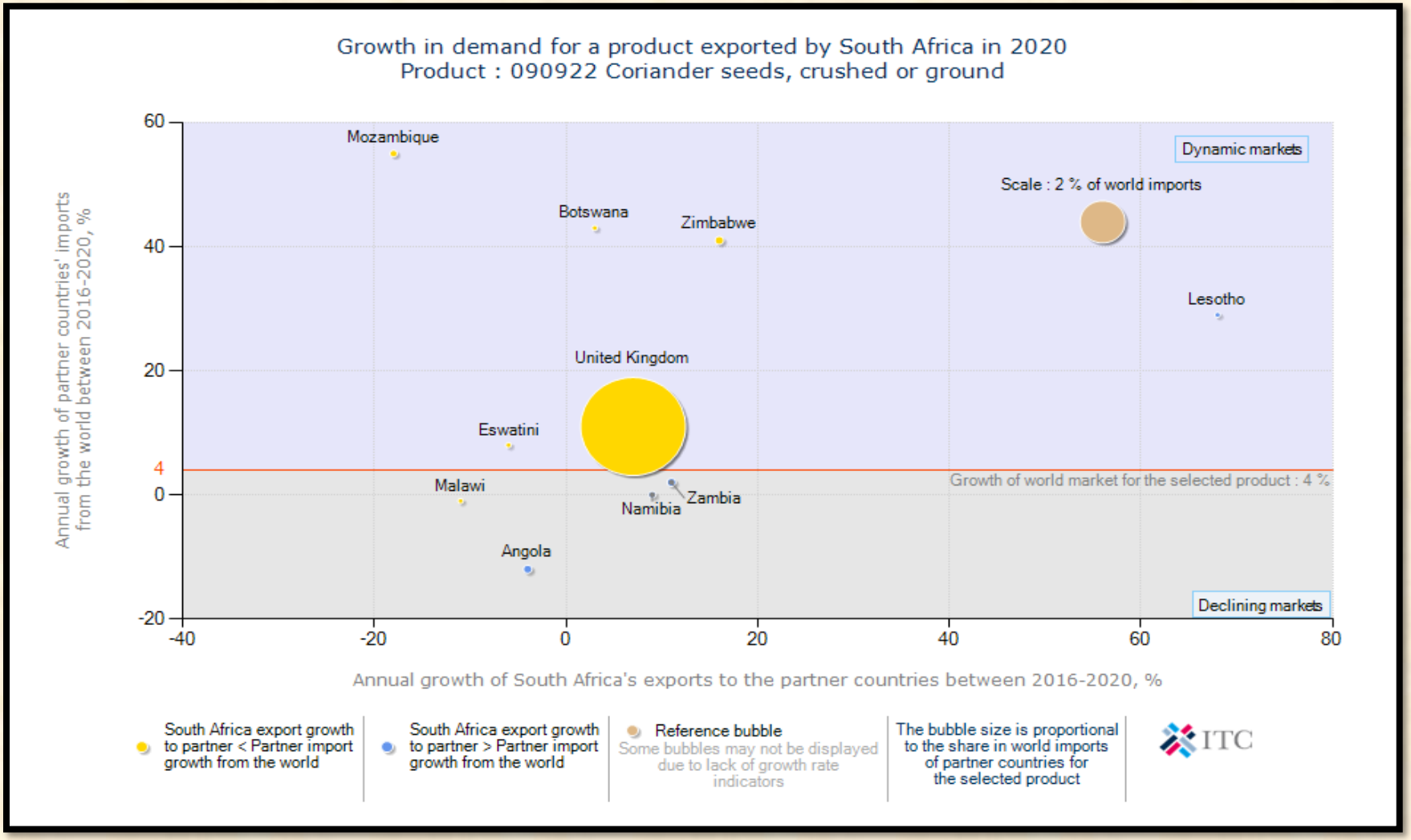
Source: ITC Trade Map

Figure 52: Prospects for market diversification for coriander seeds neither crushed nor ground exported by South Africa in 2020



