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The evaluation of Kwazulu-Natal's priority agricultural sectors for effective export promotion

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ABSTRACT

This study provides the strategies that can be implemented to promote the agricultural sector in KwaZulu-Natal and the theory behind economic development, as well as the importance of trade and export growth. There are restrictions in terms of trade and it is important that these are addressed before making a decision to choose a viable, potential and realistic country to export to. This study is aimed answer the research question if agriculture can be seen as a primary export sector in KwaZulu-Natal. Furthermore, this study includes background on the KwaZulu-Natal Province and mainly focus on the indicators such as GDP, employment, health issues and other indicators that will indicate that this province is of importance in South Africa in terms of the agricultural sector. This study uses SARS data to analyse and calculate the Revealed Comparative Advantage (RCA) of all agricultural products of the province. This is done to identify if there is a comparative advantage in the products studied in this study. The products of KwaZulu-Natal also show that this province's agriculture can be seen as a primary export sector and that this sector is a major contribution to South Africa's GDP and development. This study uses the Decision Support Model (DSM) to compare the results from the Revealed Comparative Advantage to identify the products and sectors which have the most export potential in the international market. This study reveals that the agricultural products and industries in KwaZulu-Natal with the highest overall export potential are chocolate and cocoa preps, refined soybean oil, and leather products as the three top performers among agricultural products and have the most export potential in the province. Concluding remarks are based on the findings made throughout the study.

KEYWORDS

Agriculture, KwaZulu-Natal, Revealed Comparative Advantage (RCA), exports, Decision Support Model, trade, producer support estimates, export promotion, agriculture price policy, Balassa.

OPSOMMING

Hierdie studie bied die strategieë wat geïmplementeer kan word om die landbousektor in KwaZulu-Natal te bevorder, asook die teorie agter ekonomiese ontwikkeling en die belangrikheid van handel en groei ten opsigte van uitvoer. Daar is beperkings in terme van handel en dit is belangrik dat dit aangespreek word voordat besluite geneem word oor die lewensvatbaarheid, potensiaal en realistiese keuses ten opsigte van uitvoer. Die navorsingsvraag wat hierdie studie ondersoek, is of landbou kan dien as 'n verneme uitvoersector in KwaZulu-Natal. Verder ondersoek hierdie studie die agtergrond van die KwaZulu-Natal Provinsie se sosio-ekonomiese samestelling en fokus veral op aanwysers soos die BBP, indiensname, gesondheid en ander indikatore wat sal aandui dat hierdie provinsie van belang is in Suid-Afrika in terme van landbou-uitvoere. Hierdie studie gebruik SARS-data in die analise en bereken die geopenbaarde vergelykende voordeel(RCA) van al die provinsie se top landbouprodukte om sodoende te bepaal watter produkte- as markleiers - uitvoer in die provinsie kan bevorder. Die produkte van KwaZulu-Natal kan ook'n bydrae lewer tot Suid-Afrika se BBP en ontwikkeling. Hierdie studie het ook die "Decision Support Model" (DSM) gebruik om die resultate van die geopenbaarde vergelykende voordeel te vergelyk, ten einde te bepaal watter lande die meeste uitvoerpotensiaal in die internasionale mark bied vir produkte waarin die provinsie 'n mededingende voordeel besit. Die studie toon die landbouprodukte met die heel hoogste uitvoerpotensiaal in KwaZulu-Natal, is sjokolade en kakaoprodukte, verfynde sojaboon-olie, asook leerprodukte. Slotopmerkings is gebaseer op die bevindinge wat deurgaans in die studie gemaak is.

SLEUTELWOORDE

Landbou, KwaZulu-Natal, geopenbaarde vergelykende voordeel, uitvoere, Decision Support Model, handel, vervaardigersondersteuningsberamings, uitvoerbevordering, landbouprysbeleid, Balassa.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	ii
ABSTRACT	iii
OPSOMMING	iv
TABLE OF CONTENTS	v
LIST OF FIGURES.....	x
LIST OF TABLES	xii
LIST OF ABBREVIATIONS.....	xiv
1. Chapter 1: Introduction.....	1
1.1 Introduction	1
1.2 Background.....	1
1.2.1 The importance of exports.....	1
1.2.2 Export promotion and the Decision Support Model	3
1.2.3 Potential of the agricultural sector	4
1.3 Problem Statement and Motivation	6
1.4 Research Question	8
1.5 Objectives	8
1.5.1 Primary objectives.....	8
1.5.2 Secondary objectives	8

1.6	Research Method.....	9
2.	Chapter 2: The Importance of Agricultural Exports	11
2.1.	Introduction	11
2.2.	Economic Growth and the Importance of Exports	11
2.2.1.	Sectors of the economy.....	14
2.3.	Policies.....	16
2.3.1.	Introduction	16
2.3.2.	Evaluation of Policy Measures	16
2.3.3.	Agricultural Price Policy.....	17
2.3.4.	Policy Measures in South Africa.....	17
2.4.	Comparative Advantage in the Agricultural Sector	23
2.5.	The role of Agriculture in Economic Development	24
2.6.	A Strategy for Agricultural led Development	26
2.6.1.	Introduction to the strategy	26
2.6.2.	Successes of the Agricultural led Strategy	27
2.7.	Export Led Growth	30
2.8.	Primary Export Dependence	31
2.9.	Export Promotion	31
2.9.1.	Benefits of Exports for the Agricultural Sector	32

2.9.2.	Export Promotion in South Africa	33
2.10.	The Decision Support Model	35
2.10.1.	DSM Filters	36
2.11.	Summary and conclusion	37
3.	Chapter 3: Overview of the Kwazulu-Natal Province.....	40
3.1.	Introduction	40
3.2.	Geographic Profile of the KwaZulu-Natal Province	40
3.2.1.	Introduction	40
3.2.	Economic overview of KwaZulu-Natal	43
3.2.1.	Economic Indicators	43
3.3.	Socio Economic Development of the KwaZulu-Natal Province	53
3.3.1.	Human Development Index (HDI) and Gini Coefficient	53
3.3.2.	Per Capita Income (Per Race)	56
3.3.3.	Poverty Rates.....	57
3.3.4.	Health Issues	61
3.4.	Summary and conclusion	64
4.	Chapter 4: Revealed Comparative Advantage	67
4.1.	Introduction	67
4.2.	Background on Revealed Comparative Advantage.....	67

4.3.	Competitiveness.....	71
4.4.	The RCA Equation	71
4.5.	Data	73
4.6.	Harmonized Tariff Schedule.....	79
4.7.	An Example of the RCA - Estimation	81
4.8.	Summary and conclusion	82
5.	Chapter 5:Empirical Analysis of Data.....	83
5.1.	Introduction	83
5.1.1.	Revealed Comparative Advantage.....	83
5.2.	Data	84
5.2.1.	Customs Values of specific products of KwaZulu-Natal and South Africa.	84
5.2.1.1.	Live animals and animal products	84
5.4.	Revealed Comparative Advantage of the products exported from KwaZulu- Natal and South Africa	92
5.4.1.	Revealed Comparative Advantage of Live Animals and Animal Products	93
5.4.2.	Revealed Comparative Advantage of Vegetable Products.....	95
5.4.3.	Revealed Comparative Advantage of Animal or vegetable fats and oil and their cleavage products, prepared edible fats, animal or vegetable waxes	96

5.4.4.	Revealed Comparative Advantage of Prepared foodstuffs, beverages, spirits, vinegar, tobacco and manufactured tobacco substitutes	97
5.4.5.	Revealed Comparative Advantage of Raw hides and skins, leather and fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut)	99
5.4.6.	Revealed Comparative Advantage of Textile and textile articles.....	101
5.4.7	Leading Comparative Advantage in KwaZulu-Natal	102
5.5.	Decision Support Model Matching.....	104
5.6.	Summary and Conclusion	111
6.	Chapter 6: Conclusion and Recommendations.....	114
6.1.	Introduction	114
6.2.	Recommendations	120
7.	REFERENCES.....	124
8.	APPENDIX.....	134

LIST OF FIGURES

Figure 2.1: Share of the economy's sectors (%), 2007-2009	14
Figure 2.2: Annual average growth between total industries and agriculture between 2007 and 2009	15
Figure 2.3: Sectors' contribution to economic growth between 2007and 2009	16
Figure 2.4: Agriculture First Pro-poor Strategy	28
Figure 3.1: Geographical map of KwaZulu-Natal	41
Figure 3.2: Annual Growth Rates of Agriculture in South Africa and KwaZulu-Natal, 2002 - 2012	44
Figure 3.3: Agriculture's share to the region's total, 2001-2010	45
Figure 3.4: KwaZulu-Natal GDP Growth rates per Quarter, 2002- 2010	46
Figure 3.5: Contribution of all the Provinces to the South African Economy, 2009 (current prices R1 000).....	47
Figure 3.6: KwaZulu-Natal Exports and Imports, 2001 - 2010.....	48
Figure 3.7: Total Trades of South Africa and KwaZulu-Natal, 2001 - 2010	49
Figure 3.8: Broad Economic Sectors of South Africa, at current prices (R1 000), 2006 - 2010	50
Figure 3.9: Broad Economic Sectors of KwaZulu-Natal, at current prices (R1 000), 2006-2010	50
Figure 3.10: Lorenz Curve.....	54

Figure 3.11: Annual Per Capita Income (Rand, in current prices) in KwaZulu Natal, 2001- 2008	56
Figure 3.12: Poverty rates of African People in KwaZulu-Natal, 2001- 2008.....	58
Figure 3.13: Poverty rates of white people in KwaZulu-Natal, 2001- 2008.....	58
Figure 3.14: Poverty rates of Coloured people in KwaZulu-Natal, 2001- 2008.....	59
Figure 3.15: Poverty rates of the Asian Race in KwaZulu-Natal, 2001 - 2010.....	60
Figure 3.16: AIDS Estimates during the years 2001 - 2010	62
Figure 3.17: AIDS estimates across South Africa, between 2001 and 2010	63
Figure 3.18: Aids estimates of South Africa versus KwaZulu-Natal, 2001 - 2010	63
Figure 3.19: HIV estimates, 2004 - 2008.....	64

LIST OF TABLES

Table 3.1: Land Area of South Africa, 2009	42
Table 3.2: Structural features of the KZN and SA economies, 1995 & 2001.....	51
Table 3.3: KwaZulu-Natal - Annualised per cent change in the quarterly GDP by industry.....	52
Table 3.4: Human Development Index of KwaZulu-Natal, all Races, 2006 - 2010...	55
Table 3.5: Gini Coefficient of KwaZulu-Natal, all races, 2006- 2008	56
Table 3.6: Annual per capita income (Rand, current prices), all provinces, 2008.....	57
Table 3.7: People living in Poverty per cent, 2008	60
Table 3.8: People living in the Poverty Gap, R millions.....	61
Table 4.1: Table for District Offices	74
Table 4.2: Post office sorting Lines	76
Table 4.3: Tariff Code and Description.....	77
Table 4.4: Table of SARS data.....	78
Table 4.5: Harmonised Tariff Schedule including Chapters, Section 1-8	79
Table 4.6: Tariff Code and value of Chapter 1: Live animals.....	80
Table 4.7: RCA of Specific product	81
Table 5.1: Live animals and animal products (Values in Rand).....	85
Table 5.2: Chapter 6-14: Vegetable Products (Value in Rand)	86

Table 5.3: Animal or vegetable fats and oils and their cleavage products, prepared edible fats, animal or vegetable waxes.....	87
Table 5.4: Prepared foodstuffs, beverages, spirits and vinegar, tobacco and manufactured tobacco substitutes (Value in R).....	89
Table 5.5: Raw hides and skins, leather fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut) - (Value in R)	90
Table 5.6: Textile and Textile articles (Value in R)	91
Table 5.7: Revealed Comparative Advantage of Live Animals and Animal Products (Value in R)	94
Table 5.8: Revealed Comparative Advantage of Vegetable Products.....	95
Table 5.9: Revealed Comparative Advantage of animal or vegetable fats and oil and their cleavage products, prepared edible fats, animal or vegetable waxes	96
Table 5.10: Revealed Comparative Advantage of prepared foodstuffs, beverages, spirits, vinegar, tobacco and manufactured tobacco substitutes	98
Table 5.11: Revealed Comparative Advantage of Raw hides and skins, leather and fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut)	100
Table 5.12: Revealed Comparative Advantage of Textile and textile articles.....	101
Table 5.13: Leading Comparative Advantage products in KwaZulu-Natal	103
Table 5.14: Decision Support Model (DSM) results of Potential Export Countries for Tariff Codes.....	105

LIST OF ABBREVIATIONS

DSM	–	Decision Support Model
RCA	–	Revealed Comparative Advantage
GNP	–	Gross National Product
GDP	–	Gross Domestic Product
DTI	–	Department of Trade and Industry
DET	–	Differential Export Tax
GATT	–	General Agreement on Trade and Tariffs
USA	–	United States of America
WTO	–	World Trade Organisation
PSE	–	Producer Support Estimate
LDC	–	Least Developed Countries
OECD	–	Organisation for Economic Cooperation and Development
HDI	–	Human Development Index
GGP	–	Gross Geographical Product
MNE	–	Multi-National Enterprises
SARS	–	South African Revenue Service

CHAPTER 1: INTRODUCTION

1.1 Introduction

This study determines which agricultural products have the potential to be exported sustainably from KwaZulu-Natal Province to the international market. This study explains the importance of Revealed Comparative Advantage (RCA) and how this theory is used together with the Decision Support Model (DSM) to compile a list of suitable and potential products and industries that can be exported from the KwaZulu-Natal Province.

Chapter 1 consists of an introduction to the next chapters, namely: background, problem statement and motivation, research question, research objectives and research method. Chapter 2 emphasises the theory behind trade, competitiveness, RCA and DSM. Chapter 3 entails an overview of the KwaZulu- Natal Province. Chapter 4 provides the background behind the RCA and how it will be used to compile the data of Chapter 5. Chapter 5 consists of the empirical data and estimations for the products to be exported from KwaZulu-Natal. Chapter 6 concludes this study with a summary and recommendations.

1.2 Background

1.2.1 The importance of exports

There is a transition in the world economy as more countries are moving from command economies towards free market practice. This is one of the reasons why globalisation and exports is of importance all over the world and to South Africa in particular (Jansen van Rensburg, 2008:13).

Albaum and Peterson (1984:161), and Barrett and Wilkinson (1986:227) highlighted the fact that globalisation in the business environment has been a significant factor in

the development of today's economy. Globalisation has created many important opportunities that are vital to a nation's economic development and independence. Furthermore, the growth, profitability and survival of individual firms are also influenced by globalisation.

Cavusgil and Nevin (1981:114) concur with the importance of exports, stating that the expansion of a nation's exports has a positive effect on the growth of the economy as a whole. Radelet (1999:5) documented the fact that manufactured exports and rapid economic growth have been linked to success. This realisation comes from the developing countries that have recorded rapid growth in manufactured exports with economic growth and *vice versa*. A debate has developed between the benefits and costs of globalisation for developing countries. Some say it is beneficial, but others argue that global outsourcing leads to immiserising growth and a "race to the bottom" when these countries compete with offers of transnational companies with low operating costs (Gereffi & Sturgeon, 2004:2). Outsourcing in the early 1980's referred to the situation where firms expanded their purchases of manufactured physical inputs, but since 2004 outsourcing refers to a specific segment of the growing international trade in services (Bhagwati, Panagariya & Shrinivasan, 2004:93).

Cheng and Feng, (1999:10), Lewer and Van den Berg (2003:367), and Jordaan and Eita (2007:540) all agree to the fact that exports are the key to growth of the economy. It has been estimated that one billion dollars' worth of exports created approximately 30 000 jobs in the 1980's (Kotabe & Czinkota 1992:639, Robock, 1993:26). Exports influence economic growth, monetary and fiscal policies, national competitiveness and the quantities of imports a country can afford (Jansen van Rensburg, 2008:14). Exports can also influence the quality of life that is experienced by the residents of a nation (Czinkota, 2002; Leonidou & Katsikeas, 1996:518).

It has been shown that countries with open trade policies not only grow faster, but also tend to alleviate poverty faster than less open economies, struggling with the same problems (Jansen van Rensburg, 2008:14). Smith (1776) and Ricardo (1817) theoretically justified the fact that exports are of importance. Their absolute and

comparative advantage theories¹ helped to identify export industries that could be of benefit to the nations (Pearson, 2007:19).

1.2.2 Export promotion and the Decision Support Model

Export promotion is of importance because of limited resources and a lack of knowledge that can create problems for producers and prospective exporters in developing countries. Because of this they often need guidance and support during internalisation (Janse van Rensburg, 2008). Export promotion is a part of the governmental and private sector attempts to stimulate the presence of the country on the world market (Cuyvers, De Pelsmacker, Rayp & Roozen, 1995:174).

Necessary information on foreign markets, competitors and their products are gathered by private and public institutions and are distributed to their exporters. Cuyvers *et al.* (1995:173) states that new markets are important for export promotion organisations and exporting companies. The countries' improved export records are also used as a traditional tool of public export promotion (Cuyvers, 2004:255).

Cuyvers *et al.* (1995:173) declared that the Decision Support Model (DSM) was created to assist the exporters in their quest for the most viable export market. The DSM is a screening procedure that involves the gathering of relevant information on the world market, and screening and filtering out the market opportunities that should be a main concern to export promotion (Cuyvers *et al.*, 1995:173). The objective of the DSM is to compile a limited list of excellent opportunities in the world market.

Another objective is to obtain export promotion priorities and appropriate promotion strategies for different categories of markets, from a governmental export promotion department's point of view. It is important to link the DSM with the findings of other studies, and to provide the information gathered to the exporters and exporting businesses that need it.

¹ Although a theoretical distinction can be made between the terms "comparative" and "competitive", these terms will be treated as synonymous in this dissertation.

Cuyvers *et al.* (1995:174) declared that in the long-term point of view, it will be the wrong decision to discontinue current export activities. In the short-term, historical data is used instead of current data. Export promotion is sometimes based on economic criteria, whereas diplomatic and political arguments can lead a government not to support exports to economically promising markets for other than economic reasons (Cuyvers *et al.*, 1995:174).

1.2.3 Potential of the agricultural sector

According to Erero (2007:35) agriculture has been identified as a priority sector by the South African government because of its export potential. It is important to understand that agricultural exports have grown significantly since the beginning of the third millennium (Erero, 2007:1). South Africa can be seen as an agricultural exporting country that has positive trade balances for agricultural goods.

Unstable macro-economic policies are some of the many challenges that the agricultural sector has to face with regards to trade, although this sector has the potential to generate more employment (Erero, 2007:1). There are also negative aspects with regard to the agricultural sector. Compared to the rest of the economy, the agricultural sector is not performing well in terms of output growth, exports and employment demand.

According to Lindhauer, Perkins and Radelet (2006:607) agriculture should be fundamentally understood so that development can be understood. In a country's early developmental stages employment is created mostly in the agricultural sector – which may even account for 60 per cent of the total output. In poorer developing countries, such as India and China, the largest part of the workforce comes from the agricultural sector (Lindhauer *et al.*, 2006:607).

According to Lindhauer *et al.* (2006:608) agricultural activities have existed for thousands of years ever since people gave up hunting and gathering as their main source of food supply. Agriculture differs from other sectors because land is an important factor of production. Lastly, agriculture is the only sector that provides food.

People can survive without steel, coal and electrical power, but they cannot survive without food.

The size of the agricultural sector is an attribute that gives it a viable role in the provision of factor inputs, labour to industry and other relevant sectors (Lindhauer *et al*, 2006:609). The agricultural sector can also be an important source of capital for modern economics. The role of agriculture was overstated because there was suggestion from writers that agriculture was the only source of capital in the early stages of development. The largest share of income in the poorest countries comes from the agricultural sector. The rest of the Gross National Product (GNP) is then provided by non-agricultural sectors (Lindhauer *et al*, 2006:609).

Economic, social and environmental crises attracted new attention to agriculture as a contributor and a potential instrument, which can lead to solutions. To accomplish agricultural growth, new conditions must be implemented. Agriculture is seen as having the capacity to help achieve major development, specifically accelerating GDP growth at the early stages of development, reducing poverty and vulnerability and releasing scarce resources such as water and land for use in other sectors. These factors can be seen as a new paradigm starting to emerge (De Janvry, 2009:1).

Echevarria (1997:432) argues that there are regularities in the relationship between sectorial composition and growth. Sectorial composition explains 22 per cent of the variation in the growth of per capita income across poor developing countries. Additionally, poor countries have the lowest growth rates and middle income countries have the highest average annual growth rates in real Gross Domestic Product (GDP).

Agriculture's proportion of GDP has been shown to be higher in developing countries, while the proportion of GDP in services is higher in more developed countries. In addition, wealthier countries' relative prices are higher for services than in poorer countries (Echevarria, 1997:433). Furthermore, agriculture's share in the labour force decreases as GDP increases, across countries over time. Finally,

labour compensation appears to represent a greater percentage of GDP in industrialised countries. To bring this into context, Echevarria (1997:435) implies that sectorial composition explains a fundamental part of the variation in growth rates that is observed across several countries.

With a population of 10.2 million the KwaZulu-Natal Province contributes 17 per cent of South Africa's GDP and have a GDP of US\$ 34.5 billion per annum (Trade and Investment KwaZulu-Natal (TIKZN), 2008:5). Trade and Investment KwaZulu-Natal highlighted the fact that agriculture in KwaZulu-Natal is very diverse owing to the province's topography (TIKZN, 2009).

A significant percentage of South Africa's small scale farmers are based in KwaZulu-Natal. Agricultural expansions in Kwazulu-Natal have potential. It has been estimated that if agricultural natural resources are well managed, the present production yields could be increased, thus unlocking the full agricultural production potential of KwaZulu-Natal (TIKZN, 2009,1).

It will be beneficial for both South Africa and the KwaZulu-Natal Province to focus their exports on agriculture, because South Africa can be seen as a developing country and agriculture can be seen as a creator of job opportunities and as a method of income for those who use the land to its fullest potential.

1.3 Problem Statement and Motivation

Janse van Rensburg (2008:3) identified an important problem in South Africa's exports. There is very little information available for exporters in each province to reach their full export potential. With this lack of resources provincial exporters also experience problems exporting, and the authorities experience problems identifying priority sectors for effective export promotion.

Governments, in recent years, have experienced major liberalisation of foreign trade regulations and competition internationally. They have developed export development programs to assist future producers and exporters to guide them in future trade (Janse van Rensburg, 2008:4). Whether the involvement of the

government in the allocation of resources and trade promotion are effective, is still undecided.

The South African Department of Trade and Industry (DTI) and Trade Promotion Organisations (TPO) indicate that there needs to be a more extensive and scientific study on export promotion. This will assist senior management and ensure that government resources are optimised when determining priority export markets for South African products (Pearson 2007:5).

According to the DTI (2005:47) export promotion activities in South Africa relied on the trends of historical export performance. Little, if any, scientific justification was given to the allocation of export promotion activities and these export promotion resources did not take into consideration new export opportunities in unexploited markets or opportunities for new products in existing markets. This problem was addressed by applying results of the DSM to a scientifically justifiable allocation of export promotion resources.

The DSM model matches only those products and countries that are comparable. In South Africa's case there is no mention as to where the products are located. This study will now analyse the sectorial composition of economic activity of the KwaZulu-Natal Province to determine which agricultural products are the most prominent and also assess the contribution of agriculture to the economy of KwaZulu-Natal.

Empirical evidence highlights the significant role that sectors contribute to economic growth. A study of the economic composition of the KwaZulu-Natal Province will reveal the most dominant economic activity or comparative advantage in the province. Furthermore, the results of this analysis will be recommended as sectors in which the DTI can commit export promotion resources to. Moreover, an audit of the DSM results which identified the most realistic export opportunities, relative to the existing economic activity in the province, would be beneficial to assess the predictive power of the model.

1.4 Research Question

In this study the following research questions are discussed:

- What are the agricultural products that have the best export potential in the KwaZulu-Natal Province?
- Can these products, with the highest Revealed Comparative Advantage (RCA), be matched to the Decision Support Model (DSM model) to estimated export potential and global opportunities?

1.5 Objectives

1.5.1 Primary objectives

The primary objective of this study is to determine the agricultural products which have the highest export potential in KwaZulu-Natal and to identify the possible or potential countries that can be exported to.

This objective will give assistance to future and current exported of the KwaZulu-Natal province to help them with the export process and also to assist them with the main competitors in the rest of the world.

1.5.2 Secondary objectives

The primary objective will be achieved through the following secondary objectives:

- Provide a literature review on the KwaZulu-Natal products and to determine if they can be classified as the products with the most export potential
- Provide a review on the KwaZulu-Natal Province, which include social, demographic and economic information
- Determine the Revealed Comparative Advantage of the agricultural products of the KwaZulu-Natal Province with the most export potential
- Match these RCA results to the results of the DSM model to evaluate the agricultural products with export potential and opportunities in the KwaZulu-Natal Province

1.6 Research Method

The research method used consists of an empirical analysis and a literature review. The literature review consists of theory on the sectorial composition of KwaZulu-Natal by intensively studying the primary, tertiary and secondary sectors of the province. An overview of the agricultural sector will be discussed as this study proceeds. The literature study will also consider the economic development and growth of the agricultural sector.

A part of this review focuses on the agricultural sector's contribution to the other sectors in the KwaZulu-Natal Province. The importance of export promotion in South Africa and especially in KwaZulu-Natal will be addressed together with an overview of the DSM model.

The empirical analysis involves the collection, calculation, analysis and interpretation of data. Other data on employment, GDP and trade data will also be utilised. With this data the aim will be to analyse the GDP, employment and other relevant data to study the impact this may have on the KwaZulu-Natal Province's export potential.

The data provided of KwaZulu-Natal indicates different sectors in the province and their contribution to the KwaZulu-Natal economy, and their size according to their activity in the economy.

The Revealed Comparative Advantage (RCA) can be defined as *the number that is the ratio of a province's export of a particular product relative to South Africa's total export*. The denominator is the ratio between the total exports of the province and the total export of the country (Moenius, 2006:4).

The revealed comparative advantage on Excel spreadsheets are used to analyse the data. RCA indices are estimated to determine which agricultural products of the KwaZulu-Natal Province are the most competitive. These results is presented in text, table, graphs and figure format, and evaluated. This are then matched to the results of the DSM model of the Department of Trade and Industry's Export Promotion

Agency to determine where these competitors can export their products sustainably to. This is then be discussed and a conclusion will be drawn in the final chapter.

CHAPTER 2: THE IMPORTANCE OF AGRICULTURAL EXPORTS

2.1. Introduction

The main focus of this chapter is to broaden the experience of the reader to the development of the South African agricultural sector, but also to focus on the policies and measures taken by the South African government to promote the exports of agricultural products and the policies that are in place to protect the agricultural Sector in South Africa and with a special focus on KwaZulu-Natal.

Chapter 2 consists of a literature overview of economic growth with two sub-sections: the sectors of the economy and sectorial composition. The second part considers the role of agriculture in South Africa and in other nations. The third part concludes this chapter, by including export promotion with four subsections: why agriculture can benefit from exporting, why export promotion is important, the instruments for agricultural exports, an explanation of the Decision Support Model (DSM) and how it is being utilised.

The following section provides an overview into the economic growth of the agricultural sector of South Africa. Graphs indicates whether the agricultural sector is a priority sector and whether or not agriculture can contribute to the South African economy and its growth.

2.2. Economic Growth and the Importance of Exports

During the years of 1960 and 1970 African governments shifted their focus to macro-economic, sectorial trade and exchange rate policies that directly or indirectly taxed farm households, seeking to gain income from exports and through that obtain

development funds to alleviate poverty. These policies improved economic development and also reduced poverty (Anderson, Masters, Kurzweil & Valenzuela, 2008:1). These marked improvements can to a large extent be attributed to Africa's reliance on agriculture and to agriculture being a major employer in Africa, especially for the poor. Therefore, it is often seen as a key export sector. Changes in the policy stances could explain Africa's development experience, including the slow pace of economic growth to the 1980's and the faster income growth and poverty alleviation since then (Edwards & Alves, 2006:473).

In 1994 the new South African government inherited an economic system that was characterised by decreasing economic and employment growth. These pressures forced the government to establish policy reforms to stimulate growth, employment and redistribution. Such policies were subsumed under the Growth, Employment and Redistribution (GEAR) policy initiative. The government was positive that this would encourage growth and employment. This strategy aimed to transform South Africa into a competitive outward orientated economy (Edwards & Alves, 2006:473).

Gouws (2005:2) stated there are important channels between growth and trade. These include improved resource allocation, stronger incentives for adaptations and innovation, cheaper capital goods and higher foreign direct investment associated with new trade opportunities. However, there is a debate on whether or not countries should promote their export sectors to gain economic growth or not. Most economists agree that exports contribute to the economic growth of a country. Gouws (2005:2) summarised this position as:

"The opportunity to expand exports is the key determinant of the prospects for economic growth in developing countries. Exports provide often-scarce foreign exchange, scope for economies of scale, and a stimulus to productivity growth as developing countries as they seek to compete in international markets."

Matthee and Naudé (2007:3) stated that there is a link between economic growth and export diversification, and that developing countries must realise that economic growth through export growth is important.

But there are contradictions to this statement. Thurlow (2006:3) indicates that the export growth was only successful because of the trade policies that were implemented. Although evidence remains ambiguous, some studies found that there was a positive link between exports and productivity growth, because there was a change in the productivity enhanced technology due to the increased import competition and imported capital goods (Thurlow, 2006:3).

The role of exports for the promotion of growth was in question until empirical studies in this field used data at country or industry level to test whether exports promote productivity growth or vice versa (Wagner, 2007:2).

Peterson (2005:790) expressed his concern about issues that affect the rate of economic growth, such as the factor endowments effect on trade structure. Arguments that need to be investigated are: low economic growth in world demand for primary products that, with their volatile prices, will result in export revenue being unstable. On the supply side he is concerned that the few opportunities there are for skills and technical improvements in production, establish a difficult linkage with the rest of the world and this may diminish growth. A likely result of specialisation in capital intensive products is the cause of resource wealth, which will have a negative effect on human capital development in the region and may contribute to the inequality of wage (Peterson, 2005:790).

The effects of economic growth contributed to liberalisation and the expansion of world trade. Outward oriented and export oriented development remains a controversial concept, because evidence highlights the fact that there is a positive relationship between productivity, enhancement, economic growth and export performance (Henson & Loader, 2001:86).

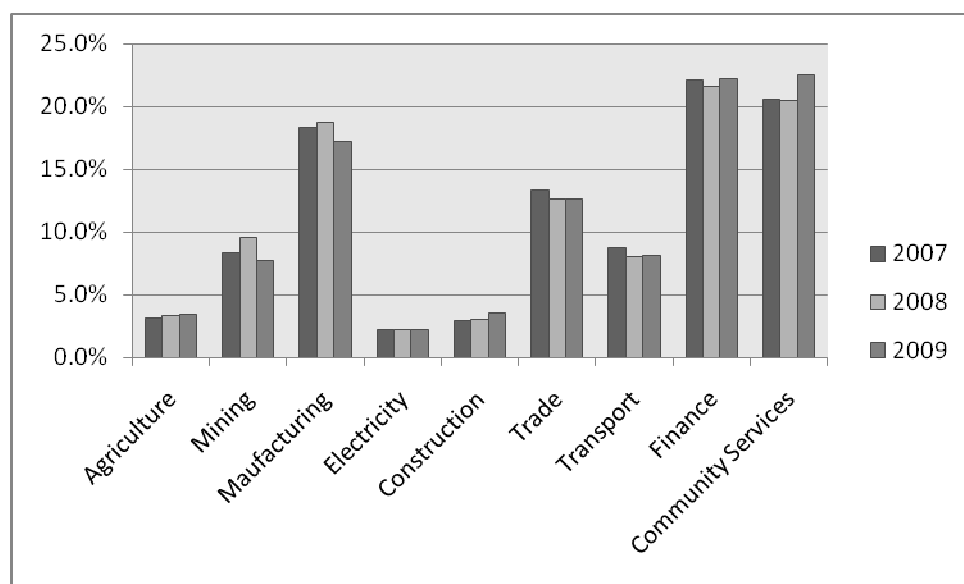
The subsequent part of this chapter will show why export promotion is an important aspect of export success, specifically in the agricultural sector.

2.2.1. Sectors of the economy

The sector devoted to the region of KwaZulu-Natal is the extraction of basic materials, in other words, the primary sector. This sector includes the extraction of basic materials like mining, lumbering and agriculture. This sector also involves the conversion of natural resources into products that consumers will be using as a final product. The commodities to produce final products come from the primary sector. The important businesses included in the primary sector are agriculture, agribusiness, fishing, forestry, mining and quarrying industries.

Figure 2.1 illustrates the share that the different sectors contribute to the South African Economy's GDP.

