



agriculture,  
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National Agricultural  
Marketing Council  
Promoting market access for South African agriculture

# Markets and Economic Research Centre and Directorate of International Trade



# TRADEPROBE

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This issue of *TradeProbe* covers the following topics:

- Trade Profile: Olive Oil: HS 1509
- Trade Profile: Abalone-HS 030781
- Trade Profile: Wood in chips, non-coniferous (HS 440122)
- Country Profile – Tanzania
- Comparative Study of Risk in South African Raw Maize and Apple Exports

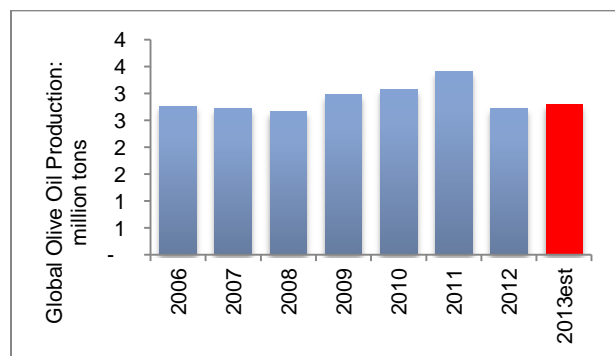
## 1. Trade Profile: Olive Oil: HS 1509

### Product description

Olive oil is obtained from the olive tree (*Olea europaea*; family *Oleaceae*). The oil is produced by grinding whole olives and extracting the oil by mechanical or chemical means. It is commonly used in cooking, cosmetics, pharmaceuticals, and soaps and as a fuel for traditional oil lamps. The harmonised classification code of olive oil discussed in this trade profile is HS 1509 which includes both virgin (HS 150910) and refined (HS 150990) olive oil products.

### Global outlook

The global outlook of olive oil remains relatively the same as in 2012. The bulk of the world's olive oil is still produced in the Mediterranean countries where the climate is favourable for olive tree cultivation. **Figure 1** presents the trend on global olive oil production in the past seven years and also provides the production estimates for 2013. According to the International Olive Oil Council (IOOC), the EU bloc is the largest producer of olive oil, followed by individual countries such as Morocco, Syria, Tunisia and Turkey. The IOOC also reports that the bulk of olive oil is consumed by the largest producers. Over and above the five mentioned producers, olive oil is also heavily consumed in countries such as the USA, Canada, Russia and Brazil.



**Figure 1:** Trends in global olive oil production  
Source: International Olive Oil Council

**Table 1** shows the leading importers and exporters of olive oil in the world. It is worth noting that both global imports and exports have grown significantly between 2006 and 2012, indicating a growing global demand for this product. It is highly expected that the leading

global importers and exporters of olive oil in 2012 will have retained their respective positions in 2013 trading year.

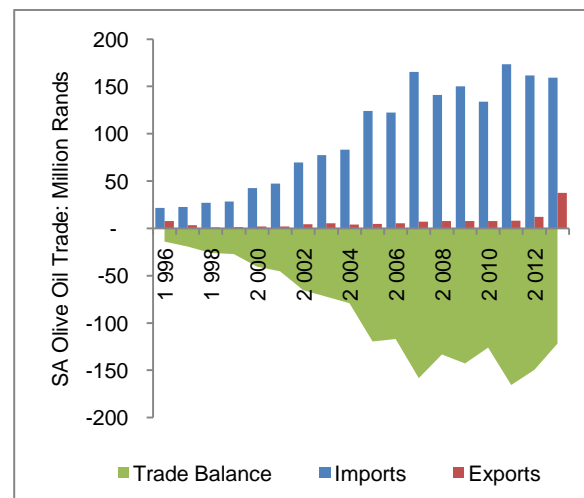
**Table 1:** Leading exporters and importers of Olive Oil in the World (Million Rand)

	Exporters		Importers		
	2006	2012	2006	2012	
<b>World</b>	<b>38 271</b>	<b>44 637</b>	<b>World</b>	<b>32543</b>	<b>46 190</b>
Spain	14 533	19 439	Italy	10 536	11 692
Italy	10 775	12 641	USA	5 669	7 982
Greece	3 393	3 392	France	2 298	3 076
Tunisia	4 208	2 855	Brazil	675	2 549
Portugal	791	2 774	Portugal	1314	2 078

Source: ITC-Trade Map, 2013

### South African outlook

South Africa is one of the countries in the world that produces olive oil. However, the olive industry in South Africa is relatively young, compared to Mediterranean countries, where olives have been cultivated for centuries. This trade profile will not concentrate on production but rather on the trade performance of this product over the last 17 years. South Africa is a net importer of olive oil products, with a negative trade balance of R122 million in 2013 (see **Figure 2**). The country's olive oil imports increased from R21 million in 1996 to over R159 million in 2013. This is equivalent to an annual average growth rate of 14 % for the past 17 years. On the other side, exports of this product have remained modest, only registering an annual average growth rate of 9 %. This growth is also from the low base which stimulated the export value to R38 million in 2013.



**Figure 2:** South African olive oil trade performance  
Source: WTA, 2014

**Table 2** shows the leading suppliers of olive oil to South Africa. Interesting to note, is that the top five suppliers collectively account for 99 % of olive oil supply into the country, indicating a very strong supply concentration. Furthermore, the top five suppliers in 2013 are same countries that occupied the top five

positions in 2003, which indicates that the supply of olive oil into South Africa has not changed in the past ten years. The top five suppliers are Italy, Spain, Portugal, Greece and the UK and all are located on the European continent, which is the biggest producer of olive oil products in the world.

