UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Competitiveness of the South African Deciduous Fruit Canning Industry

by

TSHIFHIWA MATIBE MADIMA

Submitted in partial fulfilment of the requirements for the degree:

M Inst Agrar (Agricultural Economics)

in the

Department of Agricultural Economics, Extension and Rural Development

Faculty of Natural and Agicultural Sciences

University of Pretoria

Pretoria

December 2009

ACKNOWLEDGEMENTS

First of all I would like to thank God for giving me the strength, wisdom and patience, and for his countless blessings that have brought me thus far. Without God's intervention, this study would not have seen the light of day.

I would like to express my sincere gratitude towards several people who contributed in different ways before and during this study. I feel indebted to my study leader, Professor Johann Kirsten, the Head of the Department of Agricultural Economics, Extension and Rural Development at the University of Pretoria, for his patience and guidance from the time this study was conceptualised until the day it was completed.

I am grateful to my parents who contributed to my education many years ago. Your financial support prior to this study contributed immensely in laying a good educational foundation on which this study was built.

Special thanks to various stakeholders in the South African Deciduous Fruit Canning Industry for their support and co-operation in providing me with industry information whenever I requested it during this study.

To my beautiful and loving wife Mpho, my daughter Ankonisaho and son Orifha, your patience, support and understanding while I spent many hours away from all of you during this study is highly appreciated. Your presence in my life gave me the strength to stay focused and motivated, and your moral support inspired me throughout this journey. As a family, we can now celebrate the successful completion of this study as one of our 2009 achievements.

T.M Madima

Pretoria

December 2009

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

DECLARATION

I Tshifhiwa Matibe Madima declare that this dissertation/thesis which I hereby submit to the University of Pretoria for the M Inst Agrar (Agricultural Economics) degree is my own work and has never been submitted to this or any other tertiary institution for any degree.

SIGTNATURE……Date:……

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Competitiveness of the South African Deciduous Fruit Canning Industry

by

TSHIFHIWA MATIBE MADIMA

Degree: M Inst Agrar (Agricultural Economics)

Department: Department of Agricultural Economics, Extension and Rural Development

Study leader: Professor Johann Kirsten

ABSTRACT

The purpose of the study is to investigate the competitiveness of the South African deciduous fruit canning industry in the global canned fruit market. The study was done in the Western Cape Province, the province where the deciduous fruit is produced and canned in South Africa. Both local and international literature on the deciduous fruit canning industries was used as part of the analysis. In addition to this, a variety of methods and techniques including descriptive, theoretical, analytical and quantitative were applied. These include: The Balassa's Revealed Comparative Trade Advantage method, which was used to calculate the competitiveness indices of various canned deciduous fruit products. Time series data on South African and global canned deciduous fruit imports and exports was also used to calculate the competitiveness indices using the RTA method and Excel software.

A structured questionnaire was used to collect both qualitative and quantitative data from an array of expert views from key industry stakeholders. These key informants included Chief Executive Officers of various companies and organisations in the fruit canning industry. Data collected was analysed using Excel spread sheet programme, SPSS and the Porter methodology.

The competitiveness analysis of this study clearly pointed out that EU subsidies but not SPS conditions, definitely disadvantage the South African fruit canning industry and negatively affect its competitiveness in the EU market. However, it was revealed that the South African deciduous fruit canning industry is competitive on:

(a) labour costs - Being a labour intensive country, South Africa's labour cost is amongst the lowest when compared with other countries that compete in the EU fruit canning market.

(b) product quality - The South African deciduous fruit canning industry has positioned itself world-wide to be the supplier of premium quality and premium priced canned deciduous fruit products. The industry's second biggest market, Japan, demands mostly premium products, and South Africa is a key player in that market.

Respondents differed in opinion in almost all variables, with the exception of two variables. All respondents viewed starting a new business in the industry is extremely difficult and the trust in the honesty of politicians is very low.

There are variables where 90 percent of all respondents agreed, and these are:

(a) The South African fruit canning companies are rated as having the world's most stringent regulatory standards.

(b) Entry to the local market by new competitors at the fruit canning stage of the value chain almost never occurs.

(c) The administrative regulations in South Africa are burdensome.

(d) Crime in South Africa imposes a significant cost to companies.

(e) Companies' approach to human resources is to invest heavily to attract, train and retain staff.

Due to the nature of the methodology used and varying results that came out, it is difficult for the industry's competitiveness position to be articulated in one sentence.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

African National Congress	ANC
Argentinean Dollar	AR$
Agricultural Products Standards Act	APSA
Agricultural Research Council	ARC
Australian Dollar	AUD
Canned Fruit Producers' Association	CFPA
Chief Executive Officer	CEO
Chilean Dollar	CH$
Common Agricultural Programme	CAP
Congress of South African Trade Unions	COSATU
Consumer Price Index	CPIX
Department of Agriculture, Forestry and Fisheries	DAFF
Department of Trade and Industry	the dti
Deciduous Fruit Control Board	DFCB
European Union	EU
Food and Agriculture Organisation	FAO
Fast Moving Consumer Goods	FMCG
Hazard Analysis and Critical Control Points	HACCP
International Standards Organisation	ISO
Least Developed Country	LCD
National Agricultural Marketing Council	NAMC
National Energy Regulator of South Africa	NERSA
Rate of return	ROR
Revealed Comparative Trade Advantage	RTA
Sanitary and Phytosanitary	SPS
South Africa	SA
South African Canned Fruit Export Board	SACFEB
South African Canning Fruit Producers' Association	SACFPA

Southern African Customs Union	SACU
South African Fruit and Vegetable Canners' Association	SAFVCA
South African Fruit and Vegetable Canners' Export Council	SAFVCEC
South African Rand	ZAR
South African Reserve Bank	SARB
South African Sugar Association	SASA
Technical Barriers to Trade	TBT
Trade and Development Cooperation Agreement	TDCA
United Kingdom	UK
United Nations Conference on Trade and Development	UNCTAD
United States of America	USA
United States of America Dollar	US$
World Health Organisation	WHO
World Trade Organisation	WTO

CHAPTER 1

INTRODUCTION

1.1 Background

From a small and possibly an insignificant industry in the South African agricultural sector in the early 1900s, the South African fruit canning industry had grown into an internationally recognised agri-business (Keetch, 2000). The industry produces eight percent of world production, is ranked the fourth largest processor in the world, and is worth R3.5 billion with an annual turnover of approximately R1.5 billion.

Exports of canned fruit products from South Africa commenced in the early 1900s with the export of canned jams to Great Britain. Trade between South Africa and Europe flourished, but during the late 1980s South African canners faced sanctions and boycotts from consumers in Europe who were opposed to the apartheid government's policies. The industry was forced to concentrate on other export markets. However, despite these pressures, Europe remained the South African Canning Industry's most important market (Louw, 2004).

The South African Canning industry mainly consists of three categories, namely:

(a) Deciduous fruit canning – based in Ashton, Tulbagh and Groot Drakenstein in the Western Cape Province and mainly export-orientated.
(b) Pineapple canning – based in East London in the Eastern Cape Province and mainly export-orientated.
(c) Vegetable canning – based in various parts of South Africa, mainly in Gauteng, Mpumalanga, Limpopo, Kwazulu Natal, North West and Western Cape, and focused on the domestic and Sub-Sahara markets.

Key players in the fruit and vegetable canning industry are organised and represented by the South African Fruit and Vegetable Canners' Association (Pty) Ltd (SAFVCA), a voluntary industry body established in 1954 mandated to co-ordinate activities of the industry and to promote the interests of the canning industry as a whole in both local and international markets and also provide its members with synergistic services of value.

The fruit canning industry is an important contributor to the South African economy in terms of employment. According to SAFVCA (2004) more than 11 000 factory workers and over 500 administrative and sales staff are directly employed in the fruit canning industry. Most factories are situated in or close to rural areas where very few alternative employment opportunities exist. Approximately 17 000 farm workers are employed on 1 200 farm units which supply the factories with fresh deciduous fruit. The industry creates both direct and indirect jobs; it is a very important customer for the packaging industry which supplies over 540 million cans, labels and cartons to the canners annually. In addition to the packaging industry, other industries where the fruit canning industry sources raw materials and other inputs and services are the fruit growers (farmers) and the sugar industry. The pineapple industry in the Eastern Cape provides in excess of 2 700 jobs, and processes more than 20 000 tons of fruit per season or annum.

A significant number of people are employed at farm level and in fruit canning, and both stages of the value chain are found predominantly in economically depressed geographical areas. The deciduous fruit canning industry, in particular, makes a significant contribution in terms of employment mainly in Ashton, Tulbagh and Groot Drakenstein in the Western Cape where processing plants are situated and Ceres, Tulbagh, Wolseley, Montague and Robertson where the deciduous fruit for canning is produced. The pineapple canning industry's contribution is mainly in the Peddie region of the Eastern Cape where pineapples are grown, and in East London were a processing factory is situated. The general view in the industry, following engagements with industry leaders, is that these areas are characterized by limited employment opportunities in both the agricultural and non-agricultural sectors. Ashton, a small town in the Western Cape

province, largely owes its existence to the deciduous fruit canning industry, and fruit canning is still a significant contributor to employment in this town.

According to industry's anecdotal knowledge, fruit canning is reasonably labour intensive. The fruit canning process involves hand sorting and visual inspection of the fruit, to ensure that what goes into cans is of acceptable colour, texture and size, and free from defects. These processes cannot be mechanised and require labour, making the industry reasonably labour intensive. The importance of the industry in the Western Cape in particular is not only in terms of employment, but also investment in skills, training and education as well as social projects and community expenditure.

An estimated 85 percent of canned fruit produced in South Africa is exported mainly to the European Union (EU) and the Far East. The industry's focus on the export market exposes it to foreign exchange fluctuations and other foreign markets drivers which are largely beyond the industry's influence or control. These external issues include EU farm subsidies and Sanitary and Phytosanitary (SPS) requirements set out by the EU. These are largely technical barriers to trade, to protect the EU's agricultural industry, including the fruit canning industry, against competition from other countries such as South Africa.

1.2 Problem statement

Groenewald (1998) argued that the EU import tariffs as well as subsidised USA and EU agricultural exports have put a lot of pressure on some of the Southern African agricultural industries. Based on anecdotal evidence it can be argued that the South African deciduous fruit canning industry is constrained in the EU export market. This is due to trade barriers such as farmer subsidies offered to EU producers, tariffs and quotas imposed on South African exporters, and stringent SPS requirements. These trade barriers are critical for the survival of the EU agricultural producers from upstream primary production to downstream food processing. These measures are used by EU governments to protect their agricultural industries against external competition.

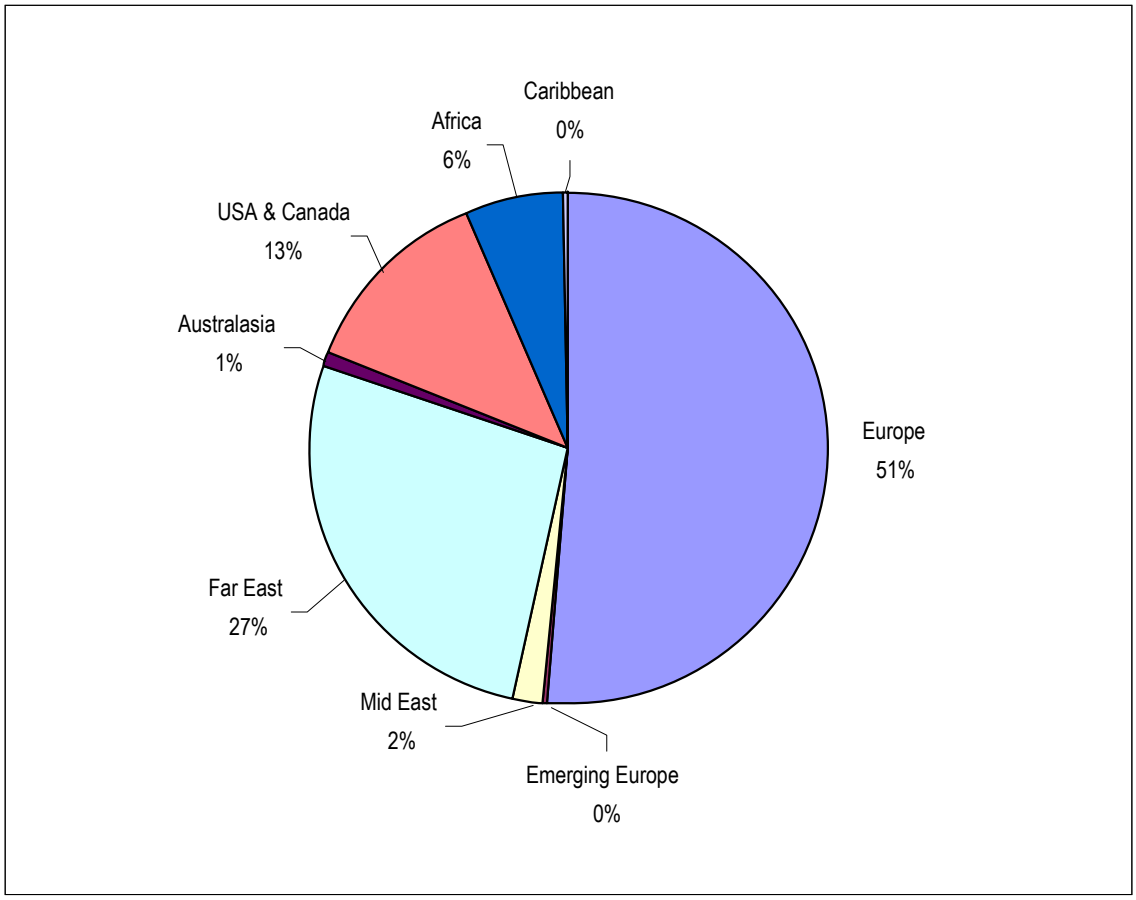

Figure 1.1: South Africa's canned fruit export destinations

Source: SAFVCA, 2005

A study done by SAFVCA in 2005, indicated that 51 percent of the total export volume is destined to Europe, followed by 27 percent to the Far East, and 13 percent to United States of America and Canada, and 6 percent to Africa, making Europe the industry's main export market. The European market could be considered hostile to South Africa given that, in terms of the Trade Development and Co-operation Agreement (TDCA) only 53 445 metric tonnes tariff free quota was allocated to South Africa for 2010 with an annual growth of 3 percent. It is clear that these non-technical barriers to trade are applied to protect the EU agricultural industry against developing economies such as South Africa and unfortunately are putting more pressure on already stressed industries of these economies. These measures make the South African deciduous fruit canning industry's

main export market highly regulated and protected and this limits South Africa's ability to enter and compete in these markets.

1.3 Objectives of the study

The deciduous fruit canning industry has the prospect of being a significant source of employment and export earnings for a number of southern hemisphere countries which enjoy a considerable comparative advantage. "Market distortions severely constrain this outcome, however, most importantly a combination of protection and subsidies in the industrially advanced countries" (Kaplan and Kaplinsky, 1999).

According to Keetch (2000), the biggest threat to the South African canning industry is the unrealistically high subsidies paid to producers and canners in other countries, especially the EU. This makes it almost impossible for the South African peach and pear canners to compete with EU fruit canning member states. These subsidies act as trade barriers that erode the South African industry's competitiveness in the EU market. European countries' agricultural trade barriers (subsidies, tariffs, quotas and stringent Sanitary and Phytosanitary requirements) impact negatively on the South African fruit canning industry's global competitiveness and access to Europe's market, which is South African industry's biggest export market.

Against this background, the objective of this study is to analyse the competitiveness of the South African deciduous fruit canning industry.

The specific objectives are:

(a) To promote the understanding of the link between the competitiveness of the deciduous fruit canning industry and EU trade barriers.
(b) To identify the most important South African deciduous fruit canning industry competitors on the EU export market, and compare South African industry's competitiveness in various aspects of the industry.

(c) To provide arguments that may sensitise those at decision-making level about the links between South African deciduous fruit canning industry competitiveness and EU trade barriers.
(d) To assess the impact of EU trade barriers on the competitiveness of the South African deciduous fruit canning industry.
(e) To identify areas where the South African deciduous fruit canning industry is competitive and where it lacks competitiveness.
(f) To provide a well-informed basis for the formulation of trade policies favourable to the South African deciduous fruit canning industry.
(g) To develop a turnaround strategy that must be implemented to address competitiveness challenges faced by the South African fruit canning industry.
(h) To conclude and make recommendations on future policies and strategies for the industry.

1.4 Research methodology

Guided by the objectives specified above, this study will, first of all, benefit from both local and international literature on the deciduous fruit canning industries, and then apply a variety of methods and techniques including descriptive, theoretical, analytic and quantitative.

The Balassa's Revealed Comparative Trade Advantage (RTA) method was used to calculate the competitiveness indices of various canned deciduous fruit products as advised by Doyer and Van Rooyen (2002), Time series data on South African and global canned deciduous fruit imports and exports was also used to calculate the competitiveness indices using the RTA method and excel software. This data was obtained from: Statistics South Africa (Stats SA), Department of Agriculture, Forestry and Fisheries (DAFF), Department of Trade and Industry (the dti), Canned Foods World Trade Yearbook, the SAFVCA, the South African Fruit and Vegetable Canners' Export Council (SAFVCEC), the Canned Fruit Producers' Association (CFPA), South African

Canning Fruit Producers' Association (SACFPA), the National Agricultural Marketing Council (NAMC), the South African Reserve Bank (SARB), and Agricultural Research Council (ARC).

An array of expert views was gathered through interviews with key industry stakeholders. These key informants included Chief Executive Officers (CEOs) of various companies and organisations in the fruit canning industry. Structured questionnaires were used to obtain qualitative and quantitative data from the CEOs. These CEOs were selected due to their active participation in the industry at different stages of the value chain and the fact that they are key stakeholders who are indirectly or directly affected by the increasing global competition of the fruit canning industry.

The Excel programme was used to capture and analyse the primary data gathered during the interviews. In addition, SPSS was also used to do a descriptive analysis of data collected by means of a questionnaire. In addition to this, and given the nature of this study, the Porter methodology was used to analyse primary data collected using structured questionnaires in order to determine the rates of competitiveness of various factors. The analysis of the structured questionnaires was done by Excel spread sheet programme and SPSS.

1.5 Outline

The study is comprised of six chapters. Chapter 2 provides both the South African and the global overview of the canned fruit industry. It deals with the key industry statistics that 'paint' the industry's picture, and includes historical data, information on how the South African industry evolved over the years since it was started in the 1950s. The chapter also provides information on the industry marketing structure during and post regulated marketing of agricultural products. In addition to that, there is information on the South African industry's productivity and profitability, and various identified changes with which the industry is faced.

In Chapter 3 the competitiveness of the South African fruit canning industry is analysed using the Balassa's RTA method to calculate the competitiveness indices of various canned deciduous fruit products as mentioned above. In addition to that, an Excel programme and SPSS was used to capture and analyse the primary data gathered during the interviews. Structured questionnaires were used to obtain qualitative and quantitative data from the CEOs. Questionnaires were distributed and received from the following industry stakeholders;

(a) Fruit production (farmers)
(b) Can manufacturers
(c) Fruit canners
(d) Organised labour
(e) Fruit Canning Industry Association

Chapter 4 focuses on the correlation between investment and the performance of the industry in terms of, amongst other factors the trend in a number of processing facilities in South Africa over the years since the fruit and vegetable canning industry was established in South Africa in the 1900s. It analyses the relationship between the competitive indices and research and, development and technology at industry level. This chapter uses the Porter's method to analyse the industry's performance. Focus is put on Porter's six broad criteria or attributes that shape the environment in which canners compete locally and globally in order to promote the creation of competitive advantage. These are: factor conditions, demand conditions, related and supporting industries, firm strategy, structure and rivalry, government attitude and policy, and the role of chance. This chapter answers the study's critical questions: Is the South African deciduous fruit canning industry competitive in the EU market, and are EU trade barriers the main challenge in the industry's competitiveness?

Chapter 5 identifies and outlines various strategies that can be considered by, and for, the industry to address all identified competitiveness related challenges. These would be

challenges viewed as the most relevant initiatives that the industry should consider to regain the lost international market share and also deal with other issues that have had a negative impact on the competitiveness of the industry.

Chapter 6 provides conclusions: findings and recommendations on how the industry can address identified challenges that have a negative impact on the competitiveness of the industry. It also considers actions and plans to ensure a better future for the industry.

CHAPTER 2

OVERVIEW OF THE SOUTH AFRICAN AND GLOBAL FRUIT CANNING INDUSTRY

2.1 Introduction

Canned deciduous fruits are produced and sold in both local and international markets. This chapter provides the history of the industry, overview of the industry focusing on factors that contributes to describing the industry at a local and global level. In describing the industry, key industry statistics used include: the number of people employed, export and import volumes, value of exports and imports, the number of key players, the size of the industry in terms of value, and other industries whose existence is dependent on fruit canning.

It should be noted that research on the deciduous fruit canning industry is rather limited which contributed to the rather limited industry information, particularly at global level.

2.2 World deciduous fruit canning industry

The fruit canning industry dates back to the 1700s, which marks the beginning of the modern food canning technology. This technology was started with the experiments of the French confectioner, Nicolas Appert (Den Hartog, 2003). Nicolas Appert is also referred to as the father of canning.

“In 1795, the French government offered a prize of 12 000 francs to anyone who could find a way to preserve food because Napoléon Bonaparte needed to provide the military with a safe food supply. After fourteen years of experimentation, Appert developed a method for preserving foods by heating. The food, meat or vegetables, was first cooked in open kettles and placed in glass jars” (Den Hartog, 2003). Den Hartog further reported that in 1810 Appert published his prize-winning essay on food preservation and the

French Emperor Napoléon awarded the 12 000 franc-prize to him. "In 1811, Appert published a book revealing his method for preserving food. His book was called "L'Art De Conserver, pendant plueieurs annes, Toutes les Substances Animales et Vegetales" which, when translated means: The Art of Preserving All Kinds of Animal and Vegetable Substances For Several years" (Hyperhistory.net, 2009). Subsequent to this, Appert established the world's first commercial cannery in Massy, France in 1812.

According to Den Hartog, in 1811, two Englishmen, Bryan Donkin and Peter Durand applied and improved Appert's invention. Bryan Donkin realized that iron containers could be used instead of fragile glass, and the Dartford Iron Works factory began to produce canned food such as meat in 1811. Peter Durand then patented the use of metal containers, which were found to be better than the glass because they were easier to make and harder to break than glass. The British Royal Navy started buying canned meat from Durand in 1813 and these foods formed part of the medical stores for distribution to sick men as well as to supply expeditions.

According to the Encyclopaedia of Global Industries (2006), as scientific understanding of the principles of food preservation improved at the end of the nineteenth century, there was a great and an increasing improvement in the quality of the food canned by the industry firms, just as mass production was transforming canned goods into a common household item.

Despite this history, none of the two pioneering countries in fruit canning, France and Britain, feature as the top producers of canned fruit. Data from the Canned Foods World Trade Yearbook of 2007 indicates that the top eight deciduous fruit exporting countries in the order of export volumes (in tonnes) are: Greece (1 404 462), South Africa (781 836), Italy (772 787), Spain (683 582), China (578 840), Germany (367 961), USA (276 297), and Netherlands (146 842). All of these countries, with the exception of South Africa, China and USA, are members of the EU, making the EU as trading block a major player in the fruit canning industry.

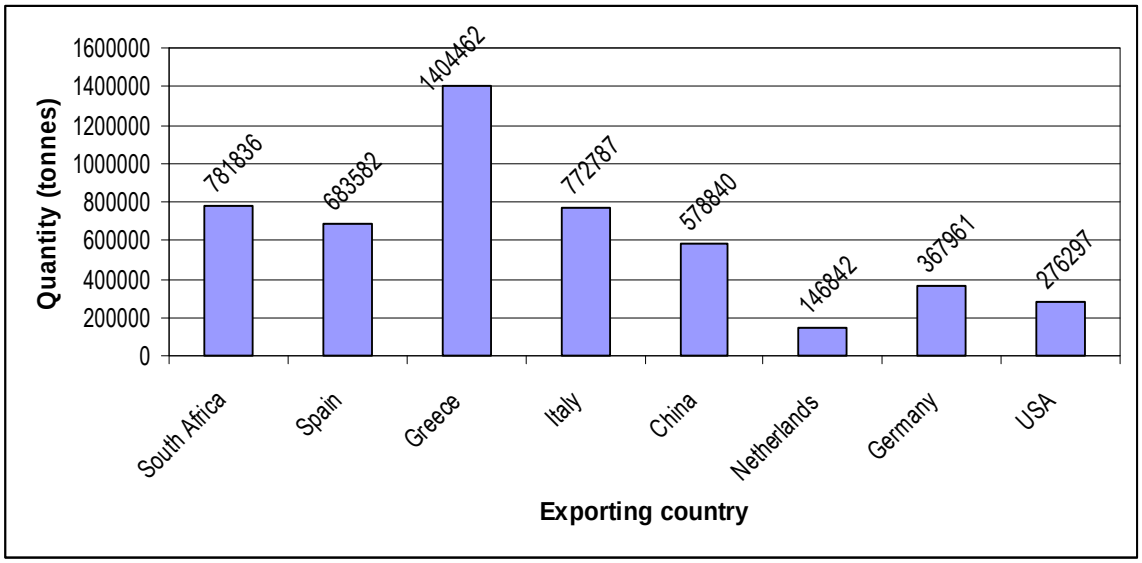

Figure 2.1: World deciduous fruit export trade (2007)
Source: Canned Foods World Trade Yearbook, 2007

The second position of the South African industry in total world export is impressive, given that it outperforms some of the EU industries that receive a lot of support from their governments. The countries in the European Union dominate the world fruit canning industry with five out of the top eight exporters: Spain, Greece, Italy, Netherlands and Germany are all members of the EU. Looking at these volumes and the EU member states' ranking in world exports, an assumption can be made that these countries position in terms of world exports could be influenced by the protection and support from their governments.