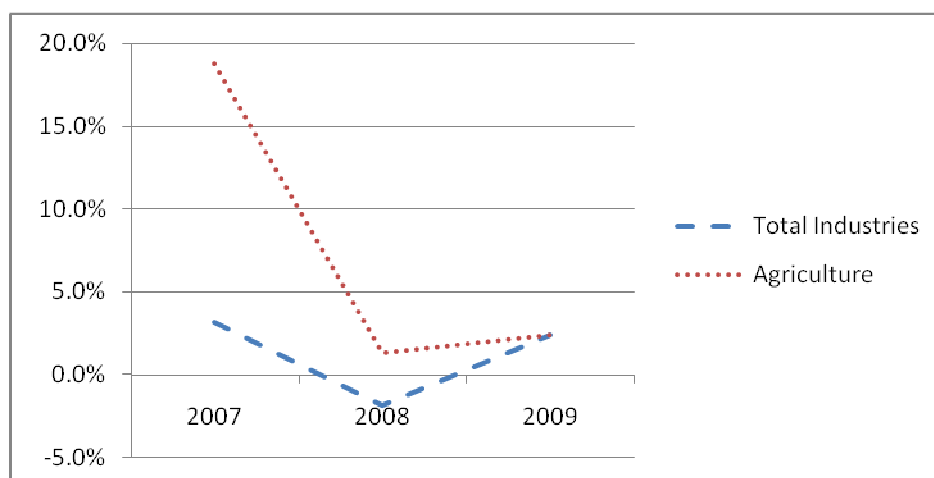
Figure 2.1: Share of the economy's sectors (%), 2007-2009



Source of data: Author's own calculations based on Global Insight results

Figure 2.1 shows the percentage share of the various sectors to the GDP of the country from 2007 until 2009. The sector that contributed the largest share in South Africa's GDP was the financial sector, followed by the community services sector and the manufacturing sector. The agricultural sector ranked seventh with less than a five per cent share contribution to the South African economy

Figure 2.2: Annual average growth between total industries and agriculture between 2007 and 2009

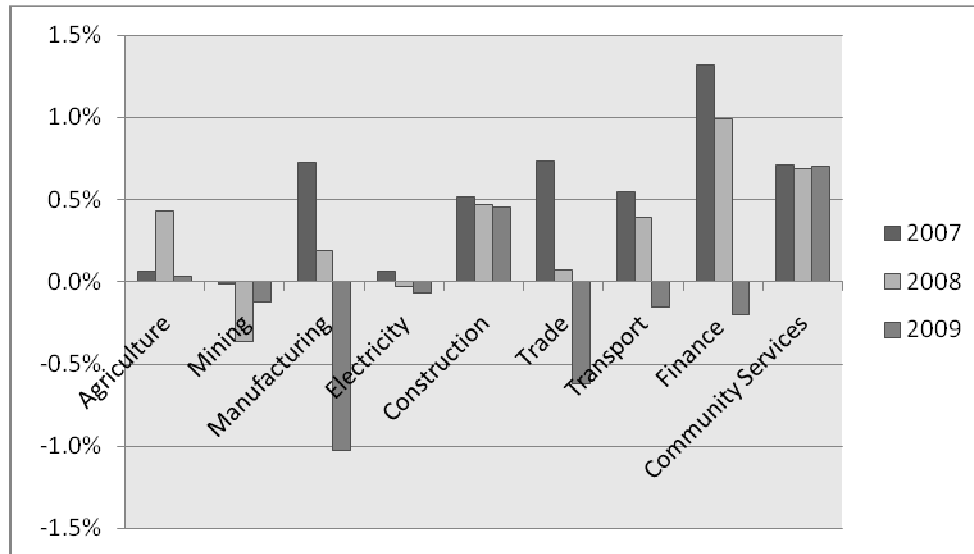


Source of data: Author's own calculations based on Global Insight results

Figure 2.2 compares the annual growth rates between total industries and the total industries in the economy. Agriculture showed a strong declining growth until 2008 and an increase in 2008. Total industries had a declining growth until 2008 and an increasing growth in 2009. The drop from 2007 to 2008 is due to the economic crisis that was experienced world-wide at that time. Even during this time of economic crisis agriculture experienced positive economic growth rates. This was higher than the industrial average at that time.

Figure 2.3 explains the contribution of the sectors to increase economic growth. The sector that gave the most contribution to economic growth between 2007 and 2009 is the finance sector and secondly the trade sector. The third sector is the manufacturing sector. This growth also shows how important agriculture is in the contribution of economic growth.

Figure 2.3: Sectors' contribution to economic growth between 2007 and 2009



Source of data: author's own calculations based on Global Insight results

The following part of this chapter will discuss the comparative advantage that the agricultural sector has in the South African economy and why this is an important sector for the government to focus on.

2.3. Policies

2.3.1. Introduction

Herault & Thurlow (2009:4) indicated that taxes on exports and government subsidies were eliminated in the 1990's because the government stopped to intervene in the input and product markets. This gave the farmers the chance to respond to the changes in market opportunities. Thereafter taxes and subsidies were eliminated. The only policy element left was import tariffs.

2.3.2. Evaluation of Policy Measures

Mundlak (2000) stated that agricultural policies are implemented in most countries across the world and while these policies are not fully understood, they are unique in

their own way. Economic policies are brought over to other sectors but these motives should be general. These policies cause distortions and welfare costs.

Specific aspects that are important in this regard are agricultural price policies, subsidies, taxes, and producer support estimates. These matters will now be discussed.

2.3.3. Agricultural Price Policy

Lindhauer *et al* (2006:642) emphasise the fact that government investment in infrastructure and agricultural research is of importance to the economy. But this can take a long time - years and sometimes decades. An area where the government can make a significant impact is when prices are set in the agricultural markets. The intervention of governments in this case can have a large impact on agricultural production and consumption.

Beghin and Aksoy (2003:2) state that there are instruments used to protect agriculture and these types are trade protection, general support and infrastructure. Trade protection ensures that the domestic producer prices do not exceed international prices. General support is the kind of support that is not directly linked to production such as research and training.

The prices that are made by the government have three vital roles. The prices paid to the farmers for key inputs have an impact on what, as well as the quantities, they can produce. Secondly, the prices that are paid to farmers together with the quantities of produce sold are determinants of a farmer's income. Thirdly, the prices at which agricultural products are sold are often controlled by government marketing boards that manipulate the farmers to earn profit for the government - often called taxation (Lindhauer *et al*, 2006: 643).

2.3.4. Policy Measures in South Africa

To improve the South African economy, wide-ranging policy reforms which include trade and exchange rate policies, need to be implemented. The rapid export

expansion of the economy can lead to higher levels of employment and wealth creation (Kargbo, 2007:2069). In the Southern African Customs Union, agricultural exports increased from R18.4 billion in 1995 to R23 billion in 2003. The imports increased to R13.84 billion from R6.83 billion in the same period (Kargbo, 2007:2069).

The policy makers place a great deal of importance on the need for increasing competitiveness and efficiency gains in the domestic agricultural sectors. Agricultural exports are a major source of foreign revenue for a developing country like South Africa. A reduction in food prices related to efficient gains and this also contribute to the fight against poverty. The agricultural sector on the other hand is identified by the same policy makers as an important source of employment growth. This increases the real income associated with efficient gains and which results in the expansion of economic activities (Paauw, McDonald & Punt, 2007: 309).

2.3.4.1. Subsidies for producers

Governments should consider the welfare of the poor urban residents and the political impact of major increases in food prices. Farmers are negatively influenced when prices of higher yields are favourable. This leads to the benefits of income and production not being distributed equally. For instance, richer farmers who market a higher percentage of output, gain the most from high prices, and on the other hand poorer farmers gain less (Lindhauer *et al*, 2006: 645).

In some countries all farmers who market a high percentage of their crop, gain from higher prices. But this is all set on world prices and also require that the government of the country subsidise farmers so that imports on lower-cost products are restricted. The surplus production that are generated from these high prices is also often exported at below market prices so that there are a depression of prices for agriculture in the countries that receive subsidised imports (Lindhauer *et al*, 2006: 645-646).

2.3.4.2. Taxes on export of agricultural products

Deese and Reeder (2007:2) define export tax as a tax that is imposed by government on products that are exported to the international market. Export taxes are applied as a fixed percentage of the product value or as a fixed rate of a specific product. The primary users of export taxes are developing countries, because they use it to impose taxes on exports of raw materials rather than on produced goods (Piermartini, 2004:7-15).

Export restrictions can be displayed in different forms, including export taxes, export bans, regulated exports and supervised exports. Export can take different forms. The first one that will be looked at is advalorem tax which is specified as a percentage of tax of the value of a specific product (Piermartini, 2004:3). A specific tax is specified as an amount that is paid to a particular product. Progressive Tax, which is used in South Africa, indicates that the higher the tax per product is, the higher the product's price and vice versa.

Mitra and Josling (2009:3) define agricultural export restrictions as a defensive measure which is implemented by economies to protect consumers and/or producers.

Export Bans are applied on products such as fisheries, wildlife, hide and skins of endangered species (Piermartini, 2004:3). Another way for the government to implement the export ban is to prohibit the exports of dangerous materials. There are problems that come to light when this policy is used. Some argue that this policy is not a long-term policy and can be an indication of smuggling in an effort to avoid the previously mentioned quotas and licensing requirements.

Quotas are the volume of a product which is restricted, and licensing requirements are found when a commodity can be exported through approved export channels. These two schemes can encourage the formation of cartels and rent-seeking activities. Taxes being the instrument that is often preferred amongst the various policy options for export restriction. Tax makes it easier for government to yield

revenue from consumers, which are administrable and transparent (Piermartini, 2004:3).

The following part will discuss the restrictions that exports have on unprocessed final products, as well as the motivation and reasons behind export restrictions.

2.3.4.2.1. Motivation for Restrictions on Commonly Processed Agricultural Products

Commonly processed agricultural products are a variety of products that are consumed in their processed form. The basis for restricting exports of the processed form products is straightforward: by exporting these products in their raw form, the importer can add a margin, which then accumulates a higher profit in the importing countries. By withholding raw products from the international market and produce it locally, a country can enlarge its production and exports of processed products and increase income generated from exports. They may also expand their domestic market of the product.

2.3.4.2.2. Export Taxes

Taxes on exported products can be set on a specific or an ad valorem basis. Many countries employ export taxes, and such policies can generate an income for the government to spend on their expenses (Mitra & Josling, 2009:8). It would be ideal if some of those taxes could be channelled back towards rural and agricultural development.

2.3.4.2.3. GATT Disciplines on Export Restrictions and Taxes

The United States of America (USA) included in its comprehensive proposal to the World Trade Organisation (WTO) the following objectives:

“To strengthen substantially WTO disciplines on export restrictions to increase the reliability of global food supply; and to prohibit the use of export taxes, including differential export taxes, for competitive advantage or supply management purposes” (Mitra & Josling, 2009:16).

Deese and Reeder (2007:2) imply that the WTO does not prohibit export taxes. Export taxes must be transparent and clear and cannot discriminate against other countries demanding the product.

The General Agreement on Trade and Tariffs (GATT) banned quantitative restrictions on export and agricultural goods, but the rules are difficult to interpret and enforce. There are no prohibitions on export taxes. Article XI of the GATT (94) states in paragraph 1 that there shall be “no prohibitions or restrictions other than duties, taxes or other charges ... on the exportation ... of any product” destined for another WTO member (Mitra & Josling, 2009:16).

The following section will discuss the support that is given to the producer of Agricultural products.

2.3.4.3. Producer Support Estimate

A measure of support to agriculture is the Producer Support Estimate (PSE) (Chadha, Pratap and & Tonden, 2007:4). These policies measure that domestic prices for farm goods are at a higher level than the price of the market. Secondly, they also provide payment to farmers on a community based criteria, the amount of iniutsused the number of animals kept at a minimum. This measure captures all the effects of the different types of governmental programs and interventions in a single number. It is better to compare this model to tools like nominal and effective rates of protection because it only accounts for a small proportion of the transfers between government and the producers of agricultural commodities. PSE's can be represented in different ways. In the first phase, PSE can be expressed as a proportion of transfers multiplied by 100 to get the percentage PSE. This is relative to the size of the farmers' gross revenue (Chitiga *et al*, 2008:83). The other measure is PSE per unit of output of a commodity where the PSE is divided by the level of protection. This measure captures the subsidies provided by the government for the production of units of output.

The ratio of PSE can be expressed as the percentage of producer support estimate, equals to the total transfers, divided by the value to the producers. It can be

explained as the quantity produced, multiplied by the monitor on the agricultural bufertary,multiplied by the producer's price on domestic currency units, minus the world price in currency units,multiplied the quantity produced, plus the direct governments payments and indirect transfers, divided by the quantity produced, multiplied by producers price on the domestic currency units and plus direct government payments (Chitiga *et al*, 2008:83).

The PSE monitors and evaluates the progress of agricultural reform and covers transfers from agricultural policies to farmers. There is a component of the PSE which is called budgetary support. This component makes payments to farmers. They also receive a budget to cover the cost of their inputs on farms (Chadha *et al*, 2007:4).

The PSE percentage can be estimated as follows:

$$\begin{aligned}\%PSE &= \frac{\text{Total transfers}}{\text{Value to Producers}} \\ &= \frac{(Q \times (P_d - P_w \times X) + G + I)}{(Q \times P_d + G)}\end{aligned}$$

Where:

Q = the quantity produced

P_d = the producer price on domestic currency units

P_w = the world price in world currency units

X = an exchange conversion factor

G = direct government payments

I = indirect transfers

The above equation means that a percentage PSE could be negative if the domestic price is less than the world reference price, or positive if domestic price is larger than the world reference price. A level of percentage PSE is determined by the level of distortion, which is created by the increased price support. Trade distorting support contributes towards lower world prices and inflicts costs on producers in countries which are not secured by their domestic markets (Chitiga *et al.*, 2008:83).

If the government policies remain unchanged, changes in exchange rates and domestic production can alter the percentage PSE. However, not all transfers have the same weight in the percentage PSE measurement. To determine the percentage PSE, transfers from price support programs and direct payments (G), appear in both the numerator and the denominator; though, indirect transfers (I) appear only in the numerator. This implies that a country's percentage PSE can decline or increase without changing the total transfers to producers merely by shifting transfers from indirect payments or price support programs (Chitiga *et al.*, 2008:83). Dependence from the South African agricultural industry has gained international competitiveness, although sectors within the industry had experienced an adjustment period difficulty.

The aim of land distribution is to provide access to land for agricultural purposes to people so they can settle small and emerging farmers on viable farming operations in the commercial farming areas.

The following section will discuss the export led growth and its impact on the trade sector and specifically the agricultural sector.

2.4. Comparative Advantage in the Agricultural Sector

There have been discussions of the role of agricultural productivity in economic development for several years. Development economists have stressed the improvement of agricultural productivity as an essential part of a successful development strategy (Matsuyama, 1992:317).

Industrialised goods and services require a market to serve, which will depend on the stages of early development from the agricultural sector. There are two sides to the

economy: demand and supply. Demand requires a higher price for agricultural goods, which will increase the purchasing power of agricultural goods and services. Supply needs a food industry which is not expensive, where consumers can obtain food and also save and accumulate capital (Thurlow, 2006:104).

There are positive links between industrialisation and agricultural productivity. Firstly, there are increases in productivity of food production, which will make it possible to feed the growing population in the industrial sector. There will be more labour opportunities in the manufacturing sector when more food is produced by using less labour. Secondly, higher income that is generated in agriculture will show a growing domestic demand for industrial products and thirdly it increases the supply of domestic savings that is required to finance industrialisation (Matsuyama, 1992:318).

There are implications that terms of trade is not in equilibrium. There needs to be equilibrium between the terms of trade. For example, if the price of food is too low or high, in relation to the industrial goods, the growth of industrial goods is demand- or supply constrained. An industry could accumulate capital, but goods cannot be sold.

The following section will discuss the role that agriculture has in the economic development in South Africa and also in least developed countries (LDC's).

2.5. The role of Agriculture in Economic Development

The agricultural sector plays an important role in economic growth of least developed countries (LDC's), and can be summarised as follows:

Labour is provided by the agricultural and non-agricultural sector and this shows that an excess supply of labour can be seen in the Least Development Country's (LDC's) economy. This indicates that, with the availability of labour, low opportunity costs could be an important factor to growth (Ghatak, 2003:271-273).

Ghatak (2003: 271-273) explains the industrial sector relies on the agriculture sector, because it supplies food and raw materials. Wages are also an important

determinant in the industrial sector because food can then be purchased. This will lead to a constant food price which could increase economic development rather than slowing it down.

Thirlte, Lin and Piesse (2003:1960) indicate that agricultural growth which is driven by technology is not new. Agriculture must be labour intensive as a large share of poor people living in rural areas use the agricultural sector as employment, and also to reduce poverty. The poor, who seek employment in the agricultural sector, live on less than \$1 a day.

Agricultural exports can make a country gain more foreign exchange. Total exports indicate that primary exports contribute a small percentage of total exports which conclude in an inelastic demand curve. When many LDC's try to export similar goods at the same time, prices tend to fall and together with the low income and price elasticity's demand of this exported goods, the LDC's will be worse off than they were before the exports (Ghatak, 2003: 271-273).

An improvement in the agricultural sector can be the result of the formulation of capital rates in LDC's. Elasticity of food supply is an accumulation process, where wages and costs will increase and profit will decrease. This will finally lead to an overall decline in surplus and growth.

The expansion of the size in the LDC's plays an important role in the agricultural sector. The demand of industrial products will stimulate industrialisation when the money and real income of the country is enlarged (Ghatak, 2003: 271-273).

Bezemer and Heady (2007:1343) stated that the involvement by governments in agriculture is a necessary precursor to both agricultural development and overall economic progress. A policy is needed which discriminates against LDC agriculture and will delay economic growth and poverty reduction. A body of work from economic theory, economic history and empirical analysis support these claims. Agriculture can be seen as a labour intensive source of employment and thereby economise on scarce capital and imports. It aids growth by providing cheap food, raw materials, labour, savings and demand for non-agricultural goods. Agricultural

growth is a key determinant of food stability and nutrition, poverty reduction and political stability in a country (Bezemer & Heady, 2007:1343).

Restuccia, Yang and Zhu (2008:249) imply that there is a difference in agriculture and total labour productivity across rich and poor countries in the requirements of food and the decreasing returns of labour in agriculture. The cost of government policies impact agriculture, because the incentive of farmers is reduced in poor countries. These incentives are used to improve the modern inputs to enhance the agricultural productivity.

A further important point is that agricultural growth is basically pro-poor growth. The reasons are well known. Agriculture is, for example, generally labour intensive and low skill-extensive so that agricultural growth creates additional employment with low entry barriers. Increased agricultural productivity also lowers food prices for both the rural and the urban poor, who typically spend most of their household budgets on food. Especially productivity growth on small family farms is very pro-poor. A second theoretical reason for state involvement in the agricultural transformation is that market failure is pervasive in underdeveloped agriculture (Bezemer & Heady, 2007:1345).

The following section of the chapter will provide an introduction to strategies that are used in agricultural led development. The successes of strategies will also be a part of this section. Under these strategies the Producer Support Estimate (PSE) will be discussed, as well as the subsidies and taxes in the agricultural sector and the agricultural price policy.

2.6. A Strategy for Agricultural led Development

2.6.1. Introduction to the strategy

Agriculture has an important role to play. It is also possible that agriculture could play the role of a leading sector rather than a follower (Cypher & Dietz, 2009:353). During economic development agriculture should not be neglected. Research conducted between 1790 and 1980 shows that thirty per cent of all economic growth rose from

better nutrition and increasing human capability, which arose from the improved ability of the labour force which were given greater energy from their food consumption (Cypher & Dietz, 2009:353). The rise in agricultural productivity leads to induce rising productivity in the remainder of the labour force and leading to lower food prices.

Cypher *et al.* (2009:353) also suggest that when the agricultural sector is in “boom”, it can create an important source for domestic industrial demand, both for consumer goods which farmers will buy, and farm outputs which can create economies of scale in the production of manufacturing goods.

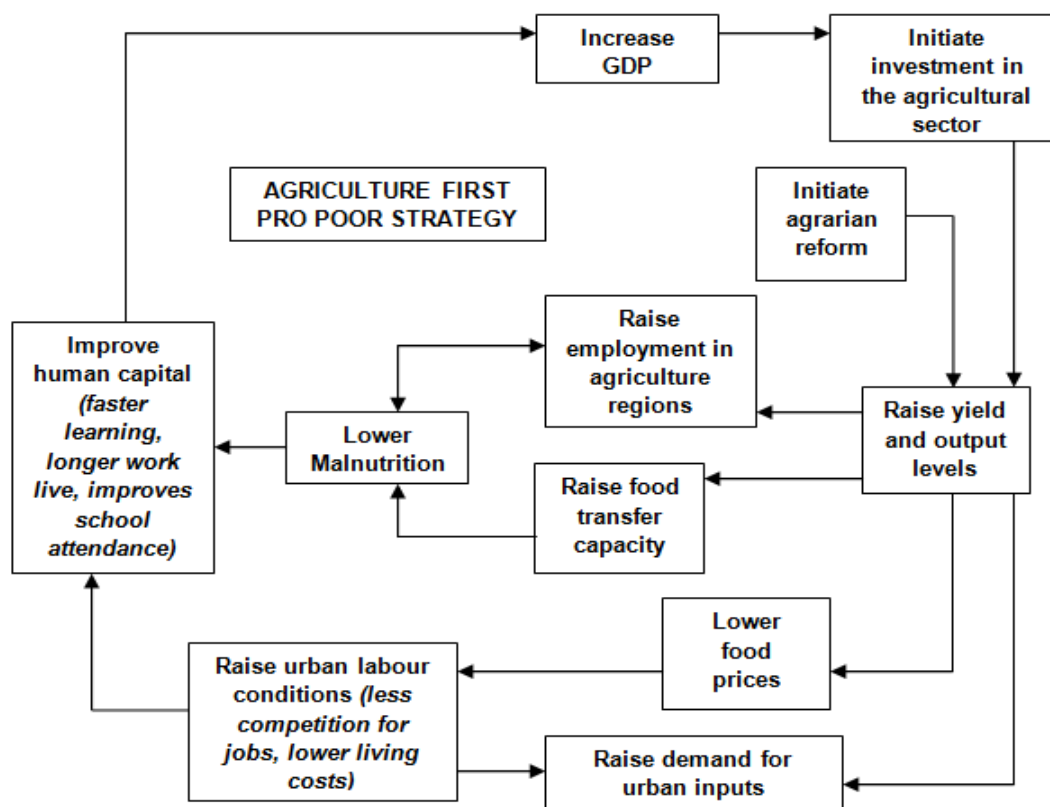
Studies indicate that infrastructure is of importance in this strategy, according to Cypher *et al.* (2009:353). Labour intensive methods are used for building dams, irrigation canals and water storage facilities. It is also easier to import substitution activities such as in the textile industry. The agricultural led strategy may target some of the poorest people, because agricultural output will grow more and at the same time the demand for landless workers in the countryside will grow.

2.6.2. Successes of the Agricultural led Strategy

During the 1970's and 1980's Indonesia enjoyed success with this strategy in their rural economy as the force of growth in the motor vehicle industry (Cypher *et al.*, 2009:354). The poverty rate decreased from fifty per cent of the population in 1960 to twenty per cent in 1990. Forty percent of the new jobs acquired by the increasing labour force between 1969 and 1994 were due to the development in agriculture (Cypher *et al.*, 2009:354).

Indonesia's success combined the adoption of the green revolution in the 1960's and agricultural sector support centred on the needs of small landholders. The agricultural sector can promise to engender a virtuous circle of forces.

Figure 2.4: Agriculture First Pro-poor Strategy



Source: Cypher *et al.*, 2009:355

Figure 2.4 illustrates that an increase in the GDP initiate investment in the agricultural sector. These raised yields in the output levels, which will eventually lead to initiate agrarian reforms that also contribute to this. From the output levels this figure goes about in three directions: firstly it raises employment in the agricultural regions, which is an important factor for the growth in the country. Secondly, it raises food transfer capacity to lower food prices because food is a basic necessity for all human beings and lastly it raises demand for urban inputs (Cypher *et al.*, 2009:354).

There was a downward trend for food prices over the years which ended when world prices started to rise in 2006 because of the price inflation in 2007 and 2008. A combination of high food prices and petroleum prices have the potential of encouraging inflationary pressures, which compete for public expenditures that are intended for alleviating poverty and meeting the Millennium Development Goal

targets. The poorer households who spend all their expenditures on food are suffering the most from this high food process, because of purchasing power which has a negative impact on food security, nutrition and access to school and health services (Dumeke, Pangrazio & Maetz, 2008:4).

The rise in employment in the agricultural regions and higher food transfer capacity both lead to lower malnutrition; therefore, improving human capital. Lower food prices lead to an improvement in the urban living conditions which also increases the demand for urban inputs. The raise in urban living conditions also leads to an improvement in the human capital. Finally the improvement of human capital can lead to an increase in GDP (Cypher *et al.*, 2009:354). There are large increases in productivity; however, the majority of the constantly hungry are small farmers in developing countries who produce what they eat and are often poor and marginalised from input and product markets. There is still a fundamental food security challenge across the world despite of the falling fertility rates and family sizes, but there is a continuous increase in the total demand for food (Hine & Pretty 2006:4). There will also be a shift in the coming decades, when economic growth will increase the people's purchasing power. Urbanisation will then grow and encourage people to adopt new diets. Climates will threaten both land and water resources. There is also a sustainable choice for agricultural development and food security is to increase the total farm productivity in the developing countries that have a larger need for the food products (Hine & Pretty 2006:4).

The initial investment in the agricultural sector through a state led process of large-scale investments in irrigation, roads, bridges, storage facilities and canals, will increase the demand for rural workers as cultivators and labourers which lead to lowering malnutrition and food security concerns. In short, to intermediate time-frame the agricultural supply expansion will decrease food prices. This will lead to increase the standard of the urban working class and benefit the informal workers (Cypher *et al.*, 2009:354).

The following section of the study will explain the policies in the South African government toward the agricultural sector and what impact it has, not only on the export sector, but also on the domestic sector and the people of South Africa.

2.7. Export Led Growth

According to Tay Cheng (2008:1150) trade can either be inward or outward. Inward orientation involves an import substitution strategy that is characterised by government intervention that weighs out the options of bias between production and exports in the domestic market. Outward orientation involves export expansion and weighs out possibilities of being biased between sales in the foreign market, which is compared to sales in the domestic market. Such an approach implies a liberalisation strategy where government intervention is minimised to effectively allocate economic resources that are being used by the market mechanism (Tay Cheng, 2008:1150).

Over the past three decades considerable research was done on export led growth, which showed that there is a link between exports and economic growth. There have been numerous arguments over the pursuit of an export oriented strategy (Mahadevan, 2007:1071). Higher productivity will be the outcome of trade expansion and greater economies of scale in the export sector. This will eventually lead to a reallocation of resources from the inefficient non-trade sector to the productive export sector. A comparative advantage exists in specialisation and will increase the GDP (Mahadevan, 2007:1071).

Exports provides access to advanced technologies, learning by doing gains and better management practices that will result in further productivity gains, through the outward oriented trade policy. Easier access of advanced technologies will ease the constraints on growth when there is an increase in export earnings. For essential goods such as capital and intermediate goods, to be imported, the capital for it needs to be enhanced. Capital accumulation and economic growth are promoted by the export expansion. Lastly, an approach of export experience will lead to a rapid expansion of employment and wages, which will result in domestic spending as another source of GDP Growth (Mahadevan, 2007:1071).

The subsequent part of the study will discuss the role that export promotion plays in the export industry, and will discuss the possibilities that the Agricultural sector have to boost the South African economy.

2.8. Primary Export Dependence

Less developed countries are more focused on the production of primary products (agriculture, fuel, forestry and raw material) as opposed to secondary and tertiary sectors. Poor countries need to obtain foreign exchange in addition to domestic savings in order to finance development projects that are of importance to developing countries. There has been a negative flow of capital with more foreign currency flowing out of the developing countries than was actually received. Developing countries also did not keep pace with the exports of the developed countries (Todary & Smith, 2003: 68-69).

There is pressure from less developed countries on rich developed countries to support agriculture (LDC`s) (Mcmillan *et al.*, 2007:183-185). OECD countries rely on subsidies from government for their products to export and sell their products on the world market below the cost of production. There is criticism that policies may cause harm by depressing world commodity prices to the disadvantage of poor countries.

There are also arguments that policies are likely to hurt the poorest residents of developing countries mostly because they are farmers. Developing countries believe there is diversity in the policies the rich countries support (McMillan *et al.*, 2007:183-185).

2.9. Export Promotion

Henson and Loader (2001:85) highlighted the importance of the agricultural sector in the economy, not only macro-economically but also for the rural population. The agricultural sector accounted for 61 per cent of employment in 2001 and also 14 per cent of the GDP in developing countries. In the developing countries it contributed about 85 per cent to employment and 36 per cent in GDP. Agriculture accounts for a

large share in the international market in areas such as market access export subsidies, restrictions and internal support (Henson & Leader, 2001:87).

Although agriculture has a small and declining share in the economy, it remains an important source of employment (Herault & Thurlow, 2009:3). Global trade is doubling, which indicates that the developing countries tend to import more industrial goods and exporting more agricultural products, automobile parts, clothing and other raw materials (Lindhauer *et al*, 2006:649).

Kargbo (2006) indicates that over the last ten years there has been a development in the intervention of governments in the South African agricultural sector. Governments use policy reforms such as trade and exchange rate policies in order to increase international competitiveness. Other reforms include poverty reduction and economic growth promotion. These reforms facilitate growth in agricultural trade and the integration of South Africa in the global economy. There has been a transformation in the agricultural sector in South Africa because of the extensive intervention of the government.

Esterhuizen and Van Rooyen (2006:230) state that agriculture and agribusiness is experiencing changes worldwide. Competition is an influence which has an effect on the external environment. With the aid of Porters determinants of competitiveness, factors were identified that can influence the agricultural export firms in South Africa.

2.9.1. Benefits of Exports for the Agricultural Sector

Agriculture can be a main beneficiary from exports. It can receive a greater share of competitiveness in the international market. For the South African agricultural sector a comparative advantage can be gained, because South Africa is classified as a developing country and can benefit from the agricultural share and market share in the world. Agriculture contributes to development by providing food, as well as raw materials for population. When productivity rises in agriculture, it could also contribute to the supply of labour in the non-agricultural sector, and then leads to

higher income in the rural areas, as well as a higher demand for non-agricultural and agricultural products (Lindhauer *et al*, 2006:649).

Agriculture can become an even larger sector in South Africa, not only because of the attributes it can provide to the other sectors, but also its large potential to boost our economy.

2.9.2. Export Promotion in South Africa

Exporters in the domestic market require assistance in foreign markets and this assistance can be given by export promotion organisations. The government needs to allocate their resources more effectively and more attention is needed on the agendas of export promotion agencies. Van Aarde (2007:6) states that export incentives are unique in each country that uses it. The nature and degree of the involvement in export promotion has not been agreed upon universally. Governments need to shift their attention from investment towards export promotion. This need will be influenced by a country's economic and social structure (Van Aarde, 2007:7).

Etro (2006:2) indicates that the support of governments to exporting firms are strong, but they often hide export promotion forms behind nationalistic pride and consider conquering larger market shares abroad as a positive achievement.

Biggs (2007:4) highlights the fact that government trade support services, like export promotion zones (EPZ's), are often not effectively operated. Numerous agencies, private and public, have no strategy operations and mandates are unclear and overlapping. These services governments provide often do not meet the export community's needs.

The Department of Trade and Industry's (DTI's) reviews of responses indicated three things to reform low income country samples:

- To promote sustained export expansion and diversification. Promotion of macro-economic stabilisation and trade liberalisation by themselves were not

enough. Other areas played a major role in limiting export response to bind constraints (Biggs, 2007:5-6). The constraints used in text means that the DTI tries to constraint the issues that are on hand, for instance agricultural and food exports or tourism development.

- The outcomes of trade liberalisations depends heavily on how reductions in import restrictions are affected by the productive dynamism of the economy – meaning that trade liberalisation stimulates a modest increase in traditional exports while causing a decline in the industrial base without stimulation of new non-traditional exports. The economic dynamism to decline is possible and future growth could be disappointing. Reforms that had a level effect on GDP in sample countries were not always effective, because traditional exports increases will not be enough to drive future increases in productivity or growth. To highlight the previous point, a declining industrial base and limited diversification into new non-traditional exports will be experienced (Biggs, 2007:5-6).
- The DTI shows there are functions not properly incorporated in low income countries, such as the involvement of government institutions, formulated and implemented trade policy, promoting trade and providing trade support services. Trade ministries experience challenges in trade policy management and coordination of other ministries and agencies to deal with large amounts of behind the border issues. Sector specific ministries do not have the necessary capability to handle the complex cases of trade development strategies. In the areas of trade promotion and standards, government trade support services are not managed to its fullest potential. These areas require more technical assistance (Biggs, 2007:5-6).

A decision support model was developed to assist export promotion by the authorities in South Africa, by Cuyvers *et al.* (1998) in cooperation with the North West University of South Africa. This model identifies potential export opportunities in the world for products that South Africa has an international comparative advantage in. This model will be explained next.

2.10. The Decision Support Model

Cuyvers (2003:255) states that developing countries' export promotion should be concerned with the producing of public goods through the pooling of information and by improving knowledge and capabilities in the international trade relations field. Various instruments can be used to achieve export promotion, such as the organisation of outgoing trade missions, centralised information gathering and dissemination, and the provision of incentives to receive more detailed market knowledge by the participation of companies in trade fairs and international market training.

Cuyvers, De Pelsmacker, Rayp and Roozen (1998:174) highlight the final objective of the Decision Support Model to develop a limited list of excellent opportunities and to obtain export promotion priorities, as well as promotion strategies for a variation of categories of markets. The model provides guidelines as to the differentiation in promotion strategies according to the nature of the export and to export those market opportunities. The model should only be used as a tool to facilitate and structure government decisions rather than a contribution to build decision making models. The model; however, has been developed in a userfriendly way (Cuyvers *et al.*, 1998:175). It must, however, be remembered that export opportunities tend to change over time.

The DSM Model works through four filters which can be used as guidelines to determine a country's possible export partners and their position in the world market. The filters of the DSM will be discussed in the following paragraphs. Criteria can be used to the degree of detail and specification, which can increase filters further down. This is used to eliminate markets of low potential on the basis of general macro indicators, so that there can be concentrated on detail in a more limited set of preliminary opportunities. First a preliminary study is made of the market opportunities and then possible opportunities are identified. Thirdly, these opportunities are judged according to probable and realistic criteria and finally the country's export position is determined. The filters are as follows:

2.10.1. DSM Filters

2.10.1.1. Filter 1: Preliminary market opportunities

Cuyvers *et al.* (1998:177) indicates that in the first filter the general idea is to eliminate countries that do not have the necessary information and size for their economies to provide opportunities for their exports. Cuyvers (2003:255) also states that information related to the commercial and political risk of doing business with each country, is used in order to assess the lack of sufficient general potential in the markets. General macro-economic indicators can be brought into his conclusion. Countries with higher commercial and political risk should be eliminated from the potential markets' list, as well as countries with a low scale and scope.

2.10.1.2. Filter 2: Possible opportunities

Cuyvers (2003:257-258) indicates that the market potential of the various product groups for the remaining countries, must be interpreted in a more specific way by using product related criteria of market potential, such as import growth and import market size. Combinations of products and markets, which do not exceed the threshold value determined by the cut-off points in filter 1, are rejected. The principle behind filter 2 is to remove the markets that are not sufficiently interesting as an export promotion target for small countries. However, there needs to be an estimate of the future import demand of a country (Cuyvers *et al.*, 1998:178).

2.10.1.3. Filter 3: Probable and realistic opportunities

Markets can be considered opportunities in filter 3, based on their size and growth; although, this does not mean that these countries can be easily entered. These countries may have trade restrictions and other barriers for entry, which can prevent an exporter from acquiring a significant market position. The tariff and non-tariff trade barriers can make the entry to the specific market difficult (Cuyvers *et al.*, 1998:179). Cuyvers (2003: 257) also implies that this filter analyses the remaining possible export opportunities in more detail, such as removing markets that are more

difficult to enter, due to barriers, and whose likelihood might show a dominant bilateral trade pattern which are difficult to circumvent.

2.10.1.4. The country's export position

The final stage of the DSM's analysis is drawn from the relative strength of the business - one that is accessible for the remainder of realistic opportunities. Cuyvers (2003:257) agrees with the previous statement. He states that the previous filter's results will conclude to identify the parameters, which are necessary to assess the strengths and weaknesses of the export country in the respective foreign market. When this model is developed, the assessment is only based on the market share of the exporting country in the target markets. When the market is still weak, another strategy should be used. It should be compared to a product-country combination where the export country's market share is already high (Cuyvers, 2003:257).

