

A PROFILE OF THE SOUTH AFRICAN GARLIC MARKET VALUE CHAIN 2010

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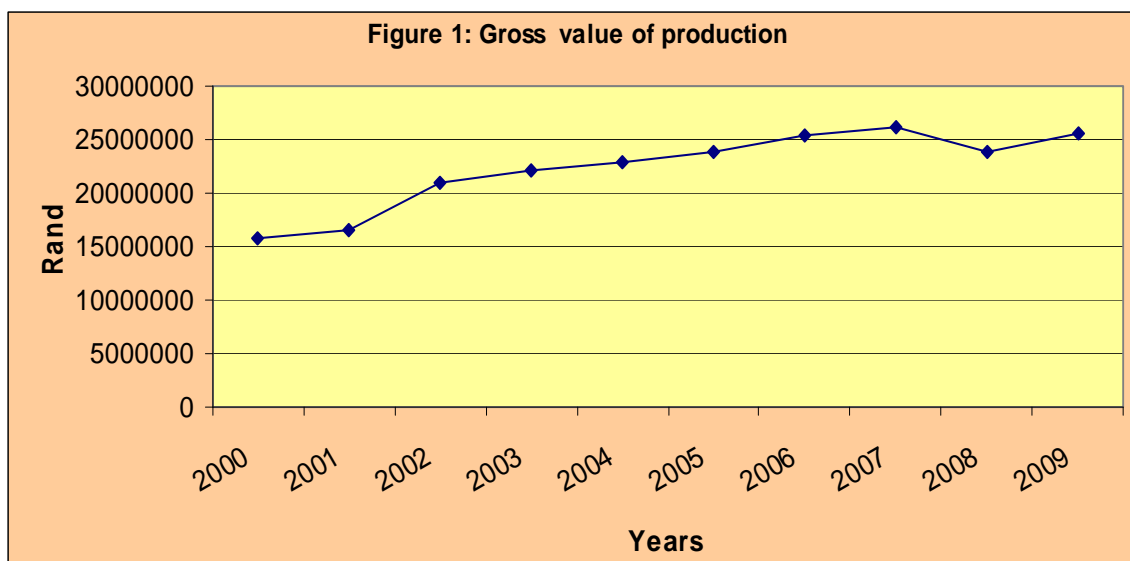
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1. DESCRIPTION OF THE INDUSTRY

Garlic is a close relative of onion, leeks and chives. In size and growth habit, garlic resembles the onion. Besides onion, garlic is the most important bulb crop grown almost all over South Asia. It is widely used for flavoring and seasoning dishes, pickles and sauces. Large amount of garlic are produced in China and India. Garlic has become an increasingly popular vegetable in recent years among producers, marketers and consumers. Its long acclaimed nutritional and medicinal values are proving to be valid. More people are discovering its culinary splendor, and producers have found garlic to be a potentially highly profitable crop.



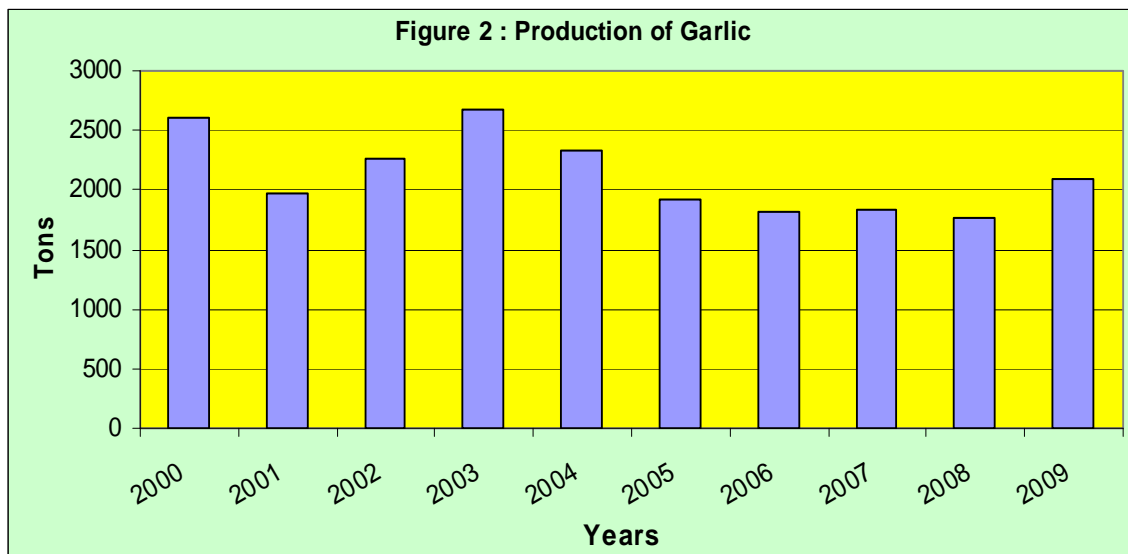
Source: Agricultural Statistics

Figure 1 above, illustrate the contribution of garlic industry to the total gross production of agricultural industry over the period of 10 years. The contribution of garlic industry has increased steadily from 2001 to 2007. In 2008, the gross value of production dropped by 8.7% due to decline in production in the same production season. In 2009 the contribution increased by 7% when compare to the previous year. The highest garlic industry contribution was recorded in 2007 due to higher prices received by producers across the markets.

1.1 Production Areas

As a general rule, conditions suitable for onion production, are suitable for garlic production. The highest quality garlic is produced in the cool, dry regions of South Africa. These production areas include Limpopo Province in particular (Polokwane Plateau); North West Province, Gauteng ; northern, western and southern Free State province; part of Kwa-Zulu Natal; the Western Cape province (in particular the Karoo); as well as parts of the Northern Cape

(Douglas area). Globally, China followed by India, South Korea, and United States are top countries producing garlic.



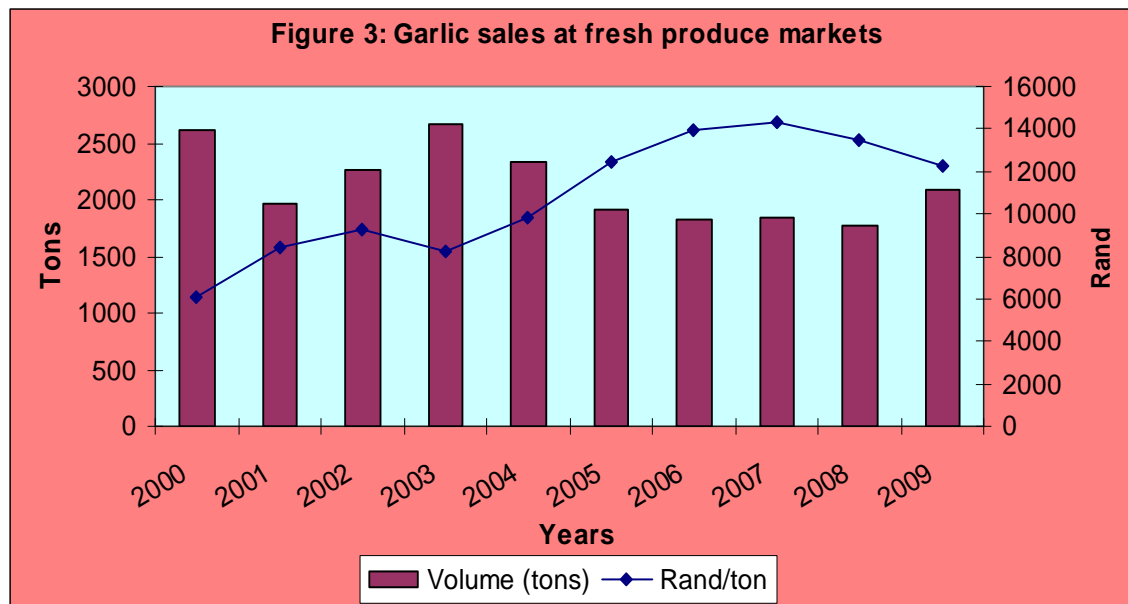
Source: Agricultural Statistics

Garlic production has been fairly unsteady for the period under review. In 2001 the production dropped by 24% compared to tons produced in the year 2000. The production started to increase again in 2002 to 2003 and then the production started to decline steadily from 2004 to 2006. In 2009 the production volumes increased by 18% when compared with 2008 production season. The drop in production can be attributed to the unfavorable climatic conditions, and South African producers having to compete with cheaper garlic imports from the world where production costs are much lower.

2. MARKET STRUCTURE

2.1 Domestic market and Prices

In South Africa garlic is sold through different marketing channels such as the National Fresh Produce Market, hawkers, directly to the retailers, restaurants and processors. Garlic is marketed as a fresh product, dehydrated or as certified seeds. Garlic is also exported to other countries through exports agents and marketing companies. Most of commercial garlic production is grown under contract between grower and buyer. SA has a limited market for garlic; South Africa consumes only 3000 tons of garlic per annum.



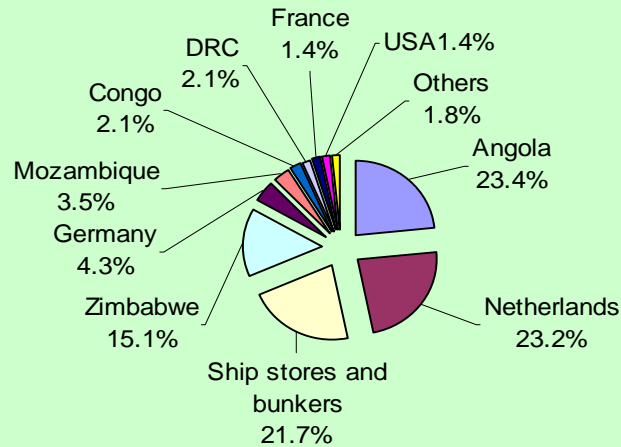
Source: Agricultural Statistics

Figure 3 above; illustrate the sales of garlic in the national fresh produce markets in the past ten years. There were relative fluctuations in the volumes and prices of garlic sold in the major fresh produce markets. The prices were very low in 2000 and 2003 due to high volumes across the markets. The general trend observed is that prices increase substantially when few volumes are supplied to the markets. The highest volume was supplied in 2003 and the price was 10% lower compared to 2002 garlic price. Prices eased marginally higher from 2004 to 2008 as volumes declines significantly across the markets. In 2009 the prices eased lower by 9% as volumes increases across the market.

