PROVINCE OF KWAZULU-NATAL

Socio-Economic Review and Outlook

2014/2015

KwaZulu-Natal Provincial Government

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Foreword

The 2014/15 Socio-Economic Review and Outlook is tabled at a time when South Africa (SA) is being confronted with uncertainties both domestically and globally. As we assess the challenges confronting the province, it becomes imperative to look for alternative strategies in addressing them. The National Development Plan (NDP) vision 2030 of SA has provided the pathway to be followed in order to address the country's challenges. Consequently, KwaZulu-Natal (KZN) has developed its own Provincial Growth and Development Plan (PGDP) that is set to assist in fulfilling the NDP's mission. It is within this context that this document aims to provide key indicators that are at the core of addressing the province's socio-economic challenges.

We, as the custodians of fiscal prudence within the province of KZN, are committed to making advancements in the move towards poverty alleviation, employment creation and a more equal society through the efficient allocation of the provincial fiscus. This task of allocating resources to the departments and their respective entities compels us to make a clear economic analysis of the province's available resources; hence an evaluation of strides made in the areas of health, education, and social development need to be analysed.

The recent sharp decline in the oil price is expected to enhance economic growth through lower input costs for businesses and higher disposable incomes for consumers. However, the country is faced with other challenges that might offset the overall benefits of lower oil price. Electrical power outages and labour unrests are some of the internal shocks that might cause negative contribution towards economic growth, especially in mining, manufacturing and trade. We therefore present to you the KZN Socio-Economic Review and Outlook (SERO) 2014/15 in order have a clearer understanding of the economic conditions under which the provincial budget was prepared.

Mrs Belinda Scott

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List of acronyms

AIDS	Acquired Immune Deficiency Syndrome
ANA	Annual National Assessment
BCI	Business Confidence Index
BER	Bureau of Economic Research
BRICS	Brazil, Russia, India, China and South Africa
DBSA	Development Bank of Southern Africa
DBE	Department of Basic Education
DoE	Department of Education
DoT	Department of Transport
DoH	Department of Health
EAP	Economically Active Population
EC	Eastern Cape
ECB	European Central Bank
ECD	Early Childhood Development
EMDE	Emerging Markets and Developing Economies
FPL	Food Poverty Line
FS	Free State
GDP	Gross domestic product
GDP-R	Real Gross Domestic Product
GP	Gauteng Province
HDI	Human Development Index
HIV	Human Immune Virus
IA	Implementing Agent
ICC	International Conference Center
ICT	Information, Communication and Technology
IDIP	Infrastructure Delivery Improvement Plan
IDMS	Infrastructure Delivery Management System
IMF	International Monetary Fund
INEP	Integrated National Electrification Programme
KZN	KwaZulu-Natal
LAR	Labour Absorption Rate
LBPL	Lower Bound Poverty Line
LER	Learner-Educator Ratio
LFPR	Labour Force Participation Rate
LP	Limpopo
LSR	Learner-School Ratio
MDGs	Millenium Development Goals
MP	Mpumalanga
MPC	Monetary Policy Committee
MTEF	Medium Term Expenditure Framework
MW	Megawatts
NC	Northern Cape
NDP	National Development Plan
NDT	National Department of Tourism
NSC	National Senior Certificate
NW	North West
NWMS	National Waste Management Strategy
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of Petroleum Exporting Countries
PGDP	Provincial Growth and Development Plan
PMI	Purchasing Managers' Index
PPP	Public-Private Partnership

PT	Provincial Treasury
QE	Quantitative Easing
RMB/BER	Rand Merchant Bank / Bureau for Economic Research
SA	South Africa
SADC	Southern African Development Community
SARB	South African Reserve Bank
SAT	South African Tourism
SDA	Service Delivery Agreement
SDIPs	Service Delivery Improvement Plans
SERO	Socio-Economic Review and Outlook
Stats SA	Statistics South Africa
SWOT	Strength, Weaknesses, Opportunities and Threats
TIPS	Trade and Industrial Policy Strategies
UK	United Kingdom
UN	United Nations
US	United States of America
UNDP	United Nations Development Plan
UBPL	Upper Bound Poverty Line
WC	Western Cape
WEF	World Economic Forum
WEO	World Economic Outlook
WHO	World Health Organisation
WTTC	World Travel and Tourism Council

Executive Summary

It is with great pleasure that the Provincial Treasury of KZN presents the Socio-Economic Review and Outlook (SERO) for the 2014/15 financial year to all relevant stakeholders. This publication seeks to provide a detailed analysis of the social and economic factors that influence the operation of the provincial economy. This analysis is intended to assist the provincial administration in effective policy-making, and to promote the efficient allocation of fiscal resources to the various government departments and public entities. The private sector and members of the public who are interested to know about the state of the KZN economy could also benefit from the information presented herein as it could be used for planning purposes. It also serves as a wake-up call to the provincial and local government about the service delivery backlogs in the province, and the urgency with which they need to be addressed.

The publication opens with an analysis of the state of the world population; how prevailing global trends have affected the South African population, and how these in turn have influenced development on a universal and national scale. The world population increased to 7.2 billion people in 2013 with Asia being the most populous continent, followed by Africa. A general trend which has been observed is that developed countries experience slower population growth, with most of it emanating from the immigration of people from less developed countries. The South African population increased by an estimated 9.2 million people between 2001 and 2014. Considering then that population dynamics are the driver of many socio-economic activities, a high level of population growth brings with it challenges such as poverty, crime and inadequate health care. The province of KZN used to be the most populous province; but has recently relinquished this position to Gauteng. This is, to a large extent, attributed to migration patterns and other demographic factors.

According to the International Monetary Fund (IMF) (2015), global economic growth is expected to strengthen to 3.5 per cent in 2015 and projected at 3.7 per cent in 2016. Sub-Saharan Africa is also projected with high growth during the latter years and its growth is projected higher than that of the world at 4.9 per cent and 5.2 per cent respectively. South Africa's projections are much lower than that of its counterpart in the Sub-Saharan Africa at 2.1 per cent and 2.5 per cent respectively. It should be added that the recent changes in the petroleum price have contributed in various way when it comes to the short term growth. The country's macro-economic performance and projections for 2011 to 2017 are also analysed; where growth shows positive signs even-though it is also low compared to the rest of Sub-

Saharan Africa. The national economic performance is influenced by the economic activities across provinces. Gauteng is the most contributing province to the national gross domestic product (GDP) at 36.1 per cent while KZN trails at 16.5 per cent. This is followed by the Western Cape at about 14.8 per cent; otherwise all other six provinces' contribution is less than 10 per cent each.

The tertiary sector contributed the most towards the province's growth, followed by both the secondary and primary sectors, respectively. These sectors are supported by industries which provide employment to the people of the province. Travel and tourism and international trade are extensively analysed in this publication. Travel and tourism has become one of the global key industries when it comes to GDP contributions and job creation. It has been estimated that in 2013 this industry has contributed about 9.5 per cent towards the global GDP. Direct employment has been estimated at 100 894 000 (3.4 per cent) during the same year. The number of jobs created through the tourism industry are more than doubled when including indirect jobs at 265 855 000 in 2013. South Africa (SA) is not an exception because it also shares the same response as the world. During the year 2013 this industry contributed 3 per cent towards the GDP of SA estimated at R103.2 billion. The industry has attracted domestic and foreign investment. Foreign visitors are dominated by visitors from the continent.

The province of KZN is one of the provinces that attracts more visitors thus becomes one of the important industries in the province. There are various reasons for the province to be attractive when it comes to tourism. Among them, the province is blessed with natural attractions such as mountains, ocean, wildlife and beautiful city of Durban. These attractions make KZN to be the most famous destination in domestic tourism.

Travel and tourism promotes interaction among nation which encourages international trade. This is why this publication has taken a look at international trade as strategic contributor to the economy of the country as well as the province. The publication looks at aspects of the balance of trade and imports and exports of the country from each province. Currently, the country is faced with huge deficit of about R95.3 billion (2014). The province is hit hard but not as hard as the provinces with mines like Gauteng, Limpopo, North West and Mpumalanga. The share of exports by the province of KZN was at 24.3 per cent in 2003 compared to 19.6 per cent in 2013. There is a decline in exports and this trend is pertinent across provinces. Contrary to this, the province's imports are increasing when comparing 2003 and 2013.

On the positive note, inflation rate is expected to decrease in 2015; the driver being the price of crude oil which is currently at a very low level similar to its price five years ago. It is also noted that KZN's inflation rate is the same as the national rate of 5.3 per cent in December 2014.

Infrastructure spending becomes one of the most important aspects when it comes to economic growth of the province. Infrastructure allocation for KZN in the financial year 2014/15 is R12.44 billion. In an attempt to enhance infrastructure delivery, Infrastructure Delivery Management Systems (IDMS) is also intensified through capacity building. Monitoring and evaluation of the implemented infrastructure is applied. Infrastructure funding which comes from public and private funders is outlined. It is utilised in funding the gaps that are existing within the municipalities.

This publication also looks at the spatial autocorrelation function for KZN. This topic concentrated on five major economic hubs of the province namely eThekwini (Durban), Richards bay (Empangeni), Msunduzi (Pietermaritzburg), Port Shepstone (Hibiscus Coast) and New Castle in Amajuba district. The geographic maps reveal that these economic hubs have high population densities compared to other regions in the province of KZN. The analysis of the spatial dynamics was conducted using Moran *1 Statistics* model. The GIS maps clearly indicate the level of concentration in population, GDP and Gini coefficient of KZN comparing 1996 and 2013. *Moran 1 statistics* and *Geary's C statistics* are used to determine the spatial weights. These models are utilised to test the hypothesis of spatial correlation using matrices.

The provincial economic risk indices are also weighed using strategic sectors. The variables used to determine risk are interest rate, inflation, oil price, sugar price, rand/dollar exchange rate, gold price, credit extension and electricity supply. The weight results of these variables were dominated by negative values, which is not a good picture as far as economic performance is concerned. These weight indices are also depicted in graphical forms.

An outline of the labour market dynamics in KZN is also provided in this publication. The focus is on the national labour market, focusing mainly on employment and unemployment rates, labour force participation and labour absorption rates as well as the relationship between labour remuneration and productivity. The total number of people employed in KZN improved slightly from 1.97 million in 2003 to an estimated 2.38 million in 2013. A closer scrutiny to the employment rate in KZN reveals that an excess of 50 per cent of those employed are in eThekwini Metro. A large proportion of jobs in KZN are created by

government, trade, manufacturing and finance sectors. Unemployment in KZN is 20.8 per cent compared to the national 24.3 per cent.

The publication further provides an in depth analysis of the development indicators, focussing mainly to poverty levels, income inequality, Human Development Index (HDI), education and health. KZN is known for its population which is dominated by youth which is unemployed. Income distribution according to income categories and race in the province is analysed. A big gap is witnessed in categories where African comprises of 0.2 per cent under effluent category while other races are above 1 per cent.

A comparison of human development indices across provinces for 2002 and 2013 is conducted. The situation is improving as the index increases from 2002 to 2013, implying that, there is an improvement in the quality of life in all provinces. The province of KZN is the highest beneficiary in grants. This does not come as a surprise because KZN is the most populous province after Gauteng with higher percentage of unemployed youth. It is of a major concern that social grant shares grow over the years.

Education is one of the development indicators that are discussed at length in this report. School and educator ratio is discussed in depth comparing data for 2009 and 2014. Literacy rate for 2003 and 2013 is analysed according to provinces while the levels of education is analysed according to race during the same years. An important indicator of matric pass rate for 2012, 20013 and 2014 is compared. KZN's performance in this category is still a challenge; particularly in 2014, whereby the pass rate was 69.7 per cent. This made the province number two from the bottom, slightly above the Eastern Cape.

Health is one of the critical development indicators in a region. SERO thus provides the top ten diseases that cause death in the province and Tuberculosis is identified as number one killer in KZN. Aids orphans, AIDS sick, HIV prevalence, People living with HIV for 2011 to 2016 are also categorised according to provinces. Crime statistics is also provided where in most categories of crime, Western Cape leads almost in all categories. Crime and growth rate in the KZN is analysed according to crime categories. Access to basic services for 2002 and 2013 includes access to electricity, water, sanitation and refuse removal are discussed.

Chapter 1: Introduction

The purpose of the Socio-economic Review and Outlook (SERO) is to provide a detailed analysis of the socio-economic indicators affecting the quality of life of the people of KwaZulu-Natal (KZN). The publication identifies the potential for and constraints to economic development in KZN. The analysis of the socio-economic variables assists in informing government on key areas that need urgent attention with respect to service delivery. This will result in the formulation and implementation of appropriate policies and strategies that will address the challenges facing the province. This analysis takes a view not only of local imperatives, but also considers the global and national factors.

This publication is tabled during the most critical period in the country as people have mixed feelings about the economy of the country. These mixed feelings emanates from the external and internal social and economic shocks that are taking place. The low oil price, energy crisis, labour unrests, protests for service delivery, weaker currency, and high unemployment rate are the key factors resulting to low confidence in the national economic performance.

The recent fall in the price of oil is more likely to enhance gross domestic product (GDP) in the oil importing countries. Conversely, in oil producing countries like Nigeria, Russia and others, such fall may put pressure on government revenues and can lead to financial instability. During the writing of this publication in February 2015, the price of crude oil was around $54.00 per barrel and the latter estimated current price is equivalent to that of 2009 where the average price was $58.60 per barrels. As one of the oil importing countries, South Africa (SA) is also expected to benefit from this drastic decline in the brent crude oil price.

It is expected that the falling oil price will boost the economy in the form of expenditure by households, business sector and government. However; the country is faced with other challenges that might hinder progress in compensating the cheaper oil prices with other consumer goods. For example, the country is experiencing energy outages which affect all citizens including businesses which are affected the most. Businesses are expected to face economic losses which in turn affect productivity and lead to lower GDP in 2015 which will affect government revenue collection.

The slump in crude oil and power crises had influenced the South African Reserve Bank (SARB) to take a decision on lending rates. The lending rates remained at 5.75 per cent, reason being that the SARB does not see any excess demand that can occur, and the

inflation rate is still maintained between the SARB targeted range of 3 to 6 per cent. The SARB also revised down growth in 2015 to 2.2 per cent from 2.5 per cent projected in October 2014 and that for 2016 down to 2.4 per cent from 2.6 per cent. Labour unrests and protests are the biggest shocks that faced SA in 2014. These resulted in loss of number of jobs and revenue which was supposed to be credited to the SA economy. These negative activities also shy away investors from investing to the country, hence without investments; there will be less creation of jobs, lower tax base, lower government spending and increase in government deficit.

The country is also faced with a challenge of a weaker rand compared to the US dollar which is regarded as a vehicle currency. This poses a challenge, because a weaker rand makes imports more expensive and exports cheaper, which results in higher prices irrespective of the reduction in the price of oil.

The province of KZN as part of SA is directly involved in any shocks that are affecting the country. That is why it is important to stimulate growth in provinces so that SA could realise overall higher positive growth rate. The province of KZN takes into consideration all resources it has at its disposal to enhance positive growth. It takes advantage of its strategic industries such as manufacturing, agriculture, transport and tourism to utilise them in order to boost its GDP. That is why this publication looks at the socio-economic analysis of the province with regard to infrastructure, demographic profile, economic review, risk and development indices and labour market.

Chapter 2: Demographic Profile

2.1 Introduction

The population dynamics is of paramount important in addressing developmental needs in society. As population grows there is increasing pressure for government to provide social services. In addition, there is a need to increase production and employment for the growing population in order to stabilize GDP per capita. Proper planning for population dynamics will ensure that the welfare of both the current and the future generation is promoted with the objective of promoting sustainable development. In analyzing the population dynamics it is important to look at factors such as urbanization, fertility rate, mortality, life expectancy, the impact of the size of the population as well as the age structure of the population. These factors will assist government to know the estimated number of people who are fully dependent on government for transfers as well as the number of people who are economically active. In addition these factors will play a role in the efficient allocation of resources at all spheres of government.

2.2 Global population growth

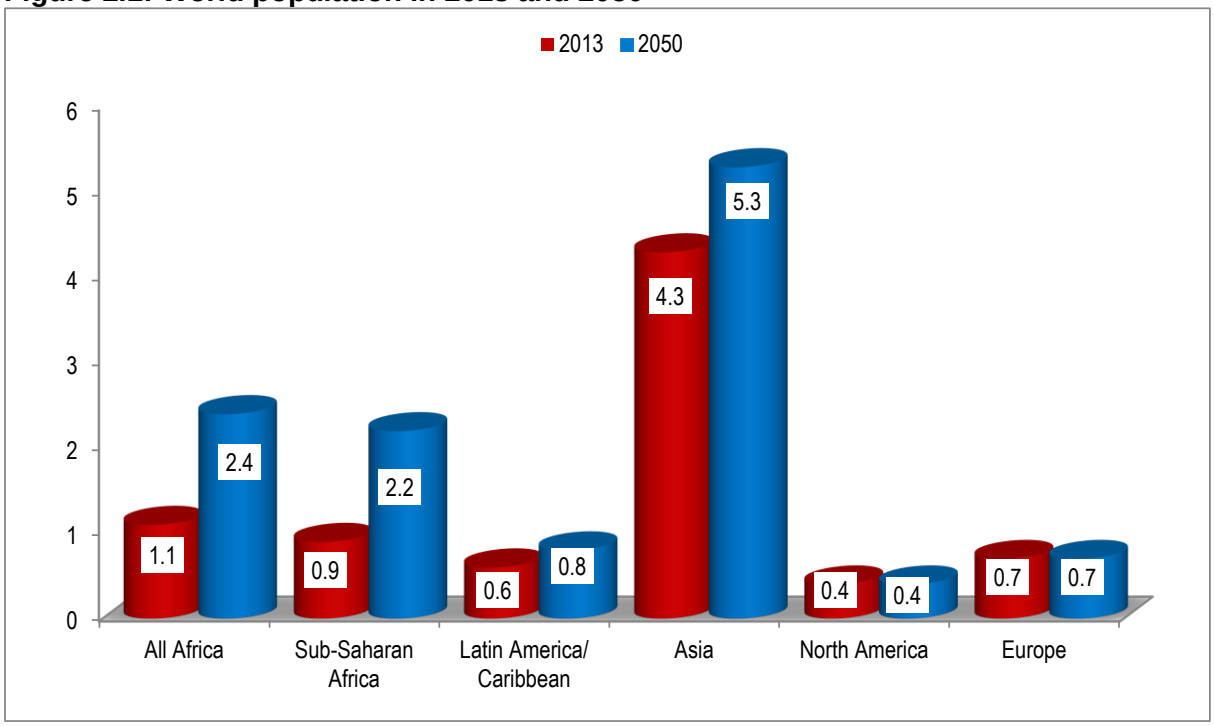
The world's population increased to 7.2 billion people in 2013, with Asia being the most populous continent with the majority of 60 per cent citizens (World Bank, 2013). Africa comprises 15 per cent of the total world population, trailed by Europe at 10 per cent. Developed countries will experience little or no population growth in this century, and much of that growth will be from immigration from less developed countries[1]. There is a 70 per cent chance that the number of people on the planet will rise continuously from 7.2 billion today to 11 billion in 2100.[2]

According to the Population Reference Bureau (2013) Africa's population is projected to increase from 1.1 billion in 2013 to 2.4 billion in 2050. The growth of 1.3 billion people in the African continent mainly emanates from 51 countries of Sub-Saharan Africa. Surprisingly, this estimated increase is even higher than the region of Asia which is projected to grow by 1 billion in the same period. According to the United Nations (2013) the increase in the population will exert pressure on development and affect the the future generation's welfare if nothing is being done to stabilise it. This is due to the fact that there is a link between

[1] www.prb.org [Accessed 26-01-2015]
[2] http://www.resilience.org/print/2014-09-20/population-aging-sept-20 [Accessed , 26-01-2015]

population dynamics and the provision of social services to the people. Lack of healthcare, poverty, pollution and rising unrest and crime are all problems linked to booming populations.

Figure 2.1: World population in 2013 and 2050



Source: Population Reference Bureau, 2013

In addition to growing population, there is also a challenge of the ageing population. According to the United Nations (2013) the ageing population currently seen in Europe and Japan, raises questions about how working population will support large numbers of elderly people. Population Reference Bureau (2010) indicates that over the past two decades China's population had also been aging rapidly. This is resulting from China's "one-child" policy and low mortality, hence the proportion of elderly citizens is continuing to grow very quickly, increasing the stress on an already troubled health care system and causing China's economic growth to decline. The study also indicated that India will face the same challenge China and Brazil are facing.

2.3 South African population

South Africa (SA) is a diverse nation, comprising of a wide variety of cultures, languages and religious beliefs. According to Statistics South Africa (Stats SA) (2014), the national population for 2014 increased from 44.8 million in 2001 to 54.0 million in 2014. There are nine provinces spread across the country, namely the Eastern Cape (EC), Free State (FS), Gauteng (GP), KwaZulu-Natal (KZN), Limpopo (LP), Mpumalanga (MP), Northern Cape (NC), North West (NW) and Western Cape (WC). KZN recorded the second largest province

among the nine provinces with approximately 10.7 million people following after Gauteng with 12.9 million people. When combined both provinces constitute 43.8 per cent of the national population in 2014.

Table 2.1: South African population by province in 1996, 2001 and 2014

	1996		2001		2014	
	Population	% Share of national population	Population	% Share of national population	Population	% Share of national population
Eastern Cape	6 302 525	15.5	6 436 763	14.4	6 786 880	12.6
Free State	2 633 504	6.5	2 706 775	6	2 786 757	5.5
Gauteng	7 348 423	18.1	8 837 178	19.7	12 914 817	24
KwaZulu-Natal	**8 417 021**	**20.7**	**9 426 017**	**21**	**10 694 434**	**19.8**
Limpopo	4 929 368	12.1	5 273 642	11.8	5 630 464	10.4
Mpumalanga	2 800 711	6.9	3 122 990	7	4 229 323	7.8
Northen Cape	840 321	2.1	822 727	1.8	1 166 680	2.2
North West	3 354 825	8.3	3 669 349	8.2	3 676 274	6.8
Western Cape	3 956 875	9.7	4 524 335	10.1	6 116 324	11.3
South Africa	**40 583 573**	**100**	**44 819 776**	**100**	**54 001 953**	**100**

Source; Stats SA, 2014

According to the Stats SA (2014), the national population has been increasing at a steady pace showing population increase of approximately five million in a period of five years (1996 to 2001). It then subsequently took thirteen years (2001 to 2014) to record the population growth of nine million people in SA.

2.4 Population growth rate

Table 2.2 shows that the growth rate of South African population had increased between the years 2012 to 2014 due to the population size increasing over the same period. The estimated overall growth rate increased from approximately 1.5 per cent between 2009 to 2010 to 1.6 per cent for the period 2013 to 2014. It is worth noting from the table that the growth rate for females is lower than that of male counterpart.

Table 2.2: National annual population growth rates (%), 2009 to 2014

Period	Male	Female	Total
2009-2010	1.6	1.4	1.5
2010-2011	1.6	1.4	1.5
2011-2012	1.6	1.4	1.5
2012-2013	1.7	1.4	1.6
2013-2014	1.7	1.5	1.6

Source: Stats SA, 2014

2.5 KwaZulu-Natal provincial population size

KZN's population increased from 8.4 million in 1996 to 10.7 million in 2014, whilst the share of the national population decreased from 20.7 per cent in 1996 to 19.8 per cent in 2014. This affected negatively the equitable share allocation of this province. The EC also experienced a decrease from 15.5 per cent to 12.6 per cent. Contrary to this, MP and the NC recorded a marginal increase from 6.9 per cent to 7.8 per cent and from 2.1 per cent to 2.2 per cent respectively. WC (9.7 per cent in 1996 to 11.3 per cent in 2014) and GP (18.1 per cent to 24 per cent) experienced significant increases in their share of the national population (table 2.1). The remaining provinces experienced a decline. This could have resulted from a number of contributing factors to the decline of the province's share of the national population; such as migration, high mortality rate in the province coupled with a low fertility rate and a high number of people who have died from HIV/AIDS related diseases.

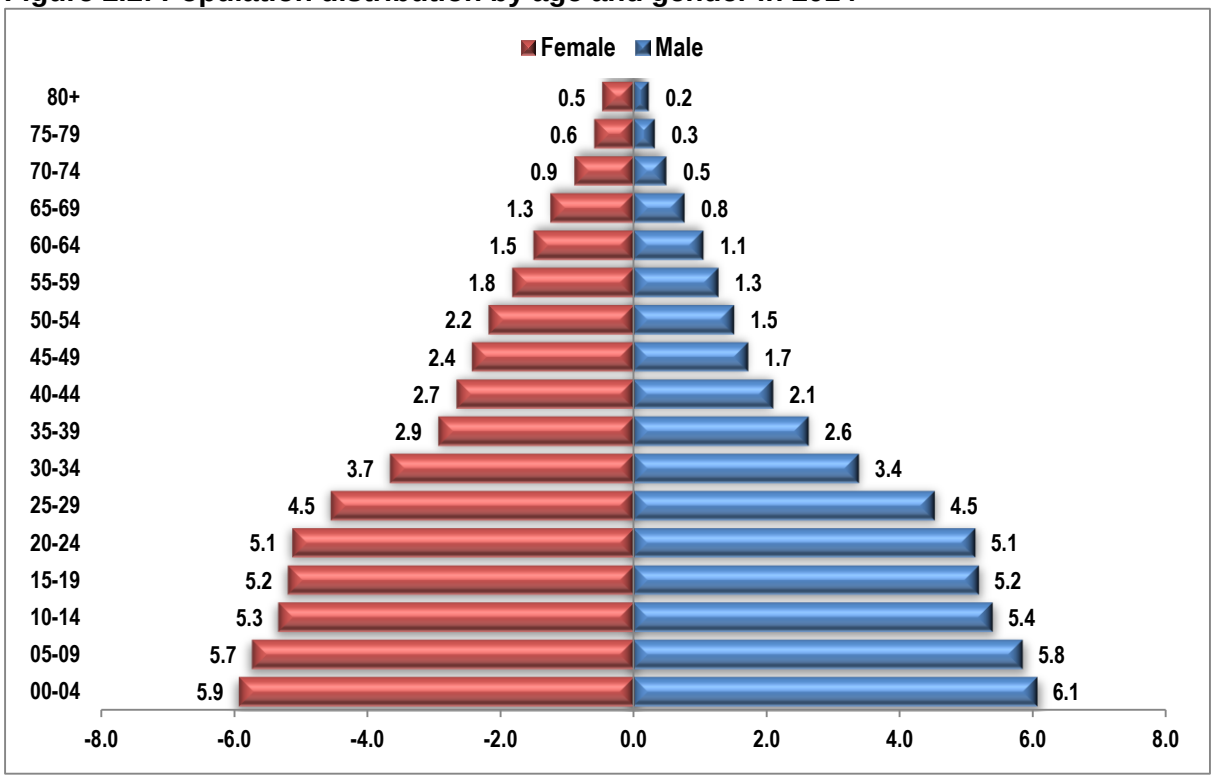
2.6 Population distribution by age, race and gender

2.6.1 Population by age, gender and dependency ratio

Figure 2.2 shows the population distribution for KZN by age and gender in the year 2014. The distribution is narrowly distributed and indicates that the largest population ranges between the ages of 00-04 to 25-29. The percentage of female and male population is almost the same in this range. However, it is worth noting from the figure that from age 30 and above, the percentage of the female population is greater than that of their male counterpart. This could be resulting from factors such as migration patterns and social behaviour by both genders.

The population between the age group of 00-04 years had the largest population estimated at 12.0 per cent in the province. This is due to the fertility rate and effective implementation of government policy aimed at reducing mother-to-child transmission of HIV/AIDS. The smallest population is between the ages of 80 and above (0.7 per cent) followed by 75-79 (0.9 per cent).

Figure 2.2: Population distribution by age and gender in 2014



Source: Stats SA, 2014

The total provincial dependent population is estimated at 4 209 885, while the economically active population is estimated at 6 484 550. The implication of these estimates is a high dependency ratio of 64.9 per cent[3]. It has to be noted that the dependency ratio is not totally reflective of the situation in the economy, since some of the people in the economically active population are not actively involved in the labour market. In addition it has to be noted that in excess of 3.5 million South Africans are lifted out of poverty by applying fiscal policy and redirects funds to social spending programs[4].

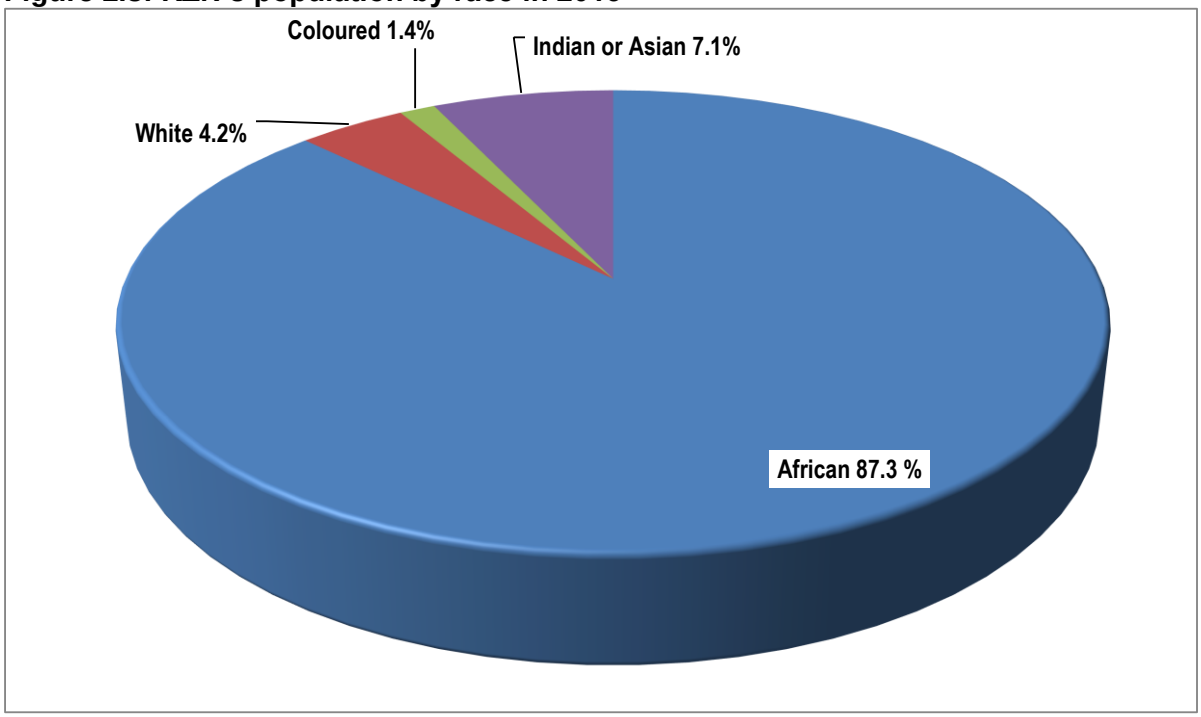
2.7 Population by race

Figure 2.2 shows KZN's population by race in 2013. The figure indicate that the province is divided into four categories; namely Africans, Indian or Asian, Whites and Coloureds. The province is largely dominated by Africans, constituting 87.3 per cent of the total 10.4 million people in 2013, followed by Indian or Asian at 7.1 per cent and Whites at 4.2 per cent. It is clearly noted from the figure that Coloureds constitutes the smallest percentage of the total provincial population (1.4 per cent).

[3] Dependency Ratio= [((Number of people under 15 years) + (Number of people aged 65 and over)/ (Number of people between 15 and 64))] * 100 = (4 209 885/6 484 550) * 100= 64.9 per cent. The dependency ratio is an age population ratio of those not in the labour force.

[4] http://www.worldbank.org/en/country/southafrica/publication/south-africa-economic-update-fiscal-policy-redistribution-unequal-society [Accessed 25 January 2015]

Figure 2.3: KZN's population by race in 2013



Source: Global Insight, 2014

2.8 Fertility, mortality, life expectancy and migration

2.8.1 Fertility[5]

Fertility analysis is of central importance in demographic analysis as births are a vital component of population growth. The subject of population growth, in turn, is one that is integral to the realisation of sustainable development.

Sustainable development hinges on two factors; consumption and population growth. High fertility rates (which lead to high population growth) burden the economy in terms of consumption. Further to this, the number of children a woman bears in her lifetime has a significant bearing on the level of economic and social development she can achieve. Generally, women who bear several children are bound to remain in the home to take care of them, thereby reducing her chances of seeking work or education outside of the home. This results in there being fewer opportunities for personal development on her part, and therefore perpetuates a cycle of poverty. The fertility rate can therefore be considered to be an indicator of the general health status of an economy, and a specific indicator of maternal health, as it encompasses health initiatives such as family planning.

[5] The Total fertility rate represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates. www.worldbank.org

Table 2.3: Fertility rate, mortality rates, and projected life expectancy, 2011-2016

	SA	EC	FS	GP	KZN	LP	MP	NC	NW	WC
Total fertility rate										
2011 mid-year 2006-2011	2.4	3.1	2.4	2.0	2.9	2.9	2.8	2.8	3.0	2.3
2016 mid-year 2011-2016	2.3	2.7	2.1	1.9	2.7	2.7	2.5	2.7	2.7	2.1
Infant mortality rate (deaths under 1 year per 1 000 live births										
2012 ASSA2008	33.2	45.4	39.8	24.3	42.4	27.2	36.4	24.8	29.6	18.3
2013 ASSA2008	32.5	44.4	39.1	23.8	41.7	26.7	35.6	24.1	29.1	17.7
2014 ASSA2008	31.9	43.6	38.5	23.4	40.9	26.2	35.0	23.5	28.5	17.1
2015 ASSA2008	31.3	42.8	37.8	22.9	40.3	25.8	34.3	22.9	28.0	16.5
Under 5 mortality rate (deaths under 5 years per 1 000 live births)										
2012 ASSA2008	47.7	63.4	56.5	36.2	61.3	39.1	52.7	35.4	43.7	25.6
2013 ASSA2008	46.7	62.0	55.4	35.3	60.0	38.2	51.4	34.1	42.6	24.7
2014 ASSA2008	45.7	60.8	54.4	34.4	58.9	37.3	50.4	33.1	41.6	23.9
2015 ASSA2008	44.8	59.6	53.5	33.7	57.8	36.6	49.6	32.2	40.9	23.1
Maternal mortality ratio in facility (deaths per 1 000 live births)										
2013/14 DHIS	133.3	156.2	143.4	104.5	148.4	152.0	149.1	118.9	184.9	68.6
Life expectancy at birth										
2011-2016 Female	60.6	59.0	53.6	66.4	59.4	62.5	60.1	57.5	58.8	67.9
2011-2016 Male	56.6	53.0	50.7	62.9	54.4	58.3	56.9	52.9	56.6	63.7

Source: Stats SA, Health Systems Trust, Department of Health, 2015

According to Stats SA, the fertility rate in KZN between 2011 and 2016 is projected to stand at 2.7 children. This estimate sits above the national average of 2.3, and is among the highest rates in the country, on par with the EC, LP, NC and the NW province. These aforementioned provinces are mainly characterised by their rural land scape, and low levels of human development. Despite them having fertility rates higher than the national average, these provinces have seen a decline in fertility rate from their 2006 to 2011 estimates (table 2.1).

2.8.2 Mortality[6]

According to the Connecticut Department of Health**,** the importance of mortality statistics derives both from the significance of death in an individual's life, as well as their potential to improve the public's health when used to systematically assess and monitor the health status of the whole community. Within the realm of public health, mortality statistics are often used as a cornerstone in formulating health plans and policies to prevent or reduce premature mortality and improve our quality of life[7].

There are several indicators of mortality which are widely used to measure premature mortality at various stages of life. This section will look specifically into infant, under 5 and maternal mortality.

[6] The mortality rate represents the average number of deaths in a particular area over a specified period of time.

[7] http://www.ct.gov/dph/cwp/view.asp?a=3132&q=388138

According to the Organisation for World Overpopulation Awareness, it has been shown that providing reproductive health care, lowering the infant mortality[8] rate and the maternal mortality rate[9] have had a positive correlation to reducing birth rates. In the case of infant mortality, when a woman thinks that many of her children will not survive childhood, she wants to have extra children as insurance that she will have enough children. When death rates are high, as with cases of HIV/AIDS where there is no access to adequate health care, families try to have more children to replace family members who will die, even if the result is a growing population.

An examination of table 2.3 reveals that mortality rates have been on a general decline in KZN. Despite that being an achievement that should be applauded, it must also be noted that these mortality rates are still relatively higher than those of other provinces. KZN has been projected to have the second to highest infant (40.3 deaths per 1 000 live births) and under 5 (57.8 deaths per 1 000 live births) mortality rates after the EC. The province is ranked as having the 5th highest in maternal mortality rates (148.4 deaths per 1 000 live births).

2.8.3 Life expectancy

"Life expectancy is the most widely used measure of health, although it only takes into account the length of people's life and not their quality of life. There have been remarkable gains in life expectancy over the past 50 years in the Organisation for Economic Co-operation and Development (OECD) countries. On average, life expectancy at birth reaches 80 years across OECD countries, a gain of more than 10 years since 1960. Women live almost six years longer than men, averaging 83 years versus 77 years for men" (OECD, 2014).

Shifts in life expectancy are often used to describe trends in mortality. Being able to predict how populations will age has implications for the planning and provision of services. Small increases in life expectancy could translate into large increases in the population.

[8] Probability of dying between birth and exactly one year of age (expressed per 1,000 live births). www.unicef.org

[9] Refers to the death of a woman while pregnant or within 42 days of termination of pregnancy (irrespective of the duration and site of the pregnancy), from any cause related to or aggravated by the pregnancy or its management. This excludes accidental or incidental causes (www.who.int).

KZN is projected to have a lower life expectancy (54.4 for males and 59.4 for females) than the national average (56.6 for males and 60.6 for females).

2.8.4 Migration

According to the United Nations Population Fund (2013), population growth, population ageing and decline, as well as migration and urbanization, affect virtually all development objectives that are on top of national and global development agendas. They affect consumption, production, employment, income distribution, poverty and social protections, including pensions; they also complicate our efforts to ensure universal access to health, education, housing, sanitation, water, food and energy[10].

Table 2.4 shows that GP continues to absorb the highest number of migrants in SA. KZN experienced a decline in its population figures, as did the EC, FS, LP and the NC. Migration is cited as one of the main factors contributing to the decline in KZN's share of the national population, and consequently its share of the equitable share grant.

Table 2.4: Migration trends in South Africa by province, 2011-2016

	Migration 2011-2016		
	Out-migration	In-migration	Net-migration
Eastern Cape	241 756	176 821	-64 937
Free State	134 346	126 703	-5 646
Gauteng	624 643	1106 375	481 732
KwaZulu-Natal	239 883	232 875	-7 012
Limpompo	303 101	241 469	-61 632
Mpumalanga	193 562	231 381	37 818
Northern Cape	76 809	72 917	-3 892
North West	195 837	261 090	65 254
Western Cape	194 699	344 630	150 221

Source: Stats SA, 2015

[10] See more at: http://www.unfpa.org/news/sustainable-development-and-population-dynamics-placing-people-centre#sthash.4fB31O2i.dpuf

Chapter 3: Economic Review and Outlook

3.1 Introduction

Despite the cheaper oil price, the world economy is still subdued but expected to rise moderately in 2015. OECD (2015) maintains that the global economy continues to run at low speed and many countries, particularly in Europe, seem unable to overcome the legacies of the 2009 global recession. Thus the International Monetary Fund (IMF, 2015) argues that the global economic recovery remained uneven since the beginning of 2014, amid sustained improvements in the United States of America (US) and United Kingdom (UK), and deteriorating prospects in the Eurozone and Japan.

Emerging market economies continue to account for the bulk of the global growth. As correctly pointed out by the IMF (2015), the Sub-Saharan African economy is expected to perform slower in 2015, at the back of lower commodity prices. Following the global economic trajectory, the national economic growth outlook remains subdued and is projected to grow at a marginal rate in 2015 and 2016.

Taking into account both the global and national economic performance, this chapter provides the economic review and outlook of the province of KZN. This chapter begins with an outline of the global, national and KZN economic review and outlook. This is then followed by the brief review of the sectorial analysis and tourism in KZN. The chapter concludes by providing an analysis of international trade and inflation at both national and within the province of KZN.

3.2 Global economic outlook

IMF (2015) expects the global economic growth rate to strengthen gradually; from the stable 3.3 per cent posted in 2013 and 2014 to 3.5 per cent and 3.7 per cent in 2015 and 2016 respectively (table 3.1). These projected growth rates are both revised downward by 0.3 percentage point relative to the IMF's October 2014 World Economic Outlook (WEO).

The moderate projected global growth rates for both 2015 and 2016 are anticipated to be supported by the current prevailing lower price of brent crude oil price. Both the OECD (2014) and the World Bank (2014) revised downward the economic outlook for 2015 to 2016, reflecting a decline in the global oil prices.