2.11. Summary and conclusion

Since the 1980's the development in Africa grew at too a slow pace for economic growth. There were pressures from the government to generate policies to stimulate growth, employment and redistribution. The government established the Growth, Employment and Redistribution policy in 1994 to address the issues that were at hand. There are important channels between trade and growth but conflict arise whether or not countries should promote their sectors of export to gain economic growth.

Empirical Studies indicated that this field used data at country, industry level. This could test whether exports could promote productivity. Peterson (2005, 790) had concerns that affected the rate of economic growth. On the demand side, there is low growth in the world's demand for primary products exported, but their changing prices indicate that revenue from this export will be unstable. On the supply side, there are no technical improvements and skills learned in production, and this makes the link with the rest of the world very difficult.

There are several product impacts to protect agricultural exports. The agricultural price policy implies that governments make investments in infrastructure and agricultural research in the economy. This could have a large impact on agricultural production and consumption. Trade protection ensures that production that takes place domestically cannot exceed the international prices. The policy makers emphasise the importance of competition in domestic sectors. A decrease in food prices could help to fight poverty. It increases the real income which also contributes to the expansion of economic activities. Subsidies are a policy that the government imposes when they pay farmers a certain amount for their production and contribution to the economy. Tax on export are applied as the fixed percentage on the products. The primary sector uses this policy in the developing countries because taxes are raised on raw materials rather than on produced goods. Quotas are used when government wants to restrict the volume of the product. The PSE evaluates and monitors the progress of agricultural reforms and transfers from agricultural policies to farmers.

There has been an advantage in the agricultural sector for several years. This is a part of the development strategy being succesful. The agricultural sector can be seen as a sector that can provide labour and create job opportunities . This sector is also gaining more foreign exchange. Agricultural exports contribute a small percentage to total exports. The government policies impact agriculture, because the incentives given to farmers are reduced in poor countries.

Research done, states there is a positive link between exports and growth. Exports provide a decrease on technology which leads to an increase in export dependance. LDC countries are focussing more on the production of primary products, whereas poor countries need to obtain foreign exchange in order to finance development projects. More developing countries tend to import more industrialised goods and exporting primary products.

The benefits that agriculture has when exporting, is that there will be a greater share in the international market. It can add to the supply of labour, more employment, higher income in rural areas. For export promotion to be effective in South Africa,

government needs to allocate its resources effectively. The government needs to change from investment toward employment. The DSM will be used to develop a limit of excellent opportunities and to obtain export promotion priorities and promotion strategies for variation in export promotion priorities, and promotional strategies for variation of the categorisation of markets.

CHAPTER 3: OVERVIEW OF THE KWAZULU-NATAL PROVINCE

3.1. Introduction

This chapter focuses on the agricultural sector of the KwaZulu-Natal Province and all the sectors that contribute to the KwaZulu-Natal economy. Demographics will be discussed, such as the top three sectors that contribute to the province's economy and economic indicators of KwaZulu-Natal. Other aspects of the KwaZulu-Natal Province will also be discussed, such as the transport industry and its functions that make the exports of agricultural products of this province a success, as well as value adding industries that benefit from the agricultural sector.

Chapter 3 now focuses on the Agricultural sector, specifically focusing on agricultural products, forestry and fishing.

3.2. Geographic Profile of the KwaZulu-Natal Province

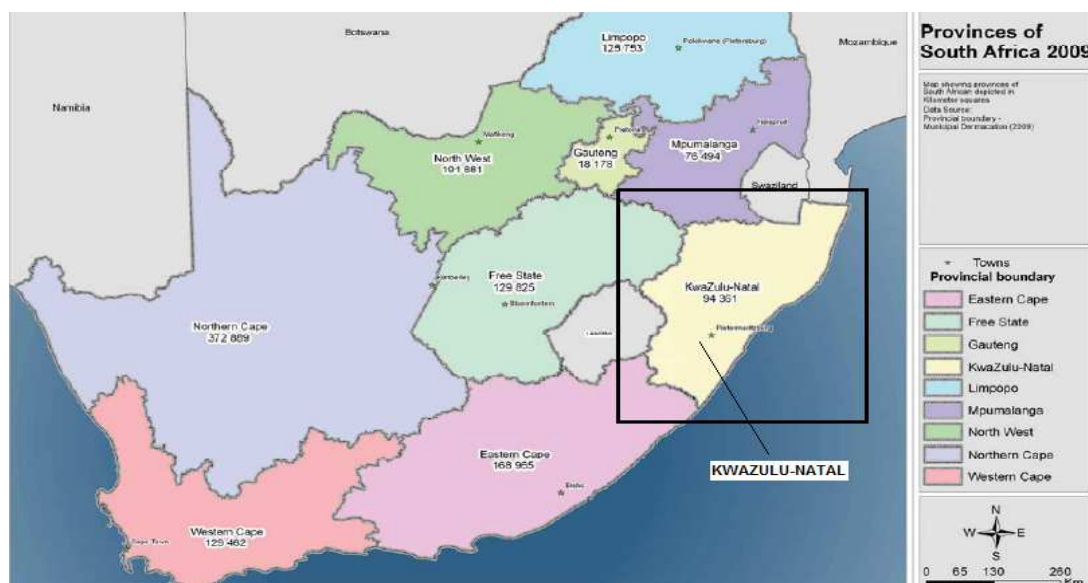
3.2.1. Introduction

The Trade and Investment KwaZulu-Natal website proclaims that KwaZulu-Natal is a province with a lot of potential in the manufacturing and agricultural sectors, and can be seen as a country with countless tourist attractions (TIKZN, 2006:2). There is also a competitive advantage to this province as it has a well-developed port and railway system for easy access to the rest of the world - an advantage that not all of the other provinces are privileged to. Over the past years the KwaZulu-Natal Province has emerged as a hub of industrial development in Southern Africa and can benefit from its unmatched natural resource endowments, extraordinary productive capacity, world class infrastructure and an advantage of a coastal location. The Metropolitan areas where economic activity is seen most are Durban,

Pietermaritzburg and Richards Bay. These areas are also rich in products like sugar cane plantations, subtropical fruit and vegetables. A competitive advantage of this province is its two ports which ensure economic growth and repositions the country to increase its share of the global market (TIKZN, 2006:3).

The subtropical coastline of KwaZulu-Natal is a major boast to the South African economy. The Indian Ocean that coasts KwaZulu-Natal makes this province a popular holiday destination. Durban (also known as eTekweni), KwaZulu-Natal's metropolis, is also the host of one of Africa's busiest ports. KwaZulu-Natal contributes 16.7 per cent to South Africa's GDP. A strategy has been established to attract investors to the province. For instance, there is a multibillion rand investment on the northern side of the uThukela River in the Macambini area that a United Arab Emirates developer is developing. This investment, once finished, will be the creator of thousands of permanent jobs (Burger, 2009:6).

Figure 3.1: Geographical map of KwaZulu-Natal



Source of data: STATSSA -see Statistics South Africa, 2009

The map in figure 3.1 indicates that the KwaZulu-Natal Province is situated on the eastern side of South Africa, with the ocean on one side and the Eastern Cape, Lesotho, Free State, Mpumalanga, Swaziland and Mozambique as its neighbouring

provinces landwards (see figure 3.1). What makes this province such an asset to the South African economy, is the fact that it is situated at the ocean and that this makes it a province that has easier access to exports and imports. It also shows to the other provinces its potential as export and import facility of their products and services.

Table 3.1: Land Area of South Africa, 2009

Province	Area km ²
SOUTH AFRICA	1 220 813
Eastern Cape	168 965
Free State	129 825
Gauteng	18 178
KwaZulu-Natal	94 361
Limpopo	125 753
Mpumalanga	76 494
North West	104 881
Northern Cape	372 889
Western Cape	129 462

Source of data: STATSSA - see Statistics South Africa, 2009

Table 3.1 indicates the land area of all the provinces in South Africa, in square kilometre (km²). The province with the largest land area is the Northern Cape, with a land area mass of 372 889 km². KwaZulu-Natal land area is 94 361 km², which is one of the smaller land areas in South Africa.

The following part of this study will include an economic overview of the KwaZulu-Natal Province, such as its economic indicators, sectors and trade indicators from the years 2005 to 2009.

3.2. Economic overview of KwaZulu-Natal

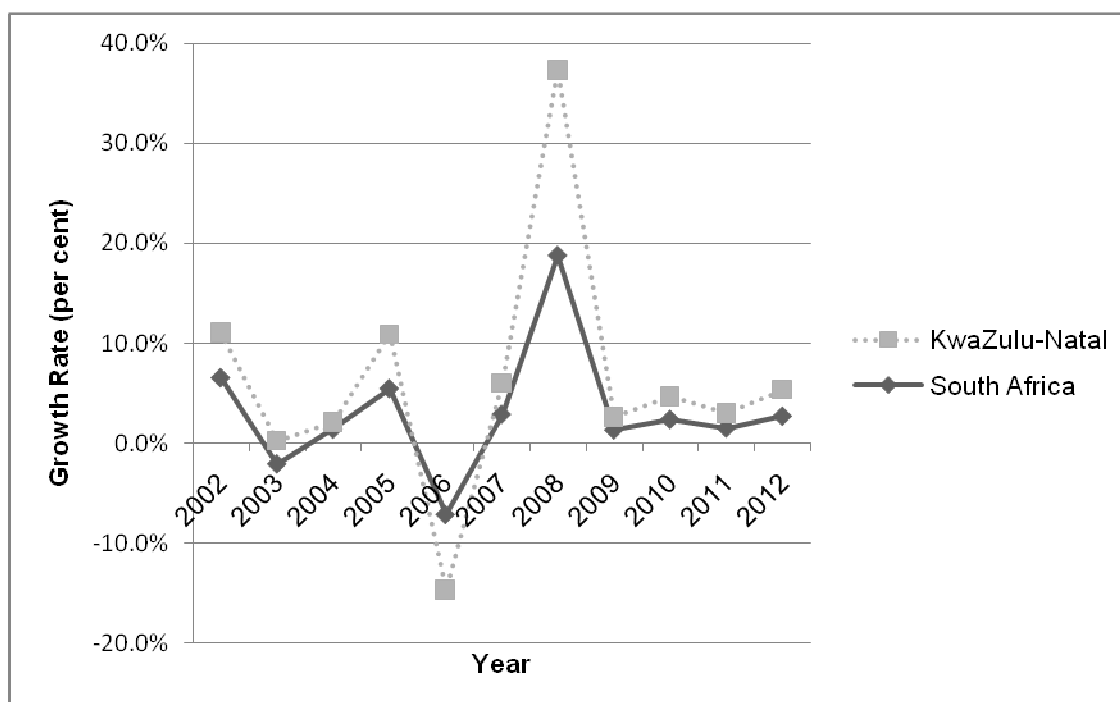
3.2.1. Economic Indicators

Altman (2009:9) indicates that in 2001 the KwaZulu-Natal economy's population was 21% and that the population contributed 15% to the GDP. In 2009 KwaZulu-Natal Department for Economic Development (2009:24) reported that the population has grown since 2001 to 51% in 2009. The population in 2009 also contributed 21.5% to the South Africa economy.

Agriculture, services and tourism are economic industries that contribute to the GDP in KwaZulu-Natal. Manufacturing is also an existing industry contributing to GDP, but it is not a main attractor for local and foreign direct investment (FDI) and this investment is needed for employment, as well as for the local population (KwaZulu-Natal Department of Economic Development, 2009:6). Forestry, agriculture and tourism are not as diversified in KwaZulu-Natal, but with the correct promotion and knowledge it can become sustainable industries in the future (KwaZulu-Natal Department of Economic Development, 2009:15).

The land and farming purposes that KwaZulu-Natal have, is 6.5 million hectares. 82% of this land is suitable for livestock and 18% can be used for farming purposes. Agricultural expansion in KwaZulu-Natal has potential and there have been estimations that if there was an optimal management of the natural resources in KwaZulu-Natal, production could have a dramatic increase. The production increase will unlock the full potential that the KwaZulu-Natal Province has in its agricultural production (TIKZN, 2010).

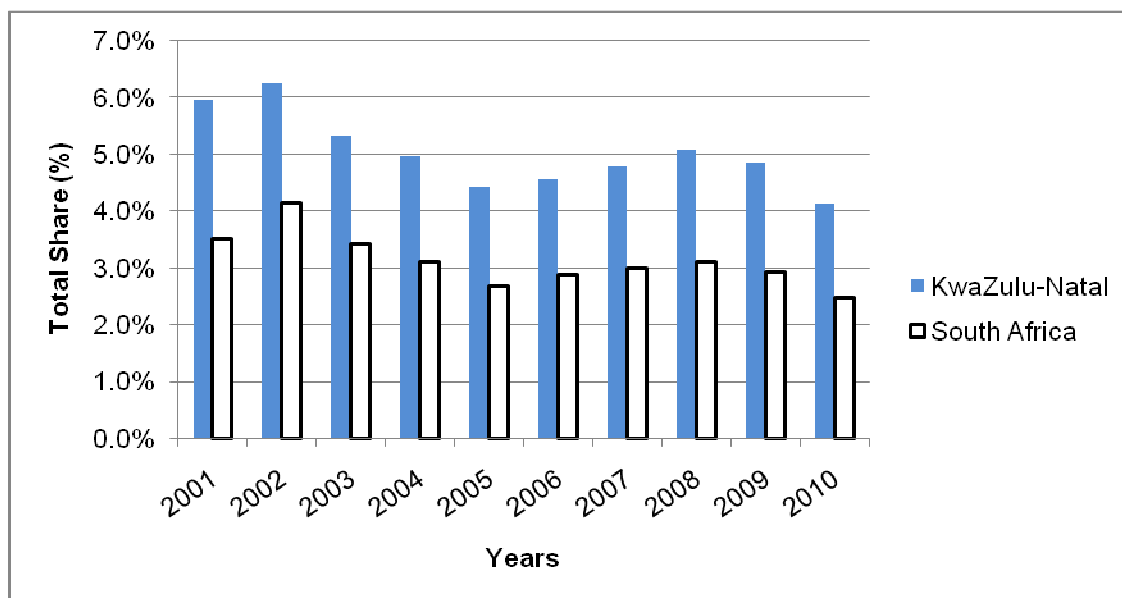
Figure 3.2: Annual Growth Rates of Agriculture in South Africa and KwaZulu-Natal, 2002 - 2012



Source: KwaZulu-Natal Department of Economic Development and Tourism (2010, q1:2)

Figure 3.2 shows the annual growth rates of Agriculture in South Africa and KwaZulu-Natal between 2002 and 2012. The comparing of KwaZulu-Natal's and South Africa's growth rate percentages for agriculture will indicate whether the Agricultural sector is an export industry in South Africa and specifically in KwaZulu-Natal. The table indicates that in the past ten years there was a constant increase and decrease in the agriculture growth over the years. There was an trough between 2002 and 2005 and again between 2005 and 2008. In the years 2002, 2005 and 2008 there were peaks which indicate that there was a significant factor which increased the growth of agriculture in those years. In the last four years, between 2009 and 2012, there was a constant agricultural growth. The reason for the decline in the growth between 2002 and 2003, is political uncertainty. The attacks on the World Trade Centre had a major impact on all world markets and industries.

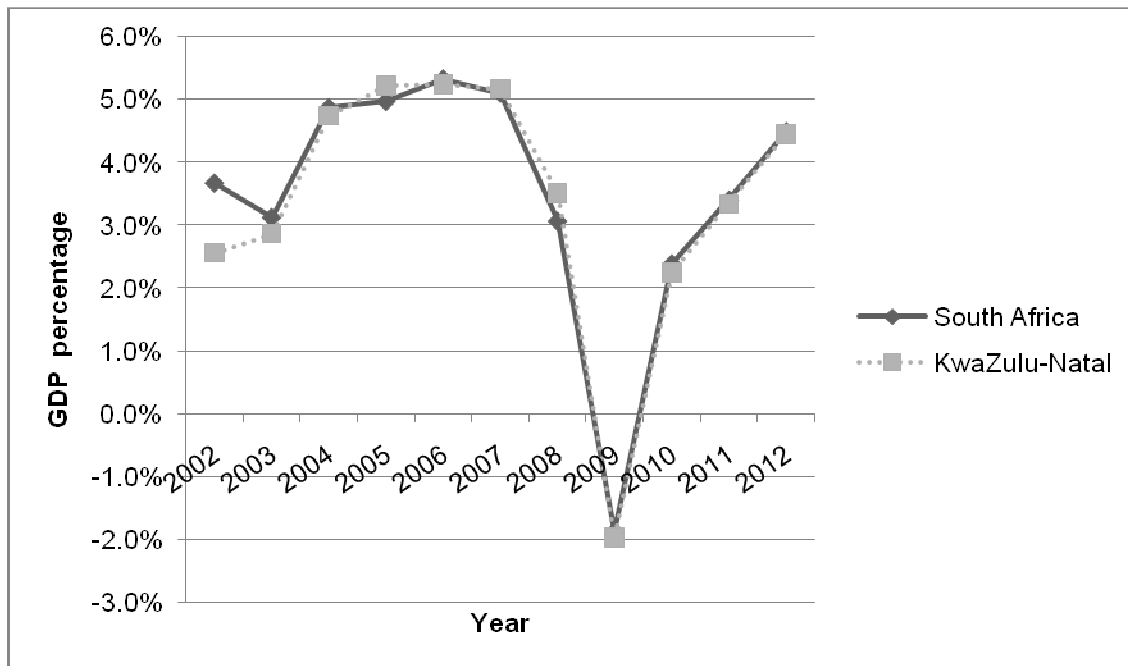
Figure 3.3: Agriculture's share to the region's total, 2001-2010



Source of data: Author's own calculations based on Global Insight's REX database

Figure 3.3 compares the share that agriculture in KwaZulu-Natal contributes to the total agriculture of the region and how much South Africa contributes. KwaZulu-Natal contributes more than South Africa. The highest point in the share both South Africa and KwaZulu-Natal contributed to the region, in terms of agriculture, was in 2002 where KwaZulu-Natal's percentage share was 6.2%. South Africa's contribution to the region's share of agriculture in 2002 was 4.2%. The lowest point was in 2010, when KwaZulu-Natal's share was 4.1% and South Africa's share 2.5%. This is the lowest over the past ten years.

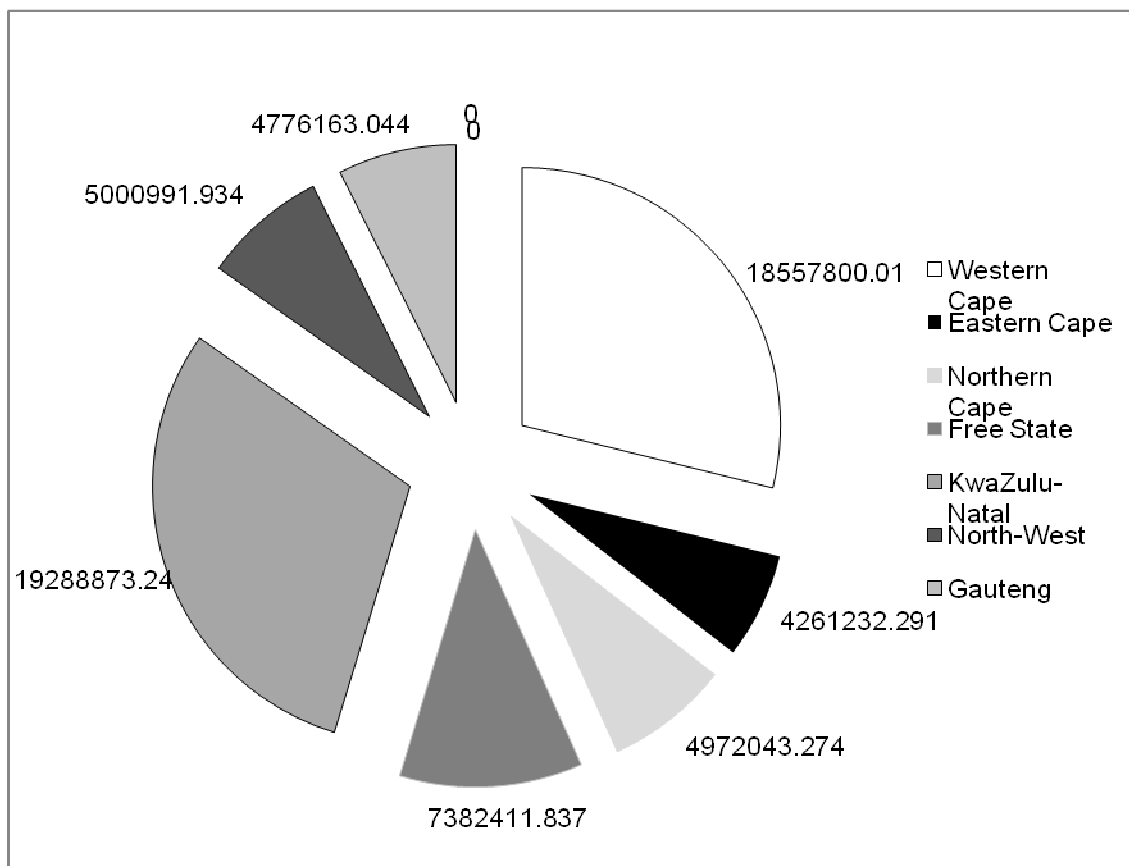
Figure 3.4: KwaZulu-Natal GDP Growth rates per Quarter, 2002- 2010



Source of data: Author's own calculations based on Global Insight's REX database

Figure 3.4 shows the GDP growth rates of South Africa and KwaZulu-Natal between 2002 and 2012. The figure shows that there was a decrease between 2002 and 2003. The reason being that the countries were still recovering from the shock of the World Trade Centre attacks. From 2003 until 2007 there was a constant growth of GDP in KwaZulu-Natal and South Africa. The reason for the sharp decline of GDP in 2009 is the property market downfall America had on the GDP of not only South Africa but also to the rest of the world. The population did not have confidence in the country and withdrew their interest in the markets. Companies did not produce as much as before because of the low demand of the population. They therefore supplied less to the markets. There was a slowdown in production in the country. From the end of 2009 onwards to 2012 the people regained confidence and started demanding more products which led to companies producing more to satisfy the wants and needs of the population.

Figure 3.5: Contribution of all the Provinces to the South African Economy, 2009 (current prices R1 000)



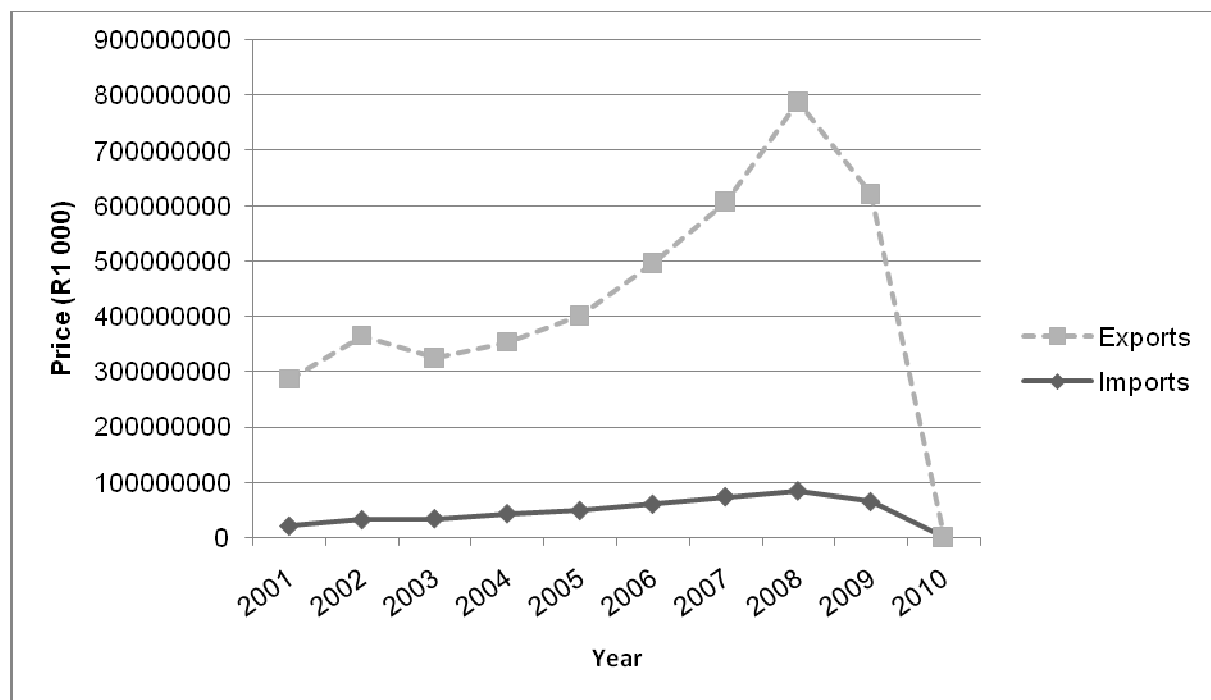
Source of data: Author's own calculations based on Global Insight's REX database

Figure 3.5 shows the contribution of all the provinces to the economy of South Africa. KwaZulu-Natal contributes R19 288 873 to the South African economy. The Western Cape is second, with a contribution of R18 557 800.

The following part of this study will determine the trade indicators, such as imports and exports and the reasons for its existence in the province and why this makes the KwaZulu-Natal Province successful.

3.2.1.1. Trade Indicators

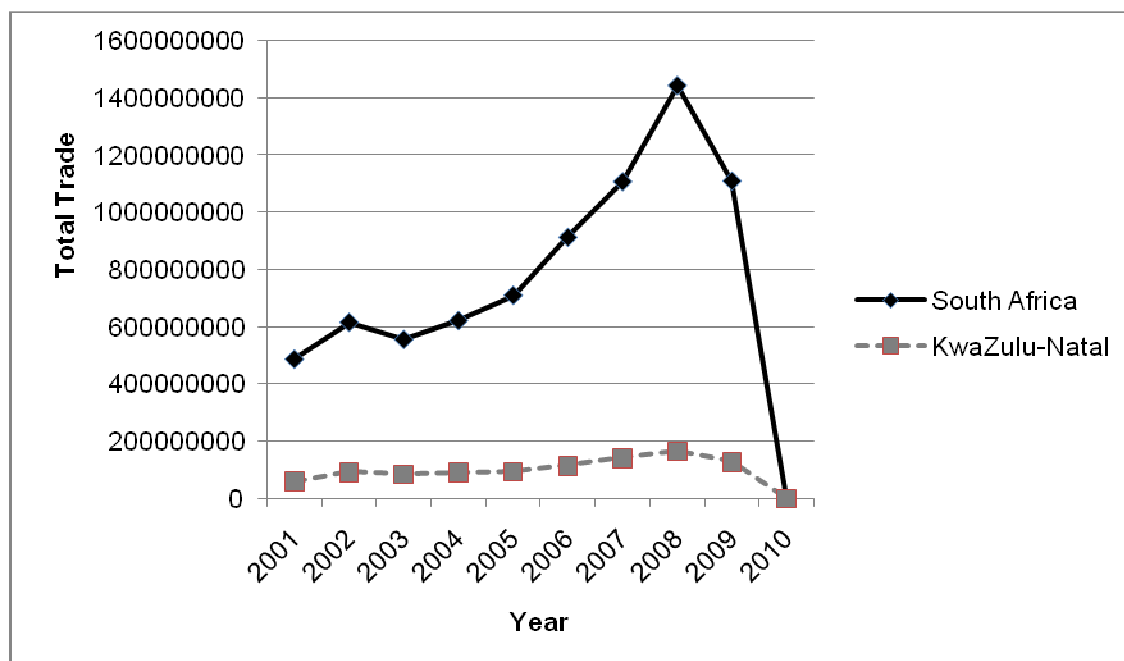
Figure 3.6: KwaZulu-Natal Exports and Imports, 2001 - 2010



Source of data: Author's own calculations based on Global Insight's REX database

The graph in figure 3.6 shows the rand total that is imported in and exported from KwaZulu-Natal from 2006 to 2010. Exports show a steady increase from 2001 until 2008 and then have a sharp decline from 2008 to 2010. The Exports reaches a peak of R704 292 998 in 2008, and reaches a trough in 2003 of R291 433 999. Imports show a constant increase from 2003 until 2008. The Imports reaches a peak in 2008 of R731 626 170 and reaches a trough of R31 760 594. The graph in figure 3.6 also shows that domestic consumers demand more than what was supplied from the foreign companies. If this demand of imports continues, this may cause problems for future exports.

Figure 3.7: Total Trades of South Africa and KwaZulu-Natal, 2001 - 2010



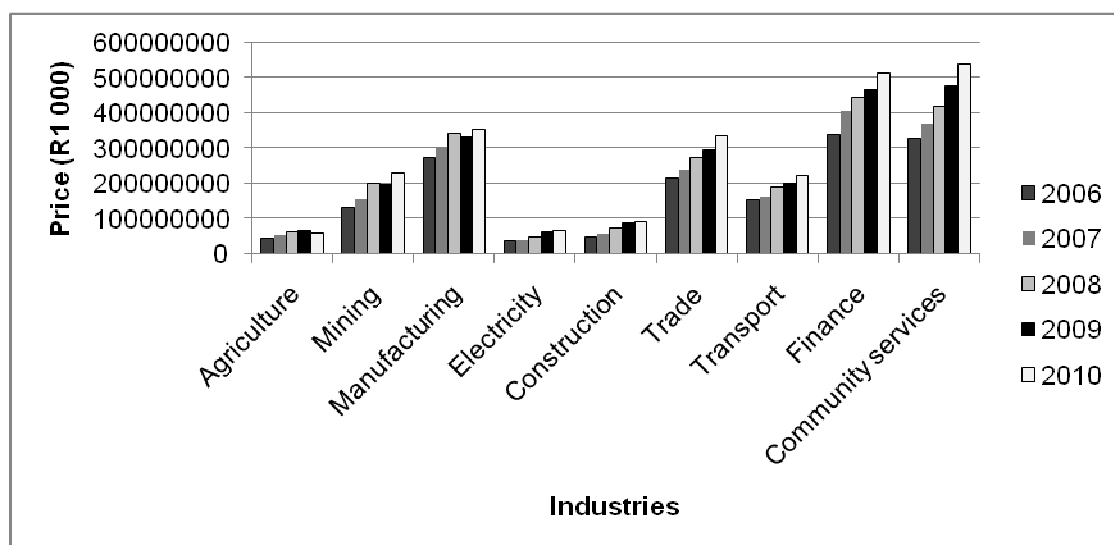
Source of data: author's own calculations based on Global Insight's REX database

Figure 3.7: shows the total trade of KwaZulu-Natal and South Africa between 2001 and 2010. Total Trade in South Africa has reached a peak of R1 444 144 994 in 2008 and a trough of R91 849 764 in 2002. KwaZulu-Natal has a total trade peak of R91 849 764 in 2008 and a trough of R556 185 997 in 2003.

3.2.1.2. Sectors

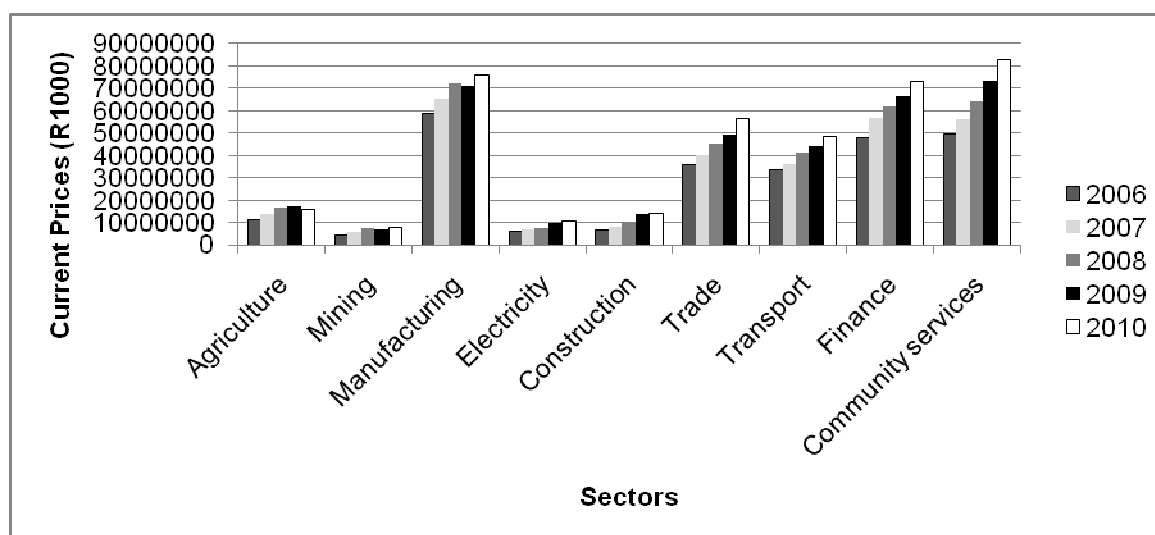
Figure 3.8 entails the broad economic sectors of the South African Economy. The sectors that contribute most to the South African economy are Finance and Community services. Finances contributes R511 332 000 to South Africa and community services contribute R539 099 000 to South Africa. Agriculture contributes R59 543 000 to South Africa. These are figures of the year 2010. The Agriculture sector is the slowest growing sector of the South African economy.

Figure 3.8: Broad Economic Sectors of South Africa, at current prices (R1 000), 2006 - 2010



Source of data: Author's own calculations based on Global Insight's REX database

Figure 3.9: Broad Economic Sectors of KwaZulu-Natal, at current prices (R1 000), 2006-2010



Source of data: Author's own calculations based on Global Insight REX database

Figure 3.9 entails the broad economic sectors of the KwaZulu-Natal economy. The sectors that contribute most to the KwaZulu-Natal economy are Finance and Community services, followed closely by the Manufacturing sector. Finances contribute R72 642 131 to KwaZulu-Natal and community services contribute R82 859 670 to KwaZulu-Natal. Manufacturing contributes R75 731 149. This data are all of the year 2010. Agriculture is the slowest growing sector in the KwaZulu-Natal economy.

Although agriculture is the slowest growing sector, Finance, Community Services and Manufacturing are the largest sectors. This study considers whether agriculture can be defined as an important sector in KwaZulu-Natal and thus merits attention.

Table 3.2 will show the performance of the sectors in the KwaZulu-Natal Province in relation to their structural contribution.