2.2 Exports

South Africa is not a major garlic exporter, it represents 0.03% of world exports for this product, and its ranking in world garlic exports is 34. In the past five years South Africa exported garlic to the following countries: Angola, Netherlands, Zimbabwe, Germany, Mozambique, Congo, Democratic Republic of Congo, United States of America, Malawi and Saint Helena. China is ranked number one in the world garlic exporters followed by Spain and Argentina respectively. Figure 4 below, illustrate major destinations of exported garlic in 2009.

Figure 5: South Africa garlic export destination in 2009



Source: Trade Map

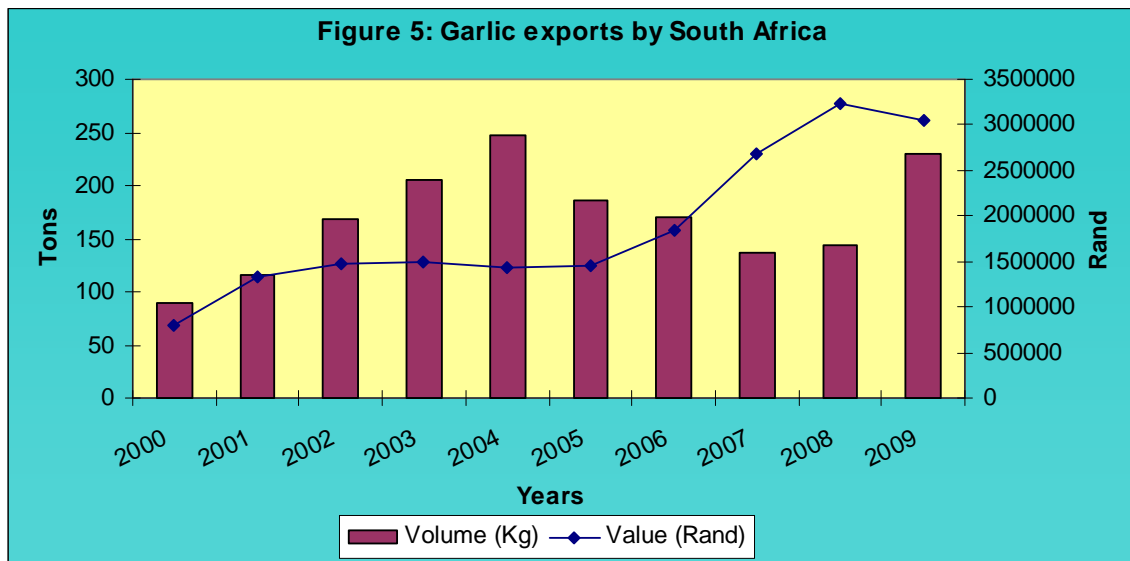
Table 1: South Africa's garlic exports in 2009

Importers	Exported value 2009, USD thousand	Share in South Africa's exports, %	Exported quantity 2009 (tons)	Unit value, (USD/unit)	Exported growth in value between 2005-2009, %, p.a.	Exported growth in quantity between 2005-2009, %, p.a.	Exported growth in value between 2008-2009, %, p.a.
World	423	100	282	1500	17	7	9
Angola	99	23.4	83	1193	6	-5	136
Netherlands	98	23.2	36	2722	37	58	9
Ship stores and bunkers	92	21.7	36	2556	17	21	-36
Zimbabwe	64	15.1	99	646	25	24	540
Germany	18	4.3	7	2571	39	-16	-44
Mozambique	15	3.5	9	1667	32	22	-6
Congo	9	2.1	3	3000			
DRC	9	2.1	2	4500	99		-25
France	6	1.4	2	3000			0
USA	6	1.4	0				
Malawi	2	0.5	1	2000	-37	-34	-50
Saint Helena	2	0.5	0		-4		-33
Switzerland	2	0.5	1	2000	-35	-35	-91
Nigeria	1	0.2	0				
Zambia	1	0.2	1	1000	-44	-56	

Source: ITC Trade Map

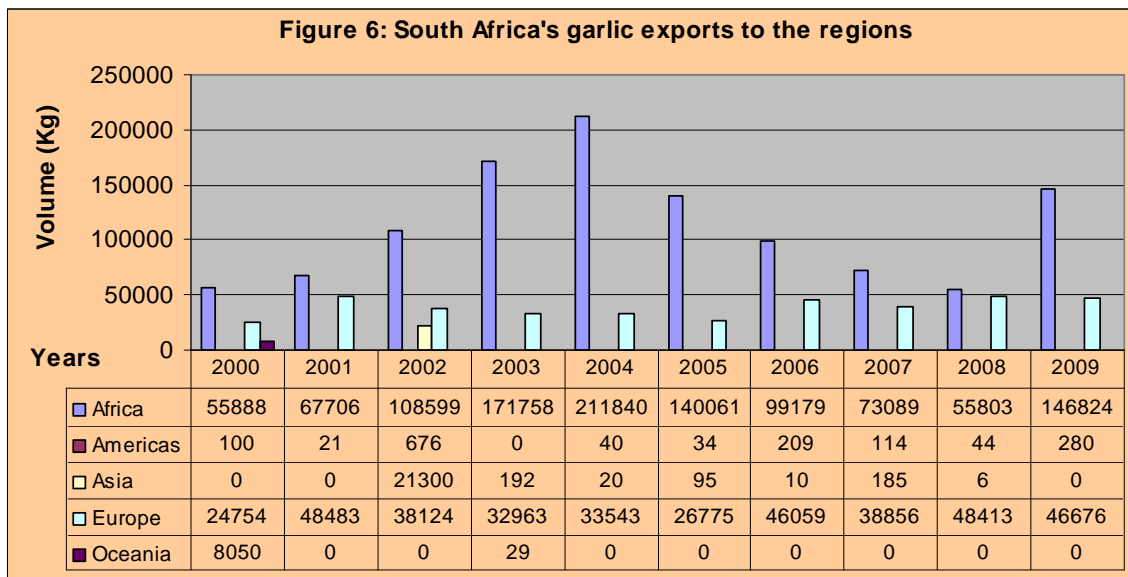
Table 1 indicates that in 2009, 21.7% of garlic exports were left in ship stores and bunkers. Angola has commanded 23.4% shares, followed by Netherlands with 23.2% share of South Africa garlic exports. South African garlic exports to Angola and Germany have decreased by 5% and 16% in export quantity respectively. South African garlic exports to Malawi have decreased by 37% and 34% in value

and quantity respectively. Switzerland has decreased by 35% and 35% in value and quantity respectively during 2005-2009 period.



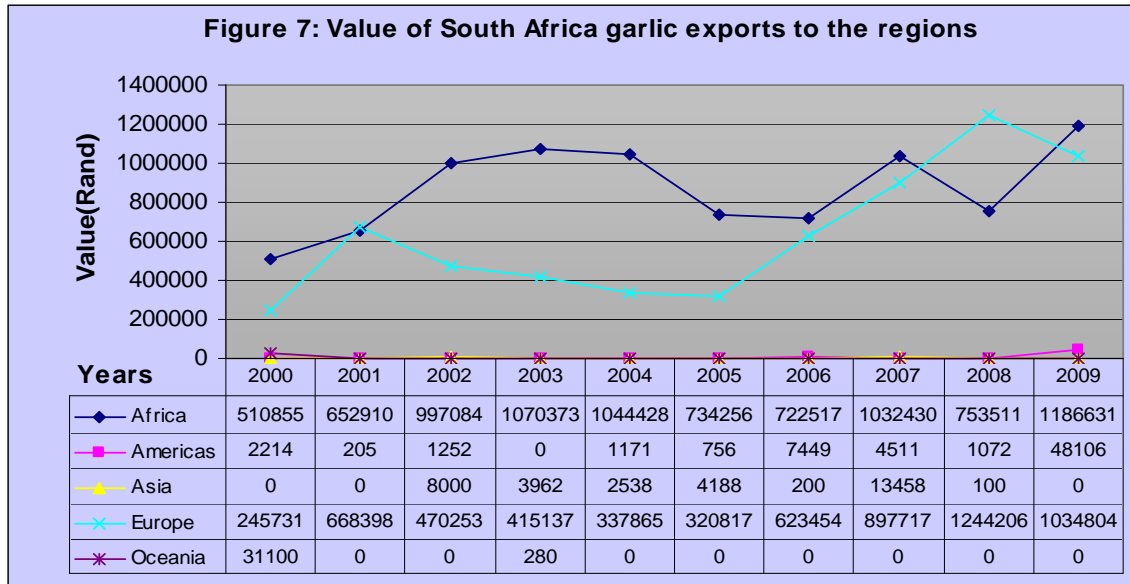
Source: Agricultural Statistics

Figure 5 above illustrate garlic exports from South Africa over the past 10 years. The highest export volumes were recorded in 2004 and since then the export volumes have declined significantly. In 2009 there was 60% increase in garlic exports. The high exports can be attributed to high production volume in the same year. The decline in exports in 2001, 2005 to 2008 can be attributed to the decline in production in the same years. From 2007 to 2009 it was more profitable to export garlic since higher export values were recorded for smaller volumes exported.