2.3 Global trade in selected canned products

South Africa produces and export selected canned fruit product lines which are highlighted in this part of the Chapter and exported to various world markets. This forms part of the process to identify the most important South African deciduous fruit canning industry competitors on the EU export market, and compare South African industry's competitiveness in various aspects of the industry such as production and share of global export market on different product lines.

In addition to mentioning the product lines and markets, the study will also show South Africa's share of the global market regarding various product lines in terms of imports and exports. Knowing South Africa and other competing countries' share of the imports and export market is central to providing useful information on which well-informed and effective strategic intervention and initiatives such as formulation of trade policies favourable to the South African deciduous fruit canning industry are developed to better position South Africa in the global fruit canning industry. Provided well-informed basis for the formulation of trade policies favourable to the South African deciduous fruit canning industry has been identified as one of the key objectives of the study.

In order to have a better picture of South Africa's standing in the global fruit canning industry in terms of volume of exports and imports, and share of the global exports and imports, this part of the study will discuss all kinds of fruit canned in South Africa and exported to the global market.

2.3.1 Canned apricots

The top five exporters of canned apricots by volume in 2007 were South Africa (18.0%), Spain (17.2%), Greece (17.2%), Morocco (10.3%) and China (9.2%).

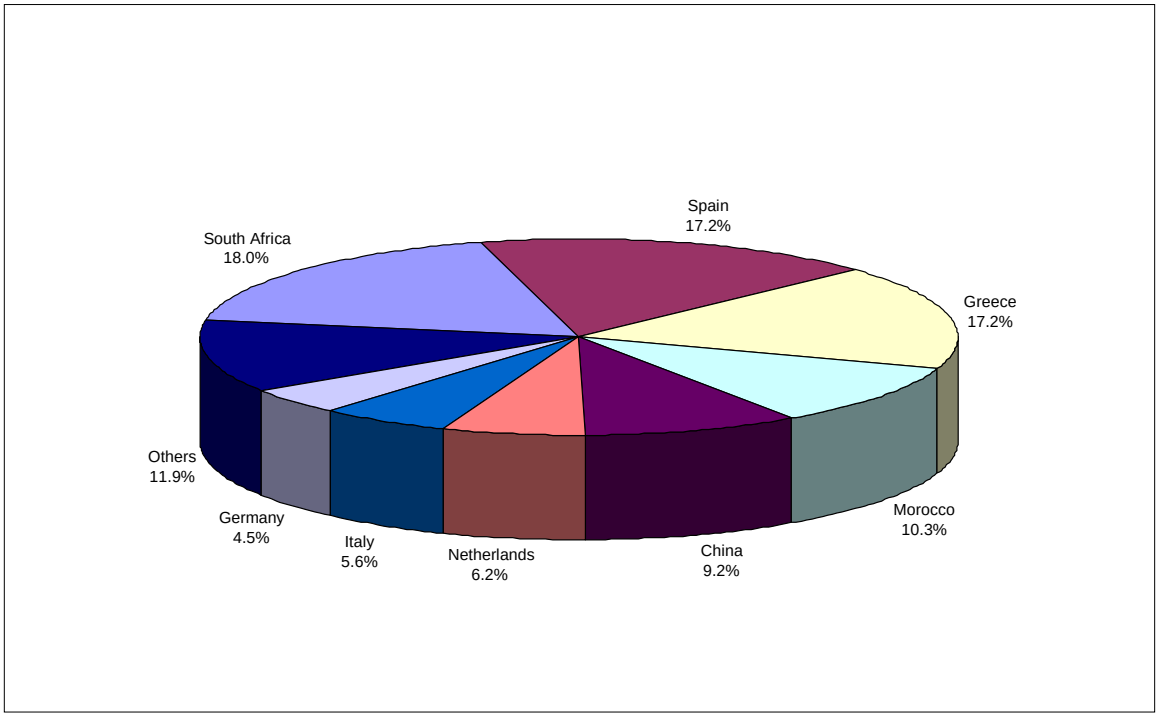

Figure 2.2: Exporters of canned apricots (share of global exports by volume), (2007)
Source: Canned Foods World Trade Yearbook, 2007

On the demand side, the global import market is dominated by European countries. The top five importers by volume are France (26.7%), Germany (21.4%), Netherlands (8.7%), Russia (7.0%) and Belgium (5.2%). All of these countries are members of the European Union with the exception of Russia, making Europe the main importer of canned apricots.

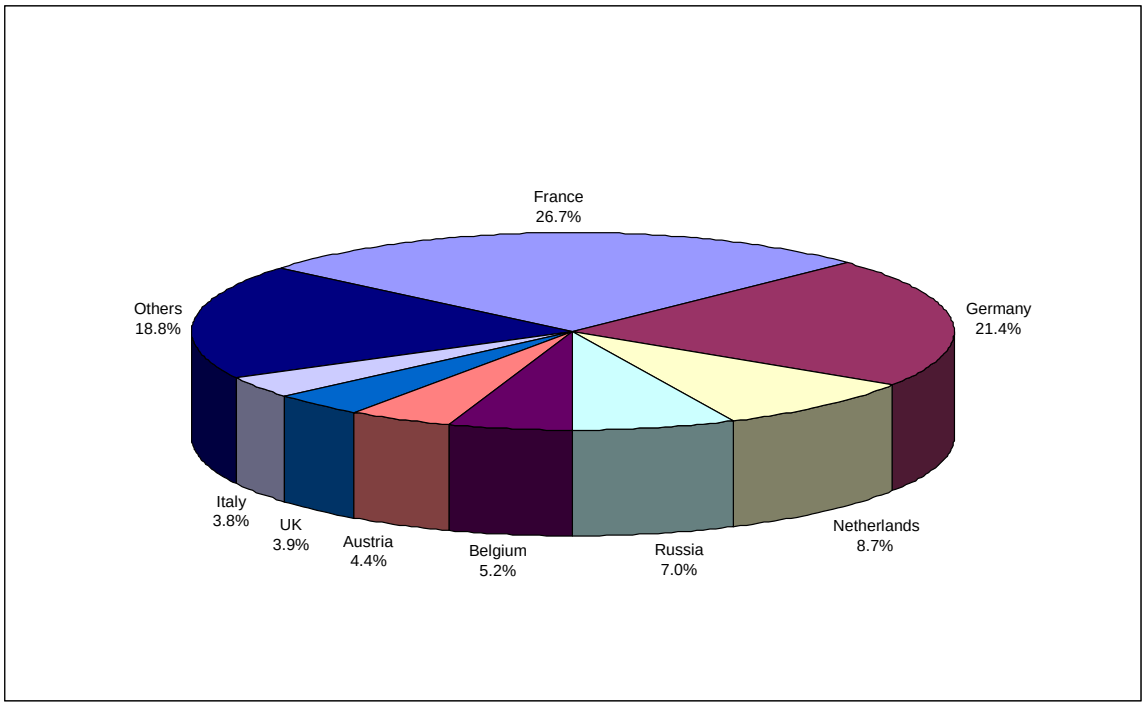

Figure 2.3: Importers of canned apricots (share of global imports by volume), (2007)
Source: Canned Foods World Trade Yearbook, 2007

2.3.2 Canned fruit cocktail

The only European country featuring in the top five exporters in terms of share in the global export market is Italy, at the third position claiming 11.0% of the market. Other competitors in the order of dominance are; Thailand (15.6%), Philippines (12.7%), China (9.2%) and South Africa (5.9%). The global fruit cocktail export market is dominated by Asian countries. An assumption can be made that Asia as a continent is the world leader on the export of fruit cocktail.

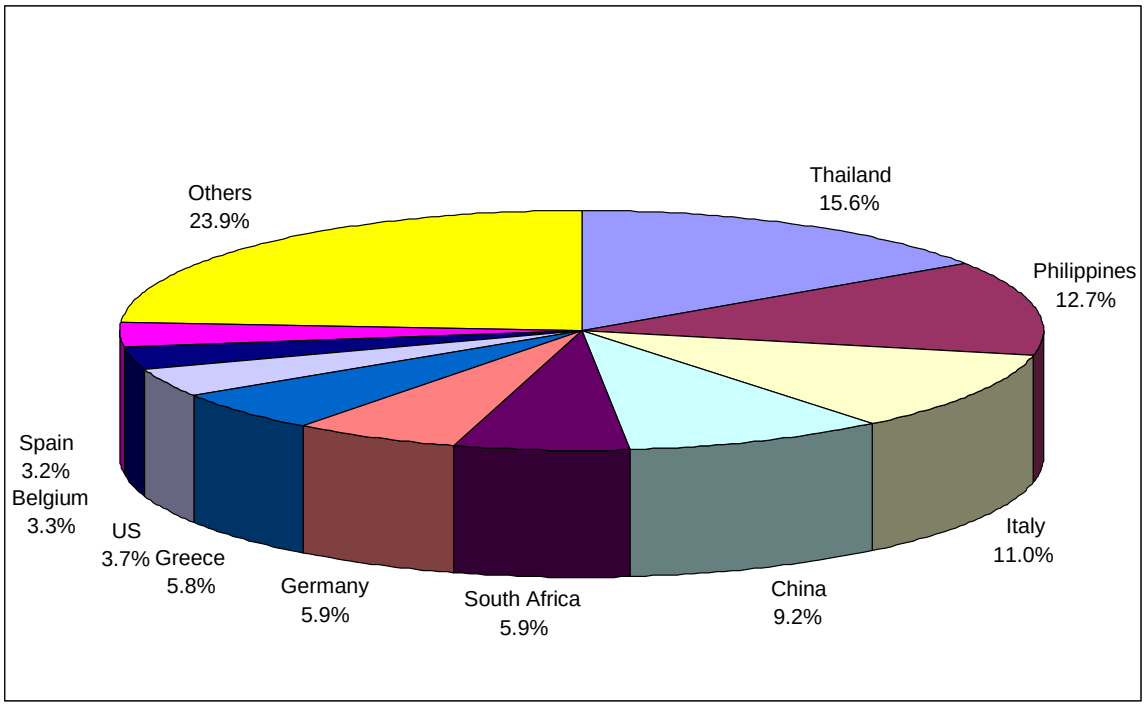

Figure 2.4: Exporters of canned fruit cocktail (share of global exports by volume), (2007)

Source: Canned Foods World Trade Yearbook, 2007

The top five importing countries of fruit cocktail in order of dominance are; the USA (22.3%), France (22.2%), Germany (7.6%), UK (6.7%) and Netherlands (4.3%). European countries still dominate in this product line.

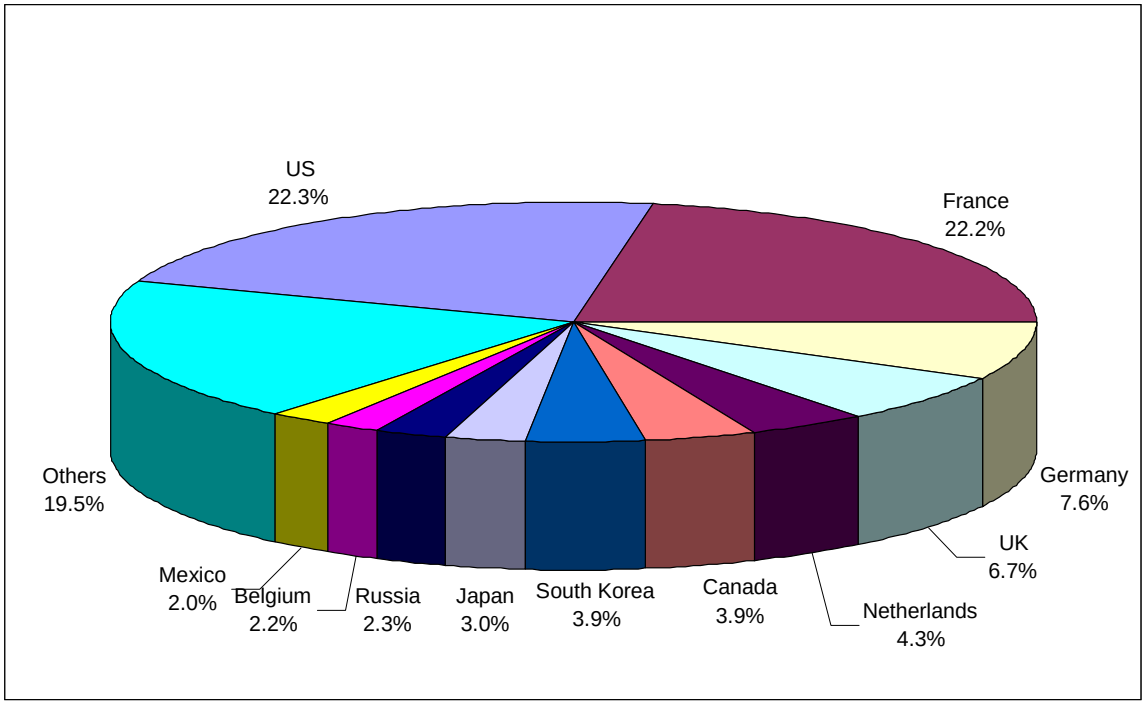

Figure 2.5: Importers of canned fruit cocktail (share of the global imports by volume), (2007)

Source: Canned Foods World Trade Yearbook, 2007

2.3.3 Canned peaches

Greece is responsible for 35.6% of global canned peach trade and also occupies the first position on world deciduous fruit export trade, responsible for over 1.4 million tonnes of canned deciduous fruit export trade (see figure 2.1). This indicates Greece's clear dominance of the global deciduous fruit export trade. In second position is China (17.8%), a country that is showing the fastest growth in terms of production and exports of canned deciduous fruit. Spain (9.4%), South Africa (7.5%) and Chile (6.9%) occupy the third, fourth and fifth position respectively. The composition of the top five exporters is generally well spread geographically. All key peach exporting continents are well represented.

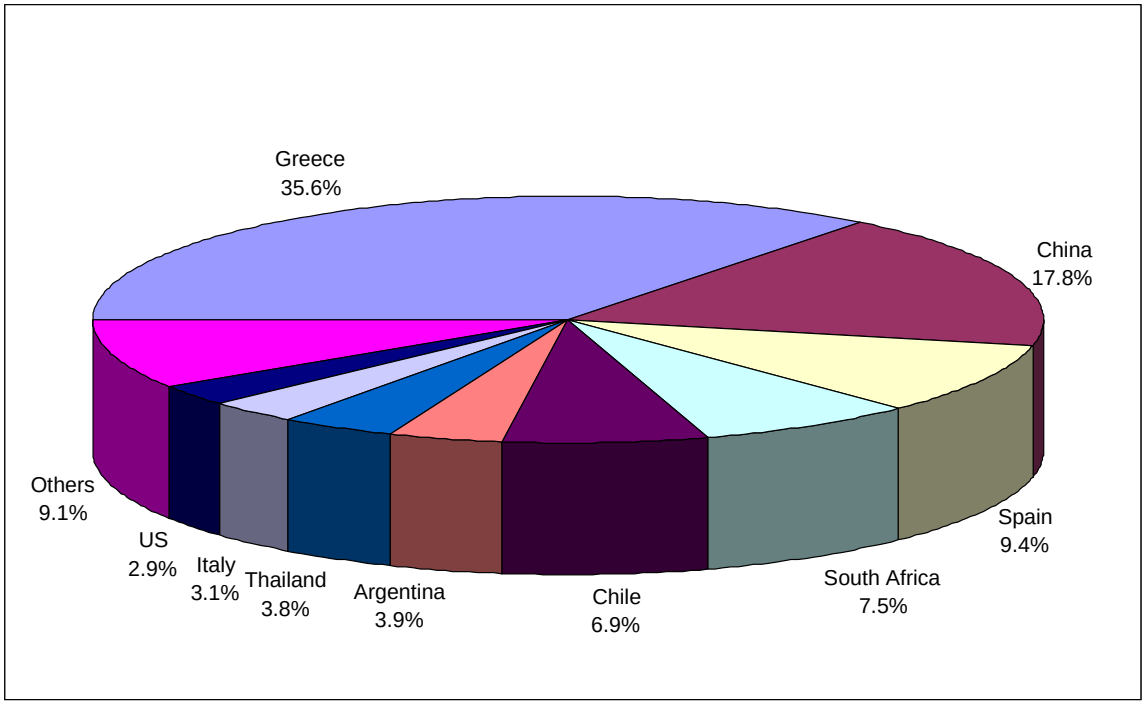

Figure 2.6: Exporters of canned peaches (share of global exports by volume), (2007)
Source: Canned Foods World Trade Yearbook, 2007

The USA (13.7%) is the world's single largest importer of canned peaches, followed by Germany (12.6%), Mexico (8.2%), Japan (7.8%) and Thailand (5.2%). This is illustrated by Figure 2.7.

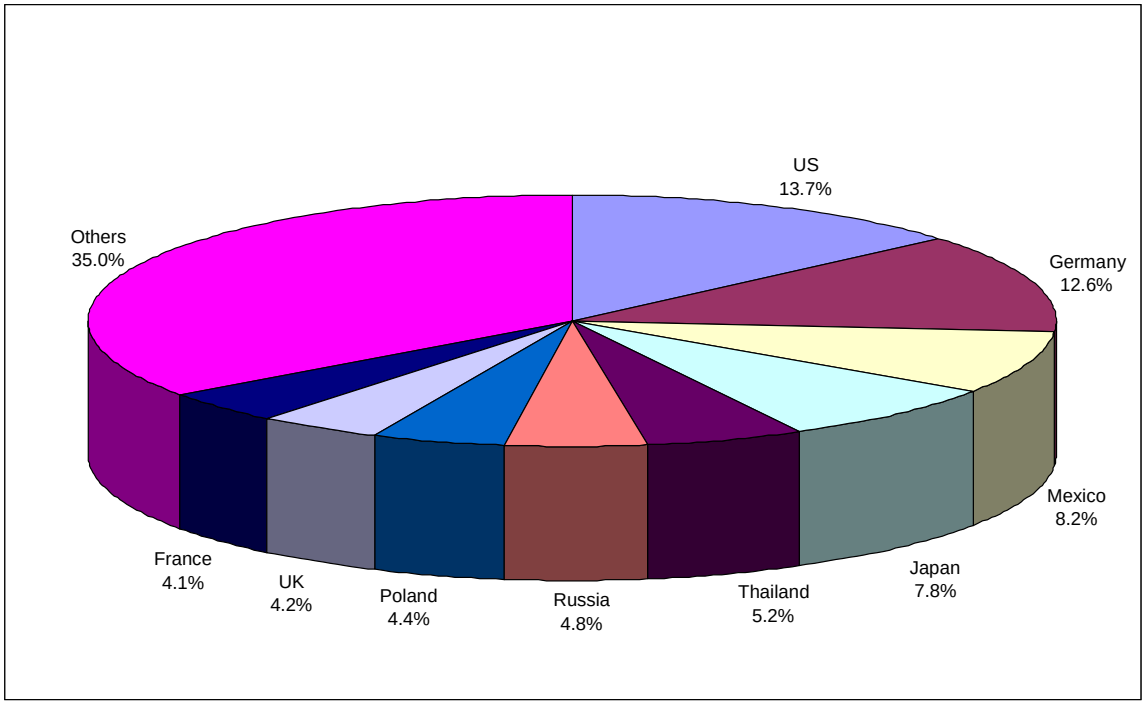

Figure 2.7: Importers of canned peaches (share of global imports by volume), (2007)
Source: Canned Foods World Trade Yearbook, 2007

2.3.4 Canned pears

China has shown the fastest growth in terms of exports of canned pears and now has the largest share of the canned pears export market. Five years ago, China was a small player in the global market, and has now become a threat to many countries. Following China is Italy, South Africa, Spain and Germany with 23.4%, 14.0%, 7.0% and 5.4% share of the market, respectively.

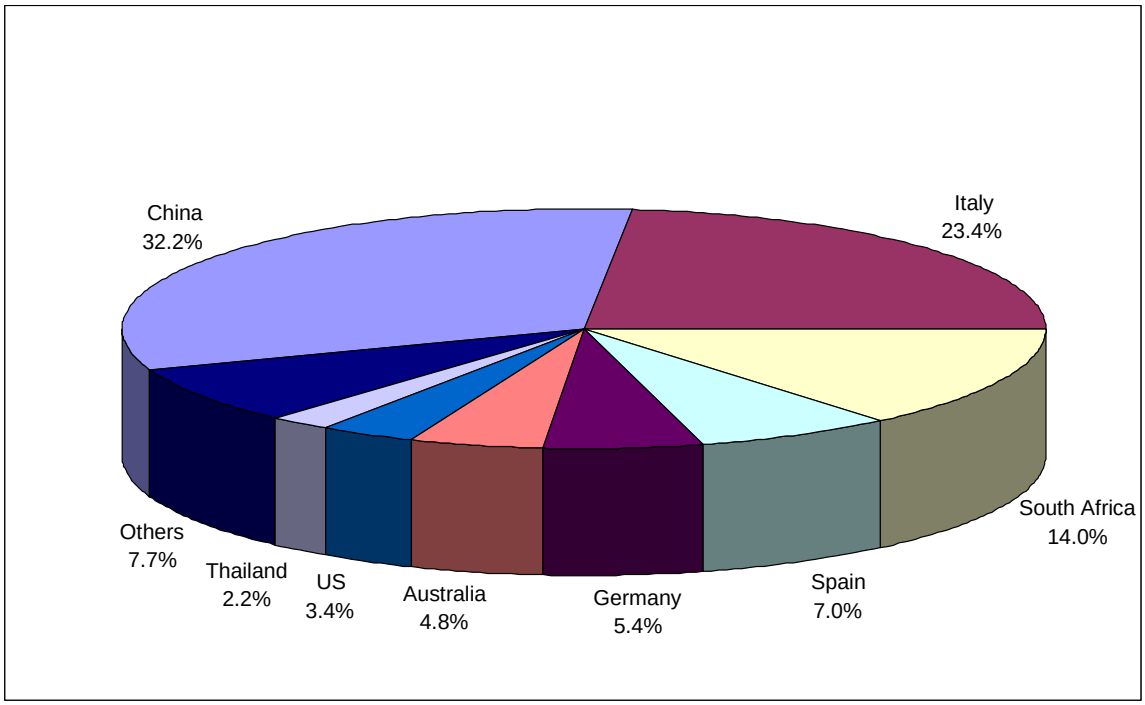

Figure 2.8: Exporters of canned pears (share of global exports by volume), (2007)
Source: Canned Foods World Trade Yearbook, 2007

The USA dominates the canned pears global import market with a share of 20.6% of global imports. Germany, France, UK and Thailand follow with 16.0%, 13.3%, 6.2% and 4.7% share of the market respectively. The largest importers are again dominated by European countries.

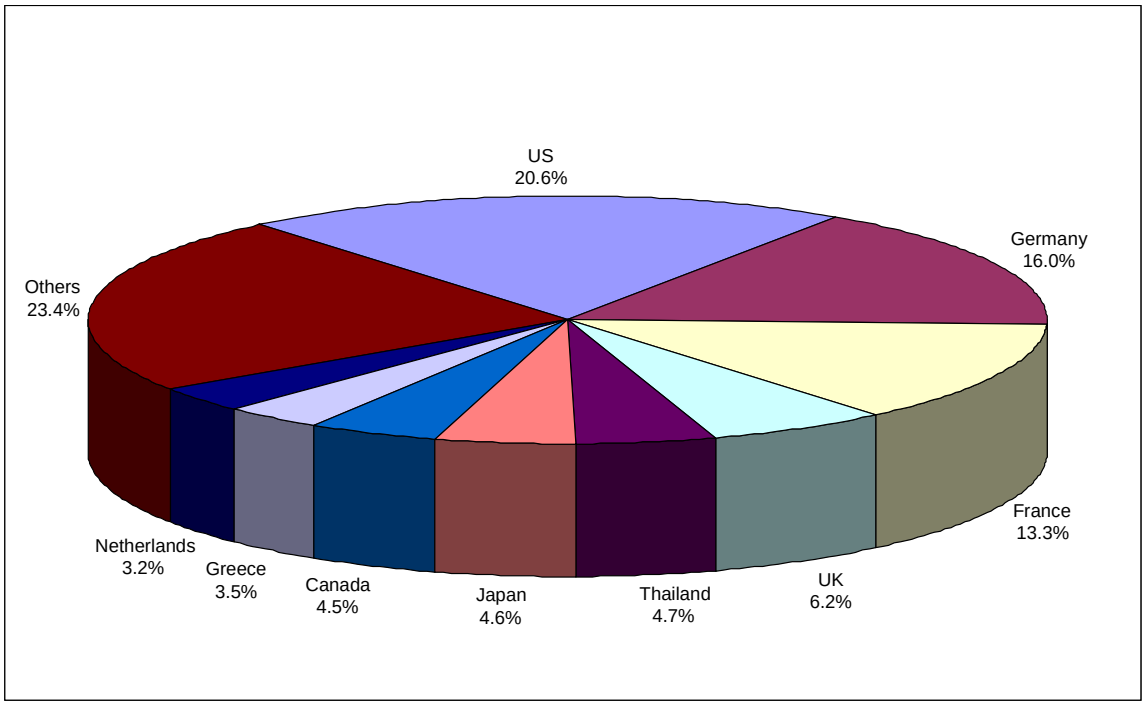

Figure 2.9: Importers of canned pears (share of global imports by volume), (2007)
Source: Canned Foods World Trade Yearbook, 2007

The deciduous fruit canning industry market and composition of exporters and importers is diverse. European countries dominate both the export and import markets, making the EU a key player in the global market. Asia is the second largest player. This has been boosted by China's share of the global industry in terms of imports and exports.

