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OCCASIONAL PAPER 09

The GCRO Barometer 2014

by Darlington Mushongera

April 2015

GCRO Gauteng City-Region Observatory

UNIVERSITY OF JOHANNESBURG

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09 OCCASIONAL PAPER

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ABSTRACT

The GCRO Barometer 2014 depicts developmental progress in the Gauteng City-Region (GCR) in a single interactive graphic using 38 indicators across ten key sectors. It serves as a tracking and diagnostic tool to inform policy makers and the public on where development progress is being made, and areas of concern. It also serves as a tool for benchmarking Gauteng against other South African provinces and similar sized city-regions across the world.

The GCRO Barometer 2014 is the first release and shows progress in 2012 against three base years: 2002, 2007 and 2011. Overall, the Barometer shows that the developmental outlook for Gauteng is positive with significant progress realised between 2002 and 2012 in nearly all sectors. For instance, the poverty rate has fallen dramatically since 2002 and access to basic services has improved. However, there are challenges in areas such as Social Cohesion, Governance, the Labour Market and Sustainability. Sadly, people's perceptions of government, as well as their unwillingness to participate in governance matters do not correspond to the achievements made by government during this period. This should be a cause for concern for policy makers in all spheres of government as it reflects dissatisfaction with the nature and quality of services being provided as well as the methods of provision.

The Barometer also shows that the impact of government programmes is minimal over shorter time spans – change between 2002 and 2012 is considerable, but change between 2011 and 2012 is insignificant. This is a cause for concern given the 5-year cycle of electoral terms for local government in South Africa. The Barometer's outcomes underscore the need for government to step up policy and programme monitoring with a view to achieving immediate and positive short-term impacts on communities.

1. INTRODUCTION

The GCRO Barometer 2014 is an analytical tool for depicting developmental progress in the Gauteng City-Region (GCR). A set of 38 development indicators spanning across ten key sectors is used in the analysis. Discerning the direction of development can be challenging given the vast number of indicators available. By selecting a few key indicators and displaying them in a single visual we hope to present to policy makers and the general public a simple but concise analysis of the socio-economic status of Gauteng. It is understood that raising living conditions, lifting quality of life, and achieving permanently higher incomes for citizens are prime objectives for government at all levels. Hence the constant monitoring of these objectives is essential. Data used in monitoring often do not originate from a single location or source. By pulling together key indicators into a single visual, the Barometer provides a unique view of developmental patterns across main areas of focus. The indicators used were selected in order to conform to internationally agreed measurement standards and best practices, while not losing sight of local realities. Therefore this Barometer will have a dual function – assessing own-progress over time as well as benchmarking the GCR against other similar sized city-regions of interest across the world.

1.1 Geopolitical context

Although used interchangeably here, Gauteng and the GCR refer to different but interconnected spaces. Gauteng is one of the nine provinces of South Africa and is centrally located in the northern part of the country. The province borders Limpopo province to the north, Mpumalanga to the east, North West to the west and Free State to the south. Contrary to the provinces, the GCR does not have an official boundary. The urban formation extends to cover outlying areas that have close socio-economic linkages with Gauteng. Figure 1 below shows the wider GCR in relation to Gauteng province. More details about the GCR can be found on www.gcro.ac.za.



Figure 1: Map of the GCR

Gauteng consists of the three metropolitan municipalities: the City of Johannesburg (CoJ) – South Africa's financial and provincial capital; the City of Tshwane (CoT) – the country's administrative capital; and Ekurhuleni Metropolitan Municipality (EMM) – the provincial industrial powerhouse. There are a number of other smaller urban centres including Heidelberg, Vereeniging, Vanderbijlpark, Krugersdorp, Carletonville, Randfontein and Westonaria, all scattered across the province, and collectively they create an almost continuous urban agglomeration. Given that official socio-economic data are almost always organised and classified by province, the analysis applies to Gauteng province as opposed to the GCR.

1.2 Method

In total, 38 key indicators were selected and categorized into 10 broad sectors (see Table 1 on page 3). The period covered in the analysis is 2002 to 2012. Various data sources were used such as Statistics South Africa (Stats SA), Quantec, Global Insight, South African Air Quality Information Systems (SAAQIS), South African Police Service (SAPS) and the GCRO Quality of Life (QoL) Surveys. A simple index was used to benchmark progress in 2012 against 3 base years i.e. 2002, 2007 and 2011. The average sector indices were used to determine progress relative to the base years using a colour scale, (red = significant negative change [<100]; amber = only minor positive change [=>100 but <105]; green = significant positive change =>105).

1.3 The Barometer visual

Figure 2 below shows the various features of the Barometer, which operates as a web-based interactive visual. Each of the slices of the pie represents a sector and the lines represent the specific indicators. The base year is represented by the red circle, and the length of the line reflects the extent of progress on a standardised index relative to the base year. If the line extends beyond the red circle there has been positive progress, and if it is below the circle there has been regression. The Barometer will be updated as and when new data become available for all the indicators.

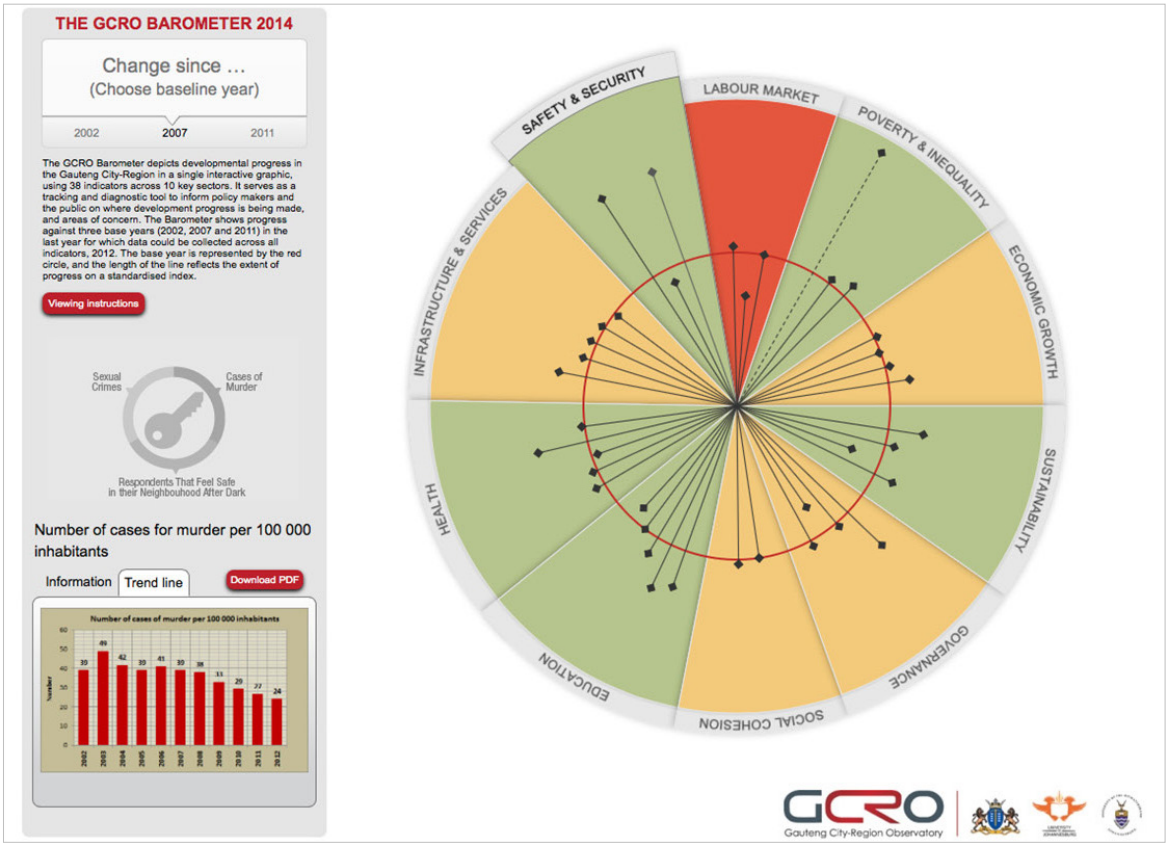


Figure 2: The Barometer visual

A web-based interactive version of the Barometer is available on the GCRO website on this link http://www.gcro.ac.za/barometer .

1.4 Table of indicators

Table 1 contains a list of the sectors, the corresponding indicators and the units of measurement used.

SECTOR	SPECIFIC INDICATOR	UNIT OF MEASUREMENT
1. ECONOMIC GROWTH	1. Gross Domestic Product (GDP)	Rand m value (at constant 2005 prices)
	2. GDP per capita	Rand m value (at constant 2005 prices)
	3. Gross Fixed Capital Formation (GFCF)	% of GDP
	4. Economic concentration: Tress Index	Index based on 23 industries
2. POVERTY & INEQUALITY	5. Human Development Index (HDI)	Index
	6. Inequality: Gini coefficient	Index
	7. Poverty rate	Rate (%)
3. LABOUR MARKET	8. Labour force participation rate	Rate (%)
	9. Unemployment rate (Strict definition)	Rate (%)
	10. Total number of employed	Number

4. SAFETY & SECURITY	11. Number of cases of murder per 100 000 inhabitants	Number
	12. Safety of neighbourhoods	% of respondents
	13. Total sexual crimes per 100 000 inhabitants	Number
5. INFRASTRUCTURE & SERVICES	14. Access to piped water in dwelling or in yard	% of total households
	15. Access to flush or chemical toilet	% of total households
	16. Access to electricity for lighting	% of total households
	17. Access to formal dwelling	% of total households
	18. Access to landline in dwelling or cellular telephone available for regular use	% of total households
6. HEALTH	19. Life expectancy at birth	Number (years)
	20. Infant Mortality Rate (IMR)	Number per 1 000 live births
	21. Maternal Mortality Rate (MMR)	Number per 100 000 live births
	22. Tuberculosis (TB) cure rate	% (Rate)
	23. HIV prevalence (ANC)	% (Rate)
7. EDUCATION	24. Primary school Net Enrolment Ratio (NER)	% of relevant age group
	25. Primary school Learner-to-Educator Ratio (LER)	Ratio
	26. Matric pass rate	Rate (%)
	27. Number of science and technology graduates	Number
	28. Adult literacy rate	% of 15 years and older
8. SOCIAL COHESION	29. Membership of voluntary organisations	% of respondents
	30. Public opinion on race relations	% of respondents
9. GOVERNANCE	31. Perception of corruption as main threat to democracy	% of respondents
	32. Public opinion of service delivery	% of respondents
	33. Registration rate of Voting Age Population (VAP)	% of VAP
	34. Turnout rate of registered voters	% of registered VAP
10. SUSTAINABILITY	35. Drinking water quality: Blue Drop Index	Blue Drop Index
	36. Waste water quality: Green Drop Index	Green Drop Index
	37. Air quality (Concentration of PM10)	Index (NAQS=1) PM10
	38. Electricity consumption per capita	Megawatt hours (MWh) per capita

Table 1: Sectors, indicators and units of measurement

1.5 A note on the data

The original intention with the development of the Barometer was to cover the period from 1995 to 2013. However, there were no datasets that consistently covered this period for all 38 indicators. In the end it was decided to focus the Barometer on the period 2002 to 2012. Even then, in some cases data were only available for specific years:

(i) All indicators that draw on the GCRO QoL Survey will have data for 2009 and 2011 because this is a biennial survey started in 2009. Data for these two years were used as proxies for 2010 and 2012 respectively;

(ii) Data on voter registration are only available for years during which elections are held and registration rates for these years were assumed for succeeding years that were without elections;

(iii) Data on the Blue and Green Drop Indexes are available for each year, but only starting from 2009.

2. SUMMARY OF FINDINGS

The Barometer uses a set of 38 socio-economic and political indicators across ten sectors to depict, in a single visual, developmental progress in the GCR. This report gives succinct analyses of the indicators and sectors for the period 2002 to 2012. It sets the basis for assessing future progress in the GCR and also serves as a tool for benchmarking Gauteng against other provinces in South Africa and similar sized city-regions across the world. The terms GCR and Gauteng province are used interchangeably in this report.

Since 2002, Gauteng has achieved significant progress in most areas. The province maintained its position as the economic powerhouse of South Africa, contributing up to 34% to the national economy (OECD, 2011.) Year-on-year (YoY) percentage changes in GDP were positive save for 2009 when the economy experienced negative growth due to the impact of the global financial crisis. GDP per capita was highest in the country despite a large population. Enormous potential for future growth exists given the expansion in GFCF. The degree of industrial diversification is also quite high in relative terms.

The HDI rose from 0.67 in 2002 to 0.74 in 2012 while the poverty rate fell dramatically from 10.4% to 1.7% over the same period. Income inequality remains extremely high (the average Gini coefficient is 0.60 for the period 2002 to 2012). However, income distribution improved marginally from a Gini of 0.65 in 2002 to 0.63 in 2012.

The labour force participation rate was high but fluctuated over the period of analysis (averaging 71%). However, the rate dropped from 73.2% in 2008 to 70.0% in 2009 and has not improved much since then. Much of this decline can be attributed to the loss of confidence in the labour market following enormous job losses caused by the impact of the global financial crisis. Unemployment was at its lowest in 2007 at 17.9% before rising to a peak of 27.8% in 2011. The drop by 3 percentage points in 2012 relative to 2011 indicates a recovery from the global financial crisis. Employment numbers for 2012 were finally back up to levels seen in the immediate pre-crisis period.

Crime statistics indicate a higher degree of success in fighting crime in Gauteng. Murder rates fell from 49 cases per 100 000 people in 2003 to 24 cases per 100 000 people in 2012 (a 51% reduction). Although sexual crimes are still very high (an average of 140 crimes per 100 000 inhabitants), the outlook is positive given a decline from 174 cases per 100 000 inhabitants in 2008 to 99 in 2012. However, people's perceptions of safety have waned. Only 59% of respondents in the GCRO QoL Survey felt safe or very safe walking in their neighbourhood after dark in 2011 compared to 65.2% recorded in 2009.