Table 3.1: World economic estimates and projections, 2011 to 2016

	Estimates				Projections	
	2011	2012	2013	2014	2015	2016
World	**3.9**	**3.4**	**3.3**	**3.3**	**3.5**	**3.7**
Developed countries	1.7	1.2	1.3	1.8	2.4	2.4
Euro Area	1.5	-0.7	-0.5	0.8	1.2	1.4
United States of America	1.8	2.3	2.2	2.4	3.6	3.3
Emerging countries	6.2	5	4.7	4.4	4.3	4.7
Sub-Saharan Africa	**5.5**	**4.4**	**5.2**	**4.8**	**4.9**	**5.2**
Japan	-0.6	1.5	1.6	0.1	0.6	0.8
South Africa	**3.5**	**2.5**	**2.2**	**1.4**	**2.1**	**2.5**
Brazil	2.7	1.0	2.5	0.1	0.3	1.5
Russia	**4.3**	**3.4**	**1.3**	**0.6**	**-3**	**-1**
India	6.3	4.7	5	5.8	6.3	6.5
China	9.3	7.7	7.8	7.4	6.8	6.3

Source: IMF, 2015

According to the IMF (2015), the WEO projections were to a larger extent influenced by four key factors. The first contributing factor relates to the significant drop in the oil price, by approximately 55 per cent, since September 2014. The overwhelming plunge in the price of crude oil was partly due to the unexpected weaker demand by emerging market economies which include China, India, Russia and others. This is also reflected in the decline on the industrial metal prices.

Furthermore, the decision by the Organization of Petroleum Exporting Countries (OPEC) to keep production levels unchanged despite the steady rise in production from non-OPEC producers, particularly the US is also cited as the key factor on the current prevailing low price of oil.

Secondly, the uneven growth rate among major economies in 2014 is also cited as having influenced the 2015 WEO. Recovery in the US economy was stronger than expected in the third quarter of 2014, while economic performance in all other major economies most notably Japan, fell short of expectations.

Thirdly, as a result of the stronger than expected growth in US, its currency (US dollar) has appreciated by about 6 per cent since October 2014. In contrast, the euro and the yen have depreciated by approximately 2 per cent and 8 per cent, respectively. Furthermore, many emerging market currencies, have weakened, particularly those of commodity exporters and SA is no exception.

Finally, as correctly pointed out by the IMF (2015), the interest rates and risk spreads have risen in many emerging market economies, notably commodity exporters, and risk spreads

on high-yield bonds. The global funder maintains that long-term government bond yields have declined further in major advanced economies. This reflects safe haven effects and weaker activity in some other advanced economies, while global equity indices in national currency have remained broadly unchanged since October 2014. The IMF however, further argues that the benefits from lower oil prices are expected to be more than offset by an adjustment to lower medium-term growth in most major economies other than the US.

Subsequent to the above four factors, economic growth rate is expected to strengthen in 2015 across most advanced economies, but the pace of recovery still remains uneven across regions. The strongest rebound of 3.6 per cent in 2015 is expected in the US, up from the 2.4 per cent estimated in 2014 (table 3.1).

Growth rate in the eurozone, remained weaker than expected in 2014, largely due to weak investment and inflation expectations which continued to decline (IMF, 2015). The economy of the region is estimated to have grown by 0.8 per cent in 2014. It is however expected to record a slight improvement of 1.2 per cent and 1.4 per cent in 2015 and 2016 respectively (table 3.1). In January 2015, the European Central Bank (ECB) announced that a programme of quantitative easing (QE)[11], totalling approximately €1.1 trillion ($1.24 trillion). This is expected to commence in March 2015 and run until June 2016. The ECB regards QE as a necessary tool to minimise deflationary pressures in the eurozone[12].

The Japanese economy is estimated to have grown marginally by 0.1 per cent in 2014. The private domestic demand is cited as having not accelerated as expected after the increase in the consumption tax rate, despite the support from the rise in infrastructure spending (IMF, 2015). This output growth is however projected to bounce back slowly by about 0.6 per cent in 2015 and 0.8 per cent in 2016 respectively (table 3.1).

The OECD (2014) cites improving labour market conditions and expanded monetary easing as the major factors contributing towards these projected growth rates in Japan.[13] Meanwhile, the IMF (2015) regards policy responses such as additional quantitative and

[11] Quantitative Easing "*is regarded as a**n** unconventional monetary policy in which a central bank purchases government securities or other securities from the market in order to lower interest rates and increase the money supply. It is considered when short-term interest rates are at or approaching zero, and does not involve the printing of new banknotes".* Accessed on the 29th January 2015, from http://www.investopedia.com/terms/q/quantitative-easing.asp.

[12] See article by P Subacchi (2014), "*Will Quantitative Easing Work for Europe?* Accessed on 29/01/2015 http://www.newsweek.com/will-quantitative-easing-work-europe-302405

[13] See Japan - Economic forecast summary (November 2014) accessed on the 29th January 2015 and available from http://www.oecd.org/economy/japan-economic-forecast-summary.htm

qualitative monetary easing and the delay in the second consumption tax rate increase as supporting tools for a gradual rebound in activity. The oil price boost and yen depreciation, are expected to strengthen growth to above 2015 and 2016 trend.

Unlike the lacklustre economic performance in the developed economies, growth in emerging market and developing economies (EMDEs) is to remain stable at 4.3 per cent in 2015 before rising slightly to 4.7 per cent in 2016 (table 3.1). Lower gross domestic product (GDP) growth rate in China and its implications to the emerging Asia is partly contributing to slow pace of the aggregate economic performance in the EMDEs.

The GDP growth rate in China is projected to moderate to a sustainable rate of 6.3 per cent in 2016, much lower than the average double digits rate last posted pre-global financial crisis that resulted to the world recession in 2009. Meanwhile, growth rate in India is estimated to have risen to 5.8 per cent in 2014. It is however expected to marginally pick-up to 6.3 per cent and to 6.5 per cent in 2015 and 2016 as exports and investment increase rise further (table 3.1).

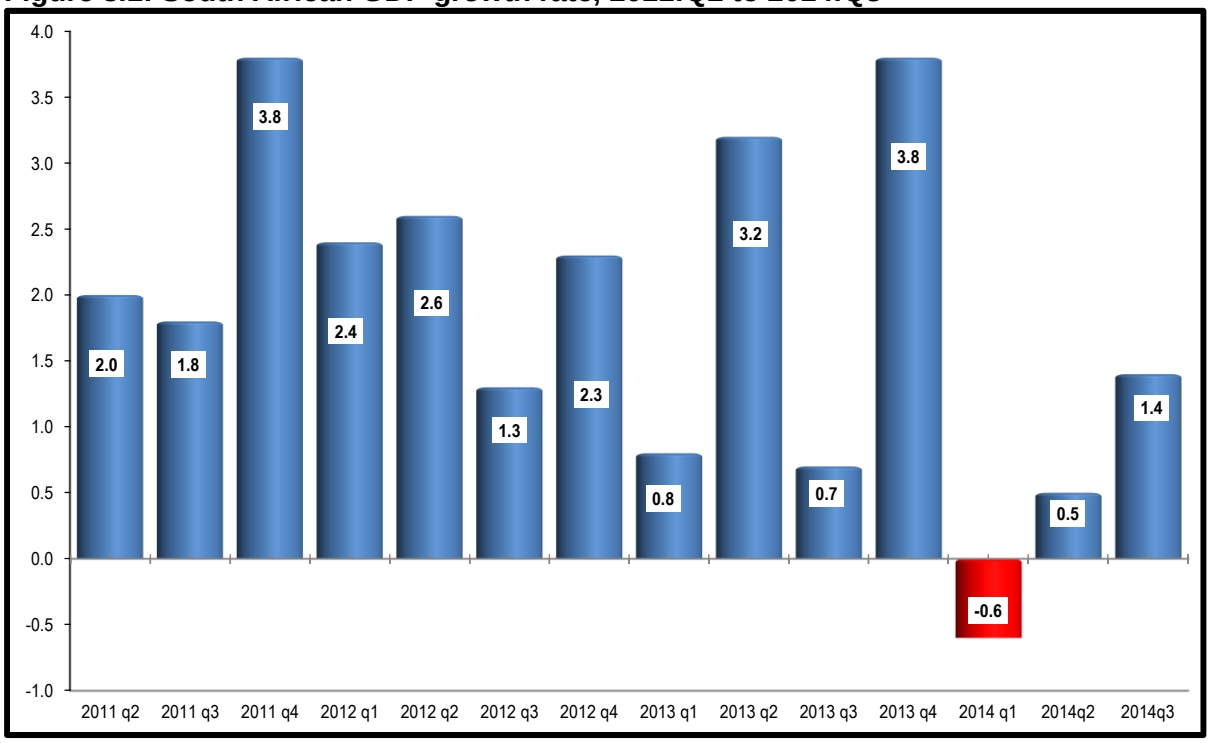
The Russian economy is estimated to have technically escaped recession in 2014. It is however projected to contract by 3 per cent and 1 per cent in 2015 and 2016 respectively. In stark contrast to Russia, the Brazilian economy is estimated to have recovered gradually in the latter part of 2014 and thus recorded marginal annual growth rate of 0.1 per cent. This was after it suffered a contraction during the first half of the year. The real GDP is expected to remain modest at 0.3 per cent and 1.5 per cent in 2015 and 2016 respectively (table 3.1). This is partly due to tighter monetary and fiscal policies, weak external demand, low levels of investment and persistent infrastructure bottlenecks[14].

3.3 National economic outlook

The South African economic activity improved slowly to 0.5 per cent in the second quarter of 2014 after it had recorded a negative growth rate of 0.6 per cent in the first quarter of the same year. It however gained momentum in the third quarter and expanded at a faster pace of 1.4 per cent (figure 3.1). According to SARB (2014), the moderate acceleration in growth rate in the third quarter of 2014 is attributed to increases in the real value added by both the primary and tertiary sectors.

[14] See Brazil - Economic forecast summary (November 2014), accessed on the 29 January 2015 and available at http://www.oecd.org/eco/outlook/brazil-economic-forecast-summary.htm

Figure 3.1: South African GDP growth rate, 2011:Q2 to 2014:Q3



Source: www.tradingeconomics.com, 2014 and Stats SA, 2014

In line with the global trends, the IMF (2015), OECD (2014) and the World Bank (2014) cut the national economic outlook again for 2015 and 2016, citing the weak demand from SA's main trading partners. The IMF (2014) further maintained that SA's growth rate for 2014 was adversely affected by the protracted industrial actions and delays in fixing infrastructure gaps, including electricity constraints. This argument was further reiterated by the SARB (2014) which stated that the frictions related to the five-month-long platinum strike in the first half of the year started to dissipate, but were replaced by industrial action in the steel and engineering subsector of manufacturing.

Table 3.1 shows that SA's economic growth for 2015 has been revised downward to 2.1 per cent from 2.3 per cent projected in October 2014. This is the third consecutive cut in 12 months. The national economy is however expected to expand by a moderate 2.5 per cent in 2016 (table 3.1). It must be noted that inherently, lower economic growth implies among others, lower revenue collection and fewer employment prospects.

The projected subdued growth rate in the national economic performance is further confirmed by the Kagiso Purchasing Managers' Index (PMI)[15], which decreased slightly to 50.2 index points in December 2014, from the 53.3 recorded in November 2014. The

[15] Kagiso PMI is an indicator of activity in the manufacturing sector, where a level below 50 suggests a contraction in activity while one above 50 points suggests expansion (www.kagiso.com). Accessed on the 30/1/2015.

magnitude of the decline was surprising, but this was possibly due to electricity load shedding and mandatory cutbacks by large industrial users.[16]

As expected, the SARB composite business cycle indicator also followed a moderate downward trend in 2014, confirming the subdued economic outlook.[17] Startlingly, the Rand Merchant Bank / Bureau for Economic Research (RMB/BER) business confidence index (BCI) returned to net positive levels for the first time since the first quarter of 2013. The BCI increased by 5 points to 51 index points in the fourth quarter of 2014.[18]

Table 3.2: Macro-economic performance and projections, 2011 to 2017

	Actual			Estimate	Forcasts		
	2011	2012	2013	2014	2015	2016	2017
Final consumption expenditure by households: Total (PCE)	4.9	3.5	2.6	1.9	2.3	2.8	3
Final consumption expenditure by government	4.3	4	2.4	1.8	1.5	1.5	1.5
Gross fixed capital formation (Investment)	4.2	4.4	4.7	2.7	3.6	4.7	5.1
Gross domestic expenditure (GDE)	4.6	4	2.2	0.9	2.6	3	3.3
Exports of goods and services	6.8	0.4	4.2	3.1	4.2	4.7	5.2
Imports of goods and services	10	6	4.7	1	4.1	5	5.6
Real GDP growth	**3.6**	**2.5**	**1.9**	**1.4**	**2.5**	**2.8**	**3**
GDP Inflation	5.9	4.5	5.8	6.1	5.8	5.7	5.6
Gross domestic product at current prices (R billion)	**2 932.7**	**3 139.0**	**3 385.4**	**3 642.6**	**3 952.6**	**4 295.8**	**4 675.6**
Headline CPI inflation (Dec 2012 = 100)	5	5.7	5.8	6.3	5.9	5.6	5.4
Current account balance (% of GDP)	-2.3	-5.2	-5.8	-5.6	-5.4	-5.2	-5

Source: National Treasury, 2014

Table 3.2 reflects some key national macroeconomic indicators. The expenditure on consumption by households is one of the key components of GDP. The houeseholds' expenditure on consumption constitutes approximately 61 per cent of the total South African GDP. The expenditure on consumption by households increased by 2.6 per cent in 2013, and is however estimated to have plummeted to 1.2 per cent in 2014 (table 3.2). According to the SARB (2014), growth in total consumption expenditure by households remained weak in 2014. It however, improved from the 1.1 per cent growth rate posted in the second quarter of 2014 to 1.3 per cent in the third quarter of the same year.

The projections from table 3.2 indicate that households' consumption will continue increasing for the period 2015 to 2017, thereby rising to 1.9 per cent this year, 2.3 per cent in 2016 and 3.0 per cent in 2017. This positive expectation is further confirmed by the RMB/BER consumer confidence index (CCI) which improved slightly from -1 in the third quarter of 2014

[16] See Kagiso Purchasing Managers' Index for December 2014 , accessed on 30th January 2015, available from http://www.kagiso.com/pdf/pmi_archive/2014/january_pmi_2015.pdf
[17] See the Composite business cycle indicators for South Africa (27 January 2015) accessed on the 30th January 2015 from https://www.resbank.co.za/Lists/News%20and%20Publications
[18] See the BER (2014): *Business confidence improves further*, accessed on the 30th January 2015, from http://www.ber.ac.za/RMBBERBCI/2024.aspx

to zero at the end of the final quarter of 2014. According to the BER (2014)[19], although the value of the fourth quarter's index is still below the long-term average estimate value of 5 since 1994, the latest consumer confidence is considerably higher compared to the very low CCI reading of -7 index points recorded in December 2013.

The level of real spending by general government in the first three quarters of 2014 was 2 per cent higher than in the corresponding period of 2013 (SARB, 2014). As a percentage of GDP, final consumption expenditure by general government increased marginally from 20.5 per cent in the second quarter of 2014 to 20.6 per cent in the third quarter of the same year (SARB, 2014). It is projected that government spending will remain stable at 1.5 per cent in the period 2015 to 2017 (table 3.2).

Growth in real gross fixed capital formation (investment) by both government and the public sector is estimated to have slowed down to 2.7 per cent in 2014, compared to 4.7 per cent growth rate recorded in 2013. It is, however, expected to gain momentum over the 2015/16 Medium Term Expenditure Framework (MTEF) and reach 4.7 per cent in 2016 (table 3.2).

3.4 KZN Economic Review and Outlook

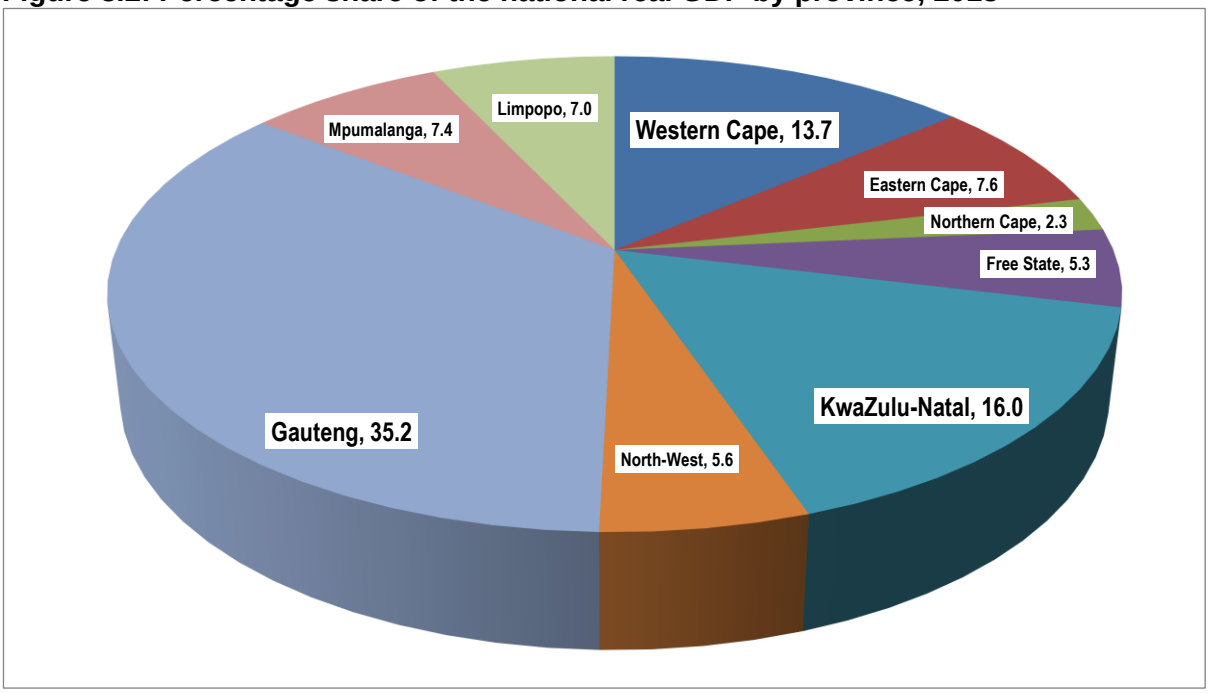
KZN is one of the key provinces in the national economy in terms of GDP contribution. The estimated real GDP[20] generated by the province amounted to approximately R428.96 billion in 2013, making KZN the second largest contributor to the economy of the country at 16 per cent, after GP with 35.2 per cent. This was however slightly above 13.7 per cent recorded in the WC province (figure 3.2).

Given the economic activities that take place within eThekwini, it is therefore not surprising that the total provincial output is predominantly concentrated in the metro at 66.2 per cent. This is followed by uThungulu with 8.1 per cent and uMgungundlovu with 7.9 per cent. The least contributing districts are Umzinyathi, Harry Gwala and Umkhanyakude at the estimated rate of 0.8, 1.1 and 1.2 per cent respectively (figure A3.1 in the appendix).

[19] See FNB/BER Consumer Confidence Index, Issued by First National Bank, EMBARGO: Thursday, 11 December 2014, accessed on 30 January 2015 and available from http://www.ber.ac.za/FNBBERCCI/2012.aspx

[20] The revised Real GDP for KZN was calculated using 2010 prices, in line with the methodology applied by Stats SA (2014) in its revised GDP data for quarter three of 2014.

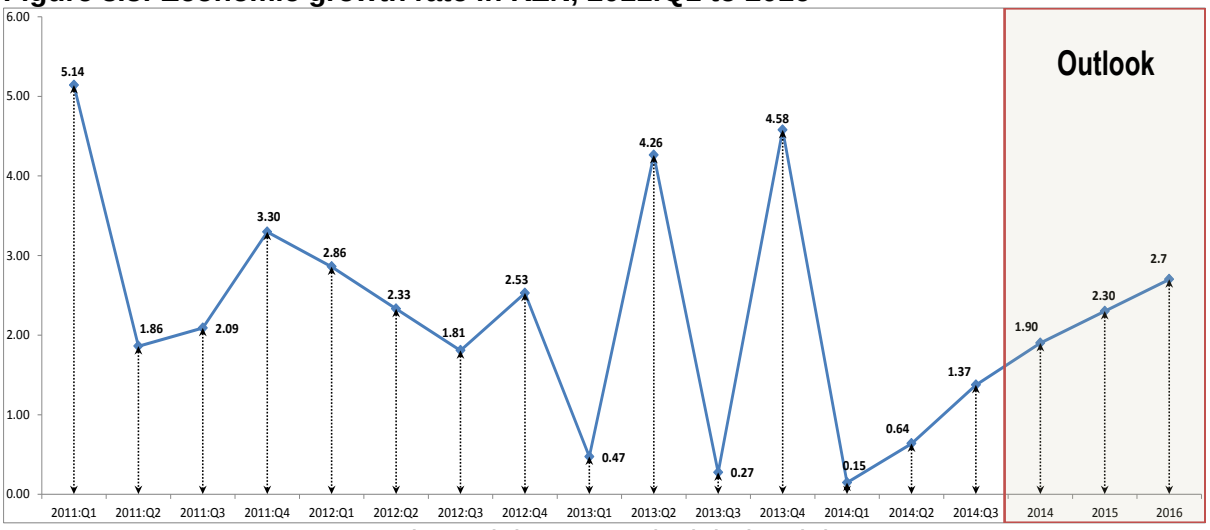
Figure 3.2: Percentage share of the national real GDP by province, 2013



Source: Global insight, 2015

Following the global and national trends, the provincial economy recorded a seasonally adjusted and annualized quarterly increase of 1.4 per cent in the third quarter of 2014, compared to the 0.1 per cent recorded during the first three months of 2014 (figure 3.3). Figure 3.3 further indicates that the provincial economic outlook is at an improving trajectory compared to the levels posted during first half of 2014.

Figure 3.3: Economic growth rate in KZN, 2011:Q1 to 2016



Source: KZN Treasury Economic Model, 2014 and Global Insight, 2014

These growth rates are however below the targeted 5 per cent required to achieve job creation as outlined in both the National Development Plan (NDP) and the Provincial Growth

and Development Plan (PGDP, 2014). This therefore signals a steeper trajectory ahead in terms of addressing poverty, unemployment, inequality and other socio-economic challenges facing the province.

3.4.1 Sector analysis

Despite the robust growth rate of 7.8 per cent recorded in 2007, the primary sector reported a healthier but lower growth of 6 per cent in 2013 (table 3.3). However the average annual growth slowed down to 2.8 per cent between 2003 and 2013 (table A3.1). Subsequently, the sector's contribution to the provincial real GDP declined moderately from 8.8 per cent in 1996 to 6.6 per cent in 2013 (table A3.2).

Agriculture grew by an annual average growth rate of 3 per cent between 2003 and 2013, but lost momentum and posted a moderate 1.8 per cent in 2013. The industry is estimated to have grown moderately (4.7 per cent) in 2014 (tables 3.3 and A3.1). The moderate but lackluster performance by agriculture in 2013 was due to the deterioration in the f*orestry & logging s*ub-sector which contracted by 0.3 per cent, while the other two sub-sectors namely, *fishing & operation of fish farms* (4.8 per cent) and *agriculture & hunting* (2.5 per cent) recorded robust and moderate growth rates respectively (table A3.4).

Table 3.3: Sector analysis growth rates and projections, 2004 to 2015

	Actual						Estimates	Projections			
	2007	2008	2009	2011	2012	2013	2014	2015	2016	2017	2018
Primary Sector	**7.8**	**14.9**	**-6.0**	**8.2**	**3.2**	**6.0**	**-0.2**	**3.4**	**4.2**	**4.0**	**4.1**
Agriculture	5.3	21.5	-3.3	9.2	1.2	1.8	4.7	0.9	1.8	1.7	1.9
Mining	2.5	-6.5	-2.7	-0.9	2.1	4.3	-4.9	2.6	2.4	2.3	2.3
Secondary Sector	**23.9**	**7.9**	**-5.2**	**4.3**	**4.4**	**4.0**	**3.3**	**6.3**	**7.5**	**9.6**	**10.3**
Manufacturing	5.4	2.2	-10.4	2.8	1.9	0.9	1.5	2.6	2.9	3.6	3.6
Electricity	3.3	-4.5	-4.3	1.0	0.2	-0.1	-1.4	0.4	1.5	3.0	3.3
Construction	15.1	10.1	9.5	0.4	2.3	3.1	3.2	3.3	3.1	3.0	3.4
Tertiary Sector	**26.8**	**15.9**	**4.2**	**15.1**	**11.4**	**9.6**	**8.7**	**9.3**	**11.1**	**14.8**	**15.5**
Trade	6.1	1.5	0.2	4.7	3.5	1.5	2.4	2.4	2.7	3.6	3.7
Transport	8.3	3.7	0.1	2.8	2.5	2.2	2.2	2.9	3.6	4.2	4.3
Finance	7.3	5.8	1.6	4.1	2.0	3.2	2.2	2.9	3.3	4.6	4.6
Community services	5.1	4.9	2.3	3.4	3.5	2.8	1.9	1.0	1.5	2.4	3.0

Source: Global Insight, 2014

Mining (-0.2 per cent) contributed towards poor performance by the primary sector on average between 2003 and 2013 (table A3.1). The decline in the mining sector was spud by

a slump in the *coal & lignite* (-5.1 per cent) (table A3.4 in appendix); this trend persisted in 2013.

As observed in most sectors, a large proportion of manufacturing production (65.1 per cent) comes from eThekwini (table A3.6 appendix). Table A3.1 in appendix shows that this sector has grown moderately (2.6 per cent) in the province between 2003 and 2013. Akin to most sectors, manufacturing exhibited the fastest growth in iLembe district municipality. The phenomenal growth of the sector in iLembe was mainly due to high growth in *textile, clothing & leather goods* (6.2 per cent) as well *as food & beverages* (4.6 per cent) sub-sectors (table A3.3).

The electricity sector grew by an average of 1.5 per cent in the province between 2003 and 2013 (table A3.1). This growth rate contracted by 0.1 per cent in 2013 (table A3.2). Construction was the fastest growing sector (7.2 per cent) over the period 2003 to 2013, but recorded a 3.1 per cent growth rate in 2013 (table 3.3). A robust growth rate in construction in 2013 was recorded across the districts in the province, but the largest rate of 9.3 per cent was posted in iLembe, followed by eThekwini at 7.7 per cent (table A3.3).

Trade showed positive growth (4.1 per cent) over the period under review. This trend was abruptly interrupted and plunged to 1.5 per cent in 2013. The robust performance in trade was enhanced by the *sales & repairs of motor vehicles* (6.4 per cent) (table A3.3).

Table A3.1 further indicates that finance (5.1 per cent) was the second fastest growing sector in the province between 2003 and 2013, but slowed down to 3.2 per cent in 2013. ILembe posted the highest growth (9.7 per cent) in this sector when compared with other districts, but its output plummeted to 3.3 per cent in 20013. The growth in finance was by far supported by growth in the finance and insurance subsector (8.8 per cent) (table A3.3).

Transport (3.8 per cent) is the fourth fastest growing sector, after finance (5.1 per cent) in the province over the 2003 to 2013 period. It however slowed down moderately to 2.2 per cent in 2013 (table A3.3). *Air transport & transporting* activities (8.6 per cent) led the growth trajectory, followed by *post & telecommunication* at 7.2 per cent (table A3.3).

Government exhibited moderate growth of 3.4 per cent over the period under review, but this slowed to 2.8 per cent in 2013 (tables A3.1 & 3.3). In terms of sector contribution towards provincial real GDP, government makes up an estimated 22.0 per cent. This contribution varies substantially across district municipalities. Predominantly rural district municipalities

seem to have a larger portion of government services contributing to their GDP, as high as 47.5 per cent in Umzinyathi, 41.1 per cent in Zululand and 40.7 per cent in Umkhanyakude. The more urbanized district municipalities have a smaller proportion of government contribution to their GDP (15.4 per cent in uThungulu and 16.2 per cent in iLembe) (table A3.5).

It is also important to note that as pertinent at the national level a larger portion of GDP and employment in KZN emanates from the tertiary sector. This sector had grown between 2003 and 2013, while the primary and secondary sectors' contributions to GDP and employment had been declining[21]. This indicates that the economy is converging towards being a tertiary sector-based economy, which is skilled-labour intensive, whilst a large majority of South African population lacks skills.

3.5 Travel and tourism

Travel and tourism has become one of the most important industries in the global economy. The industry is influenced by a number of factors[22], but the level of income is the most influential of them all. Collectively or individually, these factors contribute in the volatility of the industry which results into the industry being highly elastic. One of the critical roles of tourism in the global economy is its potential in promoting small businesses and thereby contributing to job creation.

The value contributed by travel and tourism in the economy as well as in job creation has been significant worldwide. World Travel and Tourism Council (WTTC, 2014) has done various studies on this industry and it has discovered that as middle classes increase, travel and tourism gain popularity time after time. WTTC (2014) also maintains that the industry is growing faster than known strategic industries such as financial and business services, manufacturing and transport.

Tourism has contributed to GDP of the countries worldwide. This contribution comes from various industries that are directly or indirectly linked to it. Transport, hospitality and infrastructure are the main direct beneficiaries from tourism. Number of airlines that transport tourists from different destinations around the world have increased. More hotels and bed and breakfast facilities have been built. This increase in hospitality and transport industries

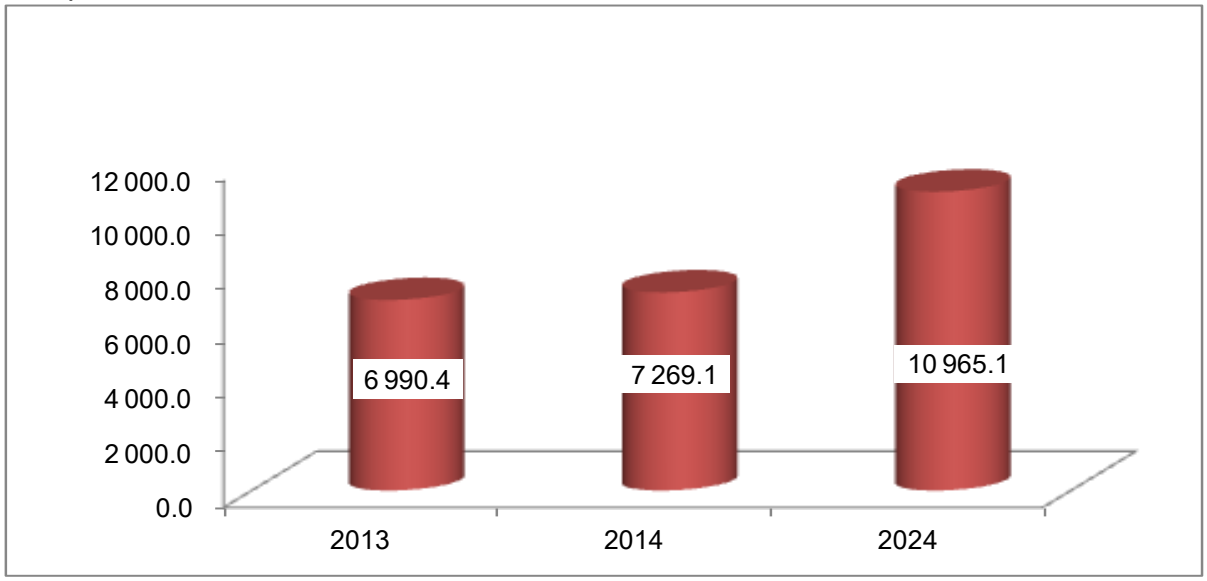
[21] See section 8.2.1 (chapter 8) of this publication for details in employment by sector.
[22] Other factors include but not limited to safety and security, geo-political stability, exchange rate, and many more.

has compelled a vigorous improvement in infrastructure, which in turn, more direct and indirect jobs have been created. The latter changes have not only created jobs towards tourism industry, they have also contributed to the GDP of different countries.

3.5.1 Contribution to global GDP

WTTC (2014) research reveals that the industry's GDP total contribution in 2013 rose to 9.5 per cent of global GDP which is estimated at $6 990.3 billion US dollars. This is an enormous improvement when compared to the previous years since 2000. The industry is estimated to have grown by 4.3 per cent in 2014. Tourism is further estimated to be growing at an average annual growth rate of 4.3 per cent and this is projected to reach 10.3 per cent or $10.97 billion of the global GDP in 2024 (WTTC, 2014).

Figure 3.4: Travel and tourism contribution (US Dollars in billions) to global GDP; 2013, 2014 and 2014



Source: WTTC, 2014

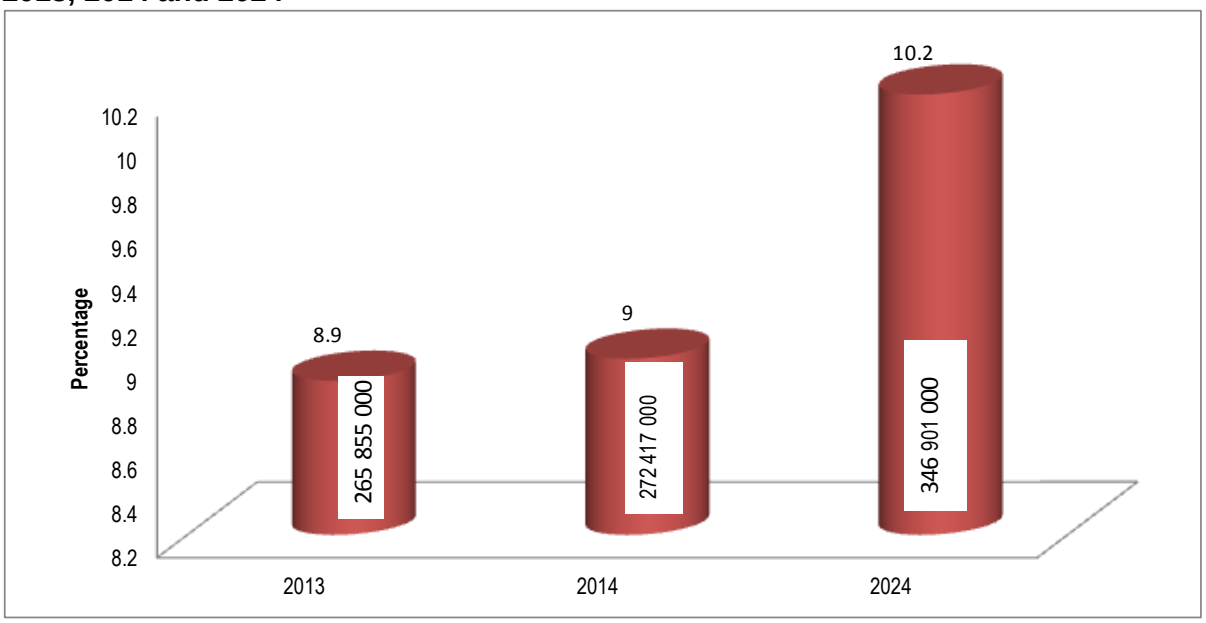
3.5.2 Travel and tourism contribution to employment

As indicated in section 3.5.1, tourism does not only contribute towards growth; it is also a source of job creation. The WTTC (2014) estimates that total employment that had been realised in the tourism industry in 2013 amounted to 100 894 000 or 3.4 per cent of the total global employment. This proportion is estimated to have increased by 2.2 per cent in 2014 and thus reached 103 069 000 and is projected at 126 257 000 in 2024. These job opportunities are influenced by the capital investments that have been realised in the tourism

industry. It is through such investment opportunities that the industry had attracted about $754.6 billion in 2013.

Figure 3.5 shows that investment expenditure had led to 8.9 per cent increase (or 265.9 million jobs) in the total global employment in 2013. This is expected to grow by 2.5 per cent and 2.4 per cent in 2014 and 2024 respectively. The projected robust growth rate is expected to support an estimated 272.4 million and 346.9 million in 2014 and 2024 respectively.

Figure 3.5: Number jobs created by tourism industry in millions and percentages, in 2013, 2014 and 2024



Source: WTTC, 2014

3.5.3 South African tourism

According to the South African National Department of Tourism (2012), the industry contributed R189.4 billion in 2009. This constituted 7.9 per cent of the national GDP in real terms. The long term goal is to grow the industry to R499 billion in 2020 (NDT, 2012). Besides the 2009 global economic crises, the country attracted an estimated 8.3 million international tourists in 2011. This was much higher than the 8.1 million people visited the country during the world cup in 2010.

Domestic tourism is also important when it comes to revenue and employment. According to the NDT (2014) it contributed 52 per cent of the total tourism consumption in 2013. It is therefore by no surprise that it is listed as one of the six job drivers of the new growth path.

Tourists from African continent are also significant when it comes to the country's revenue. Approximately 73 per cent of the total tourists arrivals are from Africa and they contributed a revenue in excess of R50 billion in 2011 (NDT, 2014)

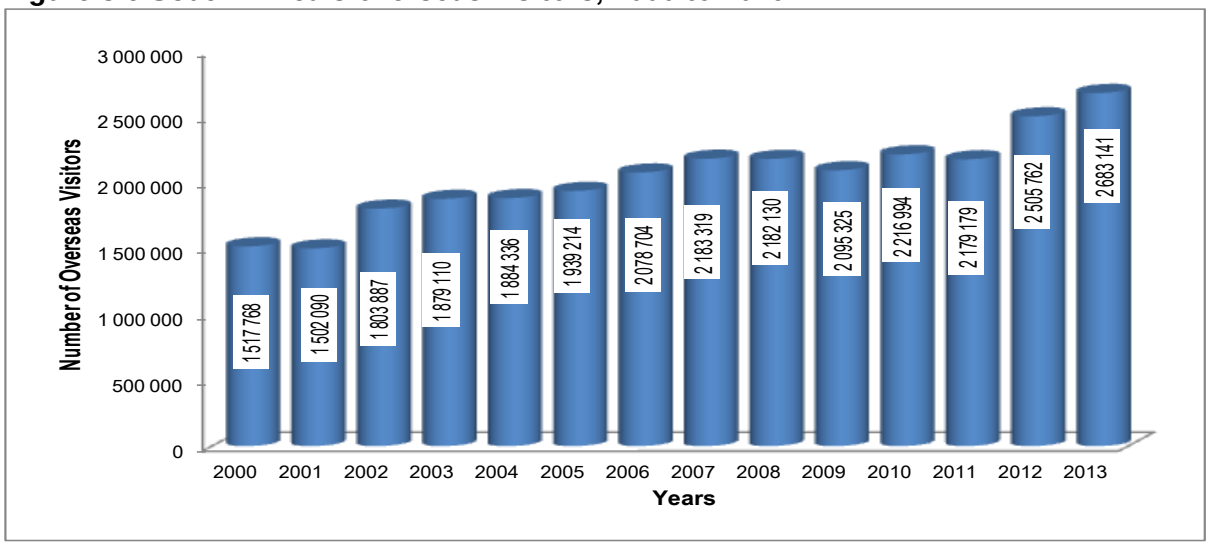
Similar to the rest of the world, SA benefits immensely from tourism. The country benefits in various ways including attracting investments, expanding existing industries that are related to tourism, creating jobs and increasing economic growth. In 2013 the direct contribution by the South African Tourism industry amounted to an estimated R103.2 billion, which translated to 3 per cent of the total GDP (WTTCSA, 2014).

This estimation involves direct contribution from hotels, travel agencies, airlines and other passenger transportation services and restaurants. When other contributors such as indirect contributors are included, the contribution rises up to an estimated R323 billion or 9.5 per cent of the GDP, over the same year. This is projected to rise to R478.3 billion or 9.8 per cent of the GDP in 2024.

3.5.4 South Africa's size of the global foreign tourism market

Figure 3.6 shows SA's overseas visitors for the period 2000 to 2013. As depicted in the graph, the total number of visitors is on the positive trajectory irrespective of economic shocks that might have occurred over the years. There was however a slight decline in the number of foreign tourist visiting SA in 2009. This was due to a large extent global economic recession.