Lack of sufficient scientific research made it difficult to give credible information on factors such as number of people employed and value invested, information that would define the makeup and provide a better picture of the global industry.

South Africa and Morocco are the only countries that represented the African continent amongst the top five performers in some canned fruit products. South America was represented by Argentina and Chile, and USA and Canada represented North America.

2.4 The South African fruit canning industry

The South African fruit canning industry is one of the key players in the global canned deciduous fruit export market. In 2006, the South African industry was responsible for a total of 781 836 tonnes (17 percent) of total world exports making it the second biggest exporter globally (see figure 2.1).

The industry is composed of both the deciduous fruit and pineapple canning industries. Both industries are export driven, thus forming part of both the Western Cape and Eastern Cape's foreign exchange earners. In the Western Cape, the industry plays a major role particularly in predominantly poor coloured and black communities, and in the Eastern Cape, the pineapple industry plays a significant role particularly in black communities in terms of employment creation and income generation. Nearly 40 000 workers, mostly coloured women in the Western Cape and black women in the Eastern Cape are employed in the deciduous fruit canning and pineapple canning factories respectively. SAFVCA reports that more than 85 percent of both industries' production is exported, and in the process earns an annual turnover of R1.5 billion. The value of exports is highly dependent on the exchange rate, and the volatility of the South African Rand (ZAR) and the import parity pricing of steel has over the past ten years presented major challenges to the industry.

The industry is highly capital intensive. According to Keetch (2000), at primary fruit production level, some 14 000ha of land has been planted with canning fruit trees at a value of about US$160 million. The replacement value of the canning factories is approximately US$120 million.

The deciduous fruit canning industry produces mainly apricots, peaches and pears. A variety of canned products is produced in different sizes: these include halves, slices, quarters, dices, puree and pulp. Mixed fruits are also canned in fruit cocktail, fruit salad,

two fruits, and three fruits in different pack sizes. Different types of jam are also produced.

2.4.1 Historical overview

According to the National Agricultural Marketing Council (NAMC, 2001), before the Second World War, 60 percent of the total production was consumed by the local market, and balance was exported mainly to the United Kingdom. No exports took place during the war, and almost the entire production was consumed locally. Only a small amount went to the Union Defence Contract.

In the late 1950s and early 1960s, there was a complete change in the local market's share of the total production. Exports to the UK grew to about 70%, and the local market's share of the total production shrunk to 12%, with 18% destined for other markets (NAMC, 2001).

In 1968, the South African Canned Fruit Export Board (SACFEB) was established in the deciduous fruit canning industry in terms of the Canned Fruit Export Marketing Act, 1967 (Act No. 100 of 1967). The marketing functions of the industry were carried out by the Board through its Marketing Committee. This included setting minimum selling prices for products on overseas markets (Keetch, 2000). Parallel to this, the South African Canned Fruit Export Board was established by the Department of Trade and Industry (the dti) at the request of the deciduous fruit canners. This required a special Act of Parliament (Act No 100 of 1967), as the statutory powers of the dti did not extend to the setting up of such a Board. The objectives of this Board were to control and promote the export marketing of the canned fruit on export markets (NAMC, 2001).

In 1987 the SACFEB was absorbed into the Canning Fruit Board (CFB). The CFB's objectives were to regulate the marketing and exportation of canned fruits in terms of the

Marketing Act and Canning Fruit Scheme. The Board established a Marketing Committee to advise the Board on matters relating to the export of canned fruit. The Committee was composed of people from major canning factories and were appointed by the Minister of Agriculture in consultation with the Minister of Trade and Industry. The Board was disbanded in terms of the Marketing of Agricultural Products Act of 1997 on 30 September 1997. Some of the functions performed by the Board were transferred to the newly formed non-statutory Forum. Changes in the marketing environment made it difficult for certain canners to continue to subscribe to the pricing and other marketing controls. As a result, the industry decided that some areas of export marketing should be continued and co-operation and discussions amongst canners would benefit the industry. The Canning Fruit Marketing Committee was retained for that purpose. “Since there were no official discussions or controls over minimum prices, quantity discounts or terms and conditions of sale, canners who wished to pool knowledge and discuss export prices did so independently of the Marketing Committee” (NAMC, 2001).

Despite trade barriers, the industry remains export orientated with over 85 percent of its annual production destined for export markets, mainly the EU and Far East. Currently approximately 10% of the annual production is sold to the local market, with little or virtually no competition. During the Control Board era, production was regulated and the marketing committee fixed prices. The disbandment of the Control Board in 1997 resulted in the industry operating in a free market, where canners decided on their production and prices.

According to the NAMC (2001), in the 1950s, the deciduous fruit canning industry had about 20 different factories varying in size from small, one-man undertakings to a single large co-operative canner, “Langeberg”. A large number of these canning factories were established after the Second World War. Most canneries were situated in the heart of the main fruit producing areas, i.e. in almost every town in the Boland. There were also a number of canning factories located in areas like the Witwatersrand, but use of these meant the fruit and vegetables had to be transported over considerable distances. In the

1950s, Langeberg bought some of the other canning factories in order to eliminate competition and rationalise the purchasing of fruit. However, in 1970 there were still about 14 independent canning factories operating in the Western Cape. In 1973, the industry commissioned an investigation into the rationalisation of the South African fruit canning industry. The investigation concluded that in order to rationalise, the number of canning factories would have to be reduced from the 11 factories then in operation to 7 factories.

The NAMC study went on to indicate that, at the beginning of the 1980s, government introduced a price scheme to support the low prices resulting from world subsidies and over-supply, on condition that the industry took urgent steps to rationalise. Government supported growers who wanted to stop producing canning fruit by paying them to remove their orchards through a voluntary tree removal scheme. Canning fruit factories were also offered financial assistance to stop producing canned fruit, which led to a further rationalisation of canners. Thus by 1990 there were only 5 companies that canned deciduous fruit. One of these companies closed down in 1991, which left Ashton Canning, Langeberg Food Processors Ltd, Rhodes Food Group (Pty) Ltd and SA Preserving Company in operation in 1996.

In 2005, the Competition Commission approved the merger of Ashton Canning Company with Langeberg Food International, and Langeberg Ashton Foods (Pty) Limited was formed. During the 1990s, fruit canning industry's features changed, mainly characterised by a reduction in the number of canneries due to closures and mergers.

In 2006 there were only five canneries left, three for the deciduous fruit canning, namely: Langeberg Ashton Foods (Pty) Limited, Rhodes Food Group (Pty) Ltd and Del Monte Foods, and two for pineapple canning, namely: Summerpride Foods Limited and Collondale Cannery (Pty) Ltd.

By the end of 2007, the Competition Commission approved another merger. This time it was Summerpride Foods Limited and Collondale Cannery (Pty) Ltd, the only two remaining pineapple canners, both situated in East London. The two merged to form Summerpride Foods Limited. The number of fruit canning factories declined by 300 percent from twenty in the 1950s to five in 2007.

2.2.3 Processing volumes

The quantity of processed deciduous canned fruit has been relatively stable during the period under review regarding productivity (1991/92 to 2002/03). The percentage of processed apricots as well as peaches and nectarines generally increased from 1995/6.

Table 2.1: Percentage of total deciduous fruit production processed

	PEARS		APRICOTS		PEACHES AND NECTARINES	
Year	**Total production (tonnes)**	**% Processed**	**Total production (tonnes)**	**% Processed**	**Total production (tonnes)**	**% Processed**
1991/2	212901	37. 65	54938	77.78	160197	67.49
1992/3	247460	32.92	55121	70.86	158217	65.76
1993/4	222589	37.57	52791	69.57	149963	53.54
1994/5	231414	36.30	60177	68.03	183983	59.90
1995/6	233305	42.09	65045	79.38	184871	64.54
1996/7	293864	40.28	66006	76.39	217696	77.90
1997/8	261316	31.04	60605	75.72	195901	78.52
1998/9	275032	39.29	66889	71.83	213961	79.76
1999/00	287554	43.90	50661	77.29	205986	81.09
2000/01	263891	39.00	63679	72.82	148113	75.04
2001/02	337311	40.68	56673	75.17	217844	72.42
2002/03	303459	37.52	50276	69.87	332224	80.09

Source: Deciduous Fruit – An international National Review; Department of Agricultural Economics (University of Free State; May 2004)

Despite a relatively stable quantity of deciduous fruit processed, the entire fruit canning industry's profitability has been on the decline since 2003. Considering that 85 percent of the total production is destined for export, the industry's competitiveness is highly dependent on the exchange rate.

2.2.4 Fruit intake

Three types of fruit, peaches, apricots and pears of which the former and the latter have two cultivars, each produced by the canning fruit farmers and supplied to deciduous fruit canning factories in the Western Cape.

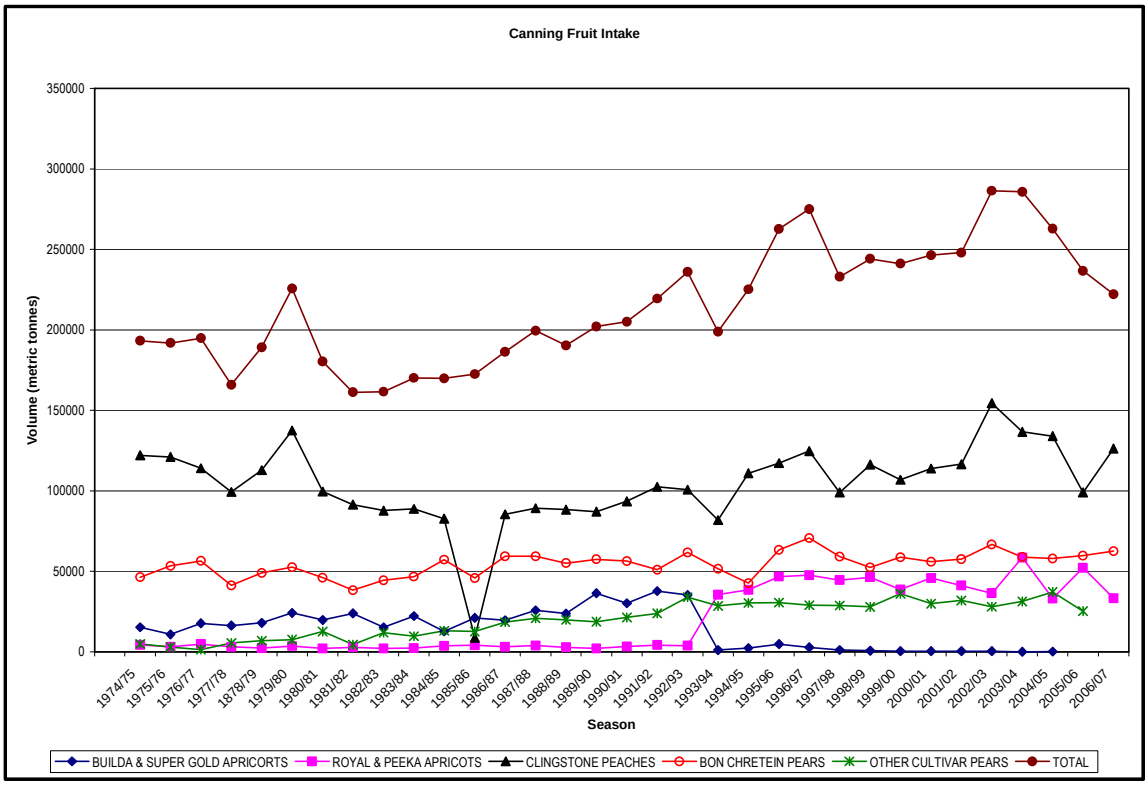

Figure 2.10: Annual intake of canning fruit
Source: Canning Fruit Producers Association (2008)

Data from the South African Canning Fruit Producers' Association (SACFPA) on volumes of fruit intake for over 30 years indicates that the intake of all canned deciduous

fruits increased steadily with the exception of Bulida and super gold apricots. The fruit type that had the highest intake in volume was Clingstone peaches. Despite the challenges that the industry has been through over the years, the total deciduous fruit intake has been generally on the increase, with the exception of a few seasons, namely 1977/78, 1980/81, 1988/89, 1997/98, 1999/00 and most recently 2004/05 to 2006/07. The 2004/05 to 2006/07 decline in fruit intake should, however, not be a cause for concern for the fruit canning industry. Figure 2.10 indicates that, considering the production level of the preceding season, it seems to be a normal industry trend. Industry stakeholders could be tempted to console themselves by stating that the 2004/05 to 2006/07 season intake is not new to the industry, and should therefore be accepted as a normal industry trend.

2.2.5 Industry challenges

The industry is faced with a number of challenges:

(a) Under utilised processing facilities

The industry's production facilities are at full operation during the harvest season when fruit comes from the farms and gets processed and canned. Unlike other industries such as the grain industry, fruit must be processed as soon as it is delivered from the farm because of its perishable nature. The deciduous fruit canning industry utilises their production capacity in full for an effective five months, starting from third week of November until mid April. After and before the harvest season, when the fruit canneries are not operating at full capacity, capital cost related to the production capacity is incurred for the full year. In the quest to make canneries competitive, expensive production equipment has to be used, which unfortunately has to be left idling for the better part of the year (around seven months in a season) waiting for the next production season.

(b) High warehousing costs

The perishable nature of fruit requires canneries to process fruit quickly to prevent loss of quality. This results in canners incurring high warehousing costs and also having money, which could be used to finance other business operations, being held in stock waiting for an order to be placed, delivered, invoices issued and paid.

"SA fruit processors have investigated the possibility of holding export inventory stock abroad, in order to reduce the cost of warehousing in South Africa's relatively high interest-rate environment. However, in all cases base warehousing cost differentials between South Africa and wealthier countries are larger than the difference in proportional shares of inventory cost driven by interest rates. One measure firms do take to reduce inventory cost is keeping stocks unlabelled in order to preserve flexibility to label and dispatch in response to shipping requests triggered from buyers. All processors use modern logistics control systems, aspects of just-in-time distribution are thus present in South Africa's processed fruit industry model" (Ross, 2007).

(c) Exchange rate

Eighty-five percent of canned fruit is exported resulting in the industry being exposed to exchange rate fluctuations. The depreciation of the ZAR boosts the competitiveness of the industry, whereas the appreciation of the Rand weakens the industry's competitiveness. A volatile exchange rate creates management problems for canneries and exposes the industry to unforeseen situations having an adverse effect on the competitiveness of the industry. Exchange rate is, by and large, uncontrollable, but can be managed and has a direct influence on the competitiveness of any export focused industry.

(d) Transport costs

Transport costs are relatively high mainly due to long distances to export markets and they are paid in foreign currency. Exchange rate fluctuations create management problems in terms of estimating transport costs and making proper budget provisions. The transport costs are further increased by high port charges and the situation is made worse by congestion at ports. High transport costs are undoubtedly a major constraint that affects the competitiveness of the industry in price sensitive markets.

(e) Price

In addition to labour costs and price of fruit, canners identified the price of tin as one of the main challenges facing the industry. “Cans constitute the single largest cost component for the fruit-processing industry. Their share, which has been constant at 30 percent to 31 percent for at least ten years, is 5 percent higher than the cost of fruit” (Ross, 2007). Tin used by canneries is made from steel, which is locally produced and sold at import parity price. The fruit processing industry does not obtain tinplate at prices that reflect the general distance from purchasing power parity in Rand values of domestically produced inputs (Ross, 2007). Two main tin manufacturers in South Africa who supply the fruit canning industry are Nampak Div Food and Carnaud Metal Box, and both source their raw material (steel) from ArcelorMittal, a multinational steel producing company. Local tin suppliers are protected from overseas suppliers by import duties on steel imports. These import duties technically prevent canneries from sourcing competitively priced tins from overseas suppliers.

(f) Payment arrangements between farmers and canners

One of the most important stages of the deciduous fruit industry value chain is fruit production. Upstream, farmers face a challenge as a result of payment arrangements between farmers and fruit canning factories. Because farmers are price takers and

produce a highly perishable product, it leaves them with very little room, if any, to negotiate favourable contract terms with fruit canning factories. This situation leads to most processors entering into contracts that require farmers to accept delayed payments, with portions of payments typically being paid well after the end of the growing season. Some contracts have fruit prices linked with actual export revenue generated after shipment of stock after the processing season. The financial well-being of growers is of critical importance as suppliers of a vital production input. Contractual arrangements between growers and processors that allow the shifting costs from processors to growers' sustainability is questionable and presents an unfortunate opportunity for adverse consequences to befall the industry in the near future.

2.5 Summary

This chapter presented an overview of both the South African and global deciduous fruit canning industry. A detailed historical overview of the South African canning industry was provided and key challenges that face the industry have been highlighted. The global fruit canning trade patterns were also articulated.

Looking at the history of both the South African and global fruit canning industry, it is clear that requirements of providing enough food for the army during wars that were fought in Europe in the 1700s have been of great significance in the history of modern deciduous fruit canning. The Civil War in America also made a significant contribution to making canned food popular (Clark, 1977).

Despite all challenges faced by the South African industry in global export markets, South Africa successfully occupied the second place in world canned deciduous fruit export in 2007 with a total of 781 836 tonnes (Canned Foods World Trade Year Book, 2008). Considering countries with which South Africa is in competition as indicated in figure 2.1, and the support that these countries offer to their agricultural industries, South

Africa's second position in world canned deciduous fruit export proves South Africa's competitiveness in the global export market.

The industry faces a number of wide ranging challenges which have been explained in detail. Identification and detailing of industry challenges is one of the most critical parts of the study. It provides a better understanding of some of the issues that impede the prosperity and competitiveness of the industry. Knowing these issues and understanding the impact that these issues have on the industry contributes to developing strategies that respond much better, turn the industry around and put it on a sustainable growth and competitiveness path.

CHAPTER 3

PERFORMANCE AND COMPETITIVENESS OF THE SOUTH AFRICAN DECIDUOUS FRUIT INDUSTRY

3.1 Introduction

This part of the study analyses identified aspects of the industry such as: canned fruit exports volumes, labour costs, cost of packaging material (cans), price of sugar, exchange rate, trade agreements and quality control and food safety. These aspects assist in assessing the industry's competitiveness. All identified aspects of the industry used in assessing the industry's competitiveness are studied separately and the results thereof indicate where the South African industry is better than its competitors in the EU market.

Globally, the South African Deciduous Fruit Canning industry's position in terms of production volume is impressive. The position that the industry occupies in the global market serve as a good indicator of its competitiveness in that market. Despite the protection offered to EU fruit canning industries in terms of subsidies, technical barriers to trade and tariffs, trade data from the Canned Foods World Trade Yearbook (2008), shows South Africa supplying more canned deciduous fruit to the international market than EU member states fruit canning industries. It is, however, important to remember that the industry's actual position in the global export market varies from one product line to the other.

Tables 3.1, 3.2, 3.3 and 3.4 below, show exports by volume (2002 to 2007) for apricots, fruit cocktail or mixed fruit, peaches and pears respectively. Data in these tables indicates each South African product line's position on the global export market.

In this chapter, the competitiveness of the South African industry is analysed using Balassa's Revealed Comparative Trade Advantage methodology. Industry's competitiveness is further analysed focusing on how the South African industry compares

with other countries on input costs such as labour, packaging material (cans) and sugar. There is also analysis of the impact of the exchange rate on exports, the current trade agreements and third party inspection services by the Perishable Products Export Control Board (PPECB).

3.2 Performance analysis of South Africa's canned fruit export product lines

3.2.1 Canned apricots

In the apricot canned fruit export market, South Africa leads, representing 18 percent share of the global market. This product line has shown an impressive increase of 27.9 percent between 2005 and 2006. South Africa exports more than a number of EU and other countries that form part of the top ten, namely: Spain, Greece, Morocco, China, Netherlands, Italy, Germany, Belgium and Austria.

Table 3.1: Global canned apricot fruit exports by volume (tonnes), 2002-2007

	2002	2003	2004	2005	2006	2007	2007 Market Share	Average annual growth
S. Africa	**23938**	**23596**	**26104**	**20587**	**34486**	**24856**	**18%**	**6%**
Spain	36133	34116	30564	25678	27350	23732	17.2%	-8%
Greece	17263	20296	23349	26978	23472	23661	17.2%	7%
Morocco	14283	13592	13609	13773	14843	14157	10.3%	0%
China	419	3705	3045	5687	8179	12693	9.2%	190%
Netherlands	3268	4220	5463	3722	7573	8534	6.2%	29%
Italy	13306	14101	9272	10272	9104	7719	5.6%	-9%
Germany	9127	6593	8655	8020	6370	6172	4.5%	-6%
Belgium	4537	3488	2831	2467	2480	3522	2.6%	-2%
Austria	1501	2038	2135	1647	1721	2222	1.6%	10%

Source: Canned Food World Trade Yearbook, 2008

Between 2002 and 2004, Spain occupied the first spot in global canned apricot fruit exports, but slipped to the second position in 2005, and Greece took the first spot. It would be interesting to look at South Africa's position after the 2008 Canned Food World Trade Yearbook is released.

In terms of average industry growth, at an average annual growth of 6 percent, South Africa was amongst the five countries that showed a positive growth between 2002 and 2007. A phenomenal growth of 190 percent was seen in China. It is worth noting that China was an insignificant exporter before 2002, and has been growing at a rate that can easily put it first. For the period under review, South Africa was in the first spot with a very tight margin above Spain.

3.2.2 Canned fruit cocktail or mixed fruit

In the export of canned fruit cocktail, also known as mixed fruit, South Africa has a poor position in the global export market when compared with other product lines, but formed part of the top five. At number five it was responsible for 5.9 percent share of the 2007 global market.

Table 3.2: Global canned fruit cocktail exports by volume (tonnes), 2002-2007

	2002	2003	2004	2005	2006	2007	2007 Market Share	Average annual growth
Thailand	75408	79438	84988	94134	96673	80054	15.6%	2%
Philippines	59001	41313	45188	53397	62927	65353	12.7%	4%
Italy	81178	80213	72591	67546	62068	56822	11%	-7%
China	3150	4429	7757	15964	20745	47110	9.2%	76%
S. Africa	**31987**	**35247**	**31376**	**35961**	**32175**	**30273**	**5.9%**	**-19%**
Germany	32756	33703	37037	33368	32945	30147	5.9%	-1%
Greece	20336	16606	16299	19508	26528	29621	5.8%	9%
USA	12800	12245	15016	21373	20130	18908	3.7%	10%
Belgium	8839	7192	5861	6022	6323	16892	3.3%	27%
Spain	9667	6721	10392	12366	16547	16577	3.2%	19%

Source: Canned Food World Trade Yearbook, 2008

The key players in the global export market include Thailand, Philippines and Italy with double digit percentage share of the 2007 market, claiming 15.6, 12.7 and 11.0 respectively. Once again, China's average industry growth of 76 percent far surpassed that of all other top ten exporters. The South African industry's exports declined by a significant 19 percent.

3.2.3 Canned peaches

The South African canned peach fruit industry showed a poor performance in terms of volumes of exports when compared with other product lines with the exception of canned fruit cocktail. However, South Africa featured in the top five exporters. Its 2007 share of the market was 7.5 percent and export volumes declined by 15.8 percent between 2006 and 2007. It is also in this product line that South Africa's competitiveness with EU member states on volumes of export to the global market is much poorer, with more than one EU member state's performance being better.

Table 3.3: Global canned peaches exports by volume (tonnes), 2002-2007

	2002	2003	2004	2005	2006	2007	2007 Market share	Average annual growth
Greece	324893	168880	167492	252227	277119	296234	35.6%	4%
China	45812	80628	71090	77404	92529	148473	17.8%	31%
Spain	82480	100017	73133	57995	77995	78070	9.4%	2%
S. Africa	**63581**	**77168**	**70522**	**80157**	**53830**	**62320**	**7.5%**	**2%**
Chile	36945	50448	54029	60290	50886	57494	6.9%	11%
Argentina	12197	33591	24484	18134	33740	32451	3.9%	41%
Thailand	7748	11479	18295	21831	27217	32051	3.8%	34%
Italy	39451	38966	30974	26466	25524	26149	3.1%	-7%
USA	16621	41649	36444	28639	24184	23865	2.9%	20%
Germany	22106	19018	25487	32530	24694	16931	2%	-2%

Source: Canned Food World Trade Yearbook, 2008

Of all EU member states, South Africa's export volume only exceeded that of Italy and Germany, and was surpassed by Greece and Italy. Greece's percentage share of the market far exceeded that of China, the second best exporter. Its share was exactly double that of China and claimed more than a third (33 percent) of the total global market in 2007.

China appears to be the country to watch, with an increase of 224 percent in volume of exports between 2002 and 2007. The latest figure from the Canned Fruit World Trade

Yearbook (2008) shows an increase of 15.8 percent between 2006 and 2007 in exports from South Africa, and this after a decline of 19.5 percent between 2005 and 2006.

3.2.4 Canned pears

Globally, South Africa is hailed as a premium canned peach producer. This industry's position in terms of product quality can be said to be in line with its rating in terms of export market share.

