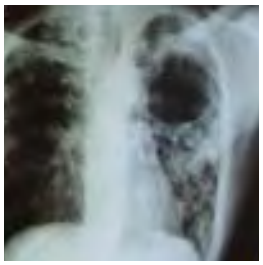
CITY OF CAPE TOWN

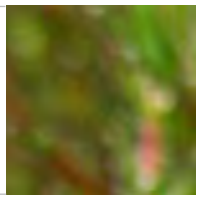
SUSTAINABILITY REPORT 2006



CITY OF CAPE TOWN | ISIXEKO SASEKAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

SUSTAINABILITY REPORT 2006



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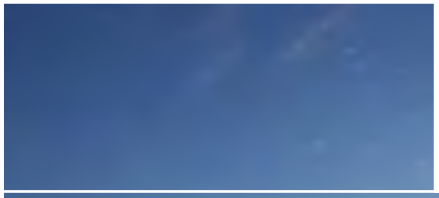

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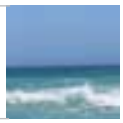


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The City of Cape Town recognises contributions from various staff members in preparing this report, particularly:

- Amy Davison
- Godfrey Mvuma
- Craig Haskins
- Stephen Granger

FOREWORD BY THE MAYOR OF CAPE TOWN

Cape Town is home to some of the most beautiful and unique natural environments in the world. It has a diverse and exceptional cultural heritage, and outstanding economic opportunities. However, these qualities are under threat from unsustainable development and other social and environmental challenges.

The City of Cape Town has made a commitment to promote environmental sustainability, and to balance this with the economic needs of its citizens. This will take good governance aimed at improving the overall social, economic and ecological conditions in the city.

This second annual Sustainability Report provides an insight into the progress that is being made in achieving the goal of becoming a Sustainable City.

Unfortunately, after seven years of State of the Environment and Sustainability Reporting it is clear that Cape Town is continuing to move away from this goal in some areas. Increasing levels of drug-related crime, deteriorating health, high levels of poverty, and exceptionally high levels of air and water pollution pose significant challenges to the City which must be addressed as a matter of urgency.

It is not all bad news though. A number of key indicators have shown improvement, especially in terms of economic growth, employment, crime and education. The City's Nature Conservation team, in partnership with local communities, is also working to preserve the city's unique and endangered plant and animal life.

The value of the Sustainability Report lies in its ability to provide a core set of information for decision-makers and the general public in an accessible and understandable manner. The function of this report is to show trends over time. In this way it provides a reference for decision-makers and allows City councillors and officials to work with a complete picture of the state of sustainability in Cape Town.

We must emphasise that the City cannot achieve sustainability in Cape Town on its own. Achieving long-term sustainability in the city will require working partnerships with Provincial and National Government, Non-Governmental and Community-Based Organisations, the Private Sector and with individual citizens. I therefore urge you, the reader, to play your part in helping Cape Town achieve its goal of long-term sustainability.

Helen Zille
Mayor of Cape Town

INTRODUCTION

Following on from the success of the first annual Sustainability Report, the City of Cape Town has committed to annual reporting on its progress towards sustainability.

Sustainability reporting enables the City of Cape Town to report on the whole environment of the city in an integrated and holistic manner. It does so whilst ensuring linkages with the City's Integrated Development Plan (IDP) and Integrated Metropolitan Environmental Policy (IMEP). These policy linkages have been detailed within the document and are listed for each indicator. This report also focuses on the extent to which Cape Town has contributed towards the fulfilment of the United Nations Millennium Development Goals (MDG), which South Africa has pledged to achieve by 2015. A full list of the MDGs can be found in Annexure D.

The City's IMEP demonstrates how best to implement sustainability at a local government level. In 2006 the IMEP underwent a comprehensive review. This review process involved key stakeholders from all line functions within the City, and identified a number of areas for improvement. One of the key findings of the review process was a need for issues of environmental sustainability and conservation to be more integrated in the City's IDP and planning processes. The strategic goals of IMEP can be found in Annexure A.

Towards the end of 2006 the City embarked on a process to develop a second generation IDP (2007/8 - 2011/12), with the goal of improving its strategic and planning functions. This five-year strategic action plan focuses on seven strategic areas, namely: Sustainable Urban Infrastructure and Services, Public Transport Systems, Integrated Human Settlements, Safety and Security, Shared Economic Growth and Development, Health, Social and Human Capital Development, and Good Governance and Regulatory Reform.

The overarching theme, and a key goal of the IDP, is creating a Sustainable City. This second report shows a number of key trends related to the progress towards that goal. Future editions will further expand on these trends and allow the City to determine the most appropriate courses of action. A list of the City's IDP goals can be found in Annexure B.

In June 2005, the City committed itself to The Green Cities Declaration - 21 Urban Environmental Accords which were endorsed by world mayors at the UNEP World Environment Day Celebration in San Francisco. These accords relate to moving towards sustainability in the areas of energy, transport, waste, health, water, biodiversity and open space. The implementation of the Urban Environmental Accords is a long-term process, which the City is committed to achieving. A full list of these accords can be found in Appendix D.

Achmat Ebrahim
City Manager



METHODOLOGY

SUSTAINABILITY

In recent years sustainability has become a key focus area of national and local governments worldwide. Sustainability has also become a key performance issue for many private companies, in terms of fulfilling their corporate social responsibility obligations. However, the term can often be misunderstood, and therefore a good working definition is required.

ICLEI (Local Governments for Sustainability) offers a definition which defines sustainability at a local government level, therefore: 'sustainable development is development that delivers basic environmental, social and economic services to all residents of a community without threatening the viability of the natural built and social systems upon which the delivery of these systems depends'[1].

The key to achieving sustainability is adopting a long-term and forward-looking approach to improving quality of life. This ensures that future and cumulative impacts of current development activities are anticipated and that quick-fix solutions, which fail to address the root causes of problems, are avoided. Ideally, local governments should keep in mind the following key points when implementing sustainability[2].