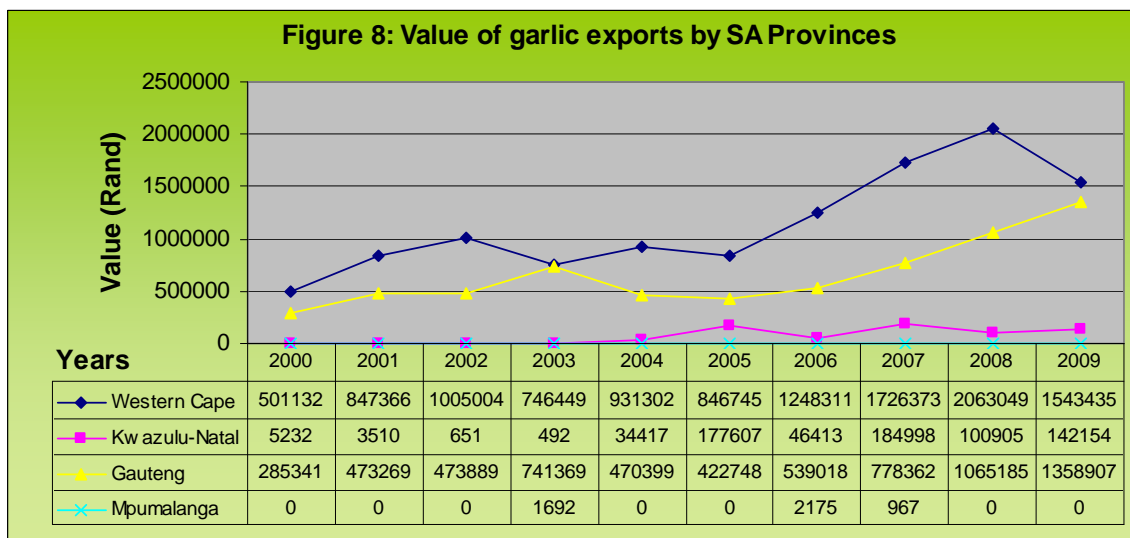
Source: Quantec Research

Figure 6 above shows garlic exports to the regions over the 10 years period. It is clear that South Africa exports high quantities of garlic to African countries. South Africa also exported considerable amount of garlic to European countries. Considerable garlic exports to Asia was recorded in 2002 and exports to Americas region was insignificantly low.



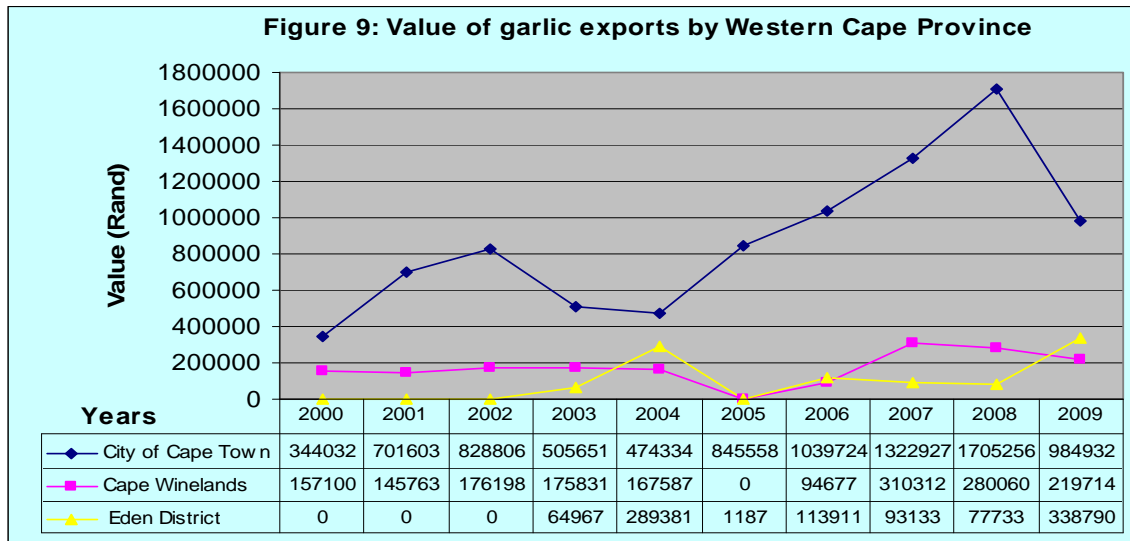
Source: Quantec Research

Figure 7 above illustrate value garlic exports to the regions. It was more profitable to export garlic to Europe than African region since high value were recorded for less volumes exported. High export values were recorded in 2008 for European region and in 2009 for African region.



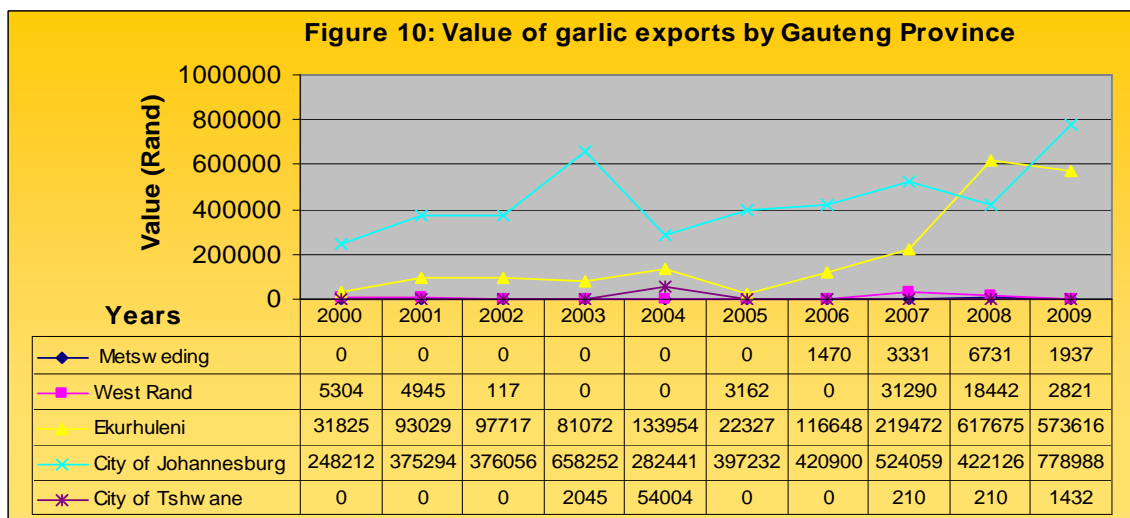
Source: Quantec Research

Figure 8, above illustrate that the highlight of garlic exports were that of Western Cape, Gauteng and Kwazulu Natal. This can attributed to exports exit points, the Cape Town harbour, Durban harbour and Freight Airport at OR Tambo International Airport. The following figures (Figure 9-12) shows the value of garlic exports from the various districts in the Provinces of South Africa.



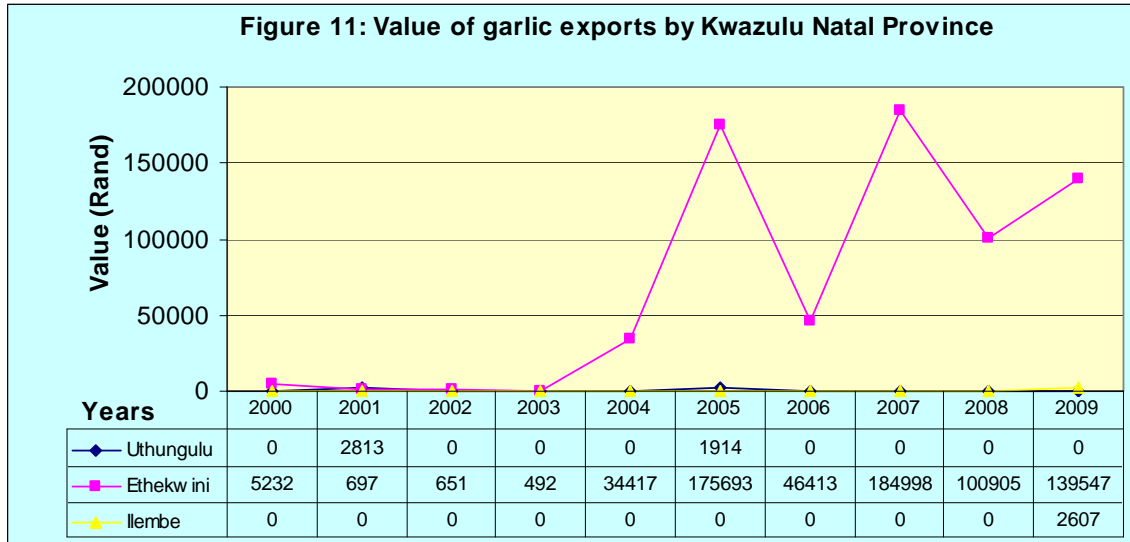
Source: Quantec Research

As can be seen from the above figure 9, garlic exports from Western Cape Province are mainly from the City of Cape Town municipality, Cape Winelands and Eden district municipality. High exports from the City of Cape Town can be attributed to the Cape Town harbor which renders export exit point. The highest exports value was recorded in 2008 from the City of Cape Town. There was 42% decrease in export value from the City of Cape Town.