Table 3.4: Global canned pear exports by volume (tonnes), 2002-2007

	2002	2003	2004	2005	2006	2007	2007 Market share	Average annual growth
China	14916	22713	29985	34604	36079	61073	32.2%	35%
Italy	42730	40089	35675	35907	37354	44337	23.4%	1%
S. Africa	**27062**	**29465**	**25333**	**22980**	**36281**	**26494**	**14%**	**-11%**
Spain	17256	14703	15657	15825	18987	13356	7%	-3%
Germany	7194	6426	6355	8290	7287	10230	5.4%	9%
Australia	22264	25777	17685	16995	14291	9027	4.8%	-14%
USA	5822	3915	7288	8929	13273	6447	3.4%	15%
Thailand	1752	3119	4426	5514	5220	4212	2.2%	24%
France	3761	2717	3515	2884	2816	2945	1.6%	-3%
Netherlands	5207	6015	4992	3929	3831	2573	1.4%	-12%
Belgium	1438	1378	1273	1363	1249	2201	1.2%	35%

Source: Canned Food World Trade Yearbook, 2008

South Africa was the third best performer in terms of canned peaches export volumes in 2007, with 19.7 percent of the global market share and an impressive 36.9 percent between 2006 and 2007. South Africa was in the second position in terms of global exports in 2006, but later dropped to the third position in 2007 and recorded a global market share of 14.0 percent. Its average annual growth declined significantly by 11 percent. This is a concern, in view of the fact that, South Africa produces premium products. Its demand, together with other premium products, should be on the increase given the growth in premium products market at global level. Under this product line, the countries that had the highest average annual growth in export volumes during the period

under review are China and Belgium. Their industries grew by an average of 35 percent. Australia's performance in terms of average annual growth was the worst, with a decline of 14 percent.

3.3 Estimating the relative trade advantage for South African trade in canned deciduous fruit

To understand the competitive performance of South Africa on the global market, the competitiveness index for these products was estimated employing Balassa's RTA method. Using data sourced from the United Nations Conference on Trade and Development (UNCTAD) global trade statistical database and the Canned Fruit World Trade Yearbook the RTA index was determined for canned apricots, pears, peaches and fruit cocktail (mixed fruits) as follows:

$$RTAiv = RXAiv - RMPiv$$

Where for $(n+v)$ countries and $(m+i)$ products.

$$RXAiv = [Xiv / \sum_{n=1}^{u} Xin] / [\sum_{m=1}^{h} Xmv / \sum_{m=1}^{h} \sum_{n=1}^{u} Xmn]$$

$$RMPiv = [Miv / \sum_{n=1}^{u} Min] / [\sum_{m=1}^{h} Mmv / \sum_{m=1}^{h} \sum_{n=1}^{u} Mmn]$$

- $Xiv(Mvi)$ = Value of SA export (imports) of a given product e.g. canned peaches.
- $\sum_{n=1}^{u} Xin(\sum_{n=1}^{u} Min)$ = Total Value of SA exports (imports) of the product from all countries except SA.
- $\sum_{m=1}^{h} Xmv(\sum_{m=1}^{h} Mmv)$ = Total Value of SA exports (imports), except for the given product, e.g. canned peaches.
- $\sum_{m=1}^{h} \sum_{n=1}^{u} Xmn(\sum_{m=1}^{h} \sum_{n=1}^{u} Mmn)$ = Total Value of World exports (imports) of all other products.

The formula on the previous page was adopted from Van Rooyen and Esterhuizen's (2005) study that investigated the competitiveness of the South African wine industry.

The indices RXA and RMP are calculated exclusively based on either export or import values. Thus, when brought together in the determination of the RTA, the latter considers both export and import activities. Given the importance and growth in intra-industry and/or inter-port trade, it is noteworthy that the 'RTA indicator implicitly weights the revealed comparative advantage by calculating the importance of relative export and relative import competitive advantages. Values below (above) zero point to a competitive trade disadvantage (advantage)' (Van Rooyen *et al*, 2002).

The results of the analysis (reported in Appendix 2) are summarised in Table 3.5 below.

Table 3.5: Relative revealed comparative trade advantage indices for canned deciduous fruit

	2002	2003	2004	2005	2006
Canned apricots RTA	18.57	28.28	32.89	28.89	36.77
Canned peaches RTA	18.57	24.34	24.57	23.91	17.08
Canned pears RTA	37.54	39.08	35.26	32.93	36.01
Canned mixed fruit RTA	13.64	17.01	14.01	14.40	11.47

Source: Own calculations

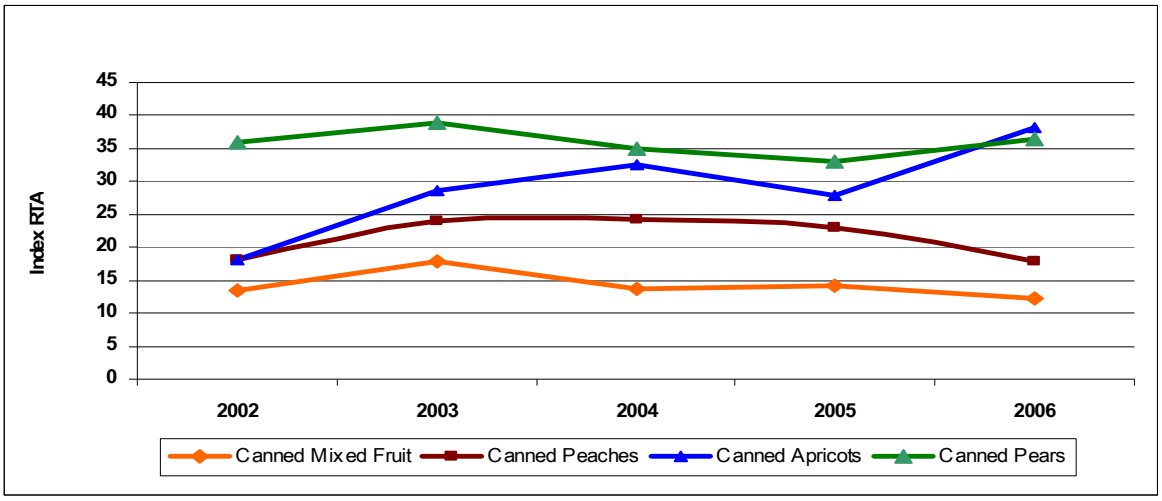

Figure 3.1: Relative revealed comparative trade advantage indices for canned deciduous fruit

Source: Own calculations

The RTA indices determined for the four products confirmed their competitiveness as indicated in terms of volumes sold on the global market, as stated in the preceding section. The indices revealed highly competitive products. The indices for 2002 to 2006 for the four products were not just above zero, but for all products were between 10 and 40. Comparing the four products for the 2002 to 2006 to competitiveness indices determined by Van Rooyen *et al* (2002) for a range of products in the South African agro-food industry for the period between 1995 and 2002, only the best of the main export products during the latter period compare with the four canned products under study. Only products such as oranges (14.37 to 19.72), grapes (11.31 to 16.88), avocado (15.27 to 12.32), grapefruit (12.83 to 18.93) and groundnuts (unshelled) (10.52 to 17.02), among the primary products; and maize meal (12.73 to 4.84 for 1995 and 2002 respectively) among the value-added products can be classified within the same range of competitiveness. In addition to their strong export performance, by implication of the mathematical formula, the negligible import values for the four products would contribute to the high RTA index values, since imports tend to reduce the magnitude of the index.

However, while the period under investigation is a relatively short period for any conclusions to be drawn on the long-term performance of the products on the global market. Figure 3.1 clearly demonstrates that only canned apricots recorded a significant improvement in competitiveness, measured by the RTA index. The RTA index indicates that competitiveness declined slightly for the other three products between 2002 and 2006.

3.4 Comparative analysis of production input costs in South African canned fruit industry

The support and protection offered to EU fruit canners by their governments, in the form of subsidies and tariffs, gives EU fruit canners an unfair advantage in the global canned fruit market over other countries, like South Africa, that do not enjoy the same support

and level of protection from their countries. Support measures in the form of subsidies enjoyed by EU fruit canning industries enables fruit processors to source fruit from their farmers at a competitive price compared to what South African processors pay their farmers. It would be correct, before making any kind of fruit price competitiveness analysis, to assume that EU farmers' fruit price to processors is much better than that of their competitors who do not have subsidies and high import tariffs. Being less competitive on the price of fruit from farmers to processors does not mean that all is lost for the South African industry. As detailed below, it is clear that there are other production input costs where the South African fruit canning industry is competitive.

3.4.1 Labour costs

One of the most important factors of production that this study analysed for the purpose of assessing the industry's competitiveness is labour. All manufacturing industries require the lowest possible cost of labour to boost their competitiveness. This part of the study analyses the cost of labour as one of the key factors of production that is used to determine the industry's competitiveness.

Table 3.6: Factory and field/farm workers wages in hourly rate in selected countries

	Argentina	**Australia**	**Chile**	**Greece**	**S. Africa**	**Spain**	**USA**
Factory wages per hour	$10.50	AUD 21.80	$1,800	€8	ZAR 21.00	€10	US$ 20.00
Field/farm wages per hour	$7.50	AUD 17.44	$1,300	€5	ZAR 10.50	€7	US$ 13.00

Exchange rate to US Dollar	**3.1**	**0.82**	**530**	**1.35**	**7**	**1.35**	**1**
	AR$ per US $	US $ per AUD	CH$ per US $	US $ per Euro	ZAR per US $	US $ per Euro	US $
	Argentina	**Australia**	**Chile**	**Greece**	**S. Africa**	**Spain**	**USA**
Factory wages per hour	**US$ 3.39**	**US$ 17.88**	**US$ 3.40**	**US$ 10.80**	**US$ 3.00**	**US$ 13.50**	**US$ 20.00**
Field/farm wages per hour	**US$ 2.42**	**US$ 14.30**	**US$ 2.45**	**US$ 6.75**	**US$ 1.50**	**US$ 9.45**	**US$ 13.00**

Source: 8th World Canned Deciduous Fruit Conference - Sacramento, California,05-19 April 2007

Table 3.6 contains farm and factory labour costs on an hourly rate in various countries that participated at the 8th World Canned Deciduous Fruit Conference held in Sacramento, California in the USA from 05 to 19 April 2007. Labour costs in Table 3.6 are given in hourly rate for both factory and farm operations. The hourly wage is based on what is paid to workers as the minimum wage legislated in respective countries. This information was collected from industry associations of countries that participated at the above-mentioned conference. The cost of labour of each country was converted (at R7.00 to US$1.00) from that particular country's currency to the United States of America (US) Dollar with the exception of the USA. The conversion of currency to US Dollar made the comparison of all seven countries' cost of labour possible and easy to understand. The last two rows of Table 3.6 indicate factory and farm hourly rates for all seven countries. South Africa's fruit canning industry labour costs at factory and farm level were at US$ 3.00 per hour and US$ 1.50 per hour respectively, making it the most competitive industry in terms of labour costs. USA's labour costs are the highest at US$ 20.00 per hour at factory level, and Australia's labour costs are the highest at US$ 14.30 per hour at farm level. At factory level, all countries with the exception of South Africa, Argentina and Chile, have double digit labour costs (in US $). Argentina's costs at factory level are at US$ 3.39 and Chile is at US$ 3.40. At farm level, all countries have single digit labour costs with the exception of Australia and the USA at US$14.30 and US$13.00 respectively.

China did not participate in the 8th World Canned Deciduous Fruit Conference, and its figures with regard to labour costs could not be part of Table 3.6 since there was no Chinese canned fruit industry delegate present. Nevertheless, China is known to be very competitive in many sectors of the global economy in terms of labour costs, and it would not be surprising if, when compared with other global players, it were found to be competitive in terms of labour costs. The China industry's growth, indicated in Tables 3.1 to 3.4 is a good indication of its competitiveness, but not necessarily in terms of labour costs, as these tables focus only on production costs.

In summing up this analysis, one can confidently conclude that the South African fruit canning industry has the lowest cost of labour, making it the most cost competitive fruit canning industry with regard to labour.

3.4.2 Packaging material

Cans are the most popular packaging material for processed deciduous fruit in South Africa, although there is a growing percentage of plastic jars and cups starting to emerge. According to Ross (2007), the can constitutes the single largest cost component for the fruit canner. In his report Ross argued that, over the last 10 years, the can cost has represented a constant 30 to 31percent of the cost of a case of canned fruit. He further comments that lately, the cost of the can is now 5 percent higher than the cost of fruit inside the can. Most of the tinplate used in can-making in SA is supplied by ArcelorMittal, an international steel manufacturer, with a tinplate production unit in Vanderbijlpark in Gauteng province. ArcelorMittal is the only supplier of tinplate in South Africa. ArcelorMittal base their price of tinplate on the average published prices in US Dollar from eight (8) tinplate producers around the world. This average price is then factored by the exchange rate change from one year to the next. ArcelorMittal does not enjoy any local market protection by way of import duties on imported tinplate, or cans and components. Their input costs such as iron ore and cooking coal, are all internationally traded commodities and therefore, even when produced locally, are traded at world prices. This does put the local fruit industry at some disadvantage, particularly as more than 85 percent of all fruit canned in South Africa is exported. ArcelorMittal has, however, over the past several years been paying a rebate of R600 per ton of tin plate used to assist canners in their exports. This rebate represents about 6 percent of the can price (including its contents) of canned fruit exported to any country with the exception of the SACU (Southern African Customs Union) region. The vegetable canning industry is, however, excluded from ArcelorMittal's rebate.

The South African industry's competitiveness in respect of can cost is further hampered by ArcelorMittal's lack of capability to supply double reduced tinplate, which process allows thinner tinplate to be used for can manufacture, without significant loss in the strength of the can. ArcelorMittal can only offer the local canning industry single reduced tinplate. Most of the competing countries, be it Europe, the USA, or the Eastern countries are supplying double reduced plate to the canneries in their regions. In simple numbers the standard 425g can would typically be produced from 0,21mm single reduced tinplate, but this can body thickness could be reduced to 0,17mm if double reduced tinplate were being used.

Other alternative packaging materials that are used by the South African industry, but for specific markets, mainly niche markets, are plastic and glass. Plastic is in the form of jars and cups.

"In 2005 SAFVCA commissioned a research study to investigate packaging trends in the industry. Main conclusions of this study, completed in 2006, were that the can remains, and will remain for the foreseeable future, the dominant container worldwide; but that plastic packaging is growing very quickly in selected (mainly wealthier) markets, albeit from a very small comparative base" (Ross, 2007). Based partly on these findings and partly on their extensive internal research, one firm, Rhodes Food Group, has invested in a plant and commenced production in Swaziland of a plastic fruit cup product with variants in juice and jelly. This can be exported to the EU under the favorable terms of the SACU or Least Developed Countries (LDC). "Production is no longer limited to the fruit cup and other pack variants have been launched. A second firm, Langeberg and Ashton Foods, is in the project feasibility or evaluation phase for plastic packaged products, and a third, Summerpride Foods, showed interest before closing down their operation in 2007. Meanwhile, however, Del Monte has commenced importation of the finished plastic fruit cup into SA, as has Shoprite under the Dole brand" (Ross, 2007).

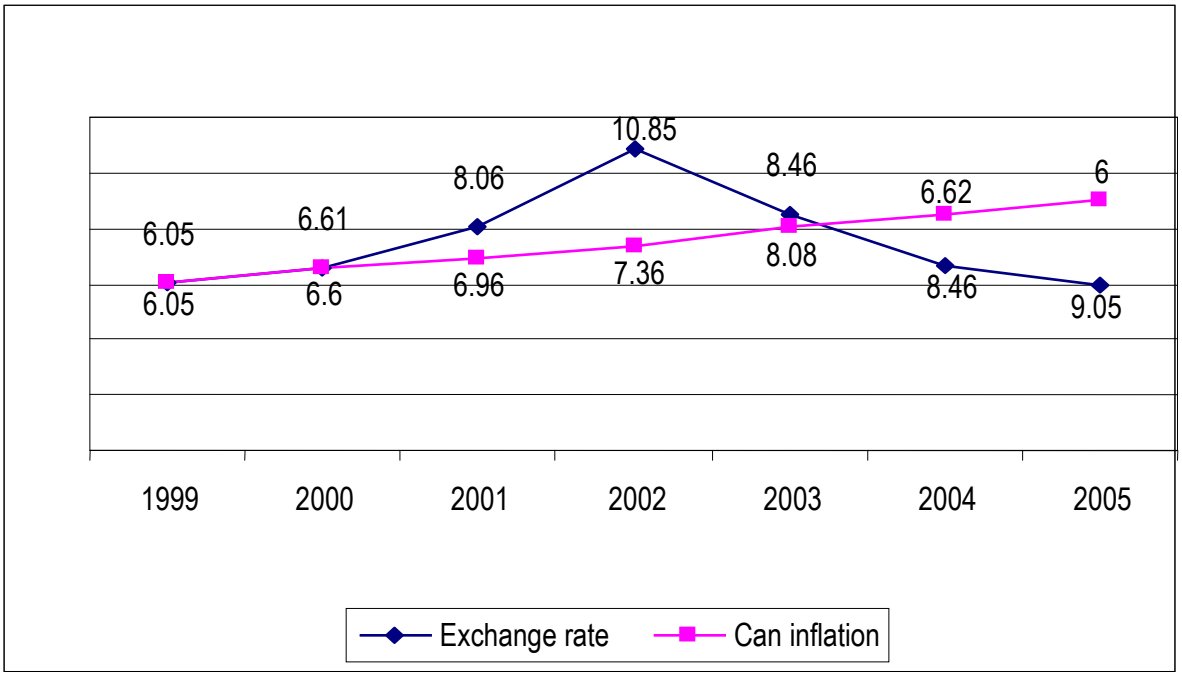

Figure 3.2: Relationship between the exchange rate and can inflation
Source: SAFVCA, 2005

In an industry that is focused on the export market, conventional knowledge dictates that there should be a correlation between the rate of exchange and production input inflation. However, this is not the case with the fruit canning industry. Figure 3.2 above clearly shows that the can suppliers do not respond to the strengthening exchange rate which has a negative impact on the industries competitiveness when the Rand strengthens against the US Dollar. Whether the exchange rate moves for or against canners over the years, can prices keep on increasing during the same period. Because of tinplate being sold at the average world price, factored by the exchange rate, when the ZAR weakens, can manufacturers find themselves on the losing side because they have to pay more ZAR's for their cans. Tinplate prices are, however, adjusted only once a year (April 01) and the average rate of exchange over the previous 12 months is used in the price adjustment calculation. It should be noted, however, that when the ZAR does weaken, the canners immediately start to benefit as they realise more ZARs to the US Dollar/Euro/British Pound on their export sales. It is true that the canners may indeed enjoy such benefit long

before the can makers may be able to recover the costs incurred on imported materials and ingredients between price adjustments.

Can prices are still adjusted according to the formula laid down by the Competition Board when they approved the merger of the Carnaud MetalBox and Nampak metal businesses, excluding food cans, in 1999. The formula specified that the food can manufacturers could recover the full cost increase of raw materials, and the full cost increase of 'non added-value' items, but that all other cost increases would be limited to the average Consumer Price Index (CPIX) increase. This formula was to apply for the following 5 years, but has been honoured by the can makers in the years that have followed since the expiry date of that ruling.

Table 3.7: Price of 1kilogram cans in various countries

	Argentina	Australia	Chile	Greece	S. Africa	Spain	USA
Cost of 1 kg can	$0.560	N/A	$100	1.130€	ZAR 1.33	0.150€	N/A
Exchange rate to US$	3.1	0.82	530	1.35	7	1.35	1
	AR$ per US$	AUD per US$	CH$ per US$	Euro per US$	ZAR per US$	Euro per US$	US $
Price of 1Kg can	US$ 0.181	N/A	US$ 0.189	US$ 0.176	US$ 0.190	US$ 0.203	US$ 0.180

Source: 8th World Canned Deciduous Fruit Conference – Sacramento, California, April 5 – 19, 2007

Table 3.7 illustrates different prices paid by canners for 1 kilogram cans in six countries that compete in the EU deciduous canned fruit market. The price of cans was converted to US dollars so that the price from all participating countries can be compared. The last row of table 3.7 provides various countries' prices for 1 kilogram cans. Of all countries surveyed, South African cans are the second most expensive at US$ 0.190 after Spain. This effectively makes South African industry the second least competitive industry regarding can prices.

3.4.3 Price of sugar

The value chain analysis study done by SAFVCA (2005) indicates that sugar comprises about 6 percent of the cost of processing fruit in South Africa. Ross (2007) argues that of

all major nodes in the processed fruit value chain, the South African domestic sugar industry is the most stringently protected. The Sugar Act administered by the dti enables equitable exposure to the world market for sugar producers whilst the tariff dispensation for sugar rests upon a foundation that triggers the imposition of protective tariffs during periods in which world prices drop below a policy-determined floor. These risk offsets effectively help cross-subsidize production for export. However, this does not appear to be a source of competitive disadvantage for the South African industry because South African sugar policy permits rebates to sugar value-adders for exported sugar value-added products, and this practice is unique to South Africa. “On use of sugar for exported product, the SA fruit processors receive a rebate that represents the difference between the domestic price and the world price in accordance with a formula agreed between SAFVCA and the South African Sugar Association (SASA). Limited benchmarking evidence available suggests that this formula has indeed been allowing fruit processors access to sugar at prices comparable to those faced by competitors abroad” (Ross, 2007).

There are concerns in this area, however. The EU is in the course of extending Common Agricultural Policy (CAP) reform to sugar, the final frontier of agricultural production to which such reform has not yet been applied. This will reduce the price of sugar to European fruit processors, to the disadvantage of the South African industry in its export market (Malzbender, 2003). At least as worrying in this respect is the prospect that the SA industry could be harmed in its domestic sales. Under the terms of the South Africa – EU trade agreement, SA has eliminated its tariff on processed fruit imports from the EU. Therefore, achievement of a cost advantage for European producers with respect to a significant production input implies a threat of import competition (Gibb, 2004). The

lower new sugar regime could improve EU processed fruit margins by up to 3 percent which is far from trivial in the tight margin business of food selling. Note that this potential threat arises not from market distorting policies in the EU, as is historically typical, but benefits the EU processors as a result of trade liberalisation. The result of this would be South African and EU fruit processors having access to sugar at world market

prices and local fruit processors no longer in a position were it cross subsidises export product revenue with local market profits.

3.4.4 Impact of the exchange rate on exports.

In an industry that exports 85 percent of its total production (both deciduous and subtropical), the exchange rate is an important factor with a significant influence on the industry's competitiveness. Any export focused industry's competitiveness is placed on a competitive platform when its country's currency weakens against that of its export products' destination. In the case of the South African Deciduous Fruit Canning Industry, with 50 percent of its exports destined for the EU market, the industry becomes more competitive when the ZAR weakens against the Euro.

Table 3.8: Exchange rate, volume and value of canned deciduous fruit exported to the EU markets from 2000 – 2006

Year	Quantity (tonnes)	Value (R)	Ave. ZAR to US$	Ave. ZAR to Euro
2000	84 089 066	333 036 996	693.53	639.26
2001	74 597 993	379 908 062	860.31	770.56
2002	87 013 637	555 483 339	1051.65	990.31
2003	99 180 429	632 182 375	756.47	853.06
2004	87 052 523	531 563 121	644.99	801.35
2005	98 042 268	481 013 436	636.23	791.29
2006	83 875 107	469 618 469	676.72	851.57

Source: SAFVCA and SARB

Data on export quantity and value of exports in Table 3.8 above clearly indicate the exchange rate's impact on the South African deciduous fruit canning industry's level of

revenue generated in relation to quantity exported. The depreciation of the Rand from 2001 to 2002 had a positive impact on revenue generated. In year 2000 and year 2005, the quantity of exports was higher than that of year 2001 and year 2004, but revenue earned from year 2001 and year 2004 was much more than was earned in year 2000 and year 2005 respectively. The Rand was much weaker against the US Dollar and the Euro in year 2001 and year 2004 compared to its value in year 2000 and year 2005

respectively. This clearly indicates the impact of the exchange rate on the value of exports. The impact of the exchange rate is also seen on quantity of export, but the impact is more on the value of revenue generated.

When the ZAR started to strengthen against the US Dollar and the Euro in 2003, the value of exports was not immediately impacted. This could have been due to the fact that the exchange rate indicated in Table 3.8 was calculated as an annual average, and a significant quantity of canned fruit products could have been exported and paid for during a period when the ZAR was weak during that particular year. Between year 2000 and 2002, and also from 2003 to 2006, Table 3.8 shows a strong correlation between the exchange rate and value of exports.

3.4.5 Trade agreements

On the trade front, the performance of the South African industry in the EU export market is highly influenced by the Trade Development and Cooperation Agreement (TDCA). South Africa's trade relations and development co-operation with the EU are governed by the TDCA. This agreement was signed in Pretoria on 11 October 1999, and was ratified by the EU in April 2004. This agreement aims at encouraging the development and liberalisation of trade in goods, services and capital between the parties, and also to encourage the integration of South Africa in the world economy and to promote co-operation between the EU and South Africa.

In terms of the TDCA, the EU enjoys free access to the South African market for its canned fruit, vegetable and jam products. On the other hand the aforementioned South African products face a duty and quotas in the EU market. Table 3.9 below provides duty applicable on various canned deciduous fruit product lines in respect of which there are very significant exports to the EU.