**Table 2:** Top five suppliers of olive oil (HS 1509) to South Africa (Million Rand)

Rank	Country	2003	2013	Growth
	World	77.5	159.3	106 %
1	Italy	34.2	76.8	124 %
2	Spain	27.2	57.3	111 %
3	Portugal	7.3	13.6	86 %
4	Greece	4.3	9.8	128 %
5	UK	0.9	0.5	-45 %
<b>Top Five Suppliers</b>	<b>Sub-total</b>	<b>73.9</b>	<b>157.9</b>	<b>114 %</b>

Source: WTA, 2014

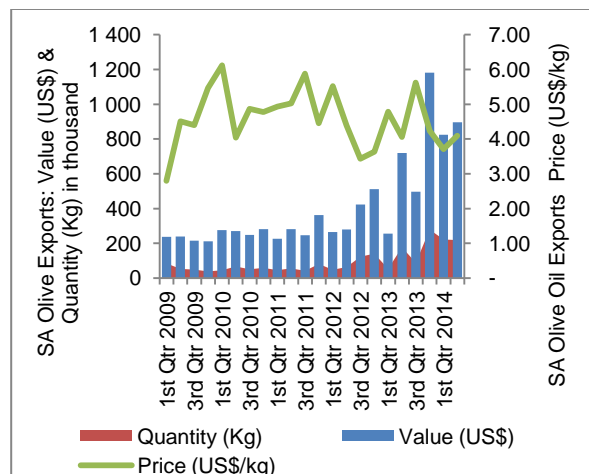
**Table 3** shows the main destination markets for olive oil exported by South Africa. South Africa's top five markets in 2013 included three African countries (i.e. Namibia, Botswana and Swaziland) and the other countries within the top five range included Canada and Italy. Ironically, South Africa exported nothing to these countries in 2003. Ten years ago, the main destination markets for South African olive oil were Mozambique, Zambia, Angola and the Seychelles. It is interesting to note that South African reduced its olive oil exports to these countries to zero in 2013.

**Table 3:** Top five destination markets for South Africa's olive oil (HS 1509) exports (Million Rand)

Rank	Country	2003	2013	Growth
	World	5.38	37.65	600 %
1	Namibia	0.00	7.81	100 %
2	Canada	0.00	6.71	100 %
3	Botswana	0.00	4.70	100 %
4	Italy	0.00	2.46	100 %
5	Swaziland	0.00	2.31	100 %
	<b>Sub-total</b>	<b>0.00</b>	<b>23.99</b>	<b>100 %</b>

Source: WTA, 2014

**Figure 3** provides a quarterly trade performance of South African olive oil exports between 2009 and 2014. Export price appears to be highly volatile and has been decreasing constantly since the second quarter of 2012. This has led to less export volumes in 2014 as can be seen in **Figure 3**. Throughout the measured period, the export price has varied between 3 and 6 US\$ keeping the export volumes constant at 94 874 kg per quarter between 2009 and 2014.



**Figure 3:** South African olive oil quarterly export price between 2009 and 2014

Source: WTA, 2014 and NAMC, 2014

### Policy considerations

It appears from trade data that South African consumption of olive oil is increasing given the constant growth in imports. The growing imports suggest that local production cannot meet the local demand. It is thus important to find underlying factors that inhibit the industry from increasing its local production to meet the growing demand. Secondly, the export markets for olive oil appear to be unattractive and non-profitable as the export price has continued to decline for the past four consecutive quarters. An analysis of attractive and profitable markets for South African olive oil is necessary.



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## 2. Trade Profile: Abalone-HS 030781

### Description of abalone

Abalone is known to fall into a group of small to very large edible sea snails, marine gastropod molluscs under the family *Haliotidae*. Other common names of abalone are ear shells, sea ears, and muttonfish or mutton shells in Australia, ormer in Great Britain, abalone or perlemoen in South Africa and paua in New Zealand. The shell of abalone is convex, a rounded to oval shape and may be highly arched or much flattened. The shell is generally early ear-shaped, presenting a small flat spire and two to three whorls. The exterior of the shell is striated and dull. The colour of the shell is very variable from one species to another and may reflect the animal's diet. The iridescent nacre that lines the inside of the shell varies in colour from silvery white to pink, red and green.

### Production areas

The majority of abalone species are found in cold waters of New Zealand, South Africa, Australia, Western North America and Japan. Commercial farming of abalone began in the late 1950s and early 1990s in Japan and China respectively. Since the mid-1990s there have been many increasingly successful endeavours to farm abalone commercially for the purpose of human consumption. The leading world producers of commercially farmed abalone are China, Taiwan, Japan and Korea. Abalone is also farmed in Australia, Canada, Chile, France, Iceland, Ireland, Mexico, Namibia, New Zealand, South Africa, Thailand and the United States.

The South African abalone industry continues to establish itself as a premium brand in Asia, and is a good example of mariculture in a developing country. Abalone farming in South Africa is a relatively new but dynamic industry and has demonstrated a high production capacity. One of the main challenges faced by the South African abalone industry is the loss in revenue experienced due to poaching. The abalone mariculture industry started developing in South Africa during the 1990s and has been gaining popularity. As a result, aquaculture has become an attractive industry for investments, and this is evident when looking at the recent Operation Phakisa launched by the President of South Africa, Mr. Jacob Zuma in June 2014. Aquaculture, including abalone production was prioritised under Operation Phakisa as a key industry to unlock job opportunities and enhance ocean economy growth in the country.

### Global trade

**Table 4** shows that the quantities of abalone imported by Japan, Hong Kong, the USA, Australia, Singapore and China decreased in 2013. In 2012 Vietnam and Spain did not import abalone. There was an increase in the quantities of abalone imported by Macao and Canada in 2013.

**Table 4:** List of world importers of abalone

Importers	2012 imported quantity (tons)	2013 imported quantity (tons)
Japan	1560	1539
Hong Kong	1289	1147
China	448	426
Viet Nam	0	374
Spain	0	316
Canada	136	206
Macao	128	135
USA	140	81
Australia	54	16
Singapore	21	16

**Source:** ITC Trade Map, 2014

**Table 5** below shows that Australia was the world's biggest exporter of abalone in 2012 and 2013. Australia exported about 60 % of the total abalone production from their harvest. Their abalone exports were destined for Hong Kong and China. Although Australia remains the biggest world exporter of abalone, its export quantities decreased in 2013. The quantities of abalone exported by Korea also decreased in 2013. South Africa stood at third place among the largest exporters of abalone in 2012 and 2013 (see **Table 5**).

**Table 5:** List of world exporters for abalone

Exporters	2012 Exported Quantity (tons)	2013 Exported Quantity (tons)
Australia	1761	1553
Korea	1332	1329
South Africa	480	603
China	389	577
Bulgaria	313	454
USA	67	124
Spain	0	41
Mexico	15	26
Thailand	37	23
New Zealand	12	10

**Source:** ITC Trade Map, 2014

**Table 6** shows that South Africa's major destination markets for abalone are Asian countries such as China, Hong Kong, Japan, Taipei and Singapore. China is known to be an important market for abalone produced worldwide due to its demand for imported abalone. Furthermore, this can also be attributed to the economic growth and increase in personal wealth exhibited by the Chinese population as well as growth of the Chinese middle-class population. South Africa's quantities of abalone exports showed an increase to Hong Kong and Taipei in 2013. South Africa's quantities of abalone exports to Japan, China and Singapore decreased in 2013.