Figure 3.6 South Africa's overseas visitors, 2000 to 2013



Source: Zulu Kingdom, 2014

3.5.5 Tourism in KZN

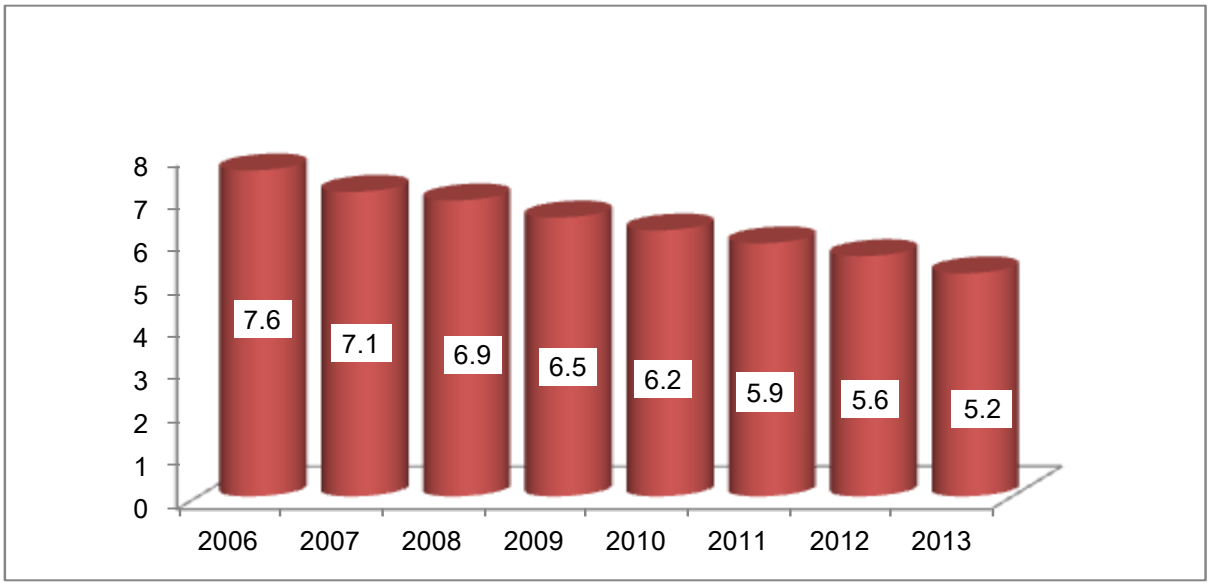
World Travel and Tourism Council (WTTC, 2014) predicts that the tourism sector will become the world's largest industry. SA also forms part of the industry where its growth is exceeding the known industries like manufacturing and transport. In line with SA, KZN forms part of the main contributors towards the growth of tourism in the country. Tourism has the potential in contributing towards resolving the triple challenges of unemployment, poverty, inequality, and high prevalence of HIV/AIDS.

(a) Contribution to GDP and employment

Similar to the province across the country, KZN is faced with many challenges that lead to the increase of triple challenge of poverty, unemployment and inequality. According to KZN Tourism Master Plan (2011) the province is faced with low skill levels which might prevent the citizens of the province to participate in the job market which prefers high levels of skills in different fields.

The report further cites information, communication and technology (ICT) as one of the challenges when it comes to shortages of air transport linkages, and land transportation which does not meet international required standards. However, with an estimated R6.1 billion, tourism was among the highest contributing industries in the economic activities of the province in 2013 (SAT, 2014). It thus becomes imperative that the industry receives the much deserving attention, particularly given the fact that it does not require highly skilled personnel, but it provides small medium entrepreneurs with opportunities to grow. As depicted in figure 3.7, the tourism had contributed an estimated 5.2 per cent towards the province's GDP in 2013. It had also provided total employment of about 386 165 in 2013 (TIKZN, 2014). Tourism spending as a percentage of GDP is showing a steady decline from 2006 to 2013. This indicates clearly that less attention is being given to the province's tourism industry.

Figure 3.7: Total Tourism spend as a percentage of GDP in KZN from 2006 to 2013

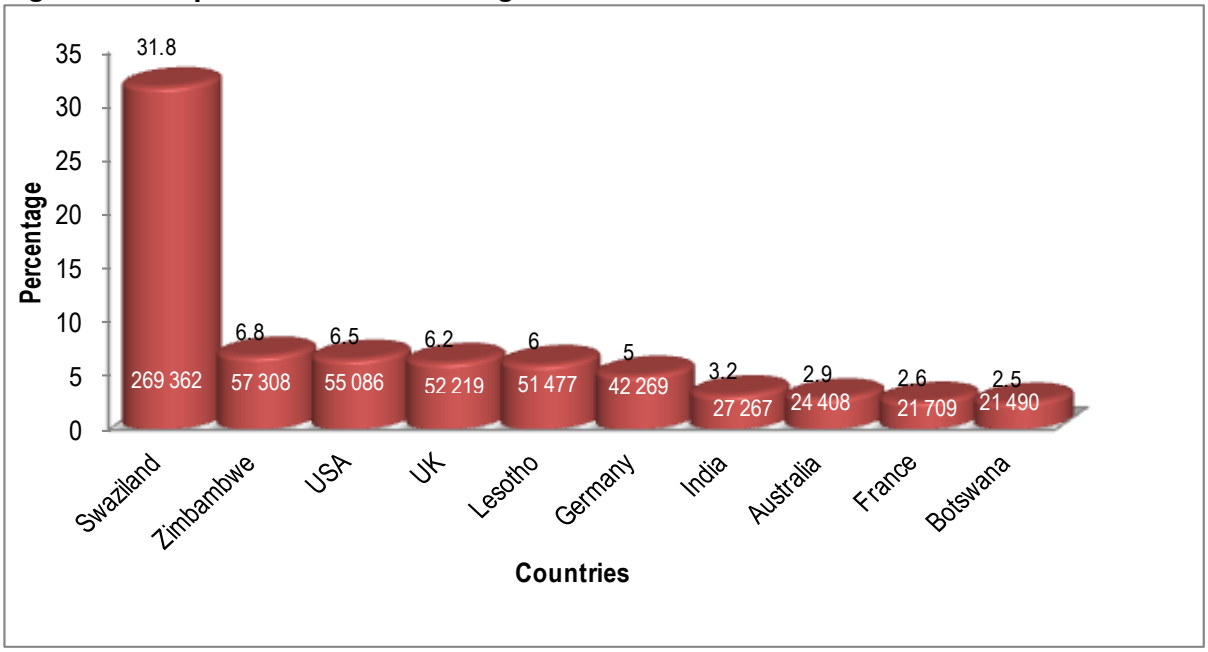


Source: Global Insight, 2014

(b) Top ten countries visiting KZN 2013

Figure 3.9 shows the top ten countries that visited the country in 2013. Six of these countries are overseas while four of them are within the continent in Southern African Development Community (SADC). USA had the highest proportion of visitors among the overseas visitors at 6.5 per cent while Swaziland (31.8 per cent) was the top leading visiting country within SADC.

Figure 3.8: Top ten countries visiting KZN in 2013



Source SAT, 2014

(c) Attraction destinations in KZN

KZN has become the largest tourism destination in SA. Natural attractions such as beaches, botanical features, conservations and wilderness, landforms and trail & hikes make KZN a "*must see province".* The province has a leading infrastructure base and has one of the busiest airports in SA which makes it easier for visitors to explore the whole of KZN. Pietermaritzburg, the capital city of the province, hosts prominent international events such as Comrades marathon, Duzi Marathon, Royal show and others.

Isimangaliso Wetland Park, located in KZN is the first world heritage site in SA and the first in the world to have large number of species sharing the ecosystem. The park is an employer to a large number of people who are residing in it. These people are employed at the lodges or park per se as reservists.

Another country's pride destination is Drakensberg Mountains. It is also one of the world heritage sites in SA that are protected by United Nations (UN). These mountains have the world's second-highest waterfall, the Tugela Falls (uThukela Falls), which has a total drop of 947 metres. It experiences snowfalls in winter which attract adventurous visitors to come and skate. The Drakensberg Rivers play a crucial role in providing fresh water for businesses and people of SA.

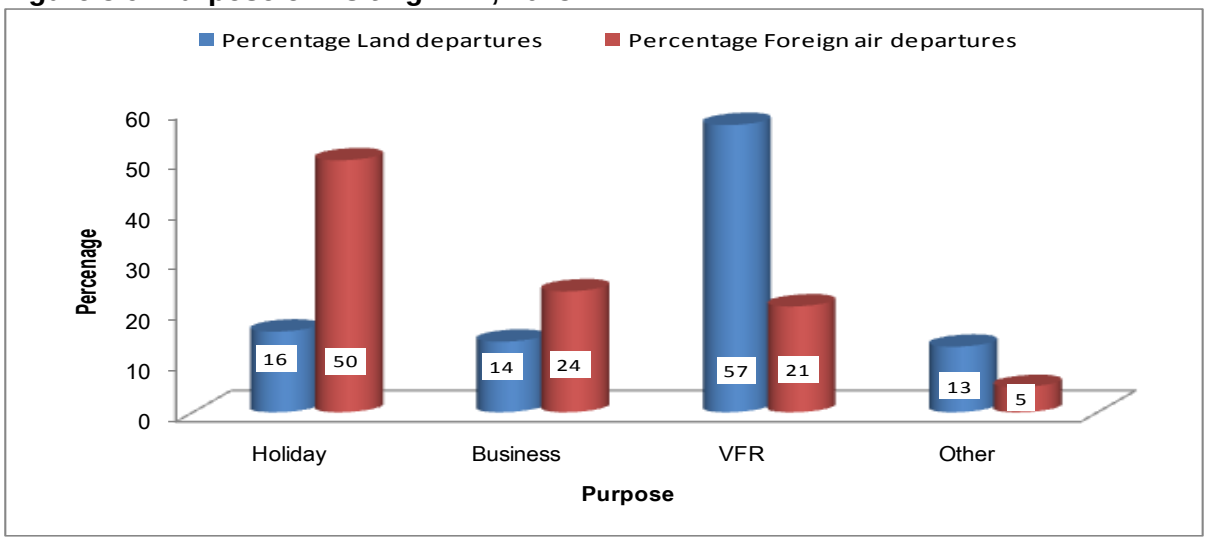
The awarding of Durban as a new "*7 wonder city of the world"* doesn't only show dedication and focus but also proves that KZN leads as tourism, events and business destination; which in turn attracts more foreign investment. The Inkosi Albert Luthuli International Conference Center (ICC) which is located in Durban has most advanced facilities in the world. It allows people to host events such as conferences, exhibitions, concerts and shows, weddings and even the indoors sporting.

Furthermore, the province has two eco-friendly hotels namely: Oyster Box Hotel and Ikhayalamafu both located in Umhlanga and Central Drakensberg respectively. To care for the environment and its surroundings, the solar power generation, recycling and reusing as well as energy saving lights are used. There is also no fencing surrounding Ikhayalamafu in Drakensberg because fencing will prohibit wildlife to have maximum freedom.

Figure 3.9 shows that most visitors (57 per cent) coming to KZN are from within the country, i.e. land departures and the main purpose is to visit friends and relatives (VFR). This is followed by foreign holiday makers at 50 per cent, foreign business at 24 per cent, foreign

visiting friends and relatives (VFR) at 21 per cent, land departure holiday makers at 16 per cent and business at 14 per cent.

Figure 3.9: Purpose of visiting KZN, 2013

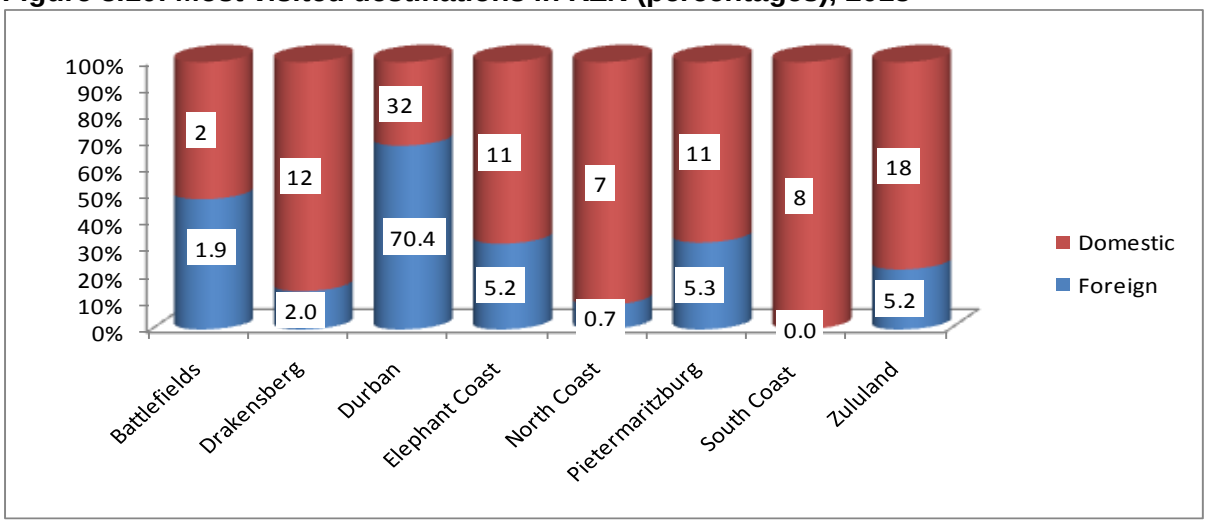


Source: SAT, 2014

(d) Most visited destinations in KZN

Figure 3.10 shows the most visited destinations in KZN. Durban is leading with 70.4 per cent of foreign visitors while domestic visitors accounted for 32 per cent. Otherwise, all other destinations account for less than 10 per cent in foreign visitors. However, domestic percentage of visiting KZN by destination is dominated by Durban at 32 per cent and followed by the rest between 2 and 18 per cent.

Figure 3.10: Most visited destinations in KZN (percentages), 2013



Source: Zulu Kingdom, 2014

There are a number of factors that cause tourists to choose the region. Infrastructure and the ocean are among a series of factors attracting tourists to Durban. Durban July Handicap attracts more tourists during the month of July for the horse racing that gives an opportunity to the designers to showcase their designs. The city is also the custodian owner of Moses Mabhida, the most beautiful stadium in the country. The stadium hosts a number of games during the year and usually these are local and international games.

The city is also known for its rugby team, the Sharks, soccer team “Golden Arrows” and many more other sport teams that originate from the Durban area. The comrades and Duzi marathons are both prominent sport which attract global as well as national communities of all ages, races and gender.

The second most visited destination in KZN is Zululand, which hosted approximately 18 per cent of the total tourists visited the province in 2013. The tourist visiting Zululand are those who are passionate about nature and history. Drakensberg follows at 12 per cent and attracts tourists who are adventurous, climbing mountains and hiking and all the sport activities that take place on the mountains.

3.6 International trade

International trade allows for the flow of goods in both the local and international market in order to meet the global demand. Goods imported assist local consumers to have the variety of goods to choose from while ensuring that prices are kept in check through fair competition. This also enables each country to focus on the production of goods that it has a comparative advantage so as to capture the market internationally.

International trade, as a major factor of openness, has made an increasingly significant contribution to economic growth and development in any economy, which is also essential for the creation of employment (Sun and Heshmati, 2010). SA and KZN’s international trade had experienced rapid contraction together with its dramatic economic growth which has made the country to target increasing the country’s volume of exports in order to reduce the current account deficit. Increasing exports of goods to international markets can attract foreign exchange in a country. This also adds to the GDP of a country by increasing output for both domestic and foreign consumption.

Table 3.4: Balance of payments on current account (R billion, seasonally adjusted and annualised) in 2014

	2013		Year	2014		
	3rd Quarter	4th Quarter		1st Quarter	2nd Quarter	3rd Quarter
Merchandise exports	896	909	869	966	910	936
Net Gold exports	63	55	64	51	55	48
Merchandise imports	-1049	-1010	-1001	-1102	-1065	-1077
Trade balance	-90	-46	-68	-85	-100	-93
Net service, income and current transfer payments	-139	-149	-135	-100	-134	-137
Balance on current account	-229	-195	-204	-185	-235	-230
As percentage of GDP	-6.4	-5.3	-5.8	-4.9	-6.3	-6.0

Source: SARB Quarterly Bulletin, 2014

Table 3.4 shows the balance of payments on current account in the third quarter of 2013 to the third quarter 2014. It is clear from the table that the deficit on the South African current account widened from R185 billion in the first quarter of 2014 to R230 billion in the third quarter of 2014. Having contracted sharply in the second quarter of 2014 as strike activity took its toll, the value of merchandise exports (excluding gold) picked up moderately in the third quarter although it continued to be impaired by industrial action. This also resulted to a decreasing percentage of GDP from a revised 6.3 per cent of GDP in the second quarter of 2014 to 6.0 per cent in the third quarter of 2014.

Table 3.5: KZN's value of exports in 2003 and 2013 (000s)

	2003			2013		
	Exports	% Share of SA exports	Exports as percentage of	Exports	% Share of SA exports	Exports as percentage of
South Africa	291 433 999		22.9	924 055 893		27.3
Eastern Cape	22 333 206	7.7	22.1	35 700 107	3.9	14.3
Free State	1 849 384	0.6	2.7	8 961 431	1.0	5.2
Gauteng	154 087 692	52.9	35.1	616 229 616	66.7	51
KwaZulu-Natal	**50 909 164**	**17.5**	**24.3**	**105 066 753**	**11.4**	**19.6**
Limpopo	2 008 195	0.7	2.5	18 772 940	2.0	8.1
Mpumalanga	4 181 500	1.4	4.6	12 832 833	1.4	5.2
Northen Cape	6 039 109	2.1	20.5	6 691 818	0.7	8.7
North West	12 462 464	4.3	18.1	20 156 967	2.2	10.5
Western Cape	37 563 285	12.9	20.5	99 643 428	10.8	21.1

Source: Global Insight, 2014

Given that brent crude oil price had fallen by more than half since June 2014, it is anticipated to have a positive contribution on the current account of the balance of payments. However,

that benefit in SA is anticipated to be offset by current electricity load shedding which has a negative effect on production. In addition, the negative effect on production is anticipated to affect output for both domestic and international market. A depreciating exchange rate coupled with unstable production will offset each other because even though local goods will be cheaper internationally but capacity will be a constraint.

Table 3.5 compares the value of exports between SA and among the provinces for the year 2003 and 2013. It is clear from the table that the value of exports made in KZN doubled from approximately R51 billion in 2003 to R105 billion in 2013. The provincial proportion of exports to provincial GDP in KZN was 19.6 per cent in 2013. This proportion had declined from 24.3 per cent recorded in 2003. KZN also realised a decline in the percentage share of SA's exports from contributing 17.5 per cent in 2003 to 11.4 per cent in 2013.

This has resulted in the province adopting a strategy aimed at improving exports. The provincial export strategy encompasses five programmes covering export climate and competitiveness, market penetration, exporter development, export promotion and performance measurement, management and review. This strategy looks to both existing markets and potential markets and speaks to the strength of the province in terms of export performance and potential.

South Africa recorded an increase from R291 billion in 2003 to R924 billion in 2013, which was also an increase in a country's percentage of GDP (from 22.9 per cent in 2003 to 27.3 per cent in 2013).The three leading provinces, in terms of total trade contribution in 2013, were GP with a share of 66.7 per cent, KZN with 11.4 per cent and the WC (10.8 per cent). NC contributed the least share of 0.7 per cent in 2013.

Table 3.6 shows the value of imports made by SA and the provinces in 2003 and 2013. KZN's contribution to total national trade was 15.2 per cent in 2013 (R150 billion), down from 12.7 per cent in 2003 (R33 billion). SA contributed R991 billion of imports in 2013, which is higher than the contribution of R264 billion realised in 2003. Among nine provinces, the two leading provinces, in terms of total trade contribution in 2013, were GP with a share of 58.0 per cent and the WC (19.4 per cent).

Table 3.6: Percentage share value of KZN's imports in 2003 and 2013 (000s)

	2003		2013	
	Imports	% Share of SA Imports	Imports	% Share of SA Imports
South Africa	264 751 997		991 185 991	
Eastern Cape	22 093 036	8.3	47 885 891	4.8
Free State	1 567 656	0.6	4 839 524	0.5
Gauteng	154 280 528	58.3	574 857 153	58.0
KwaZulu-Natal	**33 553 144**	**12.7**	**150 304 472**	**15.2**
Limpopo	579 800	0.2	3 599 948	0.4
Mpumalanga	1 394 581	0.5	6 223 081	0.6
Northen Cape	3 532 936	1.3	4 984 273	0.5
North West	1 317 161	0.5	6 022 629	0.6
Western Cape	46 433 156	17.5	192 469 021	19.4

Source: Global Insight, 2014

3.7 Inflation rate

Inflation is one of the critical indicators that affect the economic performance of a country. Higher inflation adversely affects among others the producer price index and the consumer price index. The Monetary Policy Committee (MPC)[23] of the SARB carefully monitors the inflation trends both globally and nationally and then applies appropriate monetary policy instruments as and when required.

The forecast by the SARB (2015) indicates that headline inflation outlook has improved significantly since November 2014, mainly due to the impact of declining international oil prices. Inflation is therefore expected to remain within the target range of 3 per cent and 6 per cent in 2015.

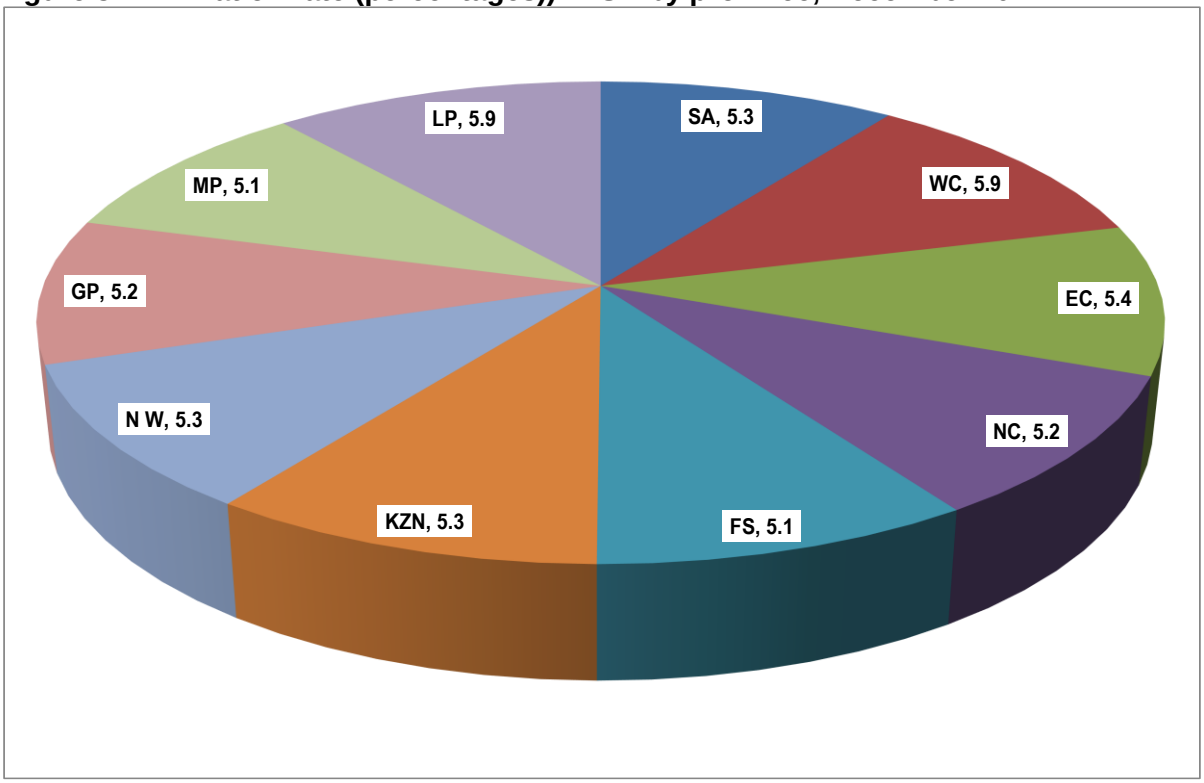
According to the SARB (2015), the average national inflation rate peaked at 6.5 per cent in the second quarter of 2014 and is estimated to have averaged 6.1 per cent at the end of last year. It is now expected to average 3.5 per in 2015, down from the 5.3 per cent projected in November last year. The central bank further expects an inflation rate of 5.5 per cent in 2016.

[23] According to the SARB, Monetary Policy Committee in SA is responsible for the decision-making on appropriate monetary policy stance. The primary objective of monetary policy in SA is to achieve and maintain price stability in the interest of sustainable and balanced economic development and growth. https://www.resbank.co.za/MonetaryPolicy/Pages/MonetaryPolicy-Home.aspx

Figure 3.11 shows that national annual inflation rate[24] eased to 5.3 per cent in December 2014 from 5.8 per cent in November 2014, mainly due to lower cost of food and transport (see table A3.6 in appendix). This estimate is below market expectations and was the lowest since November 2013. It must be noted that food and non-alcoholic beverages index decreased slightly by 0.4 percentage point, between November and December last year (table A3.6).

In KZN, inflation also slowed down to 5.3 per cent in December 2014. The province thus became among those that their inflation rate is lower than or equal to national headline inflation[25]. The provinces with an annual inflation rate higher than national headline inflation rate were WC at 5.9 per cent, LP (5.9 per cent) and the EC (5.4 per cent). Although these provinces are having higher inflation rate as compared to the national headline but they are within the inflation target band of 3 to 6 per cent (figure 3.11).

Figure 3.11: Inflation rate (percentages)) in SA by province, December 2014



Source: Stats SA, 2015

[24] The most important categories in the consumer price index are in the country are; housing and utilities at 24.5 per cent of total weight, transport (16.4 per cent) and food and non-alcoholic beverages at 15.4 per cent (Stats SA, 2015).

[25] Other provinces with inflation lower or equal to the national average rate are namely; North West (5.3 per cent), Northern Cape (5.2 per cent), Gauteng (5.2 per cent), Free State (5.1 per cent) and Mpumalanga (5.1 per cent) (Stats SA, 2015).

Chapter 4: Infrastructure in KZN

4.1 Introduction

It is imperative to conduct an infrastructure spending overview in the province because it provides insights into existing trends and helps identify bottlenecks in the infrastructure delivery value chain. The provincial infrastructure budget allocation for all sector departments is discussed in this chapter, however more detail is provided for the major infrastructure spending.

The government constantly strives to improve infrastructure delivery and has therefore approved the implementation of the Infrastructure Delivery Management System (IDMS) in the province. A summary of the progress made with the implementation and roll out process is provided and the core concepts of the system are highlighted. It is also the role of treasury within the province to monitor and evaluate how sector departments spend public funds, with the aim of determining value for money.

4.2 Infrastructure spending in KZN

4.2.1 Provincial infrastructure overview

It is a largely recognised fact that there exists a positive relationship between infrastructure investment and economic growth and development. Public infrastructure investment is a necessary input to stimulate and sustain growth and development in a region and KZN is no exception. The province has positively contributed towards the national vision of poverty eradication, reducing income inequality and creating employment through infrastructure development. The focus on infrastructure investment towards the development of public infrastructure in the province has been achieved albeit under challenging circumstances of limited physical and financial resources.

According to the IMF(2014)[26], “when public investment in infrastructure is inefficient, higher levels of spending may simply lead to larger budget deficits, without increasing the quantity or quality of roads, schools, and other public infrastructure that can help support economic growth”. Table 4.1 shows that the province has invested the largest portion of the

[26](IMF Survey Magazine, 2014 September 30, The Time is right for infrastructure push. Retrieved from: http://www.imf.org/external/pubs/ft/survey/so/2014/res093014a.htm)

infrastructure budget allocation to the departments of Transport[27], Education and Health respectively.

Table 4.1: Infrastructure baseline allocation 2013/14 to 2014/15

	2013/14		2014/15	
	R'000	%	R'000	%
1. Office of the Premier	R 13 300	0.1	R 17 097	0.1
2. Provincial Legislature	R 4 419	0.0	R 4 685	0.0
3. Agriculture	R 167 697	1.5	R 164 886	1.3
4. Economic Development and Tourism	R 599 655	5.2	R 655 747	5.3
5. Education	R 2 591 418	22.5	R 2 722 349	21.9
6. Provincial Treasury	R 20 677	0.2	R 8 000	0.1
7. Health	R 1 576 129	13.7	R 1 541 776	12.4
8. Human Settlements	R 244 864	2.1	R 166 067	1.3
9. Community Safety and Liaison	R 0	0.0	R 0	0.0
10. The Royal Household	R 13 366	0.1	R 1 063	0.0
11. COGTA	R 20 250	0.2	R 59 903	0.5
12. Transport	R 5 817 828	50.6	R 6 706 878	53.9
13. Social Development	R 220 430	1.9	R 122 312	1.0
14. Public Works	R 90 839	0.8	R 87 034	0.7
15. Arts and Culture	R 70 319	0.6	R 94 012	0.8
16. Sport and Recreation	R 54 032	0.5	R 90 378	0.7
	R 11 505 223	100	R 12 442 187	100

Source: KZN Estimates of Provincial Revenue and Expenditure, 2014

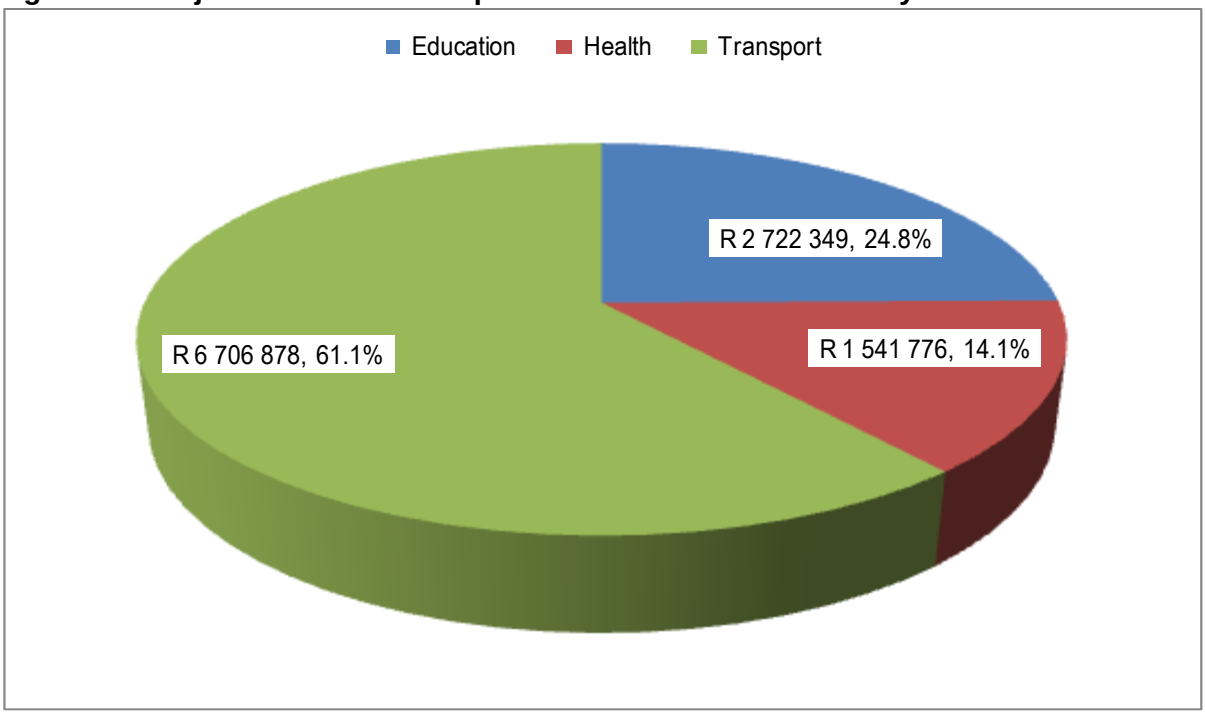
The Department of Transport (DoT) was the largest infrastructure budget beneficiary both in 2013/14 and 2014/15, with an allocation of 50.6 per cent and 53.9 per cent of the total infrastructure budget respectively. Transport infrastructure is a key pillar in the promotion of economic activity and social development through the movement of people, and goods and services. Economic growth and development in the province are therefore largely dependent on the development and maintenance of transport infrastructure. The Department of Education (DoE) was the second largest beneficiary of infrastructure investment, with a 22.5 per cent allocation of the total infrastructure budget in the 2013/14 financial year, and 21.9 per cent allocation in 2014/15. The third largest department allocation went to the Department of Health (DoH), with a budget allocation of 13.7 per cent in 2013/14 and 12.4 per cent in 2014/15.

The province allocated a total baseline amount of R11.5 billion to sector departments for the implementation of infrastructure projects in KZN in the 2013/14 financial year. This budget allocation was increased by 7.6 per cent to a total amount of R12.4 billion in the 2014/15 financial year.

[27] Community-servicing transport infrastructure is categorized as being social infrastructure (http://www.uq.edu.au/boilerhouse/docs/establishing%20standards%20web.pdf)

As mentioned, the departments which benefit the highest allocation of funds are the DoT, DoE and DoH respectively. These departments boast the largest infrastructure allocation because of the major infrastructure projects that they undertake, namely the construction of roads, schools and health care facilities.

Figure 4.1: Major infrastructure departments in 2014/15 financial year



Source: KZN Estimates of Provincial Revenue and Expenditure, 2014

Table 4.2 provides the number of infrastructure projects per department. From the table it can be observed that the DoE has the highest number of projects undertaken followed by the DoH, and the DoT is in third place. The projects are at various stages from planning through to construction. The department with the highest number of projects is not necessarily the one with the highest budget allocation because of the different project specifications per sector. Projects in the health sector are vastly different from those in the education sector.

Table 4.2: Number of projects per department, 2013/14 and 2014/15

	Number of projects implemented 2013/14	Number of projects planned for 2014/15
Transport	130	128
Education	5 038	4 126
Health	404	372

Source: Infrastructure reporting model, 2013

4.2.2 Infrastructure delivery management system

Implementation of Infrastructure Delivery Management System (IDMS) in the province has been intensified through capacity building. IDMS has been implemented within the province to promote the effective and efficient delivery of infrastructure, and to directly support the rendering of services to the communities. This includes encouraging sector departments and implementing agents to implement clean, efficient and effective construction procurement processes with clear delineation of accountability and responsibilities of the various role players, and the assurance of transparency. The ability to achieve the objectives has been strengthened by the appointment of Provincial Infrastructure Technical Assistants. Therefore in the 2013/14 financial year, a review of the KZN-IDMS was undertaken in order to determine the progress with regard to implementation, to ascertain what challenges experienced, as well as to map the way forward.

The KZN-IDMS contains the governance and infrastructure principles that are applicable to the core infrastructure roles of sector departments. It also incorporates the capacitation plan of Public Works as the implementing agent of government infrastructure. The implementation of IDMS in the province is directly focused on the key targets outlined below.

(a) Human resource capacitation and organisational development of infrastructure units

The focus on human resource capacitation aims to ensure that sector departments implementing infrastructure projects have the necessary skills adequately placed within the unit. This process therefore entails conducting the assessments of the organisational structures in departments as well as strengths, weaknesses, opportunities and threats (SWOT) analyses.

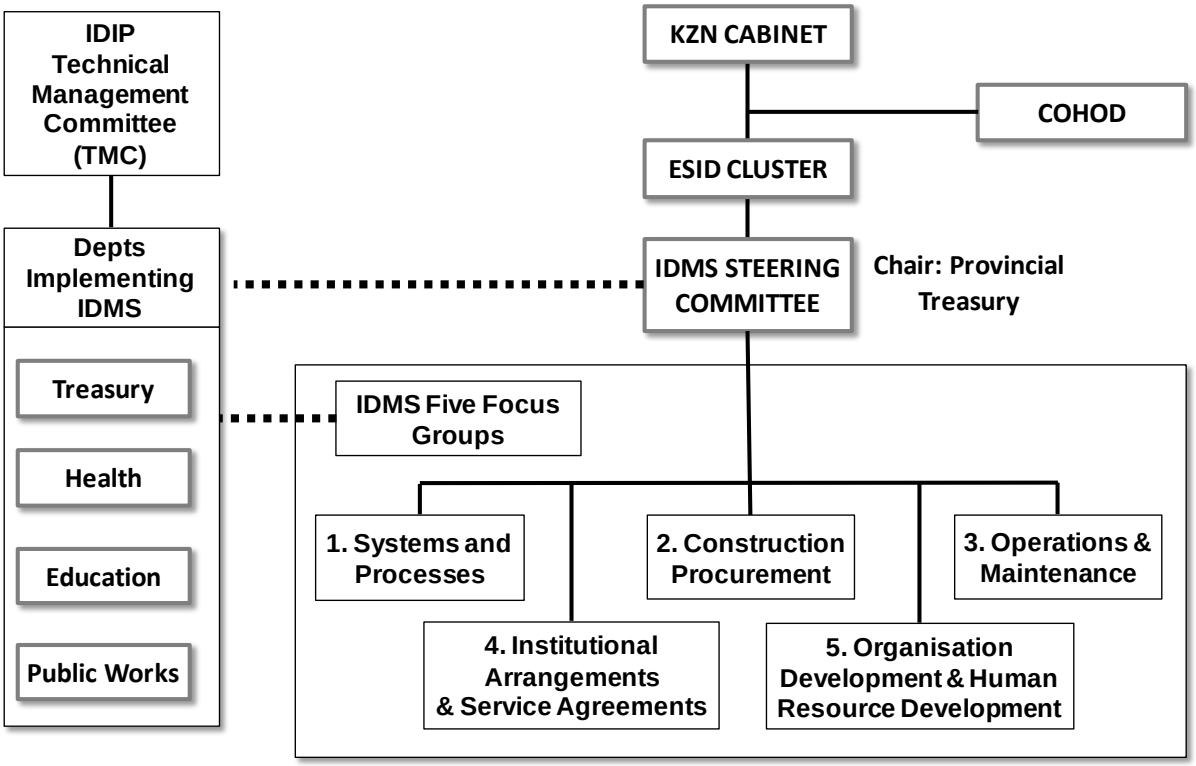
(b) Construction procurement

Construction procurement is a specialised field which also requires a specialised skill set. Hence, policy reforms need to be implemented and the supply chain reviewed in order to separate the processes followed in the procurement of goods and services, when compared with the procurement of construction works professionals.

(c) Systems and processes

With the implementation of IDMS, it was discovered that there needs to be an alignment of systems and processes amongst infrastructure departments in order to streamline service delivery, and through proper co-ordination, achieve efficiency. Lack of co-ordination is the greatest challenge which is currently being experienced with regard to systems because infrastructure departments are using sector-specific systems and processes. The intervention of the IDMS team from treasury is on-going in order to ensure that improvement is realised.

Figure 4.2: KZN-IDMS operating structures



Source: KZN Treasury, KZN-IDMS Framework document, 2012

The following governance structures have been put in place in order to assist with the alignment of systems and processes:

(a) Operations and maintenance

The operations and maintenance focus group is dedicated to addressing issues pertaining to the maintenance of existing fixed assets. The objective is to promote maintenance of existing public infrastructure and ensuring that all the necessary policies are in place. Maintenance of

fixed assets will save government substantial amounts of money on new capital projects in the future.

(b) Institutional arrangements and service level agreements

The institutional arrangements focus group was set up to assist with the framework and policy alignment. According to the KZN-IDMS, Service Delivery Agreements (SDAs) are required between the implementing agents (IA) and the sector departments. The purpose of the SDAs is to formalise the relationship for the rendering of infrastructure services between the two departments. Matters of dispute or non-adherence on the part of departments in terms of the implementation of the signed SDAs will be referred to provincial treasury. Adherence to SDA's must be monitored on a regular basis and reviewed annually.

4.2.3 Monitoring and evaluation

(a) Monitoring

The systematic and routine collection of information from projects and programmes is conducted for four main purposes, firstly to learn from experiences in order to improve practices and activities in the future. The second purpose involves having internal and external accountability of the resources used and the results obtained thereof. Meanwhile, the third purpose includes taking informed decisions on the future of the initiative and tofinally promote empowerment of beneficiaries of the initiative.

Monitoring is a periodically recurring task beginning in the planning stage of a project or programme. Monitoring allows results, processes and experiences to be documented and used as a basis to steer decision-making and learning processes. Monitoring is checking progress against plans. The data acquired through monitoring is used for evaluation.

(b) *Evaluation*

Evaluation relates to assessing, in as systematic and objective manner as possible, a completed project or programme (or a phase of an on-going project or programme that has been completed). Evaluations appraise data and information that inform strategic decisions.Evaluations are intended to assist with the drawing up of conclusions about five main aspects of the intervention, namely; relevance, effectiveness, efficiency, impact and

sustainability. Information gathered in relation to these aspects during the monitoring process provides the basis for the evaluative analysis.

Monitoring and evaluation of programmes and project implementation is crucial in order to realise value for money. Billions of rands are spent each year on various infrastructure projects within the province. The quality and stability of the projects and facilities where funds have been spent is monitored and evaluation reports compiled. These reports assist in identifying possible bottlenecks in the project management value chain and remedial actions taken.

The process of monitoring and evaluation is also essential because infrastructure projects normally take place over multiple financial years. The finances on the projects therefore need to be monitored very closely, to avert incidences of over expenditure, unauthorised expenditure as well as fruitless and wasteful expenditure.