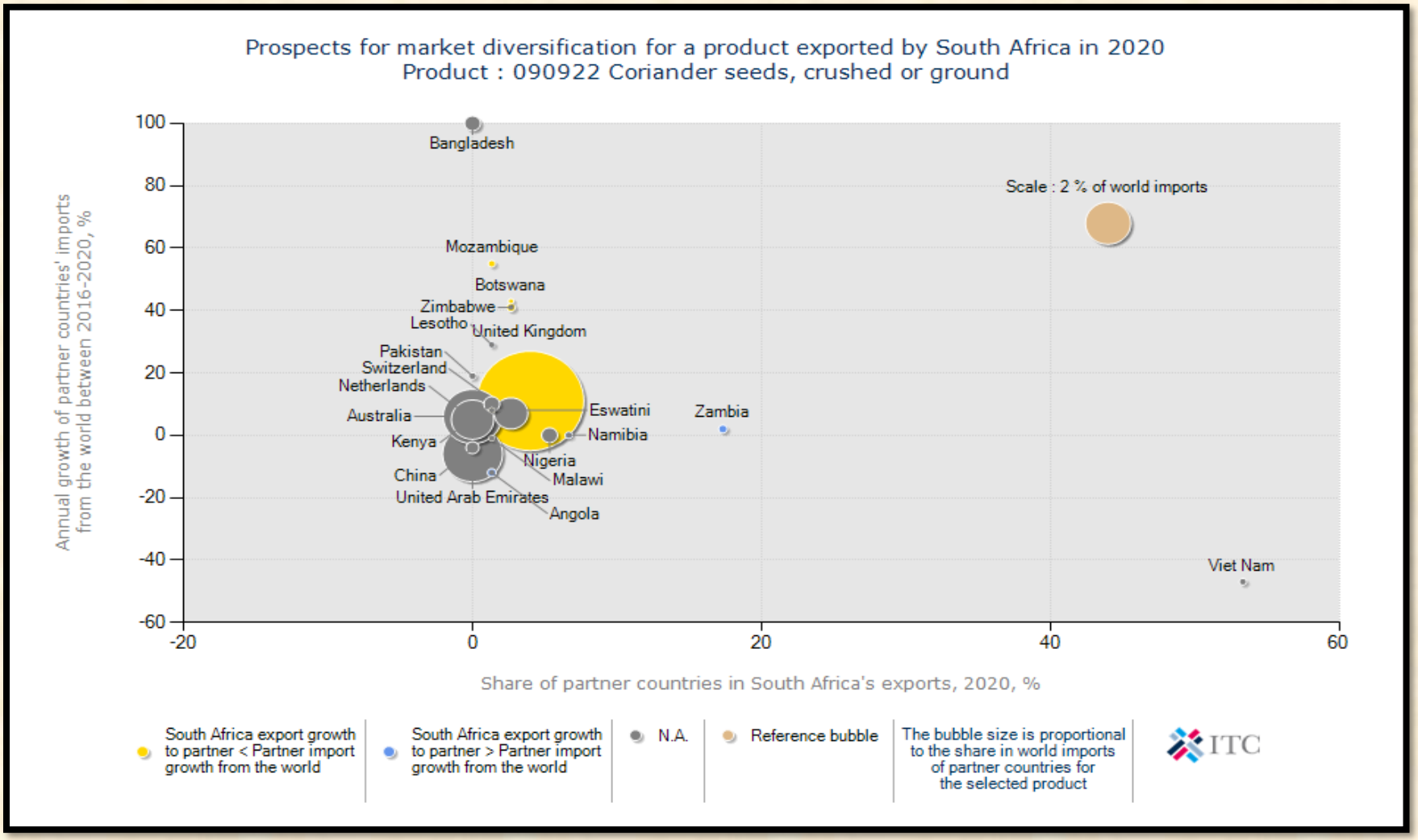
Source: ITC Trade Map

Figure 53: Growth in demand for coriander seeds crushed or ground exported by South Africa in 2020