- Wise management of the environment is fundamental to achieving growth – it is not an obstacle.
- There must be equity in service delivery and opportunities.
- Ecological limits must be respected and resources must be used in a sustainable manner.
- Development is not simply economic – it also has social, political, environmental, ethical, spiritual and cultural dimensions.
- Public participation and consultation are essential.

In implementing principles of sustainability it is essential that local governments achieve a balance between ecological, social, governance and economic aspects. Promoting social or economic goals to the detriment of the natural environment will have serious negative consequences for the future. Similarly, conserving the environment in an old-fashioned manner that fails to take into account social needs is doomed to failure. Finally, in order for sustainability to succeed it is necessary for the City to work within a framework of good governance, and promote transparency and accountability.

METHODOLOGY - CONTINUED -

INDICATORS

In order to report on Cape Town's progress towards sustainability, it is necessary to have a set of common measurements that can be tracked over time. These measurements, more commonly known as 'indicators', allow us to quantify, monitor and report on changes in our world[3].

Sustainability reporting focuses on those indicators which give information about four key areas of the environment – social, economic, ecological/biophysical and governance. A useful indictor will provide data about a number of these areas. For example, coastal water quality has ecological, economic and social components. Poor water quality negatively affects the health of beach users, the natural coastal environment and has a negative impact on tourism, one of Cape Town's key economic activities.

In the interests of clarity each indicator within this report will be described in terms of the areas of sustainability it reflects, and illustrated with a diagram depicting this visually.

The selected indicators are aligned with the IDP and the IMEP and represent issues that are relevant to the City of Cape Town and its residents. The selection of indicators was also guided by international and local experience in this field, scientific research, and consultation with key stakeholders.

Data on each indicator is assessed and analysed to determine whether a positive or negative trend can be seen. Each indicator in the report is associated with a graphic depicting this analysis thus:

SITUATION IMPROVING

NO CHANGE

SITUATION DETERIORATING

INSUFFICIENT DATA AVAILABLE

It is important to remember that indicators provide a glimpse into the progress towards sustainability at a particular point in time, and that they don't necessarily tell the whole story. However, monitoring indicators over time allow one to draw fair and truthful conclusions about the progress towards achieving sustainability in the City, while ensuring that necessary action is taken in a timely fashion.

SUMMARY

The second annual City of Cape Town Sustainability Report has identified a number of trends for key indicators, providing an insight into the City's progress towards sustainability. Unfortunately, there are still a number of indicators which lack detailed data, or for which historical data simply does not exist. The City is engaged in the process of gathering detailed data, however, in some cases this is a long-term exercise.

Indicators which show improvement are:

- **Green space per capita:** Cape Town has more managed green space per capita than most other cities in the world. This continues to grow as additional land is incorporated into nature reserves.
- **Extent of invasion by alien invasive plant species:** Although alien vegetation is extremely hard to eradicate, most of the City's large nature reserves have strong management interventions in place and are making good progress.
- **Water use per capita:** Water use per capita has gradually decreased, especially since 2001 when water restrictions were put in place. This is a positive step as Cape Town is a water-scarce area.
- **Incidence of murder:** This crime rate has seen a significant and sustained decrease since 2003, which is indicative of more effective policing and law enforcement.
- **Incidence of industrial and commercial crime:** This crime rate has seen a significant and sustained decrease since 1998, which is indicative of effective policing and law enforcement.
- **Access to water:** In 2006, 100% of residents of Cape Town had access to a clean, safe water source within 200 metres of their home.
- **Access to sanitation:** In 2006 there was a 30% increase in the number of informal residents with access to a flush toilet.
- **Unemployment:** In 2005 unemployment decreased by 3% for the first time since 1997.
- **Gross geographic product (GGP):** The economy of Cape Town has continued to grow. 2005 saw a real growth of 4.5%.
- **Public and staff education and awareness programmes:** A high number of training and education person days have been noted in the recent past. The City continues to grow its education, awareness and training programmes.
- **Local Agenda 21 projects:** These have increased over the years, providing a valuable service to communities and creating a mechanism for local environmental problems to be addressed.

- **Capital budget spent:** In 2005/6 over 71% of the capital budget was spent. While this is still underspending, it shows a significant increase since 2002.

Indicators which show no change are:

- **Proportion of effluent reused:** There has been no significant increase in the percentage of treated effluent reused, although programmes are in place to increase use of this resource.
- **HIV/Aids prevalence:** The HIV/Aids infection rate appears to have stabilised at approximately 16%.
- **Incidence of rape and indecent assault:** The rape and indecent assault rates in Cape Town remain unacceptably high. No significant change has been noted since 1994.
- **Percentage informal housing:** The percentage of residents living in informal settlements has remained at approximately 13%. The number of informal dwellings in Cape Town appears to have stabilised.
- **Adult literacy:** Adult literacy remains at approximately 84%.

Indicators which show decline are:

- **Air quality exceedances:** Particulate matter pollution in the city has remained at an almost constant level since 2001.
- **Carbon dioxide per capita:** The per capita carbon footprint in Cape Town has continued to grow at a slow but constant rate.
- **Public and private transport:** Private cars are extensively used in Cape Town, with rail passengers decreasing due to safety concerns. There is a lack of an integrated public transport system.
- **Extent of urban sprawl:** Cape Town continues to expand outwards, with most residents favouring low-density single-family dwellings.
- **Coastal water quality:** Coastal water quality has declined significantly, with fewer beaches meeting guideline requirements.
- **Landfill lifespan:** Landfills are rapidly running out of space and therefore the City of Cape Town Solid Waste Management Department is dedicated to finding alternative solutions to landfilling waste.
- **Waste disposal per capita:** Residents of Cape Town continue to dispose of more waste per capita each year.
- **Tuberculosis incidence:** The incidence of new cases of TB continues to grow each year. This is a critical public health issue.
- **Leading cause of death:** The leading cause of death in Cape Town is HIV/Aids. There is a high incidence of both communicable and non-communicable 'lifestyle' diseases.
- **Drug use and drug-related crime:** The incidence of drug-related crime in Cape Town has soared since 2004. Increasingly, teenagers and young adults are using dangerous methamphetamine or 'tik' as their primary drug of abuse.
- **Incidence of fires in informal settlements:** The number of dwellings damaged and destroyed in fires continues to grow at an unacceptable rate. 2005 saw over 6 000 shacks destroyed by fire.
- **Highest level of education achieved:** Less than half of Cape Town residents over the age of 18 have completed matric or a higher qualification. Declining matric pass rates have been observed.
- **Poverty and income disparity:** The percentage of the population living below the household subsistence level has increased significantly since 1996.
- **Election turnout:** Significantly fewer registered voters turned out for the 2006 municipal elections than for the 2000 municipal elections.

Indicators for which there is insufficient data to show trends are:

- **Renewable energy vs. total energy supply:** The City of Cape Town has a number of projects, strategies and agreements in place in order to promote and increase the use of renewable energy.
- **Energy use per sector**
- **Extent of natural vegetation conserved:** A number of ecosystems in Cape Town are critically endangered due to encroachment of development and infestation by alien vegetation. Ongoing efforts to conserve Cape Town's unique biodiversity are in place.
- **Fresh water quality**

The City of Cape Town is committed to creating a better, more sustainable city through the application of the City's IDP and IMEP, and the City's commitment to the implementation of the UN Millennium Development Goals and Urban Environmental Accords. As these policies and goals have a medium to long-term view it is important to acknowledge that many changes may take some time to manifest themselves. However, the City is confident that despite the challenges that have to be faced, the ultimate goal of creating a Sustainable City is an achievable one.

AIR QUALITY EXCEEDANCES

INDICATOR:

The number of times per year that the United Kingdom 24-hourly running mean particulate matter (PM_{10}) guideline is exceeded.

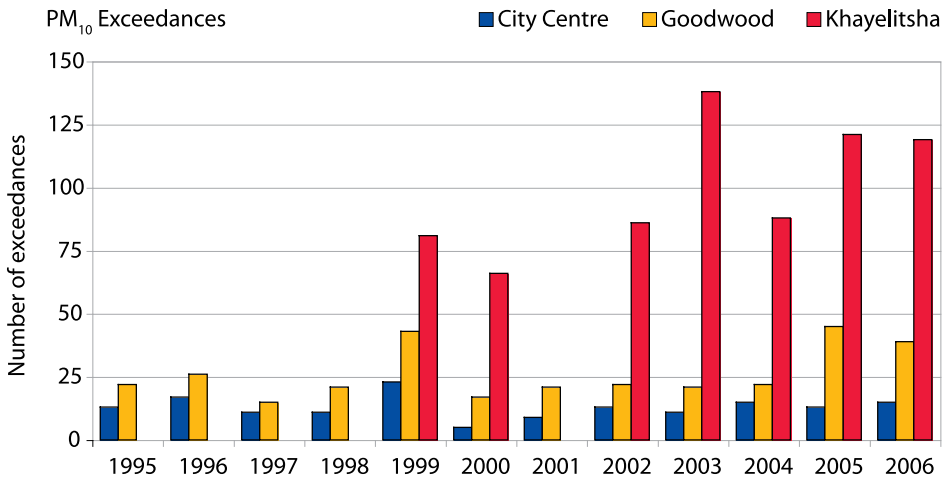
The quality of the air we breathe is important not only for the health of the natural environment but also for the health of the city's population. PM_{10} has been identified as a key pollutant in the City of Cape Town Air Quality Management Plan due to its significant negative health and aesthetic impacts.

PM_{10} pollution in Cape Town is caused primarily by burning of paraffin and wood as fuel for cooking, heating and lighting, as well as emissions from diesel vehicles. Therefore it is expected that low-income and partially informal areas such as Khayelitsha would have significant levels of PM_{10} pollution due to the almost universal use of paraffin and wood as part of the household energy mix.

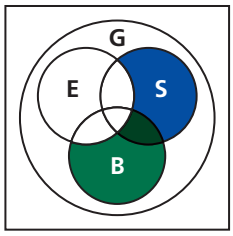
PM_{10} pollution is one of the primary contributors to the unsightly 'brown haze' often to be seen hanging over Cape Town. PM_{10} serves as a good measure of general air pollution as its presence indicates the presence of other air pollutants, which can be damaging to the natural environment. While particulate matter pollution itself is only loosely associated with ecological damage, it is very strongly associated with increased health risks. The United Kingdom's Department of Environment, Food and Rural Affairs (DEFRA) has suggested that exposure to even low levels of PM_{10} pollution can have a significant negative health impact[4]. Long-term exposure to high levels (more than 75 exceedances per year) of PM_{10} is associated with increased incidence in a number of serious respiratory conditions. Respiratory health risks include an increased rate of chronic bronchitis, asthma and an increased risk of lung cancer. Furthermore, those with an already compromised respiratory system due to TB infection are particularly at risk of complications due to PM_{10} inhalation.

Data shows that the number of exceedances in the city centre and Goodwood has remained generally the same since 1995, although significant increases were measured at Goodwood in 1999, 2005 and 2006. Exceedances in Khayelitsha have remained at unacceptably high levels since monitoring began in 1999. A particularly high number of exceedances was noted in 2003, 2005 and 2006, indicating that the air quality in this area is deteriorating. The past two years have recorded a consistently high number of exceedances, possibly indicating a continuing negative trend. This is particularly alarming as PM_{10} pollution poses an especially serious health risk to residents of low-income and informal areas, owing to the high incidence of TB and limited access to health care in these areas. The continued reliance on polluting sources of energy by poor residents of Cape Town is a considerable public health risk.