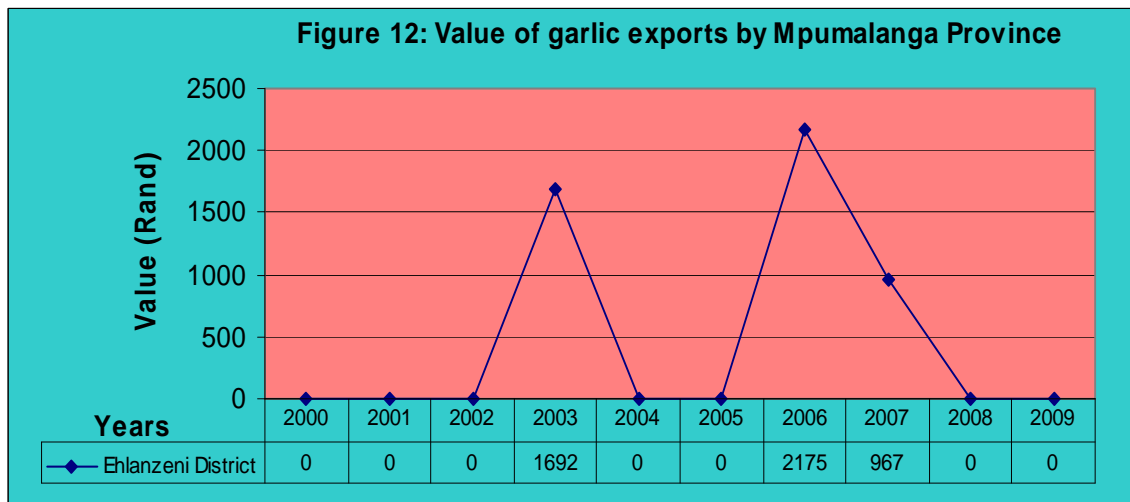
Source: Quantec Research

Figure 10 above, illustrate that in 2009, garlic exports from Gauteng Province were mainly from City of Johannesburg and Ekurhuleni. West Rand, Metsweding and City of Tshwane municipality has contributed to a lesser extent. OR Tambo International Airport serves as a garlic exports exit point from these district municipalities. The high export value was recorded in 2009 for the City of Johannesburg and in 2008 for Ekurhuleni.



Source: Quantec Research

As can be seen from the above figure 11, the garlic exports from Kwazulu Natal Province were mainly from the Ethekwini district municipality. High volumes at Ethekwini municipality can be attributed to the use of Durban harbor export exit point. The high export value was recorded in 2007. In 2009, Ilembe district municipality has recorded an export value.



Source: Quantec Research

Figure 12 above, illustrate that the exported garlic from Mpumalanga Province were recorded in 2003, 2006 and 2007 from Ehlanzeni district municipality. In the past two years the Province has recorded zero trade.

2.3 Share analysis

Table 2 below; illustrate the provincial share of the garlic exports for the past ten years. The trend indicates that Western Cape, Gauteng and Kwa-Zulu Natal Province to a lesser extent have commanded the greatest share of garlic exports for the past 10 years. North West, Limpopo and Northern Cape also produce garlic but their export share is less significant because the provinces lack market infrastructures, registered exporters and agro logistics. Western Cape, Gauteng and Kwa-Zulu Natal Provinces have an advantage of being located near the exports exit points and the registered exporters are based in these Provinces. In 2009, Western Cape Province has commanded 50.70% and Gauteng 44.63% share of South Africa garlic exports.

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

Year Province	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Western Cape	63.30	63.99	67.93	50.10	64.85	58.51	67.99	64.16	63.89	50.70
Kwazulu-Natal	0.66	0.27	0.04	0.03	2.40	12.27	2.53	6.88	3.12	4.67
Gauteng	36.04	35.74	32.03	49.76	32.75	29.21	29.36	28.93	32.99	44.63
Mpumalanga	0	0	0	0.11	0	0	0.12	0.04	0	0
South Africa	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Research

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

Year District	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
City of Cape Town	68.65	82.80	82.47	67.74	50.93	99.86	83.29	76.63	82.66	63.81
Cape Winelands	31.35	17.20	17.53	23.56	17.99	0	7.58	17.97	13.58	14.24
Eden District	0	0	0	8.70	31.07	0.14	9.13	5.39	3.77	21.95
Western Cape	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Research

Table 3 above, indicates that City of Cape Town commanded the greatest share of garlic exports from Western Cape Province. In 2009, City of Cape Town commanded 63.81%, Eden 21.95% and Cape Winelands 14.24% share of garlic exports from Western Cape Province. The higher share from the City of Cape Town can be attributed to Cape Town harbour which renders exit point of garlic exports.

Table 4: Share of district garlic exports to the total Kwa-Zulu Natal provincial garlic exports (%)

Year District	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Uthungulu	0	80.14	0	0	0	1.08	0	0	0	0
Ethekwini	100	19.86	100	100	100	98.92	100	100	100	98.17
Ilembe	0	0	0	0	0	0	0	0	0	1.83
Kwazulu Natal	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Research

Table 4 shows that Ethekwini district commanded the greatest share of garlic exports from Kwazulu Natal Province. In 2004, Uthungulu commanded the highest share of garlic exports. The greatest share by Ethekwini can be attributed to Durban harbour which renders exports exit point.

Table 5: Share of district garlic exports to the total Gauteng provincial garlic exports

Year District	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Metsweding	0	0	0	0	0	0	0.27	0.43	0.63	0.14
West Rand	1.86	1.04	0.02	0	0	0.75	0	4.02	1.73	0.21
Ekurhuleni	11.15	19.66	20.62	10.94	28.48	5.28	21.64	28.20	57.99	42.22
City of Johannesburg	86.99	79.30	79.36	88.79	60.04	93.97	78.09	67.33	39.63	57.33
City of Tshwane	0	0	0	0.28	11.48	0	0	0.03	0.02	0.11
Gauteng	100	100	100	100	100	100	100	100	100	100

Source: Calculated from Quantec Research

Table 5 illustrate that the City of Johannesburg and Ekurhuleni commanded the greatest share of garlic exports from Gauteng Province. In 2009, City of Johannesburg commanded 57.33% and Ekurhuleni district 42.22% share of garlic by Gauteng Province. OR Tambo International Airport renders exit point of garlic exports from Gauteng Province.

Table 6: Share of district garlic exports to the total Mpumalanga provincial garlic exports

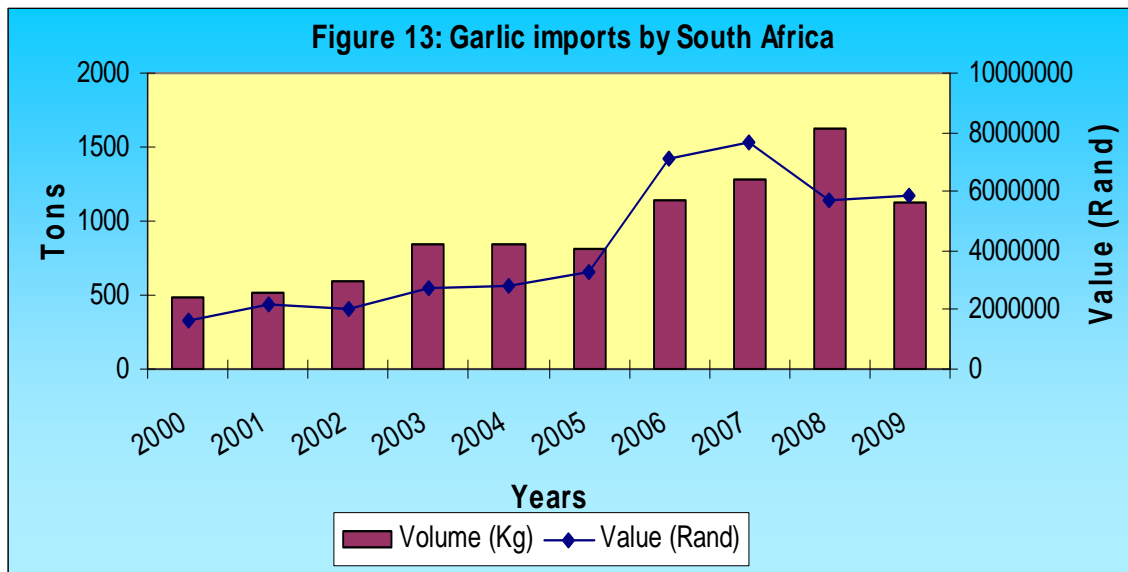
Year District	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Ehlanzeni	0	0	0	100	0	0	100	100	0	0
Mpumalanga	0	0	0	100	0	0	100	100	0	0

Source: Calculated from Quantec Research

Table 6 shows that in 2003, 2006 and 2007, Ehlanzeni commanded 100% share of garlic exports from Mpumalanga Province.

2.4 South Africa garlic imports

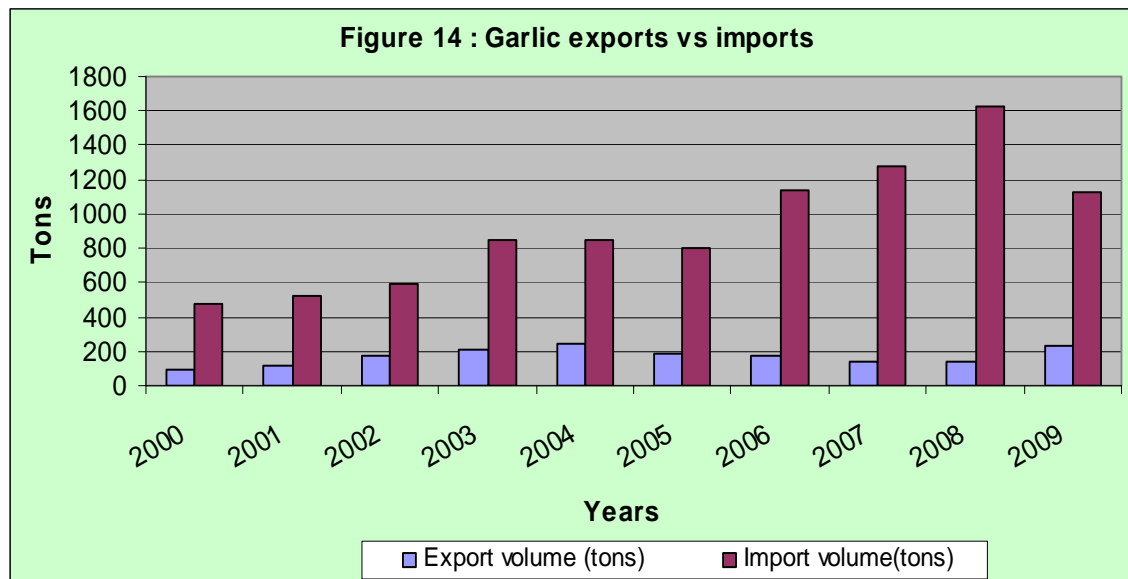
South Africa is not a major garlic importer, its imports represent 0.06% of world imports for this product and its ranking in the world is 96. In 2009, South Africa imported garlic from China, India, United States Egypt and Thailand .Globally, Indonesia is the biggest garlic importer followed by United States of America, Brazil, France, Italy and Germany.