Table 3.2: Structural features of the KZN and SA economies, 1995 & 2001

Sector	KZN - % of GGP		RSA - % of GDP	
	1995	2001	1995	2001
Primary (Agriculture & mining)	6.3	5.4	21.8	19.7
Secondary (Manufacturing)	26.8	24.4	11.2	10
Tertiary (services)	52.1	55.6	50.4	53.7
Government	14.9	14.5	16.6	16.5

Source: Human Sciences Resource Council (HSRC)

Table 3.2 states that agriculture and mining are seen as the primary sector. The gross geographic product (GGP) of KwaZulu-Natal's primary sector has declined from 6.3 per cent to 5.4 per cent. In the GDP of South Africa there was also a decline from 21.8 per cent to 19.7 per cent. This indicates that there has been an overall decline in the relative contribution of the agricultural and mining sectors, not only in KwaZulu-Natal but in South Africa as well (Altman, 2002:25).

The table above focusses on the change in volume and price in exports, imports and domestic demand. By specifically looking at agriculture under industry, we see that there has been a negative change of exports and imports, but the domestic demand has a positive value. Production is less than what the citizens demand, which means the agricultural sector is operating at a loss.

Price changes in the table indicate that the imports prices changed with 0,632 and domestic with 0,102 – which indicate that imports for South African (KwaZulu-Natal) products from foreign countries are more because the prices indicate that they are spending more on South African products. The producer receives 0,089 of the price change.

Table 3.3: KwaZulu-Natal - Annualised per cent change in the quarterly GDP by industry

Industry	Agriculture, forestry and fishing	Mining and Quarrying	Manufacturing	Electricity, Gas and Water	Construction	Wholesale & retail trade, hotels, & restaurants	Transport, storage & Communication	Finance, real estate & business service	General government Services	Personal Services	Total Value Added	Taxes less Subsidies on product	GDP on market prices
2009													
Quarter 1	-5.6	-31	-26	-8.1	11	-2.4	-2.1	-2.3	2.1	2.7	-8	-6.4	-7
Quarter 2	-15.8	15.8	-11	1.9	8.7	-5.9	-1	-3.8	3.1	3.3	-2	-6.9	-3
Quarter 3	-11.8	-5.8	7.6	4.2	6.1	-1.1	1.2	-1.5	4.9	3.5	1.4	-3.4	0.9
Quarter 4	-7.6	4.6	10.1	0.9	3.6	-0.7	1.9	1.1	7	3.1	3.5	0.7	3.2
2010													
Quarter 1	3	15.4	8.4	4.9	2.1	3.3	2.4	2.5	2.8	2	4.4	6.5	4.6

Source of data: Author's own calculations based on Global Insight's REX database

Table 3.3 shows the figures of the annualised percentage change in the GDP over the years 2009 and 2010. In the entire 2009 there was a negative growth rate which only changed in the first quarter of 2010, whereas the other sectors had shown

positive growth in 2009. The Department of Economic Development and Tourism (2010:3) declared that the Manufacturing sector is still the largest manufacturing sector in the KwaZulu-Natal Province.

According to the Department of Economic Development and Tourism (2010:1) the KwaZulu-Natal Province also experienced an economic decline during the financial crisis but still grew with four per cent. KwaZulu-Natal went into recession in the first quarter of 2009. Although the agricultural sector had not been growing as expected, the government registered a positive growth. The inflation growth rate was 3.9 per cent in March 2010.

The following part of the chapter will entail the socio-economic development of the KwaZulu-Natal Province, such as the percentage of people in the province according to race and development.

3.3. Socio Economic Development of the KwaZulu-Natal Province

The following part of this study will describe the human population of KwaZulu-Natal, the income distribution of the population, their quality of life, the Human Development Index (HDI), employment figures, unemployment figures which measure the population and the contribution they have to the economic development.

3.3.1. Human Development Index (HDI) and Gini Coefficient

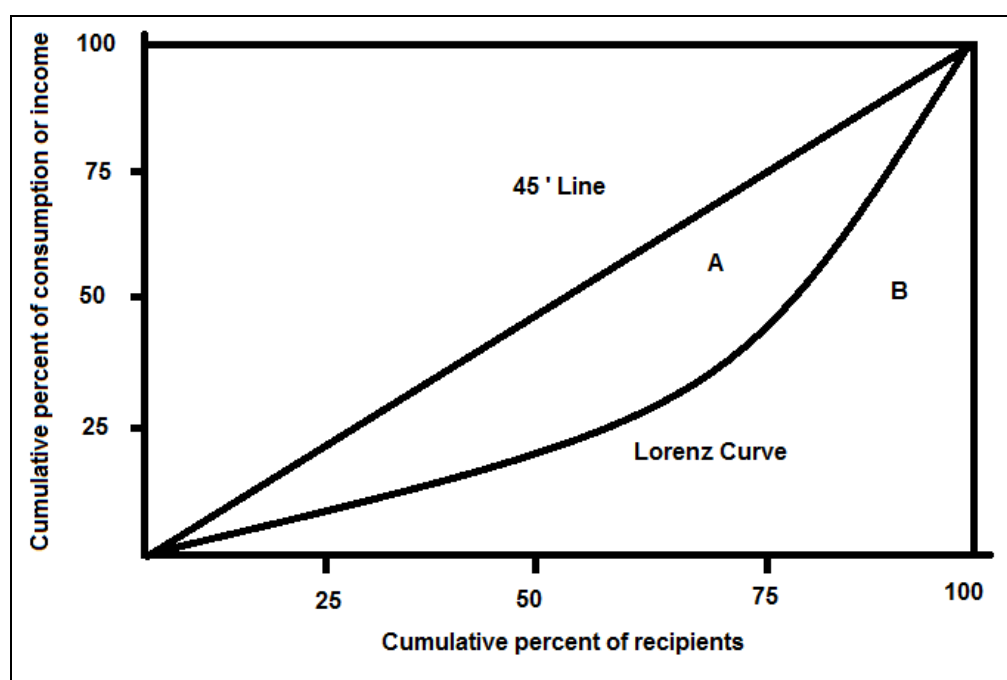
Human Development was established as a process to broaden the choices of the people. The Human Development Index (HDI) is a measure of people's economic development. Several factors can accomplish a good HDI, namely, long livelihood, education, decent standard of living, political freedom and human rights, but also self-respect. The previous mentioned factors can also be used to ensure high quality of life.

The HDI define the outcome in terms of health, education and income. A proxy for a long and healthy life is that the HDI employs a nation's life expectancy at birth and compares progress on this measurement relative to others. The closer the HDI is to one, the higher is the economic development of a region.

The Gini Coefficient is used to obtain the measurement that is linked to the Lorenz Curve to compare income distribution between people (see Figure 3.11)

The Lorenz Curve on the other hand (shown in figure 3.11) is calculated by arranging the population from the richest to the poorest. The cumulative percentage obtained from the population are set on the horizontal axis while the cumulative percentage obtained from income on the vertical axis.

Figure 3.10: Lorenz Curve



Source: Lindhauer *et al.*, 2006

The theory of The Gini Coefficient is calculated by dividing the area below the Lorenz curve by the whole area below the diagonal (Figure 3.10). A calculated value closer to 0 shows perfect equality, and the closer it is to one, the closer it is to perfect

inequality. Values measured between 0.20 and 0.40 indicate that the national income distribution of a country is better than average.

Table 3.4: Human Development Index of KwaZulu-Natal, all Races, 2006 - 2010

	African		White		Coloured		Asian		Total	
	KwaZulu-Natal	South Africa	KwaZulu-Natal	South Africa	KwaZulu-Natal	South Africa	KwaZulu-Natal	South Africa	KwaZulu-Natal	South Africa
2006	0.46	0.50	0.89	0.88	0.69	0.62	0.76	0.76	0.54	0.58
2007	0.46	0.50	0.89	0.89	0.69	0.62	0.76	0.76	0.54	0.58
2008	0.46	0.50	0.89	0.88	0.70	0.63	0.75	0.76	0.54	0.58
2009	0.45	0.49	0.89	0.88	0.70	0.63	0.75	0.76	0.53	0.57
2010	0.44	0.48	0.87	0.86	0.68	0.62	0.74	0.74	0.52	0.56

Source of data: Author's own calculations based on Global Insight's REX database

In the province of KwaZulu-Natal the Human Development Index of white people is the highest (0.89) and the economic development of Asians close to that at 0.75, according to Table 3.4. The economic development of Africans in the province is; however, very low, with a HDI of only 0.44 in 2010 - which is one of the worst in the world.

The Gini Coefficient in Table 3.5 shows the comparison between the KwaZulu-Natal Province and South Africa. The Gini Coefficient does not show a significant change, but still shows a Gini Coefficient that indicates very poor income distribution. The Gini Coefficient of all races is very high, which implies that poor income distribution exists among all races in the province.

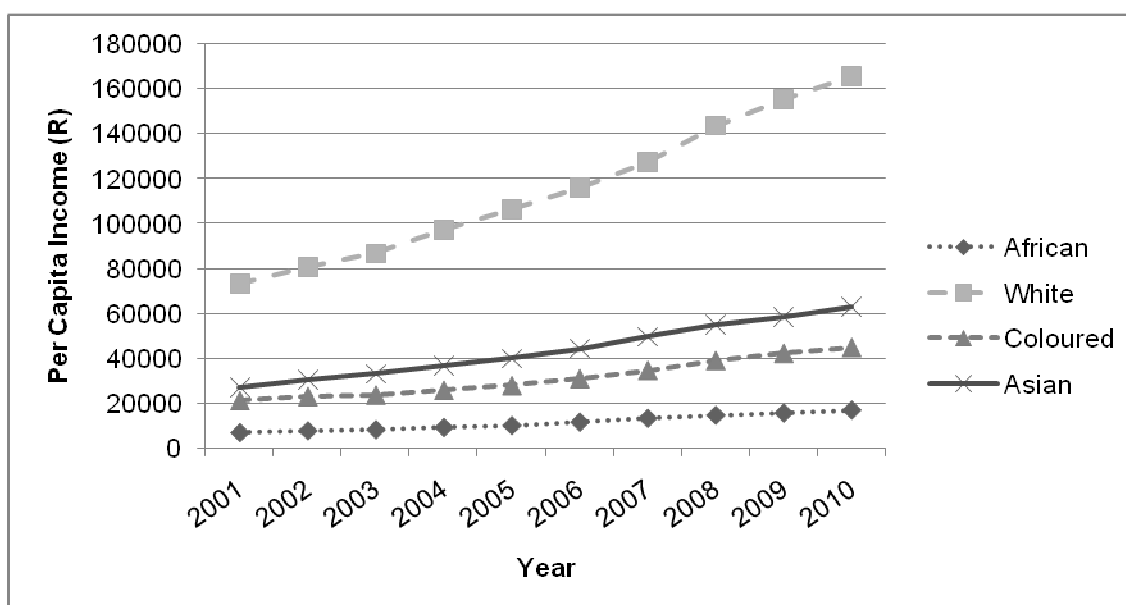
Table 3.5: Gini Coefficient of KwaZulu-Natal, all races, 2006- 2008

	African		White		Coloured		Asian		Total	
	KwaZulu-Natal	South Africa	KwaZulu-Natal	South Africa	KwaZulu-Natal	South Africa	KwaZulu-Natal	South Africa	KwaZulu-Natal	South Africa
2006	0.61	0.61	0.45	0.46	0.57	0.56	0.53	0.53	0.67	0.67
2007	0.61	0.61	0.45	0.46	0.57	0.56	0.53	0.54	0.67	0.66
2008	0.60	0.61	0.45	0.46	0.57	0.56	0.53	0.54	0.67	0.66
2009	0.59	0.60	0.44	0.45	0.56	0.55	0.52	0.53	0.66	0.65
2010	0.59	0.59	0.43	0.44	0.56	0.54	0.52	0.53	0.65	0.65

Source of data: Author's own calculations based on Global Insight's REX database

3.3.2. Per Capita Income (Per Race)

Figure 3.11: Annual Per Capita Income (Rand, in current prices) in KwaZulu Natal, 2001- 2008



Source of data: Author's own calculations based on Global Insight REX database

Figure 3.11 indicates the per Capita income of the races in KwaZulu-Natal over the period 2004 to 2010. This shows that the race that receives the most per capita income is the Whites across all the years. Second is the Asian, third the Coloured and lastly the Africans. There is a constant growth in the per capita income from 2001 to 2010 - from R6 921 in 2001 to R17 140 in 2010 for Africans. They show the lowest per capita income growth rate. In 2001 the per capita income is R27 004, showing a constant increase until 2010 with R63 114.

Table 3.6: Annual per capita income (Rand, current prices), all provinces, 2008

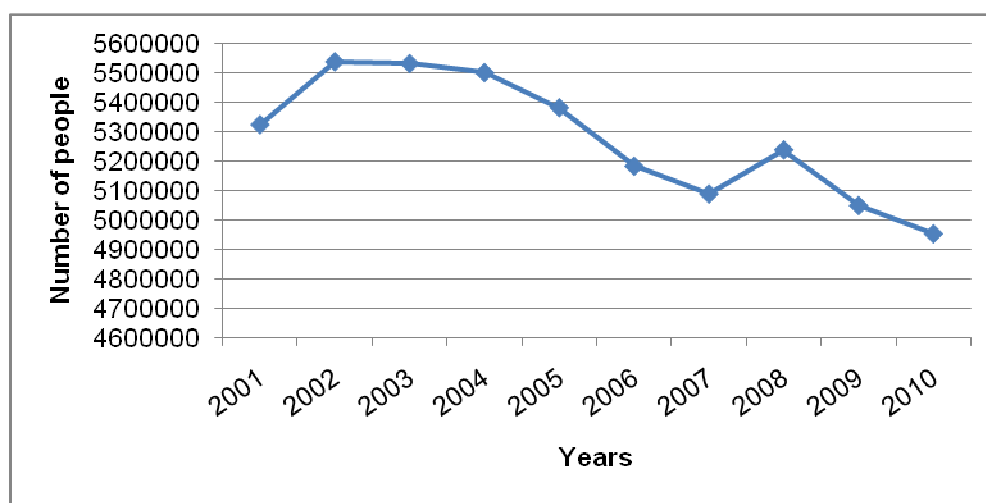
Provinces	Total R
Western Cape	48 168
Eastern Cape	22 041
Northern Cape	27 063
Free State	28 335
KwaZulu-Natal	25 463
North-West	24 715
Gauteng	52 299
Mpumalanga	23 989
Limpopo	22 094

Source of data: Author's own calculations based on Global Insight
REX database

Table 3.6 indicates the Annual per capita income across the nine provinces in South Africa. The province that has the highest per capita income is Gauteng with an amount of R52 299, followed by the Western Cape with R48 168. KwaZulu-Natal has a per capita income of R25 463.

3.3.3. Poverty Rates

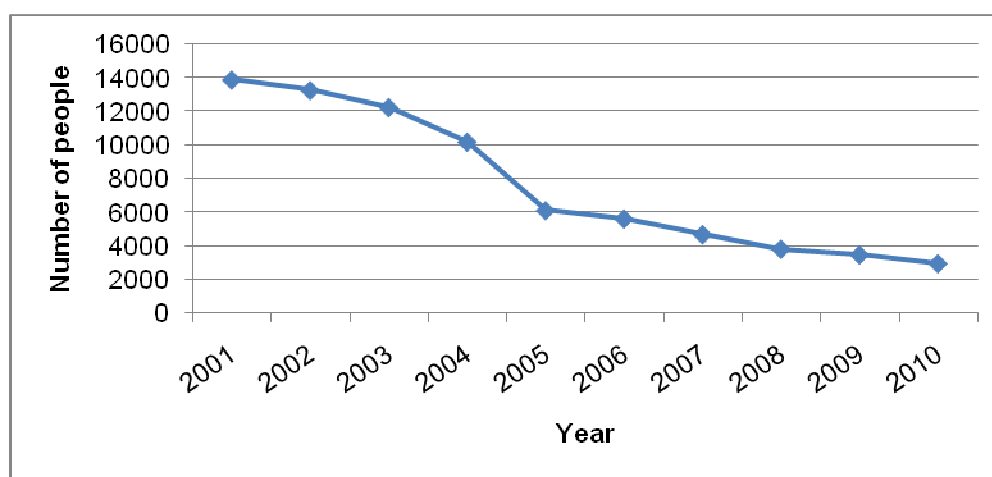
Figure 3.12: Poverty rates of African People in KwaZulu-Natal, 2001- 2008



Source of data: Author's own calculations based on Global Insight's REX database

Figure 3.12 shows the Poverty Rates of the African people in KwaZulu-Natal. There was an increase from 2001 to 2002. From 2002 to 2007 there was a continuous decrease from 5 538 930 people to 5 088 120 people. There was a peak in 2008 with 5 238 483 people.

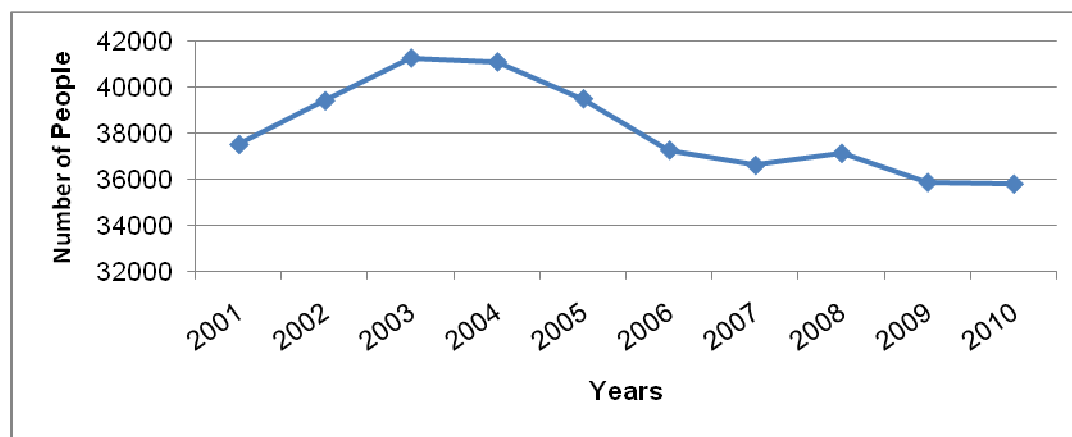
Figure 3.13: Poverty rates of white people in KwaZulu-Natal, 2001- 2008



Source of data: Author's own calculations based on Global Insight's REX database

The poverty rate for the white people in KwaZulu-Natal in Figure 3.13 shows that there was a constant decrease from 13 905 people in 2001 to 2 949 people in 2010. This is an indication that the white people in KwaZulu-Natal are the smallest population group in the province.

Figure 3.14: Poverty rates of Coloured people in KwaZulu-Natal, 2001- 2008

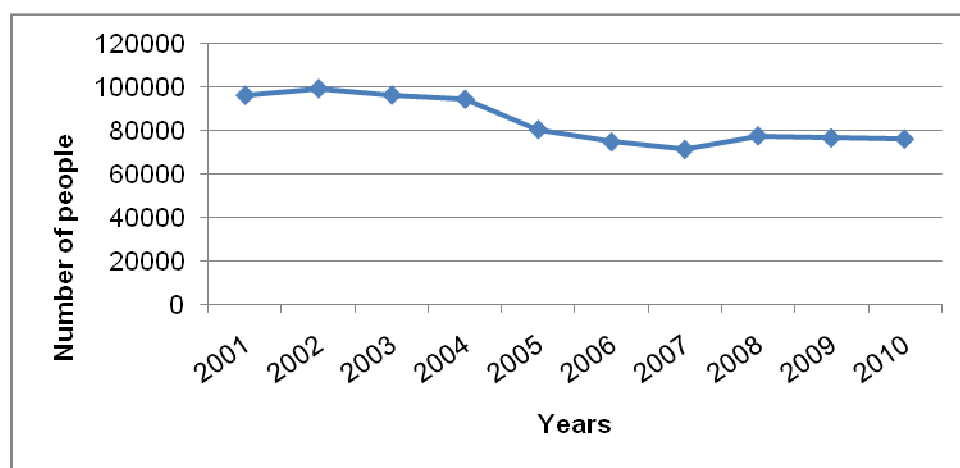


Source of data: Author's own calculations based on Global Insight's REX database

The Coloured people's poverty rate indicates that KZN is the province with the highest poverty rate for the years 2001 and 2010 shown in figure 3.14. There was an increase from 2001 to 2003 which reaches a peak of 41 279 people. From 2004 to 2007 there was a decrease, but in 2008 again a peak of 37 153 coloured people living in poverty in KwaZulu-Natal.

Figure 3.15 shows that KwaZulu-Natal has had the most constant poverty growth rate of all the other groups over the ten years. There was a continuous constant poverty growth rate between 2001 and 2005. From 2004 to 2007 there was a slight decrease but still constant poverty rate. From 2007 to 2010 there was still a constant poverty rate.

Figure 3.15: Poverty rates of the Asian Race in KwaZulu-Natal, 2001 - 2010



Source of data: Author's own calculations based on Global Insight's REX database

Table 3.7: People living in Poverty per cent, 2008

	African	White	Coloured	Asian	Total
National Total	47.90	0.60	28.60	11.30	40.67
Western Cape	38.00	0.60	23.90	13.90	23.09
Eastern Cape	54.90	0.60	34.00	12.10	50.37
Northern Cape	50.80	0.70	46.50	11.50	43.88
Free State	47.00	0.90	48.40	24.30	42.51
KwaZulu-Natal	57.10	0.50	24.20	9.70	49.85
North-West	49.90	1.30	48.10	17.50	45.96
Gauteng	32.20	0.40	23.50	14.30	25.48
Mpumalanga	49.70	0.70	32.70	13.10	46.43
Limpopo	48.10	2.10	23.30	22.00	46.90

Source of data: Author's own calculations based on Global Insight's REX database

Table 3.7 indicates the percentage of people living in poverty, according to race. The highest percentage is 57.10 per cent and this is for Africans of KwaZulu-Natal. The lowest poverty percentage is 0.40 per cent - for Gauteng's white people.

Table 3.8: People living in the Poverty Gap, R millions

	African	White	Coloured	Asian	Total
National Total	35 240	483	1 300	111	37 134
Western Cape	427	84	592	8	1 111
Eastern Cape	7,512	38	213	3	7 766
Northern Cape	588	13	292	0	893
Free State	2 033	55	35	0	2 124
KwaZulu-Natal	7 920	45	33	74	8 072
North-West	2 984	41	31	2	3 058
Gauteng	3 843	150	87	21	4 102
Mpumalanga	3 727	39	10	2	3 778
Limpopo	6 206	18	5	1	6 230

Source of data: Author's own calculations based on Global Insight's
REX database

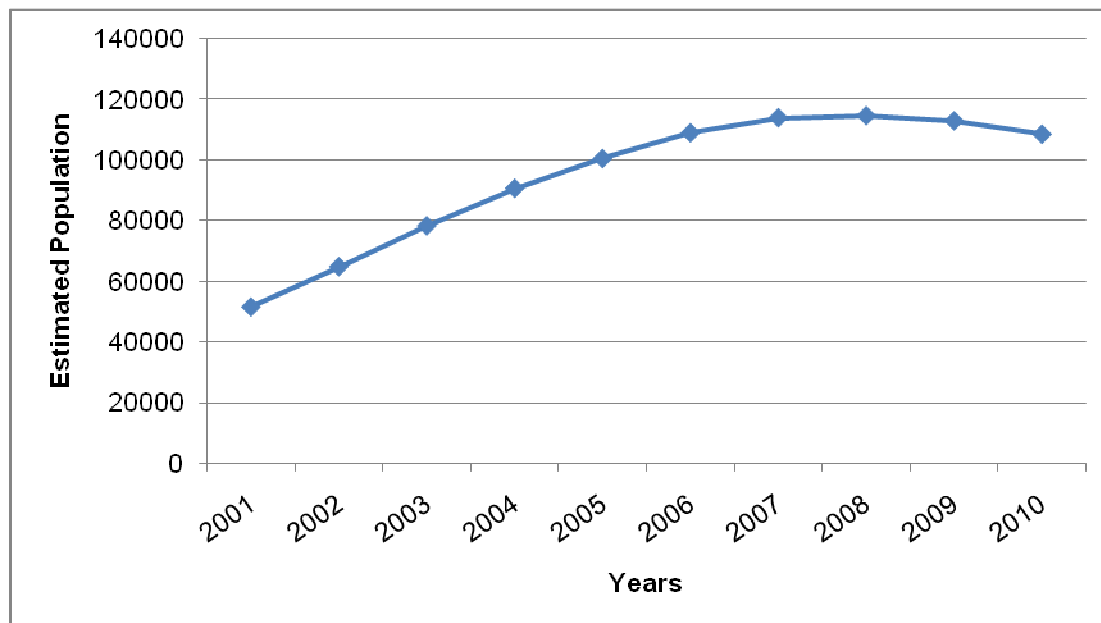
Table 3.8 indicates the size of the poverty gap in R million of the various provinces and races in South Africa. KwaZulu-Natal is the province and the Africans the race with the biggest poverty gap there.

The total rate of people living in poverty in South Africa ranges between 24 and 50.37 per cent. For KwaZulu-Natal it is 49.9 per cent. To close the poverty gap in the province of KwaZulu-Natal will request at least R8 billion. Improving the living standards of the people of KwaZulu-Natal sustainably requires consistent economic growth over a long time. This merits the rational of this current study, with the emphasis on agricultural exports, as most of the poor are situated in rural and agricultural areas.

3.3.4. Health Issues

Health issues in a country can implicate the growth and trade of that country. This means that when there are health problems among the population, the workforce will not be able to comply with the load of work they are dealt with.

Figure 3.16: AIDS Estimates during the years 2001 - 2010

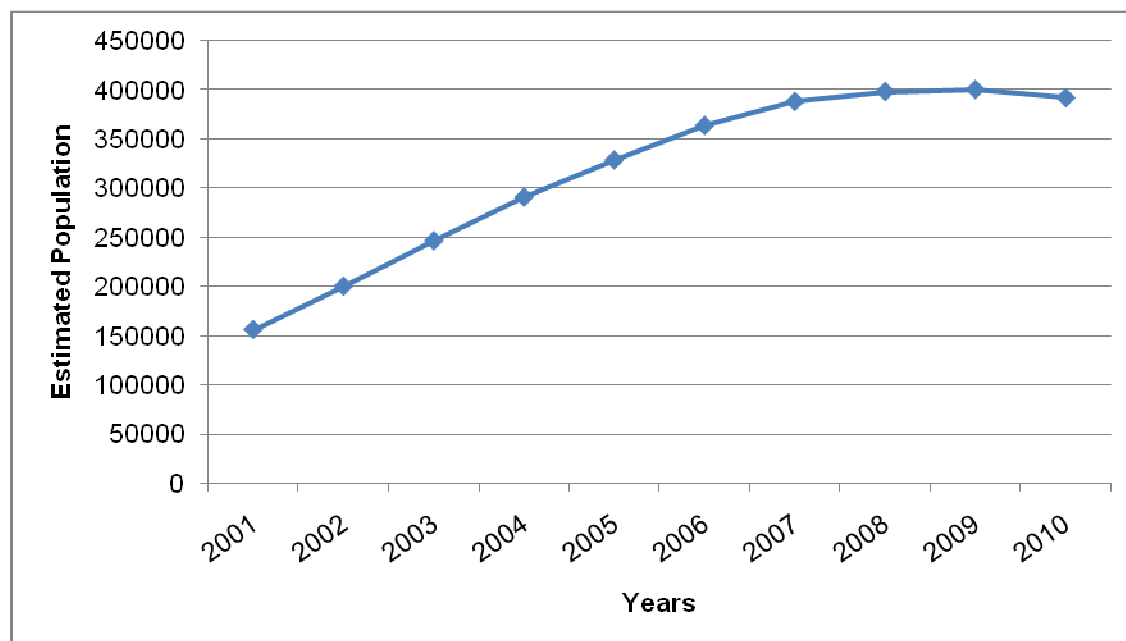


Source of data: Author's own calculations based on Global Insight's REX database

Figure 3.16 indicates that Kwazulu-Natal had a population with AIDS cases - which had been increasing from 2001. From 2008 until 2010 there was a constant decreasing of the estimation of the population living with Aids in South Africa.

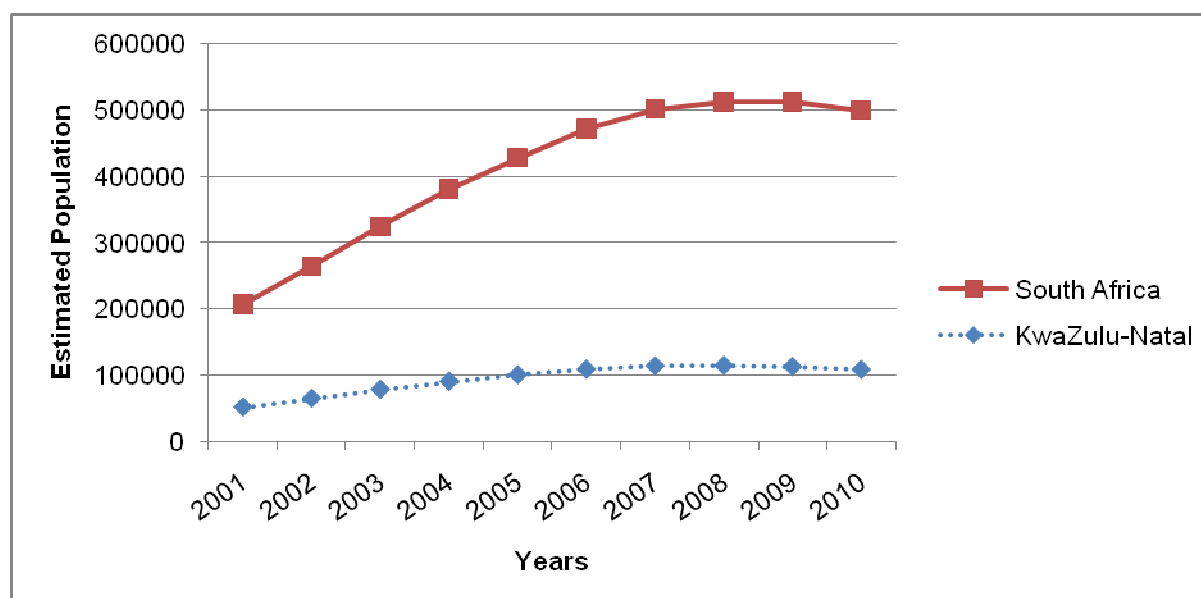
Table 3.17 indicates the Aids estimates and growth thereof during 2001 and 2010 in South Africa. There was an increase in the growth of Aids during 2001 and 2009, but a slight decrease from 2009 to 2010. The constant increase of Aids in the population could have been because of the uninformed population that were not aware of the risks and did not receive the correct treatment for Aids.

Figure 3.17: AIDS estimates across South Africa, between 2001 and 2010



Source of data: Author's own calculations based on Global Insight's REX database

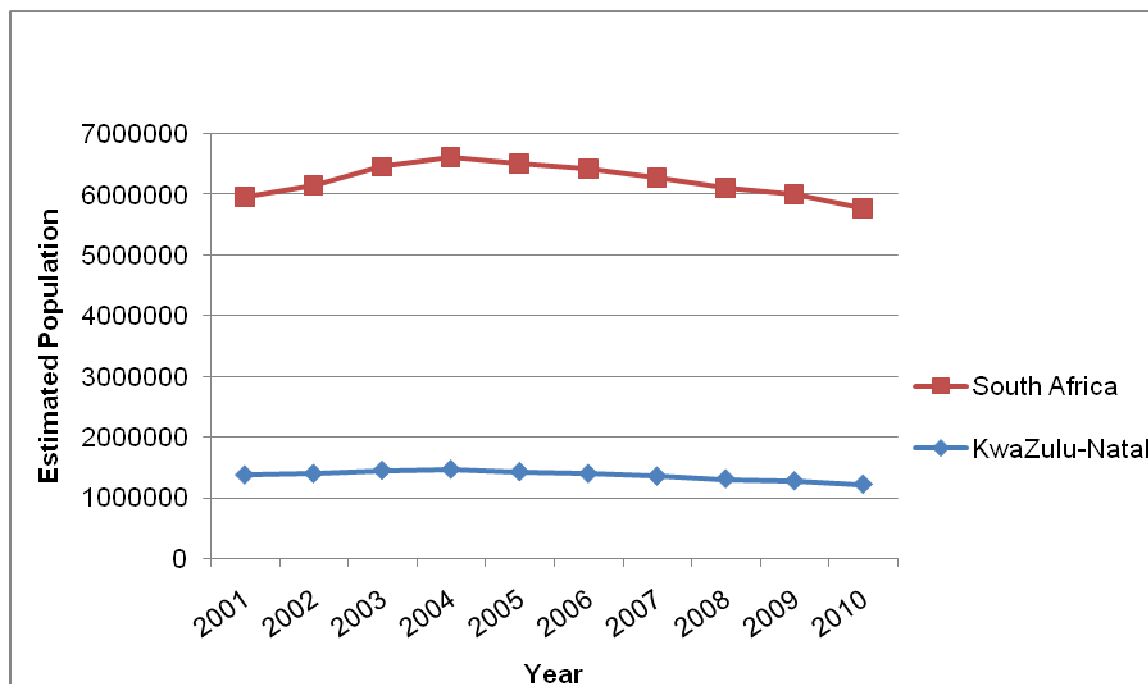
Figure 3.18: Aids estimates of South Africa versus KwaZulu-Natal, 2001 - 2010



Source of data: Author's own calculations based on Global Insight's REX database

Figure 3.18 compares the Aids estimates of the years 2001 to 2010 between South Africa and KwaZulu-Natal. Figure 3.20 shows that in comparison with South Africa, half of the Aids estimates from South Africa came from KwaZulu-Natal. This emphasises the fact that KwaZulu-Natal is the province with the highest Aids estimated population in South Africa.

Figure 3.19: HIV estimates, 2004 - 2008



Source of data: Author's own calculations based on Global Insight's REX database

Figure 3.19 shows that both KwaZulu-Natal and South Africa had the most HIV cases in 2004. This shows how HIV affects South Africa, compared to figure 3.18. where AIDS related cases is increasing.

3.4. Summary and conclusion

There is a large potential for the sectors of KwaZulu-Natal, specifically in the manufacturing and agricultural sectors. There is an added advantage to KwaZulu-Natal that the other provinces in South Africa do not have, namely the correct

infrastructure, such as: railway systems and adequate ports to export and import the products. The ports give them easier access to the international market.

The population of KwaZulu-Natal contributed 21% to the GDP in 2001. It more than doubled over nine years to 51% in 2009. Land and farming purposes of KwaZulu-Natal's 6.5 millions of hectares are used or allocated as follows: 82% of the land is used for livestock and the remaining 18% is reserved for farming purposes. There is a lot of potential in KwaZulu-Natal, and if the resources are allocated efficiently, the production of KwaZulu-Natal will increase.

The growth potential in KwaZulu-Natal has had fluctuations over the past ten years. There were peaks in 2005 and 2008 for both KwaZulu-Natal and South Africa and troughs in 2003, 2006 and 2009. From 2009 to 2012 there was a constant growth.