**Table 6:** Importing markets for abalone exported by South Africa

Importers	2012 imported quantity (tons)	2013 imported quantity (tons)
Hong Kong	318	432
Taipei	103	126
Japan	33	27
China	18	12
Singapore	2	4
Malaysia	0	1
Vietnam	5	0

Source: ITC Trade Map, 2014



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### 3. Trade Profile: Wood in chips, non-coniferous (HS 440122)

#### Background

Wood chips are a medium-size solid material made by cutting or chopping, larger pieces of wood. A machine used to make wood chips is called a wood chipper. Wood chips can be used for wood pulp, raw material for technical wood processing, mulch, playground surfacing and fuel, gardening, walkways, for decoration and erosion control. In 2013, South Africa ranked 5th on the list of exporters of wood in chips, non-coniferous (HS 440122) representing 5 % of the world exports share. A positive trade balance shows that South Africa is a net exporter of this product.

Figure 4 in Appendix A shows the international demand and supply for South African exports for the top 20 forestry value chain related export products. Wood in chips, non-coniferous is classified under losers in a growing sector. This means that wood in chips, non-coniferous supply from South Africa was growing slower than the increase in world demand. The annual growth in world demand for wood in chips, non-coniferous was above the world annual growth average for all products. South Africa is a net exporter of the product. In terms of promotional efforts, the production and exports can be stimulated because the global demand is already high.

Table 7 shows the top 10 world importers of wood in chips, non-coniferous (HS 440122). South Africa ranked 5<sup>th</sup> on the list of world exporters of wood in chips, non-coniferous with a share of 5 % of world exports. South Africa's main competitor in the world

export of this product is Vietnam with a share of 38.2 % on the world exports.

**Table 7:** List of world exporters for wood in chips, non-coniferous (HS 440122), in 2013

World Exporters	Value exported in 2013 (USD thousand)	Share in world exports (%)
Viet Nam	1 241 632	38.2
Australia	553 544	17.0
Chile	314 417	9.7
Thailand	314 251	9.7
South Africa	163 809	5.0
Indonesia	156 742	4.8
Brazil	129 061	4.0
Uruguay	79 857	2.5
United States of America	32 719	1.0
Malaysia	32 361	1.0

Source: Trade maps, 2013

Table 8 shows the top 3 importers of wood in chips, non-coniferous from South Africa. South Africa's main competitors in Japan market are Chile, Australia and Vietnam; in China market competitors are Vietnam, Thailand and Australia, whilst in India market South Africa competes with Australia, Thailand and Vietnam.

**Table 8:** List of importers for South African wood in chips, non-coniferous (HS 440122), in 2013

SA's Importers	Exported value in Thousand/ Rand	SA's main competitors
Japan	1 386 801	Chile, Australia, Vietnam
China	139 117	Vietnam, Thailand, Australia
India	46 171	Australia, Thailand, Vietnam

Source: Trade maps, 2013

Table 9 presents the top suppliers of wood in chips imported by South Africa in 2013. South Africa's main import source for wood in chips, non-coniferous is the United States, followed by Germany, France and Hungary.

**Table 9:** List of exporters of wood in chips, non-coniferous (HS 440122) imported by South Africa, in 2013

Exporters	Imported value in 2013 (Thousand/ Rand)
United States of America	1 450
Germany	1 104
France	864
Hungary	519

Source: Trade maps, 2013

#### Conclusion

On the list of exporters of wood in chips, on coniferous (HS440122), South Africa ranked the 5<sup>th</sup> largest exporter representing 5 % of shares in the world exports. South Africa is a net exporter of wood in chips, non-coniferous and is classified under losers in a growing sector. The product exports are growing slower than the international demand growth indicating a high potential to increase South African exports. In 2013, the main destination markets for South African wood in chips, non-coniferous were Japan, China and India. The appropriate intervention would be to promote production and product innovation.



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#### 4. Country Profile: Tanzania

The United Republic of Tanzania is located on the eastern side of the African continent, between Kenya and Mozambique. The United Republic of Tanzania is ranked 26<sup>th</sup> in the world with a population of 49.6 million. The agricultural sector is one of the largest sectors that contribute toward Tanzania's GDP income. The sector contributes more than 40 % of GDP, provides 85 % of the country's exports and employs 80 % of the total workforce. Apart from the agricultural sector, tourism, mining and small-scale industries are increasingly contributing to national economic growth.

The country is under the following trading blocs;

- SADC-FTA
- EAC
- COMESA

This has allowed the movement of traded goods with the countries of the mentioned trading blocs. It has also enhanced Tanzanian trade due to free market access conditions. Therefore the purpose of this article is to highlight Tanzanian trade performance in the world's markets and South Africa's.

#### Tanzania's trade performance

**Table 10** indicates Tanzania's main suppliers of agricultural products between 2011 and 2013. Indonesia was the leading supplier of agricultural

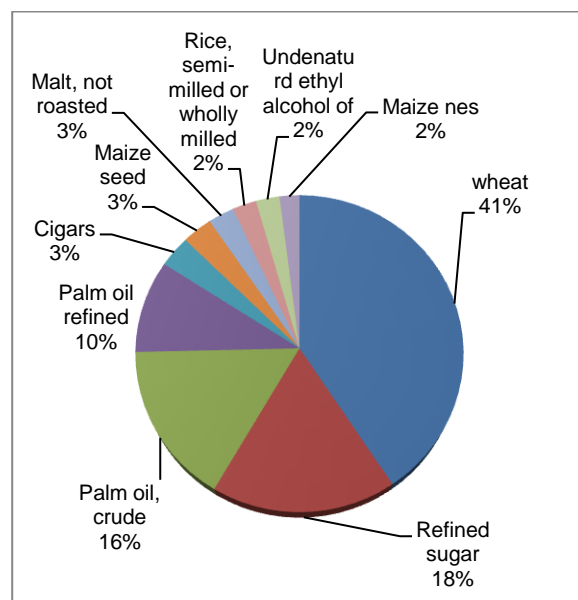
products, supplying a total of \$127 million in 2013. It has been noted that agricultural imports from Indonesia have been declining over the past three years. Australia, the United Arab Emirates (UAE), Canada and Malaysia were among the five main suppliers of agricultural produce to Tanzania.