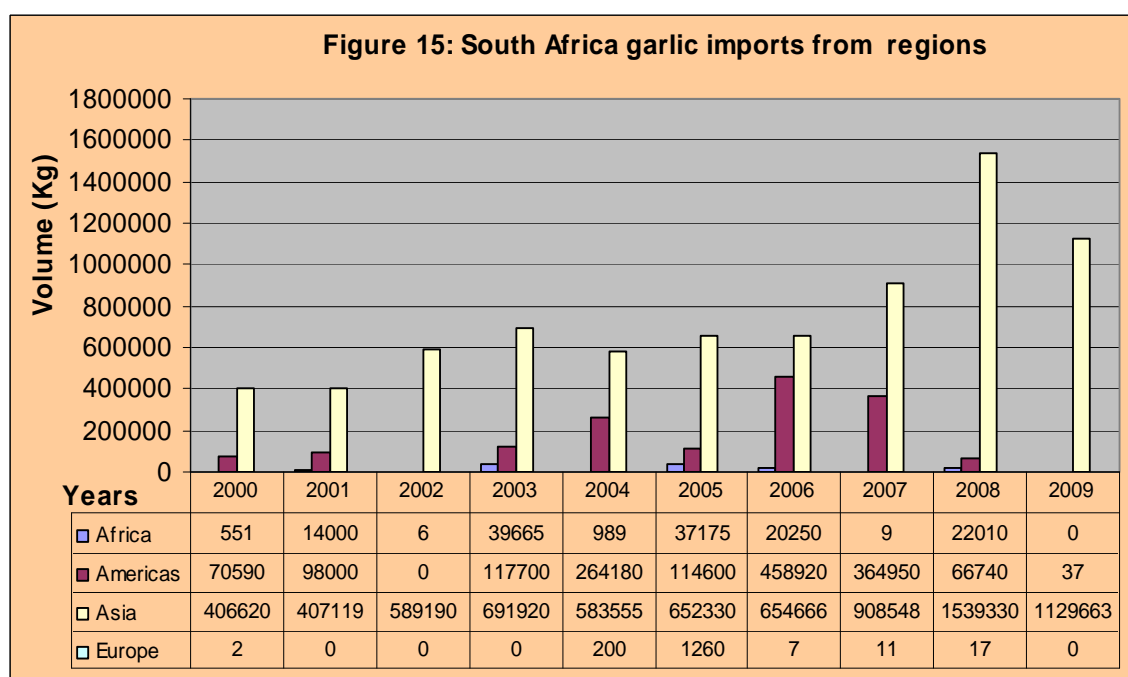
Source: Quantec Research

Figure 13 above illustrate garlic imports by South Africa over the period of 10 years. From 2000 to 2002, South Africa has imported low volumes of garlic. This can be attributed to high domestic production in the same years. From 2006 to 2008 there was a significant increase in garlic imports. The increase can be attributed to the drop in production in the same years. It was also cheaper to import garlic from 1999 to 2005 and 2008, since more volumes were imported at lesser values. In 2009, garlic imports declined by 30% compared to 2008. The decline in imports can be attributed to an increase in domestic production in the same year.

Figure 14 below compares volumes of exports and volumes of imports of garlic from 2000 to 2009. For the period under analysis, South Africa garlic exports were far less than imports. This means that South Africa consumes more garlic that the country produces. As indicated in figure 14, South Africa is a net importer of garlic.

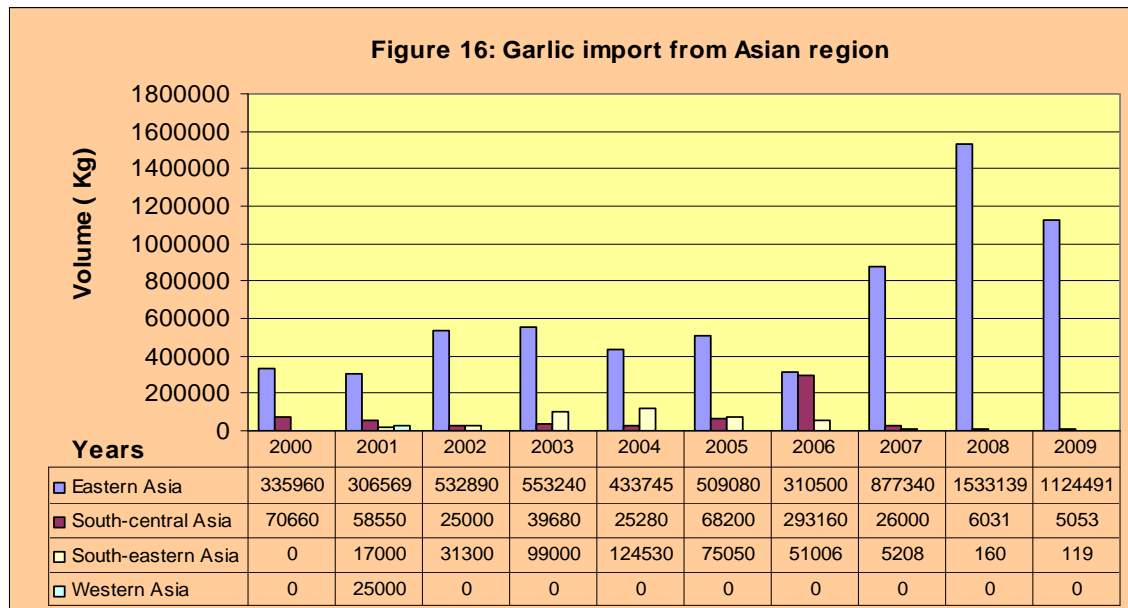


Source: Quantec Research



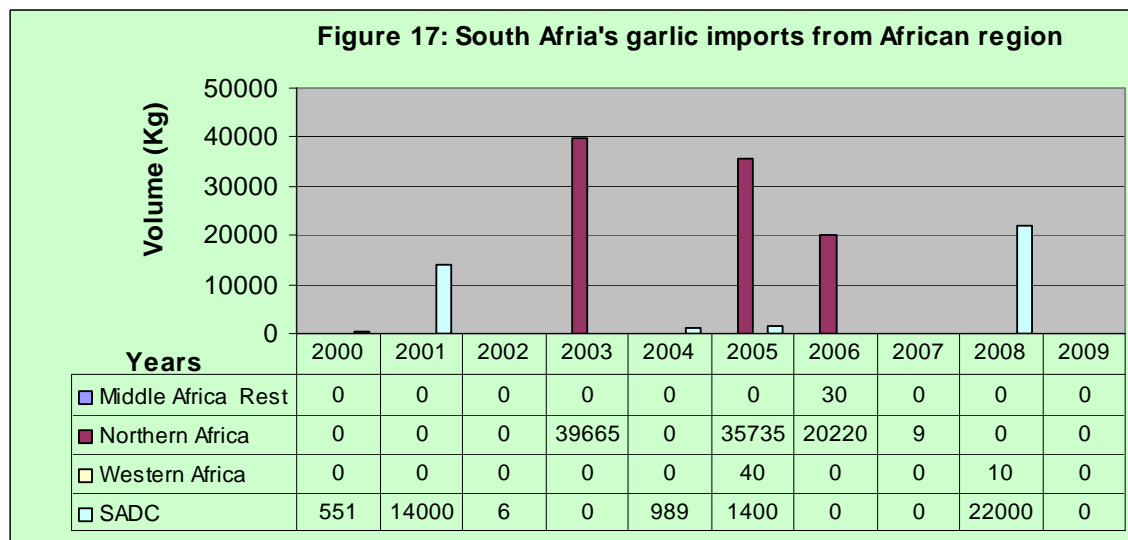
Source: Quantec Research

Figure 15 above indicate that garlic imports by South Africa originate mainly from Asia and the Americas regions. Top countries producing garlic are located in these regions. In 2009, garlic imports from Europe region was in significant. South Africa imports small quantities of garlic from African region. In 2009, there were no garlic imports from African and Americas regions.