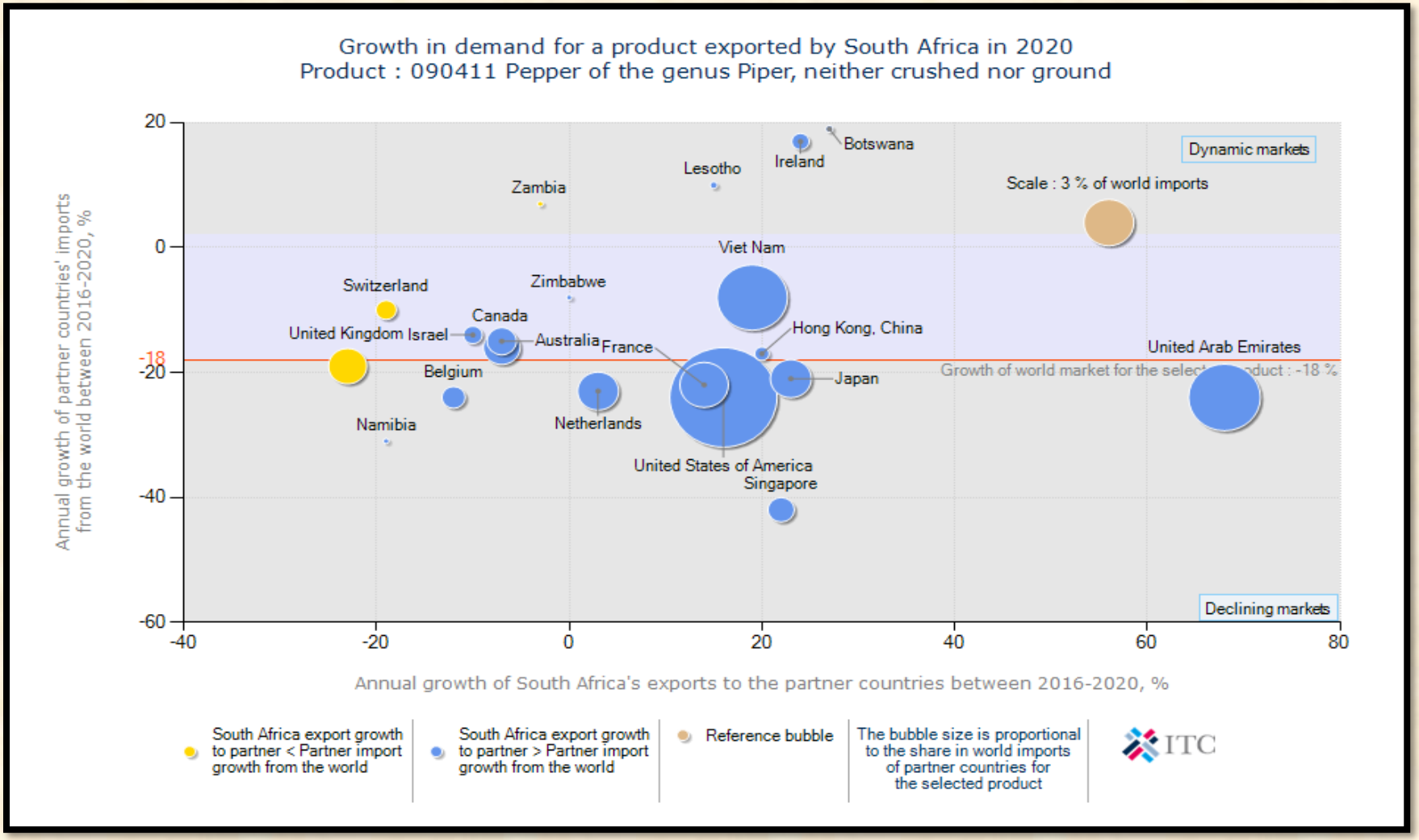
Source: ITC Trade Map

Figure 54: Prospects for market diversification for coriander seeds crushed or ground exported by South Africa in 2020