Access to basic services such as water, sanitation and electricity improved significantly over this period, and an average of 75% of households across Gauteng live in formal dwellings. Access to landline and cellular telephones improved phenomenally from 59.2% in 2002 to 96.3% in 2012, mainly due to a rise in the usage of cellular telephones.

Gauteng residents are living longer. Life expectancy rose from 56 in 2002 to 60 in 2012. IMRs fell significantly from 46 deaths per 1 000 births to 24, while maternal mortality fell from 141 per 100 000 to 116. The incidence of TB in South Africa is one of the highest in the world. However, TB cure rates for Gauteng were impressive, rising from 57.7% in 2002 to 78.2% in 2012. Sadly, the HIV prevalence rate among antenatal women remains very high (an average of 30%) with only a marginal reduction of 3 percentage points occurring between 2002 and 2012.

In the education sector, NER for primary schools fell from 89% in 2002 to 81% in 2012 while the LER remained stable at an average of 35. The matric pass rate rose from 78.1% in 2002 to 84% in 2012. In higher education, the number of university graduates in science and technology increased markedly from 12 048 in 2002 to 20 178 in 2012 (an increase of 67.5%). The adult literacy rate also rose from 80.5% in 2002 to 97% in 2012.

In terms of governance, a high proportion of people in Gauteng feel that corruption is the greatest threat to our democracy (84.2% of respondents in 2011 compared to 58.5% in 2009). In spite of the increase in the roll out of basic services, the level of satisfaction with services fell from 95.5% in 2009 to 76.2% in 2011. On the other hand, citizen participation in local government elections increased from 42% in 2002 to 56% in 2011. However, the registration rate for the voting-age population fell by 1.6 percentage points from 69% in 2002 to 67.4% in 2011.

The quality of Gauteng's drinking water scored 98.1% in 2012 on the Blue Drop Index, a significant improvement from a score of 74.4% in 2009. However, there are challenges with regards to waste water. The Green Drop Index (which is a measure of waste water quality) fell from 78.8% in 2011 to 62.8% in 2012. Air quality was assessed on the basis of the concentration of PM10[1]. The National Air Quality Standard (NASQ) is set at 1, where values above 1 indicate poor air quality and values below indicate good air quality. Results show that air quality in Gauteng is relatively poor. This can largely be explained by the presence of heavy industries and the extent of motorised transport. On the other hand, electricity consumption fell from 5.72 MWh[2] per capita in 2002 to 4.76 in 2012. This reduction is mainly attributable to changes in use behaviour and the high cost of electricity.

Overall, the outlook for Gauteng is positive with significant progress realised in nearly all sectors. However, people's perceptions about government and their unwillingness to participate in governance matters do not correspond to the achievements made by government during this period. This should be a cause for concern for policy makers in all spheres of government.

2.1 Overall status (visual)

As noted, three base years (i.e. 2002, 2007 and 2011) were used to benchmark progress in 2012, the last year for which data on every indicator could be collected. Absolute values for each indicator shown in the Barometer are for 2012. Using equal weighting, we developed a simple index for each sector, made up of a number of indicators. The averages across the indicators in a sector (i.e. the sector indices) were used to determine progress relative to the base years on a three colour scale: red shows negative change [<100], amber indicates only minor positive change [>100 but <105], and green shows significant positive change [>105]. Figures 3 to 5 depict the overall developmental status for the GCR using the three base years.

1 PM10 refers to particulate matter of up to 10 micrometers in size that are floating in the atmosphere.

2 Megawatt hour.

2.1.1 2002 as base year

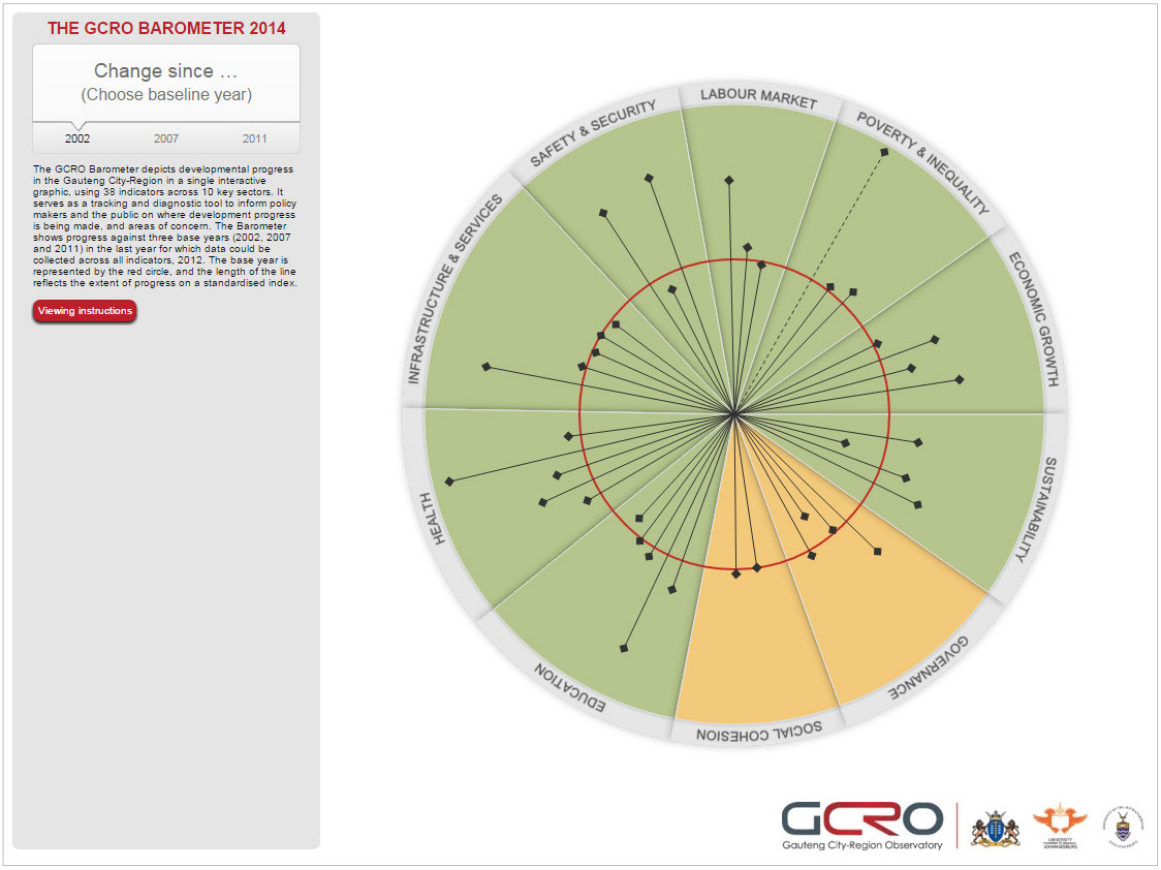


Figure 3: GCR status using 2002 as base year

Figure 2 shows the development progress in the GCR in 2012 in comparison to 2002. There have been significant improvements in practically all sectors. Overall, there are challenges in the areas of Social Cohesion and Governance since these sectors showed very limited improvement[3]. Within the sectors there are a number of specific indicators that have worsened in 2012 compared to 2002, including Air Quality, Public Opinion on Service Delivery, Net Enrolment Ratio for Primary Schools, and Safety and Security. There was a dramatic reduction in the poverty rate which is explained by a number of factors, including the successful roll out of a national social grants programme.

[3] It should be noted that data for these two sectors only start from 2009 and the short timespan between 2009 and 2012 could explain why little to no change has been realised.

2.1.2 2007 as base year

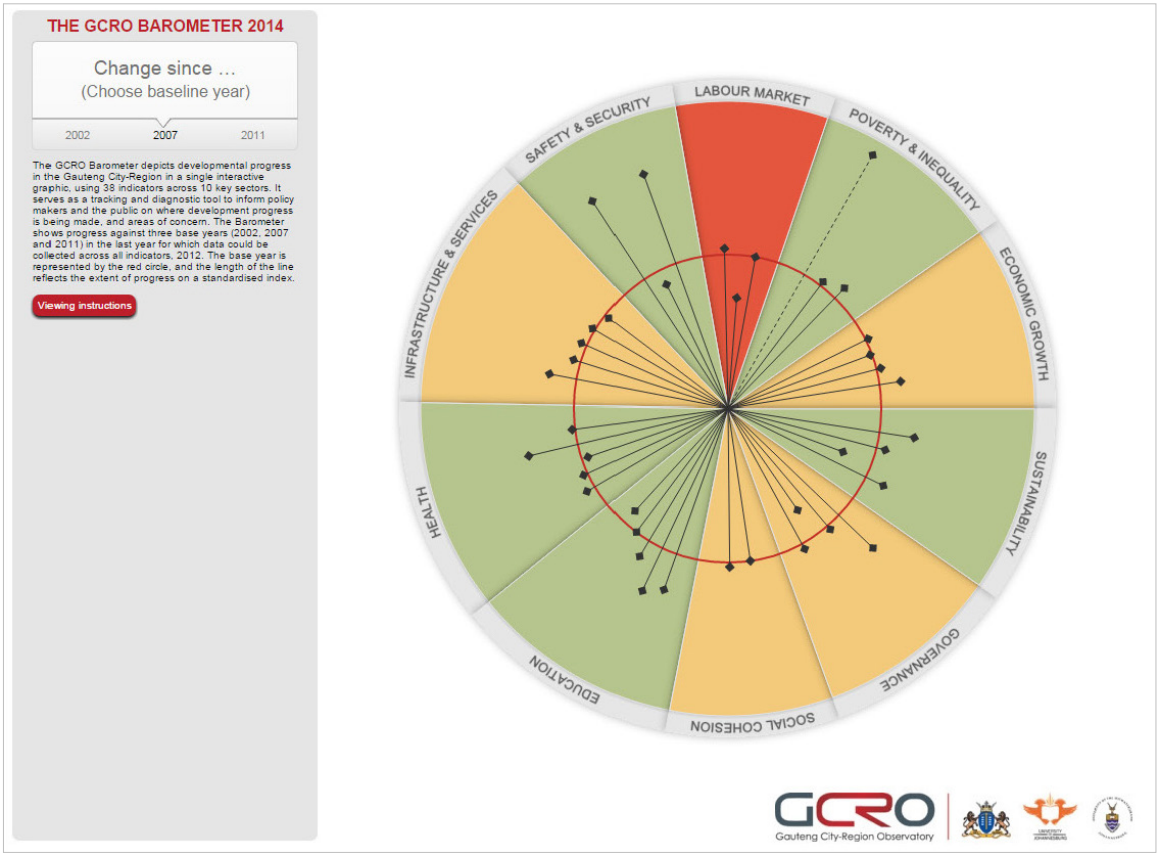


Figure 4: GCR status using 2007 as base year

Figure 4 shows the status in 2012 relative to 2007. Here we see a higher number of sectors experiencing little to no change, compared to when 2002 is used as the base year. The Social Cohesion and Governance sectors still show no change, with the Infrastructure & Services and Economic Growth sectors also stagnating. The labour market was the worst affected with the overall change between the two years showing as negative (red). This signifies the sensitivity of the labour market to both long and short-term economic shocks which include the global financial crisis. That said, reduction in the poverty rate remained large.

2.1.3 2011 as base year

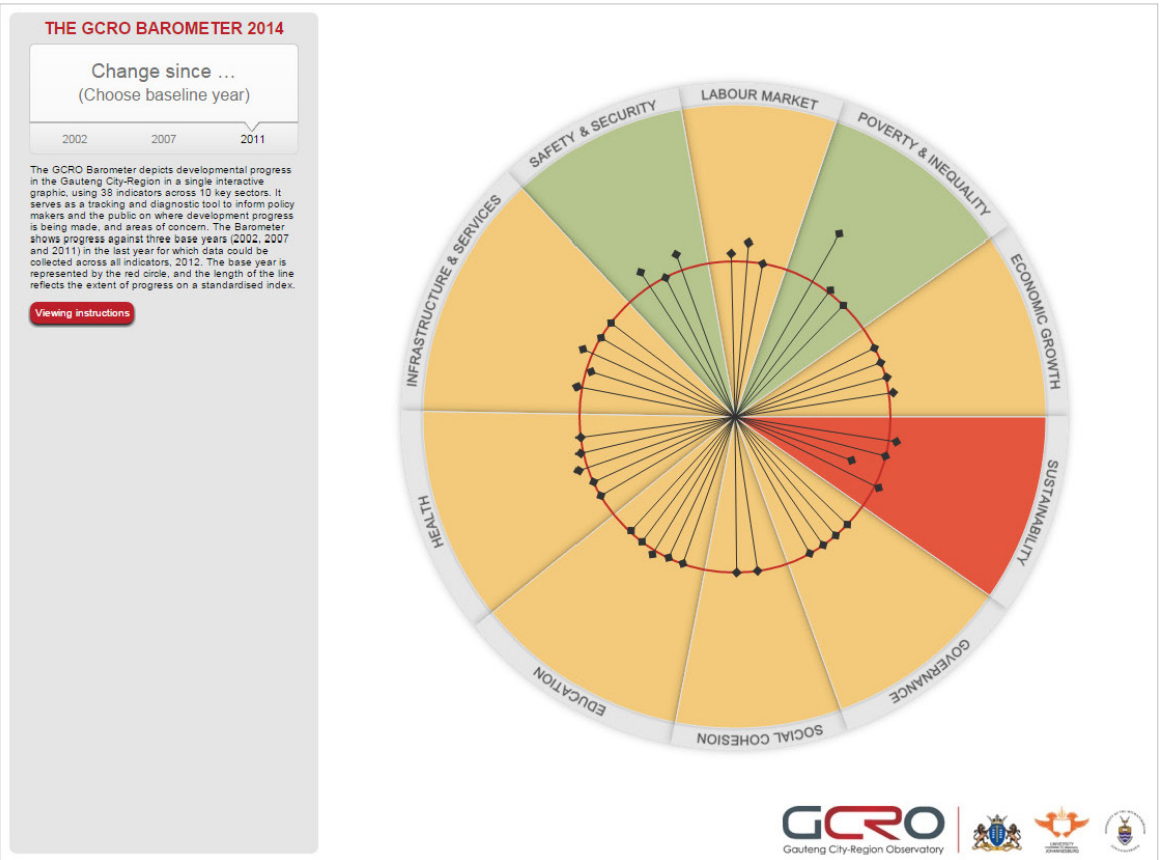


Figure 5: GCR status using 2011 as base year

Figure 5 shows change over the course of one year. Nearly all sectors show little to no change. Sustainability has declined while Safety & Security and Poverty & Inequality show positive change. Overall, this suggests little positive change over short timespans. Given the 5-year local government electoral cycle in South Africa, it is imperative for policy makers to design programmes that have greater impact in the immediate and short-term. Communities, and particularly those experiencing the most need, find it difficult to wait for longer periods to see the benefits of development. When government policies and programmes take long to mature or delay in impacting on communities, or when service delivery is not maintained at a high level, society tends to develop negative attitudes towards government, loses interest in public affairs, and ceases to participate in civic forums where residents' voices can be heard by elected representatives and officials. This may result in further alienation and exclusion from the benefits of development.