Table 3.9: Export duties payable to EU by SA

Description	% Duty payable	
	Within quota	Outside quota
Pears	8.30%	16.60%
Apricots	10.80%	21.60%
Peaches	7.90%	15.80%
Mixed	9.60%	19.20%

Source: TARIC (2007)

According to Tariff Intégré Communautaire (2007), which translates as the Integrated Tariff of the European Community, in 2007 the EU allocated South Africa a quota of 49 735 Gross Weight (GW) Tons of Peaches, Pears and Apricots and 22 111 GW Tons of Mixed Fruit. The basis of this quota at the time was 80 percent of historical exports to the EU. The terms and conditions of the TDCA, specifically with regard to EU's free access to South Africa and quota allocated to South Africa, has been and still is to the detriment of the South African industry.

Comparing South Africa with other African and Caribbean processors, the other African and Caribbean countries enjoy better access over South Africa in the EU market. Therefore SA exports its products at a relative disadvantage compared to these countries in Africa and the Caribbean. The South African industry is more advanced and better capacitated compared to other countries in Africa and the Caribbean.

Chile is one of developing economies that competes with South Africa in the export market of canned deciduous fruit to the EU. This country has a comprehensive trade agreement with the EU, as well as one with Japan. Unlike most systems of preferences extended by the EU to Africa, including the TDCA, the special tariffs on processed fruits

enjoyed by Chile are not generally governed by quotas, and are programmed to be phased out to zero between 2010 and 2013. By contrast SA faces quotas and duties which are higher than those levied to equivalent products from Chile.

When SA exports to Japan, the single largest export market, the industry faces the same import terms as all other producers with the exception of Chile, which enjoys uniquely favourable access as a result of a comprehensive bilateral trade agreement. Thus South Africa faces an increasingly significant disadvantage against a major competitor in both of our currently most important export markets (Ross, 2007).

3.4.6 Quality control and food safety

For any exporting country to have a share of the EU export market, it is required to comply with EU food quality and safety requirements. The South African fruit canning industry has been participating in the EU export market for decades and has world-class quality management systems and compliance certifications in place across the industry. These include International Standards Organisation (ISO), Hazard Analysis and Critical Control Points (HACCP), BRC (bioinformatics), IFS (financial systems), SGS (best practice in commodity-based exporting which provides inspection, testing, certification & verification services to ensure that products, services & systems meet quality, safety & performance), and ethical trading or social accountability and traceability (Ross, 2007).

The South African deciduous fruit canning industry is well organized in terms of compliance with product quality and safety requirements. The industry has in place fresh fruit quality grading specifications which are well coordinated across the industry between the fruit growers' organisation and SAFVCA, and published well before each season. The industry also complies with EU export market requirements with regard to control of pesticide residues, an important risk factor that needs to be properly managed for access to the EU export market. With regard to quality control, individual canners grade their own products using published and agreed-on specifications. These

specifications are in line with EU requirements. Unlike other industries in the United States of America (USA), the South African industry does not use a third-party fresh fruit grading system. The SAFVCA fully support the individual canner's quality control system, and are convinced that re-designing the current system to introduce third party inspection system would not add significant value. This view is in light of the rationalization that the industry has gone through over the years since its inception which has increased industry concentration especially at fruit-receiving depots.

In 2006, the SAFVCA commissioned a study to investigate the relevance and impact of the current inspection services performed by the Perishable Products Export Control Board (PPECB) focusing on final product quality as stipulated by the Agricultural Products Standards Act 119 of 1990 (APSA). The study also identified areas of overlays and/or duplication in order to improve the efficiency of inspection services, through amongst others, the elimination of duplication and/or the integration of administrative systems and procedures. APSA is administered by the DAFF and it requires that all perishable products intended for export, and any by-product derived from such product must be inspected for quality. This inspection service is conducted by the PPECB on behalf of the DAFF as stipulated in the APSA at a considerable cost to fruit canners. PPECB inspects and certifies compliance with minimum standards set by the DAFF. Inspection and certification of compliance to minimum standards is mandatory in terms of international agreements and World Trade Organisation (WTO) prescripts.

South Africa is a member of Codex Alimentarius, a commission created by the United Nations Food and Agriculture Organisation (FAO), and World Health Organisation (WHO) to develop food standards, guidelines and related texts such as codes of good practice under the joint FAO/WHO Food Standards Program. This program was developed mainly to protect health of consumers and ensuring fair trade practices in the food trade and promoting co-ordination of all food standards work undertaken by international government and non-governmental organizations. Failing to comply with Codex Alimentarius members' requirements in terms of inspection and certification

service will mean that South Africa is not adhering to international agreed practices and protocols, and therefore cannot participate in the international food export trade. Many countries have adopted food product quality and food safety standards or requirements which are more stringent than those set up by the Codex Alimentarius Commission.

SAFVCA noted that PPECB duplicates tests that were continually performed by member canning companies as part of their standard 'in-process' quality control. The results of standard 'in-process' quality control and PPECB's 'end-point' quality control does not differ in any meaningful way. The maintenance of both 'in-process' and 'end-point' quality control systems does not make business sense. The value stemming from PPECB's costly inspection and certification is questionable. The value added by PPECB in further questioned as importers do not require PPECB certification in respect of canned fruit. The aforementioned leads one to conclude that the PPECB's costly inspection and certification is to the detriment of the fruit canning industry and takes away cost competitiveness because if pushes up canners costs of doing business.

Other countries competing with South Africa in the EU market do not have third party PPECB-type inspection of final product and rely on their internal inspection systems to meet the specifications of buyers. This places the South African fruit canning industry at a disadvantage.

3.5 Summary

Chapter 3 described the performance of the canned deciduous fruit per product line in the global market. It also analysed the competitiveness of the South African fruit canning industry in the EU export market using Balassa's Revealed Trade Advantage (RTA), and provided an analysis of production input costs.

Export volume data collected for the period 2002 to 2007, indicated that South Africa is competitive in two product lines: apricots and pears. In all product lines that South Africa

produces and exports to the global market, mainly the EU which accounts for 50 percent of total exports of canned deciduous fruit, South Africa was rated amongst the top five exporters from 2002 to 2007 in terms of volume. The best performing product line was apricots, which took the first spot in the top ten best performing countries.

The second products line where South Africa performs better that most countries in export volume is pears occupying the second spot. Product lines where South Africa is a bit less competitive in export volumes are peaches and fruit cocktail, with a rating of four and five respectively.

The RTA indices which indicate four product lines' competitiveness in terms of volumes sold on the global market has only apricot with a significant improvement in competitiveness measured by the RTA index.

A survey conducted at the 8th World Canned Deciduous Fruit Conference held in Sacramento, California in the USA from 05 to 19 April 2007 showed that South Africa is the most competitive country on labour costs amongst all countries surveyed. South Africa managed to achieve this despite the existence of minimum factory and farm wages which some industry players view as a constraint to competitiveness.

The use of cans as the most preferred packaging material by the export market puts the South African industry in a difficult position due to very high tin prices, which account for 30 percent of the total canned fruit production cost. High can prices erode the gains from other areas of the fruit canning industry where South Africa is competitive.

Over reliance of the fruit canning industry's competitiveness on the weak exchange rate (i.e. US Dollar and Euro) has proved to be problematic, and will continue to be for the years to come if alternative markets are not developed.

The unfair treatment of South Africa by the EU regarding trade arrangements needs to be attended to as a matter of urgency. The lack of a reciprocal arrangement between South African and the EU on canned fruit trade has created a very uneven trade platform with odds stacked against South Africa. Duties charged to South African products in the EU market further erode the little competitiveness that the South African industry is battling to retain in the EU.

While the inspection of canned fruit and issuing of export certificate by the PPECB is important for the South African fruit canning industry, the fruit canning industry believe that the quality control part of the PPECB work done by this agency is irrelevant as quality is a matter between the buyer and seller. This practice increases the food inspection bill to the industry and further erodes competitiveness.

CHAPTER 4

DETERMINANTS OF THE COMPETITIVENESS OF THE SOUTH AFRICAN FRUIT CANNING INDUSTRY

4.1 Introduction

For any industry to survive in today's highly competitive business environment, it is crucial for that particular industry to determine and effectively address factors related to competitiveness. South Africa is not an exception to that rule as it faces EU export market trade barriers such as farmer subsidies offered to EU producers, tariffs and quotas imposed on South African exporters, and stringent SPS requirements, and other factors that impact one way or the other on the industry's competitiveness.

Determining the industry's competitiveness will assist to better understand its position in targeted markets. This will enable key industry stakeholders to develop strategic approaches to ensure the industry's sustainability.

The Porter methodology is used in this Chapter to analyse the industry's competitiveness. It analyses an industry's performance in six broad areas. This methodology presents the advantage of answering basic competitiveness questions in a simplified way. This includes:

(a) How competitive is the South African deciduous fruit canning industry?
(b) What are the key success factors and the constraints impacting on the competitiveness of the South African deciduous fruit canning industry? and
(c) How can the competitiveness of the deciduous fruit canning industry be enhanced i.e. strategic interventions to achieve competitiveness?

To unravel the reasons behind the high performance of the four canned products being considered, a perceptions survey was conducted, using a structured questionnaire. Stratified, quota (non-random) sampling of available and willing industry leaders was

undertaken in the main deciduous fruit production areas of the Western and Eastern Cape Provinces. Sampling stratification was done along industry sector lines and the objective of quota allocation was to ensure representation of sufficient numbers of main industry role players in the different categories as follows:

1. Canning fruit producers/farmers
2. Can manufacturers
3. Fruit canners
4. Labour union in the fruit canning industry
5. Fruit Canning Industry Association/Organisation

The Porter methodology employed in this study, evaluates the competitiveness of all the different players on the supply chain. The methodology was thus employed in an industry-wide analysis of a cross-section of 10 organizations.

4.2 Descriptive analysis of respondents

A sample of 10 was drawn from the management of the canned fruit supply chain, including three fruit farmers, four fruit canners, one can manufacturer, the industry labour union, and the fruit canners association. The structure of the sample of organizations drawn is characterised by the fact that 50 percent of the total sample was big business, with a turnover of over R100 million (and 500 or more employees), 20 percent had a turnover from R10 – 50 million, and another 20 percent a turnover of from R1 – 10 million. The remaining 10 percent represent the labour union and industry association. Both provide service to their members and do not generate income, hence they do not have a turn over.

A significant number of respondents employ fewer than 500 people. Half of all respondents, 50 percent to be precise, that participated in this research employ more than 500 people.

Table 4.1: Descriptive analysis of respondents

Turnover		Employment	
% of respondents	**Amount**	**% of respondents**	**Number of employees**
50	>R100 million	20	1 to 10
20	R10 to R50 million	10	11 to 50
20	R1 to R10 million	10	51 to 100
5	0	10	101 to 500
5	0	50	>500

4.3 Investment in the industry

For an industry to be attractive to investors, it must be competitive. A correlation analysis done by Doyer and Van Rooyen (2002), indicated a correlation coefficient of 78 percent which confirms this phenomenon. The study proves that investment levels in the agro-food industry have dramatically declined since the early 1980s. They started to increase again in 1993/94 but have again declined since 1996/97. The former can be said about the fruit canning industry. From the 1970s, the number of canners started to decline, indicating a decline in investment. One of the main reasons for this phenomenon is the industry's quest for competitiveness. The merger of fruit canning companies seeking to leverage on each other's strong points in an attempt to be competitive and remain in business further supports the decline in investment. As already indicated in Chapter 2, between 1950 and 2006, the number of deciduous fruit canners declined enormously by 600 percent from 20 canners in 1950 to three in 2006. The reduction was mainly as a result of closure, mergers and rationalization of the industry.

The enormous decline in the number of factories indicates lack of new investment in the industry. This shows that investors are wary of considering fruit canning as an investment option. The reason could be due to the industry reportedly making losses and losing market shares and being faced with trade challenges in key export markets, namely EU and Japan.

4.4 The relationship between competitive indices and research and development and technology at industry level

Doyer and Van Rooyen (2002), analysed the correlation between competitiveness and the rate of return (ROR) on research and technology in the cattle, wheat, maize, groundnuts, wine grapes and apples in South Africa. This analysis gave a high correlation of R^2 = 0.69. Their analysis further indicated that where the ROR is high, a high competitive index rating is observed. Investment in research and development clearly confirms the strong relationship between competitiveness and research and development.

Compared to other agro-food industries in the agro-processing sector, limited research has been done in the South African fruit canning industry, hence the difficulty in the availability of published industry specific research compared to other agro-processing industries. According to Porter (1990), research and development, and technology development are important drivers for improving productivity, which in turn enhances competitiveness. Hence the lack thereof will impact negatively on competitiveness, which is the case in the fruit canning industry. Most progressive industries in the agricultural and agro-processing sectors have industry associations with official websites that make available to the public industry research and technology development information. SAFVCA has been without a website for many years, and only launched their website in mid 2008. It still has to be improved to ensure that critical business and investment decision-making information can be made available to relevant industry stakeholders for the benefit of the industry. Lack of access to industry information by various stakeholders has a potential of making the industry very “closed” and unknown to potential investors because industry information that should be made available to the public, including potential investors, is not readily and easily available and accessible.

4.5 Empirical determination of the factors affecting the competitiveness of the deciduous fruit canning industry: An application of the Porter methodology.

Empirical determination of the factors affecting the competitiveness of the deciduous fruit canning industry will be analysed making use of the Porter methodology. This methodology will show how competitive the South African industry is. Determinants of competitiveness as described by Porter (1990, 1998) will be used to analyse the key success factors that established competitive advantage and constraints that impacted negatively on competitiveness with regard to the South African deciduous fruit canning industry.

Porter's (1990, 1998) theory of "competitive advantage" provides a framework to identify the many factors that influence competitiveness and to show how they relate to each other and to the economic performance in a global economy.

In analysing the industry competitiveness, Van Rooyen, *et al* (2002), identified three key questions to be asked, and they are: When and why is an industry internationally competitive? How sustainable is the position?

The main Porter determinants are rated as constraining (1 – 3), neutral (4), or enhancing (5 -7) to the competitiveness of the industry, based on simple arithmetic means calculated from the responses of the respondents sampled.

It should be pointed out that while the ratings indicated below are averages, the individual (and categories of industrial sector) respondent rating of various factors may be quite different from the mean, often the rating of farmers being in opposition to that of fruit canners.

According to Porter (1990, 1998) the answer lies in the performance (measured in six broad criteria or attributes) that shapes the environment in which firms compete in order

to promote the creation of competitive advantage. These are discussed in the various sections below.

4.5.1 Factor conditions

Factor conditions refer to the quality of factors of production, natural resources, level of production cost of labour, diesel, pesticides, machinery and infrastructure, necessary to compete in a given industry

4.5.1.1 Labour conditions

Labour conditions refer to labour related variables such as availability of skilled labour, quality of skilled labour, cost of skilled labour, availability of unskilled labour, quality of unskilled labour, cost of unskilled labour and the impact of labour unions in South Africa. These variables have an impact in the competitiveness of the fruit canning industry. The general perception expressed by respondents on labour conditions was analysed and the average ratings of repondents' perception on the above-mentioned labour conditions are presented in Table 4.2 below.

Table 4.2: Labour conditions ratings

Labour conditions:	**Average rating according to the Porter determinants**
Availability of skilled labour	3
Quality of skilled labour is South Africa	4
Cost of skilled labour in South Africa	4
Availability of unskilled labour in South Africa	6
Quality of unskilled labour in South Africa	3
Cost of unskilled labour in South Africa	3
Impact of labour unions on productivity	3

Source: Own calculations

The results of this analysis suggest that the availability of skilled labour in South Africa is a key challenge facing the industry while unskilled labour is available in abundance.

"The New Economy has led to an increasingly global labour market, where the demand for skilled labour is growing while that for lesser skilled labour is decreasing or stagnant. In South Africa, a massive brain drain is occurring as academics and skilled personnel are lost by emigration. At the same time, unskilled economic refugees are pouring in from neighbouring countries looking for a better life in South Africa" (Wöcke and Klein, 2002). This observation that was made by Wöcke and Klein can be attested to by a total of 80 percent of the respondents who concurred that availability of skilled labour in South Africa is difficult; ten percent had a neutral view on this issue whereas another 10 percent view labour as not a constraint. This perception was confirmed by an average rating of 3, which indicates that lack of skilled labour is a constraint in the competitiveness of the industry. Skilled labour that is difficult to obtain includes, food technologists, seamer mechanics, general artisans, forklift operators, middle and senior managers. The fruit canning industry competes with other Fast Moving Consumer Goods (FMCG) industries, for these skills. In addition to these skills being in short supply, it is difficult for the fruit canning industry to keep people with such skills because other bigger food processing companies offer better remuneration and better working conditions.

The industry has a shortage of skilled labour, nevertheless a large number of respondents believe that the quality of skilled labour is of a high standard and amongst the best in the world. This includes seamer mechanics and food technologists. Forty percent of respondents considered the quality of skilled labour in South Africa to be of poor quality, and 60 percent of respondents found the quality of skilled labour to be amongst the best in the world. The average rating on this variable was neutral.

In order for the fruit canning industry to get and keep any skilled personnel that can be easily employed in other industries, they must be prepared to offer remunerations and employment conditions better than other industries are offering. The competition for skilled labour such as financial managers, that exists within the fruit canning industry and also with other non fruit canning industries puts pressure on the industry to continuously offer better remuneration and working conditions. The analyses of respondents'

perception on this matter indicated that 60 percent of respondents believe that what business pays for skilled labour is too high, and 40 percent find it to be affordable. The cost of skilled labour in South Africa was viewed to be neutral with an average score of four.

South Africa is characterised by high levels of unemployment and abundance of unskilled labour. According to anecdotal knowledge, one of the key factors that contributes to high levels of unemployment is the lack of people with skills that are currently required by the economy, and not necessarily the lack of job opportunities. Job opportunities exist, but there are not enough people with required skills. Unskilled labour includes general factory and farm workers whose jobs can be done by almost all able-bodied people who have reached a legal working age. In theory, high supply of unskilled labour would make unskilled labour affordable, however 60 percent of respondents indicated that unskilled labour in South Africa is too costly. This is probably due to South African labour laws such as minimum wages that have been set for all sectors of the economy including agriculture and its downstream industries such as agro-processing and fruit canning in particular. This view is contrary to the results of a survey on daily factory and farm labour costs in various countries that participated at the 8th World Canned Deciduous Fruit Conference held in Sacramento, California in the United States of America (USA) in April 2007. The results of this survey showed that South Africa's fruit canning industry labour costs at factory and farm level was at US$ 3.00 per day and US$ 1.50 per day respectively, making it the most competitive industry in terms of labour costs. The survey excluded China because they did not participate in the conference. China has a reputation for being very competitive in many sectors of the global economy in terms of labour costs, and it will not be surprising if when compared with other global players, is found to be competitive in terms of labour costs. The details of this survey are discussed under item 3.2.1 of Chapter 3.

Thirty percent of respondents believe that unskilled labour in South Africa is affordable, and ten percent were neutral on the matter, and the average rating of all participants was

also neutral on the matter. Even though they are unskilled, there is a particular level of competency expected from them in what they do. Forty percent considered the quality of unskilled labour in South Africa to be of international standard. Considering the skills related challenges that the industry has, it is not suprising to see 60 percent of respondents indicating that the quality of unskilled labour in South Africa is below international standards. The quality of unskilled labour in South Africa is viewed as a constraint to the industry's competitiveness. Labour unions were strong and vocal stakeholders that lobbied for a higher minimum wage in all sectors of the South African economy before a requirement to pay minimum wages came into law. In all sectors of the economy, labour unions continue to advocate better remunerations and employment conditions for their members to the dismay of fruit canning and other companies in the main stream of the fruit canning industry such as can manufacturing. Sixty percent of all respondents view labour unions in the fruit canning industry as a hindrance to productivity improvements, 30 percent were neutral on the matter and 10 percent said they contribute to productivity improvements.

Labour conditions such as availability of skilled labour, quality of unskilled labour, cost of unskilled labour and impact of labour unions on productivity of the industry were viewed as a constraint in the competitiveness of the South African Industry. Those with an average score of four, such as quality of skilled labour and cost of skilled labour are viewed to be neutral to the industry's competitiveness. The only variable in labour conditions that came out as an enhancement to the industry's competitiveness is the availability of unskilled labour in South Africa; this is purely because of the abundance of unskilled labour in the South African economy.

4.5.1.2 Cost of doing business

Cost of doing business is an important dimension of the factor conditions shaping the competitiveness of an industry. Countries with low costs of doing business are considered business friendly and are likely to attract investors and to have industries that have a

better chance of being and becoming profitable and competitive. Under this factor condition, respondents' perception was assessed on three variables, namely: cost of doing business in South Africa, the level of development of general infrastructure in South Africa and cost of using infrastructure in South Africa. Table 4.3 below provides the average rating of all respondents on the three above-mentioned areas of focus.

Table 4.3: Cost of doing business and state of infrastructure ratings

Cost of doing business and state of infrastructure	Average rating according to the Porter determinants
Cost of doing business in South Africa	3
Level of development of general infrastructure in South Africa	5
Cost of using infrastructure in South Africa	3

Source: Own calculations

The South African business environment is characterised by, amongst other factors, single suppliers of key production inputs, namely electricity, fixed line telecommunication, and tinplate manufacturer; these are ESKOM, Telkom and ArcelorMittal respectively. Lack of competition amongst suppliers in these critical production inputs has a negative effect on the country's cost of doing business. In addition to this, business registration processes are viewed to be too cumbersome and costly. The South African government has acknowledged the fact that the cost of doing business in South Africa is higher than it should be, and plan to introduce interventions to deal with this situation. In his first State of the Nation Address delivered on 3rd June 2009, the newly elected President of the Republic of South Africa, His Excellency, Mr J.G. Zuma mentioned that: **"**In another intervention to create an enabling environment for investment, government will move towards a single integrated business registration system. This will improve customer service and reduce the cost of doing business in South Africa". The cost of doing business in South Africa was viewed to be extremely high by 80 percent of respondents to the questionnaires, and only 20 percent viewed it as being affordable. This indicates that a large part of industry stakeholders are gravely

concerned about this phenomenon and its impact on the competitiveness of the South African deciduous fruit canning industry. Respondents' average rating on this factor condition indicates that it is viewed as a constraint to the industry's competitiveness.

Like many food manufacturing companies, fruit canners require an acceptable standard of infrastructure such as roads, telecommunications, water supply and port facilities for efficient and proper functioning of their businesses. Thirty percent of respondents consider the state of general infrastructure used by companies to be poorly developed and inefficient, twenty percent view it as being neutral, and half the respondents indicated that it is amongst the best in the world: the average rating of respondents indicates it to be an enhancement to industry's competitiveness. This is another positive indication by the respondents; however, they expressed concern regarding the cost of using infrastructure. Costs such as toll road fees, telecommunication and water port charges contributed to what 70 percent of respondents view as extremely high, 10 percent were neutral and 20 percent found it to be affordable. On average respondents rated the cost of using infrastructure in South Africa as a constraint to industry's competitiveness. According to results from this analysis, the challenge facing the South African fruit canning industry is not the state of general infrastructure, but the cost of using it. Infrastructure available for use by the South African fruit canning industry is of high standard; however, costs related to its use are too high.

4.5.1.3 Technology

The industry is capital intensive and the quality and cost of technology that is utilised by fruit canning companies plays a critical role in determining industry's competitiveness. Technology used in the actual processing and canning of fruit includes simmers, cookers, coolers and conveyor belts**.** Most food processing industries are capital intensive by nature and their competitiveness is very much dependent on the quality, efficiency and cost of technology used. The table below provides the average rating of two variables, namely: Quality of technology for the deciduous fruit canning industry in SA and the cost

of quality technology for the deciduous fruit canning industry in SA. These variables' average rating was 5 and 4 respectively.

Table 4.4: Technology in the industry

Technology in the industry	Average rating according to the Porter determinants
Quality of technology for the deciduous fruit canning industry in SA	5
The cost of quality technology for the industry in SA	4

Source: Own calculations

The quality of technology for the deciduous fruit canning industry's average rating of five indicated that this factor condition is an enhancement to the South African industry's competitiveness. A study by Kirsten (1999) identified the development of technology that reduces production costs, improves product quality and innovates products as one of the important factors influencing competitiveness. The industry is viewed to have made considerable investment in the quality of technology that deciduous fruit canning companies are using. Sixty percent of respondents indicated that the quality of technology is amongst the best in the world, 10 percent were neutral whilst 30 percent viewed it as generally lagging behind most other countries. This observation is supported by a study done by Rasmussen *et al* (1985), which argued that, to remain in business, today's agricultural industry player must have the best possible information on their operations such as growing crops, controlling diseases, applying fertilizers, pesticides and herbicides. In addition to this, the industry player must keep accurate financial records for making well-informed decisions as well as for income tax purposes. This information is critical in developing viable marketing strategies. Such information mentioned above comes in large volumes and therefore requires advanced technologies to manage and interpret it in a user friendly way. Even though such technologies are costly, it is a priority and therefore worth spending money on for any fruit canning industry type of business.

4.5.1.4 Natural resources

The availability and accessibility of natural resources plays a critical role in the competitiveness of agricultural industries. Fruit canning is a downstream value addition activity with strong backward linkages with the primary agriculture fruit producing activities. Water is one of the key production inputs and climatic conditions are key factors of production. Issues that deal with the availability of water and climatic conditions have a direct impact on primary agricultural production. They affect the performance of the fruit canning industry due to strong links that exist between the two stages of the value chain, namely farm production and product processing.