AIR QUALITY EXCEEDANCES - CONTINUED -



No data for Khayelitsha 1995 - 1998 and 2001



COMPONENTS OF SUSTAINABILITY

Biophysical - Air pollution negatively affects the proper functioning of ecological systems.

Social - Air pollution negatively affects the health of residents.

POLICY LINKAGES

IMEP: Air - Commitment to reducing all forms of air pollution.

Urban Environmental Accord: Action 18 - Establish an Air Quality Index to measure the level of air pollution and set the goal of reducing by 10% in seven years the number of days categorised as 'unhealthy' or 'hazardous'.

See also:

- Public and private transport
- CO_2 per capita
- TB incidence

RENEWABLE ENERGY VS. TOTAL ENERGY SUPPLY

Indicator:

The amount of renewable energy used per year as a percentage of the total energy supply.

Renewable energy is defined as energy that is obtained from sources that can be replenished within human lifetimes. Although fossil fuels, such as coal, oil and natural gas are replenished over millions of years we are using them much faster than the rate at which they are replenished and therefore they are not considered to be renewable.

The burning of fossil fuels is therefore an unsustainable method of obtaining energy, as supplies are finite and will eventually run out. Furthermore, the burning of fossil fuels is the primary contributor to the increase of atmospheric CO_2, the greenhouse gas responsible for climate change. Therefore, alternative sources of energy must be found and utilised in order to ensure an environmentally and economically sustainable future.

Currently very little renewable energy is produced in South Africa, and as such there is virtually no renewable electricity supplied to the national grid. However, current estimates do not take into account the widespread and increasing use of solar water heaters in private homes around Cape Town, although statistics are not available at this time. The City has drafted a Solar Water Heater By-law which is currently available for public comment before it is passed into law. This by-law requires that all new buildings in Cape Town, and additions to existing buildings that will require the use of hot water, make use of a solar water heating system. The law makes allowances for buildings where this will not be possible, for historical or structural reasons, as well as for privately funded low-income developments where the cost per unit is less than R36 000.

A small portion of the electricity generated at the Steenbras hydroelectric pumped storage plant can be considered renewable. The pumped storage plant operates by pumping water uphill at night when the cost of electricity from Eskom is cheap and releasing water downhill through turbines during the day when electricity is more expensive. This allows the plant to act as a buffer for periods of high electricity consumption. Natural drainage due to rainfall in the catchment area adds to the amount of water flowing through the turbines and can be considered renewable energy. This renewable portion generally consists of less than 0.5% of the total system electricity.

The Darling wind farm – South Africa's first privately operated power station – has been approved and, with four wind turbines, is expected to produce 13.2GWh of electricity a year initially – or 0.11% of Cape Town's current energy use. The City of Cape Town has signed a 20-year power purchase agreement with Darling Wind Power, which is expected to expand its plant to ultimately include 16 wind turbines that could supply 53GWh a year, or 0.43% of Cape Town's current energy use[5]. Although this may seem like a small amount, this wind farm is but one of a host of renewable interventions planned for the Western Cape in the coming years, including a number of large wind farms to be operated by Eskom.

Wave-generated electricity is another feasible, but as yet commercially unexplored opportunity for Cape Town. With over 308 km of coastline, there are plenty of opportunities for the installation of both onshore and offshore generators, which are designed specifically so as to be low profile and not interfere with coastal views and aesthetics.

Cape Town is an ICLEI Cities for Climate Protection member city, and as such is committed to reducing the city's CO_2 footprint. The integration of clean renewable technologies into Cape Town's energy mix is a key part of this commitment.

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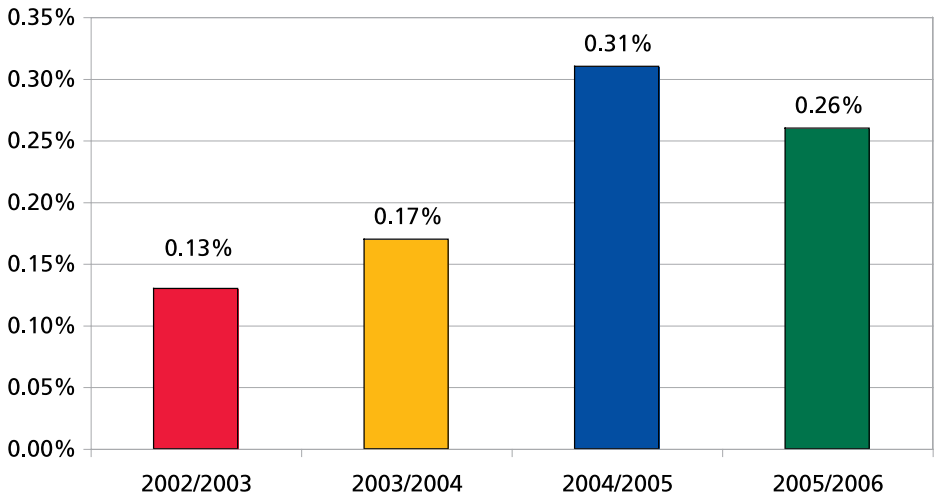
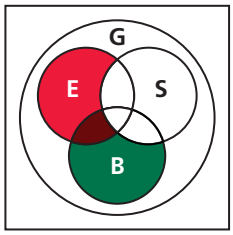
Cape Town is an ICLEI Cities for Climate Protection member city, and as such is committed to reducing the city's CO_2 footprint. The integration of clean renewable technologies into Cape Town's energy mix is a key part of this commitment.

RENEWABLE ENERGY VS. TOTAL ENERGY SUPPLY - CONTINUED -

'Green' electricity generated at Steenbras as a percentage of the total system electricity





COMPONENTS OF SUSTAINABILITY

Biophysical - Renewable energy plays a vital role in reducing air pollution and CO2 emissions.