3. ANALYSIS OF INDIVIDUAL INDICATORS

Sections 3.1 to 3.10 provide brief but concise analyses for each of the indicators in the different sectors. The analysis period runs from 2002 to 2012, save for a few indicators that utilise the GCRO's QoL Survey where data are only available from 2009 onwards. These summaries also include details about each indicator and readers are urged to pay attention to how the indicators have been defined, the units of measurement, and the data sources used.

3.1 Economic growth

3.1.1 Gross Domestic Product (GDP)

Definition GDP is the total output of goods and services for final consumption use produced in the Gauteng economy.

Measure Rand value (at constant 2005 prices)

Data sources Stats SA, GDP statistical release, 3rd Quarter GDP-R. http://beta2.statssa.gov.za/?page_id=1854&PPN=P0441&SCH=5393

Trend graph



Figure 6: Gross Domestic Product (GDP)

Summary

Given its vast industrial base, Gauteng has maintained its position as the country's economic engine. The province contributes 34% to the national fiscus and is by far the most influential economic player in the South African economy. Between 2002 and 2012, GDP for Gauteng rose annually, except for 2009 when the economy experienced a negative growth of -1.3%. The negative growth is attributed to the impact of the global financial crisis on the South African economy which saw output in the manufacturing and mining sectors fall by 12.4% and 5.5% respectively in 2009. Although there were positive growth in sectors such as construction and government services, they were not enough to offset the regression in others, and hence the dip. However, the quick recovery after 2009 indicates the resilience of the Gauteng economy to external shocks and that prospects for continued growth exist in the short to medium-term.

3.1.2 Per capita GDP

Definition A measure of the total Gauteng output that makes up GDP divided by the total Gauteng population.

Measure Rand value (at constant 2005 prices)

Data sources Calculation based on Stats SA GDP-R and mid-year population estimates.
http://beta2.statssa.gov.za/?page_id=1854&PPN=P0441&SCH=5393
http://beta2.statssa.gov.za/?page_id=1854&PPN=P0302&SCH=6012

Trend graph



Figure 7: Per capita GDP

Summary

Changes in per capita GDP shown in Figure 7 are consistent with GDP growth discussed in the previous section (see Figure 6). Per capita GDP rose at an average annual rate of 2.7% between 2002 and 2008. However, the impact of the global financial crisis on the South African economy caused a drop in per capita GDP of 3.4% in 2009 relative to 2008. A combination of response measures by government and the relative resilience of the Gauteng economy led to rapid improvements in per capita GDP after 2009. Per capita GDP for Gauteng is high compared to other provinces. Higher per capita GDP is associated with higher standards of living, but this is not uniform across the entire population because of income inequality in the province (the Gini index for 2012 was 0.63). This calls for deeper spatial analysis of income distribution in order to ensure more accurate policy targeting.

3.1.3 Gross Fixed Capital Formation (GFCF)

Definition GFCF refers to the net increase in physical assets (investment minus disposals) within the measurement period for the GCR.

Measure Percentage of GDP

Data sources Calculation based on GFCF data from Quantec and GDP data from Stats SA.
http://quanis1.easydata.co.za/TableViewer/tableView.aspx?ReportId=42186
http://beta2.statssa.gov.za/?page_id=1854&PPN=P0441&SCH=5957

Trend graph

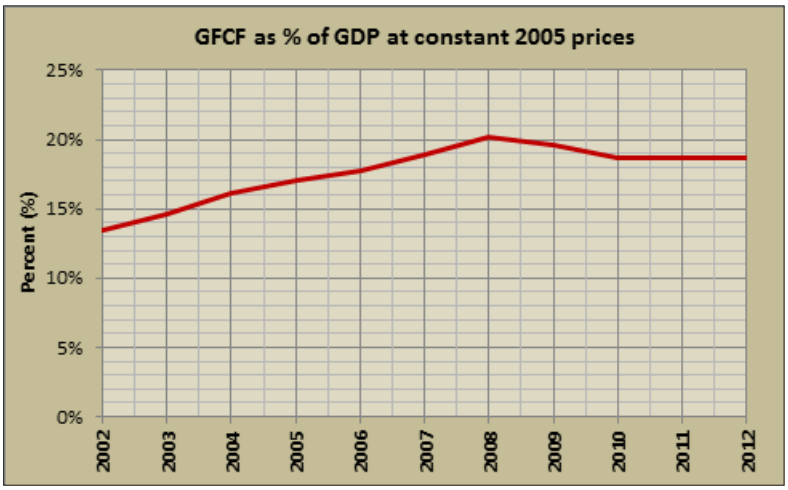


Figure 8: Gross Fixed Capital Formation (GFCF)

Summary

Growth in GFCF reflects investments/improvements in physical assets such as road and rail infrastructure, industrial buildings, and plant and machinery. GFCF also comprises fixed assets that are acquired for long-term use. Positive changes in GFCF as a proportion of GDP indicate potential for future growth in the economy. Figure 8 shows a sustained growth in GFCF as a proportion of GDP between 2002 and 2008. GFCF fell between 2008 and 2010 but stabilised thereafter at levels much the same as in the pre-crisis period.

3.1.4 Tress Index

Definition The level of concentration or diversification within the GCR economy where a Tress Index of 0 represents total diversification and 100 indicates very high concentration.

Measure Index based on 23 industries

Data sources Quantec. http://quanis1.easydata.co.za/TableViewer/tableView.aspx?ReportId=40424

Trend graph



Figure 9: Tress Index

Summary

The recent global financial crisis underscored the importance of a diversified economy. An economy is more likely to run the risk of collapse if it is over reliant on a few sectors, particularly in the face of financial shocks, price volatility, changes in trade relations between countries, or adverse climatic conditions. Therefore, it is critical that governments focus on diversifying the economy by, for instance, stimulating new areas such as the knowledge-based and green economies. Support for weaker industries is equally important, especially those with more informal and small enterprises, given their ability to absorb more people from poorer sections of society. The Tress Index for Gauteng over the analysis period indicates a fairly specialised economy that is dominated by the tertiary sector. The Index rose from 67.6 in 2002 to 69.5 in 2009, but then fell off slightly after the recession.

3.2 Poverty and inequality

3.2.1 Human Development Index (HDI)

Definition An index devised by the United Nations Development Programme (UNDP) to assess comparative levels of development in countries, quantified in terms of literacy, life expectancy and GDP per capita.

Measure Index

Data sources Global Insight. http://www.ihsglobalinsight.co.za/Products/ReX/

Trend graph

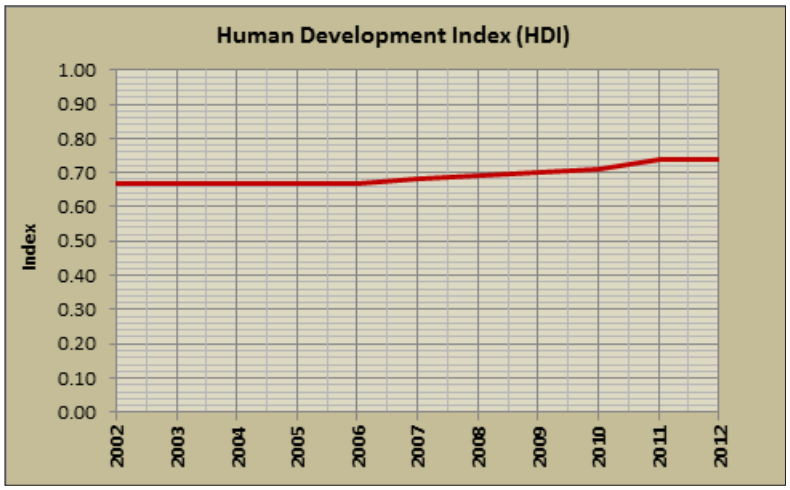


Figure 10: Human Development Index (HDI)

Summary

The HDI for Gauteng improved significantly between 2002 and 2012 from 0.67 to 0.74. This is indicative of improvements in wellbeing across the province. The greatest increase occurred between 2006 and 2011 before it stabilised at 0.74, much higher than the 0.63 for South Africa as a whole. Gauteng's HDI ranks among countries classified as having high human development by the UNDP such as Ukraine, Peru, Georgia and others (UNDP, 2013). Therefore the improvement in HDI for Gauteng is in line with global trends, in particular countries of the global south where substantial progress in human development has occurred over the past two decades (UNDP, 2013). Increases in per capita income, expansion of health services, and increased access to education and social grants have all contributed to improvements in wellbeing. However, with higher levels of income inequality in the province, HDI levels are not uniform, both spatially and between races.

3.2.2 Gini coefficient

Definition A measure of the extent to which the distribution of income (or in some cases consumption expenditure) is skewed amongst individuals or households within the GCR. The Gini ranges between 0 and 1 representing perfect equality and perfect inequality respectively.

Measure Index

Data sources Global Insight. http://www.ihsglobalinsight.co.za/Products/ReX/

Trend graph

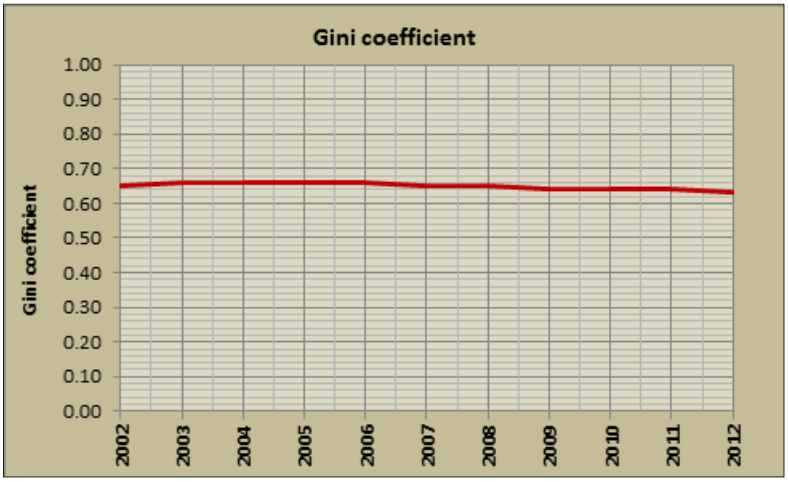


Figure 11: Gini coefficient

Summary

South Africa is known for its high income inequality. The country's Gini coefficient is among the highest in the world at 0.64 (Stats SA, 2012) and scenes of extremely poor communities juxtaposed against affluent ones are not uncommon in South Africa, particularly in provinces with large urban populations such as Gauteng and the Western Cape. Collecting information on income is generally difficult due to: (i) a low response rate to the income question in surveys; (ii) a very high proportion of respondents who report "no-income" (raising questions as to how they survive); and (iii) variation in the way the income question is phrased or recorded in successive surveys, hence making comparison over time difficult. However, in spite of these setbacks and after applying different analysis methods on income data from a number of different surveys, income inequality for South Africa was confirmed as very high. At the provincial level, Gauteng is no exception. As shown in Figure 11, the Gini coefficient for Gauteng between 2002 and 2012 stayed consistently higher than 0.60. Although the data show slight improvement since 2002, a Gini of 0.63 in 2012 is considered very high by international standards. Spatial data from the GCRO's 2011 QoL Survey indicate even higher levels of inequality in the three metro areas of Johannesburg (0.78), Ekurhuleni (0.76) and Tshwane (0.74)[4]. High income inequality is a potential source of socio-economic tensions, particularly in populous urban provinces like Gauteng. Reversing the inequality trend must remain a key priority for the South African government.

[4] Own calculation based on GCRO QoL Survey data for 2011.

3.2.3 Poverty rate

Definition Poverty rate is the percentage of the population living below the international poverty line of $2.00 day.

Measure Rate (%)

Data sources Global Insight. http://www.ihsglobalinsight.co.za/Products/ReX/

Trend graph

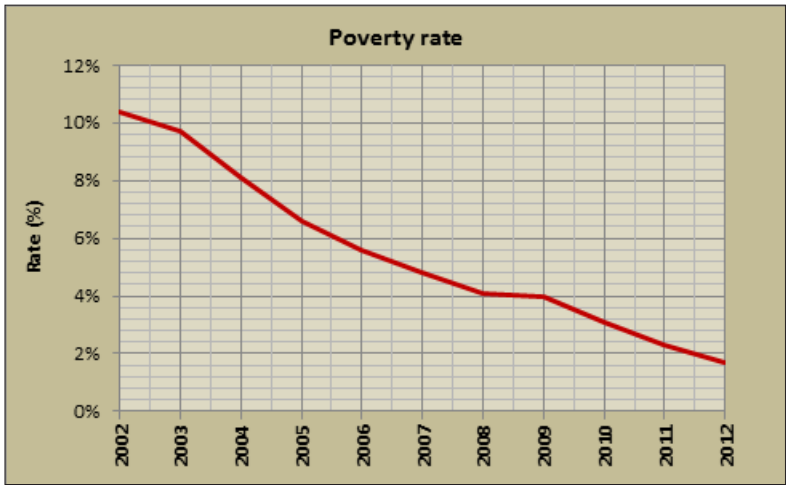


Figure 12: Poverty rate

Summary

Unlike income inequality, tremendous improvements have been made in lowering poverty levels in South Africa. In Gauteng, the poverty rate fell from 10.4% in 2002 to 1.7% in 2012. A number of factors were instrumental in effecting this dramatic improvement: (i) expansion in the roll out of social grants; (ii) income growth; (iii) above inflation wage increases; (iv) decelerating inflationary pressures; and (v) expansion of credit (Stats SA, 2014). Further declines in the poverty rate beyond 2012 are likely. However, analyses of poverty dynamics at localised levels are needed in order to reveal the spatial extent and degree of incidence. For instance, the GCRO QoL Surveys show that a high proportion of respondents going hungry due to a lack of money are concentrated in particular neighbourhoods.