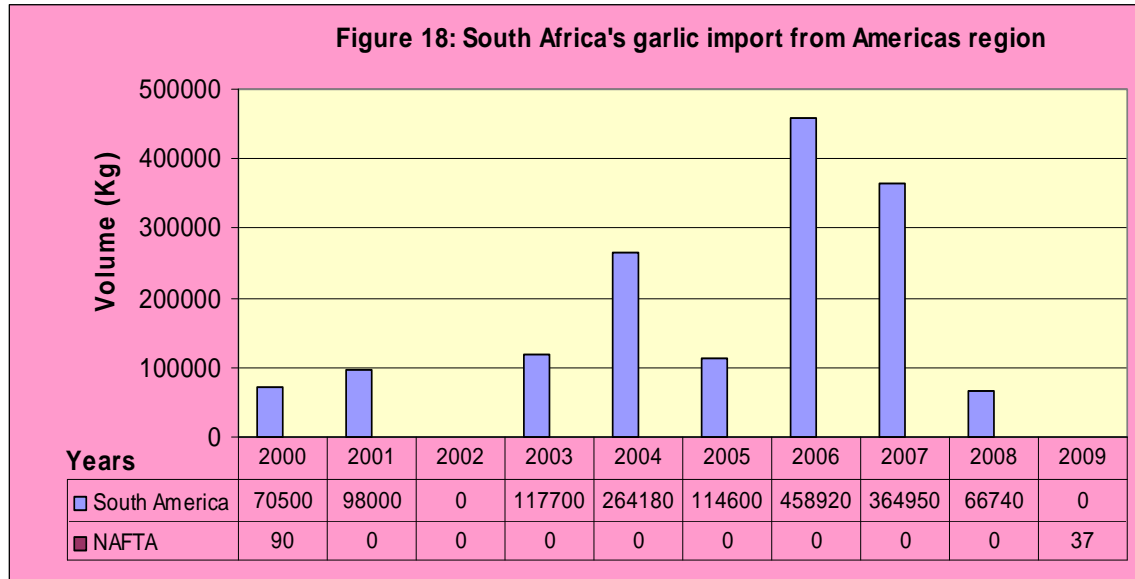
Source: Quantec Research

Figure 16, shows that from Asian region, South Africa is supplied garlic mainly by Eastern Asia (China, Hong Kong and Japan), South Central Asia (India and Bangladesh) and South Eastern Asia (Indonesia, Malaysia, Singapore and Thailand) to a lesser extent. In 2001 South Africa , imported garlic from Western Asia (United Arab Emirates).



Source: Quantec Research

Figure 17 above shows that in African region South Africa imports garlic from Northern Africa (Egypt), West Africa (Nigeria), SADC (Zimbabwe) and Middle Africa (Cameroon). In 2009 there were no garlic imports from African region.



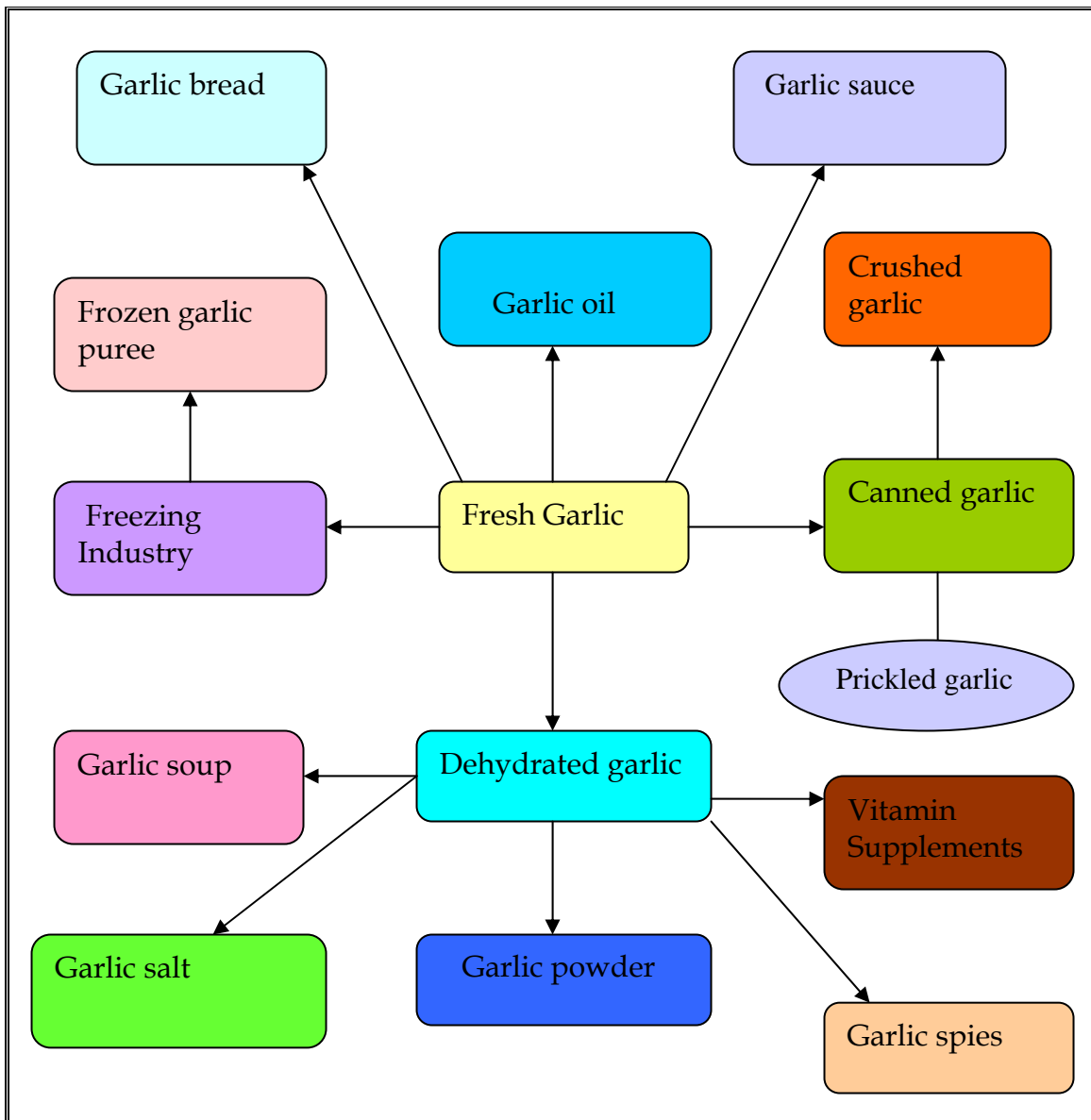
Source: Quantec Research

Figure 18 above illustrate that in Americas region South Africa imports garlic from South America (Argentina) and NAFTA (United States). The Imports from NAFTA was insignificant.

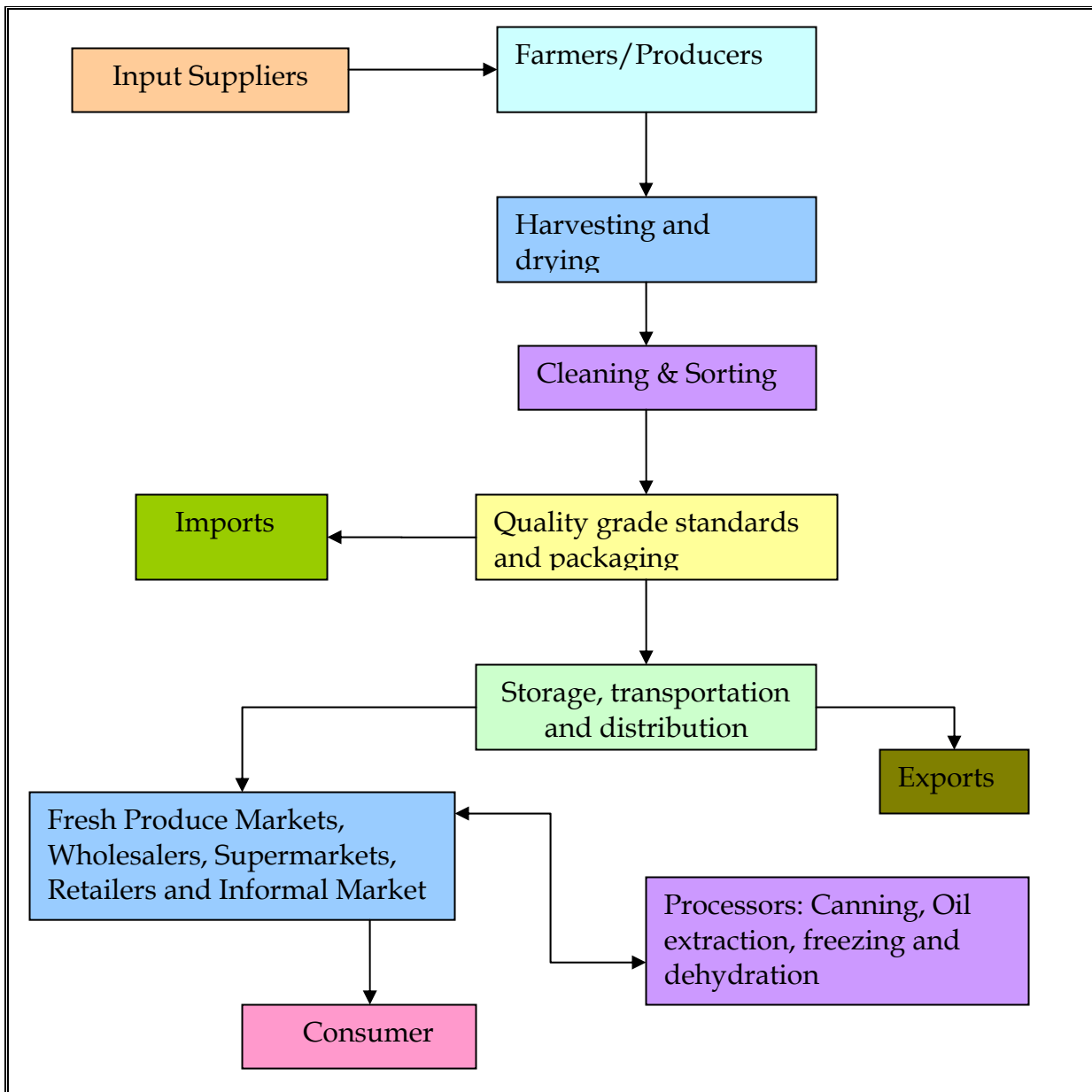
2.5 Processing

Garlic is a high value crop that can be marketed being fresh, dehydrated or as certified seeds. The majority of garlic is dehydrated and used in a variety of processed foods. Garlic bulb can be peeled, sliced, flaked and dried. This can be packaged or processed further as food spice, vegetable mixtures and sprays. India also produces odourless oil and oleoresin from garlic. Garlic can be used externally for skin problems and fungal infections. It is also uses as insect repellent. Garlic is also alleged to help regulate blood sugar levels. The picture below shows different end products after value adding and processing.