Monitoring and evaluation also assists to identify any challenges experienced by the sector departments, the consultants and the IAs when it comes to the construction of physical public infrastructure. The process of monitoring and evaluation therefore affords all the stakeholders the opportunity to interact, with a view to change what does not work and to replicate those aspects of project management that do work. It also assists with compiling archives repository of the infrastructure that is visited.

4.3 Assessment of funding options for infrastructure delivery at a local government level: A case of KwaZulu-Natal

Public infrastructure can only be funded from either public or private finance, or a combination of both. Traditionally, the bulk of public finance has come from government borrowing. Revenues from taxes are used to repay the ensuing debt over the expected lifetime of these physical assets.

Factors such as low funding, poor planning, population growth, urbanization, tighter health, safety and environmental standards, poor quality control, inferior installation, inadequate inspection and maintenance, construction and operation practices have proven to have a negative impact on municipal infrastructure. This problem is compounded by an increase in the demand for services. These factors impact on the economic and social needs of society.

The infrastructure funding[28] requirements in South Africa indicate that historic and traditional mechanisms of funding infrastructure delivery are inadequate. Alternative funding mechanisms can provide part of the answer to infrastructure needs; however, these mechanisms are not a panacea.

There are several potential benefits associated with alternative funding mechanisms, some of which include the collection of revenue to support the continued provision of safe and efficient infrastructure, supplementing the property tax base, incorporating life cycle costs of infrastructure (i.e., depreciation of infrastructure; operation and maintenance costs resulting from new capital investments), availability of reliable, predictable and dedicated funding to support multi-year infrastructure investment strategies, providing additional options to generate infrastructure funds, and the development of demand management techniques.

Ultimately there are only two sources of funding for infrastructure – government revenue raising (the tax payer) and/or direct user charges. The focus of this section will be on developing a framework for plugging the municipal infrastructure funding gap.

4.3.1 Public Infrastructure and the funding gap in SA

There seems to be fairly wide consensus that the world is experiencing an ever increasing infrastructure deficit which poses serious risks and challenges to development. According to the Development Bank of Southern Africa (DBSA, 2013), municipal infrastructure funding needs will have increased by R251 billion over the 5 year period between 2013 and 2018. This increase is estimated to be split among metropolitan municipalities at R96 billion, secondary municipalities (R50 billion) and under-resourced municipalities (R105 billion).

The DBSA further asserts that the infrastructure funding gap will increase by R105 billion over the 5 years with metropolitan municipalities requiring R36 billion, secondary municipalities R10 billion and under-resourced municipalities R59 billion. Despite their growth, capital transfers to municipalities are deemed to be insufficient to bridge the infrastructure funding gap, and municipal revenues are growing slowly and are under severe pressure.

[28]Funding refers to how infrastructure is paid for. This is opposed to financing, which refers to the way debt and/or equity is raised for the delivery and operation of an infrastructure project.

National Treasury states that envisaged municipal infrastructure would be funded through a combination of capital grants from national government, local cross-subsidisation and the mobilisation of private investment. However, there are clear overlaps with the latter two options which are supposed to supplement the former and ensure suitable service delivery to all citizens.

4.3.2 International experience and literature with regard to plugging the funding gap for local government infrastructure[29]

There has been a long-term trend in the UK of moving away from the public provision of infrastructure financed from general taxation, towards private sector provision (through charges and fees) of both infrastructure and related services. The long-term trend towards private finance and provision seems to have been driven by a combination of the rising costs of infrastructure and the unwillingness of national and local electorates to pay higher taxes. Some of the many ways of raising public finance for infrastructure include the following

(a) ***Property taxes:*** relates payment of local taxes to the capital (municipal tax) or rental (business rates) values of residential and industrial/commercial properties respectively.

(b) ***Property tax incentives:*** under this funding model, businesses volunteer to pay a levy to finance extra services of direct benefit to the area in which they are located.

(c) ***Supplementary business rate:*** levy a supplementary business rate to fund urban development projects.

(d) ***Local betterment tax (planning gain):*** planning gain refers to a situation where local authorities secure benefits from developers that do not relate to the development itself.

(e) **Local betterment tax (planning obligations):** these are negotiated agreements between planning authorities and developers, with the latter contributing to the cost of infrastructure or services the local authority considers necessary to facilitate a proposed development or offset any adverse impacts it causes.

(f) **Infrastructure charges (local tariffs):** municipality use formulae and standard charges payable in tranches by developers to fund community facilities and infrastructure needed to support expansion plans.

(g) **Infrastructure charges (statutory planning charge):** municipalities apply new planning charges to new developments, alongside negotiated contributions for site-

[29]The views expressed in this section are those of the author (Dr C Coetzee) and might not necessarily reflect the views of the Provincial Treasury.

specific matters. Charge income will be used entirely to fund the infrastructure identified through the development plan process.

(h) Infrastructure charges (community infrastructure levy): municipalities levy the charges against developers in order to provide top-up funding for infrastructure.

(i) Infrastructure charges (social cost tariff): the tariff, payable by developers, would be paid as compensation for communities (via their local municipalities) for wider development costs. It is a shift from a marginal cost (site-specific) approach to the financing of infrastructure by developers to an average cost (municipality-wide) approach.

(j) Infrastructure charges (impact fees): fees payable by developers to cover the broader costs imposed upon municipalities by general urban development.

(k) Land value tax: annual land value tax on all sites, built and undeveloped, urban and rural. This is not a transaction tax and therefore should not deter market transactions. It taxes ownership of all land, not just sites at a particular stage of development.

Profiled municipal best practices showed evidence of one or more of the following features:

(a) Innovative funding sources or successful user-pay approaches to fund infrastructure

(b) Recent approval for significant infrastructure investments or expenditures, especially significant transportation works

(c) Infrastructure investments to support quality of life in the community and/or to achieve corporate objectives

(d) A structured decision-making matrix for funding allocation decisions that formally compares or rate municipal infrastructure functions with other municipal services; and

(e) Evidence of a formal process to gain public and special interest group input or support for infrastructure funding requests.

The alternative funding mechanisms profiled and presented in the guide include among others special levies. This method refers to a particular residential or commercial tax, a general levy on the property tax or a rate base/utility levy for residential and/or commercial properties. Typically, this method is accompanied by a special fund established by the municipality to manage the special levy revenues.

The development fees method, in its basic form, is an economic instrument that ensures municipalities have a revenue source to fund the municipal infrastructure required as a result of new private developments. The utility model entails management of capital assets, operations and maintenance on a cost-recovery basis through fees for service. Corporate

sponsorships allow private companies to get some form of public recognition through advertising, signage or monuments, for example, in exchange for significant donations or strategic funding arrangements to cities to pay for the operation and maintenance (O&M) of facilities or recreational areas.

With the strategic budget allocations approach, a private company or non-governmental organization forms a partnership with a municipality often, but not necessarily, following an open competitive bid process. This arrangement could be established for road or bridge infrastructure, utilities such as water and sewer, solid waste services or recreational facilities. The partnership could be a specific infrastructure project or for a package of services, or even an exchange of services. The method typically involves private sector capital financing. The arrangement could have the municipality providing a monthly lease rate to the private contractor. Often, a private partner is willing to finance the capital for a project in exchange for a set rate or lease agreement, which allows a municipality to meet a need without having to raise the capital to finance a project. The funding partnerships method entails strategically setting aside certain moneys collected from a portion of the tax bill or a portion of a rate bill into a special fund. The special fund is invested, and interest earned is reinvested, with the goal of having a special fund for certain types of capital for future needs.

The Department of Water Affairs commissioned a project to revise the pricing strategy for water use charges and to develop a funding model for water infrastructure development. The report found that when it comes to fiscal support, it is not relevant whether this is obtained through general taxation or treasury bonds. Public sector institutions may build capital reserves though tariffs that are designed to exceed costs, which are intended to be used for infrastructure expansion, upgrading or refurbishment. The same also have access to commercial sources of finance through loans or bonds. Equity investment by the private sector may be through a public-private partnership (PPP) or an entirely private concession, while donor support and green funds were another option.

The Australian government initiated a report that makes several recommendations to support the infrastructure drive in Australia. These recommendations include expanding the use of the PPP process and considering its use for all major infrastructure projects. PPPs have been shown to lower project costs, reduce construction times and bring innovations in design and construction.

The development of capital markets (to create more options for private investment in infrastructure debt), as well as the removal of barriers to infrastructure investment caused by distortions in the tax system have also been identified as being instrumental to the success of infrastructure delivery. The development of infrastructure markets, especially water, electricity and roads is essential. This implies to move towards greater private investment and pricing that reflects full-cost recovery and a return on investment, with appropriate regulation in place to safeguard consumers and encourage efficient investment is also a key factor. In addition, Nedbank has highlighted four PPP "best practice" areas as being those of rigorous project-preparation, bankable feasibility studies, balanced risk allocation and regulation, and a conducive enabling environment.

According to the Productivity Commission Inquiry Report (2014)[30] released by the Australian government, the funds pay for public infrastructure ultimately have to come from those who benefit from it (through direct charges on users and other beneficiaries), or from the wider community through their governments (using taxation and other sources of public revenue).

The report highlights various mechanisms to fund public infrastructure, such as user charges[31], developer contributions[32] and value capture[33] ; which consists of the following:

(a) Betterment levies:individuals and businesses in a given area are required to fund specific infrastructure ;
(b) Tax increment financing: uses the expected increase in property tax revenue as security to finance the infrastructure;
(c) Hypothecation of tax increments to an infrastructure fund: reinvesting some of the returns from past projects back into an infrastructure fund and
(d) Property development:selling development rights as part of a tender to build public infrastructure.

From the issues highlighted above, there is a clear need for a radical change of scale in the financing volumes for infrastructure across cities in African countries. Crucial areas where intervention is urgently needed, according to Gianoli and Bongwa (2013), are with the decentralisation processes and endogenous financing. The authors maintain that empowering local governments to generate their own resources to finance investments in

[30] http://www.pc.gov.au/inquiries/completed/infrastructure/report
[31] In principle, user charges (prices) based on the (efficient) cost of provision should be the default option for funding infrastructure.
[32] Developer contributions are up-front contributions that property developers are required to make to infrastructure associated with the land they develop.
[33] Value capture is an approach that seeks to fund infrastructure from a wider range of beneficiaries than users.

infrastructure and the local financial markets, as well as creating a policy environment for general Municipal bonds or project specific bonds that taps into pension and mutual funds need to be developed and strengthened.

4.3.3 Non-traditional or alternative local government infrastructure funding mechanisms

As the name implies, non-traditional or alternative funding mechanisms are not the norm, but rather the exception; not because they cannot work, but rather because of a limited understanding and appetite to employ them for various reasons. Sponsorships/donations and grants are an ideal source of funding for infrastructure delivery since there is no costs involved to the municipality, and can be directly made to either the private or the public. These include international grants or "soft"[34] loans which are made available from international countries, organizations or banks. This is often managed by the DBSA, and municipalities must make application in a prescribed format and supply all required information. Certain municipalities lack the technical expertise to complete such applications; hence assistance is available from certain government departments or private consultants.

Commercial finance through loans and bonds or capital markets has huge potential and is in general very seldom used. However, this source is only available for the few big municipalities, and that could potentially have political ramifications. Also, some municipalities are over-borrowed so they have little room to increase their borrowings.

Equity investment, or infrastructure markets, refers to the PPP mechanism, which theoretically is attractive, but practically seems to be averted by both the private sector and public sector. Tax increment financing uses the expected increase in property tax revenue as security to finance the infrastructure. The future income generated from the project/development should be ring fenced to ensure financial viability. Municipal bonds are sold to investors who expect a reasonable return on investment. Only the larger municipalities would be able to service such bonds.

Economic/financial incentives/developer abatement relates to the use of the municipal tariff and tax policy for infrastructure delivery. It uses the tax and charges instruments of the

[34] Financing that offers flexible or lenient terms for repayment, usually at lower than market interest rates (www.businessdictionary.com)

municipality as incentives. This mechanism will be discussed in more detailed below since it's the author's view that it holds the most potential.

Many local governments offer incentives for current and/or potential investors. The offering of investment incentives and business attraction and retention measures seems to be a worldwide practice in both developed and developing countries. Governments, including local governments, offer such incentives to attract and grow investment, to steer investment into favoured industries and/or regions, or to influence the character of an investment.

Governments also use such incentives as business retention measures to either keep a business from leaving or try to keep a facility from shutting down that are to assist businesses in distress (see for example City of Cape Town, Johannesburg and Nelson Mandela Bay Municipality investment incentive policies).

The fundamental or underlying principle(s) of the economic/financial incentives/developer discount funding mechanism is identical to the well-used and widely accepted business attraction and retention incentive policy method. The municipality would have a specific objective of increasing investment and thus job creation amongst others which it does not have the means to directly achieve, and therefore is dependent on an external party (private sector). Unfortunately if the risk-reward trade-off or the value proposition for the external party is insufficient to support the municipality in achieving the objective, there is no reason for the external party to support the municipality. The municipality would therefore have to persuade the external party to support it.

The use of financial and/or non-financial instruments is the primary tools at the municipality's disposal. The municipality uses these financial and/or non-financial instruments to convince or persuade the external party to enter into a mutual beneficial agreement that will help the municipality achieving its objective.

The very same scenario as above can be applied to the delivery of public infrastructure,that is, the municipality has some infrastructure delivery objective. It does not have the means (funding) to achieve the objective and therefore has to convince/persuade an external party to support it. The municipality has to offer the external party financial and/or non-financial incentives to enter into a mutual beneficial agreement. Without the financial and/or non-financial incentives there is no reason for the external party to enter into the agreement.

Critical to the success of these incentives for both parties is that there must be a combination of financial and/or non-financial incentives, and these should be relevant to the new public infrastructure if (and only if) it is part of a larger residential, commercial or industrial development.

The financial and/or non-financial incentives will then be applicable to the full development, that is, the incentives on the development compensates for the costs of the delivery of the public infrastructure. Financial incentives can include exemptions or discounts on inter alia property taxes, building plans and capital contributions and concessions on water, electricity and refuse removal services, but only for the new. This would ensure that there are no direct budget implications for the municipality.

The municipality does not directly fund the development. The developer funds the development including the public infrastructure. However, the municipality forgoes the full rates and taxes benefits of the development for a certain number of years to compensate the developer for the public infrastructure (opportunity costs for the municipality). The municipal incentives must focus on the cash flow of the development and not the capital expenditure of the development. The financial and/or non-financial incentives must not require a complex administration in order to achieve success using this method.

4.3.4 Conclusion

Fixed capital formation is arguably one of the most important economic variables in SA. There is a wide consensus that fixed capital formation is a must if the country is to increase its economic growth rate to levels needed to address poverty and inequality. There is also consensus that public fixed capital formation is absolutely pivotal for private fixed capital formation.

The reality is, unfortunately, that public fixed capital formation is inadequate to facilitate and support private fixed capital formation, especially at a local government level. The majority of municipalities simply do not have the financial resources to supply the needed public fixed capital and therefore private sector fixed capital formation is effectively discouraged. It is therefore of vital importance that careful, but enthusiastic consideration is given to the use of alternative funding models for the provision of public fixed capital. It is recommended that tariff and taxes abatement programme be used to encourage the private sector to supply the public fixed capital. The abatement programme is an adaptation of an existing programme that is used to facilitate business establishment and retention.

Chapter 5: Estimation of the Spatial Autocorrelation Function for KwaZulu-Natal[35]

5.1 Introduction

The first law of geography, according to Tobler (1976), states that everything is related to everything else, but near things are more related than distant things. LeSage (2009) points out that it is commonly observed that sample data collected for regions or points in space are not *independent*, but rather *spatially dependent*, which means that observations from one location tend to exhibit values similar to those from nearby locations. Spatial dependence in a collection of sample data means that observations at location *i* depend on other observations at locations *j≠ i*. Formally LeSage (2009) state:

$$Y_i = f(y_j) \text{ where } j = 1, \ldots\ldots, \text{n} \text{ and } j \neq i \quad (5.1)$$

LeSage (2009) states that there are predominantly two reasons why sample data observed at one point in space will be dependent on values observed at other locations. First, data collection of observations associated with spatial units such as zip-codes, countries, states, census tracts and so on might reflect measurement error. This would occur if the administrative boundaries for collecting information do not accurately reflect the nature of the underlying process generating the sample data.

A second and perhaps more important reason, according to LeSage (2009) is spatial dimension of socio-demographic, economic or regional activity which may truly be an important aspect of a modelling problem. Regional science is based on the premise that location and distance are important forces at work in human geography and market activity. All of these notions have been formalized in regional science theory that relies on notions of spatial interaction and diffusion effects, hierarchies of place and spatial spill-overs.

Spatial autocorrelation is the formal property that measures the degree to which near and distant objects are related, that is, it measures the degree to which a set of spatial features and their associated data values tend to be clustered together in space. If there is any systematic pattern in the spatial distribution of a variable, it is said to be spatially

[35] The views expressed in this chapter are those of the author and do not necessarily represent those of the KZN Provincial Treasury.

autocorrelated, that is, if nearby or neighbouring areas are more alike, they represent a positive spatial autocorrelation. Whereas a negative autocorrelation describes patterns in which neighbouring areas are not alike. On the other hand random patterns exhibit no spatial autocorrelation. The degrees of spatial autocorrelation are illustrated in figure 5.1.

5.2 The provincial point of reference

KZN province is located in the southeast of SA. It borders three other provinces, namely EC, MP and the FS. The province also borders countries like Mozambique, Swaziland, and Lesotho, along with a long shoreline on the Indian Ocean. The province covers a land area of 93 378 square kilometre (km²) or 7.65 per cent of the total land area in SA.

As seen in section 2.2 of chapter two of this publication, there are about 10.7 million people residing in the province or about 19.8 per cent of the total national population. The province has a population density of almost 110 people per km², significantly less than the 602 people per km² recorded in the GP, but significantly greater than the 48 people per km² recorded in the MP.[36]

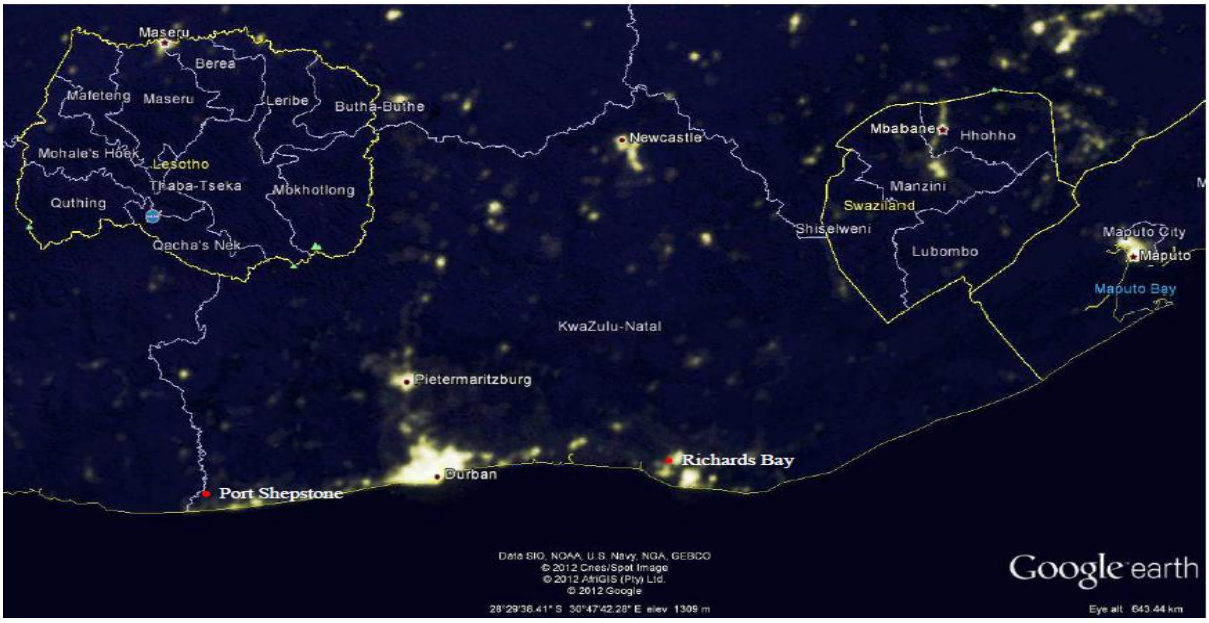
In 2013, the real GDP in KZN was estimated at about R471.74 billion.[37] KZN consists of 52 local economic regions. These local economic regions are demarcated by the Municipal Demarcation Board[38]. The province also seems to be a fairly concentrated province, for example, about 52 per cent of the provincial population resides in the five main local economies, while 77 per cent of the provincial GDP is produced in the five main local economies.

The personal per capita income is more than double in the five main local economies compared to the rest of the province, whereas poverty levels are almost half in the five main local economies compared to the rest of the province. The five main local economies cover only about 9.5 per cent of the total provincial land cover, yet population density levels are more than 13 times higher in the five local economies compared to the rest of the province. Furthermore, the five local economies account for about 89 per cent, 80 per cent and 79 per cent of all new Office & Banking Space, Shopping Space and Industrial & Warehouse Space from 2001 to 2012.[39]

[36] Own calculations using data from Global Insight (2014)
[37] See section 3. 4 in chapter three of this publication
[38] See the South African Demarcation board available from http://www.demarcation.org.za/ , accessed on the 13 December 2014
[39] Own calculations using various data sources such as Stats SA, Global Insight and other

The five local economies which are also the major municipal regions are firstly eThekwini Municipality (Durban). As seen in section 3.4, chapter three of this report, eThekwini is the economic hub of KZN and the major international trade centre in SA. The second region is Msunduzi Municipality (Pietermaritzburg). It is the second largest city within KZN and is the capital city of the province. The third critical region is Umhlathuze Municipality (Richards Bay, Empangeni). This municipality is the home of manufacturing in the province, boasting two world class aluminium smelters and the world's largest export coal terminal. Hibiscus Coast Municipality (Port Shepstone) is the fourth region contributing significantly to the economy of the province. It covers an area of approximately 90 km^2 of coastline, comprising of 21 beaches and is the premier tourism destination in the South Africa. The final region is Newcastle Municipality (Newcastle). Situated in the northern corner of the province, it has significant coal deposits and agricultural land.

Figure 5.1: Night satellite map of KZN, 2012



Source: Google Earth, 2012

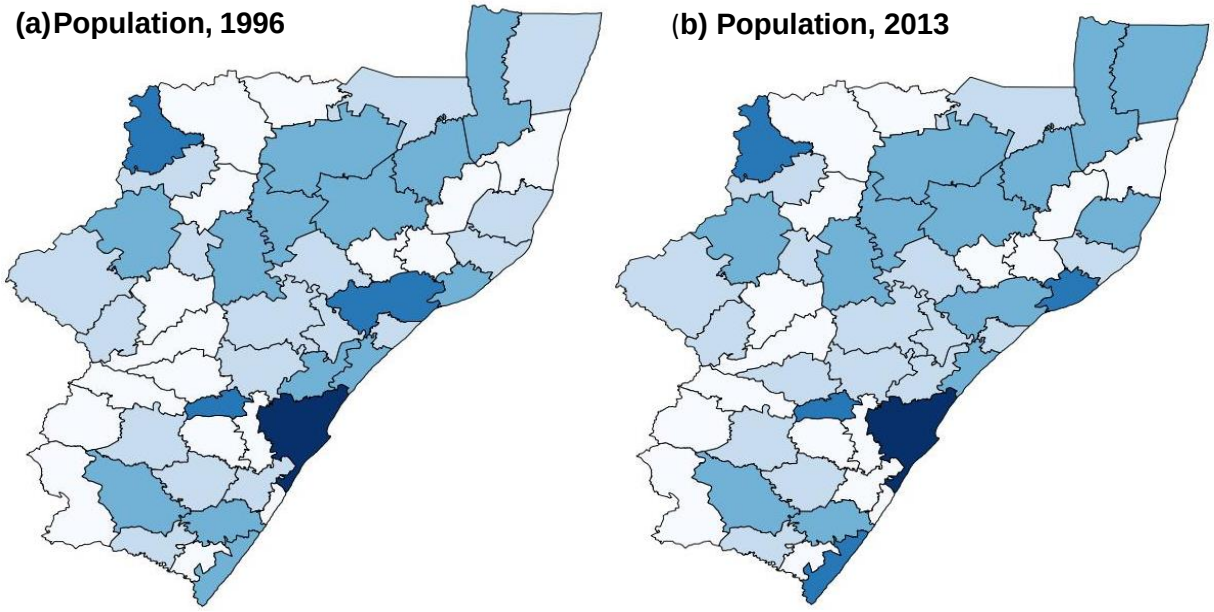
The location and economic dominance of the five local economies are clearly displayed in figure 5.1, night satellite map of the province. It is evident from the figure that the economic activity of the province is located (with the exception of Newcastle) along the N2 from Port Shepstone to Richards Bay and along the N3 from Pietermaritzburg to Durban. In-land or rural KZN seems relatively starved of economic activity.

5.3 Visualizing the data

Geographical clusters and /or regions can be analyzed and described by a number of different spatial association statistics as well as visually.[40] The following figures resent a colored map that allows the visualization of the spatial pattern of each of the provincial economic variables. The geographical information system (GIS) programme was used for the analysis.[41]

Figure 5.2: The population (number of people) properties in KZN, 1996 and 2013

(a) Population, 1996 **(b) Population, 2013**



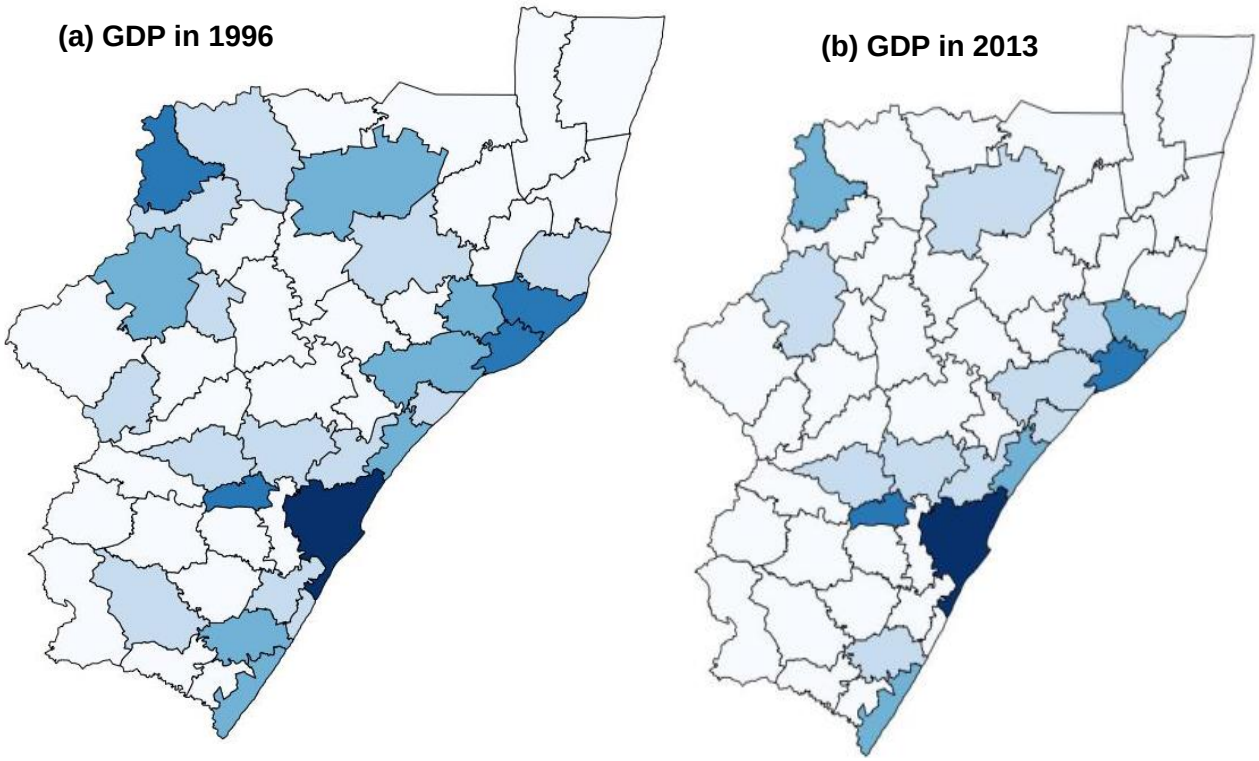
Source: Own calculations using data from Stats SA (2014), Global Insight (2014) and KZN Provincial Model[42]

Dark areas indicate high levels or concentration of the particular variable in that municipality whilst light areas indicate low levels or concentration of the particular variable in that municipality. The population graphs display the population (number of people) properties during 1996 and 2013 in the province. It seems evident that the majority of the population resided near the coast and in the north of the province. There also seems to be some spatial association especially around the Abaqulusi, Ulundi, Nongoma and Jozini municipalities. However, it seems that the population in KZN has been fairly randomly distributed and has changed very little from 1996 to 2013 (figure 5.2).

[40] Visually in this case refers to the quick and intuitively when the eye and brain look at the map.
[41] Data was sourced from various sources including Stats SA, Global Insight and other sources.
[42] The KZN Provincial Model is developed by Dr C Coetzee and the views expressed in this model are his and do not necessarily represent those of the KZN Provincial Treasury.

On the other hand, figure 5.3 shows the GDP properties suggesting that economic activity in the province has become more concentrated since 1996, with the majority of economic activity located in Richards Bay, Durban, Pietermaritzburg and Port Shepstone corridor. This indicates some degree of spatial association. The population and GDP properties seem to suggest some disjuncture between the location of the population and economic activity in the province.

Figure 5.3: The provincial gross domestic product (GDP) properties, 1996 and 2013



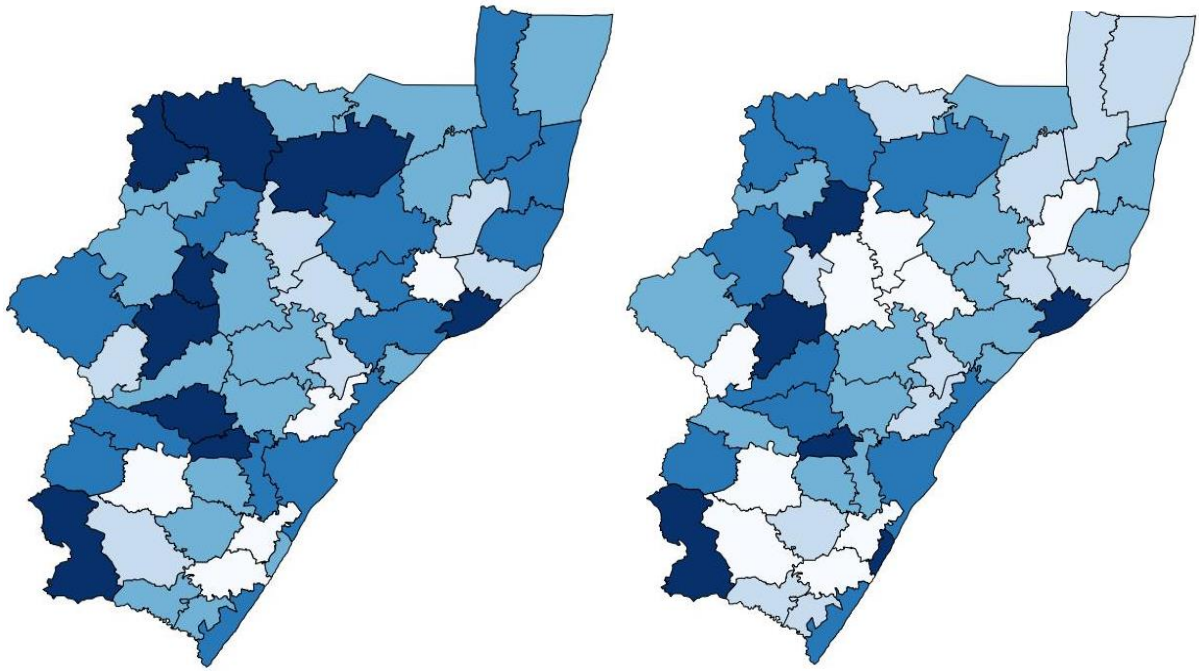
Source: Own calculations using data from Stats SA (2014), Global Insight (2014) and KZN Provincial Model[43]

The GINI coefficient properties in figure 5.4 suggest a fairly random distribution of inequality in the province that has marginally improved over time. The education properties in figure 5.4 also seem fairly randomly distributed, but with some concentration along the coast.

[43] The KZn Provincial Model is developed by Dr C Clive and the views expressed in this model are his and do not necessarily represent those of the KZN Provincial Treasury.

Figure 5.4: GINI coefficient properties for the province, 1996 and 2013

(a) GINI coefficient in 1996 **(b) GINI coefficient in 2013**



Source: Own calculations using data from Stats SA (2014), Global Insight (2014) and KZN Provincial Model[44]

Illustration for employment properties in 1996 and 2013 also seem to be fairly randomly distributed in the province, again with some concentration along the coast. Unfortunately employment does not seem to have improved much since 1996 in the province. Disposable income distribution in the province seems very similar than employment distribution.

As expected, the gross operating surplus properties, measuring profitability suggest a high level of concentration of profitability in the province. Fortunately it seems that profitability has become a bid more dispersed in the province since 1996, while the provincial government expenditure and municipal capital expenditure per capita seems fairly randomly distributed during 2012. Spatial illustrations further indicate that manufacturing and agriculture during 2013 in the province seem fairly concentrated in certain municipalities.

Figures 5.1 to 5.4 suggests that the province is in general characterized by spatial randomness, however, there are some indications that the concentration levels in the province has been increasing and have been clustering around the coastal areas. The

[44] The KZN Provincial Model is developed by Dr C Clive and the views expressed in this model are his and do not necessarily represent those of the KZN Provincial Treasury.

Richards Bay, Durban, Port Shepstone and Pietermaritzburg corridor appears to be in particular very attractive from a clustering point of view. There also seems to be some spatial disjuncture between purely economic and so-called socio-economic variables in the province for example, the poverty seems fairly randomly distributed whilst disposable income are fairly concentrated.

5.4 Determination of the spatial weights matrices

Before constructing a spatial weights matrix, it is imperative that a spatial contiguity matrix by using weight function is made (Smith, 2009). A *spatial weight matrix* summarizes potential spatial relations between *n* spatial units. Here each *spatial weight*, w_{ij}, typically reflects the "spatial influence" of unit *j* on unit *i*. For *n* elements in a geographical system, a spatial contiguity matrix, *C*, can be expressed in the form:

$$C=\begin{pmatrix} c_{11} & c_{12} & \cdots & c_{1n} \\ c_{21} & c_{22} & \cdots & c_{2n} \\ \vdots & \vdots & \cdots & \vdots \\ c_{n1} & c_{n2} & \cdots & c_{nn} \end{pmatrix} \qquad (5.2)$$

Where *cij* is a measurement used to compare and judge the degree of nearness or the contiguous relationships between region *i* and region *j*. The brief spatial weights matrix is defined in appendix B.

5.4.1 Applying *Moran's I statistic*

Moran's I is a measure of spatial autocorrelation. It was developed by Patrick Alfred Pierce Moran (Ward and Gleditsch, 2007). *Moran's I* takes the form of a classic correlation coefficient in that the mean of a variable is subtracted from each sample value in the numerator. This results in coefficients ranging from (–1) to (+1), where values between (0) and (+1) indicate a positive association between variables, values between (0) and (-1) indicate a negative association, and (0) indicates there is no correlation between variables.

The expected value of *Moran's I*[45] under the null hypothesis of no spatial autocorrelation is:

$$\left\{E(I) = \frac{-1}{N-1}\right\} \tag{5.3}$$

Results from *Moran's I* indicates that there seem to be some fairly big differences between the four weight matrices, that is, the average *Moran I* statistics being 0.055 using the spatial contiguity weight matrix versus -0.031, using the k-nearest neighbour weight matrix. It is also interesting to note that the vast majority of the *Moran I* statistics are close to zero, that is, spatial randomness.

Overall there are much more negative *Moral I* statistics (38) than positive *Moran I* statistics (27). However, it does seem that the *Moran I* statistic of many of the variables have increased (positive spatial autocorrelation) over the period, for example agriculture increased from 0.04 in 1996 to 0.047 in 2013, income increased from -0.018 to 0.097 and unemployment increased from 0.005 to 0.017. Manufacturing had the highest *Moran I* statistic (0.37) whilst provincial government expenditure had the lowest *Moran I* statistic (-0.1).

The results seem to suggest that the province experienced almost no/or very little spatial dependence from 1996 to 2013, that is, the economic outcomes or indicators from a particular region has been very much autonomous or independently generated from a provincial spatial point of view.

5.4.2 Applying *Geary's C* statistic

Geary's C is defined as:

$$C = \frac{(N-1)\sum_i \sum_j w_{ij}(X_i - X_j)^2}{2W\sum_i (X_i - \bar{X})^2} \tag{5.4}$$

where *N* is the number of spatial units indexed by $(i)$and (j); x is the variable of interest; $\bar{\mathbf{x}}$ is the mean of x; w_{ij} is a matrix of spatial weights; and w is the sum of all w_{ij}. The value of *Geary's C* lies between 0 and 2. 1 means no spatial autocorrelation. Values lower than 1

[45] (Wikipedia, http://en.wikipedia.org/wiki/Moran's_I) and the full detail of the model is illustrated in appendix B.

demonstrate increasing positive spatial autocorrelation, whilst values higher than 1 illustrate increasing negative spatial autocorrelation (Sawada, 2009).

The results [46] appear to suggest that there isn't a large difference between the four weight matrices, that is, the average *Geary C* statistics being 0.98 using the spatial contiguity weight matrix in comparison to the 1.06 using the radial distance weight matrix. It is also interesting to note that the vast majority of the *Geary C* statistics is close to one, that is, spatial randomness.

Overall there are more less than one *Geary C* statistics (34) than more than 1 *Geary C* statistic (31). However, it does seem that the *Geary C* statistic of many of the variables have decreased (positive spatial autocorrelation) over the period. Manufacturing had the lowest average *Geary C* statistic (0.854) whilst provincial government expenditure had the highest average *Geary C* statistic (1.078).

The results of the *Geary C* statistics support the results of the *Moran I* statistics, that is, the economic outcomes or indicators from a particular region have been generated independently from a provincial spatial point of view.

5.5 Comparison of *Moran's I* and *Geary's C*

Griffith (1987) notes that simulation experiments suggest that the inverse relationship between *Moran's I* and *Geary's C* is basically linear in nature. Departures from linearity are ascribed to differences in what each of the two indices measure, that is, *Geary's C* deals with paired comparisons and *Moran's I* with covariations (Sawada, 2009). The ranked correlation coefficient is -0.94, that is inverse and very strong as expected.

The histogram indicates that distribution of the *Moran I* and *Geary C* statistics suggests no-spatial autocorrelation or spatial randomness. The adjusted R^2 is estimated at 0.88 and the t-statistics is estimated at -21.9. Results further suggest that the relation between *Moran's I* and *Geary's C* is linear and either statistic will essentially capture the same aspects of spatial autocorrelation. Finally, results also suggest that it is only manufacturing that has a

[46] The *Geary's C* results using a number of different economic variables for 1996, 2004 and 2014 for each weight matrix are available on request.

statistically significant *Moran I* statistics from the included economic variables. It is therefore possible to argue that the province has experienced very little if any spatial autocorrelation.[47]

5.6 Summary and Conclusions

The aim of this chapter was to test the hypothesis of spatial correlation using four different weight matrices. The *Moran I* and *Geary C* methods were applied to 65 economic variables to estimate the levels of spatial correlation in the province. Spatial statistics are used to analyse data which have a spatial location. Spatial statistics give explicit consideration to spatial properties like location, spatial patterns, spatial arrangement and distance. This spatial dimension tends to make spatial statistics more complex than 'ordinary' non-spatial statistics.

It is suggested that spatial phenomena often exhibit a high degree of spatial correlation, that is, sample data collected for regions or points in space are not independent, but rather spatially dependent, which means that observations from one location tend to exhibit values similar to those from nearby locations.

The results suggest that the province has experienced very little (if any at all) spatial correlation from 1996 to 2013. The results strongly suggest spatial heterogeneity. However the results also suggest that concentration/dependence levels in the province have increased especially around the coastal regions.

[47] The results and the graphical demonstrations of *the Moran's I* & Geary's C, rank difference and other are provided in the full paper which is available on request.

Chapter 6: Provincial Economic Risk Index[48]

6.1 Economic risk/conditions variables

The economic risk/condition variables that are included in the monitor are indicated in table 6.1 below. The relative sector weights for the economic risk/condition variables are also displayed and add up to 100 per cent. The weights at this stage are purely assumed weights and not based on any econometric modelling or calculations simply because of a lack of sufficient time series data. However, it must be mentioned that various weightings have been modelled with very little impact on the overall results.