The percentage agriculture in KwaZulu-Natal that has shares with the region was more than half than what South Africa has shared with its regions. There were no dramatic changes in GDP between South Africa and KwaZulu-Natal. Both had an increase from 2003 to 2006 and from 2007 a dramatic decrease until 2009. From 2009 until 2012 the agriculture sector GDP had a sharp increase.

The trade industry in KwaZulu-Natal is showing a change, because KwaZulu-Natal exports are more than double the Imports. Exports are more flexible than imports which also emphasises the fact that trade in KwaZulu-Natal had a surplus, i.e. when exports are more than imports.

The sectors that contributed most to the KwaZulu-Natal Province and South Africa were finance, community services and the manufacturing sector. KwaZulu-Natal experienced a decline during the financial crisis, but still had a positive rate of 4%. KwaZulu-Natal went into a recession in the first quarter of 2009. The government did not register the growth in KwaZulu-Natal as a positive growth.

The HDI broadens the choices of people and is also a measure of the people's economic development. The closer the HDI is to one, the higher is the economic development of that region. The HDI index shows that there is a development in the

white population of KwaZulu-Natal and South Africa. The per capita income per person indicates that the white population increased the most over the years. The poverty rate is the lowest among the white population. The highest poverty rate is with the African population. The Africans in KwaZulu-Natal are the race group (and province) with the highest poverty gap.

There needs to be a consistent economic growth in the future. There should be an improvement in the living standards of the people to make the poverty gap smaller.

The information listed in chapter 3 about KwaZulu-Natal is of importance to this study, because before we can calculate the RCA and use the RCA percentages to correlate with the DSM, we need at the background, demographics and workforces of the people. This is also of importance to the study because this affects the products that are manufactured and exported.

The economic importance of KwaZulu-Natal confirm that there was a steady growth rate in this province throughout the years and this led to a positive growth in the economy. The economic sectors, primary, secondary and tertiary are discussed to place the products into different categories to see which sector have the most growth.

It is important to calculate the Human Development Index and the Gini-coefficient, because it is valuable information for the people as well as the parties interested in the process of the choices that people make. Per capita income is an indication that people fall in different classes and whether there is skills and qualifications present, can fall into certain sectors. It is also important to establish what the rate of poverty is in the KwaZulu-Natal province, because poverty can have an effect on the products and the image of the country in terms of trade.

CHAPTER 4: REVEALED COMPARATIVE ADVANTAGE

4.1. Introduction

The aim of this chapter is to explain and give an overview of revealed comparative advantage as it is utilised in international economics. Referring back to the secondary objectives of Chapter 1, one of the objectives that this chapter also achieves, is to explain the revealed comparative advantage of the products with the most export potential. Comparative advantage does not measure international trade, but reveals the ability to trade and generates profits from global transactions.

4.2. Background on Revealed Comparative Advantage

Leishman, Menkhaus and Whipple (1999:5) indicate how cost or price information is used to measure efficiency in production and how scarce resources are used. The constraints in the analysis are due to a lack of reliable internationally comparable data and information on measuring instruments.

An investigation of specific industrial products that can play an important role in domestic production and exports will eventually enable the provision and enhancement of human and physical capital. There are individual products categories in which a region shows export potential and these are expressed as a ratio of a country or region's share in world exports of a particular product category and in the share of specific industry goods (Balassa, 1979:259).

Volrath (1991:265) states that comparative advantage is an important concept, which is central to economic theory. He also indicates that it is important to identify the consequences of policy shifts and in clarifying economic welfare. There can be an

overall directing of comparative advantage that could enhance a country's investment and trade. Comparative advantage exploits international differences in product and factor demand and supply in favour of a country's international competitiveness.

Batra and Khan (2005) state that competitive pressures are created through the reduction of trade barriers and the potential for technology transfers, which lead to productivity gains and restructuring of an economy toward its comparative advantage. There have, for example been extensive efforts to liberalise international trade in India, and economic reforms were put in place to open up their economy in the 1990's. It is believed that trade liberalisation changed the composition of their exports so that it reflects a comparative advantage in the global economy. Production, consumption, import and export data were used by Balassa and other economists to compare various performance indicators.

There are several factors that can influence comparative advantage in international trade, such as a change in the factors of production or, due to increased trade, integration of other countries. Transportation models and quantitative linear models also highlight these factors (Batra& Khan, 2005:6).

Batra and Khan (2005:6) indicate that complications appear when milieu factors are taken into consideration, namely: government policy, history and other sources of comparative advantage that do not easily lend themselves to quantification.

Leishman, *et al.* (1999:6) reason that there are two models that can identify the country with a comparative advantage: the Classical and Neo-classical trade models. One type of economic condition has an ability to produce a given commodity efficiently. The Ricardian model states that international trade take place because of differences in labour productivity between countries. The Hecksher-Ohlin model explained that trade is based on the differences in the factor endowments of regions and their intensities.

The subsequent part of this chapter will be a description of the way that the data will be used to determine which agricultural sectors will be effective export promotion tools to determine export promotion from KwaZulu-Natal to the rest of the world.

The contributions made to economic growth and poverty reduction in Sub-Saharan Africa were the result of their agricultural and trade policies. During the past decades there was an injection in the agricultural development funding, and on-going regional and global trade negotiations (Anderson, 2009:2).

Jooste and Spies (2006:1) indicate that growth and stability is affecting global and South African trade. There are changes in the world population, economic growth and income. The current trade indicates that there was misdirection by government policies and it contradicts the patterns of the past. The contradiction in these policies was the consumer demands which were not satisfied by the world markets, although the demands could be met by the agricultural sector.

There is an increase in trade in the global economy, as well as in agricultural products. The cause is globalisation which indicates that the global market has grown. It also means that countries have access to imports of South African products. The reliability of developing countries supplying agricultural exports is in 2012 less than before. This is in part caused by developed countries' subsidies which were given to the primary sector participants. The developing countries are using agricultural exports to market and sell their own products within their countries. This is a positive trend which indicates that they are becoming more focused on their local markets and importing less from the international market. There is an expansion of the processed agricultural product exports and is driven by demographic, social and economic trends. The markets demanding these products are seeking specific products and will turn to international markets to satisfy their needs, wants and preferences if they are not satisfied locally.

There is a minimal integration between less developed countries (LDC) and the world economy in terms of exports, and especially agricultural exports (Jooste & Spies, 2006:2).

Balassa (1989:42-4) found difficulties within the Hecksher-Ohlin theory, because prices are not relevant in the Hecksher-Ohlin Model. Balassa developed the Revealed Comparative Advantage theory (RCA), which analyses trade data measuring comparative advantage (Kleynhans, 1998:498). This theory identifies that there are several ways to determine the RCA, for example, according to the sub-global regional level, bilateral trade between two countries or between trading partners (Balassa, 1965).

Welfare and free trade can be an indication that could lead to prosperity in the world economy, according to the predicted gains of the Classical-theory (Bender & Li, 2002:1). A comparison between the Ricardian and Hecksher-Ohlin-Samuel theory shows that the Ricardian theory explains costs and technological differences from comparative advantages, while the Hecksher-Ohlin-Samuel theory considers factor price differences. A third theory indicates factor efficiency, with a gap of technology and learning-by-doing, which can cause comparative advantage (Bender & Li, 2002:1).

Trade liberalisation can imply a greater extent of improvements within the revealed comparative advantage of regions. There are implications that there are improvements in the RCA of several countries. There is an expectation that there is a positive correlation between the revealed comparative advantage and the increase in total factor productivity. There is an expectation that RCA can be positively correlated with total factor productivity increases. For example, an investigation on the total factor productivity of the 2-digit industry classification sectors (ISIC) revealed such a correlation in the following industries: 36 (Non-Metallic Mineral Products), 33 (Wood & Wood Products), 38 (Fabricated Metal Products & Machinery and Equipment) and 35 (Chemicals & Petroleum & Coal & Plastic Products) – an experienced improvement that could give new insights into trade and productivity.

Target policies (direct or indirect subsidies, industrial and also trade protection) and horizontal policies (labour and capital market policies, quality of law and exchange rates) can be influenced by the principles named here; this can make a strong case for an investigation in the dynamics of comparative advantage. This should lead to

follow-up research in which important factors that have an effect on these trends can be identified (Kowalski & Bottini, 2009:1).

The following part of this chapter will be a description of the empirical estimation method of international competitiveness and how agricultural exports can be used as a priority sector in KwaZulu-Natal.

4.3. Competitiveness

International competitiveness is a major issue and a topic of discussion. There are important issues that have a relationship to competitiveness at firm, industry and national level (Snowdon & Stonehouse, 2006:163).

Countries tend to focus on the creation of certain assets, which are human capital, rather than natural assets, such as land and unskilled labour. Many of the assets described earlier are intangible and ownership specific. They entail proprietary rights or are exclusive to commercial enterprises and not the property of countries or governments. The role of multi-national enterprises (MNE) is continuing to increase, because it is in the interest of domestic firms to use these assets to their own advantage in a foreign country or they can use it to generate or acquire new assets. National governments play an important role in affecting the competitiveness of assets, including those which are owned by firms within their jurisdiction (Dunning, 1991:8-11).

The following section is going to explain how the Revealed Comparative Advantage is estimated, and the equations that are going to be used.

4.4. The RCA Equation

Balassa suggested that the comparative advantage that a country has in a particular commodity can be measured using the following equation:

$$RCA_{ijt} = \left(\frac{\frac{X_{ijt}}{X_{iwt}}}{\frac{\sum X_{ajt}}{\sum X_{awt}}} \right) \times 100 \dots\dots\dots \text{Eq. 1}$$

Where:

RCA_{ijt} = Revealed Comparative Advantage index value for the Agricultural industry in country j in year t

X_{ijt} = Exports of specific agricultural industry or product in country j in year t

X_{iwt} = Total world exports of a specific agricultural industry or product in year t

$\sum X_{ijt}$ = Sum of all agricultural exports in country j in year t

$\sum X_{awt}$ = Sum of all world agricultural exports in year t

To adapt the equation to the specific situation of agricultural exports in KwaZulu-Natal, the equation can be changed as follows:

RCA_{ijt} = Revealed Comparative Advantage index value for the Agricultural industry in province j (KwaZulu-Natal) in year t

X_{ijt} = Exports of a specific agricultural industry or product in KwaZulu-Natal Province j in year t

X_{iwt} = Total South African exports of a specific agricultural industry or product in year t

$\sum X_{ijt}$ = Sum of all agricultural exports in province j (KwaZulu-Natal) in year t

ΣX_{awt} = Sum of all South African agricultural exports in year t

According to this equation the higher the revealed comparative advantage (RCA) index value is, the greater will the influence of agricultural exports be for the export promotion for KwaZulu-Natal. Values larger than one indicate that the region has a competitive advantage to trade in that commodity.

According to Krugell and Matthee (2009:460) there are several more explanations of trade. The Ricardian model is an extension of the Hecksher-Ohlin model and it includes countries' resources and differences in the models.]There is also a factor endowment model, called the factor portion model, which describes the interplay of the proportions of production factors and the resources that are available in various countries, which are able to produce the same product (Krugell & Mathee, 2009). One determinant of exports is that there is a specific factor endowment. The model of Hecksher-Ohlin indicates that a country with an abundance of labour will produce and export labour intensive commodities.

De Benedictis and Tamberi (2002) argued that for a country to be defined on the basis of the comparative advantage principle, they must specialise in exports of a specific product.

If the indicator of the RCA is larger than one, it means that the product disregarded as a potential export product. This means that the products in the region are seen as a potentially important part of total exports (De Benedictis & Tamberi, 2002:5).

4.5. Data

The South African Revenue Service (SARS) provided the data utilised in this study to determine whether specific agricultural products can be seen as a priority promotion tool for exports of KwaZulu-Natal. The tariff code, district code as well as the quantity, value and the description of the product were provided. Filters are set to allow easier access to the necessary data that will be used to compile the indices.

Table 4.1 was used to place specific tariff codes to specific locations, so it could be easier to sort the products.

Table 4.1: Table for District Offices

Abbreviation	District Office
BBR	Beit Bridge
BFN	Bloemfontein
CLP	Caledonspoort
CTN	Cape Town
DFM	Cape Town International Airport
DBN	Durban
LBA	Durban International Airport
ELN	East London
FBB	Ficksburg Bridge
GMR	Germiston
GOL	Golela
GRB	Groblers Bridge
JPR	Jeppes Reef
JHB	Johannesburg
JSA	O.R. Tambo International Airport
KBY	Kimberley
KFN	Kopfontein
KOM	Lebombo
MAH	Mahamba
MAN	Mananga
MSB	Maseru Bridge
MAF	Mmabatho
MOS	Mossel Bay
NAR	Nakop (Narogas)
NRS	Nerston
PSH	Oshoek
OUT	Oudtshoorn
PRL	Paarl
PMB	Pietermaritzburg
PEZ	Port Elizabeth
HFV	Port Elizabeth Airport

PTA	Pretoria
QAC	Qacha's Nek
RAM	Ramatlabama
RIC	Richards Bay
RBS	Robertson
SKH	Skilpadshek
STE	Stellenbosch
UPT	Upington
UPS	Upington Station
UIA	Upington International Airport
VRH	Van Rooyenhek
VLD	Vioolsdrift
VRE	Vredendal
WOR	Worcester

Source: SARS, 2010

Table 4.1 provides insight to this study as it shows the district office where a product is located and whether or not this product is seen as a product that has the potential for exports. Table 4.1 indicates all the district office abbreviations, as well as the district office names. These district codes will be added to the data tables and then used further in this chapter, as well as in Chapter 5.

Table 4.2 indicates the postal codes for the different provinces. The table indicates the postal codes and the areas of their range. This will also give an indication of where the district of a particular product is located.

The codes start on a numeric number range from 0001 and ends at 9999. These can be used to link the specific product to the district, sorting centre and the province. Unfortunately these do not correspond with the South African Provincial boundaries, the SARS Database and the post office distribution areas and regions.

Table 4.2: Post office sorting Lines

Province	Hub	Range	
		Start	End
Gauteng	Pretoria 1	0001	0204
Mpumalanga	Pretoria 2	0205	0698
Limpopo	Polokwane (Pietersburg)	0699	0999
Mpumalanga	Pretoria 3	1000	1199
	Nelspruit	1200	1399
Gauteng	Germiston	1400	1699
	Heidelberg	1438	1444
	Krugersdorp	1700	1799
	KDP/Soweto	1800	1870
	Vanderbijlpark	1871	1990
	Witspos (Johannesburg)	2000	2199
Mpumalanga	Pretoria 4	2200	2494
North West	Krugersdorp	2495	2519
	Potchefstroom	2520	2709
	Mafikeng	2710	2899
KwaZulu-Natal	Ladysmith	2900	3199
	Pietermaritzburg	3200	3599
	Ladysmith	3310	3599
	Durmail 2	3600	3799
	Richardsbay	3800	3990
	Durmail 1	3991	4179
	Port Shepstone	4180	4299
	Durmail 2	4300	4641
	Port Shepstone	4642	4730
Eastern Cape	Umtata	4800	4899
	East London	4920	5049
	Umtata	5050	5199
	East London	5200	5750
	Port Elizabeth	5751	6499
Western Cape	George	6500	6699
	Worcester	6700	6899
	Beaufort West	6900	7099

	Cape Mail	7100	8179
Northern Cape	Upington	8180	8299
	Kimberley	8300	8799
	Upington	8800	8999
Free State	Bloemfontein 1	9300	9409
	Welkom	9410	9699
	Bloemfontein 2	9700	9999

Source: Lombard (2004)

Table 4.3: Tariff Code and Description

Tariff Code	Description
010110	Live horses/asses/mules/hinnies: pure-bred breeding animals
010111	Horses, live pure-bred breeding
010119	Horses, live except pure-bred breeding
010190	Live horses/asses/mules/hinnies other than pure-bred breeding animals
010210	Bovine animals, live pure-bred breeding
010290	Bovine animals, live, except pure-bred breeding
010310	Swine, live pure-bred breeding
010391	Swine, live except pure-bred breeding < 50 kg
010392	Swine, live except pure-bred breeding > 50 kg
010410	Sheep, live
010420	Goats, live
010511	Fowls, live domestic < 185 grams
010512	Turkeys
010519	Poultry, live except domestic fowls, < 185 grams
010592	Fowls, domestic
010593	Fowls, domestic
010599	Poultry, live except domestic fowls, > 185 grams
010600	Animals, live, except farm animals

Source of data: Author's own calculations based on SARS Database

Table 4.3 is a short version of the table in the Appendix. These products will be used to identify the products with the most potential of being exported in South Africa. For

example: 010420 – *Live Goats*, can be seen as a product that will be tested to determine whether it has the potential to be exported.

Table 4.4: Table of SARS data

Date	District Office	Postal Code	Country of origin	Tariff	Quantity	Customs value
201001	Beit Bridge	0001	Zimbabwe	70190008	3194000	114822
201001	Beit Bridge	0001	Zimbabwe	70200000	1200	828
201001	Beit Bridge	0001	Zimbabwe	70410002	4900	240
201001	Beit Bridge	0001	Zimbabwe	70490009	28800	1008
201001	Beit Bridge	0001	Zimbabwe	70519003	6300	1270
201001	Beit Bridge	0001	Zimbabwe	70610009	245000	7095
201001	Beit Bridge	0001	Zimbabwe	70690006	20000	300
201001	Beit Bridge	0001	Zimbabwe	70700009	65600	2400

Source of data: Author's own calculations based on the SARS Database

Table 4.4 gives an example of the data that will be used throughout the chapter and the study. The longer version can be seen in the Appendix. The list of district offices in Table 4.4 is substituted in the row "District Office" so that identification can be made within which province the district office is located. Column 2, "District office", indicates where the product is produced. Column 4, "Country of origin", indicates which country will receive the product (although it does not sound like that). The Scheduled Harmonised Standard Code for the particular product, as prescribed by the United Nations, is given under the heading "Tariff". "Quantity" shows how much of this particular product is produced. "Customs value" in column 7 is the total value of the product that is exported.

Once the identification is made, the data can be sorted into the different provinces. Since this study will investigate the agricultural sector within the province KwaZulu-Natal, this will be important.

The table in Appendix, at the end of the dissertation, indicates the different chapters of goods and services that are exported to selected countries interested in specific

products. The first three sections of the tariff schedule are used for agricultural products that will be used to compile the data in this study.

4.6. Harmonized Tariff Schedule

This part of the study indicates the different product lines or divisions, which the United Nations calls “chapters”, in each section as well as the tariff name of those which might be applicable to this study.

Table 4.5 gives some examples of the “chapters” and descriptions that will be utilised to determine the KwaZulu-Natal’s agricultural exports. Below each chapter there are several products classified. A complete list of the chapter will appear in the Appendix.

Table 4.5: Harmonised Tariff Schedule including Chapters, Section 1-8

Section	Chapter	Description
I	1	Live animals
	2	Meat and edible meat
	3	Fish and crustaceans, molluscs and other aquatic invertebrates
	4	Dairy produce, bird eggs, natural honey, edible products of animal origin
	5	Products of animal origin, not elsewhere specified or included
II	6	Live trees and other plants, bulbs, roots and the like, cut flowers and ornamental foliage
	7	Edible vegetables and certain roots and tubers
	8	Edible fruit and nuts, peel of citrus fruit or melons
	9	Coffee, tea, maté and spices
	10	Cereals
	11	Products of the milling industry, malt, starches, insulin, wheat gluten
	12	Oil seeds and oleaginous fruits, miscellaneous grains, seeds and fruits, industrial or medicinal plants, straw and fodder
	13	Lac, gums, resins and other vegetable saps and extracts
	14	Vegetable plaiting materials, vegetable products not elsewhere specified or included
III	15	Animal or vegetable fats and oils and prepared edible fats, animal or vegetable waxes

IV	16	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates
	17	Sugars and sugar confectionery
	18	Cocoa and cocoa preparations
VIII	41	Raw hides and skins (other than fur skins) and leather
	42	Articles of leather, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut)
	43	Fur skins and artificial fur, manufactures thereof

Table 4.6 indicates the tariff code and values of “chapter 1”. Tariff Code Total (column 3) indicates the value of the specific product, for example, tariff code 010420 – *Live Goats* exports a total of R1 006 332. Chapter Total (column 4) indicates the sum of all the tariff codes that are added up to compile a chapter’s values for further analysis of the data.

Table 4.6: Tariff Code and value of Chapter 1: Live animals

Tariff Code	Tariff Code and Description	Tariff Code Total	Chapter Total
010290	Bovine animals, live, except pure-bred breeding	500	
010420	Goats, live	1006332	
010511	Fowls, live domestic < 185 grams	1285	
010599	Poultry, live except domestic fowls, > 185 grams	64701	
010619	Live mammals	56150	
010620	Live reptiles, incl. snakes & turtles	74952	
010631	Live birds of prey	1527026	
010632	Live birds (order Psittaciformes), incl. parrots/parakeets/macaws/cockatoos	143180	
010639	Live birds (excl. of 0106.31 & 0106.32)	353457	
010690	Live animals	558412	3785995

Source of data: Author’s own calculations based on SARS Database

4.7. An Example of the RCA - Estimation

Finally the export products of the various chapters will be matched to the Decision Support Model (DSM). Focus will now be on the products and sectors which show potential for exports in KwaZulu-Natal. The tariff code total is the value of the whole chapter in total Rand, which are given in the “Chapter Total” column.

For example, tariff code 010631 – *Live birds of prey (section 1 chapter 2)*- in South Africa exports R1 591 848 worth of live birds of prey to other countries annually (2010), of which R1 527 026 is expected from the province of KwaZulu-Natal. In total, South Africa exports R232 418 040 (2010) of agricultural products, while R3 785 995 is exported from KwaZulu-Natal.

Table 4.7: RCA of Specific product

Chapter	Chapter Heading	Tariff Code	Tariff Code and Description	KZN Chapter Total	SA Chapter Total	RCA % Specific Product
0-5	Animal and animal products	10690	010690 - Live animals	3785995	232418040	1.63

Source of data: Author's own calculations based on SARS Database

Table 4.7 indicates the RCA percentage of a specific product of only one chapter. The RCA is estimated using the specific totals, as well as the total of South Africa's product.

Estimations have for example shown that the “chapter” for *Animals and animal products* have an RCA percentage of 1.63%, which indicates that the products in this chapter can be seen as products with a high revealed comparative advantage and as products with high export potential.

4.8. Summary and conclusion

This chapter explained the findings of the RCA as well as the identification of the export potential of the products identified in the Decision Support Model. The tables and graphs will be used in the next chapter to indicate that the agricultural sector can be seen as a primary export sector for the KwaZulu-Natal Province.

The three theoretical models that were used in this chapter to explain the Revealed Comparative Advantage are the Richardian model, Hecksher-Ohlin Model as well as the Classical theory. The Classical theory indicates that world trade leads to prosperity and welfare, and that free trade can be implied by the creation of wealth. The Ricardian Model shows the comparative advantage, which is the consequence of technological differences. The Hecksher-Ohlin theory expresses factor price differences in terms of natural resource allocation.

The higher the Revealed Comparative Advantage (RCA) index values, the greater will the influence of agricultural exports be in the export promotion for KwaZulu-Natal. Values larger than one indicate that the region has a competitive advantage to trade in a particular commodity.

Comparative advantage is an important concept of economic theory and trade, and this could be a factor that can enhance trade. There are several pressures from competition which lead to gains in productivity and restructuring of the economy.

Countries with market demand for particular products need to be defined for these products to be a definite comparative advantage and they need to specialise in those exports.

The Data that was explained in this chapter also indicates the data that is used in the next chapter. Explaining what was described in this chapter forms an introduction to Chapter 5.

CHAPTER 5: EMPIRICAL ANALYSIS OF DATA

5.1. Introduction

This chapter reports on the empirical analysis of the comparative advantage of the various sectors of the agricultural sector of the province KwaZulu-Natal in South Africa and how this analysis matches with results from the Decision Support Model (DSM), which identify international export opportunities abroad. Attention to the Revealed Comparative Advantage (RCA) mentioned in Chapter 4 receives attention first.

5.1.1. Revealed Comparative Advantage

Comparative advantage was first identified by Adam Smith, David Ricardo and John Stuart Mill. The propositions of labour specialisation and opportunity cost were derived from comparative advantage. Absolute advantage was developed by Stuart Mill who identified that a nation will use the products which cost them the least and then export those products (Leishman *et al.* 1999).

Leishman (1999) states that the Hecksher-Ohlin (H-O) model or the Factor Abundance Theory predicts that intensive products will be more likely to be exported from a country with abundant land, whereas capital intensive goods will be exported from capital abundant countries.

Referring to the formula in chapter 2: The equation indicates Revealed Comparative Advantage (RCA) and how the final data is calculated.

5.2. Data

5.2.1. Customs Values of specific products of KwaZulu-Natal and South Africa

The “Customs Value” column given in table 5.1 indicates the total value of the specific product that is exported from KwaZulu-Natal and South Africa, in Rand indicates the annual volume of exports of a specific commodity.

5.2.1.1. Live animals and animal products

This section indicates the top ten tariff codes of KwaZulu-Natal and South Africa for live animals and animal products (Chapter 1-5). For example, Tariff Code and Description 040510 – Butter’s custom value of exports from KwaZulu-Natal is R7 505 237 and for South Africa R26 350 227.

The top three products from Table 5.1 indicate that 020714 – Fowls, cut and offal, were the products with the most exports from KwaZulu-Natal with a value of R43 383 973. South Africa’s value of exports is R80 806 891 for that specific product. The product that comes second is *020230 - Bovine cuts boneless (beef), frozen* with a value of R25 891 339 for KwaZulu-Natal and R195 206 743 for South Africa. The third product is *020712 – Fowls, domestic, not cut*. The value for KwaZulu-Natal is R22 281 739 and for South Africa R353 653 978.

Table 5.1: Live animals and animal products (Values in Rand)

Live animals and animal products		KwaZulu-Natal	South Africa
Tariff Code	Description	Customs Value	Customs Value
020714	Fowls, cuts & offal, fro	43383973	80806891
020230	Bovine cuts boneless, frozen	25891339	195206743
020712	Fowls, domestic, not cut	22281739	35372085
020329	Swine cuts, frozen	19655065	35653978
040120	Milk not concentrated nor sweetened 1-6%fat	18457903	40318042
040221	Milk and cream powder unsweetened < 1.5% fat	12853150	29460216
030379	Fish, frozen, whole	11423550	345306144
040510	Butter	7505237	26450227
040700	Bird eggs, in shell, fresh, preserved or cooked	5335875	113210460
040210	Milk powder < 1.5% fat	4826857	40318042

Source of data: Author's own calculations based on SARS Database

5.3.1.2. Vegetable products

This section will indicate the top ten tariff codes of KwaZulu-Natal and South Africa for Vegetable Products (Vegetable Products), which implies the current size of annual exports. For example, Tariff Code and Description *100590 – Maize (corn) grouts or meal's* custom value of exports from KwaZulu-Natal is R117 495 702 and for South Africa R278 941 625.

Table 5.2: Chapter 6-14: Vegetable Products (Value in Rand)

Vegetable Products		KwaZulu-Natal	South Africa
Tariff Code	Description	Customs Value	Customs Value
080510	Oranges, fresh or dried	1165166297	4410449382
080540	Grapefruit, fresh or dried	294109457	723606640
110100	Wheat or meslin flour	247892544	263333559
110313	Maize (corn) grouts or meal	117495702	278941625
100590	Maize except seed corn	97281691	2061336543
080290	Nuts edible, fresh or dried,	96971357	215435837
080550	Lemons (Citrus lemon/limonum) & limes (Citrus aurantifolia/latifolia), fresh	91398154	802489177
100510	Maize (corn) seed	85643244	289477751
080520	Mandarin, Clementine & citrus hybrids, fresh or dried	51807325	663933395
100700	Grain sorghum	44767097	56758231

Source of data: Author's own calculations based on SARS Database

The top three products from Table 5.2 that were exported are: firstly, *080510 – Oranges, fresh or dried* with a customs value of R1 165 166 297 from KwaZulu-Natal and R4 410 449 382 from South Africa. The product that exports the second largest volume is *080540 – Grapefruit, fresh or dried* with values of R294 109 457 from KwaZulu-Natal and R723 606 640 from South Africa. The product that is third most exported is *110100 – Wheat or meslin flour*. The values for this product that are exported are R247 892 544 from KwaZulu-Natal and R263 333 559 from South Africa.

5.3.1.3. Animal or vegetable fats and oils and their cleavage products, prepared edible fats, animal or vegetable waxes

This section indicates the top 10 tariff codes of KwaZulu-Natal and South Africa for animal or vegetable fats and oils, and their cleavage products, prepared edible fats,

and animal or vegetable waxes (Chapter 15). For example, the Tariff code and Description *152000 – Glycerol crude; glycol wat's* custom value of exports from KwaZulu-Natal is R2 737 645 702 and for South Africa R4 999 749.

Table 5.3: Animal or vegetable fats and oils and their cleavage products, prepared edible fats, animal or vegetable waxes

Animal or vegetable fats & oils products		KwaZulu-Natal	South Africa
Tariff Code	Description	Customs Value	Customs Value
151219	Sunflower or safflower oil, fractions simply refined	639476575	703823571
150790	Refined soybean oil, not chemically modified	66932105	200009529
151710	Margarine, except liquid margarine	41518423	153030670
151790	Edible mix & preparations of animal & vegetable fat, oil ne	16728011	27868633
151229	Cotton-seed or fractions simply refined	7077094	14678421
151800	Processed animal, vegetable oils, industrial preps	6222430	11572959
151190	Palm oil or fractions simply refined	5317629	247515184
151620	Vegetable fats, oils or fractions hydrogenated, esterified	3656734	29937629
151329	Palm kernel & babassu oil, fractions, simply refined	3470110	4821130
152000	Glycerol crude; glycolwat	2737645	4999749

Source of data: Author's own calculations based on SARS Database

The product that is most exported in Table 5.3 is *151219 – Sunflower or safflower oil, fractions simply refined's* value is R639 476 575 from KwaZulu-Natal and R703 823 571 from South Africa. The product that falls second is *150790 – Refined soybean oil, not chemically modified*. That value exported from KwaZulu-Natal is R66 932 105 and R200 009 529 from South Africa. The third product, *151710 –*

margarine, except liquid margarine, has a value of R41 519 423, exported from KwaZulu-Natal and R153 030 670 from South Africa.

5.3.1.4. Prepared foodstuffs, beverages, spirits and vinegar, tobacco and manufactured tobacco substitutes

This section indicates the top ten tariff codes of KwaZulu-Natal and South Africa for prepared foodstuffs, beverages, spirits and vinegar, tobacco and manufactured tobacco substitutes (Chapter 16-23). For example, Tariff Code and Description *180690– Chocolate/cocoa food preparations* custom, has a value of exports of R49 328 336 from KwaZulu-Natal and R1 437 680 163 from South Africa.

The most exported product in Table 5.4 is *170199 – Refined sugar, in solid form, pure sucrose*, with an export value of R583 362 767 from KwaZulu-Natal and R916 739 999 from South Africa. The product that exports second most is *210390 – Sauces, mixed condiments, mixed seasoning* with a value of R164 868 521 from KwaZulu-Natal and 358 845 516 from South Africa. The product that exports third most in this “chapter” is *220710 – Un-denaturated Ethyl alcohol > 80% by volume* with values of R158 791 285 from KwaZulu-Natal and R1 589 105 475 from South Africa.

Table 5.4: Prepared foodstuffs, beverages, spirits and vinegar, tobacco and manufactured tobacco substitutes (Value in R)

Prepared food products		KwaZulu-Natal	South Africa
Tariff Code	Description	Customs Value	Customs Value
170199	Refined sugar, in solid form, pure sucrose	583362767	916739999
210390	Sauces, mixed condiments, mixed seasoning	164868521	358845516
220710	Un-denatured ethyl alcohol > 80% by volume	158791285	1589105475
200929	Grapefruit juice (excl. of 2009.21), unfermented & not cont. added spirit	145331039	154737783
180631	Chocolate, cocoa preps, block, slab, bar, filled, >2k	122278936	45954971
210690	Food preparations	81177321	817262862
220720	Ethyl alcohol and other spirits, denatured	79719343	80836809
200939	Juice of any single citrus fruit other than orange/grapefruit	59197509	154267192
170490	Sugar confectionery not chewing gum, no cocoa content	55642332	141664008
180690	Chocolate/cocoa food preparations	49328336	1437680163

Source of data: Author's own calculations based on DSM results

5.3.1.5. Raw hides and skins, leather fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut)

This section indicates the top 10 tariff codes of KwaZulu-Natal and South Africa for raw hides and skins, leather fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut) – Chapters 41-43. For example, Tariff Code and Description 420212 –

Trunks, suitcases, outer surface plastic/textile shows a custom value of exports of R2 984 642 from KwaZulu-Natal and R9 324 922 for South Africa.

Table 5.5: Raw hides and skins, leather fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut) - (Value in R)

Raw hides, skins, fur and articles		KwaZulu-Natal	South Africa
Tariff Code	Description	Customs Value	Customs Value
420299	Gun, musical instrument, camera, etc. cases	61759115	69972106
410190	Bovine (incl. buffalo)/equine hides & skins	35342721	42512611
410320	Reptile skins, raw	9417329	24126810
420500	Articles of leather and composition leather	7532448	424884
420292	Containers, outer surface plastic or textile	5577278	13189023
411390	Leather Furth. prepd. after tanning/crusting, incl. parchment-dressed leather	3457633	2592764
420321	Leather, composition sports gloves, mittens and mitts	3358599	4033541
411420	Patent leather & patent laminated leather, metallised leather	3253033	6869147
420212	Trunks, suitcases, etc., outer surface plastic/textile	2984642	9324922
410120	Whole bovine (incl. buffalo)/equine hides & skins, wt. per skin not >8kg	2967454	652515

Source of data: Author's own calculations based on DSM results

In Table 5.4 the following products reach the top 3: 420299 – *Gun, musical instrument, camera, and cases* is first. The value that is exported from KwaZulu-Natal is R61 759 115 and from South Africa R69 972 106. The second product is 410190 – *Bovine (including Buffalo) equines hides and skins* with values of R35 342 721 from KwaZulu-Natal and R42 512 611 from South Africa. The third

product is 410320 – *Reptile skins, raw* with values of R9 417 329, from KZN, and R2 412 6810 from South Africa.

5.3.1.6. Textile and textile articles

This section indicates the top 10 tariff codes of KwaZulu-Natal and South Africa for Textile and Textile articles (Chapter 51-59). For example, Tariff Code and Description 570410 – *Tiles of felt of textile materials, area <0, 3 m²* has a custom value of exports of R3 58 7 695 from KwaZulu-Natal and R3 730 311 for South Africa.