Economic - As the price of oil rises, renewable energy will play an increasingly important role.

POLICY LINKAGES

IMEP: Energy - A commitment to sources of energy with the least impact on the environment and health of communities.

IDP: 2020 Goal - Renewable energy share equal to 10% of energy consumed.

MDG Goal 7: Target 9 - Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.

Urban Environmental Accord: Action 1 - Adopt and implement a policy to increase the use of renewable energy to meet 10% of the City's peak electric load within seven years.

See also:

- CO_2 per capita

ENERGY USE PER SECTOR

INDICATOR:

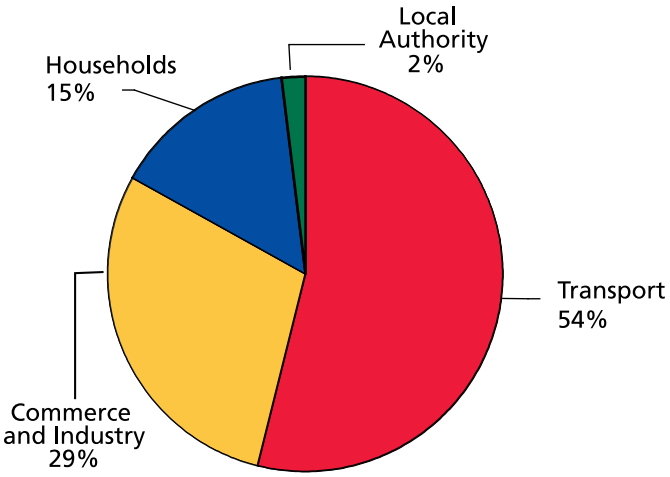
The percentage of energy used per sector per year.

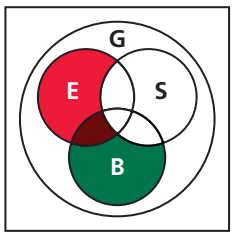
Unfortunately no updated information was available for this indicator in 2006. However, it is unlikely that the sectoral use of energy has changed significantly since 2005.

Energy use in Cape Town is dominated by three main sectors: transport, commerce & industry and domestic (households). The City of Cape Town is also a significant user of energy, accounting for approximately 2% of the total energy use in the Cape Town area.

The transport sector remains the dominant energy user in Cape Town and uses primarily petroleum products such as petrol and diesel, with a very small percentage of vehicles making use of cleaner fuels such as liquid petroleum gas and electricity. In recent years hybrid vehicles, which use a combination of petrol and electricity, have grown in popularity but still represent a small minority of vehicles on the road. This dominance by the transport sector has important implications for all residents of the city, as roads become increasingly congested, adding to stress levels and contributing to loss of productivity in the workplace due to worker lateness.

The dominance of the transport sector also has negative implications for air quality and greenhouse gas emissions levels in Cape Town, as the burning of petrol and diesel for transport purposes is a significant contributor to the city's carbon footprint, as well as PM_{10} pollution. In order to reduce the city's overall energy usage the implementation of safe and reliable public transport is a key issue.





COMPONENTS OF SUSTAINABILITY

Biophysical - Understanding the sectoral distribution of energy use is vital in the development of plans to reduce energy usage and greenhouse gas emissions.

Economic - Understanding the sectoral distribution of energy use allows the development of plans to reduce energy usage without negatively impacting on the economy.

POLICY LINKAGES

IDP: 2020 Goal - Renewable energy share equal to 10% of energy consumed.

IMEP: Energy - A commitment to sources of energy with the least impact on the environment and health of communities.

MDG Goal 7: Target 9 - Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.

See also:

- Air quality exceedances
- CO_2 per capita
- Public and private transport

CARBON DIOXIDE PER CAPITA

INDICATOR:

The total amount of carbon dioxide and carbon dioxide equivalents produced through energy consumption in Cape Town, per person.

Carbon dioxide (CO_2) is a colourless, odourless gas produced as a by-product of numerous human activities, primarily the burning of fossil fuels to generate electricity and for transport purposes.

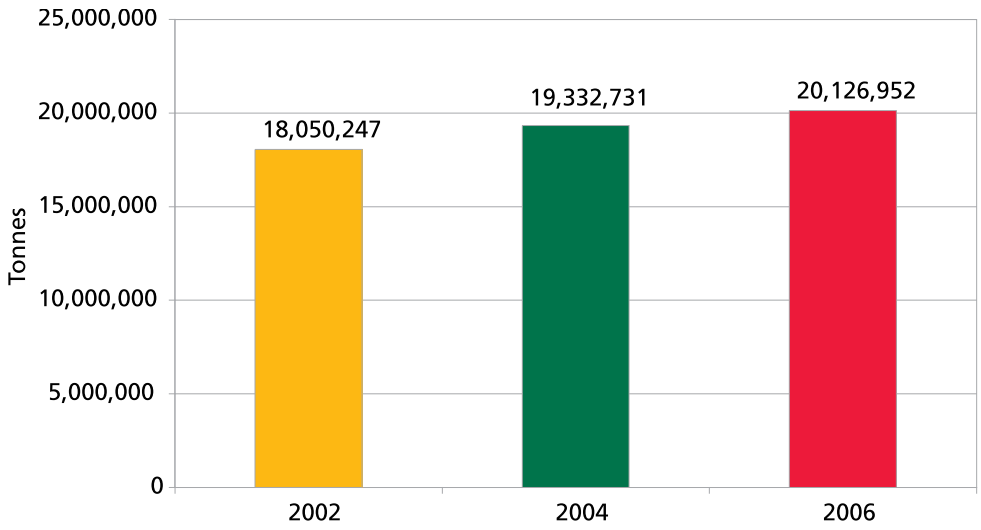
In South Africa, approximately 90% of the electricity generated is through coal-burning power plants. Coal is one of the dirtiest fuels available and produces a massive amount of CO_2 when burned. Petroleum and diesel fuels used in motor vehicles similarly produce CO_2, although to a lesser extent.