Table 6.1: Economic risk/condition variables and their associated sector weights

Relative Economic Sector Impact	Rand/Dollar (Rand per USD)	Interest rate (R186 = %)	Inflation (pa %)	Oil Price (USD)	Sugar price (US cents per pound)	Gold Price (USD)	Credit extended to the domestic private sector (Rm)	Physical volume of electricity production (2005 = 100)	Total Weights
Agriculture, forestry and fishing	20.0%	10.0%	5.0%	17.0%	30.0%	0.0%	10.0%	8.0%	100.0%
Mining and quarrying	30.0%	0.0%	0.0%	10.0%	0.0%	40.0%	0.0%	20.0%	100.0%
Manufacturing	35.0%	20.0%	5.0%	10.0%	0.0%	0.0%	10.0%	20.0%	100.0%
Electricity, gas and water	10.0%	5.0%	5.0%	20.0%	0.0%	0.0%	10.0%	50.0%	100.0%
Construction	10.0%	30.0%	10.0%	15.0%	0.0%	0.0%	30.0%	5.0%	100.0%
Wholesale & retail trade; hotels & restaurants	10.0%	35.0%	20.0%	10.0%	0.0%	0.0%	25.0%	0.0%	100.0%
Transport , storage and communication	10.0%	20.0%	10.0%	30.0%	0.0%	0.0%	20.0%	10.0%	100.0%
Finance, real estate and business services	10.0%	35.0%	10.0%	10.0%	0.0%	0.0%	30.0%	5.0%	100.0%
Personal and General Government Services	10.0%	35.0%	20.0%	0.0%	0.0%	0.0%	30.0%	5.0%	100.0%

Source: Own calculations using KZN Economic Model, 2014

Table 6.2: Implications of a change in the economic risk/condition variables

Economic Indicator	Unit	Movement	Decreasing risk	Increasing risk
Rand/Dollar exchange rate	Rand per USD	Appreciate or depreciate	Depreciate	Appreciate
Interest rate	Percentage R186 bond	Increase or decrease	Decrease	Increase
Inflation rate	Percentage per annum	Increase or decrease	Decrease	Increase
Oil price	USD per barrel	Increase or decrease	Decrease	Increase
Sugar price	US cents per pound	Increase or decrease	Increase	Decrease
Gold price	USD per ounce	Increase or decrease	Increase	Decrease
Credit extended to the domestic private sector	Rand million	Increase or decrease	Increase	Decrease
Physical volume of electricity production	Index, 2005 = 100	Increase or decrease	Increase	Decrease

Source: Own calculations using KZN Economic Model, 2014

[48] The views expressed in this chapter are those of the author and do not necessarily represent those of the KZN Provincial Treasury.

The theoretical impact of a change in each of the economic risk/condition variables are illustrated in table 6.2. For example, when the rand/dollar exchange rate depreciates the risk associated to the provincial economy is assumed to be decreasing because of the potential improvement in the economic conditions associated with a depreciating currency (increased exports for example).

6.2 Behaviour of the economic risk/conditions variables

The behaviour or movement of the economic risk/conditions variables during 2014 is shown table 6.3.

Table 6.3: Behaviour of the economic risk/conditions variables, January 2014 to December 2014

	Rand/Dollar (Rand per USD)	Interest rate (R186 = %)	Inflation (pa %)	Oil price (USD)	Sugar price (US cents per pound)	Gold price (USD)	Credit extended to the domestic private sector (Rm)	Electricity generated and available for distribution (Gigawatt-hours)
Jan-14	11.2	8.9	5.8	107.0	15.7	1 244	2 455 950	19 657
Feb-14	10.7	8.5	5.9	108.0	16.9	1 332	2 496 031	19 449
Mar-14	10.6	8.4	6.0	108.0	17.9	1 296	2 522 866	19 217
Apr-14	10.6	8.4	6.1	108.0	18.2	1 296	2 522 110	19 618
May-14	10.4	8.3	6.6	109.0	18.2	1 256	2 537 089	19 297
Jun-14	10.6	8.3	6.6	113.0	18.1	1 316	2 562 749	19 050
Jul-14	10.7	8.3	6.6	106.5	18.7	1 296	2 583 386	19 102
Aug-14	10.6	8.0	6.3	102.5	17.7	1 290	2 594 325	19 021
Sep-14	11.3	8.3	6.4	97.2	16.5	1 216	2 615 435	19 484
Oct-14	10.9	7.9	5.9	86.2	16.5	1 200	2 610 611	19 306
Nov-14	11.0	7.6	5.9	77.8	15.9	1 191	2 643 032	19 137
Dec-14	11.6	8.0	5.8	57.9	15.0	1 201	2 615 851	19 237

Source: Own calculations using KZN Economic Model, 2014

Figure 6.1 indicates the behaviour of the economic risk variables in index format (2005 = 100) from January 2011 to December 2014. Evidence from both table 6.3 and figure 6.1 shows that during 2014, the risk index was adversely or positively influenced by the following variables[49]:

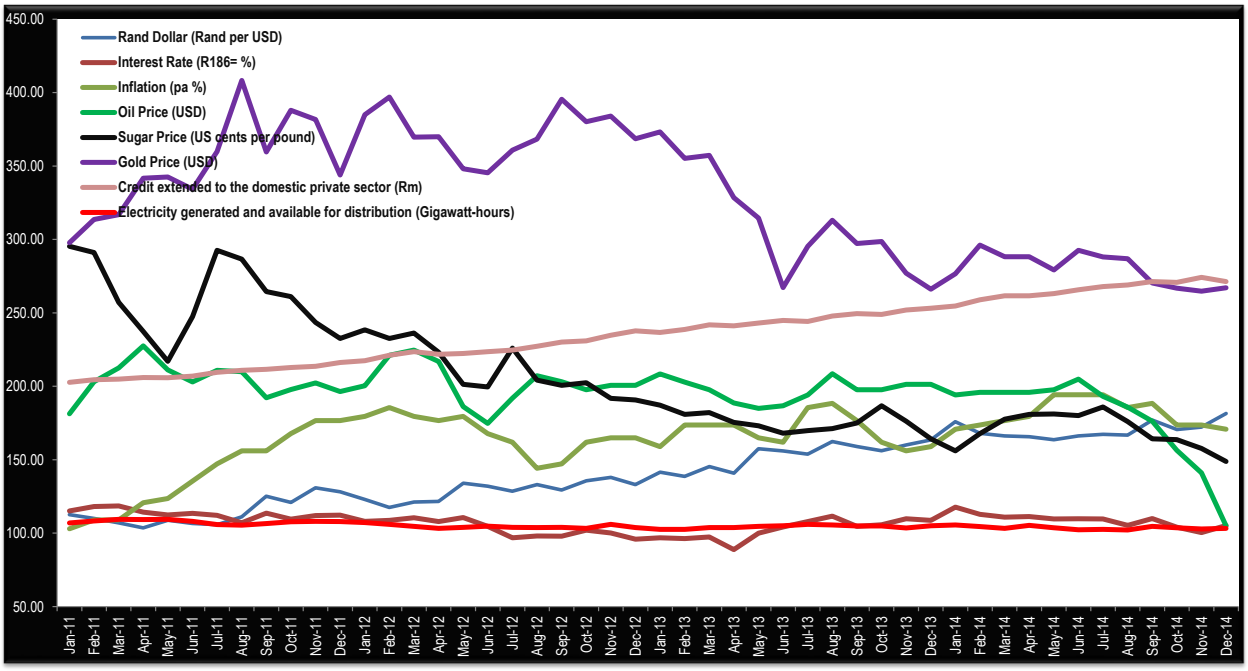
- ❖ The rand/dollar exchange rate has depreciated (√)
- ❖ Interest rates have increased (x)
- ❖ Inflation has increased (x)

[49] A cross on a variable indicates a negative effect while a tick implies a positive influence on a risk index.

- ❖ Oil prices have decreased (√)
- ❖ Sugar prices have decreased (x)
- ❖ Gold price has decreased (x)
- ❖ Credit extended has increased (√)
- ❖ Electricity supply has decreased (x)

Both table 6.3 and figure 6.1 suggest that the behaviour or change of five of these variables has increased the economic risk and the remaining three have decreased the economic risk in the provincial economy. The calculation of economic risk/conditions monitor for KZN and each of the provincial six regions is presented in Appendix B.

Figure 6.1: Behaviour of the Economic Risk/Conditions Variables in index format, 2011 to 2014



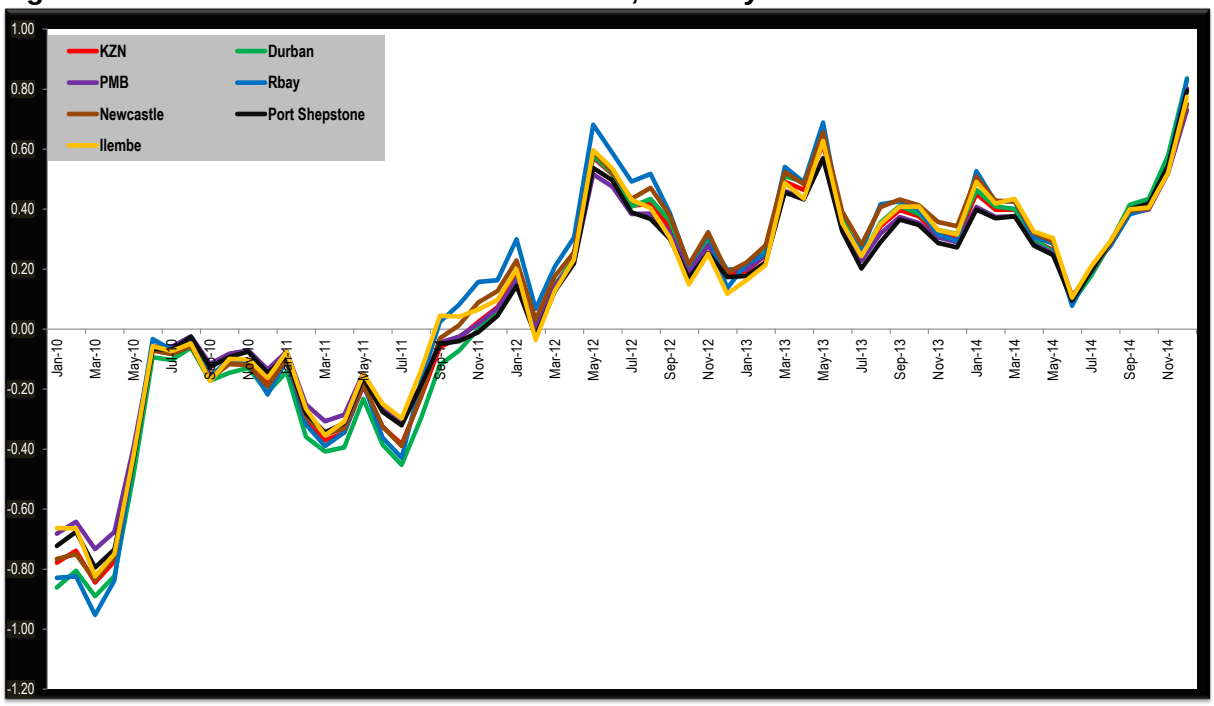
Source: Own calculations using KZN Economic Model, 2014

6.3 Economic risk/conditions monitor for KZN

The results for the province and each of the six regions are displayed in figure 6.2 and table 6.4 below. The results have been smoothed using a twelve month moving average method because of the inclusion of monthly data in the calculations. The monitor should be interpreted as follows:

- ❖ Positive numbers: Low or decreasing risk
- ❖ Zero: Neutral risk
- ❖ Negative numbers: High or increasing risk

Figure 6.2: Economic risk/conditions monitor, January 2010 to November 2014



Source: Own calculations using KZN Economic Model, 2014

Table 6.4: Economic risk/conditions monitor, January 2013 to December 2014

	KZN	Durban	PMB	Richards Bay	Newcastle	Port Shepstone	Ilembe
Jan-13	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Feb-13	0.3	0.3	0.3	0.3	0.3	0.2	0.2
Mar-13	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Apr-13	0.5	0.5	0.4	0.5	0.5	0.4	0.4
May-13	0.6	0.6	0.6	0.7	0.7	0.6	0.6
Jun-13	0.4	0.4	0.4	0.4	0.4	0.3	0.4
Jul-13	0.2	0.2	0.2	0.3	0.3	0.2	0.2
Aug-13	0.3	0.4	0.3	0.4	0.4	0.3	0.4
Sep-13	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Oct-13	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Nov-13	0.3	0.3	0.3	0.3	0.4	0.3	0.3
Dec-13	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Jan-14	0.5	0.5	0.4	0.5	0.5	0.4	0.5
Feb-14	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Mar-14	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Apr-14	0.3	0.3	0.3	0.3	0.3	0.3	0.3
May-14	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Jun-14	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Jul-14	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Aug-14	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Sep-14	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Oct-14	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Nov-14	0.6	0.6	0.5	0.5	0.5	0.5	0.5
Dec-14	0.8	0.8	0.7	0.8	0.8	0.8	0.8

Source: Own calculations using KZN Economic Model, 2014

The average risk index for the province and each of the regions for the period 2010 to 2014 is displayed in table 6.5.

Table 6.5: Average economic risk/conditions monitor for the period 2010 to 2014

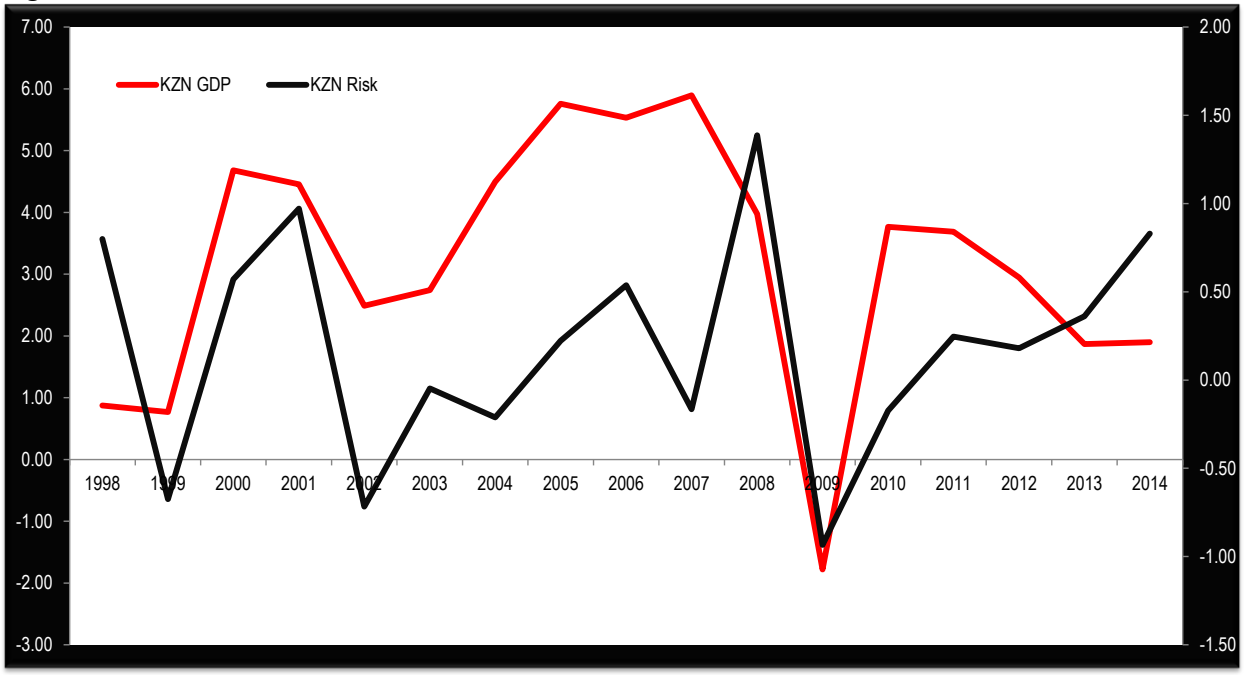
	KZN	Durban	PMB	Rbay	Newcastle	Port Shepstone	Ilembe
2010	-0.36	-0.4	-0.31	-0.38	-0.36	-0.33	-0.34
2011	-0.19	-0.23	-0.15	-0.16	-0.17	-0.17	-0.13
2012	0.29	0.3	0.27	0.35	0.32	0.26	0.28
2013	0.36	0.38	0.34	0.39	0.4	0.33	0.36
2014	0.38	0.39	0.36	0.39	0.39	0.37	0.39

Source: Own calculations using KZN Economic Model, 2014

6.4: KZN risk index and KZN GDP

Figure 6.3 shows the behaviour of the KZN risk index and KZN GDP growth from 1998 to 2014. There had been two periods prior to 2013 where the provincial risk index was higher than the provincial GDP, that is in 1998 and 2008. Both periods were characterised by very low economic output followed by strong economic recovery. Time will tell whether the current period of low economic output will also be followed by strong economic recovery as per the history.

Figure 6.3: KZN risk index and KZN GDP[50], 1998 to 2014



Source: Own calculations using KZN Economic Model, 2014

[50] KZN GDP is on the left axis (% growth) and KZN risk index is on the right axis (value)

6.5 Interpretation of the Monitor

The results suggest that the economic risk in the province during 2014 was consistently fairly low and improved further during the latter part of 2014, especially compared to 2013. Fortunately the outlook also seems to be even further improving during 2015 given the behaviour of the international oil price which should feed into lower inflation and interest rates, especially during the latter part of 2015. The major risk factors for 2015 are the availability of electricity and the further weakening of the exchange rate.

The immediate past, current and risk/economic conditions outlook “should” support the economic outlook of the province during 2015, but unfortunately only marginally given the “bad” business and consumer confidence numbers and the electricity constraints. The South African and KZN economies seem to seriously suffer from a chronic lack of business and consumer confidence. This seriously constrains the investment prospects for the national and provincial economy which even in a “fairly” conducive economic risk environment seems very limited.

The results also suggest that economic risk during 2014 was the highest in the Pietermaritzburg and Port Shepstone economies, whilst it was the lowest in the Durban and Richards Bay economies. This is predominantly linked to the depreciation of the exchange rate that is “good” for economies that focus on the production side for exports and the deterioration of the inflation and interest rate outlook which is “bad” for economies that focus on the consumer side.

Chapter 7: Labour markets

7.1 Introduction

The South African labour market has transformed since 1994. Since then, more emphasis has been put on strategies that are aimed at eliminating labour inequalities of the past, and improving working conditions for the people of the country. Although there has been a transformation in the labour market, the country is however still faced with major challenges such as job creation, excess of unskilled labour which is unemployable, high poverty rate, high levels of inequality and many more.

The purpose of this chapter is therefore to provide the labour market dynamics in KZN. The chapter starts by providing an outline of the national labour market, focusing mainly on employment and unemployment rates. It proceeds by providing an analysis of both labour force participation and labour absorption rates. The chapter concludes by discussing the relationship between labour remuneration and productivity.

7.2 Employment

According to Stats SA (2015), the country reported more employment gains in seven of the nine provinces during the last quarter of 2014. The national total number of employed people increased by 203 000 in quarter four of 2014 compared to the preceding quarter of the same year. The largest quarterly employment gains were observed in KZN with 101 000 and GP with 61 000. Large quarterly gains of an estimated 56 000 were observed in agriculture. This was followed by construction and trade at 53 000 and 50 000 respectively. Over the same period, the "*economically in-active*[51] population increased by 400 000. This was driven largely by an increase in the number of "*discouraged job-seekers*"[52], which increased by an estimated 203 000 people.

[51] The *economically active population* comprises all persons between the ages of 15 and 64 who are either employed or unemployed during a specified time period. *Economically not active* population refers to those people who are either below the age of 15 or above the 64 years. Accessed on the 09/02/2015 and available from http://laborsta.ilo.org/applv8/data/c1e.html

[52] *Discouraged job-seeker* is a person who was not employed during the reference period, wanted to work, was available to work or start a business but did not take active steps to find work during the last four weeks. This how applies provided that the main reason given for not seeking work was any of the

In KZN, the total number of people employed improved slightly from 2 million in 2003 to an estimated 2.4 million in 2013 (table 7.1). A closer scrutiny to the employment rate in KZN reveals that an excess of 50 per cent of those employed are in eThekwini Metro. This is nonetheless, a non-startling revelation as eThekwini is the economic hub of the province[53].

Table 7.1: Formal and informal employment by district, 2002 to 2013

	2002			2013		
	Formal Employment	Informal Employment	Total Employment	Formal Employment	Informal Employment	Total Employment
National	9 612 594	1 797 948	11 410 542	11 728 320	2 257 009	13 985 328
KwaZulu-Natal	1 661 748	315 183	1 976 931	1 957 828	418 722	2 376 551
Ethekwini	903 260	119 007	1 022 266	1 042 191	201 629	1 243 820
Ugu	82 324	21 150	103 474	106 455	23 797	130 252
uMgungundlovu	189 015	36 846	225 860	219 621	50 402	270 022
Uthukela	74 383	25 201	99 585	81 587	22 253	103 841
Umzinyathi	27 219	8 298	35 517	35 731	9 909	45 640
Amajuba	67 398	22 551	89 949	69 013	18 569	87 582
Zululand	57 328	16 271	73 599	70 083	16 618	86 701
Umkhanyakude	374 054	10 287	47 691	50 600	12 526	63 126
Uthungulu	119 476	23 448	142 924	138 717	27 317	166 033
iLembe	67 673	19 674	87 347	92 597	22 637	115 234
Sisonke	36 269	12 451	48 720	51 233	13 066	64 299

Source: Global Insight, 2013

7.2.1 Employment by sector

According to the SARB (2014), the national employment trends reflect a general subdued growth in economic activity. The central bank's enterprises survey indicates that employment in the formal non-agricultural sector rose somewhat over the last quarter of 2013 to the third quarter of 2014. The survey however shows that most of the jobs created over the period took place in the public sector. The household-surveyed employment data by the national central bank suggests a more vigorous increase in employment in the second quarter of 2014.

Table 7.2 evinces that the largest proportion constituting of close to a quarter of all jobs in the province are the government. This is followed by trade at 16.4 per cent, mainly due to wholesale, retail trade and hotels and restaurants. Manufacturing (15.3 per cent) and finance (15.1 per cent) are also critical contributors to employment of the province. Mining is the least contributor to employment of the province with 0.5 per cent. The tertiary sector (73.1 per cent) is the main driver of job creation in the province. The remaining balance is spread between the secondary (22.2 per cent) and the primary (4.7 per cent) sectors.

following; no jobs available in the area; unable to find work requiring his/her skills; lost hope of finding any kind of work.

[53] See section 3.4 of this publication.

Table 7.2: Employment by sector, 2013

DIstricts	National Total	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North-West	Gauteng	Mpumalanga
Primary Sector	**9.5**	**7.6**	**6.0**	**26.6**	**15.0**	**4.7**	**28.7**	**3.6**	**21.9**
1 Agriculture	5.2	7.5	5.8	14.4	9.2	4.2	4.7	1.2	10.1
2 Mining	4.3	0.1	0.2	12.2	5.9	0.5	24.0	2.4	11.7
Secondary Sector	**18.4**	**21.1**	**20.3**	**8.3**	**13.0**	**22.2**	**12.1**	**19.4**	**15.2**
3 Manufacturing	12.5	15.0	13.3	2.9	7.6	15.3	7.3	14.2	8.1
4 Electricity	0.8	0.6	0.6	0.8	0.6	0.5	0.6	0.7	2.5
5 Construction	5.2	5.6	6.4	4.6	4.8	6.5	4.1	4.5	4.7
Tertiary Sector	**72.0**	**71.3**	**73.7**	**65.2**	**72.0**	**73.1**	**59.2**	**77.0**	**62.9**
6 Trade	17.4	19.9	17.1	13.4	16.1	16.4	15.7	18.4	15.7
7 Transport	4.7	5.0	3.4	3.0	3.0	5.8	2.2	5.6	3.4
8 Finance	17.1	19.6	11.2	10.0	10.8	15.1	8.9	23.7	12.0
9 Community services	23.0	19.9	30.4	28.8	27.8	24.7	22.9	20.3	19.8
Households	9.9	6.8	11.5	10.0	14.2	11.1	9.5	8.9	12.0

Source: Global Insight, 2013

7.3 Unemployment

Unemployment, poverty and inequality are some of the major challenges hampering the economic performance of the country. These are among other reasons that the national government has formulated policies such as the National Development Plan (NDP), New Growth Path, Industrial Policy Action Plan, Special Economic Zones and many more. These policies are aimed at directly addressing these social ills.

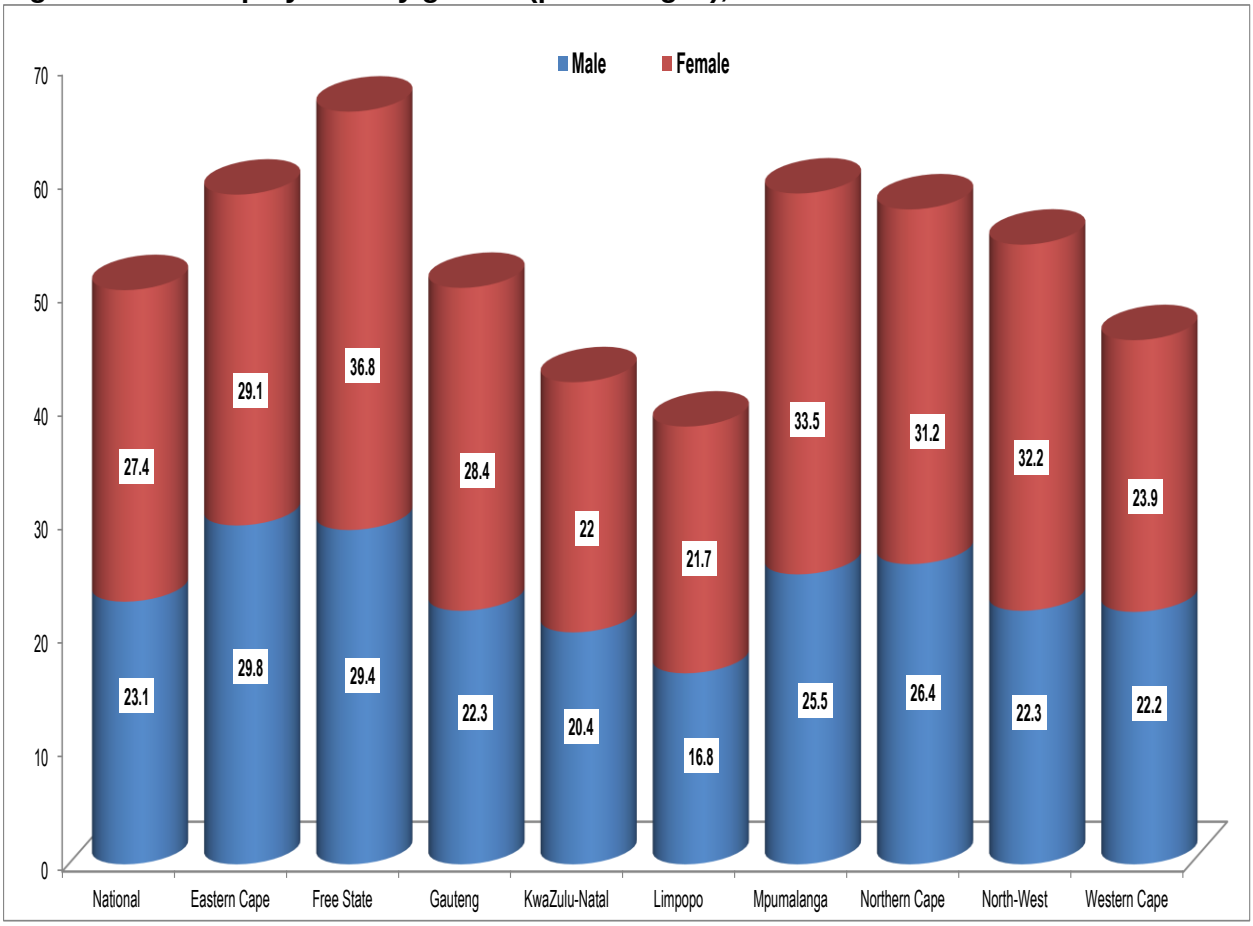
Data from Stats SA (2015) shows that, between quarter three and four of 2014, the official unemployment rate declined moderately by 1.1 percentage points, from 25.4 per cent in quarter three to 24.3 per cent in quarter four. With 3.3 percentage points, KZN was one of the seven provinces, that reported a decline in the unemployment rate during the last quarter of 2014. This was followed by MP and the FS at 2.7 percentage points and 2.4 percentage points respectively. In the same period, the official unemployment rate remained unchanged in GP and LP. In comparison to the same period in 2013, NC, WC and the EC recorded the largest rise in the official unemployment rate.

7.3.1 Unemployment by gender

Figure 7.1 indicates that unemployment rate in KZN is slightly higher among females at about 22 per cent compared to their male counterparts (20.4 per cent). This gap is however much higher at the national level as well as in most provinces, with the exception of the EC and the WC. Evidence further indicates that the national unemployment gap between women and men had narrowed between 2003 and 2013; this could be attributed to, among others, the effective implementation of the labour laws such as the Employment Equity Act. As correctly pointed out in the 2030 NDP, SA must find ways to urgently reduce alarming levels of youth unemployment and to provide young people with broader work opportunities and KZN is no exception.

Subsequently, strategic objective number 1.3 of the PGDP (2014) aims at improving efficiency of government-led job creation programmes that yield incomes and prepare participants for entry into the labour market.

Figure 7.1: Unemployment by gender (percentages), 2013



Source: Global Insight, 2013

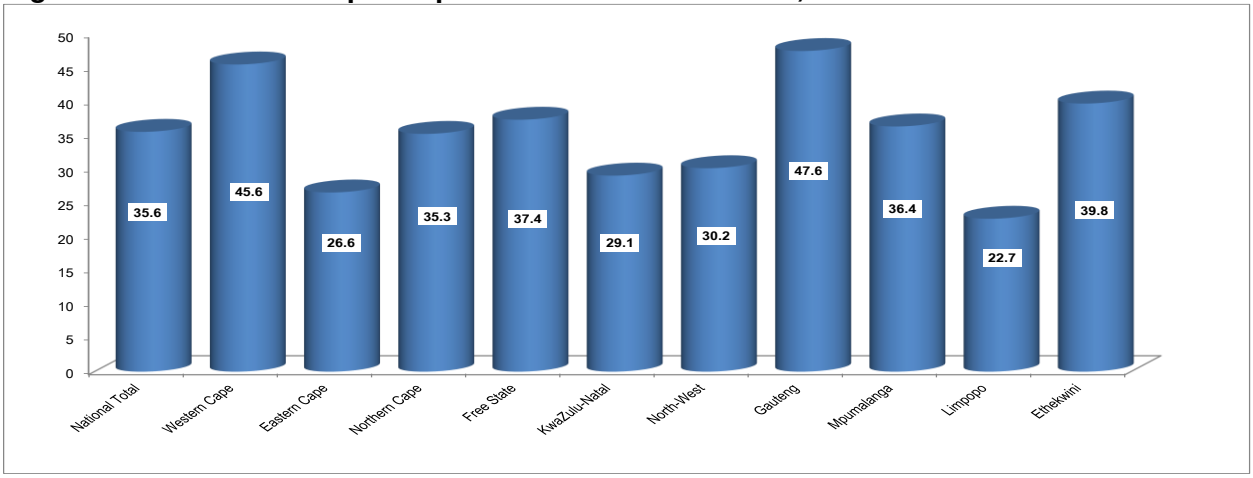
Stats SA (2014b) further indicates that, unemployment rate among youth aged 15 to 34 increased from 32.7 per cent in 2008 to 36.1 per cent in 2014. Young women between the ages 15 and 34 are cited as in a particularly perilous situation, with unemployment rates at more than 10 percentage points higher than that of young men at the same age category. The report further argues that, as a result this challenge, young women opt for continuing with education hoping to better their employability opportunities.

7.4 Labour force participation rate

The labour force participation rate (LFPR)[54] shows the extent to which the working population is economically active. Figure 7.2 indicates that, LFPR in KZN is estimated at 29.1 per cent which is far below the national average rate of 35.6 per cent. This rate is further below those estimated in most provinces, with the exception of the EC (26.6 per cent) and LP (22.7 per cent).

A lower LFPR indicates a decrease in the number of persons who are economically active, hence a rise in the number of discouraged workers. Technically this leads to a decrease in the number of labour force, which implies that KZN, EC and LP experience more discouraged job seekers compared to the national rate.

Figure 7.2: Labour force participation rate in SA and KZN, 2013



Source: Global Insight, 2013

7.5 Labour absorption rate

The labour absorption rate (LAR) is generally defined as the percentage of the working age of population employed. The national LAR declined slightly by 0.1 percentage point between quarters two and three of 2014. This was a third successive decline (Stats SA (2014).

[54] The labour force participation rate is defined as the percentage of working-age persons in an economy who are employed or unemployed but looking for a job. Generally, "*working-age"* persons, refer to people between the age cohort of 16 and 64. Aaccessed on the 4th of February 2014 ands available from: http://economics.about.com/od/unemploymentrate/f/labor_force.htm,

Table 7.3 reflects on the LAR in KZN between 2004 and 2013. There had been a variation in the absorption of the labour force in KZN over the years under review. The provincial LAR had been increasing between 2004 and 2008. It however started to decline and fell slightly to 24 per cent in 2009, compared to 24.1 per cent posted in 2008. Since then, it never returned to pre-global economic recession's upward trend. As expected, eThekwini[55] consists of the highest LAR, ranging between 31.8 in 2004 and 35.6 per cent in 2013.

Table 7.3: Labour absorption rate (percentages), 2004 to 2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
KwaZulu-Natal	20.4	20.8	21.7	23.1	24.1	24.0	23.5	23.0	22.9	22.9
Ethekwini	31.8	32.2	33.4	35.0	36.4	36.4	35.9	35.6	35.4	35.6
Ugu	15.0	15.4	16.4	17.8	18.9	18.9	18.5	18.2	18.0	18.1
uMgungundlovu	23.8	24.1	25.1	26.8	28.2	28.2	27.4	26.7	26.3	26.3
Uthukela	15.1	15.4	16.2	17.3	17.8	17.3	16.5	15.9	15.7	15.6
Umzinyathi	7.6	7.9	8.4	9.2	9.8	9.7	9.4	9.0	8.9	8.9
Amajuba	18.3	18.3	18.8	19.7	20.2	19.6	18.7	17.9	17.5	17.3
Zululand	9.6	9.8	10.4	11.3	11.8	11.6	11.1	10.7	10.6	10.7
Umkhanyakude	8.9	9.5	10.3	11.3	11.6	11.2	10.6	10.1	10.0	10.0
Uthungulu	16.2	16.4	17.2	18.5	19.5	19.5	18.8	18.2	18.1	18.1
iLembe	15.9	16.3	17.1	18.4	19.5	19.6	19.1	18.8	18.7	18.8
Sisonke	11.3	11.8	12.7	14.0	15.0	15.0	14.5	14.1	14.0	14.1

Source: Global Insight, 2013

7.6 Labour remuneration and productivity

Labour productivity is defined as the number of units of output obtained from a unit of input (Barker, 1998). It is a meaningful measure since it helps reflect changes in the price of labour. When output increases without changes in input, productivity increases and when output decreases without a change in input, productivity decreases. The relationship between productivity and remuneration is arguable, such that labour cost and productivity can be said to have a positive or a negative relationship. For example an increase in productivity is normally rewarded with an increased remuneration and vice versa.

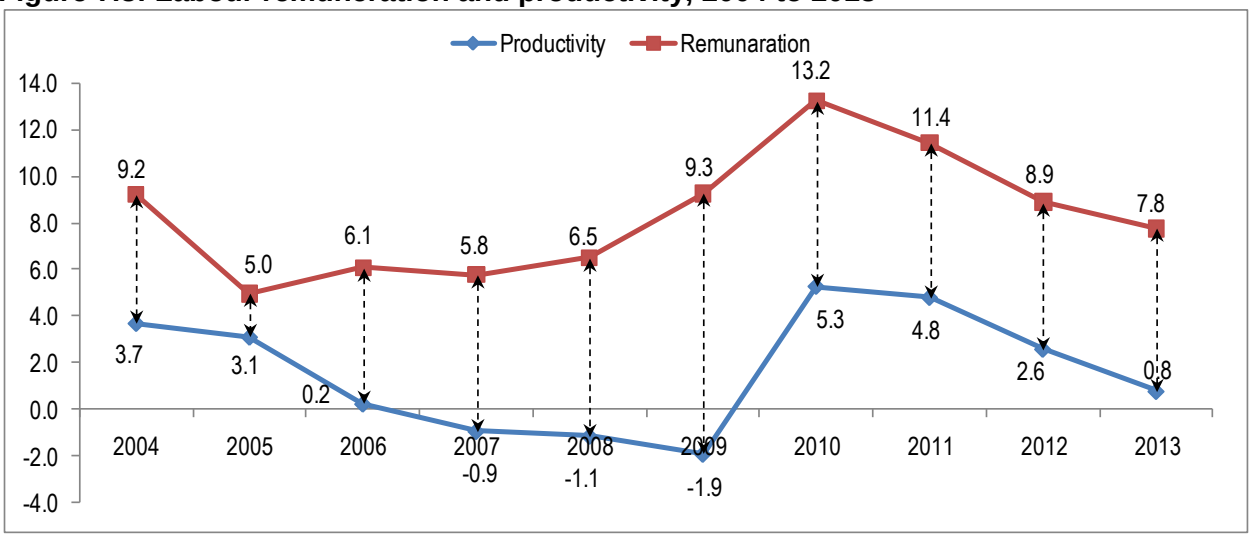
Productivity is one of the critical indicators in attracting investors. According to the Department of Labour (2014), investors generally withdraw their investments due to unproductive labour. This is not surprising as one of the country's key challenges relates to the shortage of skilled labour. An increase in wages with no link to efficiency, labour costs tend to increase and the economy becomes less competitive internationally and locally. It is therefore evident that the

[55] As indicated in section 3.4 of this publication, eThekwini is the economic hub of the province.

labour productivity in SA is also a challenge; this may be due to many factors such as lack of skills, literacy rate, experience and many more.

Figure 7.3, evinces the trend between productivity and remuneration of labour in KZN for the period 2004 to 2013. Similar to the national trend, the growth rate in labour remuneration has outperformed productivity growth in KZN over the period under review. An ideal situation is for both the productivity and remuneration curves to be closer to each other, meaning that gab between the two variables should be minimal. Interestingly, the gap between these variables was huge in 2009[56], whereby productivity contracted by 1.9 per cent while labour remuneration rose by 9.3 per cent.

Figure 7.3: Labour remuneration and productivity, 2004 to 2013



Source: Global Insight, 2014

[56] It must be remembered that this was during the time of the global economic recession.

Chapter 8: Development Indicators

8.1 Introduction

The growth of the economy is a crucial precursor to job creation and to the attraction of investment into a region and KwaZulu-Natal (KZN) is no exception. However, economic growth on its own can be of little significance if it does not translate into economic development - a better quality of life for the provincial populace. Todaro (2009) describes economic development as being an increase in living standards, improvement in self-esteem needs and freedom from oppression as well as the availability of a greater choice. A further necessary condition for economic stability is that this growth must be inclusive; benefiting the populace as a whole, and not merely a privileged few.

In contrast to economic growth, which is a positive concept, economic development is a normative study which encapsulates people's sense of right and wrong pertaining to topics such as poverty, income inequality and social security. The level of economic development of a region can be measured using indicators which include, among others, the human development index (HDI), the Gini coefficient, literacy rate, and poverty rate.

"In South Africa (SA), people with access to wealth experience the country as a developed, modern economy, while the poorest still struggle to access even the most basic services. In this context of high inequality, the idea that SA has 'two economies' can seem intuitively correct, and has informed approaches that assume there is a structural disconnection between the two economies" (Trade and Industrial Policy Strategy (TIPS), 2008). This structural disconnection finds its genesis from the structural unemployment[57] which is the most prevalent type of unemployment in the country.

SA, and the province of KZN, has long been burdened by what has come to be termed "*the triple challenge"* of chronically high levels of unemployment, poverty and inequality. The crux of this triple challenge is that the income (or lack thereof) of a person or household limits his choices in pursuit of his needs and wants. This trend in SA has unfortunately reached an

[57]Structural Unemployment refers to a mismatch between the skills required by the economy and those that are possessed by the unemployed.

alarming level where it prevents a person to avail even his most basic needs. This situation is known as being in poverty.

Although KZN's official unemployment rate is 20.8 per cent, the broad definition of unemployment is estimated at 37.9 per cent. This means that a little less than half of the provincial populace has no access to income. "… People the world over are demanding a change in direction. Through social movements and in protests in both the Global North and South, people are calling for better services, greater opportunity, dignity, and respect" (UNDP, 2013).

The views of the UNDP are evidenced in SA by the prevailing violent and destructive service delivery protests that took place in the province of Limpopo, in and around the town of Malamulele, during the first two months of 2014. The cause of this tension is believed to be residents' perception that the local municipality in the region has been channelling services to Tshivenda-speaking areas rather than to their own, which have predominantly Xitsonga-speaking people.