Note: On the GCRO Barometer visual, this indicator is shown with a dotted line for some base years because the massive improvement in percentage change terms cannot be shown at the same scale as other indicators.

3.3 Labour market dynamics

3.3.1 Labour force participation rate

Definition The proportion of GCR working-age population that is either employed or unemployed. The working-age population in South Africa is from 15 to 64.

Measure Rate (%)

Data sources Stats SA Labour Force Survey (LFS) and Stats SA Quarterly Labour Force Survey (QLFS), 3rd Quarter.
http://www.statssa.gov.za/Publications/statsdownload.asp?PPN=P0210
http://beta2.statssa.gov.za/?page_id=1854&PPN=P0211&SCH=5367

Trend graph

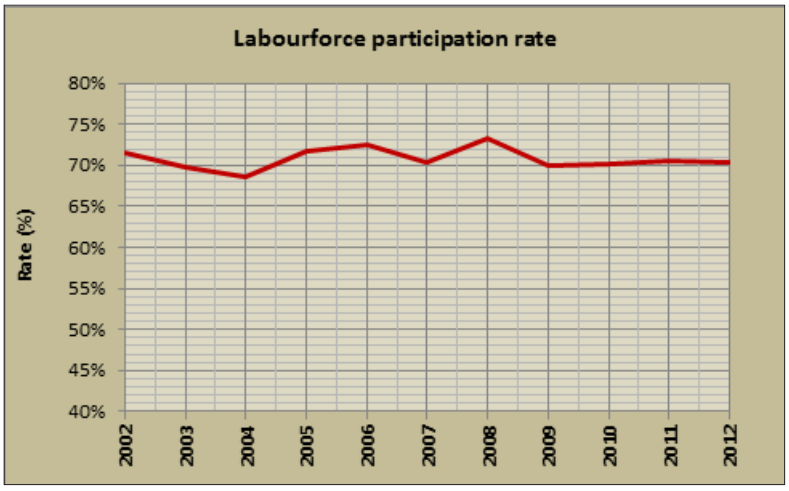


Figure 13: Labour force participation rate

Summary

Since January 2008 labour force data in South Africa have been collected and reported on quarterly basis instead of biannually. In March 2009 Stats SA readjusted the pre-2008 labour surveys to enable comparison with the new QLFS. The revised data were used to generate Figure 13 which shows fluctuations in labour force participation for Gauteng. The participation rate was lowest in the 3rd quarter of 2004 (68.5%) and highest in the 3rd quarter of 2008 (73.2%). It is clear that 2009 was the worst year for South Africa following the global financial crisis, during which over a million jobs were lost. For Gauteng, participation rates have not improved significantly since the drop that occurred in 2009. Many potential workers often get discouraged and stop looking for employment during periods of economic decline. Labour force participation rates are therefore a measure of workers' confidence in the economy.

3.3.2 Unemployment rate (strict definition)

Definition The percentage of the labour force that is without jobs. The official definition of the unemployed is that they are people within the economically active population (aged 15-64) who: (i) did not have a job or business during the seven days prior to the interview; (ii) want to work and are available to work within two weeks of the interview; and (iii) have taken active steps to look for work or to start some form of self-employment in the four weeks prior to the interview.

Measure Rate (%)

Data sources Stats SA LFS and Stats SA QLFS, 3rd Quarter.
http://www.statssa.gov.za/Publications/statsdownload.asp?PPN=P0210
http://beta2.statssa.gov.za/?page_id=1854&PPN=P0211&SCH=5367

Trend graph

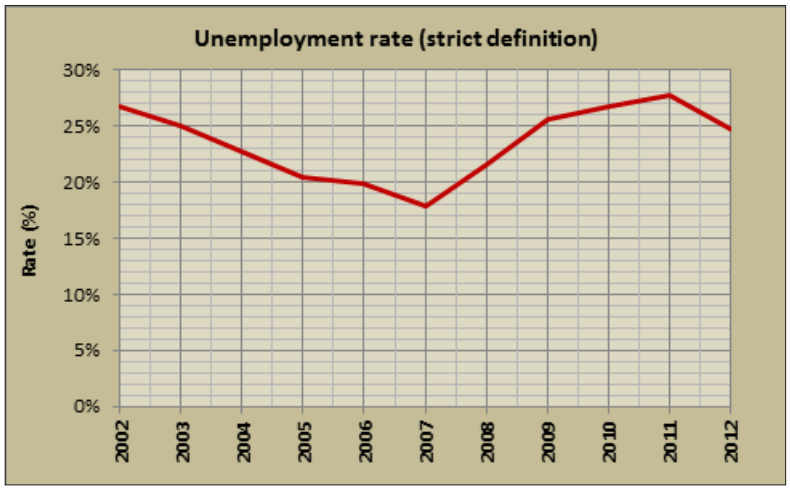


Figure 14: Unemployment rate (strict definition)

Summary

Unemployment is a major developmental challenge in South Africa and also for Gauteng – a popular employment destination for millions of jobseekers. Between 2002 and 2012 unemployment in Gauteng was at its lowest in 2007 at 17.9% before rising to a peak of 27.8% in 2011 following the impact of the global financial crisis. This trend is consistent with the decline in labour force participation rates seen in 2009 (see Figure 13). Between the third quarter of 2008 and that of 2009, unemployment rose by a relatively larger margin of 4 percentage points (from 21.8% to 25.8% respectively). This reflects the strong impact of the global financial crisis on the Gauteng economy. The decrease in the second quarter of 2012 was in line with an overall reduction in unemployment nationally, and the general recovery of the Gauteng economy after 2009 coupled with an employment stimulus created by the FIFA 2010 Soccer World Cup.

3.3.3 Total number employed

Definition Persons within the GCR aged from 15-64 years who, during the reference week, did any work for at least an hour, or had a job or business but were not at work (temporarily absent).

Measure Number

Data sources Stats SA LFS and Stats SA QLFS, 3rd Quarter.
http://www.statssa.gov.za/Publications/statsdownload.asp?PPN=P0210
http://beta2.statssa.gov.za/?page_id=1854&PPN=P0211&SCH=5935

Trend graph

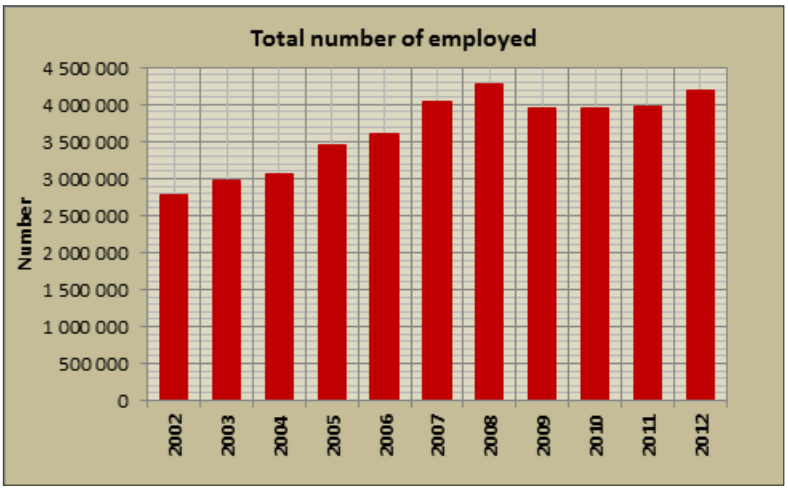


Figure 15: Total number employed

Summary

Data on employment mirror that on the unemployment rate (see Figure 14). Employment levels increased consistently between 2002 and 2007. However, after 2008 employment numbers plummeted as a result of the impact of the global financial crisis and the subsequent shedding of jobs across major sectors. However, by 2012 employment numbers were on the rise again driven by recovery in the economy.

3.4 Safety and security

3.4.1 Number of cases of murder per 100 000 inhabitants

Definition This refers to the number of people who lose their life through deliberate acts of others.

Measure Number

Data source South Africa Police Service (SAPS)
http://www.saps.gov.za/resource_centre/publications/statistics/crimestats/2014/crime_stats.php

Trend graph

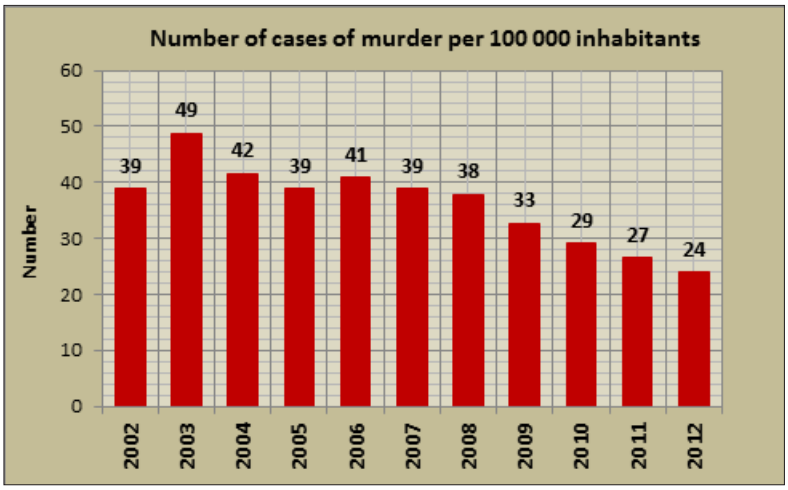


Figure 16: Number of cases of murder per 100 000 inhabitants

Summary

Crime is a serious challenge in South Africa generally and in Gauteng in particular. Incidences of assault, armed robbery and murder, among others, are daily occurrences in the province. However, there was a tremendous decline in the crime rate between 2002 and 2012. Figure 16 shows a decrease in the rate of murder in the province from 49 cases per 100 000 inhabitants in 2003 to 24 cases in 2012 (a 51% decline). Apart from isolated incidences, the decline in the murder rate indicates considerable success in fighting serious crimes in the province. Higher rates of serious crime are not conducive for local and foreign investment. These rates also deter tourism and stifle long-term economic development.

3.4.2 Safety of neighbourhoods

Definition Percentage of GCR population aged 18 and above that expresses an opinion that they felt unsafe or very unsafe to walk in their area they live after dark.

Measure Percent (%)

Data sources GCRO QoL Survey. http://gcro1.wits.ac.za/qolviewer/

Trend graph

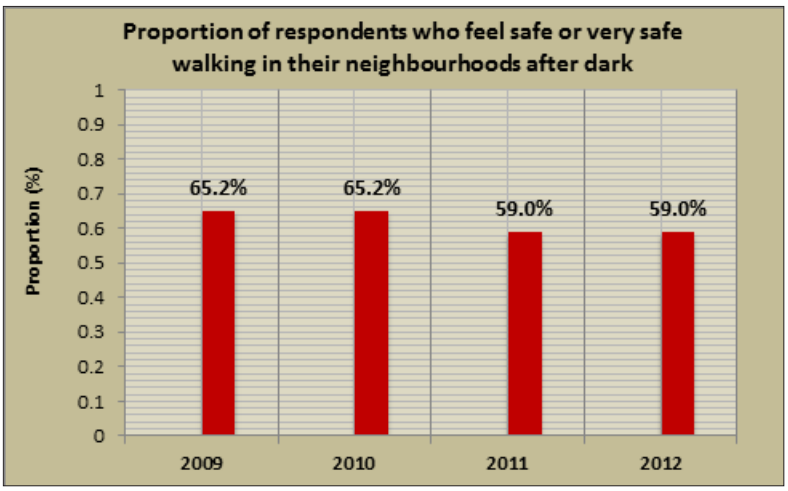


Figure 17: Safety of neighbourhoods

Summary

Although there was a decline in the crime rate for major categories, people's perceptions of safety have worsened. During the GCRO 2009 and 2011 QoL Surveys, respondents were asked whether or not they felt safe walking in their neighbourhoods after dark. Using this question as a proxy for safety in Gauteng, the survey revealed that in 2009 65.2% felt either safe or very safe walking in their neighbourhoods after dark. However, as shown in Figure 17, this fell to 59% in 2011. GCRO has committed to continue tracking perceptions about safety in the GCR in order to shed more light on the disjuncture between falling crime rates and perceptions of a lack of safety that are very high.

3.4.3 Total sexual crimes

Definition Total sexual crimes per 100 000 inhabitants. These include a whole range of crimes as defined by a new Act regulating sexual offenses, the Criminal Law [Sexual Offences and Related Matters] Amendment Act, Act 32 of 2007 implemented on 17 December 2007.

Measure Percentage of total contact crimes (crime against a person).