2.6 Garlic value chain tree explaining its uses



2.7 Market value Chain for Garlic



The garlic value chain can be broken down into the following levels: the producers of garlic (farmers); pack house owners (dry, cleans, grade and quality control); cold storage and transport facilities (store and transport garlic on behalf of farmers); traders in garlic (market and sell garlic); processors (add value by canning, oil extraction, dehydration and freezing of garlic and process garlic to other usable forms); and end users (consumers)

3. MARKET INTELLIGENCE

3.1 Tariffs

Table 7 below, indicates tariffs applied by various exports markets to garlic from South Africa

Table 7: Tariffs for garlic exports

Country	Product description (H070320)	Trade regime description	Applied tariff	Estimated total advalorem equivalent tariff	Applied tariff	Estimated total advalorem equivalent tariff
			2009		2010	
Angola	Garlic fresh or chilled	MFN duties (Applied)	15.00%	15.00%	15.00%	15.00%
Bangladesh	Garlic fresh or chilled	MFN duties (Applied)	12.00%	12.00%	12.00%	12.00%
Brazil	Garlic fresh or chilled	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
China	Garlic fresh or chilled: Bulbs	MNF duties (Applied)	13.00%	13.00%	13.00%	13.00%
Congo	Garlic fresh or chilled	MFN duties (Applied)	30.00%	30.00%	30.00%	30.00%
DRC	Garlic fresh or chilled	MFN duties (Applied)	10.00%	10.00%	10.00%	10.00%
France	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Germany	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%

Country	Product description (H070320)	Trade regime description	Applied tariff	Estimated total advalorem equivalent tariff	Applied tariff	Estimated total advalorem equivalent tariff
			2009		2010	
Indonesia	Garlic fresh or chilled	MFN duties (Applied)	0.00%	0.00%	0.00%	0.00%
Italy	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Malawi	Garlic fresh or chilled	MFN duties (Applied)	10.00%	10.00%	10.00%	10.00%
Mozambique	Garlic fresh or chilled	MFN duties (Applied)	20.00%	20.00%	20.00%	20.00%
Netherlands	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Spain	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
United Kingdom	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
United States of America	Garlic fresh or chilled	MFN duties (Applied)	0.34%	0.34%	0.34%	0.34%
Zambia	Garlic fresh or chilled	Preferential tariff for South Africa	0.00%	0.00%	0.00%	0.00%
Zimbabwe	Garlic fresh or chilled	MFN duties (Applied)	40.00%	40.00%	4.00%	40.00%

Source: Market Access Map

As illustrated in the table 7 above, South African can look up to garlic export opportunities in countries such as United Kingdom, Spain, Netherlands, France, Germany and Italy as these countries applies 0.00% tariff to exports of garlic originating from South Africa due to EU-SA Free Trade Agreement (FTA). In African markets, Zambia applies 0.00% preferential tariff to garlic exports originating from South Africa due to SADC_FTA agreement. Other African markets in Congo, Mozambique and Zimbabwe apply 30.00%, 20.00% and 40.00% tariffs respectively, in spite of the existence of the SADC- Free Trade Agreement. China is the top garlic producer in the world and its domestic producers are protected by 13% tariff.

3.2 Non tariff barriers

3.2.1 The European Union

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

Product legislation: quality and marketing

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

General Food Law covers matters in procedures of food safety and hygiene (micro-biological and chemical), including provisions on the traceability of food (for example, Hazard Analysis and Critical Control Points, of HACCP).

EU Marketing Standards, which govern the quality and labeling of vegetables, are laid out in the CAP framework under regulation EC 2200/96. These regulations include diameter, weight and class specifications, and any produce that does not comply with these standards are not allowed to be sold on the EU markets (detailed lists of products and their standards can be found in the annexes to the directive). The legislation (under EU 1148/2001) also dictates that a Certificate of Conformity must be obtained by anyone wishing to export and sell vegetables in the EU, if that particular vegetable falls under the jurisdiction on the EU marketing standards, vegetables to be used in further processing needs a Certificate of Industrial Use, whilst another legislative directive covers the Maximum Residue Limits (MRL) of various pesticides allowed.

3.2.1 (b) Product legislation: phytosanitary regulations

The international standard for phytosanitary measures was set up by the International Plant Protection Committee (IPPC) to protect against the spreading of diseases or insects through the importation of certain agricultural goods. The EU has its own particular rules formalized under EC 2002/89, which attempts to prevent contact of EU crops with harmful organisms from elsewhere in the world. The crux of the directive is that it authorizes the Plant Protection Services to inspect a large number of vegetable products upon arrival in the EU. This inspection consists of a physical examination of a consignment deemed to have a level of phytosanitary risk, identification of any harmful organisms and certification of the validity of any phytosanitary certificate covering the consignment. If the consignment does not comply with the requirements, it may not enter the EU, although certain organisms can be fumigated at the expense of the exporter.

3.2.1(c) Product legislation: packaging

The EU commission lays down rules for materials that come into contact with food and which may endanger people's health or bring about an unacceptable change in the composition of the foodstuffs. The framework legislation for this EC 1935/2004. Recycling packaging materials are also emphasized under 94/62/EC, whereby member states are required to recycle between 50% and 65% of packaging waste. If exporters do not ship produce in packaging which is reusable, they may be liable for the costs incurred by the importing companies. Wood packaging is subject to phytosanitary controls (see Directive EC 2002/89) and may need to undergo heat treatment, fumigation, etc.

3.2.1. (d) Non-legal market requirements: social and environmental accountability

To access a market, importers must not only comply with the legal requirements set out above, but also with market requirements and demands. For the most part, these revolve around quality and the perceptions of European consumers about the environmental, social, health and safety aspects of both the products and the production techniques. Whilst supplying vegetables that complies with these issues may not be mandatory in the legal sense, they are becoming increasingly important in Europe and cannot be ignored by existing or potential exporters.

(i) Social responsibility is becoming important in the industry, not only amongst consumers, but also for retail outlets and wholesalers. The Social Accountability 8000 (SA8000) certification is a management system based on International Labour Organization (ILO) conventions, and deals with issues such as a child labour, health and safety, and freedom of association, and requires an on-site audit to be performed annually. The certificate is seen as necessary for accessing any European market successfully. The major retailers in the EU also play an important role in tackling environmental issues, which means that exporters have to take these into account when negotiating exporting arrangements.

(ii) Environmental issues are becoming increasingly important with European consumers. Consumer movements are lobbying against purchasing non-environmental friendly or non-sustainable produce. To this end, both governments and private partners have created standards (such as ISO 14001 and EUREPGAP) and labels to ensure produce adhere to particular specifications. Labels are an absolute must for exporters attempting to enter the rapidly expanding organic produce market. The EU Commission has recently adopted an EU label for identifying food produced according to EU organic standards in the directive EEC 209/91

3.2. 1(e) Consumer health and safety requirements

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

3.2.2 The United States

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

3.2.3 Asian Market Access

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

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

4. GENERAL DISTRIBUTION CHANNELS

There are roughly three distinct sales channels for exporting vegetables. One can sell directly to an importer with or without the assistance of an agent (usually larger, more established commercial farms). One can supply a vegetable combine, which will then contract out importers/marketers and try to take advantage of economies of scale and increased bargaining power. At the same

time vegetable combines might also supply large retail chains. One can also be a member of a private or co-operate export organization (including marketing boards) which will find agents or importers and market the produce collectively. Similar to a vegetable combine, an export organization can either supply wholesale markets or retail chains depending on particular circumstances. Export organizations and marketing boards will wash, sort and package the produce.

5. LOGISTICAL ISSUES

5.1 *Mode of transport*

The transportation of vegetables falls within two categories – *ocean cargo* and *air cargo* – with ocean cargo taking much longer to reach the desired location but costing considerably less. Of course, the choice of transportation method depends, for the most part, on the fragility of the produce and how long it can remain relatively fresh. With the advent of technology and container improvements, the feasibility, cost and attractiveness of sea transportation have improved considerably. As more developing countries begin to export and supply major developed countries markets, so the number and regularity of maritime routes, and the container vessels travelling these routes, increase.

Presently South American countries like Peru benefit from the asparagus trade, which has lead to some level of economies of scale with other vegetable products, and this has enabled cheaper transport prices for their other vegetable varieties. Such economic of scale could benefit SADC countries if more producers became exporters and took advantage of the various ports which have special capabilities in handling vegetable produce (for example, the proposed terminal in Maputo).

5.2 *Cold chain management* is crucial when handling perishable products, from the initial packing houses to the refrigerated container trucks that transport the produce to the shipping terminals, through to the storage facilities at these terminals (and their pre-cooling capability), onto the actual shipping vessels and their containers, and finally on to the importers and distributors that must clear the produce and transport it to the markets/retail outlets, etc. For every 10°C increase above the recommended temperature, the rate of respiration and ripening of produce can increase twice or even thrice. Related to this are the increasingly important traceability standards, which require an efficiently controlled supply chain and internationally accepted business standards.