Table 4.5: State of natural resources

Technology in the industry	**Average rating according to the Porter determinants**
Availability of water	5
Climatic conditions in the past three years	3

Source: Own calculations

South Africa is a water scarce country. According to the South African Weather Information (2009), it has an average annual rainfall of 464mm, compared to a world average of 857mm. Unlike other agricultural industries, the fruit canning industry is better located in an area were water is considered readily available. Respondents' perception on the availability of water was generally very positive. Seventy percent perceive water to be readily available, 10 percent were neutral, and only 20 percent viewed it not readily available. An average rating of 5 is a good indication that the availability of water enhances the competitiveness of the industry, as viewed by respondents; however, the new challenge facing the South African agricultural industry is water quality which is fast deteriorating and placing the competitiveness of the industry at risk.

Climatic conditions are also factors that determine production at farm level. Whilst 70 percent perceived water to be readily available, these respondents were concerned about climatic conditions in the past three years, and considered it to have been a constraint to their companies' competitive success; 30 percent were neutral on this matter. Deciduous canning fruit is mainly produced in some parts of the Western Cape's fruit farming areas. The province is a winter rainfall area and has a dry summer with strong winds when some plant species are dry creating a suitable condition for veld fires, and posing a threat to canning fruit producing orchards. Climatic conditions in the past three years received a rating of 3, indicating that it was viewed to have constrained the competitiveness of the industry.

4.5.2 Finance

The fruit canning industry is largely capital intensive and requiring more capital investment compared to other industries and therefore likely to be heavily dependent on access to credit for, amongst other things; equipment and machinery for the factory.

Table 4.6: Views on financing

Technology in the industry	Average rating according to the Porter determinants
Obtaining credit for your company	4
Cost of financing in South Africa	2
Financing institutions in South Africa	4

Source: Own calculations

"The financial sector plays a vital role in promoting private sector development" (Holden, 1996). Access to finance is one of the cornerstones for the existence of any business that requires capital investment. Manufacturing industries such as fruit canning are generally characterised by high levels of capital investment. Most such companies do not have own capital to fund their business operations and therefore require access to finance. Makhura (2008) argued that the development of agricultural value chain requires

access to finance. It is somewhat of a relief to observe that respondents' views with regard to the access to credit were rather balanced. Forty percent claim that it is extremely difficult; another 40 percent said it is easy and 20 percent were neutral. Of grave concern is the cost of financing which eighty percent of respondents argue is extremely high and 20 percent were neutral. An ideal situation would be when a large percentage of businesses in the fruit canning industry have better access to finance. For access to finance to be improved and for cost of financing to be brought down to lower levels, it will require, amongst other reforms, government's intervention. "Beyond the necessary phases of stabilisation and adjustment, government must find an appropriate balance between financial liberalisation and sound regulation and supervision. There is a pressing need to develop money markets. This implies deepening the financial market and enhancing its efficiency in mobilising and allocating domestic and foreign financial resources. These initiatives have to be complemented by legal reforms and institutional development to ensure their success" (Holden, 1996).

Despite the availability of a sophisticated banking system in South Africa, praised as being of international standard, and the fact that there are foreign international banks that have displayed confidence in the South African banks and the banking system by buying shares and also expressing interest in part-owning South African banks, financial institutions in South Africa were generally viewed to be a constraint to the companies' competitive success by 50 percent of respondents. Of the remainder, 10 percent viewed it as an enhancement to the competitive success of their companies and 40 percent were neutral on the matter.

4.5.3 Demand conditions

Demand conditions refer to the nature of demand for the industry's product and service and the ability to capture this demand through marketing and sales, for example, demand composition, demand size and information on trends in demand.

4.5.2.1 Buyers and market behaviour

Progressive industries and businesses rate buyers and market behaviour as key factors in determining success. This is the stage of the business cycle that determines whether a company stays in business or not. Like any other industry, the fruit canning industry produces goods and services in response to buyers and market demands. An assessment of how the industry leaders rate the buyers and market behaviour thus becomes critical in determining the industry's competitiveness. Assessing how best the industry responds to the needs and expectations of buyers and the market provides the industry with a better understanding the client relations and market expectations areas of improvement if there are such areas.

Table 4.7: Buyers and market behaviour rating

Buyers and market behaviour	**Average rating according to the Porter determinants**
Level of local buyers knowledge of product and/or services	4
Rate of adoption of technology by local buyers	4
Internationalisation of local buyers	4
Concern of local buyers about ethics and production methods	4
Local customers demand for environmentally friendly product	5
Local market size in terms of obtaining economics of scale	3
Growth in the local market in terms of investment in new technology	3

Source: Own calculations

Throughout the world, agriculture is undergoing radical change. Consumers are increasingly becoming more sophisticated and demanding healthy, safe and convenient food products. South Africa is not an exception to this phenomenon. Strangely, local buyers of companies' products are viewed to be unsophisticated by 30 percent of respondents and buyers decision on a product is based on price. However, 70 percent view them to be knowledgeable and demanding and buying innovative products.

The fruit canning industry has for a number of years, probably since its inception in the 1800s, been characterised by delays in the adoption of new technology which is also experienced in most, if not all, sectors of the economy. “Unlike the invention of a new technology, which often appears to occur as a single event or jump, the diffusion of that technology usually appears as a continuous and rather slow process. Yet it is diffusion rather than invention or innovation that ultimately determines the pace of economic growth and the rate of change of productivity. Until many users adopt a new technology, it may contribute little to our well-being” (Hall and Khan, 2003). Respondents’ views with regard to the adoption of new products and technologies’ systems is balanced. Fifty percent claim that local buyers of companies’ products and/or services are slow to adapt to new products and processes, and another half claim that buyers actively seek out the latest products, technologies and processes. “The contribution of new technology to economic growth can only be realized when and if the new technology is widely diffused and used. Diffusion itself results from a series of individual decisions to begin using the new technology, decisions which are often the result of a comparison of the uncertain benefits of the new invention with the uncertain costs of adopting it” (Hall and Khan, 2003). The ramification of slow pace in adoption of new technology and products is delayed economic development.

Post 1994, South Africa re-entered the international economy from isolation, making it part of the global economy, a phenomenon referred to as globalisation. Globalisation can be loosely defined as the ability of free flow of international trade, finance and information being brought together into a single global market. This extends to clients or buyers of goods and services on offer at a single global market being part of the global economy. When asked about the internationalization of local buyers, it is encouraging to see 40 percent of respondents rating local buyers being in pace with the rest of the world and 30 percent believe they lag behind; another 30 percent expressed neutrality on this question.

In recent years, food buyers have shown growing concern regarding primary food production activities such as soil erosion, the presence of different pollutants from industry in the natural environment, the widespread use of pesticides and fertilizers, the declining attractiveness of the countryside, the unethical treatment of farm animals and reduction of biodiversity. This observation by Kirchmann and Thorvaldsson (2002), and Horrigan *et al*. (2002) is supported by 40 percent of respondents who indicated that they are concerned about ethics and production methods. Opposed to this thinking are 30 percent of respondents who indicated that local buyers are not concerned about ethics and production methods and 30 percent who were neutral.

Oosterveer (2007), argued that concerns raised about environmental, social and human health impacts of food production and consumption seem to have become increasingly important in the everyday lives of consumers, politicians, NGOs and private co-operations in most developed countries. Even though South Africa is not classified as a developed country, one of the characteristics that it shares with developed countries referred to by Oosterveer includes having a growing population of people who are increasingly becoming more concerned about the environment. Local fruit canning industry customers are increasingly becoming more and more environmentally conscious, thus demanding more environmentally friendly products. Thirty percent were reported not to take local consumers demand for environmentally friendly products as important and fifty percent considered it important. Ten percent were neutral. Unnevehr and Roberts (2003) argued that the demand for food safety standards is increasing and human and environmental health concerns are rising, posing a new challenge to the agricultural profession and downstream industries.

As indicated under section 1.1 of Chapter 1, it is estimated that about 85 percent of the total South African canned fruit production is exported, making the export market the industry's major market. With about 85 percent being exported, only about 15 percent is left to be sold in the local market. It is not surprising to see that 80 percent of respondents

consider the size of the local market in terms of obtaining economics of scale to be small although 20 percent of respondents consider it large enough.

Flowing from the above observation, one can see why 90 percent of respondents consider growth in the local market too slow for investment in new technologies, and a only a small fraction, 10 percent, view it to be fast enough for investment in new technologies.

4.5.4 Related and supporting industries

Related and supporting industries refer to the presence or absence of supplier industries and related industries that are internationally competitive. The presence or absence of such industries impacts on the fruit canning industry's competitiveness. The presence of a key related and supporting industry can mean that products and services that it supplies to the fruit canning industry can be made available at a competitive price and the absence of it can mean that the products and services that it supplies to the fruit canning industry can be made available at higher prices because they have to be imported from somewhere else. However, this is not always the case. A good example of a related and supporting industry would be ESKOM, the sole electricity supplier to the South African economy.

Like other industries in other sectors of the economy, the fruit canning industry is solely dependent on ESKOM for electricity supply. The recent increase in the price of electricity by ESKOM and the power outages experienced for the better part of 2008 had a negative impact on manufacturing industries' competitiveness. It resulted in scaled-down production and eroded the industry's competitiveness. It is not surprising to see seventy percent of respondents indicating that electricity suppliers are a constraint to their companies' competitive success. Thirty percent view suppliers of electricity as an enhancement to their competitive success. The fruit canning industry's competitiveness will be further eroded by a 31.1 percent electricity tariff increase for ESKOM which was approved by the National Energy Regulator of South Africa (NERSA) on 25 June 2009

and implemented by ESKOM for the period 01 July 2009 to 31 March 2010. Subsequent to this tariff increase, ESKOM went back to NERSA on 30 September 2009 and lodged another electricity tariff increase application. This time, ESKOM applied for a 45 percent tariff increase per annum for the next three years with effect from 01 April 2010. If approved, this application will further exacerbate the South African fruit canning industry's situation regarding electricity costs. There is a strong feeling that NERSA will again approve ESKOM's application for a tariff increase in order for ESKOM to raise enough capital to part-fund its much-needed capital expenditure to meet future energy demands. By end of November 2009, it was reported that ESKOM dropped their requested rate of increase in electricity tariff from 45 percent per annum to 35 percent per annum. This came after widespread opposition from business, labour and civil society.

Another important related industry is telecommunication, where TELKOM Ltd is the dominant fixed-line service provider. TELKOM Ltd controls more than 90 percent of the fixed-line market and the newly formed Neotel Ltd come second with a market share of just fewer than 10 percent.

Telecommunications costs in South Africa are very high. The Economist Intelligence Unit Limited, (2005) reported that a survey commissioned by the South African Foundation, a body representing top 50 South African companies listed on the Johannesburg Securities Exchange as well as 15 major multinationals in South Africa found that South African telecommunication costs are 400 percent higher than any identical services in other countries. It does not come as a surprise to see 50 percent of respondents when they view Telecommunication firms as a constraint to companies' competitive. However, 30 percent view it as an enhancement while 10 percent were neutral on the matter.

Table 4.8: Related and supporting industries

Related and supporting industries	Average rating according to the Porter determinants
Electricity supply impact on competitiveness	3
Telecommunications firms' impact on competitiveness	4
Internet service providers' impact on competitiveness	4
Availability of specialised information technology services	4
Road transport companies' impact on competitiveness	4
Air transport companies' impact on competitiveness	4
Impact of similar service suppliers' in SA on your competitiveness	2
Other packaging materials' impact on your competitiveness	4

Source: Own calculations

According to The Economist Intelligence Unit (2008), South Africa ranks 37th out of 66 countries measured in their 2008 IT industry competitiveness index published in September 2008. The country's ranking is unchanged from 2007. With this kind of ranking at a global level, it comes as no surprise when respondents' rating on the service received from internet service providers is neutral with 40 percent rating it as a constraint to companies' success and another 40 percent rating it as an enhancement to companies' competitiveness. Twenty percent of respondents were neutral on the matter.

Most industries may, in some cases, require specialised services that address those particular industries' peculiar needs. In the case of the fruit canning industry, 30 percent of respondents indicated that they consider this specialised service to be not available and 50 percent considered it available from world-class local institutions. Thirty percent considered it neutral.

Considering high costs in road transport, it was surprising to see that service received from road transport companies in South Africa was viewed as a constraint to the competitiveness of the industry by 50 percent of respondents, and 40 percent viewed it as an enhancement. Ten percent consider it neutral.

Canned fruits are not highly perishable and therefore do not require a fast mode of transport such as air transport for the movement of products from the factory to the export market. Nevertheless, 20 percent of respondents perceived air transport to be a constraint to companies' competitiveness and 40 percent perceived it to be an enhancement to industry's competitiveness. The South African fruit canning industry uses water transport (cargo ships) for movement of products from South Africa to overseas markets; this could be the reason why 40 percent of respondents were neutral on this matter.

The dominance of and pricing structure of ArcelorMittal and Nampak as tinplate producer and can manufacturer respectively is cause for concern for the fruit canning industry. Eighty percent of respondents considered suppliers of tins/cans in South Africa a constraint to companies' competitiveness, and 20 percent were neutral.

As a result of tins/cans being sold at a very high price to canning companies and having a negative impact on their competitiveness, the options of looking at other packaging materials and sourcing of cheaper products from overseas has lately been a subject for discussion in the industry. Fifty percent consider the high price a constraint to the competitiveness of the industry, 10 percent indicated it to be an enhancement and 40 percent were neutral on the matter.

4.5.5 Firm strategy, structure and rivalry

Firm strategy, structure and rivalry are conditions within the country governing how companies are created, organised and managed, and the nature of domestic rivalry. The current social transformation and changes in the input supply and agribusiness structure (from co-operatives and companies) will have an influence in this regard.

4.5.5.1 Related factors

The industry's competitiveness is not exempted from non-core factors. These factors are also referred to as related factors and forms part of the fruit canning industry in one way or the other. Some of these factors are listed underneath in table 4.9.

Table 4.9: Related factors with impact on industry's competitiveness

Related factors	**Average rating according to the Porter determinants**
Opinion on your company's bargaining power	5
Level of regulatory standards in your industry	6
The flow of information from customers to companies	5
Competition in the local market	5
Origin of competition in the local market	6
Entry of new competitors	2
Substitutes for company's product or service range	4
Starting a new business in this industry is generally?	2

Source: Own calculations

One of the latest key food industry trends is companies' increasingly gaining bargaining power. This trend can be confirmed by 70 percent of CEOs who perceive companies' bargaining power as being very powerful. Twenty percent consider them to have no power and ten percent were neutral. With such a huge percentage in terms of the power that companies have, it is very clear that companies are key players when it comes to issues such as required product and services' prices.

The ever-changing food industry requirements are continuously putting more pressure on the food manufacturing industries to comply with regulatory standards such as product standards, sanitary and phytosanitary, trace ability and environmental requirements. South Africa's fruit canning companies were rated as having amongst the world's most stringent regulatory standards by 90 percent of respondents, and 10 percent rate these companies as having lax or non-existent regulatory standards.

"When consumers and producers have a high level of interaction, both parties know a lot about what is going on in the market. If consumers know a great deal about producers and the variety and prices of goods for sale, they make informed buying decisions. Producers' knowledge about consumers and their desires helps them make informed production decisions" Beierlein *et al* (2003). Customers' feedback to any company on business issues such as the quality of service, products quality and any other issue about the product which has an influence in consumer decision-making is of utmost importance for the competitiveness and sustainability of the company. If the company is not sure or aware of what customers' needs are, there is a risk of not appropriately responding to customers' needs through products and services. Respondent's rating on the flow of information from the customers to the company indicates a very fortunate situation for the industry: 70 percent consider it to be very good, 20 percent said it is poor and 10 percent were neutral.

The deciduous fruit canning industry is export driven, 85 percent of its products are exported, making the local market very insignificant looking at the total picture of the industry. However, sixty percent of the respondents viewed competition in the local market very intense, and 40 percent considered it to be very limited. This observation can be easily confused with local fruit canners competing for a bigger share of the local market. In reality the local competition between the three remaining deciduous fruit canneries to which this part of the study refers, is for a bigger slice of the total exported South African canned fruit market. There is also some competition for a share of the local market, but the focus is on foreign markets which account for the biggest share of the total market (both domestic and foreign).

A study done by the Centre for Rural Legal Studies (2003), states that: as a part of the adoption of trade liberalisation by the South African government, the domestic market was opened to products and producers from foreign countries. This resulted in higher competition on the domestic market and, as a consequence, leads to lower prices for products on the domestic market. In recent years there has been an increase in the

presence of foreign canned fruit and other food products on South African supermarkets shelves. In the fruit canning industry, competition from foreign firms operating in the local market is not fierce, as observed by sixty percent of respondents who indicated that competition comes primarily from local firms or local subsidiaries of multinationals. Contrary to this view, 40 percent of respondents indicated that competition comes primarily from imports.

The fruit canning industry is highly capital intensive and it requires huge capital investments to set up a factory and get it running. In a country that is characterised by low levels of access to credit, and difficulty in accessing credit being one of the key barriers to entry, common sense dictates that very few aspiring new participants will succeed in becoming part of industry as canned fruit manufacturers. However, respondents have a very different view on this matter: 90 percent said that barriers to entry to local market by new competitors almost never occur, and 10 percent said barriers to entry faced by new competitors are common.

Canned fruit is a product that can easily be substituted by fresh fruit. A growing number of people are becoming increasingly health conscious, especially in the middle to upper class, and preserved food including canned fruit is being viewed as being less healthy compared to fresh food. Most consumers can easily and immediately switch from canned to fresh fruit when their economic position improves. The number of respondents who think that substituting companies' product or service range is not a problem is equal (50 percent) to those who think it is a big threat to the industry.

As stated in a preceding paragraph, to start a fruit canning factory large capital investment is required, and taking into consideration the difficulty in fulfilling some of the requirements such as accessing credit, doing so is extremely difficult. All respondents had a consensus in their view of starting a new business in the industry; all say it is extremely difficult.

4.5.5.2 Primary inputs

The South African deciduous fruit canning industry is mainly dependent on local suppliers for primary inputs. Main primary inputs include fruit which is produced and supplied to canneries by farmers in the Western Cape province, and cans produced mainly by Nampak and made from tin plate sourced from ArcellorMittal. Without the two main primary inputs, fruit and cans, the fruit canning industry is non-existent. However, these are not the only primary inputs, but are the core fruit canning factories' primary inputs. Other industry players such as can-makers will have a different set of primary inputs and their perception on the competitiveness of the fruit canning industry will be based on what is considered primary inputs in their industry. What is considered primary inputs varies from one industry player to the other.

Table 4.10: Companies' primary inputs

Primary inputs	**Average rating according to the Porter determinants**
Local suppliers of your company's primary inputs	5
Quality of local suppliers of company's primary inputs	4
The sustainability of local suppliers of company's primary inputs	5

Source: Own calculations

On the supply side, 20 percent of respondents indicated that local suppliers of their companies' inputs are largely non-existent, 70 percent indicated that there are numerous local suppliers and this includes the most important materials, components, equipment and services. Ten percent were neutral.

As mentioned in Chapter 1, the industry exports 85 percent of their products. At this level of participating in the export market, products' quality is of utmost importance and is not negotiable when exporting. The final product's quality is influenced by the quality of primary inputs. Thirty percent of CEOs interviewed expressed that local suppliers are

inefficient and have little technological capability, 50 percent said local suppliers are internationally competitive and assist in new product and process development. Twenty percent were neutral.

One of the fruit canning industry's sustainability determining factors is the sustainability of local suppliers of companies' primary inputs. If suppliers of primary inputs cease to exist, the result thereof will be the demise of the fruit canning industry with a possible spill-over effect to other related industries. A study by Kirsten (1999) revealed that, at the primary agriculture stage of the fruit canning value chain, which mainly deal with fruit farming, all the leading agricultural machinery and implement manufacturers are represented in South Africa. Although only a small agricultural machinery and implement manufacturing companies are South African, with the majority of equipment and machinery being imported, the presence of foreign companies in South Africa strengthens the local input supply industries and brings stability and sustainability of input supplies. This could be the reason why 60 percent of respondents considered it not to be a problem at all, 30 percent viewed it as a huge problem and 10 percent were neutral.

4.5.5.3 Processes and flow of information

Well-informed product development processes are based on, amongst other critical factors, the flow of information from the end user back to the producer. Understanding and responding to end users' needs and expectations is of vital importance in sustaining the existence of producers. The assessment of captains of the industry's perception of their views on the flow of information from end users to producers and processes through which information flows in the fruit canning value chain, is of great importance in competitiveness analysis. Industry's competitiveness can be influenced by how best and fast information flows from end user to manufacturer or producer and how best producers respond to it.

Table 4.11: Product, process development and flow of information rating

Product, process development, and flow of information	Average rating according to the Porter determinants
Product and process development	4
The information flow from primary suppliers to company	5

Source: Own calculations

Weaver (2008) argued that "collaboration has been a key piston in the engine that is driving economic growth in the new millennium. Innovation in agribusiness areas such as information technology, institutions, and strategic reorientation of technological change has opened opportunity, and competition has put strong imperatives in play for collaborative innovation. First, these imperatives have forced a reorientation of private enterprise from push to pull systems. Second, they have catalyzed a strategic unbundling of integrated firms to create specialized enterprises with enhanced productivity and flexibility, though with increased demand for virtual integration through less formal relationships to establish and manage collaboration"

Sixty percent of CEO's in the survey share Weaver's observation on the importance of collaboration and indicated that they intensively collaborate with local suppliers, local customers and local research institutions. On the other hand, 40 percent of CEOs said that they conduct their own products and process development.

In any business arrangement where there is selling of goods or services, there will be client (s) and service or goods provider(s) or seller(s). The same applies to the fruit canning industry. There are primary suppliers of inputs and companies that use these inputs for the production of goods they produce and sell to their clients in the next stage of the value chain. Buying and selling of goods and services is preceded by communications between the buyer and seller. It is up to both parties to decide how they want to communicate and how important they view communication in their business

relationship, and the impact it has on their business. In today's business environment, electronic communication is preferred mainly because of it being more efficient and less costly. Communication allows the flow of information between primary suppliers and companies, and is one of the key success factors with regard to industry competitiveness. "Traditionally, buyer–supplier relationships were considered as adversarial, arms-length transactions. However, this relationship is moving towards a more collaborative approach. This change is subject to the belief that suppliers are essential sources to gain competitive advantage in world markets in terms of their expertise, knowledge and their ability to share risks" Humphreys *et al* (2003). In a study by Humphreys *et al* (2003), it was established that: the supply chain effectiveness hinges on communication between the supplier and the buyer, and effective communication has a positive impact on the industry's competitiveness. The fruit canning industry appears to be well positioned regarding these issues; fifty percent of respondents indicated that information flow is very good, and 30 percent said it is poor. Ten percent were neutral.

4.5.5.4 Legal, political changes and environmental regulations

The legal, political and environmental regulations environment plays an important role in creating and enabling environment for business to realise its full potential. The existence of a legal framework and rule of law that business is comfortable even when there is change in political leadership is central in creating stability in the business environment.

Another issue that is continuously receiving attention by governments globally is legislating and enforcing business practices that promote the protection of the environment. The EU, which is the South African fruit canning industry's key market, is currently leading in terms of countries that are promoting and enforcing the use of environmentally friendly practices in the manufacturing and other sectors of the global economy. In view of this, it is expected that if South Africa wants to retain its competitiveness in the EU, it has to comply with various environmental legislations set out by the EU.

Table 4.12: Legal, political changes and environmental regulations rating

Political changes and environmental regulations	Average rating according to the Porter determinants
Impact of legal or political changes over the past five years on company capacity for planning	5
Environmental regulations in South Africa	5
Complying with environmental standards in South Africa	5

Source: Own calculations

A study by Esterhuizen (2006) argued that the impact of political change, which took place in the past five years preceding 2006, was relatively moderate on the competitiveness of agribusiness. Esterhuizen (2006) viewed this as an indication of a very stable legal and political environment in South Africa. South Africa is considered to be one of the countries that is very politically stable. The state of the political situation in a country tends to impact on business operations such as planning. Esterhuizen's observation is supported by sixty percent of respondents who indicated that the impact of legal or political changes over the past five years has had no effect on company capacity for planning. Thirty percent said these changes have severely undermined planning capacity. Ten percent were neutral.

In recent years there have been a number of environmental protection initiatives aimed at, amongst other issues, saving the environment from further degradation. One of such initiatives is the Kyoto Protocol, initially adopted on 11 December 1997 in Kyoto, Japan. South Africa, together with 186 other state is a signatory to this protocol. The Kyoto protocol is aimed at combating global warming. Under this protocol,"Thirty seven industrialized countries commit themselves to a reduction of four greenhouse gases (carbon dioxide, methane, nitrous oxide, sulphur hexafluoride) and two groups of gases (hydrofluorocarbons and perfluorocarbons) produced by them, and all member countries give general commitments" Winkipedia, (2009). These countries agreed to reduce their collective greenhouse gas emissions by 5.2% from the 1990 level.

In view of environmental developments such as climate change and global warming, which is triggered by high levels of greenhouse gas emissions, most countries are increasingly tightening their environmental laws and introducing new environmental policies in an attempt to deal with the climate change. Sixty percent of respondents indicated that: environmental regulations in South Africa are enforced consistently and fairly. Thirty percents said these regulations are not enforced or are enforced erratically.

South African environmental laws compel the South African deciduous fruit canning companies to comply with certain environmental standards. Seventy percent of respondents believe that complying with environmental standards in South Africa helps long-term competitiveness by promoting companies to improve products and processes, and 30 percent were neutral.

4.5.6 Government attitude and policy

Government attitude and policy plays a vital role. Government can influence each of the above determinants either positively or negatively through policy and operational capacity. That is why government, as a determinant of competitiveness, must be viewed apart from the four determinants.