**Table 10:** Import performance for agricultural products

	Values in \$ millions			Growth (%)
	2011	2012	2013	2011-2013
<b>World</b>	<b>1127</b>	<b>1232</b>	<b>1020</b>	<b>-9</b>
Indonesia	228	197	127	-44
Australia	77	38	115	49
UAE	35	63	75	115
Canada	14	69	67	394
Malaysia	40	48	64	60
Kenya	54	69	58	9
South Africa	43	46	49	12
Russian	65	45	48	-27
Ukraine	9	40	34	295
Uganda	9	83	31	249

Source: Trademap, 2014

**Figure 5** highlights agricultural products imported by Tanzania from the world in 2013. Wheat accounted for the largest share of 41 % in total agricultural imports and is ranked among the top ten imported products into Tanzania. Refined sugar was the second largest imported agricultural product, followed by palm oil.



**Figure 5:** Agricultural product imports for Tanzania, 2013

Source: Trademap, 2014

**Table 11** gives an overview of the main destination markets for Tanzanian agricultural exports. Over the last three years, agricultural exports have shown an increasing trend. This is mainly attributable to the exchange rate and country's efforts to improve agricultural productivity. India was ranked as the biggest destination market for Tanzania agricultural exports with export growth of 65 % between 2011 and

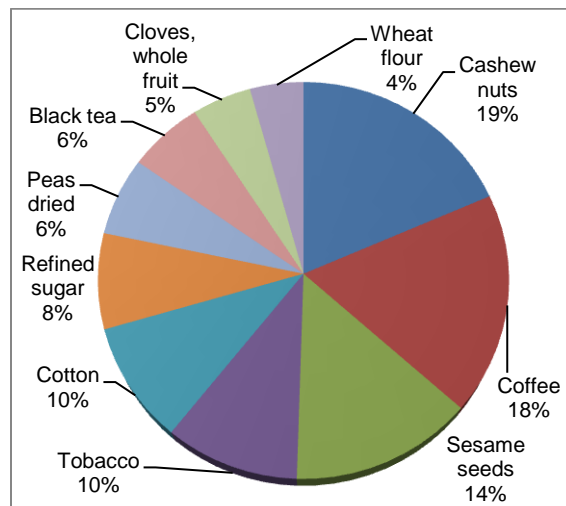
2013. China, the DRC, Kenya and Belgium were next among the top five main markets for Tanzania (see Table 11)

**Table 11:** Tanzania's main export destinations

Importers	Values in \$ millions			Growth (%)
	2011	2012	2013	
<b>World</b>	<b>967</b>	<b>1576</b>	<b>1338</b>	<b>38</b>
India	171	302	282	65
China	79	115	143	82
DRC	59	81	86	48
Kenya	55	172	79	44
Belgium	61	138	78	28
Congo	25	3	72	185
Japan	69	89	66	-5
Germany	31	44	49	59
Netherlands	54	90	47	-13
UAE	35	43	43	24

Source: Trademap, 2014

**Figure 6** indicates the main products exported to the global market. Cashew nuts were the largest agricultural product exported to the global market, commanding 19% share of total exports in 2013. Other leading commodities exported by Tanzania included coffee and sesame seeds, which accounted for 18% and 14% respectively in 2013.



**Figure 6:** Main products exported globally by Tanzania  
Source: Trademap, 2014

### Potential trade between Tanzania and South Africa

South Africa is ranked as the 7th largest supplier of agricultural commodities to Tanzania and ranked as 17th biggest destination market for Tanzanian agricultural exports in 2013. This indicates that there is existing trade between the two countries and there is a need to identify products that are currently imported by Tanzania from other supplying countries in order for South Africa to replace that supply.

**Table 12 in Appendix A** indicates South Africa's potential to supply Tanzania with agricultural products. Some of the products that can be supplied to Tanzania, and in which South Africa has a strong

comparative advantage, include soyabean oilcake, maize and margarine. South African currently exports low volumes of these products into Tanzania while Tanzania shows a strong demand for them. One of the limiting factors for South Africa to expand exports of these identified products is high levels of tariffs. On the identified products, South Africa faces an average tariff of 20% into Tanzania.

**Table 13 in Appendix A** shows all the products that Tanzania has the potential and the capacity to export to South Africa (capacity is translated only by the export values). In 2013 there was no trade of the listed products in **Table 13 in Appendix A** between South Africa and Tanzania. South Africa has a high demand for these identified products which Tanzania exports large values to the world, yet there is no trade taking place between the two countries



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### 5. Comparative Study of Risk in South African Raw Maize and Apple Exports

#### Overview

The main problem organisations face with regards to risk and risk mitigation strategies is the identification of risk drivers and the development and implementation of effective mitigation strategies. The primary purpose of this study was to investigate and identify the most common supply chain disruptions, as well as the relevant risk mitigation strategies, associated with the physical distribution and handling of export quality raw maize and fresh apples. Furthermore, the final purpose of the research was to offer some insight into how companies operating in either the fruit or the grain industry of South Africa identify and manage their supply chain risks.

#### Background

The major element of this study is risk and risk mitigation strategies, thus when discussions turn to risk or supply chain vulnerability, the question of what risk is must be addressed. Purdy (2010) defines risk as the consequences businesses face when pursuing objectives in an environment of uncertainty. Brindley

(2004) specifically defines supply chain risk as those risks that are directly related to the flow of goods as well as the logistics activities associated with supply chain flow. Thus, supply chain risk is merely a part of the overall risk faced by a firm.

Another concept relating to the supply chain and risk is logistics management, which is also influenced by risk in various ways. Logistics management consists of both inbound and outbound flows of information, goods and finances. This study focuses on the distribution and handling activities associated with outbound logistics. Materials handling can be defined as the handling and movement of goods over short distances within facility perimeters, while physical distribution can be defined as the physical movement or transportation of goods between facilities and the end consumer.

According to Hoag (2010) agriculture is more risky than other business endeavours as most operations are subject to risks from Mother Nature and unstable input and output markets. The activities associated with agriculture are often exposed to various types of risks, which, according to Shanmugam et al. (2012), come in two basic forms: controllable and uncontrollable risks. Controllable risks are those that are known and thus can be controlled, while uncontrollable risks are generally unknown and thus uncontrollable.