Table 5.6: Textile and Textile articles (Value in R)

Textile and textile articles		KwaZulu-Natal	South Africa
Tariff Code	Description	Customs Value	Customs Value
540710	Woven hi-ten filament, nylon, polyamide or polyester	26188320	29343044
570320	Carpets nylon, polyamides, tufted	17783411	26966812
570390	Carpets of materials, tufted	13289665	17038598
580632	Woven fabric manmade fibres, < 30 cm wide	8792899	10641175
550200	Artificial filament tow	5461353	5461926
550130	Filament tow of acrylic or mod acrylic	5121322	5197549
510111	Greasy shorn wool, not carded or combed	4894671	424110802
550340	Staple fibres of polypropylene, not carded or combed	3923542	4712912
570410	Tiles of felt of textile materials, area <0.3 m ²	3587695	3730311
591132	Textile fabric used in paper-making etc., >650 g/m ²	3114650	3126090

Source of data: Author's own calculations based on DSM results

The products that have been most exported in Table 5.6 is 540710 *woven hi-ten filament, nylon, polyamides or polyester* with export values of R26 188 320 from KwaZulu-Natal and R29 343 044 from South Africa. The product that falls second is 570320 – *Carpets nylon Polyamides, tufted* and are exported with a value of R17 783 411 from KwaZulu-Natal and R26 966 812 from South Africa. The third

most exported product is 570390 – *Carpets of materials, tufted* with export values of R13 289 665 from KwaZulu-Natal and R17 038 598 from South Africa.

The following section will report on the findings concerning the estimations of the Revealed Comparative Advantage of products in the KwaZulu-Natal Province.

5.4. Revealed Comparative Advantage of the products exported from KwaZulu-Natal and South Africa

This section gives a detailed explanation of the calculations of Revealed Comparative Advantage (RCA) of specific products that are exported from KwaZulu-Natal Province and South Africa as a whole. These calculations will reveal which products have the highest international comparative advantage and as such have the most potential to export from KwaZulu-Natal. The calculations are done by using the following Equation:

Revealed Comparative Advantage (RCA) =	$\frac{\frac{\text{Provincial export of specific product}}{\text{South Africa's total export of specific product}}}{\frac{\text{Provincial exports of all products}}{\text{South Africa's export of all products}}}$
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As an example Table 5.7 will be used in the following equation explanation:

The industry for Butter in South Africa exports R26 450 227 to other countries annually (2010), of which R7 505 237 is exported from the province of KwaZulu-Natal. In total South Africa exports R502 718 091 573 (2010) of agricultural products, while R131 868 467 558 is exported from Kwazulu-Natal.

$$RCA_{ijt} = \left(\frac{\frac{X_{ijt}}{X_{iwt}}}{\frac{\sum X_{ajt}}{\sum X_{awt}}} \right) \times 100$$

$$= \frac{(7\,505\,237 \div 26\,450\,227)}{(131\,868\,467\,558 \div 502\,718\,091\,573)} \times 100$$

$$= \underline{0.2837494363} \times 100$$

$$= 0.2623109647$$

$$= 108.17$$

an RCA > 1

This value is larger than one, indicating that the province has a comparative advantage in this product. This implies that this province should export this product to the international market.

The final part of this equation is to divide the all product division by the specific Product Division –the amount is placed in the RCA percentage column.

5.4.1.Revealed Comparative Advantage of Live Animals and Animal Products

By using the information of the first product in Table 5.7: 020712 - *Fowls, domestic, not cut*, where the totals of Kwazulu-Natal is R22 281 730 divided by South Africa's R35 372 085 to get a total of 0,629924. The second part of the equation is to divide South Africa's export of all products (R502 718 981 573) by KwaZulu-Natal's exports (R131 868 467 558) and get a figure of 0.2623. The final part of this equation is to divide 0,629924 by 0.2623 and get an index of 2.40144%, which is placed in the RCA percentage column. This amount shows that this specific product has a competitive advantage and is seen as a product that has potential to be exported.

Table 5.7: Revealed Comparative Advantage of Live Animals and Animal Products (Value in R)

Tariff Code	Description	Specific Product Export of KwaZulu-Natal	Specific Product Export of South Africa	Calculation
		Customs Value	Customs Value	RCA %
020712	Fowls, domestic, not cut	22281739	35372085	2.40
020329	Swine cuts, frozen	19655065	35653978	2.10
020714	Fowls, cuts & offal, frozen	43383973	80806891	2.05
040120	Milk not concentrated nor sweetened 1-6% fat	18457903	40318042	1.75
040221	Milk and cream powder unsweetened < 1.5% fat	12853150	29460216	1.66
040510	Butter	7505237	26450227	1.08
020230	Bovine cuts boneless, frozen	25891339	195206743	0.51
040210	Milk powder < 1.5% fat	4826857	40318042	0.46
040700	Bird eggs, in shell, fresh, preserved or cooked	5335875	113210460	0.18
030379	Fish, frozen, whole	11423550	345306144	0.13

Source of data: Author's own calculations

The products in Table 5.7 are ranked according to their RCA values from the highest to the lowest, to indicate the products that have the highest export potential. The product with the highest comparative advantage, which is indicated by the highest RCA index, is 020712 *Fowls, domestic, not cut*, with an index of 2.40%. Second is 020329 – *Swine Cuts, frozen*, with a total of 2,10% and third is 020714 – *fowls cut & offal, frozen* with an index of 2,05%.

5.4.2. Revealed Comparative Advantage of Vegetable Products

The vegetable products in Table 5.8 are sorted according to the RCA value from highest to lowest to accumulate the products that have the highest export potential (of Chapter 6-14). The most competitive product, with the highest RCA, is 110100 - *Wheat or meslin flour* with an index of 3.59%. Second is 100700 - *Grain sorghum* with an index of 3.01% and third 080290 - *Nuts edible, fresh or dried*, with an index of 1.72%.

Table 5.8: Revealed Comparative Advantage of Vegetable Products

Vegetable Products		Specific Product Export of KwaZulu-Natal	Specific Product Export of South Africa	Calculation
TariffCode	Description	Customs Value	Customs Value	RCA %
110100	Wheat or meslin flour	247892544	263333559	3.59
100700	Grain sorghum	44767097	56758231	3.01
080290	Nuts edible, fresh or dried	96971357	215435837	1.72
110313	Maize (corn) grouts or meal	117495702	278941625	1.61
080540	Grapefruit, fresh or dried	294109457	723606640	1.55
100510	Maize (corn) seed	85643244	289477751	1.13
080510	Oranges, fresh or dried	1165166297	4410449382	1.01
080550	Lemons (Citrus lemon/limonum) & limes (Citrus aurantifolia/latifolia), fresh	91398154	802489177	0.43
080520	Mandarin, Clementine & citrus hybrids, fresh or dried	51807325	663933395	0.30
100590	Maize except seed corn	97281691	2061336543	0.18

Source of data: Author's own calculations

5.4.3.Revealed Comparative Advantage of Animal or vegetable fats and oil and their cleavage products, prepared edible fats, animal or vegetable waxes

Table 5.9: Revealed Comparative Advantage of animal or vegetable fats and oil and their cleavage products, prepared edible fats, animal or vegetable waxes

Animal & Vegetable fats, oil and Products		Specific Product Export of KwaZulu -Natal	Specific Product Export of South Africa	Calculation
Tariff Code	Description	Customs Value	Customs Value	RCA%
150790	Refined soybean oil, not chemically modified	66932105	47541222	5.37
152219	Sunflower or safflower oil, fractions simply refined	639476575	703823571	3.46
151329	Palm kernel & babassu oil, fractions, simply refined	3470110	4821130	2.74
151790	Edible mix & preparations of animal & vegetable fat, oil	16728011	27868633	2.29
152000	Glycerol crude; glycolwat	2737645	4999749	2.09
151800	Processed animal, vegetable oils, industrial preps ne	6222430	11572959	2.05
151299	Seed or fractions simply refined	7077094	14678421	1.84
151710	Margarine, except liquid margarine	41518423	153030670	1.03
151620	Vegetable fats, oils or fractions hydrogenated, esterified	3656734	29937629	0.47
151190	Palm oil or fractions simply refined	5317629	247515184	0.082

Source of data: Author's own calculations

The product that has the highest RCA in Chapter 15 - the *Animal or vegetable fats and oil and their cleavage products, prepared edible fats, animal or vegetable waxes* is: 150790 – *Refined soybean oil, not chemically modified*, with an RCA value of 5,37%. The second product is 151219 - *Sunflower or safflower oil, fractions simply refined*, with an RCA of 3.46%. The third product is 151329 - *palm kernel and babassu oil, fractions, simply refined* with a RCA value of 2.74% (see Table 5.9).

5.4.4.Revealed Comparative Advantage of Prepared foodstuffs, beverages, spirits, vinegar, tobacco and manufactured tobacco substitutes

The products of chapters 16 to 23: *Prepared foodstuffs, beverages, spirits, vinegar, tobacco and manufactured tobacco substitutes*, that have the most export potential according to the RCA percentage is tariff code 180631 – *Chocolate, cocoa preps, block, slab, bar, filled (>2k)*, with a percentage of RCA of 10,44% and second is 220720 – *Ethyl Alcohol and other spirits, denatured* with an RCA value of 3,76%. The third most exportable product is 200929 - *Grapefruit juice, unfermented and added spirit* with an RCA index of 3,59% (see Table 5.10).

Table 5.10: Revealed Comparative Advantage of prepared foodstuffs, beverages, spirits, vinegar, tobacco and manufactured tobacco substitutes

Prepared foodstuffs, beverages		Specific Product Export of KwaZulu-Natal	Specific Product Export of South Africa	Calculation
Tariff Code	Tariff Code and Description	Customs Value	Customs Value	RCA %
180631	Chocolate, cocoa preps, block, slab, bar, filled, >2k	122278936	45954971	10.14
220720	Ethyl alcohol and other spirits, denatured	79719343	80836809	3.76
200929	Grapefruit juice (excl. of 2009.21), unfermented & not cont. added spirit, ...	145331039	154737783	3.58
170199	Refined sugar, in solid form, pure sucrose	583362767	916739999	2.42
210390	Sauces, mixed condiments, mixed seasoning	164868521	358845516	1.75
170490	Sugar confectionery not chewing gum, no cocoa content	55642332	141664008	1.50
200939	Juice of any single citrus fruit other than orange/grapefruit (excl. of 200)	59197509	154267192	1.46
220710	Un-denatured ethyl alcohol > 80% by volume	158791285	1.589E+09	0.38
210690	Food preparations	81177321	817262862	0.38
180690	Chocolate/cocoa food preparations	49328336	1.438E+09	0.13

Source of data: Author's own calculations

5.4.5.Revealed Comparative Advantage of Raw hides and skins, leather and fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut)

The RCA value of chapters 41 to 43: *Raw hides and skins, leather and fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut)* shown in Table 5.11, indicates that the potentially most exportable products from KwaZulu-Natal and South Africa, are 411390 – *Leather Further prepared after tanning/crusting, including parchment-dressed leather*, with an index of 5.08%. The second most exportable product from KwaZulu-Natal according to the RCA value is 420299 – *gun, musical instrument, camera cases*, with a value of 3.36%. The product that is third most competitive in this group is 420321 – *leather composition sports gloves, mittens and mitts* with an index of 3,17%.

Table 5.11: Revealed Comparative Advantage of Raw hides and skins, leather and fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut)

Rawhides, skins, fur & articles		Specific Product Export of KwaZulu -Natal	Specific Product Export of South Africa	Calculation
Tariff Code	Description	Customs Value	Customs Value	RCA %
411390	Leather Furth. prepd. after tanning/crusting, incl. parchment-dressed leather ...	3457633	2592764	5.08
420299	Gun, musical instrument, camera, cases	61759115	69972106	3.36
420321	Leather, composition sports gloves, mittens and mitts	3358599	4033541	3.17
410190	Bovine (incl. buffalo)/equine hides & skins (excl. of 4101.20 & 4101.50),	35342721	42512611	3.17
411420	Patent leather & patent laminated leather; metallised leather	3253033	6869147	1.81
420292	Containers, outer surface plastic or textile	5577278	13189023	1.61
410320	Reptile skins, raw	9417329	24126810	1.49
420212	Trunks, suitcases, outer surface plastic/textile	2984642	9324922	1.22
420500	Articles of leather and composition leather	7532448	42048840	0.68
410120	Whole bovine (incl. buffalo)/equine hides & skins, wt. per skin not >8kg	2967454	42512611	0.27

Source of data: Author's own calculations

5.4.6.Revealed Comparative Advantage of Textile and textile articles

Table 5.12: Revealed Comparative Advantage of Textile and textile articles

Textiles		Specific Product Export of KwaZulu-Natal	Specific Product Export of South Africa	Calculation
Tariff Code	Description	Customs Value	Customs Value	RCA %
550200	Artificial filament tow	5461353	5461926	3.81
591132	Textile fabric used in paper-making etc., >650 g/m ²	3114650	3126090	3.80
550130	Filament tow of acrylic or mod-acrylic	5121322	5197549	3.76
570410	Tiles of felt of textile materials, area <0.3 m ²	3587695	3730311	3.67
540710	Woven hi-ten filament, nylon, polyamide or polyester	26188320	29343044	3.40
550340	Staple fibres of polypropylene, not carded or combed	3923542	4712912	3.17
580632	Woven fabric manmade fibres, < 30 cm wide	8792899	10641175	3.15
570390	Carpets of materials, tufted	13289665	17038598	2.97
570320	Carpets nylon, polyamides, tufted	17783411	26966812	2.51
510111	Greasy shorn wool, not carded or combed	4894671	424110802	0.04

Source of data: Author's own calculations

The competitive advantage of chapters 51 to 59: *Textile and textile products* that is the most competitive is given in Table 5.12. Most competitive in these chapters is tariff code 550200 – *artificial filament tow* with an RCA index of 3,81%. The second

most exportable product is 591132 – *textile fabric used in paper making (>650g, m²)* with a value of 3,80. Third is 550130 – *filament tow of acrylic or mod-acrylic* with an index of 3,77.

5.4.7 Leading Comparative Advantage in KwaZulu-Natal

The agricultural products and industries of the KwaZulu-Natal Province that have the highest **overall** comparative advantage (RCA), disregarding its particular “chapter” group, is given in Table 5.13. From the table it can be seen that tariff code 180631 – *Chocolate, cocoa preps, block, slab, bar, filled* (RCA = 10.1), 150790 – *Refined soybean oil, not chemically modified* (RCA = 5.4) and 411390 – *Leather further prepared after tanning or crusting, including parchment-dressed leather* (RCA = 5.1) are the three top performers among agricultural products, with the best export potential in the province.

The agricultural products in KwaZulu-Natal Province with the highest international comparative advantage, was indicated in the sections and tables above. These products were matched to the Decision Support Model (DSM) and the results are reported in the following section.

Table 5.13: Leading Comparative Advantage Products in KwaZulu-Natal

Top Comparative Advantage		Specific Product Export of KwaZulu-Natal	Specific Product Export of South Africa	Calculation
Tariff Code	Description	Customs Value	Customs Value	RCA %
180631	Chocolate, cocoa preps, block, slab, bar, filled, >2k	122278936	45954971	10.14
150790	Refined soybean oil, not chemically modified	66932105	47541222	5.37
411390	Leather Furth. prepd. after tanning/crusting, incl. parchment-dressed leather ...	3457633	2592764	5.08
550200	Artificial filament tow	5461353	5461926	3.81
591132	Textile fabric used in paper-making etc., >650 g/m2	3114650	3126090	3.80
220720	Ethyl alcohol and other spirits, denatured	79719343	80836809	3.76
550130	Filament tow of acrylic or mod-acrylic	5121322	5197549	3.76
570410	Tiles of felt of textile materials, area <0.3 m2	3587695	3730311	3.67
110100	Wheat or meslin flour	247892544	263333559	3.59
200929	Grapefruit juice (excl. of 2009.21), unfermented & not cont. added spirit	145331039	154737783	3.58
152219	Sunflower or safflower oil, fractions simply refined	639476575	703823571	3.46
540710	Woven hi-ten filament, nylon, polyamide or polyester	26188320	29343044	3.40
420299	Gun, musical instrument, camera, cases	61759115	69972106	3.36
420321	Leather, composition sports gloves, mittens and mitts	3358599	4033541	3.17

550340	Staple fibres of polypropylene, not carded or combed	3923542	4712912	3.17
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Source of data: Author's own calculations

5.5. Decision Support Model Matching

This section indicates the results captured from the Decision Support Model (DSM) compared to the RCA in terms of the highest comparative advantage ($RCA > 1$). By comparison to the DSM it will indicate that the following products have an export potential to be exported to the required international markets. This implies that these products have international competitive advantage and that there also exist realistic export opportunities abroad. The tables in the Appendix at the end of this study provide a complete summary of these findings.

Table 5.14: Decision Support Model (DSM) results of Potential Export Countries for Tariff Codes

Revealed Comparative Advantage Results		Decision Support Model Results	
Tariff Code and Description	RCA %	HS Chapter	Potential Export Country
Chapter 01 - 05 Animal and animal products			
020712 - Fowls, domestic, not cut	2.40	02	Czech Republic, Hungary, Indonesia, Malaysia, Portugal, Romania
020329 - Swine cuts, frozen	2.10	02	Australia, Bulgaria, Cyprus, Finland, Hong Kong, India, Japan, Latvia, Lithuania, Malaysia, Malta, United States
020714 - Fowls, cuts & offal, frozen	2.05	02	Armenia, Bulgaria, China, Cyprus, France, Hong Kong, the Netherlands, Slovenia, United Kingdom
040120 - Milk not concentrated nor sweetened 1-6% fat	1.75	04	Belgium, Bulgaria, Cyprus, France, Georgia, Germany, Ghana, Hungary, Italy, Jordan, Spain, Sweden, United Kingdom
040221 - Milk and cream powder unsweetened < 1.5% fat	1.66	04	Czech Republic, Germany, Indonesia, Malaysia, the Netherlands, Saudi Arabia, Singapore, Slovakia, Thailand
040510 - Butter	1.08	04	Belgium, China, France, Germany, Netherlands, United Kingdom
020230 - Bovine cuts boneless, frozen	0.51	02	Thailand, United States, Vietnam
040210 - Milk powder < 1.5% fat	0.46	04	Australia, Bulgaria, Cyprus, Finland, Hong Kong, India, Japan, Latvia, Lithuania, Malaysia, Malta, United States
040700 - Bird eggs, in shell, fresh, preserved or cooked	0.18	04	Belgium, Cyprus, Estonia, Greece, Hong Kong, Israel, Italy, Jordan, Kazakhstan, Kuwait, the Netherlands, New Zealand, Romania, Russia, United Kingdom
030379 - Fish, frozen, whole	0.13	03	Australia, Austria, Brazil, China, Cyprus, Czech Republic, Germany, Greece, Iceland, Indonesia, Italy, Japan, Jordan, Kuwait, Malaysia, the Netherlands, New Caledonia, Norway, Saudi Arabia, Singapore, South Korea, Spain, Switzerland, Tunisia, United Kingdom, United States, Uruguay
Chapter 06-14 Vegetable products			
110100 - Wheat or meslin flour	3.59	11	Belgium, Germany, Italy, Japan, Netherlands, United Kingdom
100700 - Grain sorghum	3.01	10	Belgium, Germany, Italy, Japan, Netherlands, United Kingdom

080290 - Nuts edible, fresh or dried	1.72	08	Austria, Belgium, China, Croatia, Cyprus, Estonia, Finland, France, French Polynesia, Germany, Hong Kong, Israel, Italy, Japan, Jordan, Kazakhstan, Latvia, Lithuania, Macau, Malaysia, Malta, Netherlands, New Caledonia, Norway, Poland, Saudi Arabia, Singapore, Spain, Sweden, United Kingdom
110313 - Maize (corn) grouts or meal	1.61	11	Austria, Czech Republic, France, Germany, Israel, Korean, Malaysia, Singapore, Slovakia
080540 - Grapefruit, fresh or dried	1.55	08	Armenia, Belarus, Belgium, Bosnia Herzegovina, Estonia, France, Germany, Ireland, Italy, Japan, Kazakhstan, Latvia, Lithuania, the Netherlands, Poland, Portugal, Qatar, Romania, Russia, Slovakia, Spain, United Kingdom.
100510 - Maize (corn) seed	1.13	10	Belarus, Israel, Malaysia, Netherlands, Romania, Saudi Arabia
080510 - Oranges, fresh or dried	1.01	08	Albania, Argentina, Armenia, Belarus, Belgium, Bosnia Herzegovina, Canada, Croatia, Czech Republic, Denmark, Estonia, Greece Hong Kong, Iceland, India, Ireland, Italy, Japan, Jordan, Kazakhstan, Latvia, Lithuania, Malta, the Netherlands, Norway, Poland, Portugal, Qatar, Romania, Russia, Saudi Arabia, Slovenia, Spain, Sweden, Switzerland, United Kingdom
080550 - Lemons (Citrus limon/limonum) & limes (Citrus aurantifolia/latifolia), fresh	0.43	08	Armenia, Belarus, Belgium, Bosnia Herzegovina, Bulgaria, Canada, Cape Verde, Czech Republic, Denmark, Estonia, Germany, Iceland, Indonesia, Israel, Italy, Jordan, Kazakhstan, Latvia, Lithuania, Luxembourg, Malaysia, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Saudi Arabia, Slovakia, Slovenia, Spain, Sweden, United Kingdom
080520 - Mandarin, clementine & citrus hybrids, fresh or dried	0.30	08	Belarus, Canada, China, Croatia, Estonia, Greece, Ireland, Jordan, Kazakhstan, Latvia, Lithuania, Macau, the Netherlands, Qatar, Romania, Russia, Slovakia, Slovenia, Sweden, United Kingdom
100590 - Maize except seed corn	0.18	10	Armenia, Austria, Bulgaria, France, Germany, Hungary, Iceland, Ireland, Italy, Netherlands, Poland, Romania, Saudi Arabia, Spain
Chapter 15: Animal or vegetable fats and oils and their cleavage products, prepared edible fats, animal or vegetable waxes			
150790 - Refined soybean oil, not chemically modified	5.367199006	15	Romania, United Kingdom

151219 - Sunflower or safflower oil, fractions simply refined	3.46	15	Albania, Australia, Austria, Bosnia, Herzegovina, Cyprus, Czech Republic, Denmark, France, Georgia, Germany, Greece, Hong Kong, Indonesia, Jordan, Lithuania, Malaysia, the Netherlands, New Zealand, Poland, Romania, Singapore, Slovakia, Spain, Sweden, United Kingdom, United States, Vietnam
151329 - Palm kernel & babassu oil, fractions, simply refined	2.74	15	Spain
151790 - Edible mix & preparations of animal & vegetable fat, oil	2.29	15	Brazil, China, Germany, Jordan, Romania, United States
152000 - Glycerol crude	2.09	15	Belgium, China, Czech Republic, Estonia, France, Germany, Hungary, India, Ireland, Latvia, Malaysia, New Zealand, Norway, Spain, Switzerland, United Kingdom, United States, Zambia
151800 - Processed animal, vegetable oils, industrial prepared	2.05	15	Austria, Belgium, France, Germany, Hungary, Italy, the Netherlands
151229 - Cotton-seed or fractions simply refined	1.84	15	Australia, Japan
151710 - Margarine, except liquid margarine	1.03	15	Cyprus, Czech Republic, France, Ghana, Hungary, Jordan, Malta, the Netherlands, Poland, Romania, Saudi Arabia, Spain, Sweden, Thailand, United Kingdom
151620 - Vegetable fats, oils or fractions hydrogenated	0.47	15	Belgium, France, Germany, Greece, Indonesia, Kuwait, Macao, The Netherlands, New Zealand, Norway, Oman, Poland, Qatar, Saudi Arabia, Vietnam
151190 - Palm oil or fractions simply refined	0.08	15	Russia, Germany
Chapter 16-23: Prepared foodstuffs			
180631 - Chocolate, cocoa prepared, block, slab, bar, filled, >2k	10.14	18	Bulgaria, France, Germany, Italy, Jordan, the Netherlands, Romania, United Kingdom, United States
220720 - Ethyl alcohol and other spirits, denatured	3.76	22	Belgium, France, Germany, Malaysia, the Netherlands, Saudi Arabia, Sweden, Tanzania, United Kingdom, United States.
200929 - Grapefruit juice, unfermented & not continuous added spirit	3.58	20	Belgium, Bulgaria, Cyprus, Czech Republic, France, Germany, Ghana, Ireland, Israel, Italy, Japan, Kuwait, the Netherlands, Poland, Qatar, Romania, Russia, Saudi Arabia, Singapore, Spain, Switzerland, Thailand, United Kingdom
170199 - Refined sugar, in solid form, pure sucrose	2.43	17	Australia, Austria, Bahrain, China, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hong Kong, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Mongolia, the Netherlands, Singapore, Sweden, Switzerland, Vietnam

210390 - Sauces, mixed condiments, mixed seasoning	1.75	21	Albany, Argentina, Australia, Belarus, Belgium, Brazil, Cyprus, Czech Republic, Denmark, Egypt, France, Georgia, Germany, Greece, Hong Kong, Hungary, India, Indonesia, Ireland, Israel, Japan, Jordan, Latvia, Lithuania, Malaysia, Mongolia, the Netherlands, Norway, Poland, Portugal, Qatar, Romania, Saudi Arabia, Spain, Sweden, Tanzania, United Kingdom, United States, Vietnam, Zambia
170490 - Sugar confectionery not chewing gum, no cocoa content	1.50	17	Albania, Argentina, Australia, Belarus, Belgium, Bulgaria, Canada, China, Czech Republic, France, Georgia, Germany, Ghana, Hungary, India, Ireland, Jordan, Latvia, Lithuania, Macao, Malaysia, Mongolia, the Netherlands, Oman, Poland, Qatar, Romania, Saudi Arabia, Slovakia, Sweden, Tanzania, Thailand, United Kingdom, United States, Uruguay, Zambia
200939 - Juice of any single citrus fruit other than orange/grapefruit	1.46	20	Albania, Canada, Czech Republic, France, Germany, Ghana, Ireland, Israel, Italy Japan, Kazakhstan, Malta, the Netherlands, Norway, Poland, Qatar, Singapore, Spain, Thailand, United Kingdom, United States, Vietnam
220710 – Un-denatured ethyl alcohol > 80% by volume	0.38	22	Australia, Austria, Bahrain, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Finland, Germany, Ghana, Greece, Hungary, Italy, Japan, Latvia, Lithuania, the Netherlands, Portugal, Romania, Spain, Sweden, Tanzania, United Kingdom, United States, Vietnam.
210690 - Food preparations	0.38	21	Albania, Argentina, Australia, Austria, Cyprus, Czech Republic, Estonia, France, Germany, Hungary, Iceland, Italy, Japan, Macao, Malaysia, the Netherlands, Oman, Poland, Portugal, Romania, Saudi Arabia, Slovakia, South Korea, Spain, Thailand, United Kingdom, Vietnam
180690 - Chocolate/cocoa food preparations	0.13	18	Belgium, Brazil, India, Lithuania, Macao, the Netherlands, Oman, Romania, Tanzania, United Kingdom
Chapter 41-43: Raw hides and skins, leather fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut)			
411390 - Leather further prepared after tanning/crusting, including parchment-dressed leather	5.08	41	Argentina, Armenia, China, France, Germany, Hong Kong, Iceland, Israel, Italy, Japan, the Netherlands, Switzerland, Thailand, United Kingdom, United States, Vietnam

420299 - Gun, musical instrument, camera, cases	3.36	42	Austria, Belarus, Belgium, Brazil, Bulgaria, Canada, Czech Republic, Denmark, Estonia, France, Georgia, Germany, Ghana, Greece, Iceland, Ireland, Israel, Kuwait, Latvia, Lithuania, Malta, Mongolia, Poland, Portugal, Romania, Singapore, Slovakia, Spain, Switzerland, United Kingdom, United States, Uruguay, Vietnam, Zambia
420321 - Leather, composition sports gloves, mittens and mitts	3.17	42	Argentina, Australia, Austria, Belarus, Belgium, Brazil, Bulgaria, Canada, China, Croatia, Czech Republic, Denmark, Estonia, France, Ghana, Iceland, Israel, Italy, Japan, Kazakhstan, Lithuania, New Caledonia, New Zealand, Norway, Poland, Slovakia, Spain, Sweden, Thailand, United Kingdom, United States, Vietnam, Zambia
410190 - Bovine (including buffalo), equine hides & skins	3.17	41	Belgium, China, France, Germany, Greece, Hong Kong, India, Israel, Italy, Japan, the Netherlands, Poland, Slovakia, Spain, Thailand, Turkey, Vietnam
411420 - Patent leather & patent laminated leather; metallised leather	1.81	41	Brazil, China, Hong Kong, India, Malaysia, Norway, Slovakia, Tunisia
420292 - Containers, outer surface plastic or textile	1.61	42	Belarus, Bosnia Herzegovina, Brazil, China, Finland, France, Germany, Italy, Jordan, Lithuania, Poland, Saudi Arabia, Sweden, United States
410320 - Reptile skins, raw	1.49	41	France, Germany, Italy, Japan, Singapore
420212 - Trunks, suitcases, outer surface plastic/textiles	1.22	42	Belarus, Bulgaria, China, Czech Republic, France, Germany, Ireland, Lithuania, Macao, Mongolia, Romania, Slovakia, United Kingdom
420500 - Articles of leather and composition leather	0.68	42	Argentina, Bosnia Herzegovina, Brazil, Bulgaria, China, Cyprus, Czech Republic, Egypt, Estonia, Greece, Hungary, Iceland, India, Israel, Italy, Jordan, Kazakhstan, Latvia, Lithuania, Macao, New Zealand, Norway, Panama, Poland, Qatar, Romania, Saudi Arabia, Singapore, Slovakia, Slovenia, Spain, Switzerland, Thailand, Tunisia, United Kingdom, United States, Uruguay, Vietnam, Zambia
410120 - Whole bovine (including buffalo), equine hides & skins, per skin not >8kg	0.27	41	China, Hong Kong, Israel, Italy, Netherlands, Portugal, Spain, Tunisia, Uruguay
Chapter 51-59:Textiles & textile articles			
550200 - Artificial filament tow	3.81	55	Germany, Hong Kong, Lithuania, Netherlands, Poland, Russia
591132 - Textile fabric used in paper-making, >650	3.80	59	Belarus, Bosnia Herzegovina, Brazil, China, Finland, France,

g/m2			Germany, Italy, Jordan, Lithuania, Poland, Saudi Arabia, Sweden, United States
550130 - Filament tow of acrylic or mod-acrylic	3.76	55	China, Indonesia, Italy, Tanzania, Turkey, United States
570410 - Tiles of felt of textile materials, area <0.3 m2	3.67	57	Australia, Ghana, Japan, Romania, Saudi Arabia, Singapore, Switzerland, United Arab Emirates, United Kingdom
540710 - Woven hi-ten filament, nylon, polyamide or polyester	3.40	54	Australia, Bulgaria, China, Denmark, Finland, France, Germany, Greece, Hong Kong, Hungary, Ireland, Israel, Japan, Luxembourg, New Caledonia, Poland, Romania, Saudi Arabia, Singapore, Slovakia, Spain, Sweden, Tunisia, United Kingdom, United States, Vietnam
550340 - Staple fibres of polypropylene, not carded or combed	3.17	55	Bosnia Herzegovina, Bulgaria, China, Czech Republic, Denmark, Finland, France, Germany, Israel, Italy, Netherlands, Norway, Poland, Romania, Russia, Spain, United Kingdom, United States
580632 - Woven fabric manmade fibres < 30 cm wide	3.15	58	Argentina, Belarus, China, Hong Kong, Kazakhstan, Poland, Romania, Slovakia, United States
570390 - Carpets of materials, tufted	2.97	57	Belgium, Brazil, Canada, Denmark, Egypt, France, Germany, Greece, Hong Kong, Iceland, Ireland, Italy, Malaysia, Netherlands, New Caledonia, New Zealand, Poland, Qatar, Romania, Saudi Arabia, Singapore, Slovakia, Spain, Sri Lanka, Sweden, Switzerland, Tanzania, United Arab Emirates, United Kingdom
570320 - Carpets nylon, polyamides, tufted	2.51	57	Armenia, Australia, Bosnia Herzegovina, China, Czech Republic, Denmark, Estonia, France, Georgia, Germany, Ghana, Iceland, Latvia, Malaysia, Mongolia, Netherlands, New Zealand, Norway, Panama, Poland, Romania, Singapore, Spain, United Kingdom
510111 - Greasy shorn wool, not carded or combed	0.04	51	Germany

Source of data: Author's own calculations based on DSM results

5.6. Summary and Conclusion

This chapter identified goods with the highest comparative advantage to export internationally from KwaZulu-Natal Province. This was done through the estimation of the various products' and industries' Revealed Comparative Advantage indices (RCA).

Data was captured into different "chapters" according to the tables of the United Nations, each estimated according to the province's (KwaZulu-Natal) and South African value, by summing all the values of the specific product lines. These "chapters" was categorised according to the products that fall under the agriculture, forestry and fisheries sectors.

The first "chapters" which were *Live animals and animal products* identified that *fowls, cuts and offal*, have the highest customs value in KwaZulu-Natal with a value of R43 383 973. The second chapters, vegetable products, revealed that *Oranges, fresh or dried*, are exported most, with an annual export value of R1 165 166 297.

The third "chapters" for *Animal or vegetable fats and oils and their cleavage products, prepared edible fats, animal or vegetable waxes*, identified *Sunflower or safflower oil fractions (simply refined)*, with a value of R63 947 575 are exported most from KwaZulu-Natal. Under the chapters for *prepared foodstuffs beverages, spirits and vinegar, tobacco and manufactured tobacco substitutes*, the product that are exported most is *Refined sugar* with an annual export value of R583 362 767.

Among the "chapters" for *raw hides and skins, leather skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut)*, the products exported most are guns, musical instruments, camera and cases, with an annual value of R61 759 115. In the chapters for *textile and textile articles*, the product that has the most export potential is *woven hi-ten filament, nylon, polyamide or polyester*, with an annual export value of R26 188 320.

The Revealed Comparative Advantage (RCA) for the largest exporters was calculated to estimate which products have the highest export potential in KwaZulu-Natal.

The first chapters on *Live animals and animal products*, with the highest export potential and RCA value are *Fowls, domestic, not cut*, with a RCA index of 2,401%. Note that an RCA value larger than one indicates comparative advantage. Secondly, for the chapters on *Vegetable products*, the RCA value indicates that *Wheat and meslin flour* have the highest export value of 3,5887%. In the chapter for *Food products* the tariff code for *Refined soybean oil, not chemically modified* has the highest export potential of 5,367%.