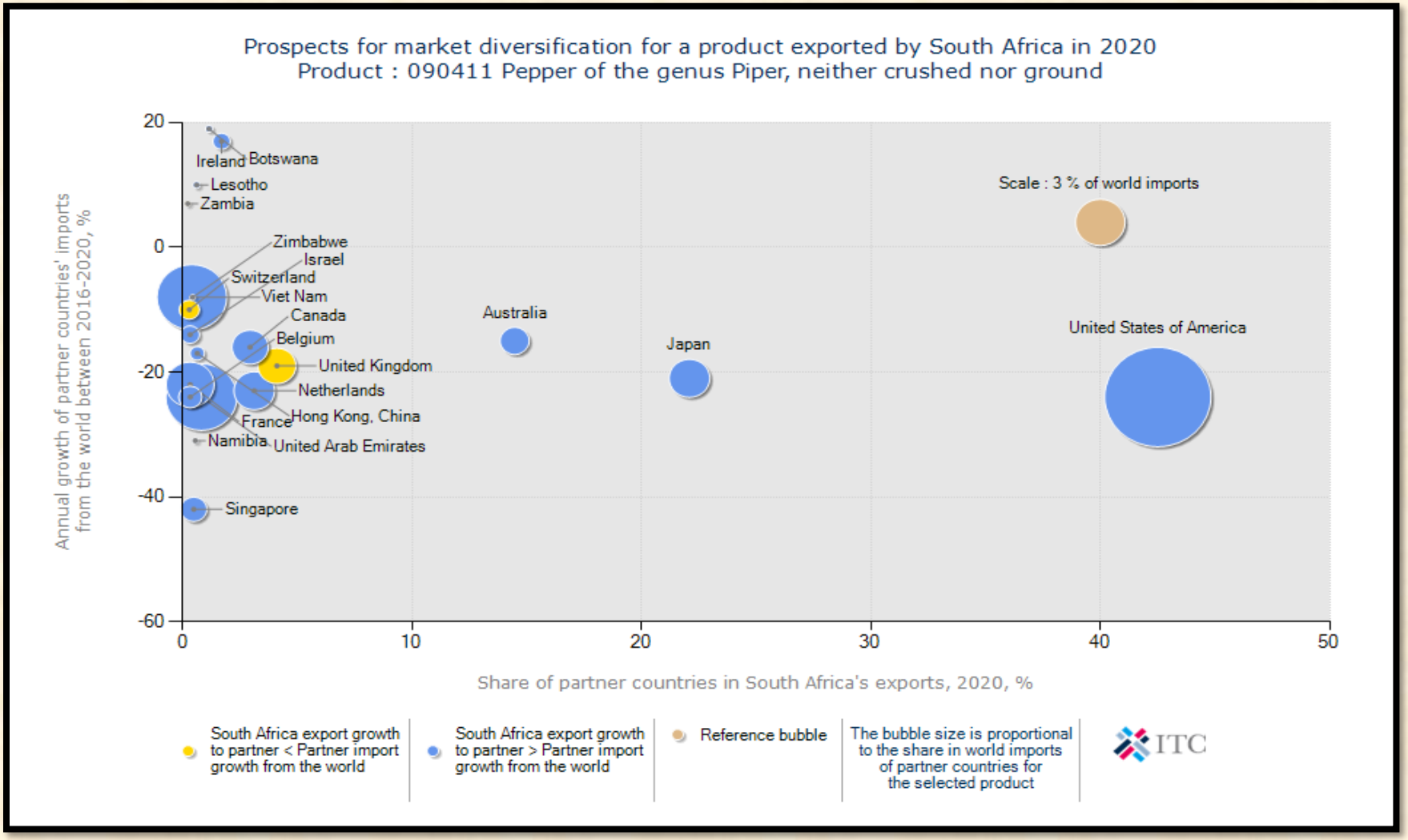
Source: ITC Trade Map

Figure 55: Growth in demand for peppers neither crushed nor ground exported by South Africa in 2020