4.5.6.1 Government administration and policies

One of the key questions that can be asked regarding this subject is: how business friendly are the South African government's administration and policies towards the business community? Table 4.13 contains some of the policy areas on which the business leadership has very strong views as they impact on their operations. As far as business is concerned, government administration systems and policies must enhance their profitability and competitiveness in a sustainable way. The support that business gets from government through civil servants, for instance is considered a very important success-determining factor by business.

Table 4.13: Government administration issues and policies' rating

Government administration issues and policies	Average rating according to the Porter determinants
Administrative regulations in South Africa	3
The competence of personnel in the public sector	2
The tax system	3
South Africa's trade policy	4
South Africa's land reform policy	3
South Africa's labour policy	3
South Africa's macro economic policy	4
South Africa's BEE policy	4

Source: Own calculations

The South African government has, over many decades, gone through a lot of political and administrative changes. The latest development in the last decade was the unbanning of the ANC and other political organisations in 1990. This political change preceded the first democratic elections in 1994, which paved the way for a new administration and major policy changes, which changed and introduced new administrative regulations.At the same time it opened more markets for South African exports – the so-called Madiba magic! Government's administrative regulations are expected to contribute towards creating an enabling environment for business to realise its full potential. It is a grave concern to see ninety percent of respondents rating the administrative regulations in South Africa as burdensome.

According to Kamoche (1997), any attempt to achieve meaningful reform in public sector management will have to consider seriously the question of skills development and the management of expertise. Kamoche argued that, ultimately, the effectiveness of the public sector product and service delivery will depend not only on economic and financial parameters but also on the availability of sufficiently skilled personnel. This calls for government to focus on skill management in the public sector and, in particular, on the creation of competences which are based on the organization's core strategic activities. Looking at perceptions expressed by industry leaders with regard to the quality

of service from the public sector, it is very clear that respondents are not impressed. This is supported by ninety percent of respondents who expressed that competence of personnel in the public sector is lower than the private sector. Captains of the industry strongly believe that private sector personnel is more competent, only ten percent of respondents expressed confidence in the competency of the public sector personnel and said it is higher than that of the private sector.

According to Ginsberg (1998), as part of the South African tax system, tax incentives in South Africa should be aimed at attracting variable investment projects that might otherwise be destined for other countries. This argument calls for the restructuring of the South African tax system. Ginsberg's view for the need to revamp the current tax system is shared by 80 percent of respondents who view the current tax system as a hindrance to business investment. Only 20 percent of respondents said the current tax system promotes business investment and risk taking.

South Africa is signatory to a number of trade agreements which government deem to be in line with its trade policy. The Marrakesh agreement is one such agreement. Under this agreement, quantitative trade restrictions were placed by tariffs; tariffs were downscaled which made markets access requirements, such as reduction of support to agriculture, and Sanitary and Phytosanitary measures, effective (Jooste *et al*, 2003). The signing of agreements such as the Marrakesh was viewed by government as an intervention that would promote the development and growth trade between South Africa and its trading partners and also strengthen South Africa's position at the international trade arena. Despite this government intervention, and other trade agreements that have been entered into, 60 percent of CEOs view the South African trade policy as a constraint to companies' competitiveness success and 40 percent viewed it as an enhancement to companies' competitiveness success. In South Africa, the objective of having a trade policy in the agricultural sector is to promote the integration of the agricultural sector into the world economy to support greater access to markets, technology, capital as well as competition (OECD, 2006). Looking at how the industry leaders view the current trade

policy, it is clear that as far as fruit canning industry leaders are concerned, trade policy objectives are still an aspiration to be realised.

Land reform in South Africa has been a topical issue for over ten years, and government has been heavily criticised for not meeting its set targets and making very little progress moving towards set targets. The views expressed by respondents were balanced, fifty percent of CEOs that were interviewed view this policy as a constraint to their companies' competitive success and the other 50 percent see it as an enhancement to companies' competitive success.

Pre-1980s, farm workers had little legal protection with regard to rights to organise themselves to form a labour oraganisation like Food and Allied Workers Union and also to have basic conditions of employment (Vink and Kirsten, 2003). Currently workers rights in the agro value chain compare with those of workers in other sectors of the economy. "The Labour Relations Act (1997), the Skills Development Act (1998) and the Employment Equity Act (1998) now also applies to the agricultural sector" Viljoen (2005). These policy developments were aimed at, amongst others; creating better working conditions for workers and in return increasing workers' productivity. Business's view on the South African labour policy has been that it is not flexible and offers more protection to workers and little protection to business. This view is supported by eighty percent of CEOs, who indicated that the labour policy is a constraint to companies' competitive success, and 10 percent view it as an enhancement to companies' competitive success, this is a respondent from the labour movement. Ten percent were neutral.

After South Africa's first democratic elections in 1994, the Government of National Unity adopted the Reconstruction and Development Programme (RDP) as its key macro economic policy. Subsequent to that, there was the Growth, Employment and Reconstruction Programme (GEAR) in 1996. Thereafter the Accelerated and Shared Growth Initiative for South Africa (AsgiSA) formally launched by the former Deputy

President of the Republic of South Africa, Ms Phumzile Mlambo-Ngcuka in February 2006. All these policies directly and indirectly seek to deal with employment creation, poverty alleviation, increasing competitiveness and narrowing the negative trade balance. At the core of the programme, what is expected is the achievement of a sustainable real economic growth rate target as well as job creation targets (Strydom, 2002). The South African macro economic policy is viewed to be sound, 30 percent of respondents see it as a constraint to companies' competitive success and 50 percent see it as an enhancement to companies' competitive success. Ten percent were neutral.

Broad-Based Black Economic Empowerment (BBBEE) is a key policy objective in South Africa aimed at addressing the past lack of access to resources, like capital, by previously disadvantaged individuals, these being Coloureds, Indians and Africans (Mantu, 2003). Makhura (2008) identified Agri BEE or Black Economic Empowerment in Agriculture as one of the South African government's instruments for agricultural development finance. This instrument (Agri BEE) is broadly aimed at economically transforming the racially biased South African commercial agricultural sector (including its upstream input supply and downstream value addition industries), and making it more inclusive, representative of the demographics of South Africa and racially balanced. Notwithstanding the BEE policy's good intentions and being one of the cornerstones in building a prosperous and sustainable post-apartheid and non-racial South Africa, it is discouraging to see 40 percent of the fruit canning industry leaders considering BEE policy as a constraint to companies' competitive success. Fewer managers, thirty percent to be precise, view it as an enhancement to companies' competitive success, and another 30 percent are neutral on this matter. "Economic apartheid will not end until reasonable opportunities and incomes are available to the mass of the population rather than being the privilege of the few" (Thirtle *et al*, 2005).

4.5.7 The role of chance

Chance events are occurrences that have little to do with circumstances in a country and are often largely beyond the influence of the firm (and often the national government). Events such as wars, political decisions by foreign governments, large increases in demand, shifts in world financial markets and exchange rates, discontinuity of technology and input demand can be described as chance events.

4.5.7.1 Impact of related issues on companies

A number of issues that relate to the fruit canning companies' competitiveness were identified. These are non-core business issues which impact on performance of the fruit canning industries.

Table 4.14: Impact of related issues

Government administration issues and policies	Average rating according to the Porter determinants
Trust in the honesty of politicians	2
Impact of crime in SA on cost to company	2
Impact of AIDS in SA on cost to company	3
Impact of developments in Zimbabwe on cost to company	3
Impact of Biotechnology on company's competitiveness	4
Impact of the exchange rate on company's competitiveness	2

Source: Own calculations

Perceptions by respondents regarding the honesty of politicians were generally negative. All respondents (100 percent) agree that the trust in the honesty of politicians is very low. They also consider this unfortunate situation as a constraint to the industry's competitiveness.

"Internationally the crime rate has a negative influence on investor confidence and consequently South Africa has been unable to attract the quantities of foreign direct investment it requires to attain the growth rate to enable it to address the inequities of the past, secure sustainable developmental programmes and focus on new national issues affecting the country such as managing the Aids pandemic. The long-term survival of the economy relies on South Africa being able to take a position equal to its peers in the global economic environment as a stable and reliable trade partner" (Blackmore, 2003). Apart from the government and private investment required in order to help alleviate the backlog of social problems, extensive long-term foreign direct investment is also essential (Abedian and Cronje, 1995). A high level of crime and its impact on business has led to possible competitive input suppliers to the fruit canning industry being scared to invest in South Africa, resulting in the local fruit canning industry being characterized by few input suppliers who continue to operate in an uncompetitive input supply market. Another area where a very high percentage of respondents had the same view is on the impact of crime on the cost of business in South Africa. An overwhelming 90 percent of respondents believe that crime imposes a significant cost to their companies, and only 10 percent have a different view; they said it does not impose significant costs on their business.

According to the 2007 United Nations programme in HIV/AIDS, South Africa recorded the largest number of people living with HIV in the world. South Africa is regarded as a Sub-Saharan country with the highest HIV infection. The impact of HIV/AIDS on business in South Africa includes lower productivity and increased absenteeism, higher employee benefit costs, loss of experience and vital skills, higher labour turnover rates, and higher recruitment and training costs. The impact of HIV/AIDS on business varies in the way in which it is viewed by CEOs. Sixty percent of CEOs said AIDS in South Africa imposes significant costs on their companies, 30 percent said it does not impose significant costs and 10 percent were neutral on the matter.

There has been severe criticism in the recent past from the South African business community regarding the South African government's stance on the economic and political situation in Zimbabwe. These views can be supported by 60 percent of respondents who perceived developments in Zimbabwe as a constraint to companies' competitive success and 40 percent view these developments as an opportunity to increase their companies' competitive success.

The South African fruit canning industry competes at global markets where competitiveness of the industry can be based on, amongst other things, better canned fruit cultivars, taste of fruit and lower production input costs. For the South African fruit canning industry to be internationally competitive, investment and focusing on the future of biotechnology such as the development of new and better cultivars is of utmost importance. Indications are that this is not a critical area for industry leaders. Only 30 percent considered it an enhancement to competitiveness and 10 percent view it as a constraint to competitiveness. Surprisingly, 60 percent were neutral, and it is not clear if their neutrality is based on lack of interest in the subject or if they just do not consider it as a priority.

The volatility of the Rand against other major trading currencies was characterised by call from both the organised labour movements such as the Congress of South African Trade Unions (COSATU) and business organisations such as Business Unity South Africa (BUSA), for government to put in place monetary policy intervention systems to curb a strong Rand. The growth of the South African economy is highly dependent on performance of the export industries. A strong Rand erodes the competitiveness of the South African exporting industries such as the fruit canning industry. The South African exchange rate has been very volatile but generally weak against other major trading currencies particularly the US Dollar, nevertheless, 80 percent of respondents view it as a constraint to companies' competitive success, and 20 percent said it is an enhancement to companies' competitive success.

4.5.7.2 Business location

Distance to markets and suppliers of inputs plays a major role in competitiveness. "Supply chain performance is impacted by several factors beginning with the plant location decision" (Bhatnagar and Sohal, 2003). Transaction costs, also referred to as cost of doing business, have an effect on cost incurred to produce a particular product and render services. The further the fruit processing plant and South Africa is from the suppliers of production inputs and international markets, the higher the cost incurred in procuring products and taking products to international markets. The effect of this is higher transaction costs, smaller profit margins and a less competitive industry.

Table 4.15: Location of business in South Africa in terms of international trade

Location of the business	Average rating according to the Porter determinants
Location of business in South Africa in terms of international trade	4

Source: Own calculations

The company's proximity to its key markets is an important competitiveness factor. Half of the respondents considered their company's location in terms of international trade an enhancement to competitiveness. Twenty percent were neutral and 30 percent consider it a constraint to their competitiveness.

4.6 Conclusion

Results from the analysis of the perceptions expressed by CEOs on the different variables gave a clear indication of areas where the South African deciduous fruit canning industry has a competitive advantage and other areas where the industry lacks competitiveness. This analysis presents the industry with an opportunity to maintain and even strengthen areas where the industry enjoys a competitive advantage, and also address challenging

areas where the industry lacks competitiveness. Identification of both areas where the industry is competitive and areas where they lack competitiveness significantly contributes to developing well-informed industry strategies.

It is difficult to articulate the industry's competitiveness position in one study because results that came out of this analysis varied. For example, the rating of the government's new legislations and political changes was rated by the group of fruit producers as constraining (2 to 3), while the can manufacturer and fruit canners rated it as very enhancing to their competitiveness (5 to 7). Similarly, the impact of the exchange rate on the competitiveness of individual organizational performance was rated by fruit canners as extremely constraining and by fruit producers (farmers) as enhancing.

In almost all variables, respondents differed in opinion, with the exception of two variables, namely: starting a new business in the industry, and trust in the honesty of politicians, where all respondents agreed that it is extremely difficult, and that it is very low, respectively.

There are variables where 90 percent of all respondents agreed, and these are as follows:

(a) The South African fruit canning companies are rated as having the world's most stringent regulatory standards.
(b) Entry to local market by new competitors almost never occurs.
(c) The administrative regulations in South Africa are burdensome.
(d) Crime in South Africa imposes as significant cost to companies.
(e) Companies' approach to human resources is to invest heavily to attract, train and retain staff.

The average industry rating for the source of industry competitive advantage was four, but must not be interpreted that respondents were neither the result of low production cost nor high quality innovative products. Actually, the opposite is true almost equal number of organisation ascribe their competitive advantage to one or the other of the two. On the

other hand, all producers agree that producing and selling environmentally friendly products is fundamentally important to their individual competitiveness, rating it between 5 and 6 on average. As opposed to imports, competition in the local market is from local producers. However, entry of new competitors to the local market seldom occurs.

CHAPTER 5

A TURNAROUND STRATEGY FOR THE INDUSTRY

5.1 Introduction

The study has identified challenges or weaknesses of the industry, and based on this, interventions to address identified challenges or weaknesses are proposed in this chapter. Proposed interventions are aimed as putting the industry on a sustainable competitive path.

It was hypothesised that European countries' agricultural trade barriers (subsidies, tariffs, quotas and Sanitary and Phytosanitary requirements) impact negatively on the South African fruit canning industry's global competitiveness and access to Europe's market, which is South African industry's biggest export market.

In the absence of the above-mentioned trade barriers, South African exports of canned deciduous fruits would likely increase significantly, and would have better market prices, thus increasing South Africa's competitiveness in the EU market. The competitiveness of the industry is also affected by constraints such as high capital costs, technological costs, unskilled labour, volatile exchange rate, inflexible labour and fiscal policy. In response to all identified challenges, the following strategies are proposed for consideration in putting the industry on a competitive path:

5.2 Intensify negotiating for better trading conditions

Trade negotiations between South Africa and the EU present a good opportunity to ensure gradual growth of the industry through tariff rate improvement in the EU. The socio-economic situation facing areas where the canning factories are located must be central to future trade negotiations. It should be emphasised that South Africa is generally of the same economic standing with a country like Chile, and South Africa should, on the

basis of fairness, argue for trade conditions similar to that of Chile for exports into the European Union and the same message should be communicated to Japan. If trade conditions free from the current trade barriers are not achieved, a media campaign on the plight of impoverished areas of South Africa where the fruit is canned and an appeal to Europeans for fairness should be strongly considered. The EU negotiating capacity often surpasses that of South Africa, and South Africa should be prepared for an uphill-battle before any mutually beneficial trade conditions can be achieved between South Africa and the EU. In view of this, government should consider partnering with the industry to strengthen their negotiating team.

5.3 Development of alternative markets

Figure 1.1 indicates that more than half of the total South African exports of canned fruit are destined for the EU market. This makes the industry to be over-reliant on the EU market, a market which is characterised by a wide range of trade barriers. For the South African industry to exist for decades to come, it is crucial to put in place initiatives that would lessen the South African industry's over-dependence on the EU market. Alternative lucrative markets must be researched and developed for the industry's survival. Fast-growing markets like China and India, though the Indian market is effectively closed to SA imports by prohibitive tariffs, need to be investigated. "Penetrating the Indian and Chinese markets are plausible priorities for the SA industry, which trade diplomats should be encouraged to facilitate". However, this is not a strategy that can (as it were) bear fruit overnight (Ross, 2007). The ongoing market and product research by SAFVCA and market access relationship channels must be developed. Efforts must be made to develop the local market, and lessen the dependence of the industry on foreign markets which are highly affected by exchange rate fluctuations.

5.4 Investigation of viable mixtures and investment in market and biotechnology research

Seasonality in an industry like deciduous fruit canning is one of the industry main features. Unlike some cash crops, growing of fruit under controlled environment like in tunnels is not an option; the "size" and structure of the fruit trees and volumes required make it economically unviable. Due to the seasonality of the industry, canning factories operate at full capacity effectively for four months, and idle for the rest of the season. Therefore, the best potential response to waste resulting from seasonality lies in development and successful marketing of off-season products (Ross, 2007). The industry should investigate the viability of mixtures of deciduous fruits with selected vegetables and other fruit types in making fruit cocktails. This requires investment in both market and biotechnological research.

5.5 Industry co-ordination

In view of relatively high transport costs and port charges, the industry's situation can be improved if they (the industry) considers co-ordinating their activities, such as transport services from factories to the port, and consolidate efforts instead of competing with one another on such services. Better transport rates and port charges can be negotiated, and the industry's competitiveness can be improved through well co-ordinated bulk transport. Regarding port charges, the industry's chances of getting better rates would be improved if they approach and negotiate as a unified group.

The industry needs to look at other business operations, where activities can be co-ordinated. Proposals should not be limited to transport and handling of cargo at ports.

5.6 Retaining industry's labour cost competitiveness

Ross (2007) argued that labour costs in South Africa's processing plants are the second lowest after China, among export producers. Daily wage data collected at the 8th World

Canned Deciduous Fruit Conference in Sacramento, California indicated that South Africa was the most labour cost competitive country amongst all surveyed at the conference. Whilst addressing other areas where the industry is less competitive, the industry should not lose focus on its labour competitiveness. Labour is a critical factor of production and being competitive on labour costs can be a draw card if properly managed and sold to potential investors.

5.7 Develop and grow the premium products niche markets

The Porter and RTA methodology employed in this study to evaluate the competitiveness of the industry, provided results on the industry competitiveness in a form of competitiveness indices. The competitiveness indices identified areas where the industry is competitive. One of the ways for the industry to consider boosting the industry's competitiveness would be to increase the industry's efforts in concentrating more on areas where the industry is competitive, and this would include producing more premium products and growing the premium product niche market.

Ross (2007) indicated that South Africa is currently preparing the ground for comprehensive trade negotiations with new partners; Brazil, India, China, which may offer substantial potential market opportunities for the South African industry. In particular, though China is the world's fourth-largest producer of processed fruit, it concentrates on inferior-grade, high-volume product and so SA has plausible prospects for establishing a presence there as a supplier of premium quality, premium priced product. Contrary to some common expectations, benchmarking recently performed by SAFVCA suggests that Chinese producers of higher-grade product are at a cost disadvantage with respect to all major input factors except labour.

In view of comprehensive trade negotiations for which South Africa is preparing the ground, the industry should make efforts in preparing for the production of more premium products and optimize its competitive advantage in producing premium

products. The industry's ability to produce a premium product is a competitive advantage that should be exploited to the fullest possible extent.

5.8 Review of the South African inspection service

The current quality regulations stipulated by the APSA, in terms of which compliance is controlled and inspected by the PPECB requires that all export products be inspected for quality at considerable cost to the industry. South Africa has an international obligation to inspect and certify compliance to minimum standards. Since costs incurred are meant to ensure that South Africa meets its obligation, and at a cost to a struggling industry, under the current competitiveness situation, it would be strategic for the South African government to consider providing the industry with support by carrying inspection costs. These would definitely reduce industry costs and boost their competitiveness.

5.9 Exploring an alternative to sugar as production input

Sugar is one of the main and costly production inputs. The study done by SAFVCA (2005) indicates that sugar comprises about 6 percent of the cost of processing fruit in South Africa. The protection offered to the South African domestic sugar industry is to the detriment of the canned fruit industry and calls for an investigation by the industry into the use of alternative sweeteners such as corn syrup that could be used as production inputs. The USA has already started looking at alternative sweeteners and Chile has also done some work on the subject.

5.10 Optimizing production capacity

Due to the perishable nature of the fruit, processing of the fruit takes place soon after harvest to avoid loss of fruit quality, and this result in processing equipment and machinery running at full capacity only during the harvest season. Capital cost related to the production capacity is incurred through out the year. The industry can reduce losses

due to idling production capacity by increasing the efficiency of the production capacity during harvest season.

The possibility of canning alternative crops off-season must be investigated and exploited.

5.11 Development of industry database and intelligence

In an industry that was started in the 1900s and with an industry body established in 1954, it would be expected that data and industry intelligence would be readily available and accessible. Conducting analysis of the industry is very difficult because of a lack of readily available key industry data and intelligence. In view of this it is critical for the industry to develop a database and intelligence for the benefit of the industry. At this time in age, SAFVCA as and industry body is expected to have an industry website with a data base and vital industry information that would not only assist local industry in planning and decision making, but also make the industry attractive to potential investors.

CHAPTER 6

SUMMARY AND CONCLUSION

The study was aimed at analysing the competitiveness of the South African deciduous fruit canning industry. Specific objectives of the study included:

(a) Promoting the understanding of the link between the competitiveness of the deciduous fruit canning industry and EU trade barriers.
(b) Identifying the most important South African deciduous fruit canning industry competitors on the EU export market, and comparing South African industry's competitiveness in various aspects of the industry.
(c) Providing arguments that may sensitise those at decision-making level about the links between South African deciduous fruit canning industry competitiveness and EU trade barriers.
(d) Assessing the impact of EU trade barriers on the competitiveness of the South African deciduous fruit canning industry.
(e) Identifying areas where the South African deciduous fruit canning industry is competitive and where it lacks competitiveness.
(f) Providing a well-informed basis for the formulation of trade policies favourable to the South African deciduous fruit canning industry.
(g) Developing a turnaround strategy that must be implemented to address competitiveness challenges faced by the South African fruit canning industry.
(h) Making recommendations on future policies and strategies for the industry.

The above objectives were used to guide the study. Both local and international literature on the deciduous fruit canning industries was used as part of the analysis and in addition to this a variety of methods and techniques including descriptive, theoretical, analytical and quantitative were applied. These include: The Balassa's Revealed Comparative Trade Advantage (RTA) method, which was used to calculate the competitiveness indices of various canned deciduous fruit products. Time series data on South African and global

canned deciduous fruit imports and exports was also used to calculate the competitiveness indices using the RTA method and Excel software.

An array of expert views was gathered by means of interviews with key industry stakeholders. These key informants included Chief Executive Officers (CEOs) of various companies and organisations in the fruit canning industry who were interviewed using structured questions to collect both qualitative and quantitative data.

Data collected in the fruit canning areas of the Western Cape by means of a questionnaire was analysed using Excel spread sheet programme, SPSS and the Porter methodology. The study was done over a period of three years starting from the beginning of 2007.

The competitiveness analysis of this study clearly pointed out that EU subsidies but not SPS conditions, definitely disadvantage the South African fruit canning industry and negatively affect its competitiveness in the EU market. Despite all areas that this study's analysis and also the Value Chain Analysis study commissioned to National Productivity Institute by the SAFVCA, found that the industry is internationally competitive with respect to areas such as labour costs, product quality, efficient production technology, and world class regulatory standards.

Being a labour intensive country, South Africa's labour cost is amongst the lowest when compared with other countries that compete in the EU fruit canning market. This position was clearly supported by data collected from participants at the Deciduous Fruit Canning Conference in California.

Another area where the industry is competitive is on product quality. The South African deciduous fruit canning industry has positioned itself world-wide to be the supplier of premium quality and premium priced canned deciduous fruit products. The industry's second biggest market, Japan, demands mostly premium products, and South Africa is a key player in that market.

At the time when some information contained in this study was collected and some verified with the SAFVCA, the organisation's thinking on the industry's competitiveness was very clear. SAFVCA indicated that the main challenge facing the industry is market access, mainly to the EU. The EU market has over the past few years been increasingly difficult to access mainly due to EU governments' support to their industries through subsidies, high tariffs that South African industries pay to the EU and technical barriers to trade that South African canners are faced with. For the canners, these issues are unfortunately out of their hands, and are government's responsibility, the DAFF and also the dti's trade negotiations division in particular. However, government's efforts to address these challenges require forming of a partnership between the DAFF, the dti, and the fruit canning industry.

Considering the above, a conclusion can be drawn that all is not lost; the industry has a good chance of improving its position in the EU market provided that strategies proposed in Chapter 5 are successfully implemented.

Whilst the industry forms partnerships with government and other relevant stakeholders and focuses on strengthening the areas where they are less competitive, efforts must still be made to ensure that the industry maintains, or even betters their position in areas where they are competitive.

REFERENCES

Abedian, I. and Cronje, A. (1995). Government Foreign Borrowing in South Africa. *South African Journal of Economics*, 63 (2). PP 132 - 149.

Balassa, B. (1989). Comparative Advantage, Trade Policy and Economic Development. London, Harvester / Wheatsheaf.

Blackmore, F.L.E. (2003). A Panel Data Analysis of Crime in South Africa. Department of Economics, University of Pretoria. *http://www.up.ac.za/dspace/bitstream/2263/3133/1/Blackmore_Panel(2003).pdf*. Accessed on 05 December 2009.

Beierlein, J.G., Schneeberger, K.C. and Osburn, D.D. (2003). *Principles of Agribusiness Management*. Waveland Press Inc. Long grove, United States of America.