Data sources SAPS.
http://www.saps.gov.za/resource_centre/publications/statistics/crimestats/2014/crime_stats.php

Trend graph

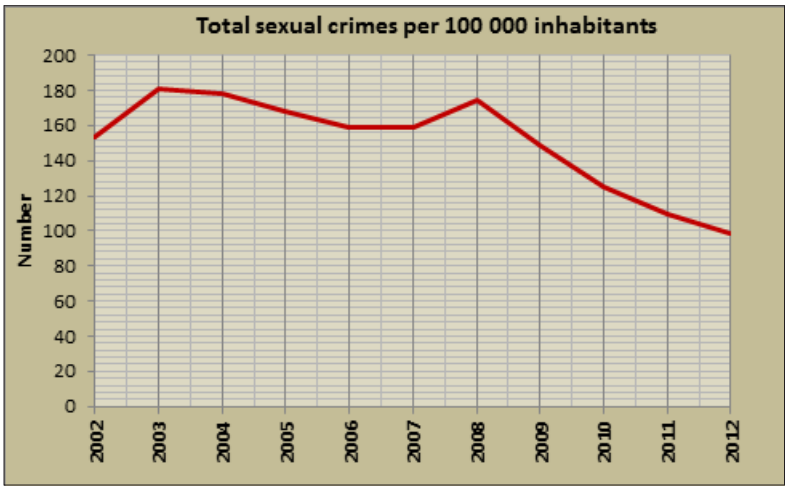


Figure 18: Total sexual crimes

Summary

Incidences of rape and sexual assault are also common occurrences in Gauteng. More than 140 sexual crimes per 100 000 inhabitants were reported each year between 2002 and 2009. This amounts to approximately 18 000 sexual crimes each year (or 50 cases per day), and the number is much higher given that some cases go unreported. However, there were significant improvements after 2008 as shown in Figure 18. Total annual sexual crimes fell from a high of 174 in 2008 to 99 cases per 100 000 inhabitants in 2012. The decline is in line with the general improvement in crime rates over the same period. It also suggests improved efforts by the state to detect crime, arrest and convict offenders. In addition, the SAPS has become proactive towards crime prevention through community awareness campaigns, visible policing strategies and other interventions such as Victim Empowerment and Domestic Violence Programmes (SAPS, 2012).

3.5 Infrastructure services

3.5.1 Access to piped water

Definition The proportion of households with reasonable access to an adequate amount of water. This covers households with piped water inside their dwellings and piped water inside their yards.

Measure Percent (%)

Data sources Stats SA General Household Survey (GHS) and Census.
http://interactive.statssa.gov.za:8282/webview/

Trend graph

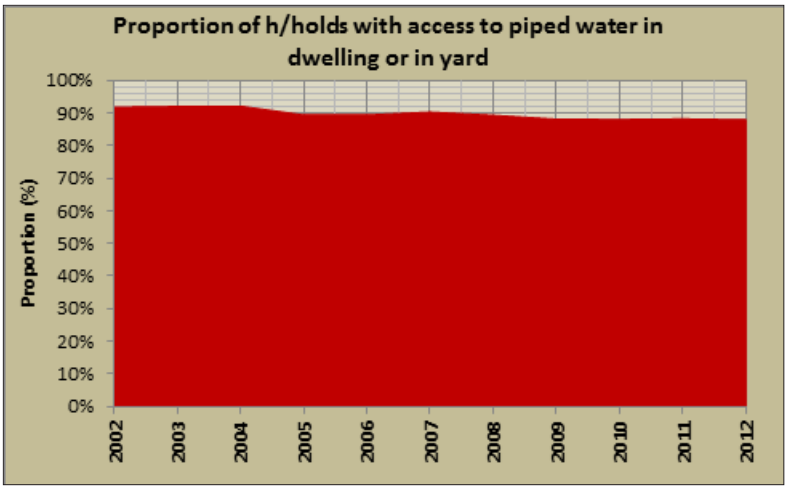


Figure 19: Access to piped water

Summary

Significant progress has been made towards ensuring access to clean portable water in Gauteng, particularly in poor and historically disadvantaged communities, high-density suburbs and informal settlements. In this analysis, access was defined as piped water either in a house or in the yard, up-scaling from Phase 1 of the Reconstruction and Development Programme (RDP) which was an interim measure to address the massive backlogs that existed prior to 1994. Figure 19 shows very high rates of access, averaging 90%, over the period 2002 to 2012. This indicates considerable success by provincial and local government in ensuring access to water[5]. Building a liveable, sustainable and prosperous province demands that access to necessities such as water be available much closer to users than envisaged in the RDP. Gauteng is also predominantly an urban province of almost 13 million inhabitants, and so proximity to water is an absolute necessity.

[5] It must be noted here that the data pose difficulties when explaining yearly changes in access. This owes partly to how the question is asked each year or how interviewees respond to the questions. For instance, it may be that water was cut off at the time of the survey and respondents respond as "no access" when in fact the "no access" is due to non-payment and not necessarily lack of provision by the municipality.

3.5.2 Sanitation access

Definition The proportion of GCR households with access to adequate sanitation. Adequate sanitation here includes flush or chemical toilets.

Measure Percent (%)

Data sources Stats SA GHS and Census.
http://interactive.statssa.gov.za:8282/webview/

Trend graph

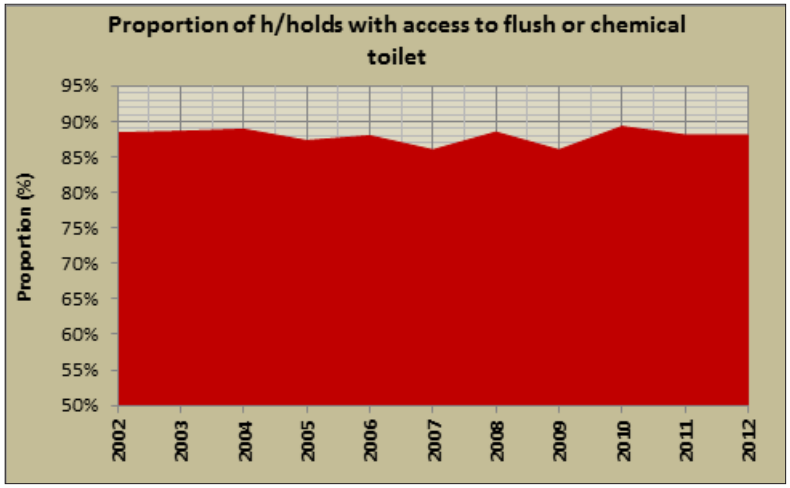


Figure 20: Sanitation access

Summary

Levels of access to adequate sanitation are fairly low compared to water. We defined access to adequate sanitation as either flush toilets, chemical toilets or ventilated improved pit latrines (VIP). Using the Stats SA GHS, we found that on average 88% of households in Gauteng had access to adequate sanitation between 2002 and 2012.

3.5.3 Energy use

Definition The proportion of household in the GCR who use electric energy for lighting.

Measure Percent (%)

Data sources Stats SA GHS and Census.
http://interactive.statssa.gov.za:8282/webview/

Trend graph

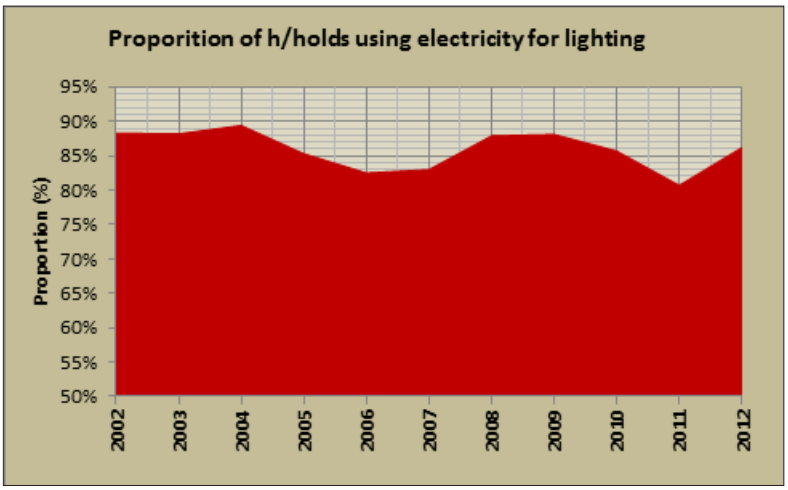


Figure 21: Energy use

Summary

Access to electrical energy for lighting was used as a proxy for electricity coverage. Figure 21 shows that on average 85% of households in Gauteng have access to electricity. However, more still needs to done to ensure that the remaining 15% of households also have access especially because of the high cost of liquid fuel and the high incidence of fire caused by paraffin stoves in informal settlements. Fluctuations in the access trend are due to how respondents react to this question at the time of the survey. Occasionally, when electricity is cut off due to non-payment, respondents may answer "no access". The 2011 Census and GCRO's 2011 QoL Survey have also confirmed this finding (87.5% and 90% access respectively).

3.5.4 Dwelling type (formal)

Definition This indicator shows the proportion of total households in formal housing. Formal housing is used as a proxy for 'adequate' housing.

Measure Percent (%)

Data sources Stats SA GHS and Census.
http://interactive.statssa.gov.za:8282/webview/

Trend graph

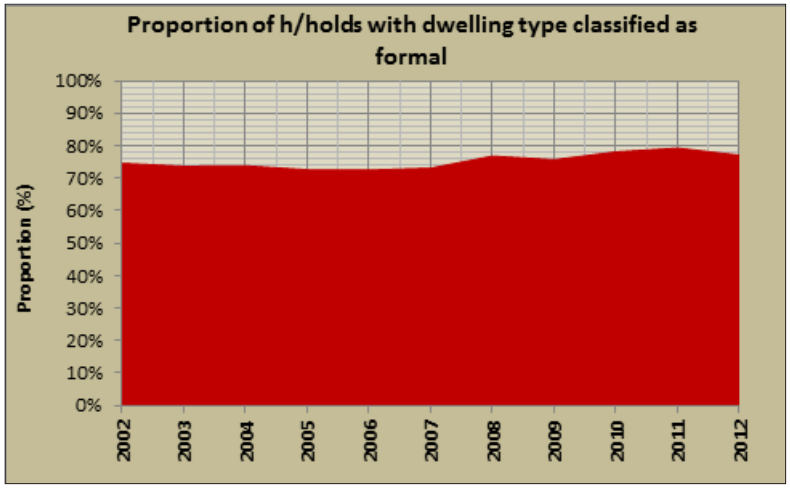


Figure 22: Dwelling type (formal)

Summary

Access to formal housing is an important indicator for improved living standards since it facilitates the provision of piped water, electricity and waterborne sanitation. Formal housing was used as a proxy for 'adequate' housing in Gauteng. The levels of access to formal housing in Gauteng are fairly high, averaging 75.2% over the period 2002 to 2012. However, considering that Gauteng is largely urban and populous, 25% of households living in informal housing means that a fairly large number of people still lack access. Furthermore, the classification of brick structures as 'formal' regardless of where they are located (e.g. informal backyard buildings or informal settlements) paints a false picture of access. Such dwellings are associated with lower quality of life, create challenges for service delivery, and poses health and safety risks (GCRO, 2014). There are significant distortions in the housing sector where some poor households are allegedly trading their formal houses for cash, preferring to live in informal dwellings (Charlton, 2014). This trend is indicative of the underlying structural problems in the economy reflecting in high income inequality and high unemployment.

3.5.5 Communication (landline/cellular phone access)

Definition The proportion of total GCR households with landline telephones or which are subscribers of mobile cellular telephones.

Measure Percent (%)

Data sources Stats SA GHS and Census.
http://interactive.statssa.gov.za:8282/webview/

Trend graph

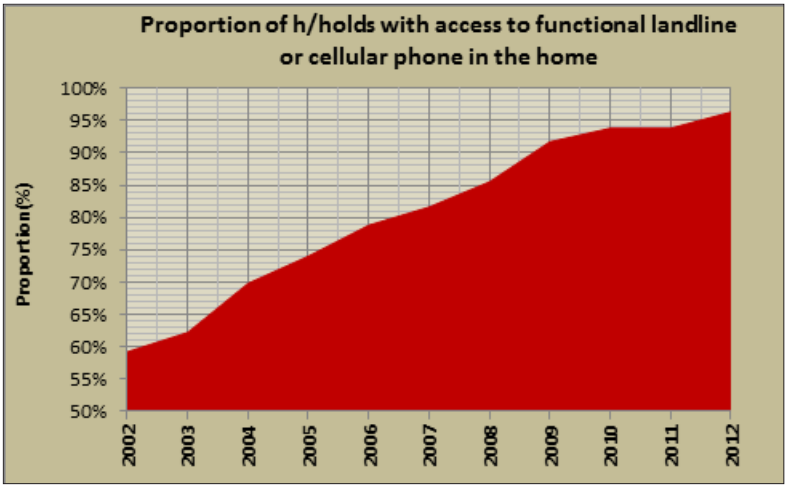


Figure 23: Communication (landline/cellular phone access)

Summary

Household access to telephone communication has grown phenomenally since 2002. Stats SA's GHS indicates that the majority of households in Gauteng have more access to cellular telephones compared to landline telephones. In fact, between 2002 and 2012 there was a substantial decline in the number of households that are connected to landline telephones. Cellular telephones are handier and more flexible than landlines, and support several functionalities such as voice calling, text messaging, Internet and data storage. The trend shown in Figure 23 is largely a result of increased access to cellular telephones. Cell phone ownership has become a necessity and has been supported by the proliferation of lower priced cellular handsets.

3.6 Health

3.6.1 Life expectancy at birth

Definition The average number of additional years a new born infant will live if current mortality trends were to stay the same for the rest of that person's life.