The rise in human-produced atmospheric CO_2 has been identified as the leading cause of climate change, which is expected to have significant negative environmental, social and economic impacts. These will include sea-level rise, hotter average temperatures and an increase in extreme weather events.

The per capita carbon dioxide use was calculated by adding together the emissions produced through the use of electricity, petrol, diesel, paraffin, liquid petroleum gas, jet fuel, heavy fuel oil and coal in 2006. Although the transport sector is responsible for 54% of Cape Town's total energy use, electricity is responsible for almost 70% of Cape Town's CO_2 emissions. This is because most of Cape Town's electricity is generated by coal-burning power plants in the north-east of the country.

In 2006, Cape Town produced an average of 6.21 tonnes of CO_2 equivalent per capita, indicating an increase of 290 kg per capita since 2002. The graph shows a trend of increasing CO_2 per capita emissions, although a smaller increase was experienced between 2004 and 2006 than was experienced between 2002 and 2004. Time will tell whether Cape Town's emissions continue to grow, or if interventions in terms of sustainable and renewable technologies and demand side management, will reduce Cape Town's overall CO_2 production.

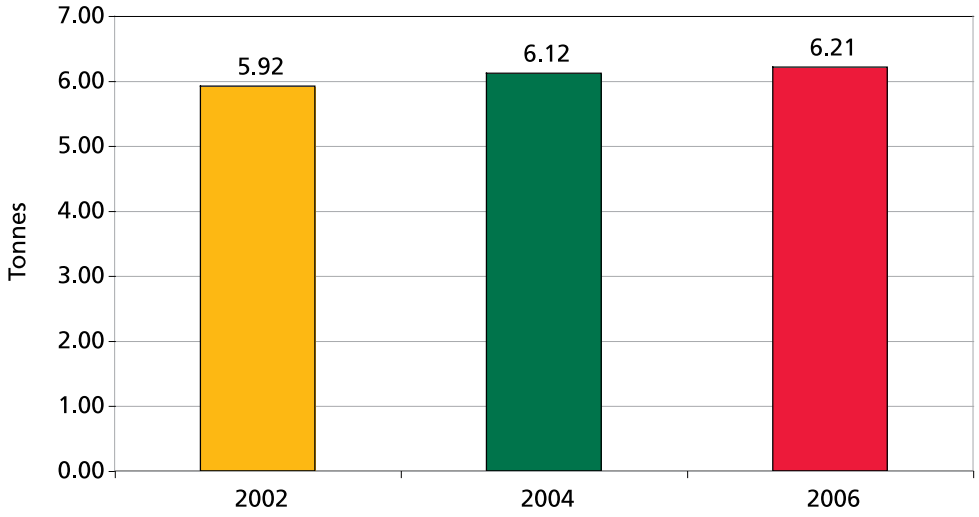
Total Carbon Dioxide and CO_2 equivalents produced by Cape Town

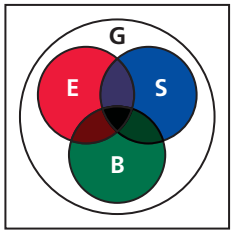


CARBON DIOXIDE PER CAPITA - CONTINUED -

South Africa is a signatory to the Kyoto Protocol, which is committed to the worldwide reduction of greenhouse gas emissions. All energy users in South Africa have a responsibility to reduce CO_2 emissions, and the City of Cape Town is leading the way through its commitment to sustainable technologies and conservation of energy. Cape Town is also committed to addressing climate change through its role as a member of Cities for Climate Protection, an ICLEI initiative which involves more than 550 cities working to reduce their CO_2 emissions.

Per Capita Carbon Dioxide and CO_2 equivalents produced by Cape Town





COMPONENTS OF SUSTAINABILITY

Biophysical - Carbon dioxide emissions contribute to climate change which will have a significant negative impact on ecosystems.

Social and Economic - Carbon dioxide emissions contribute to climate change which will have negative economic and quality of life impacts on all people.

POLICY LINKAGE

IMEP: Energy - A commitment to sources of energy with the least impact on the environment and health of communities.

MDG Goal 7: Target 9 - Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.

Urban Environmental Accord: Action 3 - Adopt a citywide greenhouse gas reduction plan that reduces the jurisdiction's emissions by 25% by 2030 which includes a system for accounting and auditing greenhouse gas emissions.

See also:

- Air quality exceedances
- Renewable energy vs. total energy supply
- Energy use per sector

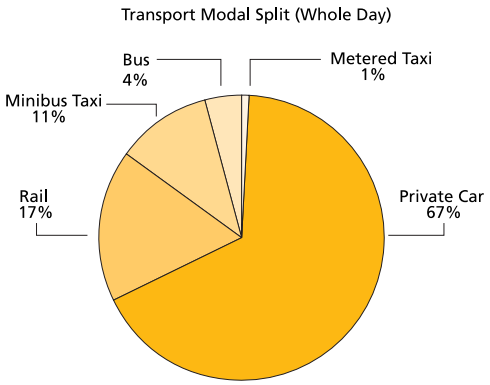
PUBLIC AND PRIVATE TRANSPORT

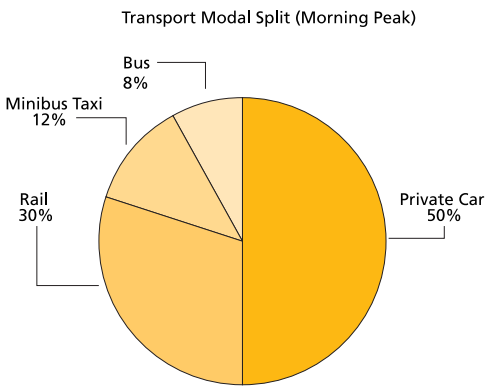
INDICATOR:

Number and percentage of passengers per transport mode entering the Cape Town CBD.