Bhatnagar, R. and Sohal, A.S. (2003). Supply chain competitiveness: Measuring the impact of location factors, uncertainty and manufacturing practices. Department of Management, Monash University, Australia.

Canned Deciduous Fruit Situation (2004). FAS Online. Horticultural and Tropical Production Division. http://www.fas.usda.gov/htp/Hort_Circular/2002/02-06/Canned%20Fruit.htm. Accessed on 07 February 2010.

Canned Foods World Trade Yearbook (2007). Published by Agra Informa Ltd, Turnbridge Wells, United Kingdom.

Centre for rural legal studies (2003). Briefing paper: *Agricultural trade, globalisation and farm workers.*

Clark, H.M. (1977). *The Tin Can Book: The Can as Collectable Art, Advertising Art, and High Art*. New York: The American Library.

Den Hartog, A.P. (2003). History of Packaging and Canning. *Encyclopaedia of food and culture, Vol.3*. Charles Scribners and Sons Publishing, New York City, United States of America.

Department of Agriculture (2006). The State of Agro Logistics in South Africa.

Doyer, O.T. and Van Rooyen, C.J. (2002). Skills for agribusiness managers of the future. In: Van Rooyen, C.J., Doyer, O.T., D'Haese, L. (Eds.), Readings in Agribusiness, A Source Book for Agribusiness Training. University of Pretoria, Pretoria.

Eighth World Canned Deciduous Fruit Conference - Sacramento, California, 05-19 April 2007.

Encyclopaedia of Global Industries (2006). Grey House Publishing, Millerton, New York, United States of America.

Esterhuizen, D. (2006). An evaluation of the competitiveness of the South African agribusiness sector. Unpublished PhD Thesis, Department of Agricultural Economics, Extension and Rural Development, University of Pretoria, Republic of South Africa.

Groenewald, J.A. (1998). Reconsidering the role of government in Southern African agriculture. *Agrekon*, Vol. 37. No. 4, PP 518-527.

Gibb, R. (2004). Developing countries and market access: the bitter-sweet taste of the European Union's sugar policy in Southern Africa. *The Journal of Modern African Studies* 42, PP 563-588.

Ginsberg, A. (1998). *South Africa's future; from crisis to prosperity*. Macmillan Publishers Ltd. London, Great Britain.

Hall, B.H. and Khan, B. (2003). Adoption of new technology. *New Economy Handbook.* NBER working paper series. National Bureau of Economic Research. http://www.nber.org/papers/w9730.

Holden, P. (1996). Improving the business environment. In: Maansdorp (eds), *Can South and Southern Africa become globally competitive economies?* Macmillan Press Ltd. London, Great Britain.

Horrigan, L., Lawrence, R. L. and Walker, P. (2002). How sustainable agriculture can address the environmental and human health harms of industrial agriculture. Environmental Health Perspectives.

Humphreys, P., Shiu, W.K., and Lo, V. H. Y. (2003). Buyer-supplier relationship: perspectives between Hong Kong and the United Kingdom. *Journal of Materials Processing Technology*. Vol.138, Issues 1-3, 20 July 2003, PP 236-242.

Hyperhistory.net (2009). Nicholas Appert, father of canning, 1749-1841. http://www.hyperhistory.net/apwh/bios/b2appert.htm. Accessed on 26 October 2009.

Jooste A., Van Schalkwyk, H.D. and Groenewald, J. (2003). South Africa agriculture and international trade. In: Nieuwoudt L and Groenewald J (eds), *The challenge of change: Agriculture, land and the South African economy*. Pietermaritzburg, University of Natal Press, Republic of South Africa.

Kamoche, K. (1997). Competence-creation in the African public sector. *International Journal of Public Sector Management: 1997*, Vol.10 Issue 4, PP 268, 11p.

Kaplan, D. and Kaplinsky, R. (1999). Trade and industrial policy on an uneven playing field: The Case of the Deciduous Fruit Canning Industry in South Africa. *World Development*, Vol. 27, No. 10, PP 1787–1801.

Keetch, D. P. (2000). *The South African Canned Fruit and Vegetable Industry*. Goldamer Consulting, Pretoria. Republic of South Africa. http://www.unctad.org/infocomm/diversification/nairobi/Canning_project.PDF. Accessed on 07 February 2010.

Kirchmann, H. and Thorvaldsson, G. (2000). Challenging targets for future agriculture. *European Journal of Agronomy*. Vol. 12 (3), PP.145-161.

Kirsten, J.F. (1999). The Agricultural input industry and the competitiveness of South African agriculture. *Agrekon*, Vol. 38, No.4, PP.487-515.

Louw, R. (2004). Deciduous Fruit – An International and National Overview. Background Document to the Fruit Industry Plan (Unpublished).

Makhura, M.N. (2008). Rethinking agricultural development finance in South Africa: Options for implementation. Presidential address. *Agrekon*, Vol. 47, No1,.PP 1-18.

Malzbender, D. (2003). Reforming the EU sugar regime: Will Southern Africa still feature? *Tralac Working Paper No. 12 [online]*. Available: www.tralac.org.

Mantu, R. (2003). Mbeki sign BEE Act into law. http://www.allafrica.com. Accessed on 04 December 2009.

National Agricultural Marketing Council (2001). *Investigation into the effect of deregulation on the fresh, canning and dried deciduous fruit industries.* Available: www.namc.co.za. Accessed on 15 January 2010.

OECD (2006). *OECD review of agricultural policies: South Africa*. Paris: OECD.

Oosterveer, P. (2007). *Global Governance of food production and consumption. Issues and Challenges*. Edward Elgar Publishing, Inc., Massachusetts, United States of America.

Porter, M.E. (1990). *The competitive advantage of nations*. London, Macmillan.

Porter, M. (1998). On Competition. *A Harvard Business Review Book*, Harvard University, Cambridge, United States of America.

Rasmussen, W.O., Ching, C.T.K., Linden, L.A., Myer, P.A., Rasmussen, V.P., Rauschkolb, R.S. and Travieso, C.B. (1985). *Computer applications in agriculture*. Westview Press, Inc. Colorado, United States of America.

Ross, D. (2007) South Africa's fruit processing industry: competitiveness factors and the case for sector-specific industrial policy measures. (Unpublished). School of Economics, Faculty of Commerce, University of Cape Town, Republic of South Africa.

South African Fruit and Vegetable Canners' Association (2004). Annual report.

South African Fruit and Vegetable Canners' Association (2005). Value chain analysis project. Not available to public.

South African Weather Information (2009). South Africa Weather. Stay in South Africa. hhtp://www.stayinsa.co.za/southafrica/southafricaweather.html. Accessed on 08 October 2009.

Strydom, P.D.F. (2002). Macroeconomic policy, 1970 to 2000. In: Jones S (ed), *The decline of the South African economy*. Cheltenham, United Kingdom.

Tariff Intégré Communautaire (2007). The Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes. Preparations of vegetables, fruit, nuts or other parts of plants.

http://ec.europa.eu/taxation_customs/dds/cgi.bin/tarchap?Taric=2006003800&Download=0&Periodic=0&ProdLine=80&Lang=EN&SimDate=20100208&Country=&YesNo=1&Indent=3&Action=1#OK. Accessed on 07 February 2010.

The Economist Intelligence Unit (2008). *How technology sectors grow. Benchmarking IT industry competitiveness 2008.* A report from the Economist Intelligence Unit. http://a330.g.akamai.net/7/330/25828/20080910172933/graphics.eiu.com/upload/BSA_2008.pdf. Accessed on 07 February 2010.

Thirtle, C., Piesse, J and Gouse, M. (2005). Agricultural technology, productivity and employment: Policies for poverty reduction. *Agrekon*, Vol. 44, No. 1, PP 37-59.

UNAIDS (2007). Regional Support Team for Eastern and Southern Africa. http://www.unaidsrstesa.org/countries/south-africa. Accessed 05 November 2009.

University of Free State (2004). Department of Agricultural Economics. *Deciduous Fruit – An international National Review.*

Unnevehr, L., and Roberts, D. Food Safety and Quality: Regulations, Trade and the WTO. Paper presented at the IATRC Conference, June 23 – 26 (Capri, Italy, 2003).

Van Rooyen, C.J. and Esterhuizen, D. (2005). An inquiry into factors impacting on the competitiveness of the South African Wine industry. Agrekon, Vol. 45, No4, PP 467-485.

Viljoen, M.F. (2005). South African Agricultural Policy 1994 to 2004: Some reflections. *Agrekon*, Vol. 44, No .1, PP 1-16.

Vink, N. and Kirsten J.F. (2003). Agriculture in the national economy. In: Nieuwoudt L and Groenewald J (eds), *The challenge of change: Agriculture, land and the South African economy*. Pietermaritzburg. University Natal Press.

Weaver, R.D. (2008). Collaborative pull innovation: origins and adoption in the new economy. Agribusiness (New York). http://www3.interscience.wiley.com/journal/120835806/abstract?CRETRY=1&SRETRY=0. Accessed on 05 December 2009.

Winkipedia (2009). Kyoto Protocol. http://en.wikipedia.org/wiki/Kyoto_Protocol. Accessed on 05 December 2009

Wöcke, A. and Klein, S. (2002). The Implications of South Africa's skills migration policy for country's competitiveness. *Development Southern Africa Vol 19, No 4. October 2002*.

Zuma, J.G. (2009) State of the Nation Address of the Republic of South Africa, 03 June 2009. *http://www.thepresidency.gov.za/show.asp?type=sp&include=president/sp/2009/sp06031116.htm&ID=1936*. Accessed on 07 February 2010.

APPENDICES

Appendix 1: Questionnaire - Survey on the competitiveness of the SA Fruit Canning Industry

March 2007
The Fruit Canning Industry Stakeholder

Dear Sir/Madam

Survey to assess the competitiveness of the South African fruit canning industry

Globalisation of the economy has added many new challenges for agricultural sectors around the world. Agribusinesses need not only to compete in their domestic market, but also to compete in foreign markets and develop strategies to induce new customers in new markets to buy their products. The issue of competitiveness has become very important for agribusiness managers, government and other key industry stakeholders.

This survey is part of a study that is currently undertaken to determine the factors influencing the competitiveness of the South African fruit canning industry in foreign markets. The study is expected to generate important new intelligence to inform the government and other important industry stakeholders on policies and strategies that must be develop to properly respond to identified challenges and opportunities.

Your company has been selected to provide vital information to assess competitiveness conditions in the fruit canning industry of South Africa. This survey provides information that is not available from other published sources. Your expert opinion is therefore essential in bringing light to competitiveness issues that are important for the country and the sector in which your company/organisation operates.

The questionnaire was designed scientifically according to Porter's method (The Competitive Advantage of Nations, 1990, 1998) and will ensure that an accurate picture of the current state of affairs is reflected in terms of factors influencing the competitiveness of the fruit canning industry. The annual Global Competitiveness Report, developed by the World Economic Forum and the Harvard University, and which is widely recognised as the world's leading cross-country comparison of issues relating to economic competitiveness and growth, uses the same methodology.

The questionnaire will only take approximately 15 minutes to complete. Most of the questions in this survey ask you to tick a box (using an X) according to your opinion. The questions are of the following format, for example:

Competition in the local market is:

Very limited	1	2	3	4	5	6	7	Very intense

Crossing 1 means you agree wholeheartedly with the left-hand side
Crossing 2 means you largely agree with the left-hand side
Crossing 3 means you agree somewhat with the left-hand side
Crossing 4 means you opinion is indifferent between the two answers
Crossing 5 means you agree somewhat with the right-hand side
Crossing 6 means you largely agree with the right-hand side
Crossing 7 means you agree wholeheartedly with the right-hand side

Note: Please make a cross on only one number per question

Please be sure that all responses will be treated as fully confidential. Information gathered from this survey will only be used as a group and not on an individual basis.

Kindly return the questionnaire as soon as possible by faxing it back to the attention of Tshifhiwa Madima, fax no: (012) 394 2149. Surveys will be processed until 31 March 2007. If there is any inquiries please feel free to contact Tshifhiwa Madima at (012) 394 1149 or 082 338 0233.

Given the importance of the information contained in each survey response, we urge you to be objective and thoughtful in answering the questions. We also thank you for taking the time to complete this survey and appreciate that it represents a major contribution on your part.

Regards,
Tshifhiwa Madima

Please cross the relevant letters, which closely apply to your business's operations.

A Canning fruit producer/farmer
B Can manufacturer
C Fruit canner
D Labour representative in the fruit canning industry
E Fruit Canning Industry Association/Organisation

Please give an indication of your business annual turnover by crossing the relevant letter.

A	**R1 000**	-	**R1 000 000**
B	**R1 000 000**	-	**R10 000 000**
C	**R10 000 000**	-	**R50 000 000**
D	**R50 000 000**	-	**R100 000 000**
E	**Above R100 000 000**		

Your business approximate number of employees.

A	**1**	-	**10**
B	**11**	-	**50**
C	**51**	-	**100**
D	**101**	-	**500**
E	**Above 500**		

4) Skilled labour is:

Difficult to obtain by your company	1	2	3	4	5	6	7	Easy to obtain by your company

5) Skilled labour in South Africa is:

Not of a very high quality	1	2	3	4	5	6	7	**Amongst the best in the world**

6) Skilled labour in South Africa is:

Too costly	1	2	3	4	5	6	7	**Affordable**

7) Unskilled labour is:

Difficult to obtain by your company	1	2	3	4	5	6	7	**Easy to obtain by your company**

8) Unskilled labour in South Africa is:

Not of a very high quality	1	2	3	4	5	6	7	**Used productively by your company**

9) Unskilled labour in South Africa is:

Too costly	1	2	3	4	5	6	7	**Affordable**

10) Labour unions in the fruit canning industry:

Prevent productivity improvements	1	2	3	4	5	6	7	**Contribute to productivity improvements e**

11) The overall cost of doing business in South Africa is:

Extremely high	1	2	3	4	5	6	7	**Affordable**

12) The general infrastructure used by your company in South Africa is:

Poorly developed and inefficient	1	2	3	4	5	6	7	**Amongst the best in the world**

13) The cost of using the infrastructure in South Africa is:

Extremely high	1	2	3	4	5	6	7	**Affordable**

14) The quality of technology for your industry in South Africa:

Generally lags behind most other countries	1	2	3	4	5	6	7	**Is among the world leaders**

15) Quality technology for your industry in South Africa is:

Difficult to obtain	1	2	3	4	5	6	7	**Easy to obtain**

16) The cost of quality technology in South Africa is:

Extremely high	1	2	3	4	5	6	7	**Affordable**

17) Water:

Is not available	1	2	3	4	5	6	7	**Is readily available**

18) Climatic conditions in the past three years were a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

19) The location of your business in South Africa in terms of international trade is a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

20) Obtaining credit for your company in South Africa is:

Extremely difficult	1	2	3	4	5	6	7	**Easy**

21) The cost of financing in South Africa is:

Extremely high	1	2	3	4	5	6	7	**Affordable**

22) Financial institutions in South Africa are generally a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

23) Scientific research institutions for your industry in South Africa are:

Non-existent	1	2	3	4	5	6	7	**The best in their fields**

24) Your company's collaboration with scientific research institutions in their R&D activity are:

Non-existent	1	2	3	4	5	6	7	**Intensive and ongoing**

25) Electricity suppliers in South Africa are a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

26) Telecommunication firms in South Africa are a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

27) Internet service providers in South Africa are a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

28) Specialised information technology services are

Not available	1	2	3	4	5	6	7	**Available from world-class local institutions**

29) Road transport companies in South Africa are a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

30) Air transport companies in South Africa are a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

31) Tin/Can suppliers in South Africa are a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

32) Other packing material (e.g. plastic/glass) suppliers in South Africa are a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

33) Local buyers of your company's product and/or services are:

Unsophisticated and choose based on the lowest price	1	2	3	4	5	6	7	**Knowledgeable and demanding and buy innovative products**

34) Local buyers of your company's product and/or services are:

Slow to adopt to new products and processes	1	2	3	4	5	6	7	**Actively seek out the latest products, technologies and processes**

35) Internationalisation of local buyers:

Behind the rest of the world	1	2	3	4	5	6	7	**In pace with the rest of the world**

36) Local buyers of your company's product and/or services are:

Not concern of ethics and production methods	1	2	3	4	5	6	7	**Very concern over ethics and production methods**

37) Local customers demands a environmental friendly product:

Not at all	1	2	3	4	5	6	7	**Very important for local consumers**

38) Is the local market size in terms of obtaining economy of scale to:

Small	1	2	3	4	5	6	7	**Large enough**

39) Is the growth in the local market:

To slow for investment in new technology	1	2	3	4	5	6	7	**Fast enough for investment in new technology**

40) Your opinion on the bargaining power of your company's customers:

Have no power at all	1	2	3	4	5	6	7	**Very powerful**

41) Regulatory standards (e.g. products standards, energy, safety, environment) in your industry are

Lax or non-existent	1	2	3	4	5	6	7	**Among the world's most stringent**

42) The flow of information from the customers to your company is:

Very poor	1	2	3	4	5	6	7	**Very good**

43) Competition in the local market is:

Very limited	1	2	3	4	5	6	7	**Very intense**

44) Competition in the local market:

Comes primarily from imports	1	2	3	4	5	6	7	**Comes primarily from local firms or local subsidiaries of multinationals**

45) Entry of new competitors:

Almost never occurs in the local market	1	2	3	4	5	6	7	**Is common in the local market**

46) Substitutes of your companies product or services range is:

No problem	1	2	3	4	5	6	7	**A big threat**

47) Starting a new business in this industry is generally:

Extremely difficult and time consuming	1	2	3	4	5	6	7	**Easy**

48) Local suppliers of your company's primary inputs are:

Largely non-existing	1	2	3	4	5	6	7	**Numerous and include the most important materials, components, equipment and services**

49) The quality of local suppliers of your company's primary inputs:

Local suppliers are inefficient and have little technological capability	1	2	3	4	5	6	7	**Local suppliers are internationally competitive and assist in new product and process development**

50) The sustainability of local suppliers of your company's primary inputs:

Huge problem	1	2	3	4	5	6	7	**No problem at all**

51) Product and process development:

Is conducted on your own	1	2	3	4	5	6	7	**Involves intensive collaboration with local suppliers, local customers and local research institutions**

52) The information flow from primary suppliers to your company is:

Very poor	1	2	3	4	5	6	7	**Very good**

53) Administrative regulations in South Africa are:

Burdensome	1	2	3	4	5	6	7	**Not burdensome**

54) The competence of personnel in the public sector is:

Lower than the private sector	1	2	3	4	5	6	7	**Higher than the private sector**

55) The tax system:

Hinders business investment and risk-taking	1	2	3	4	5	6	7	**Promotes business investment and risk-taking**

56) Have legal or political changes over the past five years undermined your company capacity for planning?:

Have severely undermined planning capacity	1	2	3	4	5	6	7	**Have had no effect**

57) Environmental regulations in South Africa are:

Not enforced or enforced erratically	1	2	3	4	5	6	7	**Enforced consistently and fairly**

58) Complying with environmental standards in South Africa:

Hurts competitiveness	1	2	3	4	5	6	7	**Helps long-term competitiveness by prompting companies to improve products and processes**

59) South Africa's trade policy is a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

60) South Africa's land reform policy is a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Opportunity to increase your companies competitive success**

61) South Africa's labour policy is a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

62) South Africa's macro economic policy is a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement to your companies competitive success**

63) South Africa's BEE policy is a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**An opportunity to increase your companies competitive success**

64) Your trust in the honesty of politicians is:

Very low	1	2	3	4	5	6	7	**Very high**

65) Crime is South Africa:

Imposes significant costs on your company	1	2	3	4	5	6	7	**Does not imposes significant costs on your business**

66) Aids in South Africa:

Imposes significant costs on your company	1	2	3	4	5	6	7	**Does not imposes significant costs on your business**

67) Developments in Zimbabwe:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Is an opportunity to increase your companies competitive success**

68) Will Biotechnology be a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement your companies competitiveness**

69) Is the current exchange rate a:

Constraint to your companies competitive success	1	2	3	4	5	6	7	**Enhancement your companies competitiveness**

70) The competitive advantage of your company is due to:

Low cost based on low wages or natural resources availability	1	2	3	4	5	6	7	**Unique products, services and processes**

71) The competitive advantage of your company is due to the selling of:

Relative cheap products	1	2	3	4	5	6	7	**Affordable high quality products**

72) To produce or sell environmental friendly products is:

Not a very important strategy for your company	1	2	3	4	5	6	7	**One of the most important strategies for your company**

73) Production processes in your company:

Generally use obsolete technology	1	2	3	4	5	6	7	**Generally employ the world's best and most efficient technology**

74) Your company approach to human resources is:

To invest little in training and employee development	1	2	3	4	5	6	7	**To invest heavily to attract, train and retain staff**

75) In your business, continuous innovation plays a major role in generating revenue:

Not true	1	2	3	4	5	6	7	**True**

76) Your company:

Do not spend money on R&D	1	2	3	4	5	6	7	**Spend heavily on R&D relative to international peers**

Thank you for your time and participation in this survey

Appendix 2: Values of traded canned deciduous fruit

VALUES OF TRADED CANNED DECIDUOUS FRUITS (IN US$ MILLIONS IN TODAYS PRICES)					
YEAR	2002	2003	2004	2005	2006
SAECA	19.817448	27.407555	32.566334	24.769894	28.351830
TVWECA-SAECA	140.871893	168.238710	167.871602	147.966035	136.447281
TVSAE-SAECA	34709.954552	42632.440326	54108.883666	60657.020106	68182.208170
TVWE -TVWECA	6479784.385	7543186.954	9173041.531	10466716.73	12065263.91
SAICA	0	0	0	0	0
TVWICA-SAICA	173.3650688	220.5279808	236.0669378	204.3169132	191.6468389
TVSAI-SAICA	29267	41083.7	53465.8	62304.3	77280
TVWI-TVWICA	6663308.636	7769623.242	9459149.583	10763752.65	12303546.65
	26.26212592	28.82431778	32.88792069	28.88627308	36.76901318
SAECPH	50.6730755	80.0448755	81.8243179	74.4831337	57.7518601
TVWECPH-SAECPH	595.6775445	681.3507223	663.0680163	632.4923304	701.8443014
TVSAE-SAECPH	29672.4269245	36401.5551245	46063.8756821	51551.2168663	58117.3481399
TVWE-TVWECPH	6479421.649	7542749.307	9172595.257	10466256.18	12064723.18
SAICPH	0	0	0	0	0
TVWICPH-SAICPH	618.9381369	712.9969075	727.3484877	669.7455286	679.1073971
TVSAI-SAICPH	29267	41083.7	53465.8	62304.3	77280
TVWI-TVWICPH	6662863.138	7769130.773	9458658.302	10763287.22	12303059.19
	18.57587196	24.34291311	24.57288051	23.90865338	17.08192344
SAECPR	24.165108	29.726734	28.341077	25.391892	26.543717
TVWECPR-SAECPR	140.4328924	157.4144128	159.8713791	156.407063	152.9615835
TVSAE-SAECPR	29698.934892	36451.873266	46117.358923	51600.308108	58148.556283
TVWE-TVWECPR	6479781.468	7543193.598	9173051.552	10466708.92	12065250.54
SAICPR	0	0	0	0	0
TVWICPR-SAICPR	161.991402	189.617257	196.0751438	180.3591977	179290375
TVSAI-SAICPR	29267	41083.7	53465.8	62304.3	77280
TVWI-SAICPR	6663482.076	7769843.769	9459385.65	10763956.96	12303738.3
	37.54390067	39.07851995	35.26103334	32.93036553	36.00615766
SAECMF	33.853661	47.880959	43.867719	48.270428	37.256464
TVWECMF-SAECMF	541.4737057	582.6153843	622.5517431	680.0843406	674.347036
TVSAE-SAECMF	29689.246339	36433.719041	46101.832281	51577.429572	58137.843536
TVWE-TVWECMF	6479474.953	7542847.227	9172659.579	10466279.36	12064766.81
SAICMF	0	0	0	0	0
TVWICMF-SAICMF	522.216567	613.6984922	652.0746182	643.3084129	670.1885971
TVSAI-SAICMF	29267	41083.7	53465.8	62304.3	77280
TVWI-TVWICMF	6662959.783	7769230.302	9458733.925	10763313.69	12303067.81
	13.64485451	17.01424554	14.01995735	14.40293508	11.46510926

Where:

SAECA:	Value of SA Exports of Canned Apricots
TVSAE:	Total Value of SA Exports
TVWECA:	Total Value of World Exports of Canned Apricots
TVWE:	Total Value of World Exports
SAICA:	Value of SA Imports of Canned Apricots

TVSAI:	Total Value of SA Imports
TVWICA:	Total Value of World Imports of Canned Apricots
TVWI:	Total Value of World Imports
SAECPH:	Value of SA Exports of Canned Peaches
TVWECPH:	Total Value of World Exports of Canned Peaches
SAICPH:	Value of SA Imports of Canned Peaches
TVWICPH:	Total Value of World Imports of Canned Peaches
SAECPR:	Value of SA Exports of Canned Pears
TVWECPR:	Total Value of World Exports of Canned Pears
SAICPR:	Value of SA Imports of Canned Pears
TVWICPR:	Total Value of World Imports of Canned Pears
SAECMF:	Value of SA Exports of Canned Mixed Fruits
TVWECMF:	Total Value of Worlds Exports of Canned Mixed Fruits
SAICMF:	Value of SA Imports of Canned Mixed Fruits
TVWICMF:	Total Value of Worlds Imports of Canned Mixed Fruits