The government of the country has long acknowledged that these disparities do exist, and has responded to these needs in the form of availing social grants, free low-cost human settlements, free basic water and electricity, and no-fee schools for the needy and in highly impoverished areas.

8.2 Poverty

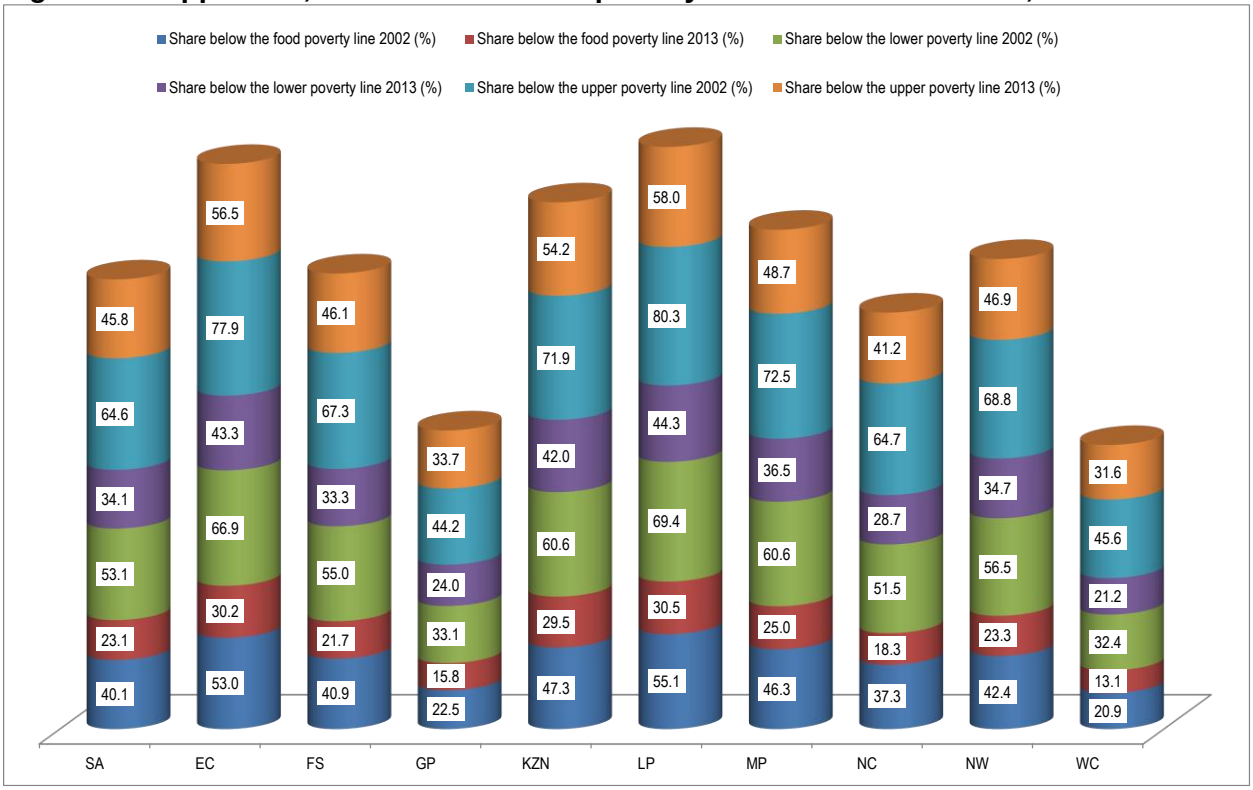
Similar to development, poverty is multi-dimensional; dependent on access to adequate health care, education facilities, and decent living standards (Alkire and Foster, 2007). It is this multi-faceted nature of poverty that prompted the decision by Stats SA, after extensive stakeholder engagements, to pilot the poverty lines approach (which is a cost-of-basic-needs approach) to poverty and deprivation measurement. A poverty line basically establishes a minimum socially acceptable standard for a predetermined welfare indicator to separate the poor from the non-poor (Stats SA, 2015). Currently, three poverty lines are being used; the food poverty line (FPL)[58], upper bound poverty line (UBPL)[59] and lower bound poverty line (LBPL)[60].

[58]The FPL is the Rand value below which individuals are unable to purchase or consume enough food to supply them with minimum per-capita-per-day energy requirement for good health (which is about 2 100 kilocalories).

Figure 8.1 shows that nationally, KZN has the third highest levels of poverty overall, while LP and the EC are the two most impoverished provinces. The share of people living under the FPL has declined on a national scale since 2002; however, the share of people living under this FPL in 2013 was still inconsolably high across the board considering that food is essential to life.

The majority of people living in poverty in KZN were living below the UBPL in 2013 (54.2 per cent), 42 per cent was living below the LBPL and 29.5 per cent was living below the FPL.The fact that poverty is on a downward trend, particularly the proportion of households living below the FPL, is indicative of the effective implementation of the social grant programme within the province.

Figure 8.1: Upper line, lower line and food poverty rates in KwaZulu-Natal, 2002 and 2013



Source: Global Insight, 2015

[59] Individuals at the LBPL do not have command over enough resources to consume or purchase both adequate food and non-food items and are therefore forced to sacrifice food to obtain essential non-food items.

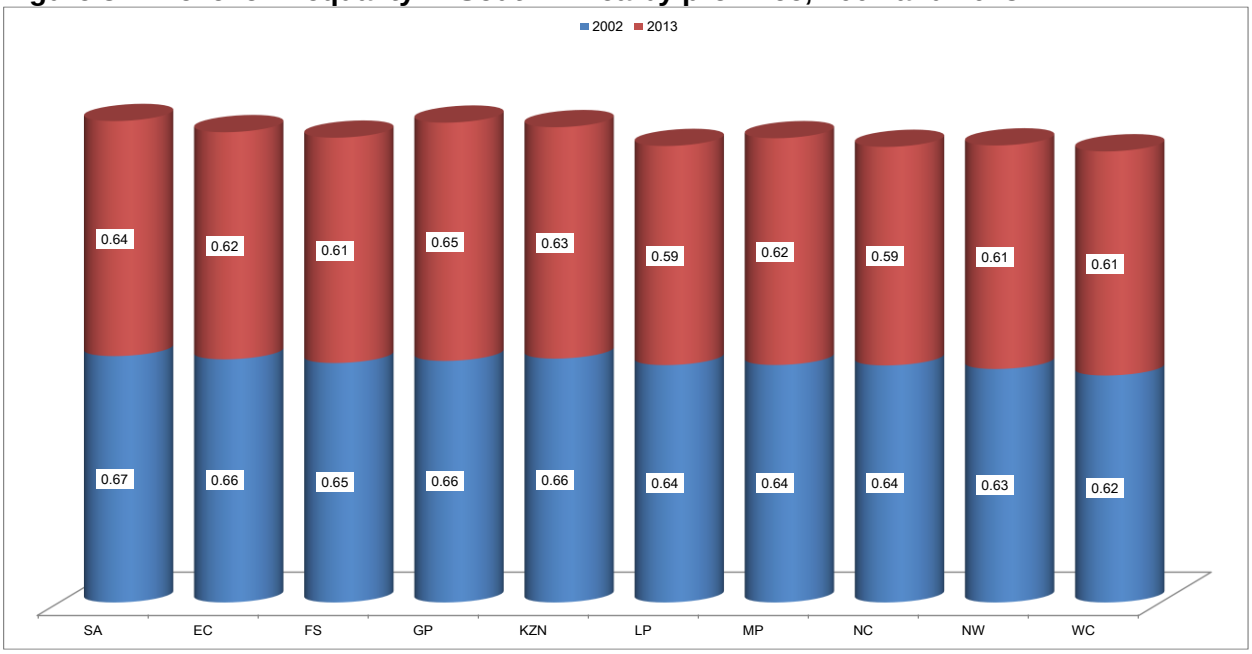
[60] Individuals at the UBPL purchase both adequate food and non-food items.

8.3 Household income and inequality

“Great and persistent inequality in the midst of plenty is a paradox of our times. Over the last few decades, innovation has exploded from our increasingly digital age, poverty rates have declined in every region of the world, and emerging market countries have experienced unprecedented growth. Global income inequality stands at very high levels, whereby the richest eight percent of the world’s population earn half of the world’s total income, while the remaining 92 percent of people are left with the other half. Such gaps have left many on the precipice of steep decline. With insecure livelihoods, volatile markets, and unreliable services, many people feel increasingly threatened by the prospect of falling under poverty lines and into poverty traps; as many in fact have” (UNDP, 2013).

High levels of inequality have a high social, and therefore political and economic, cost associated with them. SA has over the past few years experienced spates of public violence and criminal activity, sometimes masked as service delivery protests and industry-specific strikes, during which the looting of shops has been witnessed. This is one example of the numerous ways in which the ugliness of inequality rears its head in South African societies, and is a sobering reminder of the obstinacy of the levels of inequality in the country as a whole, and KZN in particular.

Figure 8.2: Level of inequality in South Africa by province, 2002 and 2013



Source: Global Insight, 2015

Since 2002, there had been minimal movement in the gini coefficient[61] of KZN (figure 8.2). The index moved from 0.66 in 2002 to 0.63 in 2013. Inequality levels have remained unrelenting despite the economy having experienced some periods of robust growth. This is largely due to the structure of the economy and the incompatibility of skills available in the labour force. Inequality in KZN is only likely to be dramatically reduced through a significant expansion of decent work for the low- and semi-skilled.

As can be seen from table 8.1, African households are the least advantaged cohort when it comes to the distribution of income within the province. A considerable majority (57.7 per cent) of total African households earned between R0 and R54 000 per annum, while a considerably lower proportion of their Asian (6.3 per cent), Coloured (25.8 per cent) and White (1.7 per cent) counterparts had earnings in that same income category.

An analysis of the emerging middle class reveals that this income category is mainly dominated by Asians (55.7 per cent), followed by Whites (44.3 per cent, Coloureds (43.3 per cent) and lastly Africans (18.2 per cent). The top three income categories, namely the Affluent, Upper middle class and Realised middle class, remain dominated by Whites at 6.7 per cent, 19.6 per cent and 23 per cent respectively.

Table 8.1: Income distribution by proportion of households in KwaZulu-Natal, 2013

Income Category	Income Level (Rands)	African	Asian	Coloured	White	Total
Affluent	1 200 000 - 2 400 000	0.2	2.4	1.0	6.7	0.8
Emerging middle class	96 000 - 360 000	18.2	55.7	43.3	44.3	23.2
Low emerging middle income	54 000 - 96 000	20.7	11.9	15.9	4.7	18.9
Lower income	0 - 54 000	57.7	6.3	25.8	1.7	49.6
Realised middle class	360 000 - 600 000	2.3	15.1	9.9	23.0	4.7
Upper middle class	600 000 - 1 200 000	0.9	8.7	4.1	19.6	2.8
Total		**100**	**100**	**100**	**100**	**100**

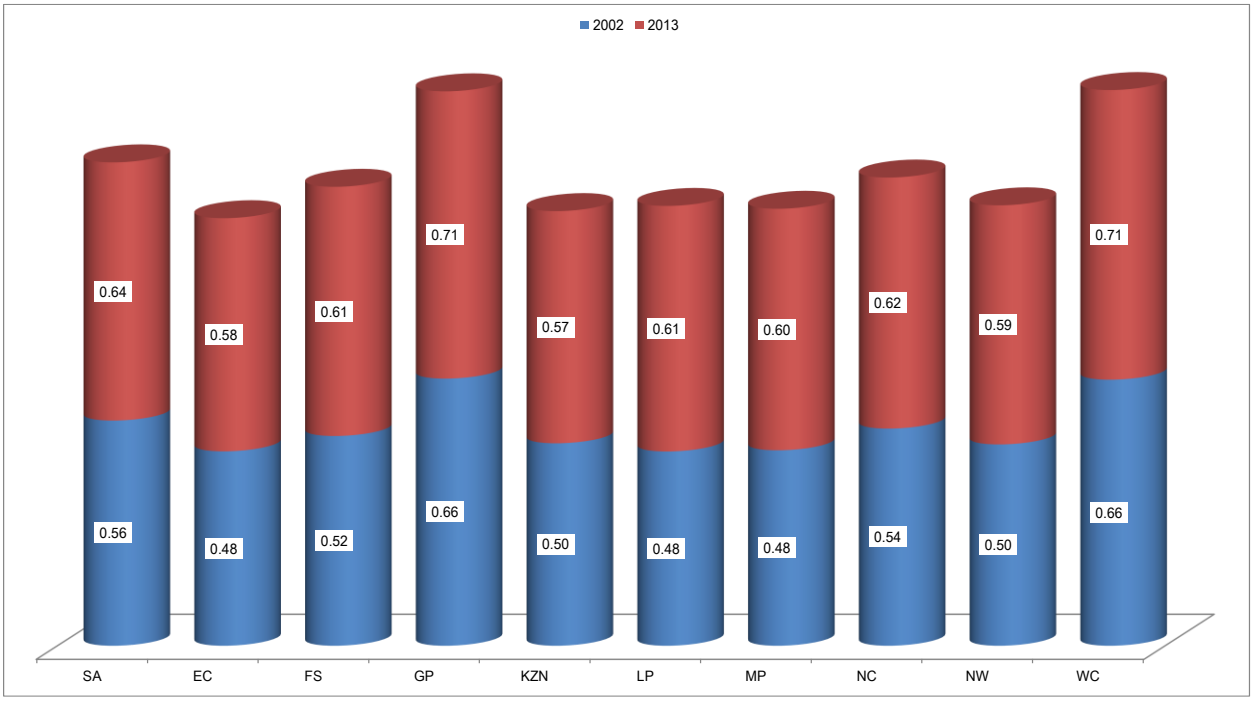
Source: Global Insight, KZN Treasury calculations, 2015

[61]The gini coefficient measures the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution (www.worldbank.org).

8.4 Human Development

Human development is a study related to economics that is primarily concerned with the betterment of lives of human beings all over the world. It is measured using the human development index[62] which takes into account various indicators such as life expectancy, state of health, and literacy rates which all have a bearing on the quality of life of the inhabitants of a particular geographical area. Human development is closely linked to income levels as individuals can generally pay for better services when it comes to health care and education.

Figure 8.3: Level of human development in South Africa by province, 2002 and 2013



Source: Global Insight, 2015

In 2013, KZN had an HDI of 0.57; the lowest HDI in the entire country. Although this has increased from 0.50, which the province had experienced in 2002, the increase could have been larger over the specified period of time.

[62] The HDI is a summary measure for assessing long-term progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. The index ranges from 0 to 1, where 0 represents the lowest quality of life and 1 represents the highest quality of life.

8.5 Grant Beneficiaries

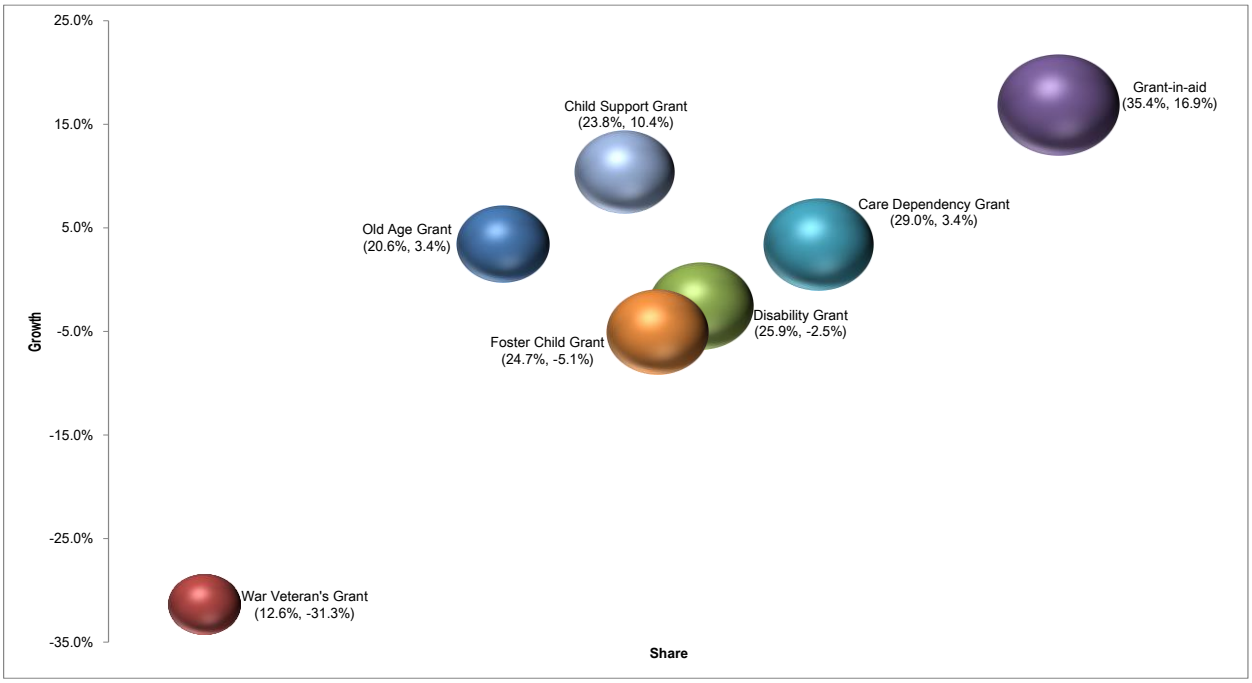
Table 8.2: Number and proportion of grant beneficiaries in KZN, as at 30 September 2014

	Old Age Grant		War Veteran's Grant		Disability Grant		Grant-in-aid		Care Dependency Grant		Foster Child Grant		Child Support Grant		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	
South Africa	3 026 260	100.0	366	100.0	1 124 770	100.0	96 433	100.0	124 225	100.0	553 223	100.0	11 480 576	100.0	**16 405 853**
Eastern Cape	523 028	17.3	52	14.2	181 186	16.1	14 329	14.9	18 706	15.1	123 155	22.3	1 829 822	15.9	**2 690 278**
Free State	179 201	5.9	6	1.6	77 424	6.9	1 717	1.8	6 277	5.1	43 141	7.8	645 350	5.6	**953 116**
Gauteng	464 977	15.4	91	24.9	113 401	10.1	2 524	2.6	15 890	12.8	59 984	10.8	1 610 480	14.0	**2 267 347**
KwaZulu-Natal	**621 898**	**20.6**	**46**	**12.6**	**290 828**	**25.9**	**34 172**	**35.4**	**36 024**	**29.0**	**136 552**	**24.7**	**2 733 804**	**23.8**	**3 853 324**
Limpopo	425 555	14.1	26	7.1	92 904	8.3	16 016	16.6	12 916	10.4	63 725	11.5	1 671 158	14.6	**2 282 300**
Mpumalanga	221 516	7.3	16	4.4	79 082	7.0	4 382	4.5	9 266	7.5	37 092	6.7	1 015 793	8.8	**1 367 147**
North West	77 957	2.6	10	2.7	49 779	4.4	6 002	6.2	4 726	3.8	15 376	2.8	284 672	2.5	**438 522**
Northern Cape	228 641	7.6	12	3.3	86 085	7.7	6 299	6.5	8 774	7.1	43 273	7.8	781 172	6.8	**1 154 256**
Western Cape	283 487	9.4	107	29.2	154 081	13.7	10 992	11.4	11 646	9.4	30 925	5.6	908 325	7.9	**1 399 563**

Source: SASSA, 2015

KZN has the highest number of grant beneficiaries (2.7 million) in the country, followed by the EC (2.7 million) and LP (2.3 million).

Figure 8.4: Social grant share and growth by grant type, November 2013 to September 2014



Source: SASSA, 2015

The leading grant category in the province is the Child Support Grant (70.9 per cent), followed by the Old Age Grant (16.1 per cent), and the Disability Grant (7.5 per cent) (Table 8.1). In terms of the growth rate with respect to grant beneficiary numbers between November 2013 and September 2014, the grant-in-aid (16.9 per cent) was the fastest growing grant category, followed by the child support grant (10.4 per cent), and the old age and care dependency grants both growing at a rate of 3.4 per cent.

8.6 Education

Education is essential to the future of any country as it prepares the future labour force to compete in a constantly evolving labour market that demands ever-higher skill levels. It is considered by every nation as one of the factors that can help in poverty alleviation, thus rendering greater prospects for income generation. Adult education programmes allow members of the current labour force the opportunity to improve their skills and their prospects for the future.

In relation to other emerging countries, SA has reached a high level of educational attainment. However, SA ranks last in quality of mathematics and science education and 54th in tertiary enrolment (Financial Development Report, 2012). According to the OECD (2013) young adults in SA, particularly those aged between 25 and 29 years, have increased their years of school attainment by about one year in every decade since 1960. This is relatively fast by global standards[63].

OECD further states that young adults in SA now spends more years in school than their counterparts in other emerging countries such as China and India. This is encouraging; however, the quality of basic education and high levels of inequality remain major challenges. The South African government spends more on education than on any other expenditure category. Hence, the provision of quality education has been a priority of government in SA since 1994. In KZN, the DoE was allocated R39.4 billion in the 2013/14 financial year which is 40.8 per cent of the total budget (KZN Provincial Treasury, 2014/2015).

One of DoE's strategic objectives is to extend a better quality of life to children of school going age. According to the study conducted by Calman and Tarr-Whelan (2005), investing in early education generates economic development for communities in the short run in the form of jobs,

[63] OECD (2013), OECD Economic Surveys: South Africa 2013. OECD Publishing

the purchase of goods and services, and a more efficient workforce. In the long run, quality early education builds an employable and educated workforce. This study has proven that Early Childhood Development (ECD) gives a good basic education foundation.

More than 50 per cent of children live in poverty with inadequate access to health care, nutrition, education and social services[64]. Access to ECD services remains far below national targets, only 35 per cent of all children between birth and four years of age are enrolled in an ECD facility (Hwenha, 2014).

8.6.1 School and educator: Learner ratio

The learning environment and the resources available to aid the learning process are vital factors that impact on children's ability to learn. Educators are key resources in the learning process. Learning outcomes are determined partly by the qualification and motivation of educators, but quantitative research has also indicated an association between learner-to-educator ratios and educational outcomes for children (Crouch and Mabogoane, 2001). Educators are expected to give individual attention to learners and ensure that they understand the material being taught.

The larger the class, the harder it is for educators to know the circumstances of each individual learner. The learner-to-educator ratio contributes directly to the quality of schooling offered. The more crowded the classrooms, the fewer educators are able to give personal attention to learners to help them along in the learning process. Learners in overcrowded classes may find it difficult to follow the lesson, or to ask questions when they do not understand the material taught. The ideal LER is 30 per class[65].

Table 8.3 shows the number of learners, educators and schools across different provinces for the years 2009 and 2014. A comparison of the years under review indicates that there had been an increase in the KZN's number of learners, educators and schools. In KZN the number of learners increased from 2 827 335 in 2009 to 2 901 697 in 2014, whereas the number of educators also increased from 89 377 in 2009 to 95 560 in 2014. It is worth noting that this resulted in a decreasing learner-educator ratio from 31.6 per cent in 2006 to 30.4 per cent in

[64] http://www.tshikululu.org.za/uploads/files/CSI_that_Works_ECD_Research_Report_final_Oct_2014.pdf
[65] www.education.gov.za

2014. Although the LER for KZN decreased in 2014, it is still the second highest in the whole country, second only to the NC (31.5 per cent in 2014).

The learner to school ratio (LSR) in KZN increased marginally from 464 in 2009 to 472 in 2014. It appears that most of the provinces recorded increasing LSRs with the exception of EC (from 357 in 2009 to 340 in 2014). It can also be seen from table that EC had the lowest LSR for both years at 357 in 2009 and 340 in 2014.

Table 8.3: Leaner-Educator Ratio (LER) and Leaner-School Ratio (LSR) by districts in 2009 and 2014

	2009					2014				
	Number of learners	Number of educators	Number of Schools	LER	LSR	Number of learners	Number of educators	Number of Schools	LER	LSR
Eastern Cape	2 076 400	69 620	5 809	29.8	357	1 946 885	64 258	5 732	30.3	340
Free State	651 785	23 741	1 595	27.5	409	672 290	24 552	1 376	27.4	489
Gauteng	1 903 838	66 351	2 390	28.7	797	2 191 475	77 265	2 721	28.4	805
KwaZulu-Natal	**2 827 335**	**89 377**	**6 091**	**31.6**	**464**	**2 901 697**	**95 560**	**6 151**	**30.4**	**472**
Limpopo	1 707 280	58 563	4 105	29.2	416	1 720 585	57 256	4 076	30	422
Mpumalanga	1 035 637	35 221	1 934	29.4	535	1 057 788	35 000	1 867	30.2	567
Northern Cape	267 709	9 115	617.00	29.4	434	289 004	9 182	577.00	31.5	501
North West	777 285	26 697	1 768	29.1	440	800 316	26 086	1 570	30.7	510
Western Cape	980 694	34 382	1 597	28.5	614	1 075 396	35 931	1 671	29.9	644
South Africa	12 227 963	413 067	25 906	29.6	472	12 655 436	425 090	25 741	29.8	492

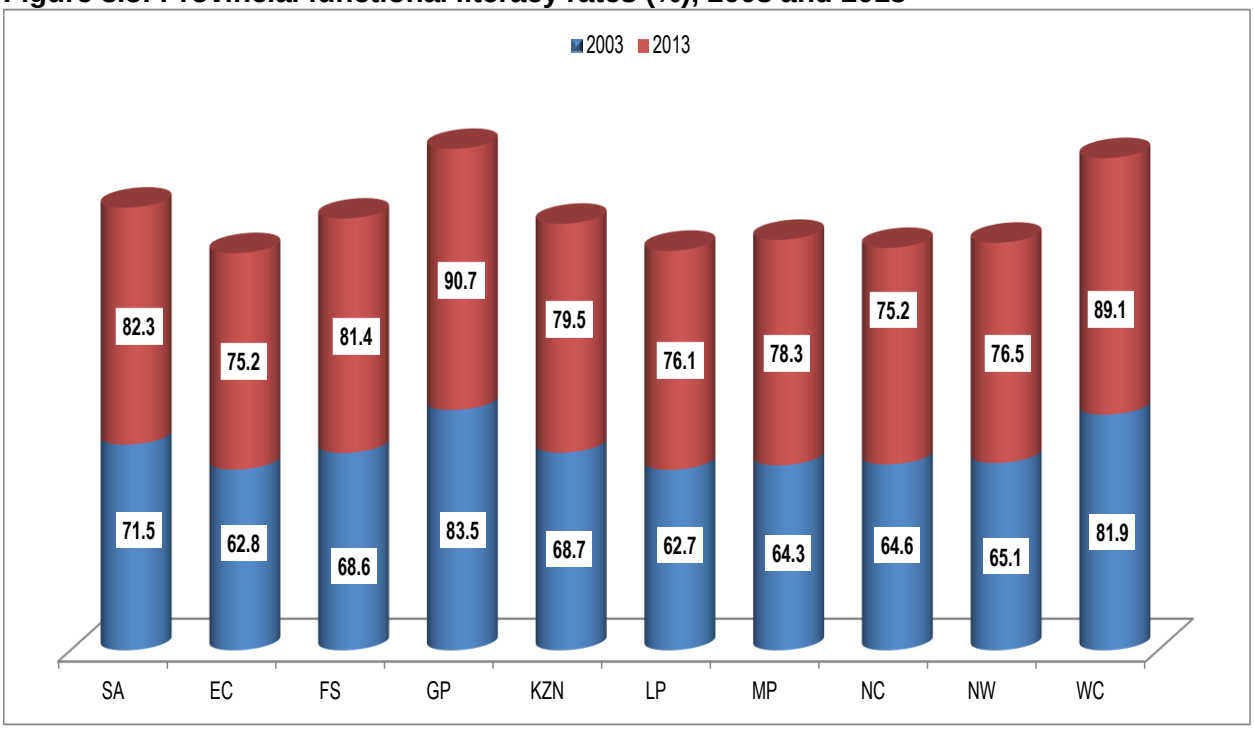
Source: Department of Basic Education, 2014

8.6.2 Literacy rate and matric results

According to the World Bank literacy rate[66] is the percentage of the population age 15 and above who can, with understanding, read and write a short simple statement on their everyday life.

[66] Literacy rate is calculated by dividing the number of literate individuals aged 15 years and over by the corresponding age group population and multiplying the result by 100. Available on: http://data.worldbank.org/indicator/SE.ADT.LITR.ZS

Figure 8.5: Provincial functional literacy rates (%), 2003 and 2013



Global Insight, 2014

Literacy confers human development benefits, such as self-confidence, esteem as well as self empowerment. Literacy also has an influence on human capital and the ability of individuals, social institutions and nations to adapt and change along with technological and other developments in the global market. People that are literate tend to have a high social status (since they can obtain employment and earn income) and economic status (since they can be more productive as they are less costly to train and gain economic skills).

Figure 8.5 shows the functional literacy rate in SA by provinces in 2003 and 2013. In KZN, the literacy rate increased from 68.7 per cent in 2003 to 79.5 per cent in 2013. However, it was still 2.8 percentage points below the national level of 82.3 per cent in 2013. In 2013, functional literacy was the highest in GP (90.7 per cent) followed by the WC (89.1 per cent) and the lowest in both the EC and the NC provinces at 75.2 per cent each. KZN's functional literacy was the fourth highest among the nine provinces in 2013 and showed a 10.8 percentage point improvement between 2003 and 2013.

Table 8.4: KZN levels of education, 2003 and 2013

Level of Education	2003					2013				
	African	White	Coloured	Asian	Total	African	White	Coloured	Asian	Total
No schooling	20.8	1.2	3.4	5.2	17.6	10.9	0.4	2.2	2.7	9.5
Grade 0-6	21.2	1.2	6.3	8.7	18.3	15.9	1.2	5.8	8.4	14.3
Grade 7-11	38.3	26.4	52.7	41.8	38.1	42.2	20.7	43.8	35.1	40.5
Certificate / diploma without matric	0.7	4.5	2.4	1.2	1.0	0.4	2.1	0.8	0.7	0.6
Matric only	17.8	48.2	32.0	37.4	22.1	28.1	49.3	40.9	45.0	30.9
Higher	1.2	18.5	3.1	5.6	2.8	2.5	26.2	6.4	8.1	4.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Global Insight, 2014

Table 8.4 represents the level of education in KZN in 2003 and 2013. It is evident that the situation regarding the level of education in KZN improved over the 10-year period. In 2013, 9.5 per cent of the people 20 years and older have not received any schooling compared to the unacceptably high level of 17.6 per cent in 2003, which could have been very much reflective of the increase realised in the literacy rate in the province.

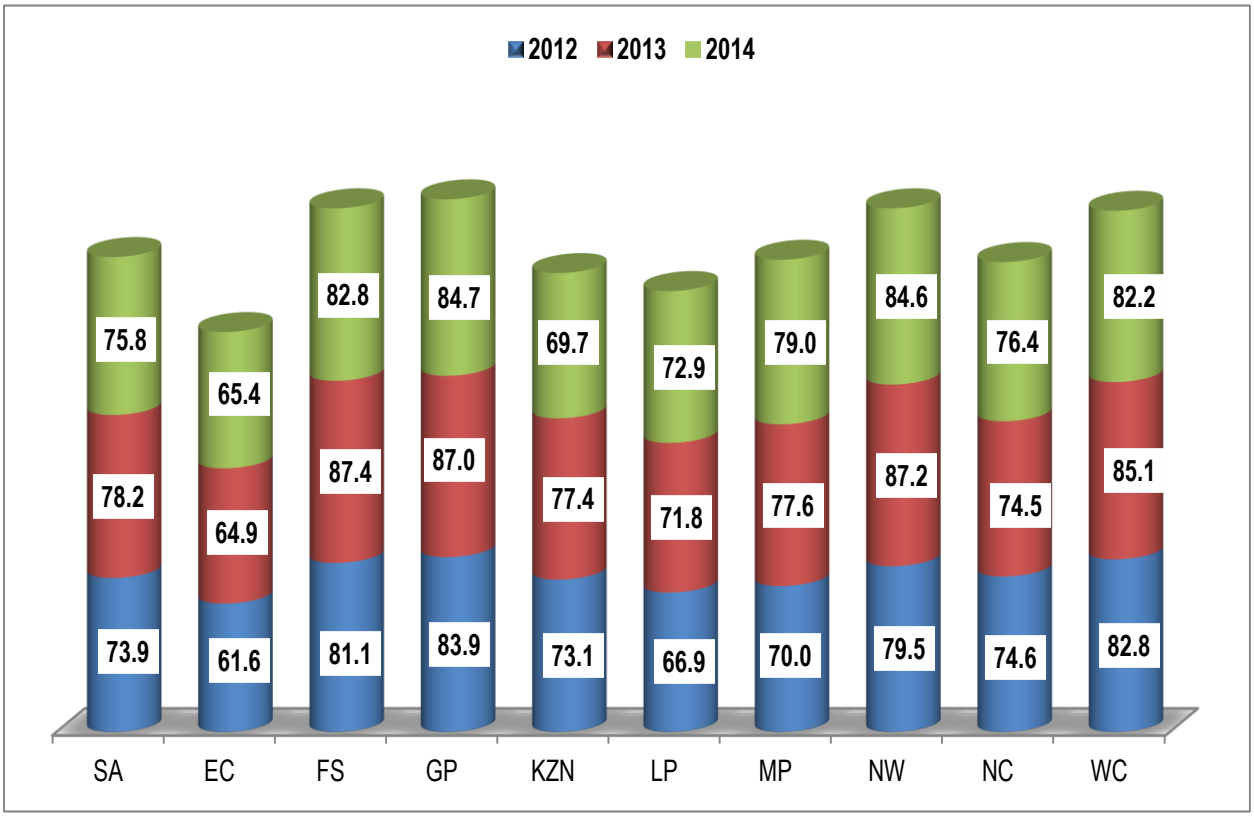
The percentage of the population 20 years and older that completed secondary education (matric only) in KZN increased from 22.1 per cent in 2003 to 30.9 per cent in 2013. This is admirable since it is reflective of more people in the economically active population (EAP) having received basic education and can be more productive members of society. It is encouraging to see that there had been an increase in the proportion of people who attained higher qualifications in 2013 (4.3 per cent) than in 2003 (2.8 per cent).

8.6.3 National senior certificate achievements

Figure 8.6 compares the national senior certificate (NSC) achievements between SA and among the provinces from 2012 to 2014. It is clear from the figure that in KZN the achievement rates decreased by 3.4 percentage point from 73.1 per cent in 2012 to 69.7 per cent in 2014. This is however discouraging as KZN had the greatest number of matriculants. It dropped to 8th in the provincial rankings[67]. The national rate recorded an increase from 73.9 per cent in 2012 to 75.8 per cent in 2014, even though it was a drop from last year's pass rate (78.2 per cent in 2013).

[67] http://www.enca.com/coverage/2014-matric-exams

Figure 8.6: Comparison of national and provincial NSC achievements in 2012, 2013 and 2014

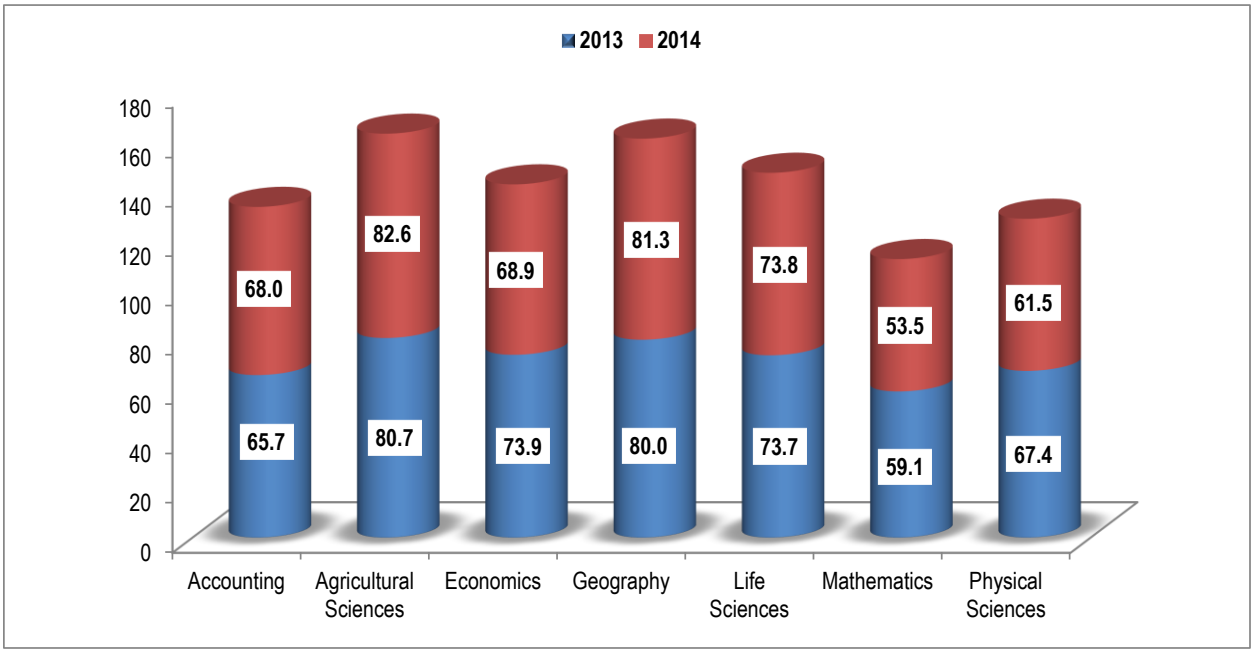


Source: Department of Basic Education, NSC Examination, 2014

This may have been due to a number of intervention programmes which were implemented by the Department of Basic Education (DBE) to improve education outcomes. Improvement in the quality of basic education has been identified as a top priority of the South African government on which the DBE has to deliver. Within this context, the Curriculum Policy, Support and Monitoring programme is the primary vehicle for ensuring quality delivery of the curriculum in the basic education sector (DBE, 2013).

The indicators in this programme are fundamentally directed towards improving learner performance as captured in the Action Plan to 2014: Towards the realisation of schooling 2025. This programme works towards achieving the strategic objectives of improving teacher capacity and practices as well as increased access to high quality learning materials.

Figure 8.7: Percentage of learners who achieved 30 per cent and above in selected subjects in 2013 and 2014



Source: Department of Basic Education, NSC examination, 2014

Figure 8.7 compares the percentage of learners who achieved 30 per cent and above in selected subjects from 2013 to 2014. While we share in celebrating the increasing number of young South Africans who pass the NSC, it is imperative that we are also concerned about their performance in the gateway subjects of Mathematics and Physical Science. The DBE's reports indicate a decrease from 59.1 per cent to 53.5 per cent (Mathematics) and 67.4 per cent to 61.5 per cent (Physical Science) respectively from 2013 to 2014. Life Science increased from 73.7 per cent to 73.8 per cent, Accounting increased from 65.7 per cent to 68.0 per cent, Geography increased from 80.0 per cent to 81.3 per cent and Economics decreased from 73.9 per cent to 68.9 per cent. Several international studies and the Annual National Assessment (ANA) results indicate that the problem with mathematics has its roots in primary school, where many learners fail to gain basic mathematical skills.

It is worth noting that most of the subjects achieved a positive trend, with the exception of Economics, Mathematics and Physical science. This means the national pool of students who are able to do a degree which requires mathematics is very limited (that is, degrees such as engineering, accountancy, economics and teaching degrees in mathematics and physical science). It is also worth noting that most students achieved 30 per cent as a minimum pass

mark, yet they are not able to gain access to university. However, these pool of learners can be absorbed by further education and training colleges whereby they will gain technical skills which will enable them to qualify as artisans in various fields.

8.7 Access to health

In the words of Jeffrey Sachs[68] (2013), "The MDGs have been the most successful undertaking in history to co-ordinate action to fight extreme poverty in all forms: income, hunger, disease, lack of schooling, and deficient basic infrastructure. Most importantly, they have helped Sub-Saharan Africa to enter an era of economic growth and disease reduction by focusing domestic and international policies, expertise, and finance on recalcitrant challenges, such as AIDS, tuberculosis, malaria, low farm yields and children out of school. The MDGs have mobilized an unprecedented focus on the global poor by promoting the cancellation of unaffordable debts; prompting the establishment of new organisations such as the global fund to fight AIDS, Tuberculosis and Malaria; and encouraging new technologies for diagnostics, medicines, supply chains, microfinance, and infrastructure. They will be met in full, but the MDGs have made their mark despite the hurdles of wars, the global financial crisis, tax evasion, and debilitating corruption in rich and poor countries alike". This address by Jeffrey Sachs on the impact of the MDGs resonates with a truth so irrefutable, that it makes a compelling case for the world community to throw its full weight behind the UN's newly proposed Sustainable Development Goals[69].