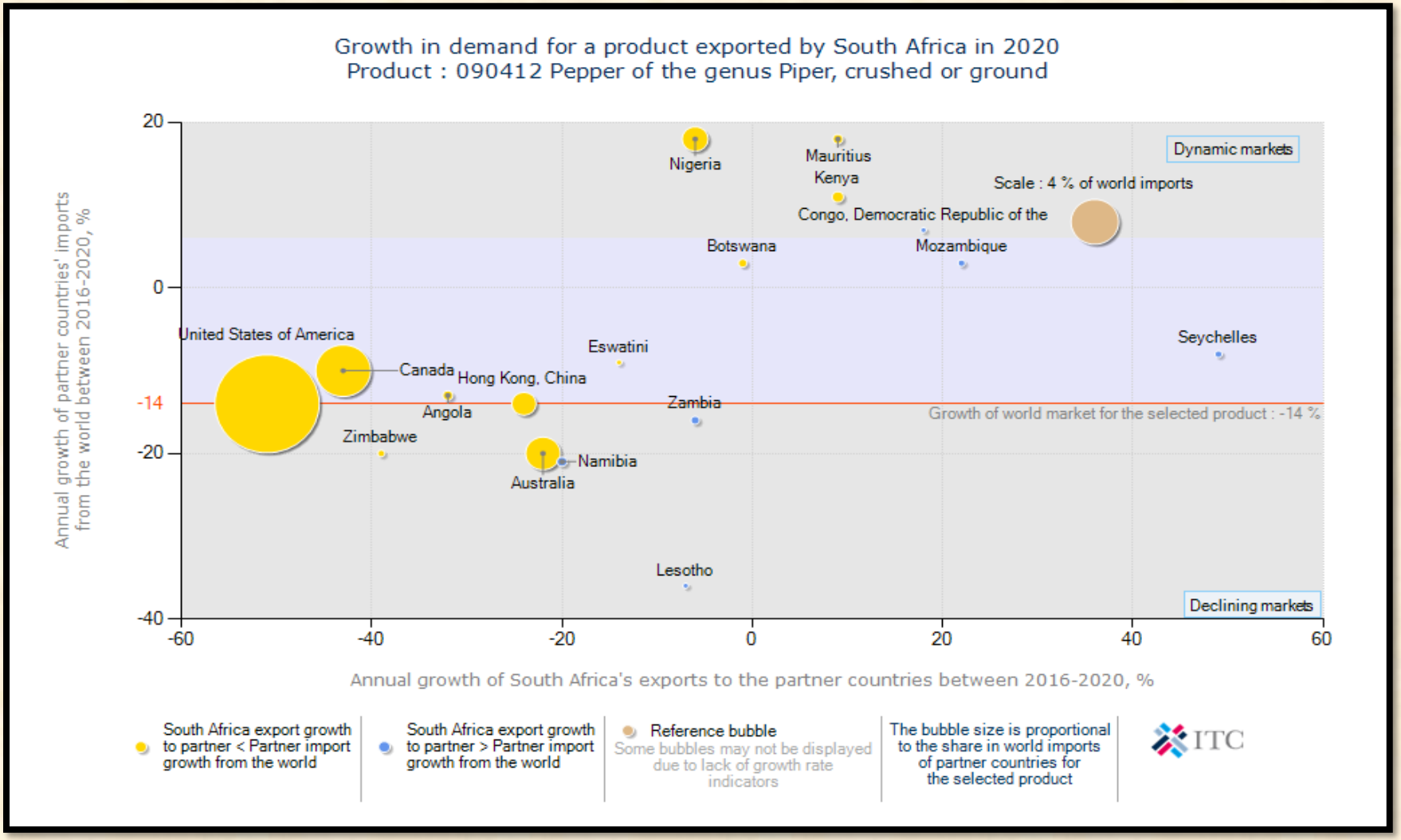
Source: ITC Trade Map

Figure 56: Prospects for market diversification for peppers neither crushed nor ground exported by South Africa in 2020