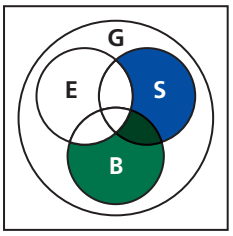
An effective public transport system is a key part of building an efficient and environmentally sustainable city. This helps by reducing congestion on the roads as well as reducing emissions of CO_2 and other atmospheric pollutants. In Cape Town the traffic flow is severely restricted by the geography of the city, and so a public transport system that ameliorates this problem would be of great social and economic benefit to the city.

Unfortunately, statistics on bus and rail use for 2006 were not available, but studies currently being conducted by the City's Transport Department will provide further information by mid-2007. Statistics on minibus taxi use were available for 2006 and showed a significant 14% increase in the use of this transport mode since 2004, and a considerable 34% increase since 2000. It is also important to note that the modal split during the morning peak shows a significantly different picture to the whole day modal split. Rail is heavily used during peak hours, but use drops off sharply between the morning and evening peaks. The reason for this is the public perception that rail transport is dangerous outside of peak hours, due to the relatively higher crime rate experienced at these times. Additionally, there is a significantly reduced rail service outside of peak hours, perhaps as a response to the decreased demand[6].





In order to reduce traffic congestion and minimise harmful emissions, it is necessary to improve Cape Town's public transport system. By reducing crime on rail transport and changing the perception that it is an unsafe transport mode, the number of rail passengers would markedly increase and therefore contribute to a reduction in traffic congestion. Furthermore, ensuring a regular service outside of peak hours, as well as a coordinated bus and train schedule, will promote the use of public transport in Cape Town.



COMPONENTS OF SUSTAINABILITY

Biophysical - Increased traffic volumes negatively affect air quality and ecology due to harmful emissions in vehicle exhausts.

Social - Congestion and noise pollution in the city negatively impacts commuter times and therefore people's quality of life and stress levels.

POLICY LINKAGES

IDP: Strategic Focus Area 2 - Public transport systems.

IMEP: Transportation - A recognition that transportation is needed for access to facilities and work opportunities.

Urban Environmental Accord: Action 15 - Implement a policy to reduce the percentage of commuter trips by single occupancy vehicles by 10% in seven years.

See also:

- Air quality exceedances
- CO_2 per capita
- Energy use per sector

GREEN SPACE PER CAPITA

INDICATOR:

The extent of green spaces within Cape Town, per person.

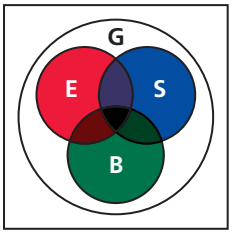
The provision of good quality green areas within a city is a vital part of creating a dignified living environment, where residents can find recreational opportunities and aesthetic enjoyment. Green spaces can be broadly defined in three categories – nature reserves, parks and public open space. Nature reserves are those formally protected areas dedicated to the management of biodiversity and the conservation of indigenous flora and fauna, as well as environmental education. They also provide recreational space and often include braai and picnic areas and hiking trails. Parks are generally smaller than nature reserves, are most often found in suburban neighbourhoods and provide recreational space for communities, especially children. Public open space consists of natural and man-made areas that form part of the broader public space network of the city.

This indicator has been redefined for this report to include both land managed by the City of Cape Town, as well as nature areas managed by other spheres of government within the Cape Town area, and therefore cannot be compared with figures stated in the previous report. The table below shows the amount of green space available in Cape Town in each category in 2006. In addition, Cape Town has approximately 308 km of coastline, which provides further recreational and conservation space. It is quite clear from the figures available that Cape Town has more green space per capita than almost any other major city in the world. Curitiba[7], Brazil, and Portland[8], Oregon (USA) have comparably high amounts of green space per capita. Densely populated and highly urbanised cities such as Tokyo[9] and Hong Kong[10] have comparatively small amounts of green space with 5.34 and 2.5 square metres per capita respectively. Most world cities with a large suburban population have moderate amounts of green space per capita, with a typical example like Melbourne[11], Australia having approximately 16 square metres per capita.

Unfortunately, easy access to good quality public green space remains problematic in Cape Town. For many residents of poor suburbs good quality green space remains inaccessible due to the distance that they are required to travel because public transport linkages to the City's nature reserves, beaches, and the Table Mountain National Park are poor. Furthermore, the cost of entry to the Table Mountain National Park means that most residents of Cape Town cannot afford to gain access.

The promotion of easy access to good-quality green space has long been a goal of the City of Cape Town. In order to achieve long-term sustainability, promote social well-being and recreation, and conserve Cape Town's unique biodiversity, it is essential that the City continues to conserve, improve, and maintain its green space, and improve public access to these areas.

Type of green space	Area (ha) in city	Area (m2) per capita
City of Cape Town nature reserves	14,562.69	44,95
Parks and public open space	4,860.00	15,01
Total area on City land	19,422.69	59,95
Other nature reserves (provincial and national, including Table Mountain National Park)	32,669.25	100,84
Total green space in Cape Town	52,091.94	160,79



COMPONENTS OF SUSTAINABILITY

Biophysical - Green spaces within the city are vital to biodiversity conservation.

Economic - The unique natural landscapes in Cape Town are a significant draw factor for tourists and contribute greatly to the local economy.

Social - Access to quality green spaces is of key importance in terms if providing recreational space as well as creating a dignified and aesthetically pleasing city.

POLICY LINKAGES

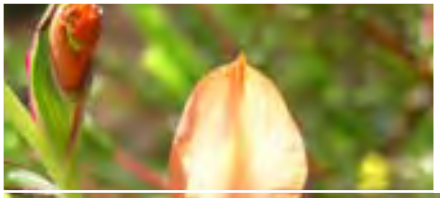
IDP: 2020 Goal - Access to safe green space within walking distance for all.

IMEP: Urbanisation and Housing - A recognition that environmental features and systems need protection from urbanisation.