Despite the strides that have been made in reducing mortality rates in KZN, the province seems to be grappling with obstinate HIV and AIDS prevalence rates. The good news is that the province is seeing less HIV/AIDS related deaths, which means that those living with the disease(s) are living longer. This implies that government is succeeding in its endeavor to improve the quality of life of the infected. However, efforts need to be intensified in preventing new HIV/AIDS infections within the province.

[68] Jeffrey Sachs is a world renowned professor of economics, leader in sustainable development, senior UN advisor, bestselling author, and syndicated columnist whose monthly newspaper columns appear in more than 80 countries (www.jeffsachs.org). [Accessed 30 January 2015].

[69] One of the main outcomes of the Rio+20 Conference was the agreement by member states to launch a process to develop a set of SDGs which will build upon the MDGs, and converge with the post 2015 development agenda (www.un.org). [Accessed 30 January 2015].

Table 8.5: Projected AIDS orphans, AIDS sick, HIV prevalence, People living with HIV, 2011 to 2016

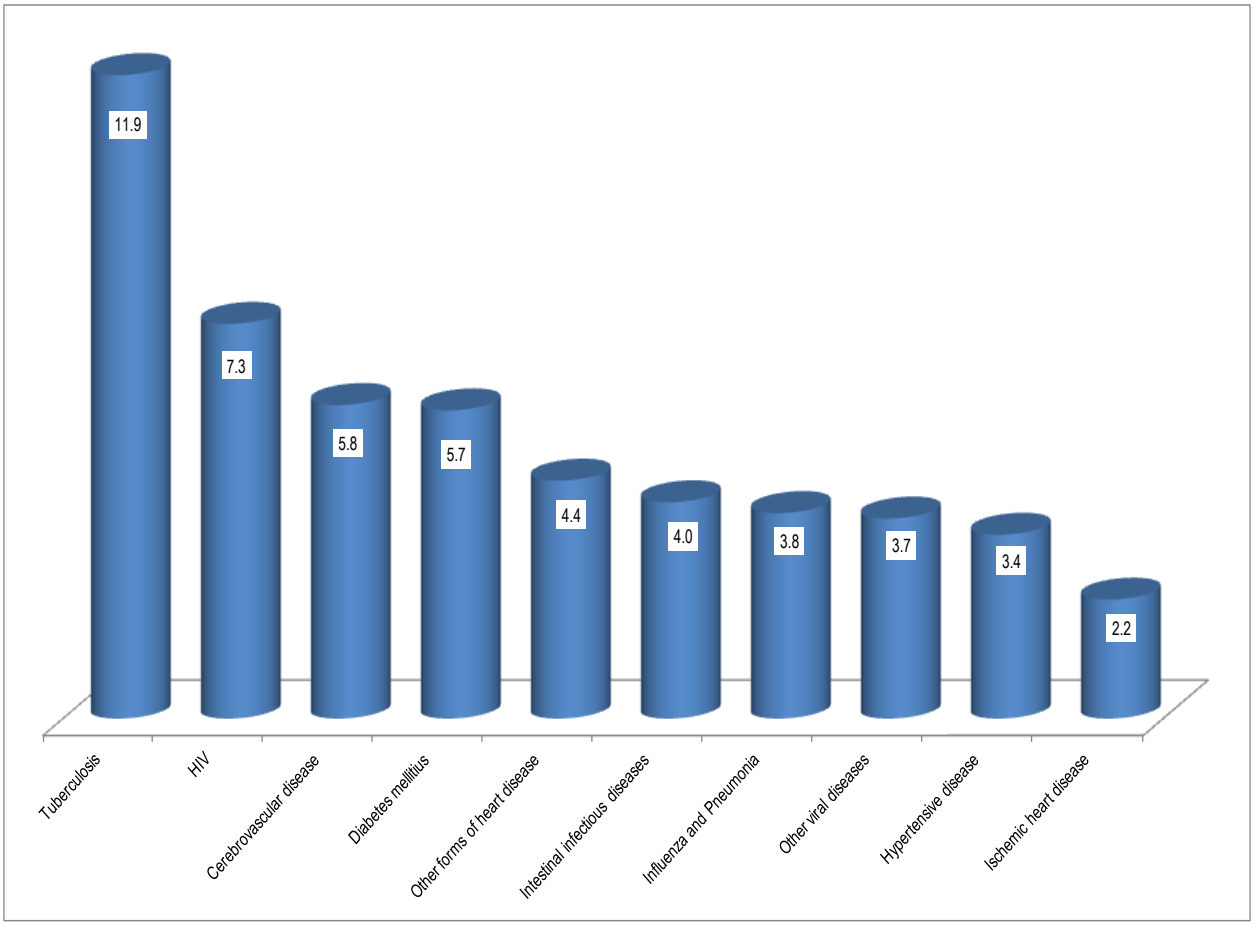
	SA	EC	FS	GP	KZN	LP	MP	NC	NW	WC
AIDS orphans (maternal orphans <18 years)										
2012 ASSA2008	1 313 260	176 955	89 353	268 550	407 190	98 219	135 452	12 729	110 540	48 708
2013 ASSA2008	1 351 144	181 485	90 299	276 490	413 145	102 965	138 031	13 673	112 088	52 397
2014 ASSA2008	1 379 917	184 941	90 480	281 811	416 079	107 574	139 608	14 563	112 733	55 869
2015 ASSA2008	1 400 267	187 391	90 079	284 602	416 265	111 858	140 340	15 365	112 672	58 905
AIDS sick										
2012 ASSA2008	553 253	64 849	36 010	132 375	158 413	36 035	46 712	7 617	45 384	27 595
2013 ASSA2008	591 116	69 948	37 490	139 348	168 173	39 672	49 513	8 293	47 342	30 323
2014 ASSA2008	629 183	75 325	39 323	146 240	177 961	43 143	52 712	8 896	49 611	32 721
2015 ASSA2008	665 502	80 652	41 238	152 552	187 299	46 526	55 965	9 432	51 915	34 743
HIV prevalence (%) (age 15-49)										
2012 ASSA2008	17.0	17.0	18.5	16.8	22.9	11.3	19.5	10.4	18.8	8.0
2013 ASSA2008	17.0	17.1	18.4	16.7	22.8	11.4	19.5	10.4	18.7	8.0
2014 ASSA2008	17.0	17.2	18.4	16.6	22.8	11.4	19.5	10.4	18.6	8.0
2015 ASSA2008	17.0	17.3	18.4	16.4	22.8	11.5	19.5	10.4	18.6	8.0
HIV prevalence (%) (total population)										
2012 ASSA2008	11.1	10.8	12.1	11.2	15.1	7.1	12.7	6.8	12.5	5.2
2012 ASSA2008 female	12.8	12.9	13.7	12.5	17.0	9.5	15.6	8.3	13.8	6.4
2012 ASSA2008 male	9.3	8.4	10.4	9.9	12.9	4.5	9.6	5.3	11.2	3.9
2013 ASSA2008	11.2	11.0	12.1	11.2	15.2	7.3	12.8	6.9	12.5	5.2
2013 ASSA2008 female	13.0	13.1	13.8	12.6	17.3	9.6	15.7	8.4	13.9	6.5
2013 ASSA2008 male	9.3	8.6	10.4	9.8	12.9	4.6	9.6	5.3	11.1	3.9
2014 ASSA2008	11.3	11.2	12.2	11.1	15.3	7.4	12.9	6.9	12.5	5.2
2014 ASSA2008 female	13.1	13.4	13.9	12.6	17.5	9.8	15.9	8.5	14.0	6.5
2014 ASSA2008 male	9.3	8.7	10.4	9.7	12.9	4.7	9.7	5.3	11.1	3.9
2015 ASSA2008	11.3	11.4	12.3	11.1	15.4	7.5	13.0	7.0	12.6	5.2
2015 ASSA2008 female	13.2	13.6	14.0	12.5	17.6	9.9	16.1	8.5	14.1	6.5
2015 ASSA2008 male	9.3	8.9	10.4	9.6	13.0	4.8	9.7	5.3	11.0	3.9
People living with HIV										
2012 ASSA2008	5 685 424	736 404	355 466	1 222 605	1 602 236	423 400	492 287	78 711	436 670	278 889
2013 ASSA2008	5 786 603	756 979	359 406	1 227 020	1 628 536	436 918	502 186	80 225	441 816	283 550
2014 ASSA2008	5 880 382	777 096	363 254	1 229 076	1 654 551	449 748	511 625	81 550	446 737	287 163
2015 ASSA2008	5 967 061	796 634	366 895	1 229 068	1 680 200	461 927	520 480	82 723	451 339	289 915

Source: Health Systems Trust, 2015

8.7.1 Causes of death in KZN

Tuberculosis (11.9 per cent), HIV (7.3 per cent) and cerebrovascular disease (5.8 per cent) were identified as the top three natural causes of death in KwaZulu-Natal in 2013. Diabetes (5.7 per cent), other forms of heart disease (4.4 per cent), and intestinal infectious diseases (4 per cent) followed closely behind cerebrovascular disease as leading causes of death in the province (Figure 8.8).

Figure 8.8: Ten leading natural causes of death, KwaZulu-Natal, 2013



Source: Stats SA, 2015

8.8 Crime

In September 2013, then Police minister, Nathi Mthethwa, said that unemployment and a lack of recreational and sports facilities contributed to substance abuse, adding that he was concerned at the fact that the users of drugs were becoming younger. He further went to say that strong partnerships were needed to beat drug abuse, with government departments and the community having a role to play in steering people away from drugs and in rehabilitating drug addicts.

According to the United Nations Office on Drugs and crime (2014), drug use continues to exert a significant toll on the economy, with valuable human lives and productive years of many persons being lost. It is therefore highly disconcerting that drug-related crime has escalated to the levels that it has in over such a short period of time within the province.

Table 8.6: Crime ratios for Top 10 KZN Crime categories by province, 2013/14

Crime Ratio per 100 000 of the population										
2013/14	Crime Category									
Province	All theft not mentioned elsewhere	Burglary at residential premises	Drug related crime	Common Assault	Assault WBH	Robbery WAC	Theft from motor vehicle	Driving UIAD	Malicious damage to property	Commercial Crime
South Africa	**1151.1**	**491.6**	**492.1**	**315.5**	**345.7**	**225.3**	**271.4**	**131.7**	**226.0**	**149.3**
Eastern Cape	427.2	373.7	227.5	202.2	414.5	203.6	178.8	111.0	193.9	105.8
Free State	683.3	594.3	297.8	622.0	527.8	194.6	206.5	64.3	297.2	163.5
Gauteng	883.7	535.3	587.0	351.6	326.7	335.0	335.6	205.1	277.6	218.0
KwaZulu-Natal	**481.6**	**421.3**	**439.5**	**252.4**	**277.7**	**201.2**	**178.4**	**120.5**	**144.4**	**121.0**
Limpopo	335.3	299.1	174.1	164.5	229.8	93.9	99.4	41.1	120.2	74.0
Mpumalanga	485.6	450.6	180.8	183.5	261.7	128.0	188.6	74.9	142.2	127.6
North West	509.7	429.0	306.2	188.5	375.5	15.1	167.4	62.6	165.6	160.2
Northern Cape	609.5	518.3	279.6	412.0	751.0	120.8	255.9	64.0	268.0	90.2
Western Cape	1574.7	840.8	1420.4	619.5	412.9	324.5	708.6	225.8	443.8	183.2
KZN Ranking	7	7	3	5	7	4	7	3	7	6

Source: South African Police Service, 2015

Table 8.6 reflects the top 10 crime categories prevalent in KZN during the 2013/14 financial year, and ranks these categories by province. It seems KZN is favoured by 7th position as it has ranked as such in 5 out of the 10 categories; these being crime categories mainly related to theft and aggression. KZN ranks 3rd in 2 of the categories; namely *drug-related crime* and *driving under the influence of alcohol or drugs*. This highlights the grim reality that KZN is grappling with the scourge of substance abuse.

The abuse of drugs poses a threat to the social health of communities as it has the potential to cause an increase in the incidences of violent crime, and predisposes communities to the health risks of HIV and hepatitis C where the use of injectable drugs, specifically the sharing of needles, is concerned. *Robbery with aggravating circumstances*[70] has also proven to be a major problem in KZN compared to other provinces. This could be seen as a natural progression when considering the high incidences of drug-related criminal offences. Both of these crime categories are considered to be crimes dependent on police action for detection.

[70]A robbery in which a firearm or other dangerous weapon is wielded, grievous bodily harm is inflicted or is threatened (www.ru.ac.za) [Accessed, 30 January 2015].

A closer examination of crime patterns in KZN reveals that not only was *drug related crime* the most prevalent crime category between 2013 and 2014, but that it was also among the fastest growing at 9 per cent. On a positive note, incidences of *driving under the influence of alcohol or drugs* however declined by 16.6 per cent over the same period (table 8.7). Crime statistics of some of the major towns and cities in the province can be found in Appendix A8.

Table 8.7: Crime levels and growth rates in KwaZulu-Natal, 2010 to 2014

Crime Category	April 2010 to March 2011	April 2011 to March 2012	April 2012 to March 2013	April 2013 to March 2014	April 2010 to March 2011	April 2011 to March 2012	April 2012 to March 2013	April 2013 to March 2014
	Crime figures				Growth Rate (%)			
CONTACT CRIMES (CRIMES AGAINST THE PERSON)								
Murder	3 749	3 422	3 629	3 625	-	-8.7	6.0	-0.1
Total Sexual Crimes	12 793	12 288	12 405	11 875	-	-3.9	1.0	-4.3
Attempted murder	3 915	3 666	3 855	3 866	-	-6.4	5.2	0.3
Assault with the intent to inflict grievous bodily harm	30 582	29 608	28 897	29 040	-	-3.2	-2.4	0.5
Common assault	32 271	31 983	30 172	26 393	-	-0.9	-5.7	-12.5
Common robbery	7 320	7 637	8 228	8 450	-	4.3	7.7	2.7
Robbery with aggravating circumstances	19 573	18 469	19 972	21 040	-	-5.6	8.1	5.3
CONTACT-RELATED CRIMES								
Arson	1 141	1 074	975	939	-	-5.9	-9.2	-3.7
Malicious injury to property	16 574	15 583	15 797	15 102	-	-6.0	1.4	-4.4
PROPERTY-RELATED CRIMES								
Burglary at non-residential premises	10 984	10 958	11 971	11 206	-	-0.2	9.2	-6.4
Burglary at residential premises	39 550	41 120	45 483	44 055	-	4.0	10.6	-3.1
Theft of motor vehicle and motorcycle	10 587	10 106	9 788	8 723	-	-4.5	-3.1	-10.9
Theft out of or from motor vehicle	15 945	15 960	18 064	18 655	-	0.1	13.2	3.3
Stock-theft	7 402	7 743	7 214	7 072	-	4.6	-6.8	-2.0
CRIME DETECTED AS A RESULT OF POLICE ACTION								
Unlawful possession of firearms and ammunition	5 072	4 696	4 444	4 586	-	-7.4	-5.4	3.2
Drug-related crime	32 457	37 415	42 167	45 954	-	15.3	12.7	9.0
Driving under the influence of alcohol or drugs	10 110	12 867	15 112	12 597	-	27.3	17.4	-16.6
OTHER SERIOUS CRIMES								
All theft not mentioned elsewhere	50 277	53 157	50 907	50 359	-	5.7	-4.2	-1.1
Commercial crime	15 276	13 681	14 458	12 658	-	-10.4	5.7	-12.4
Shoplifting	12 815	12 402	13 017	13 379	-	-3.2	5.0	2.8
SUBCATEGORIES OF AGGRAVATED ROBBERY								
Carjacking	2 619	2 229	2 427	2 274	-	-14.9	8.9	-6.3
Truck hijacking	94	64	82	46	-	-31.9	28.1	-43.9
Robbery at residential premises	3 998	3 751	4 119	4 099	-	-6.2	9.8	-0.5
Robbery at non-residential premises	1 943	1 911	2 353	2 707	-	-1.6	23.1	15.0
OTHER CRIME CATEGORIES								
Culpable homicide	2 391	2 411	2 282	2 238	-	0.8	-5.4	-1.9
Public violence	138	117	132	157	-	-15.2	12.8	18.9
Crimen injuria	5 904	6 206	5 641	4 077	-	5.1	-9.1	-27.7
Neglect and ill-treatment of children	372	302	306	244	-	-18.8	1.3	-20.3
Kidnapping	839	839	896	890	-	0.0	6.8	-0.7

Source: South African Police Service, 2015

8.9 Access to basic services

8.9.1 Access to electricity

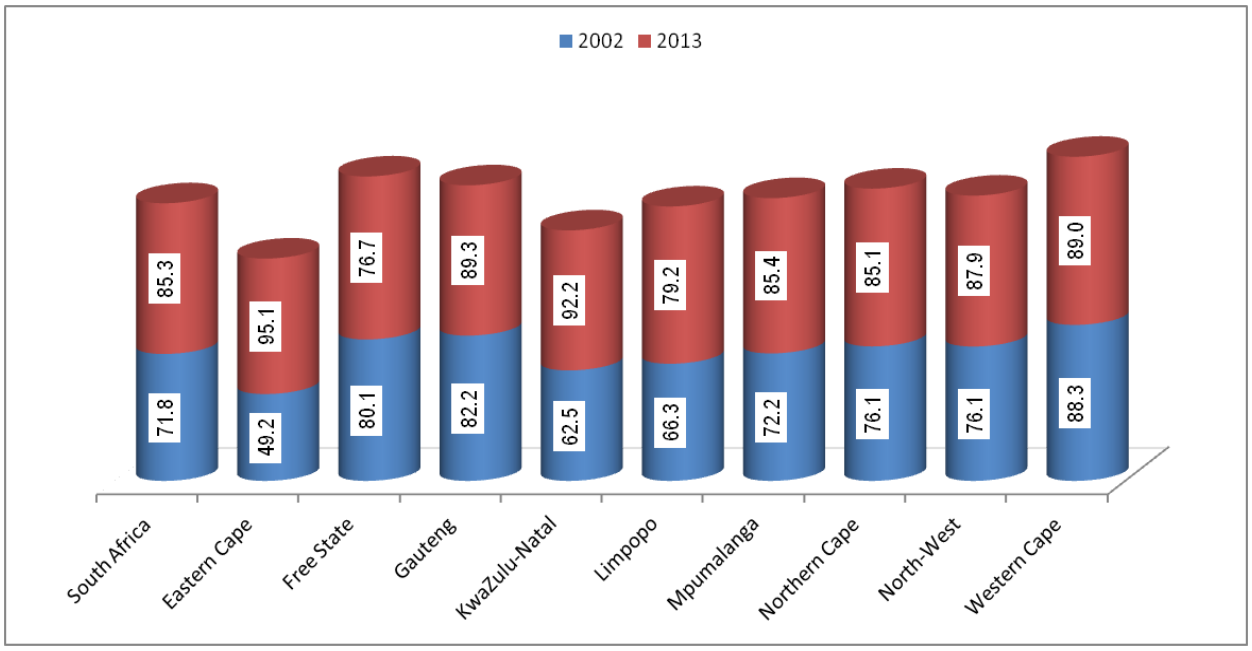
Electricity is a major input to industry for production, and output can be severely stunted without it, which would adversely affect economic growth. A nobler advocation for ensuring the supply of safe and reliable electricity, however, is that of promoting social development in our communities through infrastructure delivery; household infrastructure in particular. With access to electricity, households can benefit through lighting, which is an aid to children of school-going age in completing homework, for example. Electricity also serves as a safety mechanism as it deters would-be criminals from committing crimes such as theft, house breaking, and even interpersonal crimes such as murder and rape. Household chores such as cooking can be done quicker and safer with electricity, and this undoubtedly improves the quality of life of electricity recipients.

Due to the looming power crisis with Eskom, however, alternative energy sources need to be introduced by government to the poor and needy, as electricity supply has become unreliable. These renewable energy resources may be expensive to install, but they are cheaper to maintain and environmentally friendly, which contributes to sustainable development.

Electricity plays a crucial role in the upliftment of rural communities and the general betterment of societies. According to the Department of Energy (2013), South Africa has been able to connect 5.4 million households to electricity through its Integrated National Electrification Programme (INEP). In 2013, an estimated 85 per cent of the country's households were connected to electricity.

As evident in figure 8.9, a significant number of households that have been electrificated since 2002 to 2013 are found in the Eastern Cape (95.1 per cent) and KZN (92.2 per cent). A comparison of 2002 and 2013 indicates that credit must be given to the Eastern Cape, the Western Cape and KZN as these three provinces increased the number of households with access to electricity by 27.5 percentage points, 22.7 percentage points 16.7 percentage points respectively.

Figure 8.9: Share of households with electricity connections by province (2002 and 2013)



Source: Global Insight, 2014

8.9.2 Access to water

"Given the significantly higher water usage of coal-fired power stations compared to that of most renewable energy power plants, the transition to clean energy infrastructure might be more successfully motivated by water scarcity than by the promise of reduced carbon emissions" (Wassung, N., no date)[71].

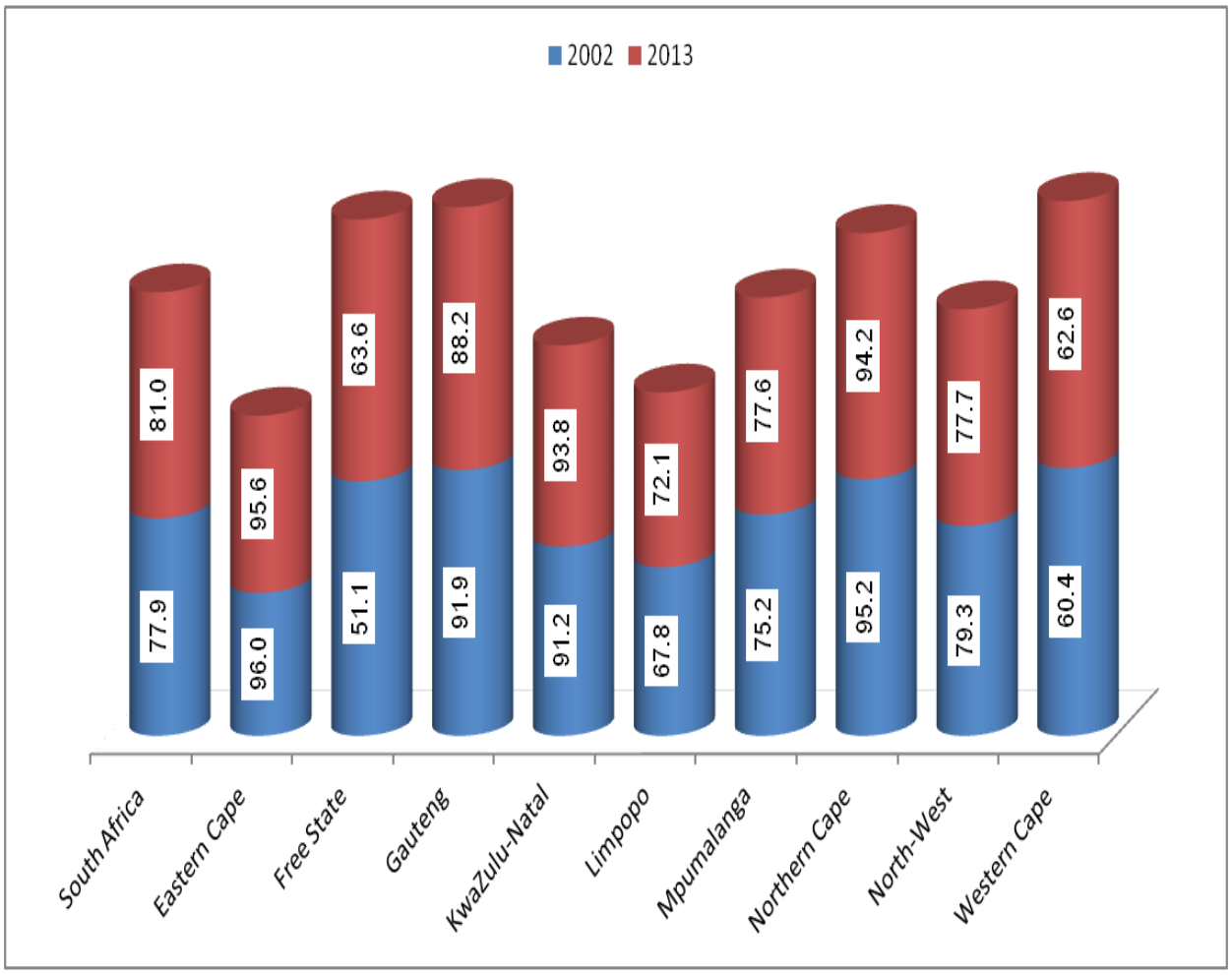
KZN has increased the number of households with water connections from 91.2 per cent in 2002 to 93.6 per cent in 2013. The province has outperformed Gauteng (88.2 per cent) in this regard. It was the Eastern Cape (95.6 per cent) and Western Cape (94.2 per cent), however, that made the greatest strides in providing access to water.

Umgeni Water, as the major source of drinkable water in the province, is currently planning on treating wastewater to potable standard and to build the largest sea water reserve osmosis (SWRO) plant through uMkhomazi Water Project to boost water supply within the province (Umgeni Water, 2014). Hopes are high that this project can reach fruition given that the

[71]http://ir1.sun.ac.za/../wassung thesis 2010.pdf?sequence=1 (Accessed 30 January 2015)

Department of Water and Sanitation (DWS, 2015) has set aside R352.4 million to help alleviate the situation in 10 drought-stricken areas of KZN.

Figure 8.10: Share of Household in South Africa by water connection in 2002 and 2013

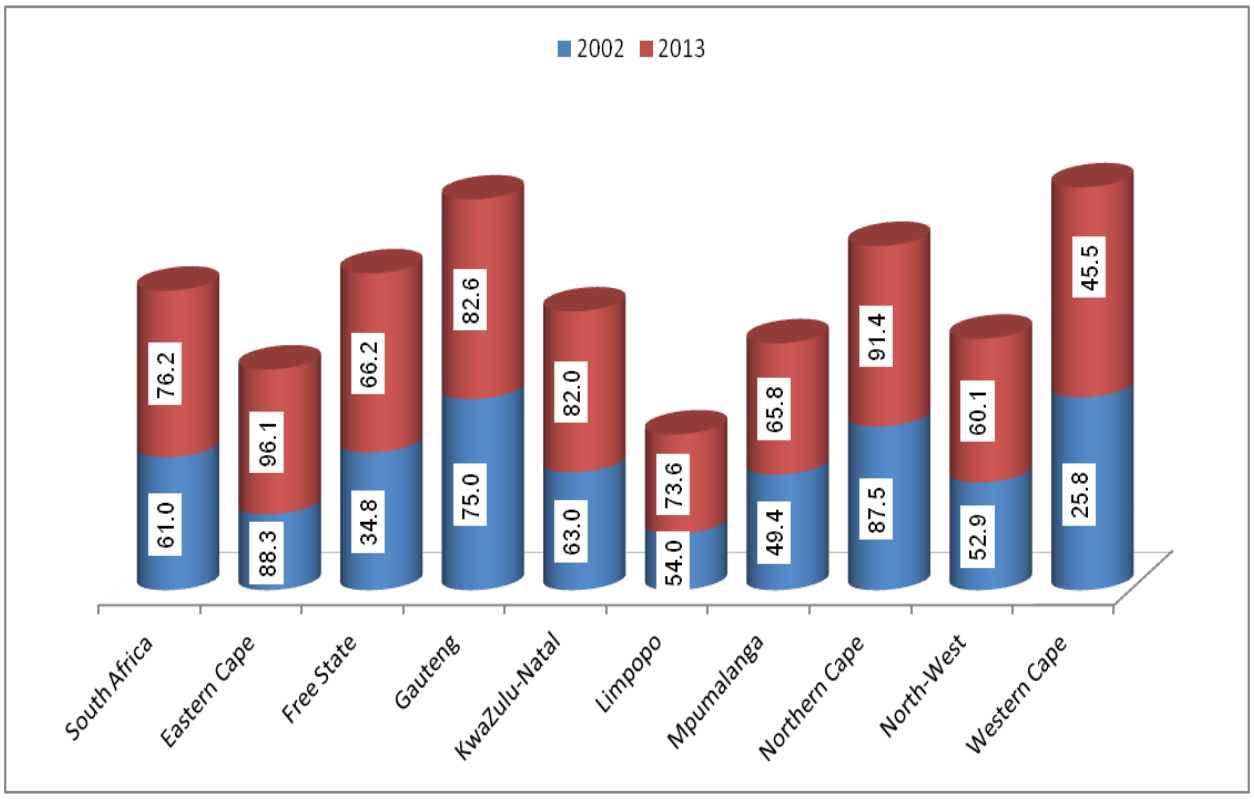


Source: Global Insight, 2014

8.9.3 Sanitation

Sanitation is the safe removal of human waste as well as the maintenance of hygienic conditions (WHO, 2015). In KZN, 82.0 per cent of households had access to proper sanitation in 2013, which is an increase of 19 per cent from 2002 coverage. A comparison of KZN and SA in terms of growth in access to sanitation shows that the province outperformed the country by 5.8 per cent.

Figure 8.11: Share of households with access to sanitation by province, 2002 and 2013



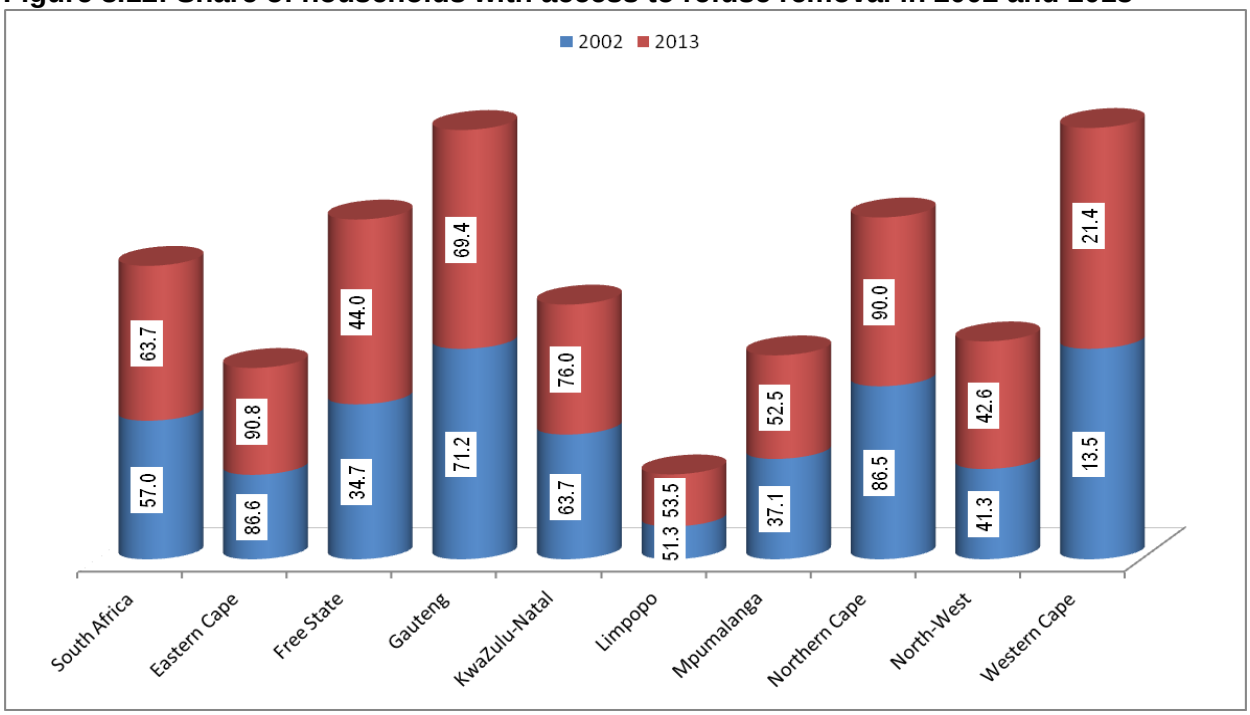
Source: Global Insight, 2014

8.9.4 Refuse Removal

National Waste Management System (NWMS[72]) is structured around eight goals and is accompanied by targets that must be achieved by 2016. Goal number 4 is set to ensure that people are aware of the impact of waste on their health, well-being and the environment. The aim is to have 80 per cent of municipalities running local awareness campaigns and 80 per cent of schools implementing waste awareness programmes by 2016[73]. About 76.0 per cent of households in KZN had access to formal refuse removal in 2013, an increase of 12.3 per cent in 2002.

[72]The National Waste Management Strategy (NWMS) is a legislative requirement of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), the 'Waste Act". The purpose of the NWMS is to achieve the objects of the Waste Act [Accessed 30 January 2015].
[73]https://www.environment.gov.za/sites/default/files/gazetted_notices/waste_strategy_establishment.pdf [Accessed 30 January 2015].

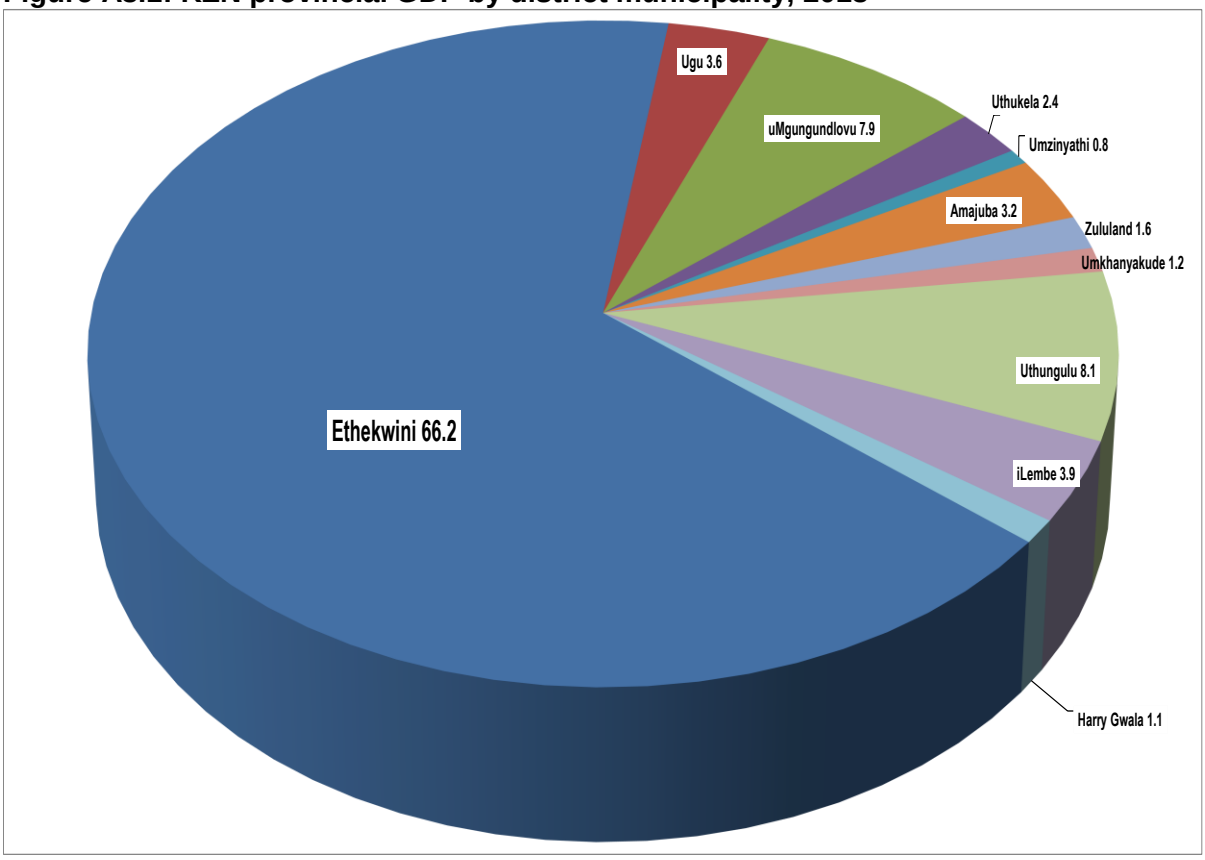
Figure 8.12: Share of households with access to refuse removal in 2002 and 2013



Source: Global Insight, 2014

Appendix A: List of additional figures and tables

Figure A3.1: KZN provincial GDP by district municipality, 2013



Source: Global Insight, 2014

Table A3.1: Sectors' average annual growth rate in KZN, 2003 to 2013

	KZN	Ethekwini	Ugu	uMgungundlovu	Uthukela	Umzinyathi	Amajuba	Zululand	Umkhanyakude	Uthungulu	iLembe	Sisonke
Primary Sector	**2.8**	**2.4**	**0.9**	**2.2**	**0.0**	**-2.1**	**-0.1**	**-0.3**	**-2.9**	**3.9**	**4.4**	**-3.9**
Agriculture	3.0	2.9	2.9	3.1	2.8	3.1	2.7	3.1	3.1	3.1	2.7	3.0
Mining	-0.2	-0.5	-2.0	-0.9	-2.8	-5.2	-2.8	-3.4	-6.0	0.8	1.6	-6.9
Secondary Sector	**11.3**	**12.6**	**9.2**	**8.5**	**9.1**	**5.9**	**5.3**	**6.0**	**5.7**	**6.0**	**17.2**	**8.1**
Manufacturing	2.6	3.2	1.5	1.6	1.9	0.4	0.5	0.4	0.6	0.6	4.7	2.1
Electricity	1.5	1.8	0.7	0.9	0.9	-1.6	-0.7	0.4	0.0	0.0	3.1	-0.1
Construction	7.2	7.7	7.0	6.0	6.3	7.0	5.4	5.2	5.1	5.4	9.3	6.1
Tertiary Sector	**16.4**	**17.1**	**16.6**	**13.4**	**14.8**	**13.7**	**12.0**	**11.6**	**19.7**	**10.8**	**24.8**	**14.7**
Trade	4.1	4.4	3.6	2.9	3.1	3.0	2.3	1.7	1.7	2.2	6.0	3.0
Transport	3.8	4.3	4.5	2.7	2.4	1.8	1.4	0.8	1.7	1.3	5.8	2.1
Finance	5.1	5.0	5.2	4.2	5.8	5.3	4.7	5.4	13.0	3.7	9.7	6.2
Community services	3.4	3.4	3.3	3.6	3.6	3.7	3.7	3.8	3.3	3.6	3.3	3.3

Source: Global Insight, 2014

Table A3.2: Sectors contribution to the real GDP, 2013

	1996	2003	2012	2013
Primary Sector	**8.8**	**7.8**	**6.6**	**6.6**
Agriculture	5.4	5.0	4.7	4.6
Mining	3.5	2.9	1.9	2.0
Secondary Sector	**28.4**	**26.9**	**25.8**	**25.5**
Manufacturing	21.0	20.6	18.7	18.5
Electricity	3.5	3.1	2.5	2.5
Construction	3.9	3.2	4.5	4.5
Tertiary Sector	**62.7**	**65.3**	**67.7**	**67.9**
Trade	13.5	15.1	15.8	15.7
Transport	9.6	12.0	12.1	12.1
Finance	14.2	15.7	17.9	18.1
Community services	25.4	22.4	21.8	22.0

Source: Global Insight, 2014

Table A3.3: Sub-sector's average annual growth rate (percentages) in KZN, 2003 to 2013