### Materials handling and risk

The fruit industry most commonly experiences storage and handling risks such as incorrect quality grading at the pack-house, a break in the cold chain at the cold store, as well as product contamination due to inadequate food safety. The grain industry, on the other hand, mainly experiences risks such as a lack of silo capacity, contamination due to rodents or chemicals, as well as quality risks resulting from incorrect grading. The risks mentioned for both fruit and grain are generally handled through mitigation, transference, avoidance or acceptance.

The following table summarises the different risk mitigation strategies utilised to manage the risks mentioned above in both the fruit and grain industries.

**Table 14 in Appendix A** clearly indicates that both the fruit and grain industries strive to mitigate, avoid or transfer their storage and handling risks.

The fruit industry commonly experiences transportation risks such as a break in the cold chain due to road accidents or in-transit container failure, road congestion, as well as delays to port. The grain industry, on the other hand, mainly experiences risks such as contamination of cargo, road accidents, delays to port, theft or road hijackings, as well as port backlogs. The risks mentioned above for both fruit and grain are generally handled through mitigation, transference, avoidance or acceptance.

**Table 15 in Appendix A** summarises the different risk mitigation strategies utilised to manage the risks mentioned above in both the fruit and grain industries. The table clearly indicates that both the fruit and grain

industries strive to mitigate, avoid or transfer their transportation risks.

The most prominent risk driver identified for the fruit industry was a break in the cold chain either during storage or in-transit to foreign markets, while the most prominent and thus most concerning risk driver identified for the grain industry was congestion on the roads or at the port. Both these risks can result in additional charges which can influence the final price of the commodities and thus influence overall trade.

This study suggests that both the fruit industry and the grain industry generally use similar risk mitigation strategies for handling and transportation risks. Both industries strive to avoid or mitigate storage and handling risks as these risks are relatively avoidable through proactive planning, forecasting and contracting. Transport risks are generally avoided through the use of strict contracting and relationship management as well as pre-season planning and forecasting to minimise congestion and port delays. Furthermore, both industries make extensive use of insurance policies to transfer road and maritime risks.

Finally, it can be concluded that companies operating in the fruit and grain industries of South Africa have a pre-established risk management "toolkit" which is merely updated annually based on the risks experienced throughout the past year.

The findings relating to the identification of risk indicate that both the grain and the fruit industry are prone to both controllable and uncontrollable risks which have varying degrees of financial impact and frequency of occurrence. It could be recommended to companies operating in either the fruit or the grain industries that they attempt to develop a systematic and continuous system that identifies and measures the probability of potential risks, including their impact on the financial position of the company should they not be managed adequately. This increased availability of relevant data could assist companies in developing more effective mitigation strategies as well as assist in forecasting and pre-season planning.

In addition, the findings and conclusions of this study suggest that risk mitigation strategies are relatively generic in nature and are simply adjusted in order to satisfy a company's particular risk management requirements. It could be recommended that companies develop a means of customising these risk mitigation strategies for their specific industry and product needs so as to manage both controllable and uncontrollable risks more effectively.

Lastly, the qualitative nature of this study results in the findings and conclusions being less concrete and definitive than if the study was quantitative by nature. Thus it could be of some merit to attempt to quantify the findings in order to develop more substantial and reliable results, which could consequently be of more use to researchers operating in the field of study, as well as companies operating in the fruit and grain industries of South Africa.



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## 6. Impact Assessment of South African Poultry Import Tariff Application

The South African Poultry Association (SAPA) applied for the import tariff on frozen chicken cuts to be adjusted. A request was sent to the International Trade Administration Commission (ITAC). According to Fourie (2013), SAPA provided the following reasons for the proposed tariff increases:

- The local poultry industry needs protection to ensure survival
- Prevention of job losses from import competition
- Ensuring that food security concerns in the region are addressed.

The poultry industry was granted the requested protection.

Prior to liberalisation attempts, the South African trade regime had two major policies which shaped the direction of trade; these were Import substituting industrialisation from 1925 and Initiatives to reduce the Anti-Export bias in 1972 during the apartheid era when South Africa was isolated from the global political and economic arena. The system encouraged self-sufficiency through a trade protectionist approach for employment creation as well as income generation.

The 1925 Customs and Tariff and Excise Duty Amendment Act aimed at protecting local industries as opposed to a revenue generation (Jerkins, Bleaney and Holden, 1995). Further Jerkins, Bleaney and

Holden (1995), stated that the effects of such a policy were:

- i. "Initial rapid industrial growth and diversification
- ii. Industrial concentration
- iii. Further industrial expansion increasingly dependent on the continuing ability of to import capital
- iv. A market anti-export bias in manufacturing"

The Initiative to reduce the Anti-Export bias in 1972 policy was prompted by heavy reliance on a single commodity (gold) and rapid increases in imports which signalled dependence (Jerkins, Bleaney & Holden, 1995). Therefore incentives for export promotion were provided to role players through "direct cash grants, tax concessions on export turnover and export profit, rail freight concessions, tax concessions on the disadvantage of using tariff-laden inputs, and rebates of import duties on imported inputs" (Jerkins, Bleaney & Holden, 1995).

The effects of such a policy promoted rapid growth of exports, which outpaced import growth; however, much of the export growth was accounted for by the mining sector. Jerkins, Bleaney and Holden (1995), further notes that between 1979 and 1983, South Africa was faced with pressure to increase protection. In the subsequent period after 1990 South Africa committed and continued to reduce its import tariffs.

South Africa since 1994 has adopted liberalisation measures under the Uruguay Round of negotiations and the 5-year liberalisation programmes of "Tariff Rationalisation Process". Tariff structures have since been classified according to harmonised systems made up as *ad valorem*, specific, mixed, compound and formula tariffs (Holden and Casale, 2000).

Since liberalisation, South Africa has been a net importer of chicken; however, since the economic meltdown, imports have increased to concerning levels (Davids, 2013). In 2012, imports constituted 20 % of domestic consumption such that this has affected local chicken prices (Davids, 2013). Trade data shows that South Africa receives most of its poultry meat from Brazil and Argentina and, according to Davids (2013), these leading exporters have a strong comparative advantage in the production of chicken, and this is mainly due to cheaper feed costs. Local prices are affected in that industries are limited in the extent to which local retailers and producers are unable to integrate increased feed costs, thus absorbing them (Davids, 2013).