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

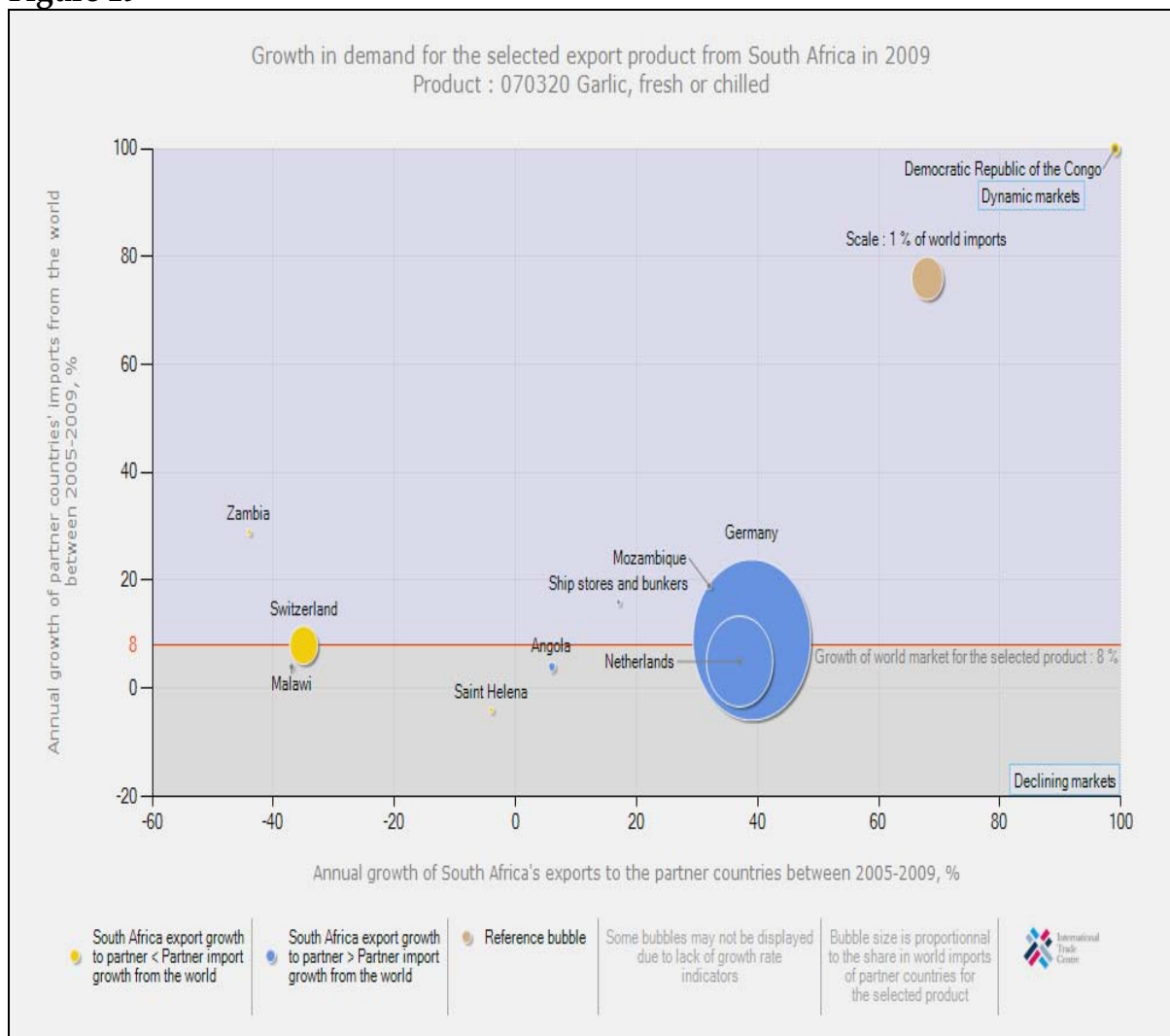
6. COMPETITIVENESS OF SOUTH AFRICAN GARLIC EXPORTS

Figure 19 below, shows that South Africa garlic exports are growing faster than the world garlic imports into Mozambique, Germany, Angola and Netherlands. South Africa's performance in those countries can be regarded as a gain in the dynamic market.

South Africa garlic exports are growing slower than the world imports into Democratic Republic of the Congo. South Africa's performance in these markets can be regarded as a loss in dynamic market.

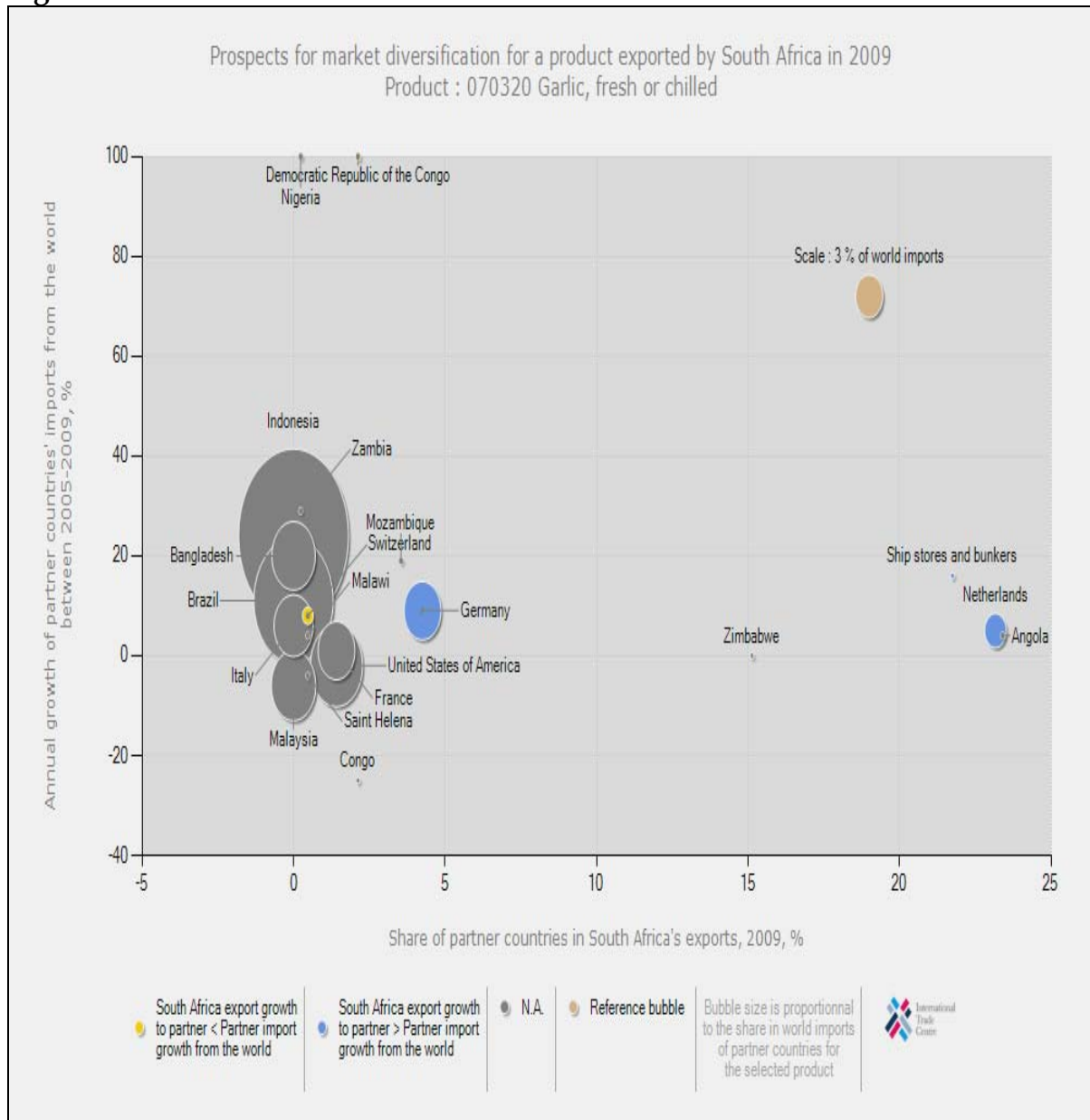
South Africa garlic exports are declining faster than the world imports into Saint Helena. And South Africa imports are declining while the world imports are growing into Zambia, Switzerland and Malawi.

Figure 19



Source: International Trade Centre (ITC) Trade Map

Figure 20



Source: International Trade Centre (ITC) Trade Map

Figure 20 above shows that the main market for South Africa garlic exports is Angola and Zimbabwe. Prospective markets for garlic exports exist in Zambia, Indonesia, Mozambique, Bangladesh, Germany and Brazil. Other small prospective markets exist in Italy, Malawi and Switzerland. However, if South Africa is to diversify its garlic exports, the most lucrative markets exist in Democratic Republic of the Congo and Nigeria which has increased their garlic imports from the world by 240% and 153% respectively between the period 2005 and 2009.

7. BUSINESS OPPORTUNITIES AND CHALLENGES

7.1 Opportunities

Garlic consumption has increased significantly over the past years. The main uses of garlic are in the culinary field, although it has other uses in the alternate medicine field because of its medicinal qualities and a pesticides and fungicides. Recently there have been some more developments in the human medicine field for garlic in which there is a compound which has been identified as lowering cholesterol. If these developments come to the commercial phase, it could mean a massive increase for garlic production.

7.2 Challenges

Garlic is high risk, labour intensive crop to grow successfully. In order to survive, each garlic producer must strive to obtain maximum yield and quality. Knowledge of the garlic plant, its growth cycle and the factors affecting its growth, yield and quality is thus of utmost importance. Marketing of garlic can also be quite difficult for the smaller producer. The market is demanding large, clean unblemished bulbs that are well graded and well packaged. South Africa garlic producers also have to compete with cheap garlic imports.

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Market Access Map

www.macmap.org

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