Measure Number (years)

Data sources Health Systems Trust; Stats SA mid-year population estimates.
http://www.hst.org.za/recently-updated-indicators
http://beta2.statssa.gov.za/?page_id=1854&PPN=P0302&SCH=5500

Trend graph

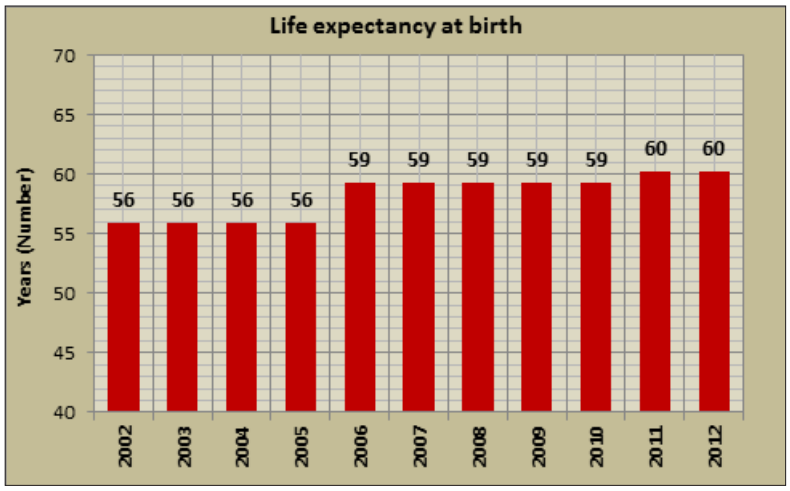


Figure 24: Life expectancy at birth

Summary

Life expectancy is an important measure of developmental progress. While many factors may determine life expectancy, changes in the public health sector and the economy are generally the key determinants. In Gauteng industrial development and a high vehicle population result in high levels of pollution which ultimately affect people's health. Steel production in Vanderbijlpark, south of Gauteng creates an unhealthy living environment through air and water pollution. Different lifestyles factors such as eating disorders, diet, smoking, drug and alcohol abuse, and exercise (or lack thereof) also affect life expectancy. The prevalence of communicable diseases such as HIV & AIDS will also have a big impact. Figure 24 shows that life expectancy for Gauteng increased between 2002 and 2012 from 56 to 60 years respectively. This trend corresponds to the improvements in HDI shown in Figure 10. The increase is most likely attributable to the decline in deaths from AIDS due to the roll out of anti-retroviral therapy.

3.6.2 Infant mortality rate (IMR)

Definition The number of GCR deaths of infants under one year old in a given year per 1 000 live births in the same year.

Measure Number per 1 000 live births

Data sources Department of Health (DoH), South Africa Demographic and Health Survey and Health Systems Trust (HST).
http://www.hst.org.za/category/social-tags/demographic-and-health-surveys
http://www.hst.org.za/recently-updated-indicators

Trend graph

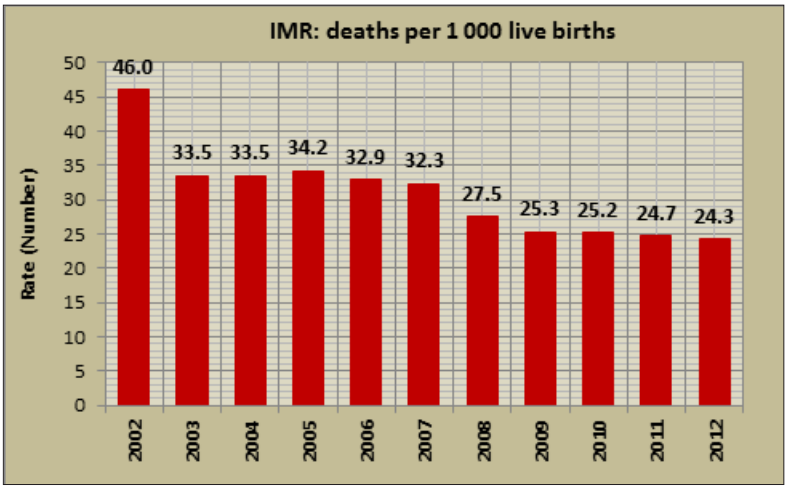


Figure 25: Infant mortality rate (IMR)

Summary

The IMR for Gauteng dropped significantly by 47% between 2002 (46 deaths per 1 000 births) and 2012 (24 deaths per 1 000 births). This drop indicates improvements in the health sector where more and more babies are surviving beyond their first year. Better health facilities, low staff-to-patient ratios, reduced waiting times and proximity to health facilities, especially in township areas, all contribute towards a greater chance for infant survival.

3.6.3 Maternal mortality rate (MMR)

Definition The number of GCR women who die as a result of childbearing, during the pregnancy or within 42 days of delivery or termination of pregnancy, per 100 000 live births during that year. This refers only to institutional / facility-based deaths, not representing the entire population.

Measure Number per 100 000 live births

Data sources DoH, South Africa Demographic and Health Survey and HST.
http://www.hst.org.za/category/social-tags/demographic-and-health-surveys
http://www.hst.org.za/recently-updated-indicators

Trend graph

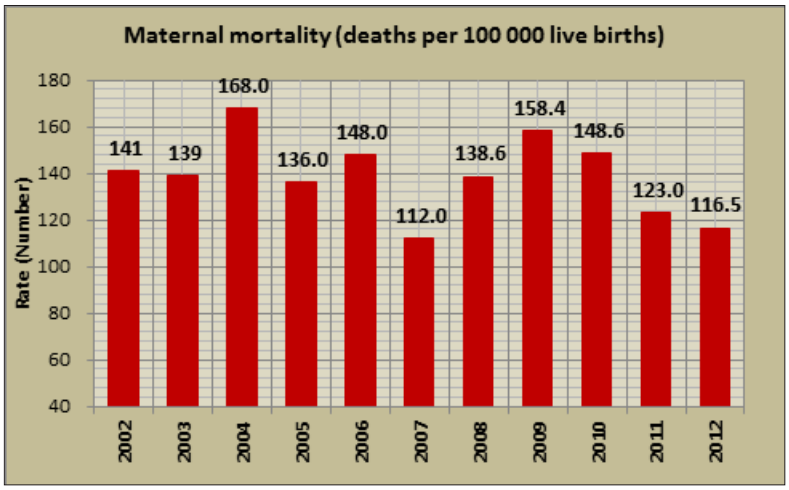


Figure 26: Maternal mortality rate (MMR)

Summary

Although the MMR has dropped since 2002 there was no consistent picture between 2002 and 2009. Only after 2009 was there a continuous downward trend. The declining pattern after 2009 suggests an improving health sector in Gauteng. However, it must be noted that these figures refer only to recorded incidences within public institutions and potentially underestimate the severity of the problem. The main threats to maternal survival are HIV/AIDS and poor implementation of existing maternal, neonatal and child health care programmes (UNICEF, 2013). Conducive policies and high coverage of antenatal care have succeeded in containing maternal deaths across the world more generally (UNICEF, 2013), and therefore the trend after 2009 is positive.

3.6.4 Cure rate (TB)

Definition Percentage of GCR patients who are proven to be cured using smear microscopy at the end of treatment. South Africa is working towards achieving the accepted World Health Organisation (WHO) target of an 85% cure rate for new smear positive cases.

Measure Percent (%)

Data sources District Health Barometer 2011-2012 and South Africa Health Review (SAHR) available through HST.
http://www.hst.org.za/publications/district-health-barometer-201112

Trend graph

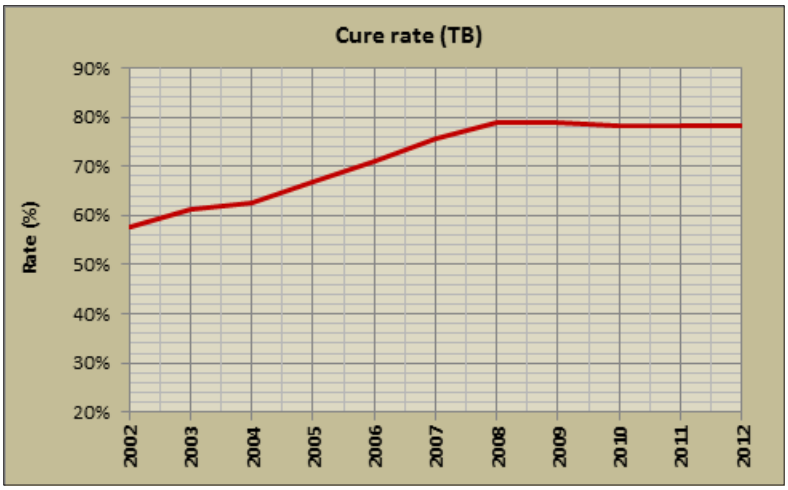


Figure 27: Cure rate (TB)

Summary

The number of TB cases in South Africa is among the highest in the world. According to HST, it is second highest after Swaziland. Cure rates of 58% have also historically been well below the world average of 78% (WHO, 2013). This makes TB a major health challenge in the country. In Gauteng, TB cure rates improved significantly between 2002 and 2008 from 57.7% to 78.2% and remained high but stable up to 2012. More effort is needed to raise cure rates to above the world average.

3.6.5 HIV prevalence

Definition Percentage of Gauteng antenatal women who test HIV positive.

Measure Percent (%)

Data sources DoH, The 2011 National Antenatal Sentinel HIV & Syphilis Prevalence Survey in South Africa.
http://www.health-e.org.za/wp-content/uploads/2013/05/f0980fb5107a7ce543a8bd5730e52333.pdf

Trend graph

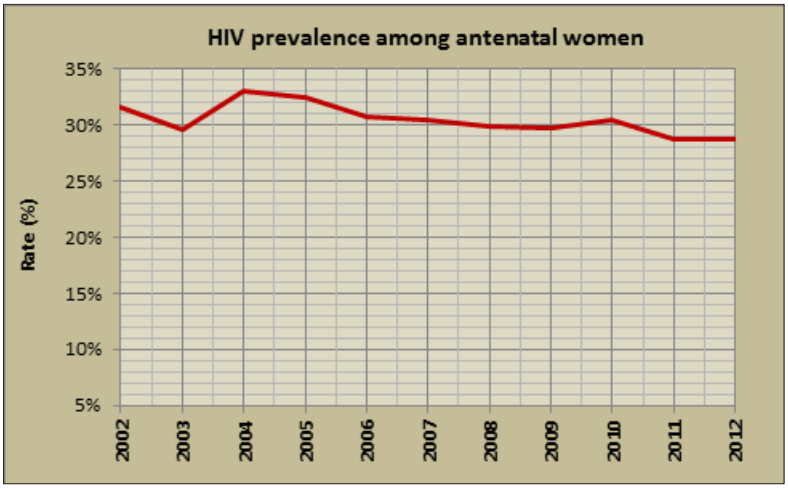


Figure 28: HIV prevalence

Summary

The South African Antenatal Clinic Survey is carried out annually to generate data for estimating the rate of new HIV infections, i.e. the incidence (DoH, 2012). This survey has shown that the HIV prevalence rate among antenatal women is currently very high for Gauteng. Between 2002 and 2012 an average of 30% of antenatal women tested positive for HIV. This rate is much higher than the 6.4% recorded in 1994. Historical data show that between 1990 and 2001 there was a drastic increase in the antenatal HIV prevalence rate from 0.7% to 29.4%. Although the rate has stabilised around 30% more effort is needed to recue it to a much lower level.

3.7 Education

3.7.1 Net primary school enrolment (NER)

Definition The ratio of children of the official primary school age who are enrolled in primary school to the total population of the official primary school age.

Measure Percentage (%) of children of primary school going age

Data sources Gauteng Department of Education (GDE), Education Management Information System (EMIS) Department.
http://www.education.gpg.gov.za/Pages/default.aspx

Trend graph

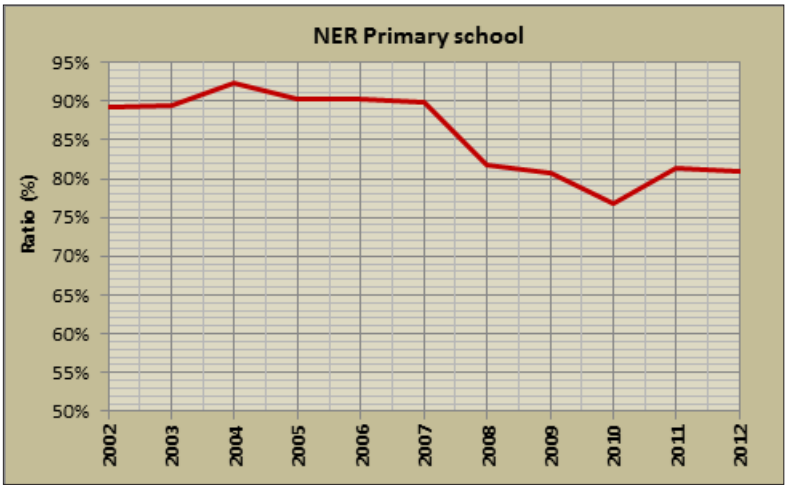


Figure 29: NER Primary school

Summary

The NER (primary school) measures the number of children of official school-going age who are enrolled in primary school as a percentage of the total number of children of the corresponding official school-going age. As such, it gives an indication of the proportion of children who should be in school but are currently not. The primary school NER for Gauteng declined significantly between 2002 and 2012 with faster decline occurring after 2007. A number of socio-economic factors bar potential learners from school at primary or secondary level. Nearly half of the world's 'out-of-school children' are found in just 12 countries and South Africa is one of them (UNESCO, 2014). Government therefore needs to take active steps towards addressing factors that prevent learners from enrolling and remaining in school.

3.7.2 Learner-educator ratio (LER), primary school

Definition The LER is the average number of learners per educator at primary level in a given school year in the GCR.