### Policy instrument: Import tariff

As stated by Salvatore (2011: 240), an import tariff is "a tax or duty levied on the traded commodity as it crosses a national boundary". A tariff increases the final price on an imported product. The main aim of the introduction of a tariff is to protect the local industry against international competition as this

reduces domestic prices and make them more competitive in comparison to imported goods. When a particular country has a factor endowment (or is subsidised) to produce a particular commodity more cheaply than the domestic country, imports from that country will reduce overall domestic prices of that particular commodity while strongly competing with domestic producers. A tariff reduces importation of a particular product (resulting in a trade diversion) while ensuring that local producers are protected.

A government imposes an import tariff for a commodity that it does not have a comparative advantage, to neutralise benefits that exporting countries previously enjoyed (Pandey, 2006).

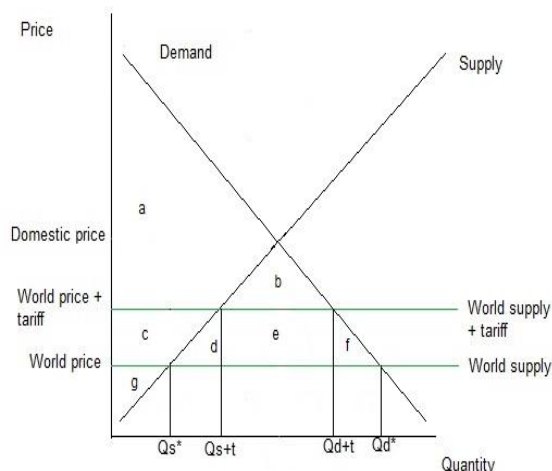
**Theoretical effect of the instrument**

To analyse the effects of a tariff, a partial equilibrium analysis is used with reference to **Figure 7** and **Table 16**. As South Africa is a small country or a small importer of poultry meat, a decline in South African poultry imports will not change world prices as a result of a tariff. Thus an upward sloping import supply curve is used to analyse gains and losses associated with a tariff. To establish the welfare effect of this policy instrument (import tariff), four components will be considered, namely the consumer surplus, producer surplus, government revenue and social surplus.

When a country does not trade with other countries, prices are set at equilibrium, and this implies that the consumers make use of what is only produced locally at higher prices. However, South Africa is a liberalised country, meaning that it is open to trading with other countries.

When a country is trading in a free market, i.e. commodities are traded duty free; prices are determined by world prices (undistorted price) as shown in **Figure 7**. Without a tariff, poultry producers are willing to supply at  $Q_{s^*}$  given the world price and producer surplus is denoted by the region “g” in **Figure 7**. Notably poultry meat demanded ( $Q_{d^*}$ ) exceeds quantity supplied ( $Q_{s^*}$ ) at world price, which implies a shortage in the market. Without a tariff, consumer surplus is represented by  $a + b + c + d + e + f$ . To this, a gap between  $Q_{s^*}$  and  $Q_{d^*}$  at world price is met through importation of poultry meat.

Given world prices of poultry meat, which reflect a free market, government does not generate any revenue.



**Figure 7:** Partial equal representation of increases in tariff  
Source: adopted from Salvatore, 2011: 243

**Table 16:** Partial equal representation of increases in tariff

	Before tariff	Tariff	Change
Consumer surplus	$a+b+c+d+e+f$	$a+b$	$-c-d-e-f$
Producer surplus	$g$	$c+g$	$g$
Government revenue	0	$e$	$e$
Social surplus	$a+b+c+d+e+f+g$	$a+b+c+e+g$	$-d-f$

To protect local producers or to stimulate growth of the domestic poultry industry, a tariff on poultry meat was imposed which increased poultry prices from world price to world price + tariff as shown in **Figure 7**. When a tariff is imposed, producer surplus increases by “c” to  $(c + g)$ , while supplying at  $Q_{s+t}$  due to increases in commodity prices. Consumers are made worse off by the introduction of a tariff (or increases in the rate of tariff in the case of SA chicken cuts), losing “ $-(c + d + e + f)$ ”, remaining with  $a + b$ , thus reducing their disposable income given higher prices. Quantity demanded by consumers when a tariff is imposed reduces from  $Q_{d^*}$  to  $Q_{d+t}$  due to increases in unit prices of imported poultry. This implies that consumers derive less satisfaction as oppose to before the introduction of a tariff.

A tariff is an indirect tax on imported products which is classified as government revenue. As a result of an import tariff the government gains “e” as revenue. Tariff revenue will be determined by units imported and the rate of tariff imposed.

Thus the consumer is made worse off with the introduction of a tariff, while the producer and the government are made better off. This also reduces the quantity imported, as quantities shrink to  $Q_{s^*}-Q_{d^*}$  and compared to  $Q_{s^*}-Q_{d^*}$ .

Protection cost or deadweight loss due to a tariff is represented by d and f, which may be referred to as a loss to an economy (Salvatore, 2011: 245). As stated by Salvatore (2011, 245) deadweight loss from a tariff arises due to domestic resources being allocated from the production of a more efficient commodity that may be more exportable to the production of a less efficient importable product.

Salvatore (2011: 246) further states that a tariff moves income from the domestic consumers to local producers of the product and also from the country's abundant factor endowment to the country's scarce factor. This may suggest inefficiencies in the protected industry.

In the context of South Africa poultry imports, South Africa imposed a tariff to protect the local industry specifically from Brazilian poultry imports while giving preference to the European Union given their trade agreement. This may in the long run lead to a trade diversion, meaning that South Africa may move from importing poultry from Brazil and other countries affected by the tariff hike to importing from the EU to meet local demand.

### Protection of the South African poultry players

The main players in the poultry industry are Rainbow, Astral, Pioneer, Country Bird and AFGRI, who are spread across several points of the poultry value chain (animal feed, broiler feeding, broilers, processing and provision of poultry products) (Ramburuth, 2013).

The imposed tariff will have a direct impact on consumer affordability in the short term as prices will adjust to a tariff. Therefore an imposed tariff is at the expense of the consumer while the producers and other unaffected markets enjoy the benefits of protection, at least in the short term. According to Kruger (2008), welfare losses associated with protection are far greater than those of tariff restrictions. Import tariffs will lead to a reduction of poultry imports, which will have several impacts. Kruger (2008); discusses some of the effects associated with tariff increments on a specific industry, which include:

- **A reduction of labour along the distribution channels while increasing it in the agricultural sector.** An economy is known to be developmental when labour moves from the agricultural sector to the secondary industries. Thus as labour moves to the agricultural sector, this may suggest a decline in the contribution of agriculture in the aggregate economy, as more focus is on primary agriculture.
- **Thus diminishing returns set in as a result of increased labour, agricultural wages will decline.** With more labour in the agricultural sector, this may give off negative returns despite the country's drive to increase labour in the agricultural sector as per the National Development Plan.