Between chapters 16 and 23, those for *Prepared foodstuffs, beverages, spirits, and vinegar, tobacco and manufactured tobacco substitutes* the product that can be exported most is *chocolate, cocoa preps, block, slab, bar, filled (<2k)* with an RCA and export value of 5,083%. Chapters 41 to 43 (*Raw hides and skins, leather fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers; articles of animal gut*) indicate that *Leather further prepared, after tanning/crusting, including parchment-dressed leather* has the highest RCA index of 5,083%. Among the *Textile and textile articles* (chapters 51 to 59) *Artificial filament tow* has an RCA index of 3,8118 which implies that this product that can be most successfully exported.

In conclusion this study showed that there is one specific product with major exported potential. Its tariff code is 180631 – *Chocolate, cocoa preps, block, slab, bar, filled (>2k)*. Second among the leading top agricultural products, with the highest RCA is 150790 – *Refined soybean oil, not chemically modified* (RCA = 5.4) and third is 411390 – *Leather fur, prepared after tanning or crusting, including parchment-dressed leather* (RCA = 5.1).

The last section identified which top performers, with the highest RCA indices, also match the results of the DSM. These are the products for which the KwaZulu-Natal

Province has an international comparative advantage, and for which there exist international export opportunities abroad.

With this DSM matching specific countries were identified where the leading competitive products and industries of KwaZulu-Natal Province can export their products to on a long-term sustainable manner. Fowls can for example be exported successfully and profitably to:

- The Czech Republic
- Hungary
- Indonesia
- Malaysia
- Portugal and
- Romania

If the authorities wish to promote exports from the region effectively, these leading products and industries that were identified here, should receive attention first.

The next chapter will summarise and conclude this study, giving some recommendations.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1. Introduction

In the first chapter it was set that this study wished to determine whether the agricultural sector of KwaZulu-Natal Province has the ability to create economic growth, jobs and wealth through the promotion of exports and if so which products and industries could be targeted for effective export promotion. In conclusion this study established that this is indeed possible and that several agricultural products and industries do possess international competitive advantage that can ensure long-term sustainable export growth.

This study has, with the aid of the Decision Support Model (DSM) filters, generated a list of suitable countries to export specific products to. Products for which the KwaZulu-Natal Province has a high Revealed Comparative Advantage were estimated and matched to those products identified by the DSM. To conclude, a final list of countries that have the potential to be future export destinations or markets.

Exports are an important part to ensure economic growth of countries. Without exports a country could not continue to survive. A positive link between exports and growth exists. It is important for a country to grow economically and sustain itself in the international market. Export promotion is important because there is a lack of suitable knowledge, skills and information to properly inform the producers, exporters and authorities in developing countries or rural areas. This information concerns the comparative advantages of exportable products and export destination countries to which realistically and sustainably exports are possible. In the past this had also often caused problems for the South Africa's export sector.

There are several strategies available to promote exports and provide aid and assistance to producers of agricultural products. There is a large number of agricultural producers that have a lack of skills and knowledge about the market and it is important for the producers to have the best available options to decide whether or not it will be profitable to export or not.

Agriculture is an important sector in a country because it provides the first step in the planning process. Without agriculture the whole development process would collapse. This is also a sector that can provide employment opportunities - in this case especially low skilled and semi-skilled workers, which would not otherwise have found work. The size of this sector can be an attribute because it can be regarded as an important source for capital and investments. The agricultural sector may also be seen as the sector that can achieve major developments through the acceleration of GDP growth of a country. It can reduce poverty and use the scarce resources efficiently, ensuring that resources are effectively and fairly distributed to all workers who participate in this sector.

The KwaZulu-Natal Province of South Africa can be seen as the province where a very large section of South Africa's farmers and producers are located. There are estimations that, if agricultural resources are well managed, it could improve KwaZulu-Natal's potential, production, income and GDP.

From the previous chapters the following conclusions were drawn: During the early years of government in South Africa, there was a large focus on macro-economic policies, sectorial trade, as well as exchange rate policies that had both a positive and negative effect of the households. Farm households were taxed and had no other choice but to comply with the rules and could not find a way out of poverty. Since 1994 international markets were opened to South African trade. This provided new opportunities and the government was committed to implement policies that could have a positive effect on economic growth and especially alleviate poverty.

The Growth, Employment and Redistribution policy (GEAR) was implemented to provide opportunities and create economic growth and thus creating employment.

Economic growth in a country is important and its citizens and the labour force must realise that a country can only grow when all the people are actively involved every day to increase production, more goods and services to increase the GDP and create wealth for all in South Africa.

Concerns about the rate of economic growth in the country, could influence the trade structure of South Africa and other countries as well. The issues of low economic growth in the world are a concern and demand for primary products. The volatility of the prices can cause the revenue received from exports, to be unstable.

The primary sector of KwaZulu-Natal Province is a large contributor to the province's income. The major sub-categories in this sector include mining and quarrying, agriculture, forestry and fisheries. The basic role of the primary sector is to extract the raw material from the earth and to make it available for the secondary sector, or to convert it into final products for the consumers.

Export promotion in South Africa needs the availability of viable foreign markets and efficient market demand from those countries. The government aims to allocate their resources effectively and incentives need to be implemented, because there are not many similarities between countries. The government needs to increase their attention upon export promotion, because this could have a greater influence in the economic and social development of South Africa. There are some concerns with the production of public goods through the information and the knowledge, capabilities in international trade. Various instruments can be applied to achieve export promotion, such as the organisation of outgoing trade missions, centralised information gathering and dissemination, and the provision of incentives to receive more detailed market knowledge through the participation of companies in trade fairs and international market training.

There are several factors that can provide the products and industries of the KwaZulu-Natal Province with a competitive advantage. One of these factors is that the correct infrastructure is in place for the distribution of raw material to the secondary sectors, and even to the rest of the world. Its coastal location makes it a

hub for industrial development and productive capacity. This province is rich in sugar cane, subtropical fruit and vegetables. The two ports KwaZulu-Natal have increased its global share in the international market over the last few decades.

Scarce resources are difficult to maintain, because of the prices and costs of production. There are constraints in the data and it is important to maintain a comparative advantage in economic strengths. Investment and trade could also enhance a country's economic position, welfare and policies.

Globalisation made it possible for South Africa and KwaZulu-Natal to grow, because a growing variety of countries have access to South African products. It is difficult for the farmers of developing countries to compete with international prices, because many governments provide subsidies to South Africa's competitor's, which keep the price of agricultural products artificially low and gaining profits in those markets is difficult.

There are several explanations of the occurrence of international trade. Heckscher-Ohlin created the Heckscher-Ohlin Model, which indicates that labour abundance in a country will have a positive effect on labour-intensive goods and services produced, whereas the Ricardian Model describes the interplay of the proportions of production factors and the resources that are available in the countries across the world and whether or not they produce the same product.

Factor abundance in a country implies that intensive products in a country will be exported only when a country has an influence in the production process of excess products, as well as in capital abundance countries where goods and services are made from capital intensive production.

Revealed Comparative Advantage (RCA) of all the agriculturally related products and industries were estimated to determine the best candidates for export promotion. The results showed that the most competitive agriculturally products in the KwaZulu-Natal Province are *Chocolate and cocoa preps, block, slabs, filled and bars, with a* RCA of 10.1, followed by *Refined soybean oil, not chemically modified* (RCA = 5.4) and *Leather further prepared after tanning or crusting, including, parchment-dressed*

leather (RCA = 5.1). Chapter 5 reported on the comparative advantage of all the various product “chapters” and illustrated the potential of the largest exporters in each “chapter” group of agricultural products. The next step was to match the results of all the products that have shown some potential to the export opportunities of the Decision Support Model.

The Decision Support Model (DSM) was developed by the economists of the North-West University and employed by the export promotion agency of the South African Department of Trade and Industry. It identifies products for which South Africa has an international competitive advantage and for which realistic sustainable opportunities exist in global markets.

The results from the Revealed Comparative Advantage (RCA) estimates for the KwaZulu-Natal Province of this study were matched to the results of the Decision Support Model (DSM). This indicated that there is a variety agricultural products that have the potential to be exported to the international market from the KwaZulu-Natal Province. Among the chapters of *Live animals and animal products*, the product with the highest export potential is *Fowls, domestic, not cut*, which can be exported to the Czech Republic, Hungary, Indonesia, Malaysia, Portugal and Romania. *Frozen swine cuts* can be exported to 12 countries, namely: Australia, Bulgaria, Cyprus, Finland, Hong Kong, India, Japan, Latvia, Lithuania, Malaysia, Malta, and the United States. The third competitive leader in this “chapter” is *Milk, not concentrated nor sweetened, 1-6% fat*, which can potentially be exported to 13 countries, namely: Belgium, Bulgaria, Cyprus, France, Georgia, Germany, Ghana, Hungary, Italy, Jordan, Spain, Sweden and the United Kingdom. The Appendix, at the end of this dissertation, contains a complete list of all the major competitors, indicating their RCA indices and the potential export destinations.

Among the *Vegetable products chapters* the leading two competitors are *Wheat or meslin flour*, and *Grain sorghum*, which can both be successfully exported to Belgium, Germany, Italy, Japan, the Netherlands and the United Kingdom. Third in this chapter are *Edible nuts, fresh or dried*, which has viable export opportunities to

no less than 30 countries, of which 26 are to higher income economies, 2 are upper middle income economies.

In the “chapter” group of *Animal or vegetable fats and oils and their cleavage products, prepared edible fats, animal or vegetable waxes* the leading potential competitor is *Refined soybean oil, not chemically modified*, which can be exported to Romania and the United Kingdom. Second is *Sunflower or safflower oil, fractions simply refined*, and can be exported to a total of 27 countries. The third competitive product is *Palm kernel and babassu oil, fractions, simply refined*, which can only be exported to Spain.

The top three potential competitors in the chapter for *Prepared foodstuffs, beverages, spirits, vinegar, tobacco and manufactured tobacco substitutes* in the KwaZulu-Natal Province are *Chocolate, cocoa prepared, blocks, slabs, filled and bars (>2k)* which can be exported to Bulgaria, France, Germany, Italy, Jordan, Netherlands, Romania, United Kingdom and the United States. Second are *Ethyl alcohol and other spirits*, which can be exported to 10 countries: Belgium, France, Germany, Malaysia, the Netherlands, Saudi Arabia, Sweden, Tanzania, the United Kingdom and the United States. The third competitor is *Grapefruit juice, unfermented & not continuous added spirit*, which can be exported to a total of 23 countries (see the Appendix).

The most competitive products in the *Raw hides and skins, leather fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut)* chapter is *Leather, further prepared after tanning or crusting, including parchment-dressed leather*, which can be exported to 16 countries. Second is *Gun, musical instrument, camera and cases* which can be exported to 34 countries, and third is *Leather, composition sports gloves, mittens and mitts*, which may also be exported to 34 countries, although not all the same countries (see the Appendix at the end).

In the *Textiles and textile articles* chapter the most competitive product is *Artificial filament tow* which can be successfully exported to Germany, Hong Kong, Lithuania,

the Netherlands, Poland and Russia. Second is *Textile fabric used in paper-making (>650 g/m²)*, which can be exported to 14 countries (see the Appendix at the end), and third is *Filament tow of acrylic or mod-acrylic*, which can be exported to China, Indonesia, Italy, Tanzania, Turkey and the United States.

The product with the most potentially viable export destinations from KwaZulu-Natal is *Sauces, mixed condiments, mixed seasoning*, which can be exported sustainably and profitably to a list of 40 countries. The product with the least exported opportunities is *Palm kernel and babassu oil, fractions, simply refined*, with only Spain as a potential country to which this product can be exported successfully.

The following section will conclude this study, giving a few recommendations.

6.2. Recommendations

The following recommendations can be made to improve and enhance exports from the agricultural sector in KwaZulu-Natal:

Information is an essential part of any economy. Making information available to exporters can increase their knowledge of potential export destinations in order to know the potential and risks involved in particular countries. There is also a lack of exporting firms in South Africa. Many firms tend to shift their focus to improve their situation, as well as to change the general atmosphere, but need information to do so. The Department of Trade and Industry (DTI), and its Trade Promotion section, wish to promote the interest of local producers and provide quality to infant industries in South Africa.

Sectors can contribute to economic growth. Agriculture is one of these sectors that can be a contributing factor to enhance the economic situation of the province. Subsidies to the producers and farmers of the Agricultural sector may increase their productivity. The DSM results, which identified the most realistic export opportunities relative to the existing economic activity in the province, would be beneficial to the development and growth of the export sector of the province and in that way create wealth and alleviate poverty.

Empirical evidence highlights the significant role that sectors can contribute to economic growth. The study of the economic composition of the KwaZulu-Natal Province revealed the most dominant economic activities and comparative advantage in the province. More research of this kind is needed in the province. The results of such analysis may suggest sectors in which the DTI can commit export promotion resources to.

The productivity and organisation of the agricultural sector need to improve, because a higher marginal product rate on capital may lead to higher investments in the country. A country needs to focus on the importance of its infrastructure, because it is important to identify the methods that the country is using, for example, labour intensive or capital intensive methods.

Expansion of export and outward orientation is an initiative that can be used to weight possibilities on sales in foreign markets. The government can also implement intervention strategies so that they can allocate their resources in an optimal and efficient way and to identify the market mechanism used.

The producers aiming at exports to improve or increase their profits need to do a clear market research before thinking about exporting. In this regard the study reported in this dissertation may contribute in the identification of potential export products, industries and destinations. Country profiles identify whether export destinations are stable regarding its economic activities, their activities in politics and how they treat their population. It is important to receive this information first because the markets of those countries will be their clients and should be developed. Markets should deliver quality products and offer services of the highest standards.

Foreign governments put large pressure on the development of South African export countries because there is a lot of support in those countries in terms of subsidies and taxes. The South African government might implement similar strategies to help and promote the South African agricultural sector and set a standard to implement and sustain it for future generations.

Promoting export should be done scientifically, with consideration to the comparative advantage of particular products, as was done in this study. Exports should only follow after proper analysis of destination countries was done to determine if realistic and sustainable opportunities exist there. The estimation of RCA indices and application of the DSM model, as was indicated in this dissertation, might serve as suitable scientific instruments in this endeavour.

This dissertation showed that the agricultural sector can play the role of a catalyst enhancing economic growth and development in the KwaZulu-Natal Province. It also determined which products have comparative advantage in the international export market and indicated where these products can be exported to in a sustainable manner. When the authorities plan an export promotion strategy for the province, the potential products and industries that were identified in Chapter 5 and summarised in the Appendix, should be those that should be focused on to be successful in promoting exports from KwaZulu-Natal.

This study set the task to identify globally competitive economic products, sectors and industries in the KwaZulu-Natal Province, which have export potential to enhance effective export promotion. This was accomplished through the estimation of the Revealed Comparative Advantage of products and industries and matching it with the results of the Decision Support Model. Much information was obtained and the most important findings were reported in this dissertation. The major contribution of this study is that it provides potential exporters, and especially export agencies, with a scientific instrument to identify products and industries that offers the most potential to effectively enhance export promotion and sustain creation of wealth and employment opportunities in the region. This should be a continuous research project, updated continually and extended to all the regions and provinces of South Africa.

It is of importance that this study has its limitations such as, the information base in South Africa is so severe and little. It makes it difficult for people to gain access to the correct media and information. Further recommendations can be includes as more research on the government policies and the role of government that can be

involved in this process of making it possible for future and existing exporters and importers

Further research can also be done on the role of agro-processing, reduced port cost and governments focus on infrastructure, as this is also an factor of potential to this study. Specific institutions can also be directed to further study and research as well as, export strategy, industrial policy framework and industrial action policy plan.

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APPENDIX

FINAL RESULTS: DETAIL OF EXPORTABLE PRODUCTS (HIGHEST RCA) AND VIABLE EXPORT OPPORTUNITIES

Table A1: Chapter 1-5 Live Animals and Animal Products RCA results compared to DSM results

Revealed Comparative Advantage Results		Decision Support Model Results		
Tariff Code and Description	RCA %	HS Chapter	HS 6-digit product code and description	Country-income classification
020712 - Fowls, domestic, not cut	2.401441316	02	020712 - Fowls, domestic, not cut	Upper-middle income economies High income economies Lower-middle income economies
020329 - Swine cuts, frozen	2.101599941	02	020329 - Swine cuts, frozen	Upper-middle income economies High income economies Lower-middle income economies
020714 - Fowls, cuts & offal, frozen	2.04674849	02	020714 - Fowls, cuts & offal, frozen	Upper-middle income economies High income economies Lower-middle income economies
040120 - Milk not concentrated nor sweetened 1-6% fat	1.745285505	04	040120 - Milk not concentrated nor sweetened 1-6% fat	Upper-middle income economies High income economies Lower-middle income economies
040221 - Milk and cream powder unsweetened < 1.5% fat	1.663248746	04	040221 - Milk and cream powder unsweetened < 1.5% fat	Upper-middle income economies High income economies Low-income economies
040510 – Butter	1.081729224	04	040510 – Butter	High income economies Lower-middle income economies
020230 - Bovine cuts boneless, frozen	0.505642129	02	020230 - Bovine cuts boneless, frozen	High income economies Lower-middle income economies
040210 - Milk powder < 1.5% fat	0.456403068	04	040210 - Milk powder < 1.5% fat	Upper-middle income economies High income economies

				Lower-middle income economies
040700 - Bird eggs, in shell, fresh, preserved or cooked	0.179681203	04	040700 – Bird eggs, in shell, fresh, preserved or cooked	Upper-middle income economies High income economies Lower-middle income economies
030379 - Fish frozen, whole	0.126118947	03	030379 - Fish, frozen, whole	Upper-middle income economies High income economies Lower-middle income economies

Source of data: Author's own calculations based on DSM results

Table A1 shows the matching of the “Chapter 1 to 5”: *Live Animals and Animal Product’s* RCA results compared to the DSM results. It indicates that all the top RCA products in these chapters are also mostly DSM results for export products. The countries that can be exported to are:

- Tariff code 020712 - *Fowls, domestic, not cut*, can be exported to countries such as: The Czech Republic (High Income Economy), Hungary (Hi Income Economy), Indonesia (Low Middle Income Economy), Malaysia (Upper Middle Income Economy), Portugal (High Income Economy) and Romania (Upper Middle Income Economy).
- 020329 - *Swine cuts, frozen*, to: Australia (Hi Income Economy), Bulgaria (Upper Middle Economy), Cyprus (High Income Economy), Finland (High Income Economy), Hong Kong (High Income Economy), India (Lower Middle Income Economy) Japan (High Income Economy), Latvia (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), Malaysia (Upper Middle Income Economy), Malta (High Income Economy) and United States of America (High Income Economy).
- 020714 - *Fowls, cuts & offal, frozen products* can be exported to: Armenia (Lower Middle Income Economy), Bulgaria (Upper Middle Income Economy) Cyprus (High Income Economy), France (High Income Economy), Hong Kong (High Income Economy), the Netherlands (High Income Economy), Slovenia (High Income Economy) and United Kingdom (High Income Economy).
- 040120 - *Milk not concentrated nor sweetened 1-6% fat products* can be exported to: Belgium (High Income Economy), Bulgaria (Upper Middle Income Economy), Cyprus (High Income Economy), France (High Income Economy), Georgia (Lower Middle Income Economy), Germany (High Income Economy), Ghana (Lower Income Economy) Hungary (High Income Economy), Italy (High Income Economy), Jordan (Upper Middle Income Economy), Spain (High Income Economy), Sweden (High Income Economy) and United Kingdom (High Income Economy).

- 040221 - *Milk and cream powder unsweetened < 1.5% fat products* can be exported to: Czech Republic (High Income Economy), Germany (High Income Economy), Indonesia (Lower Middle Income Economy), Malaysia (Upper Middle Income Economy), the Netherlands (High Income Economy), Saudi Arabia (High Income Economy), Singapore (High Income Economy), Slovakia (High Income Economy) and Thailand (Lower Middle Income Economy).
- 040510 – *Butter products* can be exported to: Belgium (High Income Economy), China (High Income Economy), France (High Income Economy), Germany (High Income Economy) Ghana (Low Income Economy), Hungary (High Income Economy), Italy (High Income Economy), Jordan (Upper Middle Income Economy), Spain (High Income Economy), Sweden (High Income Economy) and United Kingdom (High Income Economy)
- 020230 - *Bovine cuts boneless, frozen products* can be exported to: Thailand (Lower Middle Income Economy), United States (High Income Economy) and Vietnam (Low Income Economy).
- 040210 - *Milk powder < 1.5% fat products* can be exported to: Australia (High Income Economy), Bulgaria (Upper Middle Income Economy), Cyprus (High Income Economy), Finland (High Income Economy), Hong Kong (High Income Economy), Israel (High Income Economy), Italy (High Income Economy), Jordan (Upper Middle Income Economy), Kazakhstan (Upper Middle Income Economy), Kuwait (High Income Economy), the Netherlands (High Income Economy), New Zealand (High Income Economy), Romania (Upper Middle Income Economy), Russia (Upper Middle Income Economy) and United Kingdom (High Income Economy).
- 040700 - *Bird eggs, in shell, fresh, preserved or cooked products* can be exported to Belgium (High Income Economy), Cyprus (High Income Economy), Estonia (High Income Economy), Greece (High Income Economy), Hong Kong (High Income Economy), Israel (High Income Economy), Italy (High Income Economy), Jordan (Upper Middle Income Economy), Kazakhstan (Upper Middle Income Economy), Kuwait (High Income Economy), the Netherlands (High Income Economy), New Zealand (High Income Economy), Romania (Upper Middle Income Economy), United and Kingdom (High Income Economy).

- 030379 - *Fish, frozen, whole, products* can be exported to: Australia (High Income Economy), Austria (High Income Economy), Brazil (Upper Middle Income Economy), China (Lower Middle Income Economy), Cyprus (High Income Economy), Czech Republic (High Income Economy), Germany (High Income Economy), Greece (High Income Economy), Iceland (High Income Economy), Indonesia (Lower Middle Income Economy), Italy (High Income Economy), Japan (High Income Economy), Jordan (Upper Middle Income Economy), Kuwait (High Income Economy), Malaysia (Upper Middle Income Economy), the Netherlands (High Income Economy), New Caledonia (High Income Economy), Norway (High Income Economy), Saudi Arabia (High Income Economy), Singapore (High Income Economy), Korea (High Income Economy), Spain (High Income Economy), Switzerland (High Income Economy), Tunisia (Lower Middle Income Economy), United Kingdom (High Income Economy), Uruguay (High Income Economy) and United States of America (High Income Economy).

Table A2: Chapter 6-14 Vegetable Products RCA results compared to DSM results

Revealed Comparative Advantage Results		Decision Support Model Results		
Tariff Code and Description	RCA %	HS Chapter	HS 6-digit product code and description	Country-income classification
110100 - Wheat or meslin flour	3.588730214	11	110100 - Wheat or meslin flour	Lower-middle income economies High income economies Upper-middle income economies
100700 - Grain sorghum	3.006862971	10	100700 - Grain sorghum	High income economies
080290 - Nuts edible, fresh or dried	1.715967587	08	080290 - Nuts edible, fresh or dried	Lower-middle income economies High income economies Upper-middle income economies
110313 - Maize (corn) grouts or meal	1.605802794	11	110313 - Maize (corn) grouts or meal	Lower-middle income economies High income economies Upper-middle income economies
080540 - Grapefruit, fresh or dried	1.549494366	08	080540 - Grapefruit, fresh or dried	Lower-middle income economies High income economies Upper-middle income economies
100510 - Maize (corn) seed	1.12787631	10	100510 - Maize (corn) seed	Upper-middle income economies High income economies
080510 - Oranges, fresh or dried	1.007137176	08	080510 - Oranges, fresh or dried	Lower-middle income economies High income economies Upper-middle income economies
080550 - Lemons (Citrus lemon/limonum) & limes (Citrus aurantifolia/latifolia), fresh	0.434191978	08	080550 - Lemons (Citrus lemon/limonum) & limes (Citrus aurantifolia/latifolia), fresh	Lower-middle income economies High income economies Upper-middle income economies
080520 - Mandarin, clementine & citrus hybrids, fresh or dried	0.29747482	08	080520 - Mandarin, clementine & citrus hybrids, fresh or dried	Lower-middle income economies High income economies Upper-middle income economies
100590 - Maize except seed corn	0.179914333	10	100590 - Maize except seed corn	Lower-middle income economies High income economies Upper-middle income economies

Source of data: Author's own calculations based on DSM results

Vegetable products shown in Table A2 give the comparison between RCA and DSM results and are also an indication that all the products under this chapter are viable for exports.

- Tariff Code 110100 - *Wheat or meslin flour products* can be exported to: Austria (High Income Economy), Greece (High Income Economy), Hungary (High Income Economy), Indonesia (Lower Middle Income Economy), Kuwait (High Income Economy), Malaysia (Upper Middle Income Economy), the Netherlands (High Income Economy), Qatar (High Income Economy) and Spain (High Income Economy).
- 100700 - *Grain sorghum products* can be exported to: Belgium (High Income Economy), Germany (High Income Economy), Italy (High Income Economy), Japan (High Income Economy), the Netherlands (High Income Economy) and United Kingdom (High Income Economy).
- 080290 - *Nuts edible, fresh or dried, products* can be exported to: Austria (High Income Economy), Belgium (High Income Economy), China (Lower Middle Economy), Croatia (High Income Economy), Cyprus (High Income Economy), Estonia (High Income Economy), Finland (High Income Economy), France (High Income Economy), French Polynesia (High Income Economy), Germany (High Income Economy), Hong Kong (High Income Economy), Israel (High Income Economy), Italy (High Income Economy), Japan (High Income Economy), Jordan (Upper Middle Income Economy), Kazakhstan (Upper Middle Income Economy), Latvia (Upper Middle Income Economy), Macau (High Income Economy), Malaysia Upper Middle Income Economy), Malta (High Income Economy), the Netherlands (High Income Economy), New Caledonia (High Income Economy), Norway (High Income Economy), Poland (Upper Middle Income Economy), Saudi Arabia (High Income Economy), Singapore (High Income Economy), Spain (High Income Economy), Sweden (High Income Economy) and United Kingdom (High Income Economy).
- 110313 - *Maize (corn) grouts or meal*, can be exported to: Armenia (Lower Middle Income Economy), Belarus (High Income Economy), Belgium (High

- Income Economy), Bosnia Herzegovina (Upper Middle Income Economy), Estonia (High Income Economy), France (High Income Economy), Germany (High Income Economy), Ireland (High Income Economy), Italy (High Income Economy), Japan (High Income Economy), Kazakhstan (Upper Middle Income Economy), Latvia (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), the Netherlands (High Income Economy), Poland (Upper Middle Income Economy), Portugal (High Income Economy), Qatar (High Income Economy), Romania (Upper Middle Income Economy), Russia (Upper Middle Income Economy), Slovakia (High Income Economy), Spain (High Income Economy) and United Kingdom (High Income Economy).
- 080540 - *Grapefruit, fresh or dried, products* can be exported to: Austria (High Income Economy), Czech Republic (High Income Economy), France (High Income Economy), Germany (High Income Economy), Israel (High Income Economy), Jordan (Upper Middle Income Economy), Malaysia (Upper Middle Income Economy), Singapore (High Income Economy) and Slovakia (High Income Economy).
 - 080510 - *Oranges, fresh or dried, products* can be exported to: Armenia (Lower Middle Income Economy), Belarus (High Income Economy), Belgium (High Income Economy), Bosnia Herzegovina (Upper Middle Income Economy), Estonia (High Income Economy), France (High Income Economy), Germany (High Income Economy), Ireland (High Income Economy), Italy (High Income Economy), Japan (High Income Economy), Kazakhstan (Upper Middle Income Economy), Latvia (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), the Netherlands (High Income Economy), Poland (Upper Middle Income Economy), Portugal (High Income Economy), Qatar (High Income Economy), Romania (Upper Middle Income Economy) and Saudi Arabia (High Income Economy).
 - 100510 - *Maize (corn) seed products* can be exported to: Belarus (Upper Middle Income Economy), Israel (High Income Economy), Malaysia (Upper Middle Income Economy), the Netherlands (High Income Economy), Romania (Upper Middle Income Economy) and Saudi Arabia (High Income Economy).

- 080550 - *Lemons (Citrus lemon/limonum) and limes (Citrus aurantifolia/latifolia), fresh, products* can be exported to: Albania (Lower Middle Income Economy), Armenia (Lower Middle Income Economy), Argentina (Upper Middle Income Economy), Belarus (Upper Middle Income Economy), Belgium (High Income Economy), Bosnia Herzegovina (Upper Middle Income Economy), Canada (High Income Economy), Croatia (High Income Economy), Czech Republic (High Income Economy), Denmark (High Income Economy), Estonia (High Income Economy), Greece (High Income Economy), Hong Kong (High Income Economy), Iceland (High Income Economy), India (High Income Economy), Italy (High Income Economy), Japan (High Income Economy), Jordan (Upper Middle Income Economy), Kazakhstan (Upper Middle Income Economy), Latvia (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), Malta (High Income Economy), the Netherlands (High Income Economy), Norway (High Income Economy), Poland (Upper Middle Income Economy), Portugal (High Income Economy), Romania (Upper Middle Income Economy), Russia (Upper Middle Income Economy), Saudi Arabia (High Income Economy), Slovakia (High Income Economy), Slovenia (High Income Economy) Spain (High Income Economy), Sweden (High Income Economy) and United Kingdom.
- 080520 - *Mandarin, Clementine and citrus hybrids, fresh or dried, products* can be exported to: Armenia (Lower Middle Income Economy), Belarus (Upper Middle Income Economy), Belgium (High Income Economy), Bosnia Herzegovina (Upper Middle Income Economy), Bulgaria (High Income Economy), Canada (High Income Economy), Cape Verde (Lower Middle Income Economy), Czech Republic (High Income Economy), Denmark (High Income Economy), Estonia (High Income Economy), Germany (High income Economy), Iceland (High Income Economy), Indonesia (Lower Middle Income Economy), Italy (High Income Economy), Jordan (Upper Middle Income Economy), Kazakhstan (Upper Middle Income Economy), Latvia (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), Luxembourg (High Income Economy), Malaysia (Upper Middle Income Economy), Malta (High Income Economy), the Netherlands (High Income Economy), Norway (High Income Economy), Poland (Upper Middle Income Economy), Portugal (High

Income Economy), Romania (Upper Middle Income Economy), Russia (Upper Middle Income Economy), Saudi Arabia (High Income Economy), Slovakia (High Income Economy), Slovenia (High Income Economy), Spain (High Income Economy), Sweden (High Income Economy) and United Kingdom.

- 100590 –*Maize, except seed corn*, can be exported to: Belarus (Upper Middle Income Economy), Canada (High Income Economy), China (Lower Middle Income Economy), Croatia (High Income Economy), Estonia (High Income Economy), Greece (High Income Economy), Ireland (High Income Economy), Jordan (Upper Middle Income Economy), Kazakhstan (Upper Middle Income Economy), Latvia (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), Macau (High Income Economy), the Netherlands (High Income Economy), Qatar (High Income Economy), Romania (Upper Middle Income Economy), Russia (Upper Middle Income Economy), Slovakia (High Income Economy), Slovenia (High Income Economy), Sweden (High Income Economy), and the United Kingdom (High Income Economy).

Table A3: Chapter 15 Animal or vegetable fats and oil and their cleavage products, prepared edible fats, animal or vegetable waxes: RCA results compared to DSM results

Revealed Comparative Advantage Results		Decision Support Model Results		
Tariff Code and Description	RCA %	HS Chapter	HS 6-digit product code and description	Country-income classification
150790 - Refined soybean oil, not chemically modified	5.367199006	15	150790 - Refined soybean oil, not chemically modified	Upper-middle income economies High income economies
151219 - Sunflower or safflower oil, fractions simply refined	3.463732849	15	151219 - Sunflower or safflower oil, fractions simply refined	Lower-middle income economies Upper-middle income economies High income economies
151329 - Palm kernel & babassu oil, fractions, simply refined	2.74396113	15	151329 - Palm kernel & babassu oil, fractions, simply refined	High income economies
151790 - Edible mix & preparations of animal & veg fat, oil	2.288295963	15	151790 - Edible mix & preparations of animal & veg fat, oil	Lower-middle income economies Upper-middle income economies High income economies
152000 - Glycerol crude	2.087432708	15	152000 - Glycerol crude	Lower-middle income economies Upper-middle income economies High income economies
151800 - Processed animal, vegetable oils, industrial prepared	2.049741813	15	151800 - Processed animal, vegetable oils, industrial prepared	Lower-middle income economies Upper-middle income economies High income economies
151229 - Cotton-seed or fractions, simply refined	1.838057866	15	151229 - Cotton-seed or fractions simply refined	High income economies
151710 - Margarine, except liquid margarine	1.034298572	15	151710 - Margarine, except liquid margarine	Lower-middle income economies Upper-middle income economies High income economies
151620 - Veg fats, oils or fractions hydrogenated, esterified	0.46564991	15	151620 - Veg fats, oils or fractions hydrogenated, esterified	Upper-middle income economies High income economies
151190 - Palm oil or fractions, simply refined	0.081902988	15	151190 - Palm oil or fractions, simply refined	Upper-middle income economies High income economies

Source of data: Author's own calculations based on DSM results

Chapter 15: *Animal or vegetable fats and oil and their cleavage products, prepared edible fats, animal or vegetable waxes* DSM and RCA results are indicated in Table A3. The table shows the following products have possible exports opportunities in the international market:

- 150790 - *Refined soybean oil, not chemically modified, products* can be exported to: Romania (Upper Middle Income Economy) and United Kingdom (High Income Economy).
- 151219 - *Sunflower or safflower oil, fractions simply refined products* can be exported to Albania (Lower Middle Income Economy), Australia (High Income Economy), Austria (High Income Economy), Bosnia Herzegovina (Upper Middle income Economy), Cyprus (High Income Economy), Czech Republic (High Income Economy), Denmark (High Income Economy), France (High Income Economy), Georgia (Lower Middle Income Economy), Germany (High Income Economy), Greece (High Income Economy), Hong Kong (High Income Economy), Indonesia (Lower Middle Income Economy), Jordan (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), Malaysia (Upper Middle Income Economy), the Netherlands (High Income Economy), New Zealand (High Income Economy), Poland (Upper Middle Income Economy), Romania (Upper Middle Income Economy), Singapore (High Income Economy), Slovakia (High Income Economy), Spain (High Income Economy), Sweden (High Income Economy), United Kingdom (High Income Economy), United States of America (High Income Economy) and Vietnam (Lower Income Economy).
- 151329 - *Palm kernel and babassu oil, fractions, simply refined, products* can be exported to Spain, which is a High Income Economy.
- 151790 - *Edible mix and preparations of animal and vegetable fat, oil, products* can be exported to: Brazil (Upper Middle Income Economy), China (Lower Middle Income Economy), Germany (High Income Economy), Jordan (Upper Middle Income Economy), Romania (Upper Middle Income Economy) and United States of America (High Income Economy).