Measure Ratio

Data sources GDE, EMIS Department.
http://www.education.gpg.gov.za/Pages/default.aspx

Trend graph

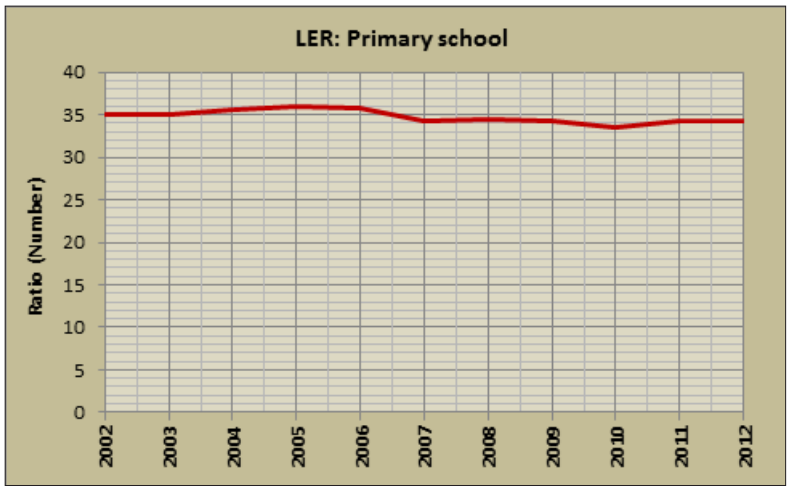


Figure 30: LER: Primary school

Summary

The LER is an invaluable planning indicator in the field of education. Apart from giving an indication of the state of teaching and learning, the ratio also speaks to equity achievements as well as the level of human resource input in the education sector (GDE, 2011). A smaller LER not only shows equitable learning opportunities but is also associated with higher performance outcomes (UNESCO, 2014). LER for South Africa is very high, especially among poor and historically disadvantaged communities where the average in public schools is between 39 and 40. This is well above the average for Sub-Saharan Africa of 27 and a world average of 21. The average LER for Gauteng between 2002 and 2012 was 35.

3.7.3 Matric pass rate

Definition Percentage of candidates who sat for National Senior Certificate (NSC) examinations and depending on the minimum requirements achieved either 40% or 30% in six subjects.

Measure Percent (%)

Data Source Department of Basic Education (DBE), Education Statistics for South Africa Report. http://www.education.gov.za/EMIS/StatisticalPublications/tabid/462/Default.aspx

Trend graph

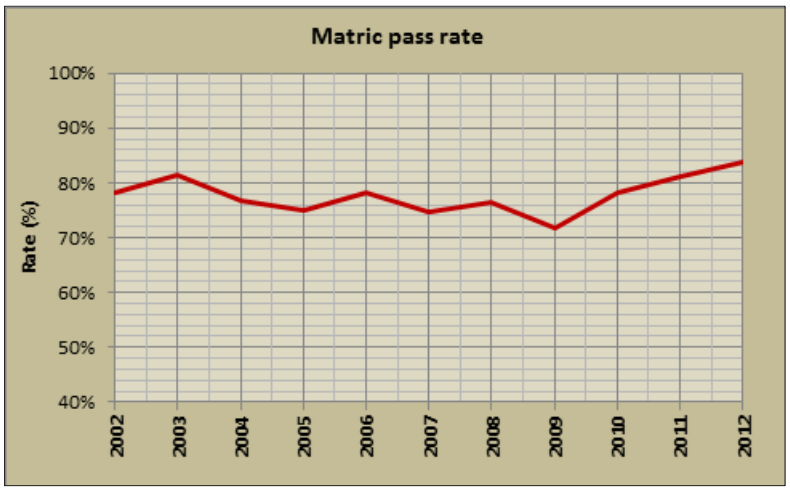


Figure 31: Matric pass rate

Summary

In South Africa, matric examinations are the basis upon which learners qualify for entry into tertiary education (DBE, 2014). Between 2002 and 2008 the matric pass rate for Gauteng fluctuated. However, after 2009, the rate rose consistently to reach a high of 83.9% in 2012. The 30% pass mark that was applied in these examinations has been a source of controversy among stakeholders given the challenges faced by learners in the post-matric phase, particularly in numeracy and science.

3.7.4 Science and technology graduates

Definition Percentage of university graduates with degrees in science, engineering and technology (SET) in the GCR institutions of higher learning.

Measure Percent (%)

Data sources Department of Higher Education and Training (DHET), Higher Education Management Information System (HEMIS) and Council for Higher Education (CHE). http://www.dhet.gov.za/SitePages/Home.aspx, http://www.che.ac.za/

Trend graph

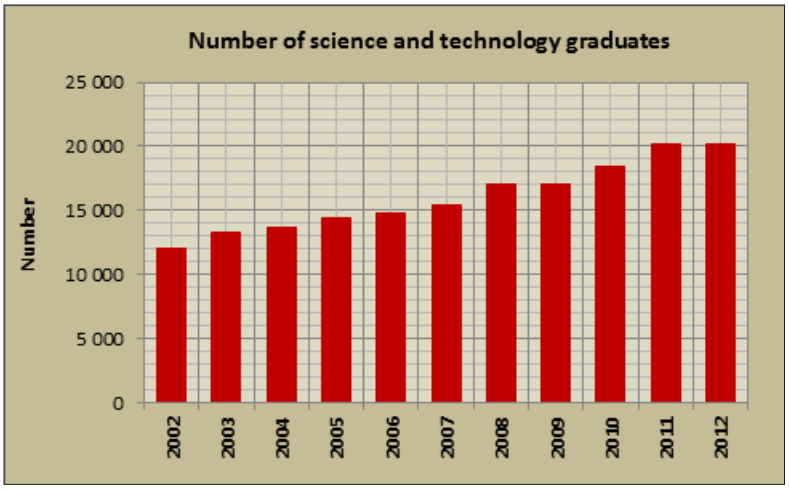


Figure 32: Science and technology graduates

Summary

University enrolment in South Africa has increased considerably since 1994. Enrolment data from HEMIS show that between 1995 and 2010 university enrolment rose by 82% nationally. Efforts have been made to increase graduate output in science and technology in order to address the skills shortage in these fields. Evidence from Gauteng universities showed a substantial increase in science and technology graduates from 12 048 in 2002 to 20 178 in 2012 (a 67.5% improvement).

3.7.5 Adult literacy

Definition Percentage of total GCR population aged 15 years and above who have no difficulty or some difficulty in reading (e.g. newspaper magazines, religious books) and writing a letter in at least one language.

Measure: Percentage (%)

Data sources GHS data from Stats SA, GDE Annual Performance Plan 2009/2010.
http://interactive.statssa.gov.za:8282/webview/
http://www.education.gpg.gov.za/Document5/Pages/default.aspx

Trend graph

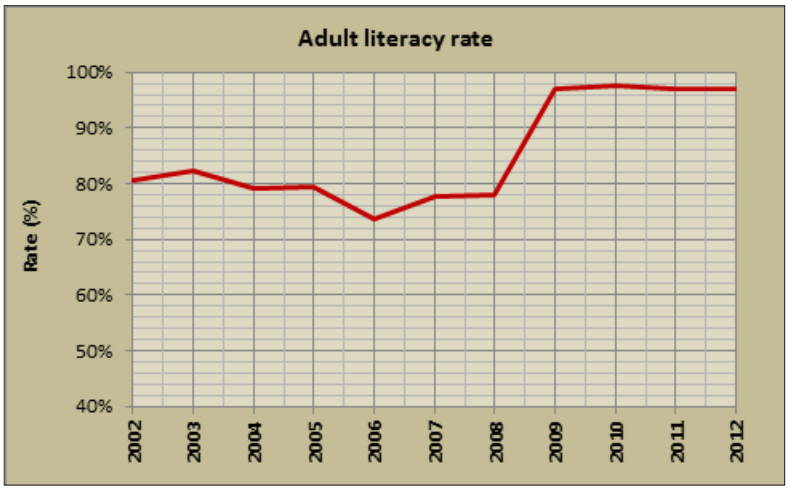


Figure 33: Adult literacy

Summary

Adult literacy, measured as the ability of adults aged 15 and above to either read or write, is an important variable for calculating the HDI. Figure 33 shows that the adult literacy rate for Gauteng is fairly high. Between 2002 and 2008 the average rate was 80% and rose significantly to 97% after 2008.

3.8 Social cohesion

3.8.1 Membership of voluntary organisations

Definition Percentage of total GCR population aged 18 and above which participates in the activities of clubs, societies, associations and organisations of a voluntary nature.

Measure Percent (%)

Data sources GCRO QoL Survey.
http://gcro1.wits.ac.za/qolviewer/

Trend graph



Figure 34: Membership of voluntary organisations

Summary

Achieving social cohesion is a major social challenge for South Africa given the variegated nature of its society. Factors such as race, ethnicity, language, political affiliation, religion, sexual orientation and nationality impact significantly on social cohesion in South Africa. Given this diversity, South Africa is susceptible to social fracturing which may in extreme cases lead to incidents such as the 2008 xenophobic attacks. The GCRO QoL Survey asks a question about membership of civil society organisations (CSOs). This question was used as one indicator of the level of social cohesion in Gauteng. Membership of CSOs was fairly high and rising (from 70.6% in 2009 to 72.8% in 2011), indicating increasing levels of social cohesion.

3.8.2 Public opinion on race relations

Definition Percentage of GCR population aged 18 and above which agrees or strongly agrees with the statement that "blacks and whites will never trust each other".

Measure Percent (%)

Data sources GCRO QoL Survey.
http://gcro1.wits.ac.za/qolviewer/

Trend graph

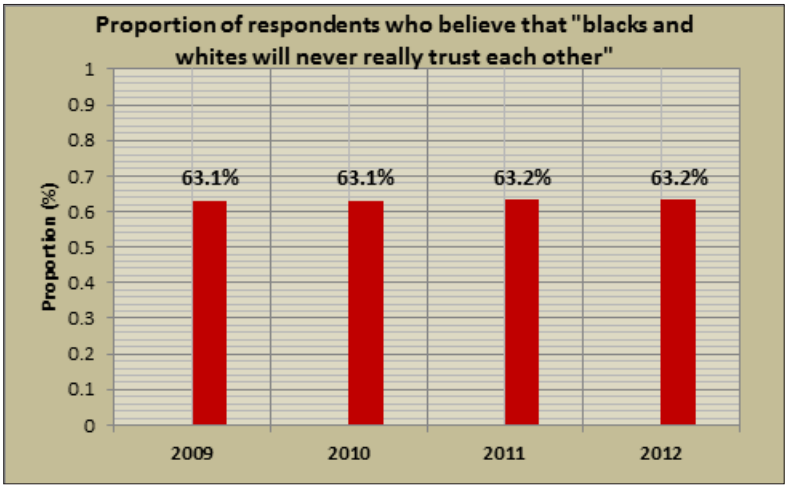


Figure 35: Public opinion on race relations

Summary

Although social cohesion as measured by membership of CSOs was high (see Figure 34), responses to the race question in the QoL Surveys give cause for concern. Respondents were asked whether blacks and whites will ever trust each other. Close to two thirds of the respondents (63.1% in 2009) and (63.2% in 2011), did not believe the two racial groups will ever trust each other. This result indicates that South African society is still highly polarised along racial lines. As shown in Figure 35, the feeling of mistrust between blacks and whites is strong and unchanging.

3.9 Governance

3.9.1 Corruption perception

Definition Percentage of GCR population aged 18 and above which agrees or strongly agrees with the opinion that "corruption is the main threat to our democracy".

Measure Percent (%)

Data sources GCRO QoL Survey
http://gcro1.wits.ac.za/qolviewer/

Trend graph

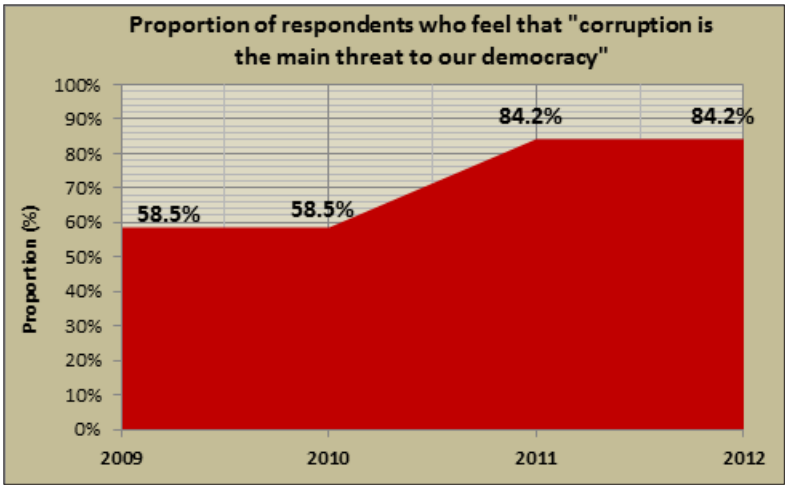


Figure 36: Corruption perception

Summary

The proportion of respondents who felt corruption is the main threat to South Africa's democracy increased drastically from 58.5% in 2009 to 84.2% 2011. This trend sends a clear message that society is getting more and more aware of and frustrated by corrupt conduct in government. The Public Protector's Office has been very instrumental in investigating corruption. The media also plays a significant role in publicising cases of maladministration by government officials. Corruption has an adverse impact on service delivery and the victims are often the poor and vulnerable members of society who look to government for support.

3.9.2 Public opinion of service delivery

Definition Percentage of GCR population aged 18 and above which expresses the opinion that they are satisfied or very satisfied with delivery of local government services namely water, sanitation and energy.

Measure Percent (%)

Data sources GCRO QoL Survey.
http://gcro1.wits.ac.za/qolviewer/

Trend graph

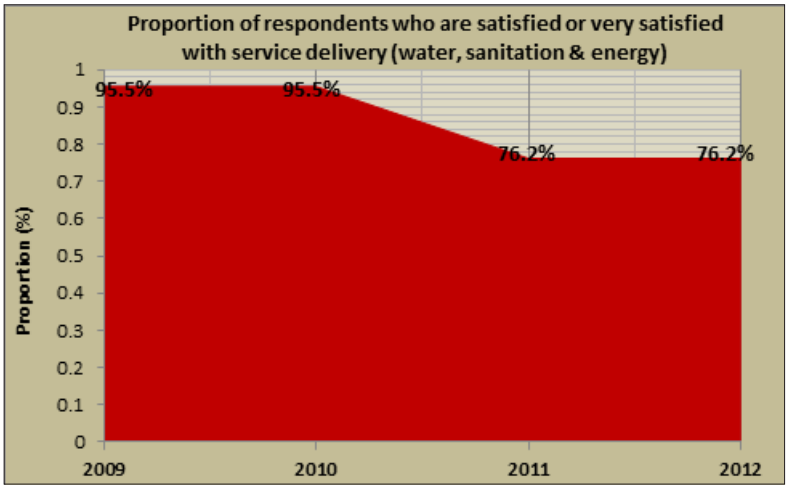


Figure 37: Public opinion of service delivery

Summary

This indicator shows the percentage of respondents who said they were satisfied or very satisfied with water, energy and sanitation, with the percentages across the three services added up and divided by three (i.e. the average). Service delivery remains a major challenge for the South African government, particularly in townships and informal settlements. Significant progress has been made since 1994 to ensure access to basic services for people living in these areas, including in Gauteng. In spite of the increase in levels of access, satisfaction with services in Gauteng declined significantly from 95.5% in 2009 to 76.2% in 2011. The decline is associated with changing perceptions about government generally, its failure to meet the demand, and the poor quality of services. The dissatisfaction has often been expressed in the form of service delivery protests not just in Gauteng but across the country.