- **Increases in the prices of imported products, distributions margins and distribution wages.** Those who are in the distribution channels will collect higher revenue which is translated from increased domestic prices as opposed to prices under a free market.
- **Increases in rent for distributors as their wages will exceed those of those in the agricultural sector.** Due to having fewer people in the distribution channels, this will automatically push their wages higher than those in the agricultural sector.

The protection of the poultry sector may also suggest that the government is protecting an inefficient sector. This implies that South Africa may not be having the factor endowment or the comparative advantage of producing poultry as compared to global competitors. According to Fourie (2013), poultry import protection may protect the industry in the short run but may not likely see much growth as a result of protection in the long run. Thus the protection of an inefficient industry will be at a cost to the consumers, more particularly the poor consumers as opposed to high income earning groups.

### Producers

According to Fourie (2013), the reasons provided for protecting the survival of the industry are against these challenges:

- Increases in raw material
- High transportation cost between urban and rural locations
- Economies of scale
- Increases in electricity costs
- Low factor productivity (labour particularly)
- High social costs that hinder business (corruption, crime and HIV)
- High cost of animal health.

Fourie (2008) further argues that, a tariff may not and will not necessarily address these challenges. Hence the industry may be inefficient, moving resources from more exportable products. The reasons also provided to protect the producers do not provide incentives as to how the producers will formulate feasible solutions to address these challenges (Fourie 2008). Despite the challenges faced by the poultry industry, the industry has been able to grow, proving that a tariff may not be a solution to the poultry industry's structural inefficiencies. Dick (1991) suggests that a tariff may have the following impact on a protected industry, which may not yield much benefit from protection:

- Tariffs may increase or decrease prices of the protected good in the domestic market, therefore growth is solely reliant on the relative sizes of

income elasticities of demand and price elasticities of supply.

- Foreign nations may settle for a lower profit margin rather than surrendering their complete market share to the domestic producers.

The latter reason for a minimal benefit of protection may apply mostly in the case of Brazil. Brazilian producers may still be able to cope with increases in tariffs due to the protection of the incentives they receive from their government.

### Methodology

Selection of products and a simulation tariff:

Chicken meat was selected because it is a product that is both produced and exported in the country while also largely imported. For the simulation a tariff was set at 82 % for all countries because this is the current tariff that is imposed on imports (which is above the bound rate). The simulation was set at 82 % regardless of trade agreements.

### WITS tariff simulation

A new rate was used for each scenario.

Formula of the new rate:

$$R1 = (A \cdot R0) / (A + R0)$$

R0 – old rate

R1 – new rate

A – Fixed coefficient

A (the fixed coefficient) is determined by the WTO negotiations and reflects the extent of tariff change for a given rate.

### Analysis and discussion

In light of the South African chicken cuts industry being affected by chicken cuts imports from Brazil, the import tariff against Brazil was raised to 82 % even though the bound rate was 72 %. Against the applied *ad valorem* tariff for the chicken cuts a simulation tariff was set at 82 % and **Table 17** presents the results. Of the leading importers of chicken cuts into South Africa, predominantly European countries will be more likely to decrease their chicken cuts exports to South Africa. Germany, the Netherlands and the United Kingdom will lose export revenue, while Brazil will realise the most gains. This suggests that Brazil has the factor endowment to recover from high tariffs and it also proves to have a leading comparative advantage in the production of the analysed product. Further to this, Brazil is the leading producer of chicken cuts in the world.

**Table 17:** Chicken cuts export view of increases in tariff<sup>1</sup>

Country	Exports Before (\$1000)	Exports After (\$1000)	Export Change In Revenue (\$1000)

<sup>1</sup> Applied the bound tariff at 82 %

Argentina	15 425	15 428	2.700
Australia	7 143	7 145	1.300
Belgium	2 409	2 409	0.400
Brazil	120 460	120 481	21.500
Canada	3 905	3 906	0.700
Chile	39	40	0.007
Denmark	116	116	0.020
France	148	148	0.030
Germany	26	20	-6.300
Greece	44	44	0.008
Ireland	3.5	3.5	0.001
Israel	215	215	0.040
Netherlands	132	100.4	-31.730
New Zealand	0.198	0.198	0
Thailand	0.03	0.03	0
UK	30	23	-7.100
United States	920	920	0.160

Source: Author's calculation

**Table 18** in **Appendix A** presents potential tariff income that South Africa may gain in light of increased tariffs. Increases in chicken cuts tariffs to 82 % would lead to an increase in revenue of \$16 000. Notably, the consumer surplus will be negative which may imply that an increase in tariff gives domestic producers protection and it increases tariff revenue; however, this means that domestic chicken cuts prices will increase.

### Trade diversion

**Table 19** presents trade diversion that may result with increased tariffs. A value of \$18 286 of exports destined for South Africa may be diverted to other markets. Germany, the Netherlands and the United Kingdom are most likely to seek other markets to export a share of their chicken cuts products initially or currently destined for South Africa.

**Table 19:** Chicken cuts trade diversion

Partners	Trade Total Effect (\$1000)	Trade Creation Effect (\$1000)	Trade Diversion Effect (\$1000)
World	-18.286	-18.286	0
Argentina	2.735	0	2.735
Australia	1.267	0	1.267
Belgium	0.426	0	0.426
Brazil	21.470	0	21.470
Canada	0.692	0	0.692
Chile	0.007	0	0.007
Denmark	0.021	0	0.021
France	0.026	0	0.026
Germany	-6.276	-2.543	-3.734
Greece	0.008	0	0.008
Ireland	0.001	0	0.001
Israel	0.038	0	0.038
Netherlands	-31.730	-12.854	-18.876
New Zealand	0	0	0
Thailand	0	0	0
UK	-7.133	-2.890	-4.244
United States	0.163	0	0.163

Source: Authors Calculation

### Impact on the South African poultry sector

An increase on poultry would lead to an increase in tariff revenues, although some exporters may seek a

market elsewhere. South African producers would still be protected but other countries who are more competitive due to their factor endowment and producer support estimates may still give South African producers competition as they are currently doing. The consumer will suffer the most from increased tariffs as this has the potential to push the prices up.