- 152000 - *Glycerol crude products* can be exported to: Belgium (High Income Economy), China (High Income Economy), Czech Republic (High Income Economy), Estonia (High Income Economy), France (High Income Economy), Germany (High Income Economy), Hungary (High Income Economy), India (Lower Middle income Economy), Ireland (High Income Economy), Latvia (Upper Middle Income Economy), Malaysia (Upper Middle Income Economy), New Zealand (High Income Economy), Norway (High Income Economy), Spain (High Income Economy), Switzerland (High Income Economy), United Kingdom (High Income Economy), United States of America (High Income Economy) and Zambia (Lower Income Economy).
- 151800 - *Processed animal, vegetable oils, industrial prepared, products* can be exported to: Australia (High Income Economy), Belgium (High Income Economy), France (High Income Economy), Germany (High Income Economy), Hungary (High Income Economy), Italy (High Income Economy) and the Netherlands (High Income Economy).
- 151229 - *Cotton-seed or fractions simply refined products* can be exported to: Australia (High Income Economy) and Japan (High Income Economy).
- 151710 - *Margarine, except liquid margarine, products* can be exported to: Cyprus (High Income Economy), Czech Republic (High Income Economy), France (High Income Economy), Ghana (Lower Income Economy), Hungary (High Income Economy), Jordan (Upper Middle Income Economy), Malta (High Income Economy), the Netherlands (High Income Economy), Poland (Upper Middle Income Economy), Romania (Upper Middle Income Economy), Saudi Arabia (High Income Economy), Spain (High Income Economy), Sweden (High Income Economy), Thailand (Upper Middle Income Economy) and United Kingdom (High Income Economy).
- 151620 - *Vegetable fats, oils or fractions hydrogenated, esterified products* can be exported to: Belgium (High Income Economy), France (High Income Economy), Germany (High Income Economy), Greece (High Income Economy), Indonesia (Lower Middle Income Economy), Kuwait (High Income Economy), Macao (High Income Economy), the Netherlands (High Income Economy), New Zealand (High Income Economy), Norway (High Income Economy), Oman (High

Income Economy), Poland (Upper Middle Income Economy), Qatar (High Income Economy), Saudi Arabia (High Income Economy) and Vietnam (Lower Income Economy).

- 151190 - *Palm oil or fractions simply refined products* can be exported to: Russia (Upper Middle Income Economy) and Germany (High Income Economy) (see Table 5.16).

Table A4: Chapter 16-23 Prepared foodstuffs, beverages, spirits, vinegar, tobacco and manufactured tobacco substitutes

Revealed Comparative Advantage Results		Decision Support Model Results		
Tariff Code and Description	RCA %	HS Chapter	HS 6-digit product code and description	Country-income classification
180631 - Chocolate, cocoa prepared, block, slab, bar, filled, >2k	10.14384747	18	180631 - Chocolate, cocoa prepared, block, slab, bar, filled, >2k	Lower-middle income economies Upper-middle income economies High income economies
220720 - Ethyl alcohol and other spirits, denatured	3.759569387	22	220720 - Ethyl alcohol and other spirits, denatured	Upper-middle income economies Low-income economies High income economies
200929 - Grapefruit juice, unfermented & not continuous added spirit	3.580515545	20	200929 - Grapefruit juice, unfermented & not continuous added spirit	Lower-middle income economies Upper-middle income economies High income economies Low-income economies
170199 - Refined sugar, in solid form, pure sucrose	2.425917802	17	170199 - Refined sugar, in solid form, pure sucrose	Lower-middle income economies High income economies
210390 - Sauces, mixed condiments, mixed seasoning	1.751514648	21	210390 - Sauces, mixed condiments, mixed seasoning	Lower-middle income economies Upper-middle income economies High income economies
170490 - Sugar confectionery not chewing gum, no cocoa content	1.497370779	17	170490 - Sugar confectionery not chewing gum, no cocoa content	Lower-middle income economies Upper-middle income economies High income economies Low-income economies
200939 - Juice of any single citrus fruit other than orange/grapefruit	1.462895868	20	200939 - Juice of any single citrus fruit other than orange/grapefruit	Lower-middle income economies Upper-middle income economies High income economies
220710 – Un-denatured ethyl alcohol > 80% by volume	0.380940805	22	220710 – Un-denatured ethyl alcohol > 80% by volume	Lower-middle income economies Upper-middle income economies High income economies Low-income economies
210690 - Food preparations	0.378666169	21	210690 - Food preparations	Lower-middle income economies Upper-middle income economies High income economies Low-income economies

180690 - Chocolate/cocoa food preparations	0.130803011	18	180690 - Chocolate/cocoa food preparations	Lower-middle income economies Upper-middle income economies High income economies Low-income economies
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Source of data: Author's own calculations based on DSM results

Table A4 shows Chapters 16 to 23: *Prepared foodstuffs, beverages, spirits, vinegar, tobacco and manufactured tobacco substitutes*, with the highest RCA's in KwaZulu-Natal compared to the DSM. It can be seen from the DSM results that the most viable and potential export categories are:

- 180631 - *Chocolate, cocoa prepared, block, slab products* are exported to Austria, and: *bar, filled, (>2k) products* can be exported to Bulgaria (High Income Economy), France (High Income Economy), Germany (High Income Economy), Italy (High Income Economy), Jordan (Upper Middle Income Economy), the Netherlands (High Income Economy), Romania (Upper Middle Income Economy), Romania (Upper Middle Income Economy), United Kingdom (High Income Economy) and United States of America (High Income Economy).
- 220720 - *Ethyl alcohol and other spirits, denatured, products* can be exported to Belgium (High Income Economy), France (High Income Economy), Germany (High Income Economy), Malaysia (Upper Middle Income Economy), the Netherlands (High Income Economy), Saudi Arabia (High Income Economy), Sweden (High Income Economy), Tanzania (Lower Income Economy), United Kingdom (High Income Economy) and United States of America (High Income Economy).
- 200929 - *Grapefruit juice, unfermented and not continuous added spirit*, products can be exported to: Belgium (High Income Economy), Bulgaria (High Income Economy), Cyprus (High Income Economy), Czech Republic (High Income Economy), France (High Income Economy), Germany (High Income Economy), Ghana (Lower Income Economy), Ireland (High Income Economy), Israel (High Income Economy), Italy (High Income Economy), Japan (High Income Economy), Kuwait (High Income Economy), the Netherlands (High Income Economy), Poland (Upper Middle Income Economy), Qatar (High Income Economy), Romania (Upper Middle Income Economy), Russia (Upper Middle Income Economy), Saudi Arabia (High Income Economy), Singapore (High Income Economy), Spain (High Income Economy), Switzerland (High

Income Economy), Thailand (Lower Middle Income Economy) and United Kingdom (High Income Economy).

- 170199 –*Refined sugar, in solid form, pure sucrose*, products can be exported to: Australia (High Income Economy), Austria (High Income Economy), Bahrain (High Income Economy), China (Lower Middle Income Economy), Czech Republic (High Income Economy), Denmark (High Income Economy), Estonia (High Income Economy), France (High Income Economy), Germany (High Income Economy), Greece (High Income Economy), Hong Kong (High Income Economy), Indonesia (Lower Middle Income Economy), Ireland (High Income Economy), Israel (High Income Economy), Italy (High Income Economy), Japan (High Income Economy), Jordan (Upper Middle Income Economy), Mongolia (Lower Middle Income Economy), the Netherlands (High Income Economy), Singapore (High Income Economy) Sweden (High Income Economy), Switzerland (High Income Economy) and Vietnam (Lower Income Economy).
- 210390 - *Sauces, mixed condiments, mixed seasoning*, products can be exported to Albania (Lower Middle Income Economy), Argentina (Upper Middle Income Economy), Australia (High Income Economy), Belarus (Upper Middle Income Economy), Belgium (High Income Economy), Brazil (Upper Middle Income Economy), Cyprus (High Income Economy) Czech Republic (High Income Economy), Denmark (High Income Economy), Egypt (Lower Middle Income Economy), France (High Income Economy), Georgia Egypt (Lower Middle Income Economy), Germany (High Income Economy), Greece (High Income Economy), Hong Kong (High Income Economy), Hungary (High Income Economy), India (Lower Middle Income Economy), Indonesia (Lower Middle Income Economy), Ireland ((High Income Economy), Israel (High Income Economy), Japan (High Income Economy), Jordan (Upper Middle Income Economy), Latvia (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), Malaysia (Upper Middle Income Economy), Mongolia (Lower Middle Income Economy), the Netherlands High Income Economy), Norway (High Income Economy), Poland (Upper Middle Income Economy), Qatar (High Income Economy), Romania (Upper Middle Income

Economy), Saudi Arabia (High Income Economy), Spain (High Income Economy), Sweden (High Income Economy), Tanzania (Lower Income Economy) and Vietnam (Lower Income Economy).

- 170490 - *Sugar confectionery not chewing gum, no cocoa content*, products can be exported to Albania (Lower Income Economy), Argentina (Upper Middle Income Economy), Belarus (Upper Middle Income Economy), Bulgaria (Higher Income Economy), Canada (Higher Income Economy), China (Lower Income Economy), Czech Republic (Higher Income Economy), France (Higher Income Economy), Georgia (Upper Middle Income Economy), Germany (Higher Income Economy), Ghana (Lower Income Economy), Hungary (Higher Income Economy), India (Lower Middle Income Economy), Ireland (Higher Income Economy), Jordan (Upper Middle Income Economy), Latvia (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy) Macau (Higher Income Economy), Malaysia (Upper Middle Income Economy), Mongolia (Lower Middle Income Economy), the Netherlands (Higher Income Economy), Oman (Higher Income Economy), Poland (Upper Middle Income Economy), Qatar (Higher Income Economy), Romania (Upper Middle Income Economy), Saudi Arabia (Higher Income Economy), Sweden (Higher Income Economy), Slovakia (Higher Income Economy), Tanzania (Lower Income Economy), Thailand (Lower Middle Income Economy), United Kingdom (Higher Income Economy), United States of America (Higher Income Economy), Uruguay (Higher Income Economy) and Zambia (Lower Income Economy).
- 200939 - *Juice of any single citrus fruit other than orange and grapefruit*, products can be exported to Albania (Lower Middle Income Economy), Canada (Higher Income Economy), Czech Republic (Higher Income Economy), France (Higher Income Economy), Germany (Higher Income Economy), Ghana (Lower Income Economy), Ireland (Higher Income Economy), Israel (Higher Income Economy), Italy (Higher Income Economy), Japan (Higher Income Economy), Kazakhstan (Upper Middle Income Economy), Malta (Higher Income Economy), the Netherlands (Higher Income

- Economy), Norway (Higher Income Economy), Poland (Upper Middle Income Economy), Qatar (Higher Income Economy), Singapore (Higher Income Economy), Spain (Higher Income Economy), Thailand (Lower Middle Income Economy), United Kingdom (Higher Income Economy), United States of America (Higher Income Economy) and Vietnam (Lower Income Economy).
- 220710 –*Un-denatured ethyl alcohol (> 80% by volume)* products can be exported to: Australia (Higher Income Economy), Austria (Higher Income Economy), Bahrain (Higher Income Economy), Belgium (Higher Income Economy), Croatia (Higher Income Economy), Cyprus (Higher Income Economy), Czech Republic (Higher Income Economy) Denmark (Higher Income Economy), Finland (Higher Income Economy), Germany (Higher Income Economy), Ghana (Lower Income Economy), Greece (Higher Income Economy), Hungary (Higher Income Economy), Italy (Higher Income Economy), Japan (Higher Income Economy), Latvia (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), the Netherlands (Higher Income Economy), Portugal (Higher Income Economy), Romania (Upper Middle Income Economy), Spain (Higher Income Economy), Sweden (Higher Income Economy), Tanzania (Lower Income Economy), United Kingdom (Higher Income Economy), United States of America (Higher Income Economy) and Vietnam (Lower Income Economy).
- 210690 - *Food preparations* products can be exported to: Albania (Upper Middle Income Economy), Argentina (Upper Middle Income Economy), Australia (Higher Income Economy), Austria (Higher Income Economy), Cyprus (Higher Income Economy), Czech Republic (Higher Income Economy), Estonia (Higher Income Economy), France (Higher Income Economy), Germany (Higher Income Economy), Hungary (Higher Income Economy), Iceland (Higher Income Economy), Italy (Higher Income Economy), Japan (Higher Income Economy), Macau (Higher Income Economy), Malaysia (Upper Middle Income Economy), the Netherlands (Higher Income Economy), Oman (Higher Income Economy), Poland (Upper Middle Income Economy), Portugal (Higher Income Economy), Romania (Upper Middle Income Economy), Saudi Arabia (Higher Income Economy),

Slovakia (Higher Income Economy), South Korea (Higher Income Economy), Spain (Higher Income Economy), Thailand (Lower Middle Income Economy), United Kingdom (Higher Income Economy) and Vietnam (Lower Income Economy).

- 180690 –*Chocolate or cocoa food preparations* products can be exported to: Belgium (Higher Income Economy), Brazil (Upper Middle Income Economy), India (Lower Middle Income Economy), Lithuania (Upper Middle Income Economy), Macau (Higher Income Economy), the Netherlands (Higher Income Economy), Oman (Higher Income Economy), Romania (Upper Middle Income Economy), Tanzania (Lower Income Economy) and United Kingdom (Higher Income Economy).

Table A5: Chapter 41-43 Raw hides and skins, leather and fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut) RCA results and DSM results

Revealed Comparative Advantage Results			
	Specific Product Export of KwaZulu-Natal	Specific Product Export of South Africa	Calculation
Tariff Code and Description	Customs Value	Customs Value	RCA %
411390 - Leather further prepared, after tanning and crusting, including parchment dressed leather	3457633	2592764	5.083928827
420299 - Gun, musical instrument, camera, cases,	61759115	69972106	3.364803244
420321 - Leather, composition sports gloves, mittens and mitts	3358599	4033541	3.1743531
410190 - Bovine (including buffalo), equine hides & skins	35342721	42512611	3.169317574
411420 - Patent leather & patent laminated leather; metallised leather	3253033	6869147	1.80538244
420292 - Containers, outer surface plastic or textile	5577278	13189023	1.612104619

Decision Support Model Results		
HS Chapter	HS 6-digit product code and description	Country-income classification
41	411390 - Leather further prepared, after tanning crusting, including parchment dressed leather	High income economies Lower-middle income economies Upper-middle income economies
42	420299 - Gun, musical instrument, camera, cases	High income economies Lower-middle income economies Upper-middle income economies Low-income economies
42	420321 - Leather, composition sports gloves, mittens and mitts	High income economies Lower-middle income economies Upper-middle income economies Low-income economies
41	410190 - Bovine (including buffalo), equine hides & skins	High income economies Lower-middle income economies Upper-middle income economies
41	411420 - Patent leather & patent laminated leather; metallised leather	High income economies Lower-middle income economies Upper-middle income economies
42	420292 - Containers, outer surface plastic or textile	High income economies Lower-middle income economies Upper-

410320 - Reptile skins, raw	9417329	24126810	1.488028997
420212 - Trunks, suitcases, outer surface plastic/textile	2984642	9324922	1.220198801
420500 - Articles of leather and composition leather,	7532448	42048840	0.682913469
410120 - Whole bovine (including. buffalo), equine hides & skins, wt. per skin not >8kg	2967454	42512611	0.266103001

		middle income economies
41	410320 - Reptile skins, raw	High income economies
42	420212 - Trunks, suitcases, outer surface plastic/textile	High income economies Lower-middle income economies Upper-middle income economies
42	420500 - Articles of leather and composition leather	High income economies Lower-middle income economies Upper-middle income economies Low-income economies
41	410120 - Whole bovine (including buffalo), equine hides & skins, wt. per skin not >8kg	High income economies Lower-middle income economies Upper-middle income economies

Source of data: Author's own calculations based on DSM results

The following tariff codes under chapters 41 to 43: *Raw hides and skins, leather and fur skins and articles thereof, saddler and harness, travel goods, handbags and similar containers, articles of animal gut (other than silkworm gut)* are indicated in Table A4. The best export opportunities globally are:

- 411390 - *Leather further prepared after tanning or crusting, including parchment-dressed leather*, products which can be exported to: Argentina (Upper Middle Income Economy), Armenia (Upper Middle Income Economy), China (Lower Income Economy), France (Higher Income Economy), Germany (Higher Income Economy), Hong Kong (Higher Income Economy), Iceland (Higher Income Economy), Israel (Higher Income Economy), Italy (Higher Income Economy), Japan (Higher Income Economy), the Netherlands (Higher Income Economy), Switzerland (Higher Income Economy), Thailand (Lower Middle Income Economy), United Kingdom (Higher Income Economy), United States of America (Higher Income Economy) and Vietnam (Lower Income Economy).
- 420299 - *Gun, musical instrument, camera, cases*, products can be exported to: Austria (Higher Income Economy), Belarus (Upper Middle Income Economy), Belgium (Higher Income Economy), Brazil (Upper Middle Income Economy), Bulgaria (Higher Income Economy), Canada (Higher Income Economy), Czech Republic (Higher Income Economy), Denmark (Higher Income Economy), Estonia (Higher Income Economy), France (Higher Income Economy), Georgia (Upper Middle Income Economy), Ghana (Lower Income Economy), Greece (Higher Income Economy), Iceland (Higher Income Economy), Israel (Higher Income Economy), Ireland (Higher Income Economy), Kuwait (Higher Income Economy), Latvia (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), Malta (Higher Income Economy), Mongolia (Lower Middle Income Economy), Poland (Higher Income Economy), Portugal (Higher Income Economy), Romania (Upper Middle Income Economy), Singapore (Higher Income Economy), Slovakia (Higher Income Economy), Spain (Higher Income Economy), Switzerland (Higher Income Economy), United Kingdom (Higher Income Economy), United States of America (Higher Income Economy), Uruguay (Higher Income Economy) and Zambia (Lower Income Economy).

- 420321 - *Leather, composition sports gloves, mittens and mitts*, products can be exported to: Argentina (Upper Middle Income Economy), Australia (Higher Income Economy), Austria (Higher Income Economy), Belarus (Upper Middle Income Economy), Belgium (Higher Income Economy), Brazil (Upper Middle Income Economy), Bulgaria (Higher Income Economy), Canada (Higher Income Economy), China (Lower Middle Income Economy), Croatia (Higher Income Economy), Czech Republic (Higher Income Economy), Denmark (Higher Income Economy), Estonia (Higher Income Economy), France (Higher Income Economy), Ghana (Lower Income Economy), Japan (Higher Income Economy), Kazakhstan (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), New Caledonia (Higher Income Economy), New Zealand (Higher Income Economy), Norway (Higher Income Economy), Poland (Upper Middle Income Economy), Slovakia (Higher Income Economy), Spain (Higher Income Economy), Sweden (Higher Income Economy), Thailand (Upper Middle Income Economy), United Kingdom (Higher Income Economy), United States of America (Higher Income Economy), Vietnam (Lower Income Economy) and Zambia (Lower Income Economy).
- 410190 - *Bovine (including buffalo), equine hides and skins*, products can be exported to: Belgium (Higher Income Economy), China (Lower Middle Income Economy), France (Higher Income Economy), Germany (Higher Income Economy), Greece (Higher Income Economy), Hong Kong (Higher Income Economy), India (Lower Middle Income Economy), Israel (Higher Income Economy), Italy (Higher Income Economy), Japan (Higher Income Economy), the Netherlands (Higher Income Economy), Poland (Upper Middle Income Economy), Slovakia (Higher Income Economy), Spain (Higher Income Economy), Thailand (Lower Middle Income Economy), Turkey (Upper Middle Income Economy) and Vietnam (Lower Income Economy).
- 411420 - *Patent leather and patent laminated leather, metallised leather*, products can be exported to: Brazil (Upper Middle Income Economy), China (Lower Middle Income Economy), Hong Kong (Higher Income Economy), India (Lower Middle Income Economy), Malaysia (Upper Middle Income Economy),

Norway (Higher Income Economy), Slovakia (Higher Income Economy) and Tunisia (Upper Middle Income Economy)

- 420292 - *Containers, outer surface plastic or textile*, products can be exported to: Belarus (Upper Middle Income Economy), Bosnia Herzegovina (Upper Middle Income Economy), Brazil (Upper Middle Income Economy), China (Lower Middle Income Economy), Finland (Higher Income Economy), France (Higher Income Economy), Germany (Higher Income Economy), Italy (Higher Income Economy), Jordan (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), Poland (Upper Middle Income Economy), Saudi Arabia (Higher Income Economy), Sweden (Higher Income Economy) and United States of America (Higher Income Economy).
- 410320 - *Reptile skins, raw*, products can be exported to: France (Higher Income Economy), Germany (Higher Income Economy), Italy (Higher Income Economy), Japan (Higher Income Economy) and Singapore (Higher Income Economy).
- 420212 - *Trunks, suitcases, outer surface plastic/textiles*, products can be exported to: Belarus (Upper Middle Income Economy), Bulgaria (Higher Income Economy), China (Lower Middle Income Economy), Czech Republic (Higher Income Economy), France (Higher Income Economy), Germany (Higher Income Economy), Ireland (High Income Economy), Lithuania (Upper Middle Income Economy), Macau (Higher Income Economy), Mongolia (Upper Middle Income Economy), Romania (Upper Middle Income Economy), Slovakia (High Income Economy) and United Kingdom (High Income Economy).
- 420500 - *Articles of leather and composition leather* products can be exported to: Argentina (Upper Middle Income Economy), Bosnia Herzegovina (Upper Middle Income Economy), Brazil (Upper Middle Income Economy), Bulgaria (High Income Economy), China (Lower Middle Income Economy), Czech Republic (High Income Economy), Egypt (Lower Middle Income Economy), Estonia (High Income Economy), Greece (High Income Economy), Hungary (High Income Economy), Iceland (High Income Economy) India (Lower Middle Income Economy), Israel (High Income Economy), Italy (High Income Economy), Jordan (Upper Middle Income Economy), Kazakhstan (Upper Middle Income Economy), Latvia (Upper Middle Income Economy), Lithuania (Upper Middle Income

Economy), Macau (High Income Economy), Panama (Upper Middle income Economy), Poland (Upper Middle Income Economy), Qatar (High Income Economy), Romania (Upper Middle Income Economy), Saudi Arabia (High Income Economy), Singapore (High Income Economy), Slovakia (High Income Economy), Slovenia (High Income Economy), Thailand (Lower Middle Income Economy), Tunisia (Lower Middle Income Economy), United Kingdom (High Income Economy), United States of America (High Income Economy), Uruguay (High Income Economy), Vietnam (Lower Income) and Zambia (Lower Income Economy).

- 410120 –*Whole bovine (including buffalo), equine hides and skins, (per skin not >8kg)* are products that can be exported to: China (Lower Middle Income Economy), Hong Kong (High Income Economy), Israel (High Income Economy), Italy (High Income Economy), the Netherlands (High Income Economy), Portugal (High Income Economy), Spain (High Income Economy) and Tunisia (Lower Middle Income Economy).

Table A6: Chapter 51-59 Textile and textile article RCA results compared to DSM results

Revealed Comparative Advantage Results			
	Specific Product Export of KwaZulu-Natal	Specific Product Export of South Africa	Calculation
Tariff Code and Description	Customs Value	Customs Value	RCA %
550200 - Artificial filament tow	5461353	5461926	3.811869219
591132 - Textile fabric used in paper-making, >650 g/m2	3114650	3126090	3.798318068
550130 - Filament tow of acrylic or mod-acrylic	5121322	5197549	3.756358603
570410 - Tiles of felt of textile materials, area <0.3 m2	3587695	3730311	3.66651976
540710 - Woven hi-ten filament, nylon, polyamide or polyester	26188320	29343044	3.402405169
550340 - Staple fibres of polypropylene, not carded or combed	3923542	4712912	3.173748661

Decision Support Model Results		
HS Chapter	HS 6-digit product code and description	Country-income classification
55	550200 - Artificial filament tow	Upper-middle income economies High income economies Upper-middle income economies
59	591132 - Textile fabric used in paper-making, >650 g/m2	High income economies Upper-middle income economies Lower-middle income economies
55	550130 - Filament tow of acrylic or mod-acrylic	Lower-middle income economies High income economies Low-income economies Upper-middle income economies
57	570410 - Tiles of felt of textile materials, area <0.3 m2	Low-income economies High income economies Upper-middle income economies
54	540710 - Woven hi-ten filament, nylon, polyamide or polyester	High income economies Upper-middle income economies Lower-middle income economies
55	550340 - Staple fibres of polypropylene, not carded or combed	High income economies Upper-middle income economies Lower-middle income economies

580632 - Woven fabricmanmade fibres, < 30 cm wide	8792899	10641175	3.150112431
570390 - Carpets of materials, tufted	13289665	17038598	2.973471173
570320 - Carpets nylon, polyamides, tufted	17783411	26966812	2.514021652
510111 - Greasy shorn wool, notcarded or combed	4894671	424110802	0.043997472

58	580632 - Woven fabric manmade fibres, < 30 cm wide	High income economies Upper-middle income economies Lower-middle income economies
57	570390 - Carpets of materials, tufted	Lower-middle income economies High income economies Low-income economies Upper-middle income economies
57	570320 - Carpets nylon, polyamides, tufted	Lower-middle income economies High income economies Low-income economies Upper-middle income economies
51	510111 - Greasy shorn wool, not carded or combed	High income economies

Source of data: Author's own calculations based on DSM results

Table A6 shows the “chapter” 51 to 59: Textile and textile articles that are seen by the DSM results as products that have the potential to be exported from KwaZulu-Natal. The highest potential products or industries are:

- 550200 –*Artificial filament tow* products which can be exported to: Germany (High Income Economy), Hong Kong (High Income Economy), Lithuania (Upper Middle Income Economy), Israel (High Income Economy), Italy (High Income Economy), the Netherlands (High Income Economy), Spain (High Income Economy), Tunisia (Lower Middle Income Economy) and Uruguay (High Income Economy).
- 591132 –*Textile fabric used in paper-making (>650 g/m²)* products can be exported to: Belarus (Upper Middle Income Economy), Bosnia Herzegovina (Upper Middle Income Economy), Brazil (Upper Middle Income Economy), China (Lower Middle Income Economy), Finland (High Income Economy), France (High Income Economy), Germany (High Income Economy), Italy (High Income Economy), Jordan (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), Poland (Upper Middle Income Economy), Saudi Arabia (High Income Economy), Sweden (High Income Economy) and the United States of America (High Income Economy).
- 550130 –*Filament tow of acrylic or mod-acrylic* products can be exported to: China (Lower Middle Income Economy), Indonesia (Upper Middle Income Economy), Tanzania (Lower Income Economy), Turkey (Upper Middle Income Economy) and the United States of America (High Income Economy).
- 570410 –*Tiles of felt of textile materials (area <0.3 m²)* are products that can be exported to: Australia (High Income Economy), Bulgaria (High Income Economy), China (Lower Middle income Economy) Denmark (High Income Economy), Finland (High Income Economy), France (High Income Economy), Germany (High Income Economy), Italy (High Income Economy), Jordan (Upper Middle Income Economy), Lithuania (Upper Middle Income Economy), Poland (Upper Middle Income Economy), Saudi Arabia (High Income Economy), Sweden (High Income Economy) and the United States of America (High Income Economy).

- 540710 –*Woven hi-ten filament, nylon, polyamide or polyester* products that can be exported to: Australia (High Income Economy), Bulgaria (High Income Economy), China (Lower Middle Income Economy), Denmark (High Income Economy), Finland (High Income Economy), France (High Income Economy), Germany (High Income Economy), Greece (High Income Economy), Hong Kong (High Income Economy), Hungary (High Income Economy), Ireland (High Income Economy), Israel (High Income Economy), Japan (High Income Economy), Luxembourg (High Income Economy), New Caledonia (High Income Economy), Poland (Upper Middle Income Economy), Romania (Upper Middle Income Economy), Saudi Arabia (High Income Economy), Singapore (High Income Economy), Slovakia (High Income Economy), Spain (High Income Economy), Sweden (High Income Economy), Tunisia (Lower Middle Income Economy), United Kingdom (High Income Economy), United States of America (High Income Economy) and Vietnam (Lower Income Economy)
- 550340 –*Staple fibres of polypropylene, not carded or combed*, products can be exported to: Bosnia Herzegovina (Upper Middle Income Economy), Bulgaria (High Income Economy), China (Lower Middle Income Economy), Czech Republic (High Income Economy), Denmark (High Income Economy), Finland (High Income Economy), France (High Income Economy), Germany (High Income Economy), Israel (High Income Economy), Italy (High Income Economy), the Netherlands (High Income Economy), Norway (High Income Economy), Poland (Upper Middle Income Economy), Romania (Upper Middle Income Economy), Russia (Upper Middle Income Economy), Spain (High Income Economy), United Kingdom (High Income Economy) and the United States of America (High Income Economy).
- 580632 –*Woven fabric manmade fibres (< 30 cm wide)* products can be exported to: the following countries: Argentina (Upper Middle Income Economy), Belarus (Upper Middle Income Economy), China (Lower Middle Income Economy), Hong Kong (High Income Economy), Romania (Upper Middle Income Economy), Poland (Upper Middle Income Economy) and Slovakia (High Income Economy).
- 570390 –*Carpets of materials and tufted* products can be exported to: the following countries: Belgium (High Income Economy), Brazil (Upper Middle

Income Economy), Canada (High Income Economy), Denmark (High Income Economy), Egypt (Lower Middle Income Economy), France (High Income Economy), Iceland (High Income Economy), Ireland (High Income Economy), Italy (High Income Economy), Malaysia (Upper Middle Income Economy), the Netherlands (High Income Economy), New Caledonia (High Income Economy), New Zealand (High Income Economy), Poland (Upper Middle Income Economy), Qatar (High Income Economy), Romania (Upper Middle Income Economy), Saudi Arabia (High Income Economy), Singapore (High Income Economy), Slovakia (High Income Economy), Spain (High Income Economy), Sweden (High Income Economy), Sri Lanka (Lower Middle Income Economy), Sweden (High Income Economy), Switzerland (High Income Economy), Tanzania (Lower Income Economy), United Arab Emirates (High Income Economy) and United Kingdom (High Income Economy)

- 570320 –*Carpets nylon, polyamides and tufted* products can be exported to Armenia (Lower Middle Income Economy), Australia (High Income Economy), Bosnia Herzegovina (Upper Middle Income Economy), China (Lower Income Economy), Czech Republic (High Income Economy), Denmark (High Income Economy), Estonia (High Income Economy), France (High Income Economy), Georgia (Lower Middle Income Economy), Germany (High Income Economy), Ghana (Lower Income Economy), Iceland (High Income Economy), Latvia (Upper Middle Income Economy), Malaysia (Upper Middle Income Economy), Mongolia (Lower Income Economy), the Netherlands (High Income Economy), Norway (High Income Economy) Panama (Upper Middle Income Economy), Poland (Upper Middle Income Economy), Romania (Upper Middle Income Economy), Singapore (High Income Economy), Spain (High Income Economy) and the United Kingdom (High Income Economy).
- 510111 –*Greasyshorn wool, not carded or combed* products can be exported to Germany, which is a High Income Economy.

List of Economies

Low income Economies	Low Middle Income Economies	Upper Middle Income Economies	High Income Countries
Afghanistan	Albania	Algeria	Andorra non OECD
Bangladesh	Angola	Annan and Samoa	Antigua and Barbuda OECD
Benin	Armenia	Argentina	Aruba OECD
Burkina Faso	Azerbaijan	Botswana	Australia OECD
Burundi	Belize	Belarus	Austria OECD
Cambodia	Bhutan	Brazil	Bahamas OECD
Central African Republic	Bolivia	Bosnia Herzegovina	Bahrain OECD
Chad	Cameroon	Bulgaria	Belgium OECD
Comoros	Cape Verde	Chile	Bermuda non OECD
Dominican Republic of Congo	China	Costa Rica	Brunei Darussalam non OECD
Eritrea	Congo	Cuba	Canada OECD
Ethiopia	Cote D'Ivoire	Dominican Republic	Cayman Island non OECD
The Gambia	Djibouti	Fiji	Channel Island non OECD
Ghana	Egypt Arab Republic	Gabon	Croatia non OECD
Guinea	El Salvador	Grenada	Cyprus non OECD
Guinea Bissau	Ecuador	Jamaica	Czech Republic OECD
Kenya	Georgia	Jordan	Denmark OECD
Democratic Republic of Kahn	Guatemala	Kazakhstan	Equatorial Guinea non OECD
Kyrgyz Republic	Guyana	Latvia	Estonia non OECD
Lao FDR	Honduras	Lebanon	Faeroe Island non OECD
Liberia	India	Lithuania	Finland OECD
Madagascar	Indonesia	Macedonia	Germany OECD

Malawi	Islamic Republic of Iran	Malaysia	Greece OECD
Mali	Iraq	Mauritius	France OECD
Mauritania	Kiribati	Mayotte	French Polynesia non OECD
Mozambique	Kosovo	Mexico	Greenland non OECD
Myanmar	Lesotho	Montenegro	Gurum non OECD
Nepal	Libya	Namibia	Hong Kong, China non OECD
Niger	Maldives	Palau	Hungary OECD
Rwanda	Marshall Islands	Peru	Iceland OECD
Sierra Leone	Micronesia Fed Stes	Panama	Ireland OECD
Somalia	Moldova	Poland	Isle of Man non OECD
Tajikistan	Mongolia	Russia Federation	Israel OECD
Tanzania	Morocco	Romania	Italy OECD
Toga	Nicaragua	Serbia	Japan OECD
Uganda	Nigeria	Seychelles	Korea Republic OECD
Uzbekistan	Pakistan	South Africa	Kuwait non OECD
Vietnam	Papua New Guinea	St Kitts and Nevis	Liechtenstein non OECD
Yemen Republic	Paraguay	St Lucia	Luxembourg non OECD
Zambia	Philippines	St. Vincent and the grenadines	Macao, China non OECD
Zimbabwe	Samoa	Suriname	Malta non OECD
	Sao Tome and Principe	Turkey	Monaco non OECD
	Solomon Islands	Uruguay	Netherland OECD
	Sri Lanka	Venezuela RB	Netherland Antilles non OECD
	Sudan		New Caledonia non OECD
	Swaziland		New Zealand OECD
	Syrian Arab Republic		Northern Mariana Island non OECD
	Thailand		Norway OECD

	TimorLeste		Oman Non OECD
	Tonga		Saudi Arabia non OECD
	Tunisia		Portugal OECD
	Turkmenistan		Puerto Rico non OECD
	Ukraine		Qatar non OECD
	Vanuatu		San Marino non OECD
	West Bank and Gaza		Singapore non OECD
			Slovak Republic OECD
			Slovenia non OECD
			Spain OECD
			Sweden OECD
			Switzerland OECD
			Trinidad and Tobago non OECD
			United Arab Emirates non OECD
			United Kingdom OECD
			United States of America OECD
			Virgin Island LUS

Source: IFTR. 2012–seeInternational Federation for Theatre Performance