3.9.3 Voter Age Population (VAP) registered

Definition VAP is the total number of people of voting age, i.e. eligible to vote. Voter registration therefore refers to the proportion of the VAP that is actually registered to vote.

Measure Percentage (%)

Data sources Independent Electoral Commission (IEC).
http://www.elections.org.za/content/Voters-Roll/Registration-statistics/

Trend graph

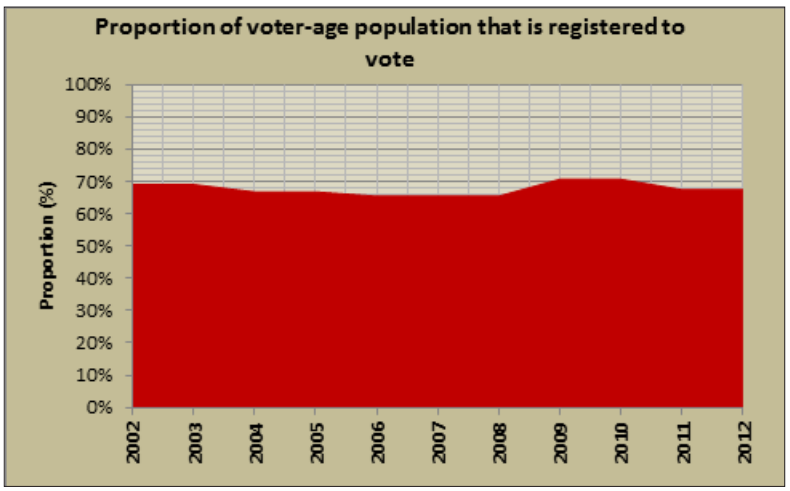


Figure 38: VAP registered to vote

Summary

As a measure of the strength of democracy, participation in local or national elections is a crucial indicator. Data on voter registration are only available for years during which elections are held and registration rates for these years were assumed for succeeding years that were without elections. For Gauteng, an average of 68% of the VAP was registered to vote between 2002 and 2012. Although government, the IEC, and individual political parties all encourage eligible persons to register and vote on election day, the decision to vote lies with the individual. Therefore, registration is no guarantee that an individual will actually turn up to cast their ballot.

3.9.4 Voter turnout

Definition The proportion of registered VAP that turned out to vote in the last municipal elections.

Measure Percent (%)

Data sources IEC.
http://www.elections.org.za/content/Elections/Election-reports/

Trend graph

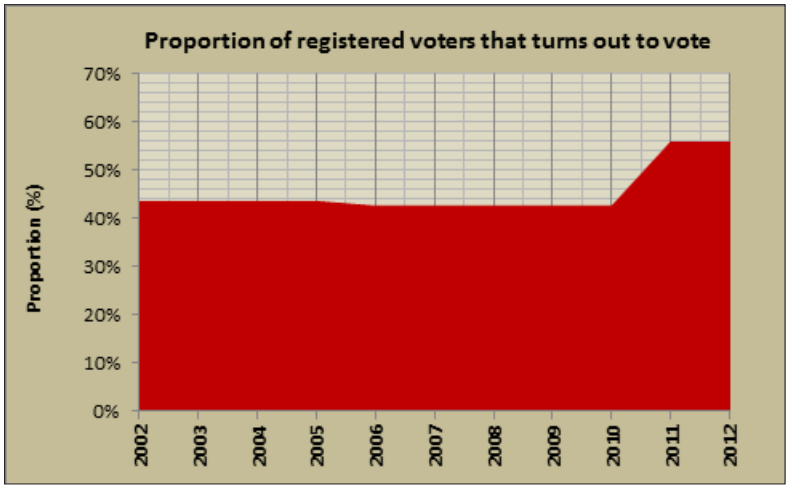


Figure 39: Voter turnout

Summary

Compared to the voter registration rate, voter turnout for municipal elections in Gauteng was low, as shown in Figure 39. However, there was an increase in voter participation from 42% in 2002 to 56% in 2011. Turnout rates for local elections tend to be much lower than for national elections.

3.10 Sustainability

3.10.1 Drinking water quality

Definition Composite score measuring compliance of water suppliers with water quality management requirements in the GCR.

Measure Blue Drop Index (%)

Data sources Department of Water Affairs (DWA), Blue Drop Report. https://www.dwa.gov.za/Documents/BD2012/Intro.pdf

Trend graph

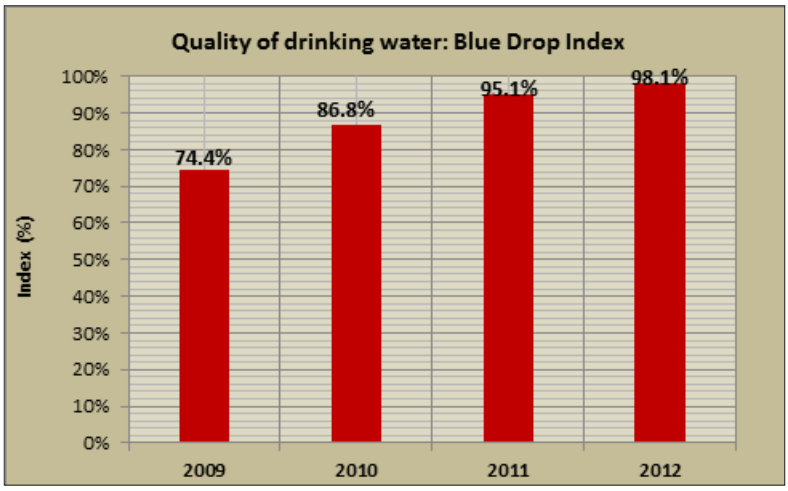


Figure 40: Drinking water quality

Summary

In 2008 government came up with a water quality monitoring programme for municipalities. This programme, the Blue Drop Certification Programme, was introduced by the then Department of Water Affairs and Forestry (DWAF) on 11 September 2008 (DWA, 2012a). According to DWA, this is an incentive-based regulatory system for the drinking water management function of Water Services Authorities. Based on this measure, Gauteng has shown improvements in drinking water quality since 2009 as shown in Figure 40. In 2012, the Blue Drop Index for Gauteng was 98.1% compared to 74.4% in 2009. However, given such problems as acid mine drainage (AMD) in the province, water quality in natural watercourses is under threat.

3.10.2 Sanitation risk

Definition A composite index measuring the ability of municipalities to identify and abate the risks that presents adverse impact on health and the environment.

Measure Green Drop Index

Data source DWA, Green Drop Report
http://www.ewisa.co.za/misc/BLUE_GREENDROPREPORT/GreenDrop2012/GreenDrop2012_Intro_Background.pdf

Trend graph

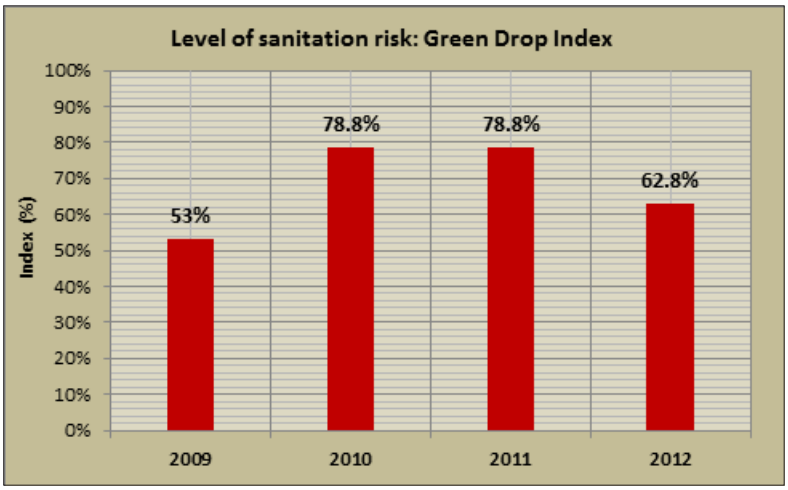


Figure 41: Sanitation risk

Summary

The Green Drop Index is also an incentive-based system for ensuring that municipalities comply with waste water quality standards. According to DWA, Green Drop status is achieved if Water Services Authorities comply with waste water legislation and other best practice requirements. A risk-based approach was initiated to determine priority waste water facilities for urgent regulatory intervention and present tangible targets for municipalities to reduce risk within an acceptable time frame (DWA, 2012b). Failure to comply or meet these targets may result in prosecution. Gauteng's Green Drop status improved in 2010 compared to 2009, but worsened again in 2012 relative to 2011.

3.10.3 Air quality

Definition An index measuring the level of concentration of PM10 in the atmosphere recorded at all stations in the GCR.

Measure Index

Data sources South African Air Quality Information Systems (SAAQIS. Data used were for stations that are in the GCR.
http://www.saaqis.org.za/RequestData.aspx

Trend graph

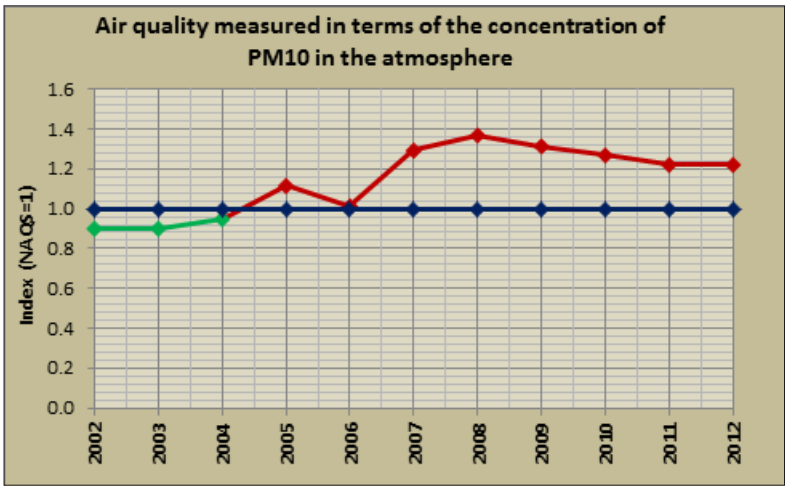


Figure 42: Air quality

Summary

Air pollution in Gauteng is high compared to other provinces due to the presence of heavy industries, coal fired power stations, steel production and coal-to-liquid industries, especially in the Vaal region. A large vehicle population and the domestic use of liquid fuel for cooking and lighting also add to the problem. As such, 33 of the country's 53 air quality monitoring stations are located in Gauteng. In this analysis, only PM10[6] was considered, largely because it poses greater threat to air quality and creates significant health and ecological risks that lead to hospitalisation for respiratory or cardiovascular diseases such as asthma. Results for Gauteng show that from 2006 the concentration of PM10 in Gauteng's atmosphere was above the standard level of 1.

[6] This essentially includes items such as dust, sand, ash, soot, smoke, pollen and exhaust fumes. The main contributing sources include among others, household (coal) fuel combustion, industrial, commercial, and institutional fuel-burning appliances, etc.

3.10.4 Electricity consumption

Definition Total consumption of electricity per capita based on total Gauteng population and on "electricity generated and available for distribution" data.

Measure Megawatt hours (MWh) per capita

Data sources Stats SA electricity generation data.
http://www.statssa.gov.za/publications/statspastfuture.asp?PPN=p4141&SCH=5497

Trend graph

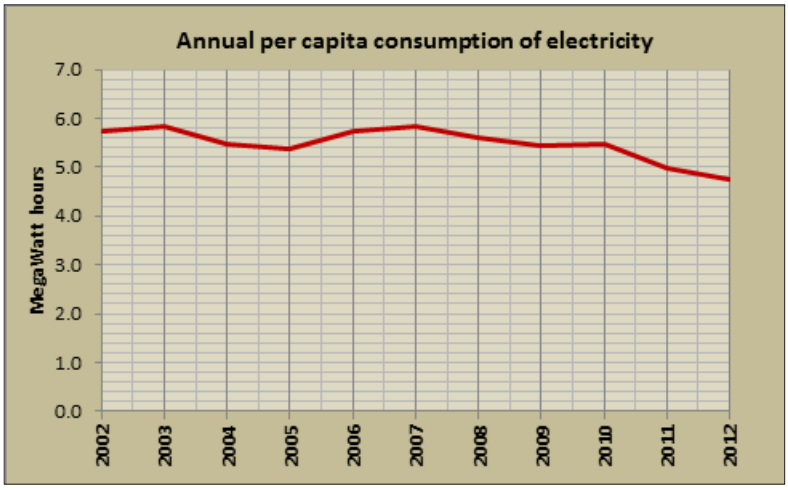


Figure 43: Electricity consumption

Summary

The association between electricity consumption and sustainability stems from the mode of electricity generation dominant in South Africa – coal fired power stations. More pressure in terms of both resource extraction and pollution is placed on the environment as more electricity is consumed. In this analysis, the volume of electricity generated and delivered to Gauteng by Eskom was used as a proxy for consumption. Annual per capita consumption was then calculated on the basis of mid-year population estimates from Stats SA. Higher the per capita consumption is a threat to sustainability. As shown in Figure 43, electricity consumption is slowly declining mainly due to changes in use behaviour caused by the rising cost of electricity.

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