It can be concluded that in light of the South African poultry industry challenges, a tariff increase may give minimal returns. The cost of the tariff will lead to increased domestic prices with the effect being felt by poor consumers. It is also shown that the government is protecting very few players at the expense of social welfare. Even though protection will lead to increases in employment, it will result in a decline of revenue for those employed in agriculture.

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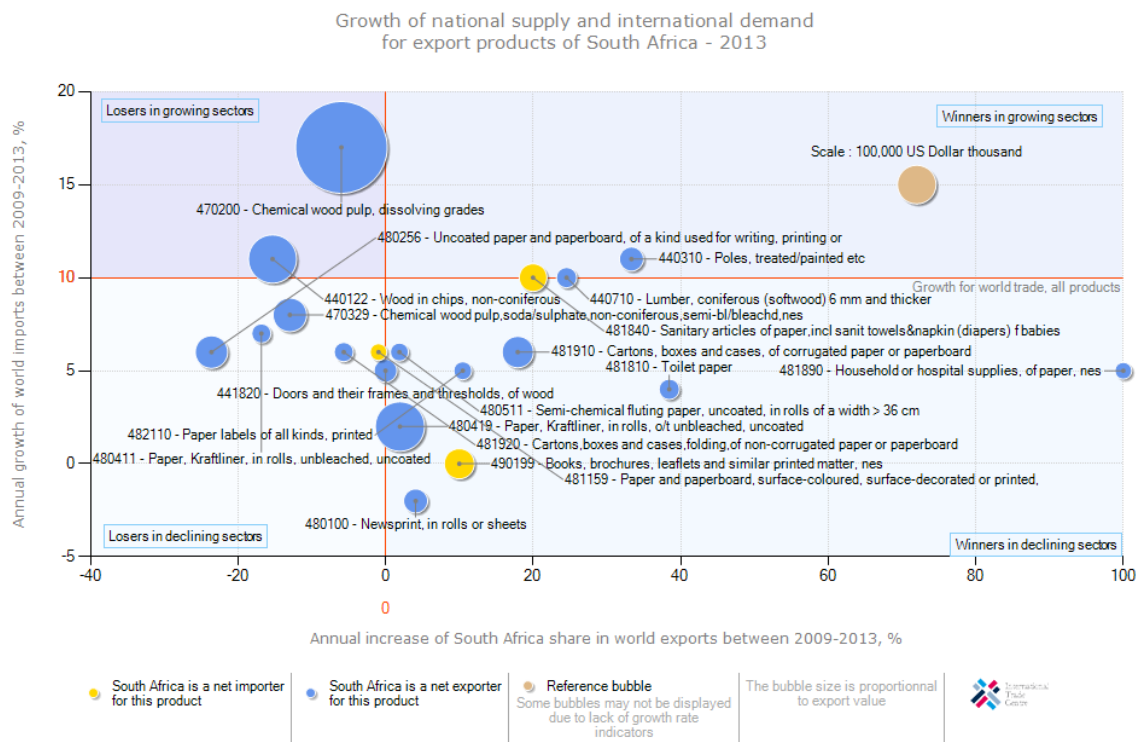


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## Appendix A



**Figure 4:** The growth of national supply and international demand for forestry value chain related export products of South Africa in 2013

Source: Trademap, 2013

**Table 12:** South Africa's potential to trade with Tanzania

HS code	Products	SA's exports to Tanzania (\$ thousands)	SA's exports to the world (\$ thousands)	Tanzania's imports from the world (\$ thousands)
230400	Soyabean oil-cake	0	24 682	3 910
100590	Maize nes	1	695 942	15 134
151710	Margarine	7	41 760	6 401
170490	Sugar	68	60 975	4 031
230990	Animal feed	69	106 517	2 581
220290	Beverages	73	31 791	11 459

Source: Trademap, 2014

**Table 13:** Tanzania's potential to trade with South Africa

HS code	Products	Tanzania's exports to SA	SA's imports (\$ million)	Tanzania's exports (\$ million)
170199	Refined sugar	0	160	69
240220	Cigarettes	0	41	7
120991	Vegetable seeds	0	36	6
230230	Wheat bran	0	15	13
110100	Wheat flour	0	13	38
071310	Peas dried	0	11	57
520300	Cotton	0	7	16

Source: Trademap, 2014

**Table 14: Risk Mitigation Strategies for Materials Handling**

Materials Handling Risks		Fruit Industry Strategies	Grain Industry Strategies
Cold Chain Breakdown	Cold Store	Avoid – contracting out (reliable pack-houses) or send back for re-cooling	
	Rodents/Birds Facility Safety	Avoid – PPECB inspections & strict Service Level Agreements (SLA's)	
Silo Capacity	Operating Times		Mitigate – contracting with reliable silos (registered as FBO for export)
	Seasonal Demand		Mitigate – preseason planning and forecasting
Quality Risks	Incorrect Grading	Avoid – contracting out (reliable pack-houses) or through strict quality protocols at harvest	Transfer – sending back to either the silo or farming source Avoid – through strict quality protocols

**Table 15: Risk Mitigation Strategies for Physical Distribution**

Physical Distribution Risks		Fruit Industry Strategies	Grain Industry Strategies
Cold Chain Breakdown	Road Accidents	Avoid – contracting (reliable transporters)	
	In-transit Container Failure	Transfer – road and maritime insurance and diversification of transport modes	
Congestion	Road Shipping lanes	Mitigate – preseason planning and forecasting	
	Port Backlogs	Avoid – contracting (reliable transporters) and excellent communication with port authorities. Mitigate – preseason planning	
Delays	Truck to Port (road conditions)	Avoid – contracting (reliable transporters)	
	Port to Port (sea conditions)	Mitigate – preseason planning and forecasting	
Theft	Road Hijackings		Avoid – strict contracting with reliable transporters
	Shrinkage		Transfer – use of road and maritime insurance

**Table 18: South African Market View (82 % tariff on chicken cuts imports)**

	Imports Before (\$1000)	Import Change	Tariff Revenue (\$1000)	Tariff New Revenue (\$1000 )	Tariff Change In Revenue (\$1000)	Consumer Surplus (\$1000)
SA	151 021	-18	15 817	15 834	17	-2

Source: Author's Calculation

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