	KZN	Ethekwini	Ugu	uMgungundlovu	Uthukela	Umzinyathi	Amajuba	Zululand	Umkhanyakude	Uthungulu	iLembe	Sisonke
Primary Sector	**-8.7**	**-11.0**	**8.0**	**7.3**	**5.3**	**2.6**	**-13.6**	**-13.7**	**-8.5**	**10.5**	**9.1**	**-2.2**
11 Agriculture and hunting	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
12 Forestry and logging	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
13 Fishing, operation of fish farms	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
21 Mining of coal and lignite	-2.4	-2.5	-2.3	-2.5	-3.2	-5.4	-3.2	-3.3	-1.6	-1.5	-2.9	0.0
23 Mining of gold and uranium ore	-17.8	-18.3	0.0	0.0	0.0	0.0	-18.9	-18.9	-17.5	0.0	0.0	0.0
24 Mining of metal ores	2.8	1.9	2.1	1.9	1.2	0.9	1.2	1.2	2.5	3.0	3.0	-4.9
25-29 Other mining and quarrying (incl 22)	-1.3	-2.0	-1.8	-2.0	-2.7	-2.9	-2.7	-2.7	-1.9	-1.0	-1.0	-7.3
Secondary Sector	**39.8**	**45.2**	**32.0**	**26.6**	**30.4**	**22.3**	**19.1**	**12.5**	**14.3**	**18.6**	**71.1**	**39.4**
30 Food, beverages and tobacco products	2.9	3.1	1.7	1.7	1.4	1.0	1.0	0.7	0.6	1.0	4.6	2.4
31 Textiles, clothing and leather goods	3.4	3.7	2.4	2.1	2.7	1.7	1.6	1.6	1.2	1.5	6.2	1.9
32 Wood and wood products	1.7	2.3	0.7	0.9	0.7	-0.3	0.2	-0.3	-0.1	0.2	4.3	1.6
33 Fuel, petroleum, chemical and rubber products	3.1	3.4	2.2	2.2	2.5	0.7	1.3	1.0	1.1	1.2	5.9	3.2
34 Other non-metallic mineral products	0.5	1.1	0.3	-0.3	-0.5	-1.1	-0.9	-1.4	-1.2	-1.0	3.0	1.6
35 Metal products, machinery and household appliances	1.3	2.5	1.3	0.9	1.4	1.3	0.4	0.2	0.3	0.3	5.4	2.6
36 Electrical machinery and apparatus	5.2	5.5	4.8	3.8	4.5	3.2	3.3	2.9	3.0	3.3	7.8	5.9
37 Electronic, sound/vision, medical & other appliances	5.3	5.7	5.2	4.0	4.8	7.7	3.6	3.0	3.6	3.5	8.5	6.3
38 Transport equipment	4.3	4.5	3.5	2.8	3.2	1.6	2.3	1.8	2.0	2.3	6.7	5.1
39 Furniture and other items NEC and recycling	1.8	1.9	1.3	0.5	0.8	0.2	-0.1	-0.6	-0.5	-0.3	4.1	0.9
41 Electricity, gas, steam and hot water supply	1.2	1.8	-0.3	0.0	0.6	-2.8	-1.0	-3.6	-2.6	-0.6	3.4	-0.1
42 Collection, purification and distribution of water	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8
50 Construction	7.2	7.7	7.0	6.0	6.3	7.0	5.4	5.2	5.1	5.4	9.3	6.1
Tertiary Sector	**66.0**	**67.4**	**64.7**	**53.9**	**61.0**	**58.5**	**52.0**	**52.5**	**62.1**	**49.2**	**94.0**	**59.5**
61 Wholesale and commission trade	3.9	4.2	3.8	2.7	2.6	3.1	2.1	1.8	1.7	2.0	5.7	2.2
62 Retail trade and repairs of goods	3.5	3.8	3.0	2.3	2.6	2.5	1.7	1.4	1.4	1.6	5.5	3.2
63 Sale and repairs of motor vehicles, sale of fuel	6.4	6.8	6.0	5.2	5.5	4.5	4.6	4.4	4.2	4.5	8.5	4.7
64 Hotels and restaurants	3.5	3.8	3.2	2.3	2.1	3.0	1.7	1.6	1.4	1.7	5.4	2.0
71-72 Land and Water transport	2.2	2.7	2.0	1.1	1.7	1.3	0.6	0.2	0.3	0.5	4.4	1.7
73-74 Air transport and transport supporting activities	8.6	8.8	7.1	7.1	7.7	7.4	6.6	6.2	6.2	6.6	11.5	9.7
75 Post and telecommunication	7.2	7.5	6.9	5.9	6.5	4.9	5.3	5.0	4.9	5.3	9.2	5.6
81-83 Finance and Insurance	8.8	9.2	8.5	7.5	7.9	7.1	6.9	6.9	6.6	6.8	11.1	6.8
84 Real estate activities	-0.1	-1.7	2.6	-0.7	3.4	4.7	2.3	5.0	15.6	0.3	8.7	5.4
85-88 Other business activities	8.0	8.4	7.7	6.7	7.1	6.0	6.2	6.2	5.9	6.1	10.2	6.3
91 Public administration and defence activities	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	3.7
92 Education	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	2.9
93 Health and social work	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	4.7
94-99 Other service activities	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.7

Source: Global Insight, 2014

Table A3.4: Sub-sector's growth rate (percentages) in KZN, 2013

	KZN	Ethekwini	Ugu	uMgungundlovu	Uthukela	Umzinyathi	Amajuba	Zululand	Umkhanyakude	Uthungulu	iLembe	Sisonke
Primary Sector	**33.4**	**62.6**	**18.3**	**42.1**	**58.0**	**54.1**	**84.2**	**72.2**	**22.8**	**12.3**	**12.9**	**-5.1**
11 Agriculture and hunting	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
12 Forestry and logging	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4
13 Fishing, operation of fish farms	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
21 Mining of coal and lignite	-5.1	-1.1	-8.1	-1.1	3.6	0.4	3.6	-0.6	-9.8	-9.9	-9.2	0.0
23 Mining of gold and uranium ore	13.1	20.4	0.0	0.0	0.0	0.0	26.2	26.2	9.8	0.0	0.0	0.0
24 Mining of metal ores	9.8	19.2	10.7	19.2	24.8	24.4	24.8	20.9	8.8	8.5	8.5	-5.7
25-29 Other mining and quarrying (incl 22)	8.6	17.1	8.7	17.1	22.6	22.3	22.6	18.8	7.1	6.6	6.6	-6.3
Secondary Sector	**20.0**	**33.1**	**-24.5**	**-8.8**	**-16.2**	**-7.0**	**-14.7**	**-19.3**	**-30.7**	**-18.4**	**48.6**	**-20.8**
30 Food, beverages and tobacco products	-0.4	0.9	-3.9	-2.6	-3.9	-3.2	-3.2	-3.4	-4.4	-3.4	-0.3	-3.3
31 Textiles, clothing and leather goods	4.1	4.9	-0.1	1.2	0.9	1.1	0.6	1.3	-0.6	0.5	7.4	0.3
32 Wood and wood products	0.0	1.6	-3.4	-1.9	-3.1	-3.6	-2.5	-2.8	-3.7	-2.8	2.3	-2.5
33 Fuel, petroleum, chemical and rubber products	1.5	2.3	-2.5	-1.0	-1.4	-3.1	-1.8	-2.4	-2.8	-2.2	4.6	-1.6
34 Other non-metallic mineral products	1.4	2.9	-1.9	-0.6	-1.9	-1.7	-1.3	-1.7	-2.3	-1.7	3.0	-1.5
35 Metal products, machinery and household appliances	2.3	4.7	-0.3	1.0	0.6	2.6	0.4	0.8	-0.4	0.0	8.8	0.0
36 Electrical machinery and apparatus	5.8	6.7	1.8	3.0	2.8	1.9	2.1	1.8	1.1	2.0	8.4	1.9
37 Electronic, sound/vision, medical & other appliances	2.0	2.9	-1.8	-0.8	-0.8	7.3	-1.3	-1.3	-2.0	-1.7	6.0	-1.6
38 Transport equipment	-0.3	0.1	-4.5	-3.4	-4.0	-5.4	-4.0	-3.9	-5.1	-4.3	1.4	-4.4
39 Furniture and other items NEC and recycling	-1.1	-0.4	-5.0	-3.8	-4.4	-3.4	-4.4	-5.2	-5.5	-4.9	0.8	-3.8
41 Electricity, gas, steam and hot water supply	-2.5	-1.7	-6.6	-4.5	-4.9	-7.1	-3.4	-6.4	-8.0	-3.8	-1.7	-7.2
42 Collection, purification and distribution of water	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	3.1
50 Construction	3.1	4.2	-0.5	0.6	-0.2	3.6	0.0	-0.2	-1.2	-0.2	3.7	-0.2
Tertiary Sector	**32.6**	**41.2**	**-2.1**	**6.1**	**1.7**	**12.2**	**2.5**	**1.8**	**-8.1**	**0.1**	**39.0**	**-5.7**
61 Wholesale and commission trade	2.8	3.7	-1.0	0.1	-1.0	1.8	-0.5	-0.7	-1.7	-0.6	2.5	-1.1
62 Retail trade and repairs of goods	0.6	1.6	-3.1	-1.9	-2.5	-0.7	-2.5	-3.1	-3.6	-2.8	1.0	-2.2
63 Sale and repairs of motor vehicles, sale of fuel	1.6	2.5	-2.2	-1.0	-1.6	-1.7	-1.6	-1.8	-2.7	-2.1	2.0	-2.1
64 Hotels and restaurants	1.5	2.6	-2.1	-1.0	-2.4	1.5	-1.6	-1.6	-2.7	-0.9	1.6	-2.2
71-72 Land and Water transport	2.1	3.1	-1.6	-0.5	-0.7	0.8	-1.1	-1.2	-2.2	-1.4	2.9	-1.4
73-74 Air transport and transport supporting activities	2.5	3.0	-2.0	-0.6	-1.0	0.6	-1.2	-1.5	-2.5	-1.2	5.4	-1.6
75 Post and telecommunication	2.6	3.5	-1.2	-0.1	-0.3	-1.6	-0.8	-0.4	-2.0	-1.0	2.4	-1.3
81-83 Finance and Insurance	5.4	6.3	1.5	2.6	2.0	2.5	1.9	2.3	0.9	1.5	6.3	1.7
84 Real estate activities	1.0	1.5	1.0	-1.2	0.1	0.0	0.6	0.3	0.2	-0.3	1.7	0.4
85-88 Other business activities	1.7	2.6	-2.1	-1.0	-1.6	-1.8	-1.6	-1.1	-2.5	-2.0	2.2	-1.7
91 Public administration and defence activities	3.6	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	2.3
92 Education	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	1.7
93 Health and social work	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	2.0
94-99 Other service activities	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	-0.3

Source: Global Insight, 2014

Table A3.5: Sectors contribution to District real GDP, 2013

	KZN	Ethekwini	Ugu	uMgungundlovu	Uthukela	Umzinyathi	Amajuba	Zululand	Umkhanyakude	Uthungulu	iLembe	Sisonke
Primary Sector	**6.6**	**1.5**	**15.4**	**12.2**	**12.0**	**19.0**	**8.3**	**19.4**	**22.6**	**22.0**	**13.5**	**27.1**
1 Agriculture	4.6	1.3	14.0	11.7	10.8	17.3	4.6	12.7	21.3	5.6	12.6	27.0
2 Mining	2.0	0.2	1.4	0.5	1.2	1.7	3.7	6.7	1.3	16.3	0.8	0.1
Secondary Sector	**25.5**	**26.2**	**23.5**	**17.3**	**19.8**	**9.4**	**29.3**	**8.8**	**6.0**	**34.0**	**37.3**	**9.6**
3 Manufacturing	18.5	18.5	14.8	10.6	13.5	4.5	23.9	4.7	2.9	29.5	31.4	6.1
4 Electricity	2.5	2.7	3.4	2.8	2.6	1.6	2.0	1.3	1.3	1.0	2.0	1.2
5 Construction	4.5	5.0	5.3	3.8	3.6	3.4	3.4	2.8	1.8	3.6	3.9	2.3
Tertiary Sector	**67.9**	**72.3**	**61.1**	**70.5**	**68.3**	**71.5**	**62.4**	**71.8**	**71.4**	**44.0**	**49.2**	**63.3**
6 Trade	15.7	18.1	16.7	12.2	11.8	8.4	9.8	8.7	7.9	7.7	13.1	18.3
7 Transport	12.1	14.3	6.2	9.1	12.1	4.4	8.1	5.3	3.9	10.6	5.6	3.9
8 Finance	18.1	20.2	16.0	16.3	15.1	11.2	15.5	16.7	19.0	10.3	14.4	8.8
9 Community services	22.0	19.7	22.2	32.9	29.3	47.5	29.0	41.1	40.7	15.4	16.2	32.3

Source: Global Insight, 2014

Table A3.6: Sectors contribution to KZN real GDP by district municipality, 2013

	Ethekwini	Ugu	uMgungundlovu	Uthukela	Umzinyathi	Amajuba	Zululand	Umkhanyakude	Uthungulu	iLembe	Harry Gwala
Primary Sector	**25.6**	**13.5**	**22.8**	**7.1**	**3.8**	**9.4**	**11.3**	**6.8**	**80.7**	**12.1**	**7.0**
1 Agriculture	17.9	11.0	20.6	5.6	3.1	3.2	5.0	6.0	10.2	10.5	6.9
2 Mining	7.7	2.5	2.1	1.5	0.7	6.2	6.3	0.9	70.4	1.6	0.1
Secondary Sector	**207.9**	**12.2**	**21.0**	**6.2**	**1.3**	**9.3**	**2.6**	**1.4**	**23.5**	**12.9**	**1.6**
3 Manufacturing	65.1	2.9	4.7	1.8	0.2	4.2	0.5	0.2	13.5	6.5	0.4
4 Electricity	71.2	5.0	9.3	2.6	0.5	2.6	1.0	0.7	3.4	3.1	0.6
5 Construction	71.6	4.2	7.0	1.9	0.6	2.4	1.1	0.5	6.7	3.3	0.6
Tertiary Sector	**282.3**	**12.6**	**32.2**	**9.5**	**3.1**	**11.3**	**6.9**	**4.9**	**22.3**	**10.9**	**4.1**
6 Trade	75.0	3.9	6.4	1.8	0.4	2.0	1.0	0.7	4.1	3.2	1.4
7 Transport	76.4	1.9	6.1	2.4	0.3	2.2	0.8	0.4	7.4	1.8	0.4
8 Finance	72.5	3.2	7.4	2.0	0.5	2.8	1.7	1.4	4.8	3.1	0.6
9 Community services	58.3	3.7	12.3	3.2	1.8	4.3	3.4	2.4	5.9	2.8	1.8

Source: Global Insight, 2014

Table A3.6: South African main indices of consumer price index (CPI) in all urban areas, December 2014

	Weighting	Monthly	Yearly
Food	**14.2**	**-0.4**	**7.4**
Non-acoholic beverages	1.2	-0.6	4.5
Alcoholic beverages	4.0	0	7.2
Tobacco	**1.5**	**0.1**	**8.2**
Clothing and footwear	4.1	0.3	6.2
Housing and utilities	24.5	0.5	5.7
Household contents and services	**4.8**	**0.1**	**2.2**
Health	1.5	-0.5	5.6
Transport	16.4	-1.6	1.7
Communication	**2.6**	**-0.9**	**-1.7**
Recreation and culture	4.1	0.1	3
Education	3.0	0	8.7
Restaurants and hotels	**3.5**	**0.3**	**8.6**
Miscellaneous goods and services	14.7	0.1	7.1

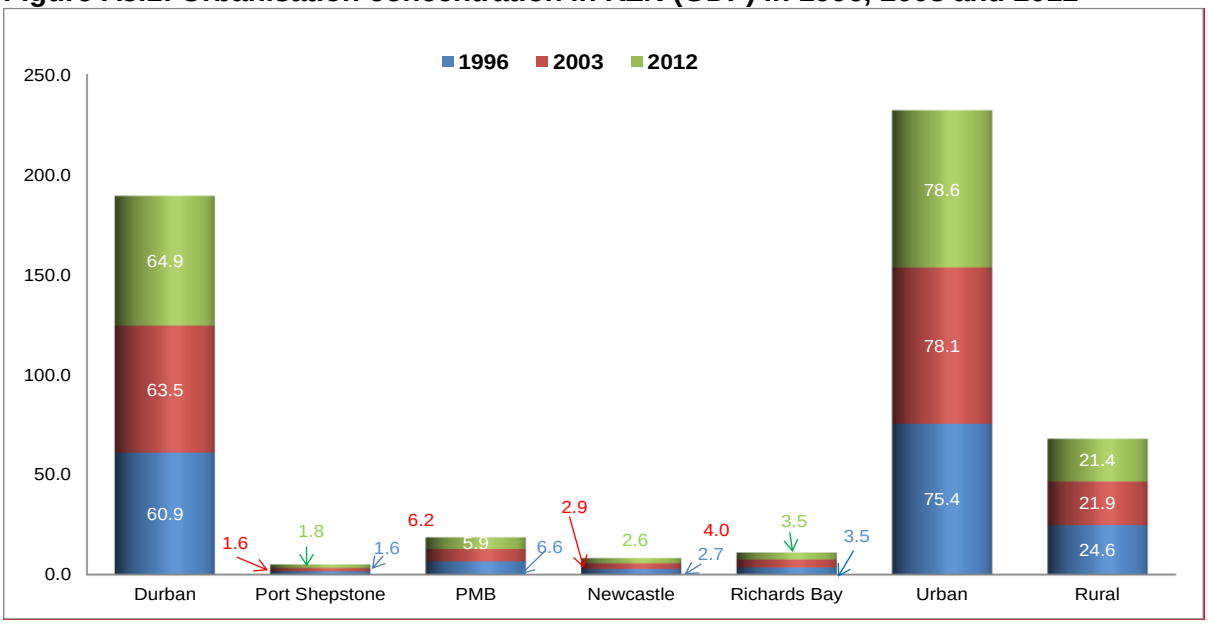
Source: Stats SA, 2015

Table A5.1: Population per road distance matrix

	Ethekwini	Msunduzi	Umhlathuze	Hibiscus Coast	Newcastle
Ethekwini	0	45 210	20 239	29 753	10 454
Msunduzi	8 134	0	2 303	3 621	2 447
Umhlathuze	1 970	1 246	0	1 122	813
Hibiscus Coast	2 233	1 510	865	0	609
Newcastle	1 003	1 305	801	779	0

Source: Own calculations using data from KZN Provincial Economic Model, 2013

Figure A5.1: Urbanisation concentration in KZN (GDP) in 1996, 2003 and 2012



Source: Own calculations using data from KZN Provincial Economic Model, 2013

Figure A5.2: The exhibit of panel of gravity

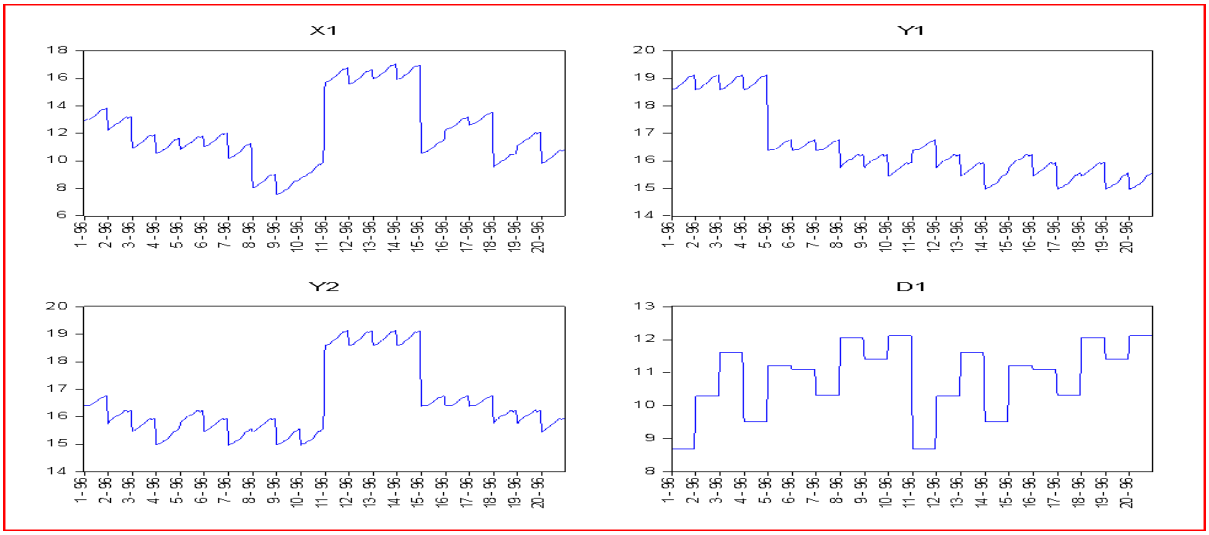


Figure A8.1: Crime in Dundee, 2010 to 2014

Crime Category	April 2010 to March 2011	April 2011 to March 2012	April 2012 to March 2013	April 2013 to March 2014
CONTACT CRIMES (CRIMES AGAINST THE PERSON)				
Murder	13	16	21	17
Total Sexual Crimes	86	63	52	67
Attempted murder	12	9	8	15
Assault with the intent to inflict grievous bodily harm	189	184	156	156
Common assault	266	322	290	253
Common robbery	57	61	56	45
Robbery with aggravating circumstances	43	76	90	85
CONTACT-RELATED CRIMES				
Arson	8	3	3	5
Malicious injury to property	106	101	86	81
PROPERTY-RELATED CRIMES				
Burglary at non-residential premises	76	57	76	59
Burglary at residential premises	222	166	168	215
Theft of motor vehicle and motorcycle	52	43	19	32
Theft out of or from motor vehicle	62	60	52	66
Stock-theft	67	44	54	58
CRIME DETECTED AS A RESULT OF POLICE ACTION				
Unlawful possession of firearms and ammunition	31	40	33	50
Drug-related crime	227	243	369	395
Driving under the influence of alcohol or drugs	107	116	175	160
OTHER SERIOUS CRIMES				
All theft not mentioned elsewhere	304	329	357	249
Commercial crime	96	73	91	123
Shoplifting	73	104	126	113
SUBCATEGORIES OF AGGRAVATED ROBBERY				
Carjacking	10	4	3	5
Truck hijacking	1	0	1	1
Robbery at residential premises	6	5	10	12
Robbery at non-residential premises	3	15	14	20
OTHER CRIME CATEGORIES				
Culpable homicide	12	12	15	10
Public violence	1	0	1	3
Crimen injuria	21	31	22	23
Neglect and ill-treatment of children	0	3	1	1
Kidnapping	5	2	1	4

Source: SAPS, 2014

Figure A8.2: Crime in Durban, 2010 to 2014

Crime Category	April 2010 to March 2011	April 2011 to March 2012	April 2012 to March 2013	April 2013 to March 2014
CONTACT CRIMES (CRIMES AGAINST THE PERSON)				
Murder	38	42	39	41
Total Sexual Crimes	763	526	576	672
Attempted murder	31	25	36	28
Assault with the intent to inflict grievous bodily harm	365	325	312	333
Common assault	813	880	789	635
Common robbery	487	515	468	445
Robbery with aggravating circumstances	899	924	885	951
CONTACT-RELATED CRIMES				
Arson	2	2	0	1
Malicious injury to property	390	332	378	387
PROPERTY-RELATED CRIMES				
Burglary at non-residential premises	573	537	599	579
Burglary at residential premises	153	184	199	194
Theft of motor vehicle and motorcycle	671	589	673	623
Theft out of or from motor vehicle	1144	1076	1252	1247
Stock-theft	0	0	0	0
CRIME DETECTED AS A RESULT OF POLICE ACTION				
Unlawful possession of firearms and ammunition	73	87	91	49
Drug-related crime	1872	2304	2336	2528
Driving under the influence of alcohol or drugs	616	978	1111	1166
OTHER SERIOUS CRIMES				
All theft not mentioned elsewhere	2945	3237	3428	3397
Commercial crime	1232	1162	1141	1128
Shoplifting	1843	1958	1840	1694
SUBCATEGORIES OF AGGRAVATED ROBBERY				
Carjacking	36	37	38	41
Truck hijacking	0	0	1	0
Robbery at residential premises	7	11	9	13
Robbery at non-residential premises	56	65	66	68
OTHER CRIME CATEGORIES				
Culpable homicide	61	68	45	50
Public violence	3	5	4	1
Crimen injuria	122	124	93	80
Neglect and ill-treatment of children	18	10	17	14
Kidnapping	36	39	34	36

Source: SAPS, 2014

Figure A8.3: Crime in Jozini, 2010 to 2014

Crime category	April 2010 to March 2011	April 2011 to March 2012	April 2012 to March 2013	April 2013 to March 2014
CONTACT CRIMES (CRIMES AGAINST THE PERSON)				
Murder	17	22	22	14
Total Sexual Crimes	90	97	91	103
Attempted murder	18	18	18	11
Assault with the intent to inflict grievous bodily harm	190	231	191	170
Common assault	96	81	74	71
Common robbery	15	27	37	28
Robbery with aggravating circumstances	73	73	91	56
CONTACT-RELATED CRIMES				
Arson	7	13	18	17
Malicious injury to property	37	44	35	30
PROPERTY-RELATED CRIMES				
Burglary at non-residential premises	59	58	66	59
Burglary at residential premises	125	102	140	104
Theft of motor vehicle and motorcycle	4	6	9	5
Theft out of or from motor vehicle	19	19	14	19
Stock-theft	54	56	37	75
CRIME DETECTED AS A RESULT OF POLICE ACTION				
Unlawful possession of firearms and ammunition	40	15	29	27
Drug-related crime	31	40	37	34
Driving under the influence of alcohol or drugs	82	93	106	79
OTHER SERIOUS CRIMES				
All theft not mentioned elsewhere	102	112	126	135
Commercial crime	29	45	39	63
Shoplifting	3	4	6	12
SUBCATEGORIES OF AGGRAVATED ROBBERY				
Carjacking	0	3	8	1
Truck hijacking	0	1	0	0
Robbery at residential premises	28	32	26	12
Robbery at non-residential premises	24	17	26	21
OTHER CRIME CATEGORIES				
Culpable homicide	8	9	6	10
Public violence	0	1	1	1
Crimen injuria	2	4	6	6
Neglect and ill-treatment of children	0	3	0	2
Kidnapping	1	10	6	6

Source: SAPS, 2014

Figure A8.4: Crime in Kokstad, 2010 to 2014

Crime category	April 2010 to March 2011	April 2011 to March 2012	April 2012 to March 2013	April 2013 to March 2014
CONTACT CRIMES (CRIMES AGAINST THE PERSON)				
Murder	17	25	14	25
Total Sexual Crimes	86	62	95	63
Attempted murder	13	18	10	10
Assault with the intent to inflict grievous bodily harm	293	233	259	217
Common assault	158	132	127	105
Common robbery	51	48	48	53
Robbery with aggravating circumstances	49	78	62	64
CONTACT-RELATED CRIMES				
Arson	3	9	7	4
Malicious injury to property	97	76	101	125
PROPERTY-RELATED CRIMES				
Burglary at non-residential premises	50	40	39	24
Burglary at residential premises	256	267	300	296
Theft of motor vehicle and motorcycle	14	19	10	23
Theft out of or from motor vehicle	143	167	251	297
Stock-theft	55	62	79	41
CRIME DETECTED AS A RESULT OF POLICE ACTION				
Unlawful possession of firearms and ammunition	13	15	8	18
Drug-related crime	396	258	290	262
Driving under the influence of alcohol or drugs	123	139	196	108
OTHER SERIOUS CRIMES				
All theft not mentioned elsewhere	251	209	245	213
Commercial crime	108	133	109	142
Shoplifting	119	133	107	74
SUBCATEGORIES OF AGGRAVATED ROBBERY				
Carjacking	0	1	2	3
Truck hijacking	0	0	0	0
Robbery at residential premises	7	13	11	19
Robbery at non-residential premises	5	4	8	8
OTHER CRIME CATEGORIES				
Culpable homicide	22	13	15	13
Public violence	0	0	0	1
Crimen injuria	37	26	18	16
Neglect and ill-treatment of children	1	1	2	1
Kidnapping	6	5	6	4

Source: SAPS, 2014

Figure A8.5: Crime in KwaDukuza, 2010 to 2014

Crime Category	April 2010 to March 2011	April 2011 to March 2012	April 2012 to March 2013	April 2013 to March 2014
CONTACT CRIMES (CRIMES AGAINST THE PERSON)				
Murder	68	57	47	55
Total Sexual Crimes	219	202	229	236
Attempted murder	74	81	71	66
Assault with the intent to inflict grievous bodily harm	500	463	494	457
Common assault	637	766	684	666
Common robbery	94	118	118	134
Robbery with aggravating circumstances	500	459	487	635
CONTACT-RELATED CRIMES				
Arson	23	15	10	11
Malicious injury to property	321	345	305	325
PROPERTY-RELATED CRIMES				
Burglary at non-residential premises	151	185	176	129
Burglary at residential premises	756	732	969	1152
Theft of motor vehicle and motorcycle	132	134	85	98
Theft out of or from motor vehicle	266	245	252	285
Stock-theft	14	4	12	17
CRIME DETECTED AS A RESULT OF POLICE ACTION				
Unlawful possession of firearms and ammunition	100	77	70	54
Drug-related crime	698	957	953	1 027
Driving under the influence of alcohol or drugs	131	234	207	268
OTHER SERIOUS CRIMES				
All theft not mentioned elsewhere	892	1 073	1 041	1 106
Commercial crime	493	541	326	293
Shoplifting	215	242	251	342
SUBCATEGORIES OF AGGRAVATED ROBBERY				
Carjacking	50	33	35	40
Truck hijacking	1	0	0	0
Robbery at residential premises	79	77	88	86
Robbery at non-residential premises	26	37	46	87
OTHER CRIME CATEGORIES				
Culpable homicide	44	41	37	40
Public violence	7	7	3	5
Crimen injuria	61	95	102	68
Neglect and ill-treatment of children	14	9	12	5
Kidnapping	27	27	14	10

Source: SAPS, 2014

Figure A8.6: Crime in Ladysmith, 2010 to 2014

Crime Category	April 2010 to March 2011	April 2011 to March 2012	April 2012 to March 2013	April 2013 to March 2014
CONTACT CRIMES (CRIMES AGAINST THE PERSON)				
Murder	44	39	46	39
Total Sexual Crimes	173	145	157	138
Attempted murder	52	65	57	51
Assault with the intent to inflict grievous bodily harm	518	538	485	433
Common assault	702	703	708	563
Common robbery	123	117	130	104
Robbery with aggravating circumstances	326	300	268	369
CONTACT-RELATED CRIMES				
Arson	15	17	10	9
Malicious injury to property	294	270	262	241
PROPERTY-RELATED CRIMES				
Burglary at non-residential premises	165	201	236	206
Burglary at residential premises	514	481	614	676
Theft of motor vehicle and motorcycle	81	84	104	74
Theft out of or from motor vehicle	297	253	256	344
Stock-theft	231	211	248	207
CRIME DETECTED AS A RESULT OF POLICE ACTION				
Unlawful possession of firearms and ammunition	32	61	35	64
Drug-related crime	119	158	73	100
Driving under the influence of alcohol or drugs	539	651	718	727
OTHER SERIOUS CRIMES				
All theft not mentioned elsewhere	922	1 065	1 009	1 090
Commercial crime	265	128	140	161
Shoplifting	542	476	488	465
SUBCATEGORIES OF AGGRAVATED ROBBERY				
Carjacking	12	12	16	11
Truck hijacking	2	6	6	6
Robbery at residential premises	33	27	32	57
Robbery at non-residential premises	33	18	24	32
OTHER CRIME CATEGORIES				
Culpable homicide	43	32	27	32
Public violence	0	1	1	1
Crimen injuria	242	229	178	139
Neglect and ill-treatment of children	3	2	2	1
Kidnapping	24	34	22	13

Source: SAPS, 2014

Figure A8.7: Crime in Pietermaritzburg, 2010 to 2014

Crime Category	April 2010 to March 2011	April 2011 to March 2012	April 2012 to March 2013	April 2013 to March 2014
CONTACT CRIMES (CRIMES AGAINST THE PERSON)				
Murder	30	30	43	27
Total Sexual Crimes	71	66	215	156
Attempted murder	13	16	27	20
Assault with the intent to inflict grievous bodily harm	235	241	234	188
Common assault	449	420	467	428
Common robbery	117	182	374	512
Robbery with aggravating circumstances	315	350	441	573
CONTACT-RELATED CRIMES				
Arson	1	5	1	1
Malicious injury to property	212	237	230	188
PROPERTY-RELATED CRIMES				
Burglary at non-residential premises	263	338	321	378
Burglary at residential premises	103	125	125	145
Theft of motor vehicle and motorcycle	206	176	168	134
Theft out of or from motor vehicle	410	371	407	753
Stock-theft	0	0	0	0
CRIME DETECTED AS A RESULT OF POLICE ACTION				
Unlawful possession of firearms and ammunition	36	40	45	34
Drug-related crime	804	835	880	922
Driving under the influence of alcohol or drugs	96	95	92	85
OTHER SERIOUS CRIMES				
All theft not mentioned elsewhere	1 114	1 233	1 230	1 424
Commercial crime	955	638	521	599
Shoplifting	757	741	798	678
SUBCATEGORIES OF AGGRAVATED ROBBERY				
Carjacking	7	7	8	7
Truck hijacking	0	0	2	1
Robbery at residential premises	10	12	15	14
Robbery at non-residential premises	38	33	41	38
OTHER CRIME CATEGORIES				
Culpable homicide	19	14	11	13
Public violence	11	0	0	11
Crimen injuria	75	51	73	56
Neglect and ill-treatment of children	8	6	8	1
Kidnapping	10	11	21	11

Source: SAPS, 2014

Figure A8.8: Crime in Port Shepstone, 2010 to 2014

Crime Category	April 2010 to March 2011	April 2011 to March 2012	April 2012 to March 2013	April 2013 to March 2014
CONTACT CRIMES (CRIMES AGAINST THE PERSON)				
Murder	51	49	48	45
Total Sexual Crimes	140	190	218	461
Attempted murder	53	62	85	85
Assault with the intent to inflict grievous bodily harm	415	382	332	302
Common assault	513	473	382	412
Common robbery	96	105	96	126
Robbery with aggravating circumstances	185	210	238	219
CONTACT-RELATED CRIMES				
Arson	9	9	3	6
Malicious injury to property	168	180	164	114
PROPERTY-RELATED CRIMES				
Burglary at non-residential premises	189	211	203	218
Burglary at residential premises	635	692	693	715
Theft of motor vehicle and motorcycle	57	50	64	109
Theft out of or from motor vehicle	293	299	252	323
Stock-theft	5	5	2	5
CRIME DETECTED AS A RESULT OF POLICE ACTION				
Unlawful possession of firearms and ammunition	39	43	28	28
Drug-related crime	329	417	906	493
Driving under the influence of alcohol or drugs	340	379	164	145
OTHER SERIOUS CRIMES				
All theft not mentioned elsewhere	662	669	653	626
Commercial crime	379	311	318	321
Shoplifting	292	287	396	480
SUBCATEGORIES OF AGGRAVATED ROBBERY				
Carjacking	5	2	3	0
Truck hijacking	0	0	1	0
Robbery at residential premises	23	37	43	30
Robbery at non-residential premises	17	20	30	33
OTHER CRIME CATEGORIES				
Culpable homicide	43	58	47	34
Public violence	5	1	3	0
Crimen injuria	59	85	67	37
Neglect and ill-treatment of children	3	0	2	4
Kidnapping	12	11	8	7

Source: SAPS, 2014

Figure A8.9: Crime in Vryheid, 2010 to 2014

Crime Category	April 2010 to March 2011	April 2011 to March 2012	April 2012 to March 2013	April 2013 to March 2014
CONTACT CRIMES (CRIMES AGAINST THE PERSON)				
Murder	19	23	24	20
Total Sexual Crimes	84	117	97	120
Attempted murder	13	13	21	16
Assault with the intent to inflict grievous bodily harm	256	222	255	199
Common assault	323	272	214	201
Common robbery	74	50	55	99
Robbery with aggravating circumstances	36	43	65	77
CONTACT-RELATED CRIMES				
Arson	0	1	4	1
Malicious injury to property	199	198	191	240
PROPERTY-RELATED CRIMES				
Burglary at non-residential premises	90	64	87	71
Burglary at residential premises	236	148	150	180
Theft of motor vehicle and motorcycle	69	69	77	87
Theft out of or from motor vehicle	123	102	113	209
Stock-theft	138	132	144	135
CRIME DETECTED AS A RESULT OF POLICE ACTION				
Unlawful possession of firearms and ammunition	19	28	24	41
Drug-related crime	94	127	85	124
Driving under the influence of alcohol or drugs	180	213	384	107
OTHER SERIOUS CRIMES				
All theft not mentioned elsewhere	775	756	670	855
Commercial crime	268	242	209	209
Shoplifting	276	234	197	169
SUBCATEGORIES OF AGGRAVATED ROBBERY				
Carjacking	5	0	5	4
Truck hijacking	0	0	1	0
Robbery at residential premises	11	7	7	8
Robbery at non-residential premises	7	11	6	9
OTHER CRIME CATEGORIES				
Culpable homicide	24	29	24	28
Public violence	0	0	0	1
Crimen injuria	63	97	71	69
Neglect and ill-treatment of children	7	9	4	6
Kidnapping	5	9	10	16

Source: SAPS, 2014

Appendix B: Spatial Matrix Weight

The spatial weights matrix can be defined as:

$$W = \frac{C}{C_o} = \begin{pmatrix} W_{11} & W_{12} & \dots & W_{1n} \\ W_{21} & W_{22} & \dots & W_{2n} \\ \vdots & \vdots & \dots & \vdots \\ W_{n1} & W_{n2} & \dots & W_{nn} \end{pmatrix} \quad \text{(A5.1)}$$

where

$$C_0 = \sum_{i=0}^{n} \sum_{j=0}^{n} Cij \quad , \quad \sum_{i=0}^{n} \sum_{j=0}^{n} W_{ij} = 1 \quad \text{(A5.2)}$$

(a) Spatial contiguity weights: the simplest of these weights simply indicate whether spatial units share a boundary or not. If the set of boundary points of unit *i* is denoted by $bnd_{(i)}$, then the so-called queen contiguity weights are defined by:

$$W_{ij} = \begin{cases} 1, & bnd_i \cap bnd_j \neq \emptyset \\ 0, & otbnd_{(i)} \cap bnd_{(i)} = \emptyset \end{cases} \quad \text{(A5.3)}$$

(*b) k-Nearest Neighbour weights:* Let centroid distances from each spatial unit *i* to all units $j \neq i$ be ranked as follows: $bnd_{ij(1)} \leq bnd_{ij(2)} \dots \leq bnd_{ij(n\ 1)}$. Then for each k =1,..,n - 1, the set $\{N_{k\ (i)} = \{J_{(1)}, J_{(2),\dots}, J_{(k)}\}$, contains the k closest units to i (where for simplicity we ignore ties). For each given k , the *k-nearest neighbour* weight matrix, W , then has spatial weights of the form:

$$W_{ij} = \begin{cases} 1, & j \in NJ_{(i)} \\ 0, & otherwise \end{cases} \quad \text{(A5.3)}$$

(c) Radial distance weights: If distance itself is an important criterion of spatial influence, and if *d* denotes a *threshold distance* (or *bandwidth*) beyond which there is no direct spatial influence

between spatial units, then the corresponding *radial distance* weight matrix, *W,* has spatial weights of the form:

$$W_{ij} = \left\{ \begin{matrix} 1, & 0 \leq dij \leq d \\ 0, & dij > d \end{matrix} \right\} \quad \text{(A5.3)}$$

(d) Actual distance values: If distance itself is an important criterion of spatial influence, and if *d* denotes the actual *distance* ($\frac{1}{d} = inverse\ of\ distance$), then the corresponding *actual distance* weight matrix, *W* , has spatial weights of the form:

$$W_{ij} = \left\{ 1, \ \frac{1}{dij} > 0 \right\} \quad \text{(A5.4)}$$

Moran's I[74]*:*

$$I(d) = \frac{\frac{1}{W}\sum_{h=1}^{n}\sum_{i=1}^{n} w_{hi}(y_h - \bar{y})(y_i - \bar{y})}{\frac{1}{n}\sum_{i=1}^{n}(y_i - \bar{y})^2}$$

for $h \neq i$ (A5.5)

where:

$I(d)$ = Moran's I correlation coefficient as a function of distance

w_{hi} = a matrix of weighted values, where elements are a function of distance

1 = y_h and y_i are within a given distance class, for $y_h \neq y_i$

0 = all other cases

y_h, y_i = values of variables at locations h and I

[74] Econometric results for *Moran's I* statistics are available on request

W = sum of the values of the matrix w_{hi}

n = sample size

Appendix C: Calculating the Index

The economic risk index for the province and each of the 6 regions are calculated as follows:
Step1: Calculate or compute the monthly percentage change in each of the 8 economic risk variables (t = 1 to 8 and i = 1 to 184)

$$\%\Delta er_{ti} = \left\{\frac{(er_{ti} - er_{ti-1})}{er_{ti-1}}\right\} \times 100 \quad 7.1$$

Where:

er_t is the different economic risk variables

i is the time in months

Step 2: Calculate or compute the monthly economic sector weights for each of the 9 economic sectors (*s = 1 to 9 and i = 1 to 184*)

$$W_{si} = \frac{GDP_{si}}{GDP_{KZNi}} \times 100 \quad 7.2$$

Where:

w_{si} is relative weight of each economic sector

GDP_{si} is the gross domestic product per economic sector in period *i*

GDP_{KZNi} is the gross domestic product for the province in period *i*

Step 3: Calculate or compute the economic sector risk for each of the 9 sectors

$$ERC_{sti} = \sum(W_{si} \times \%\Delta er_{ti} \times erw_{ti}) \quad 7.3$$

Where:

ERC_{st} is economic risk of the particular sector

ERW is a weight of each of the economic risk variables per economic sector

Step 4: Calculate or compute the provincial or regional economic risk index

$$ERC_{loc} = \sum ERC_{sti} \quad 7.4$$

Where:

ERC_{loc} is the economic risk index for the province or region

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