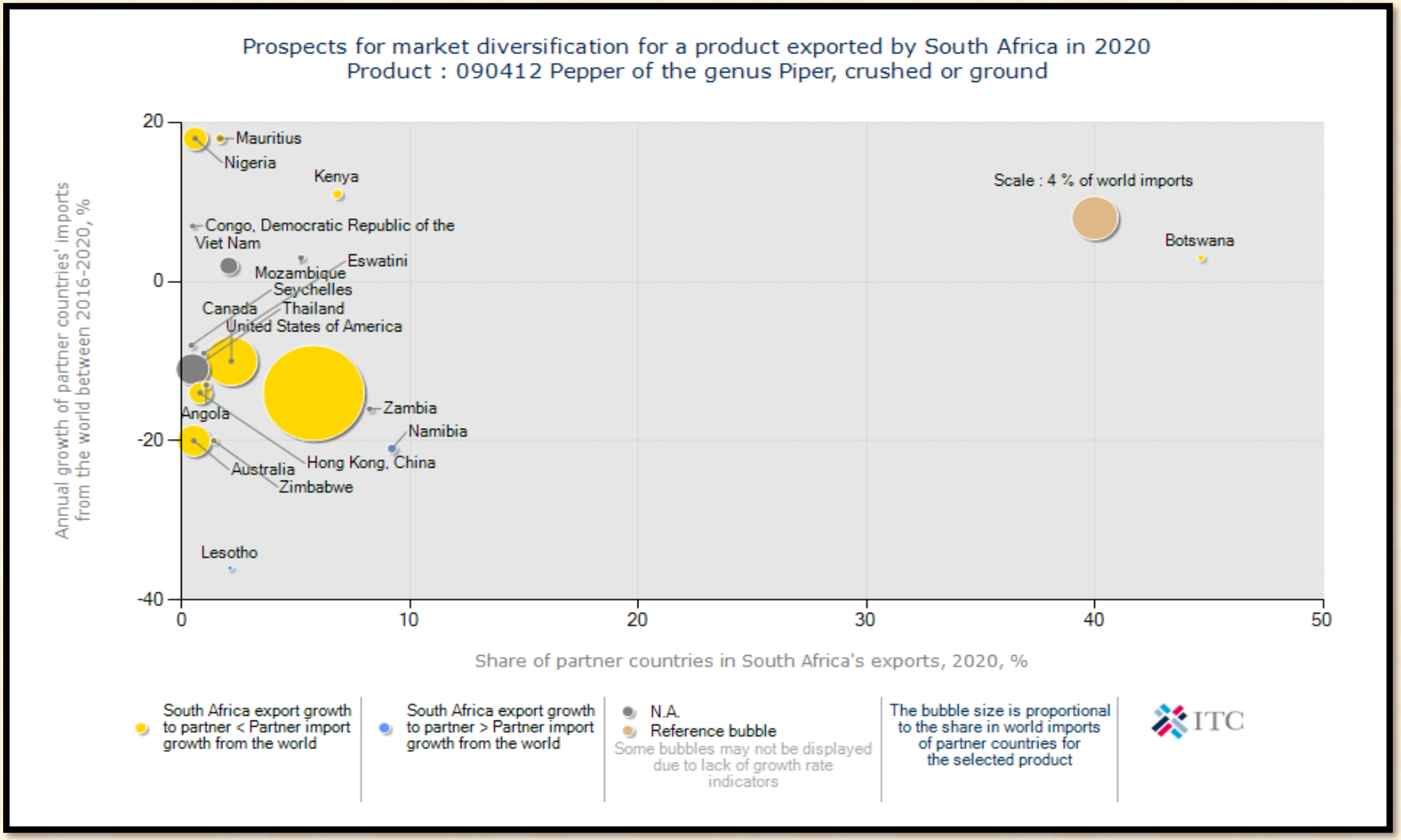
Source: ITC Trade Map

Figure 57: Growth in demand for peppers crushed or ground exported by South Africa in 2020



Source: ITC Trade Map

Figure 58: Prospects in demand for peppers crushed or ground exported by South Africa in 2020



Source: ITC Trade Map

7. OPPORTUNITIES AND CHALLENGES

7.1 Opportunities

Farmers can benefit from spices and herbs as higher value, low volume cash crops, to enhance their income and thus improve their livelihoods. A large proportion of spices traded in both local and small-scale farmers produce export markets, and the worldwide trade provides multi-billion US dollar earnings for small-scale farmers. World markets for spices and herbs, particularly in industrializing countries and in local markets are expanding and can offer good returns to small-scale farmers. Trade is dominated by dried products. In recent years, fresh herbs have become popular and are perceived to be of higher quality. Spice and herb derived essential oils and oleoresins are sold in large and growing markets. There is an increase in consumption of processed food and ready to eat dishes, which often depend on herbs and spices to retain and enhance food flavour. The increasing demand in developed countries for natural flavour offers tremendous potential for spice crops as sources of natural flavours. According to Agribook 2019, there is also increasing demand for organic and natural products such as herbal teas, essential oils, herbs and spices, phytomedicines and phytocosmetics. This growth has been supported by a global swing away from synthetic products to those that are natural, healthy, sustainably produced and fairly traded. The increasing importance of spices for various flavours in foods and medicinal properties has also resulted in higher demand for spices.

7.2 Challenges

Spices, herbs and vegetable seasonings can be heavily contaminated with microorganisms because of the environmental and processing conditions under which they are produced. In the spice sector problems can arise from pesticide application, drying process, storage, transportation, climate and weather conditions. The microbial load has to be reduced before it can be safely incorporated into food products. High-temperature treatment can cause a significant loss of flavour and aroma from a spice because the volatile oils are lost. Steam also results in a loss of volatile flavour and aroma components and colour changes. Steam can also increase moisture levels. Until recently, most spices and herbs were fumigated with sterilizing gases such as ethylene oxide to destroy contaminating micro-organisms. However, the use of ethylene oxide was prohibited by an EU directive in 1991 and has been banned in several other countries because it is a carcinogen. Irradiation has since emerged as a viable alternative and its use results in cleaner, better quality herbs and spices compared to those fumigated with ethylene oxide. According to Science direct, the herbs and spice industry is under constant threat from economically motivated adulteration. Adulteration is damaging to the economy consumer confidence and is a potential health risk. Adulteration is a legal term meaning that a food product fails to meet the legal standards.

8. ACKNOWLEDGEMENTS

The following industries are acknowledged:

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Quantec Research
www.easydata.co.za

Market Access Map
www.macmap.org

International Trade Centre (ITC)
www.trademap.org

Economic Research Service/USDA

UNIDO and FAO, 2005, Herbs, spices and essential oil (Post harvest operation in developing countries)

National Agricultural Marketing Council
www.namc.co.za

CBI Market Information Database
www.cbi.eu

India Brand Equity Foundation
www.ibef.org

Agribook
https//agribook.co.za

Science Direct
https://www.sciencedirect.com

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