Urban Environmental Accord: Action 10 - Ensure that there is an accessible public park or recreational open space within half a kilometre of every city resident by 2015.

See also:

- Extent of natural vegetation conserved
- Extent of invasion by alien invasive species
- Extent of urban sprawl



EXTENT OF NATURAL VEGETATION CONSERVED

INDICATOR: The extent of national vegetation types secured within Cape Town as a percentage of the target for each vegetation type. The overall target for each vegetation type is the minimum extent of that vegetation type needed to ensure its long-term viability within the city.

The City of Cape Town is located in the heart of the Cape Floristic Kingdom, the world's smallest and most diverse floral kingdom. As such, it is an area of high biodiversity and unique conservation value - a global urban biodiversity hot spot without parallel. The Cape Floristic Kingdom also has one of the highest proportions of endemic species in the world, with over 70% of the approximately 9 600 species that occur here found nowhere else in the world. However, Cape Town is an urban area with high rates of economic and population growth, which remain a constant threat to biodiversity conservation in the city. As a result the Cape Floristic Kingdom has been identified as a global hot spot, placing an international responsibility on all three spheres of government to ensure its adequate conservation. Cape Town is home to nine of the country's 21 critically endangered ecosystems.

Of particular concern are the Cape Town Lowlands, otherwise known as the Cape Flats and historically home to over 1 466 different plant species. Unfortunately, this area has also experienced some of the worst uncontrolled urban sprawl and environmental neglect in the city, and therefore over 14% of indigenous plants on the Cape Flats are Red Listed as species threatened with extinction. It is worth noting that Cape Town has experienced the highest rate of plant extinctions of any city in the world.

The following table shows the extent of natural vegetation conserved in Cape Town, based on photography and surveys carried out in late 2006. In order to preserve endangered and vulnerable ecosystems for the future, these conservation initiatives must be maintained and extended. Unfortunately, in some cases it is impossible to meet conservation targets, as too little remnant vegetation remains. In these cases, the entire remnant area must be conserved in order to ensure that a sample of this unique biodiversity is conserved for future generations.

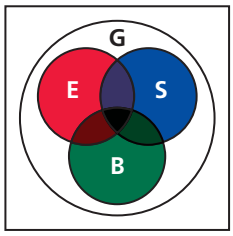
National vegetation type	Subtype	Remnant hectares in total	Total hectares formally conserved	% Formally conserved	% of historical extent lost	Status
Cape Flats Dune Strandveld	on recent non-aeolian colluvium	0.00	0.00	0%	100%	CR
Swartland Shale Renosterveld	on older non-aeolian colluvium	0.00	0.00	0%	100%	CR
Cape Winelands Shale Fynbos	on recent non-aeolian colluvium	0.03	0.00	0%	99.60%	CR
Peninsula Shale Renosterveld	on recent non-aeolian colluvium	5.41	0.02	0.45%	98.90%	CR
Cape Flats Sand Fynbos	Strandveld/Fynbos transition	7.93	0.00	0%	97.04%	CR
Swartland Shale Renosterveld	on recent non-aeolian colluvium	246.56	24.96	10.12%	94.94%	CR
Swartland Alluvium Fynbos	on Malmesbury Sandstone	88.32	0.00	0%	94.93%	CR
Swartland Shale Renosterveld	on Shale	3,823.32	629.68	16.47%	90.78%	CR
Cape Lowland Freshwater Wetlands	Wetlands	124.38	22.27	17.91%	86.83%	CR
Lourensford Alluvium Fynbos	on recent non-aeolian colluvium	646.68	453.74	70.16%	86.58%	CR
Peninsula Shale Renosterveld	on Shale	290.07	252.28	86.97%	84.59%	CR
Cape Flats Sand Fynbos	on marine-derived acid sands	8,030.07	517.64	6.45%	83.87%	CR
Swartland Silcrete Renosterveld	on recent non-aeolian colluvium	220.44	0.00	0%	78.15%	CR
Atlantis Sand Fynbos	on older non-aeolian colluvium	1,699.90	0.00	0%	77.80%	CR
Swartland Granite Renosterveld	on recent non-aeolian colluvium	39.73	0.00	0%	74.26%	CR
Boland Granite Fynbos	older non-aeolian colluvium	47.41	0.00	0%	73.68%	CR
Swartland Granite Renosterveld	on Granite	1,522.82	32.48	2.13%	73.19%	CR
Cape Flats Sand Fynbos	on older non-aeolian colluvium	1,184.91	3.20	0.27%	71.21%	CR
South Peninsula Granite Fynbos	on Granite	1,037.84	985.42	94.95%	68.29%	CR
Cape Flats Sand Fynbos	on recent non-aeolian colluvium	169.35	0.00	0%	65.59%	CR
South Peninsula Granite Fynbos	on recent non-aeolian colluvium	1,313.33	1259.37	95.89%	64.25%	CR
Cape Flats Dune Strandveld	on sands	15,994.27	4245.91	26.55%	54.79%	EN
Peninsula Shale Fynbos	on recent non-aeolian colluvium	369.19	368.27	99.75%	54.16%	EN
South Peninsula Granite Fynbos	on marine-derived acid sands	111.49	105.45	94.58%	52.11%	EN
Atlantis Sand Fynbos	on recent non-aeolian colluvium	186.45	0.00	0%	51.51%	EN

EXTENT OF NATURAL VEGETATION CONSERVED - CONTINUED -

National vegetation type	Subtype	Remnant hectares in total	Total hectares formally conserved	% Formally conserved	% of historical extent lost	Status
Hangklip Sand Fynbos	on marine-derived acid sands	1,185.43	850.40	71.74%	49.72%	EN
Cape Winelands Shale Fynbos	on Shale	1,022.96	352.80	34.49%	47.86%	EN
Cape Lowland Freshwater Wetlands	on recent non-aeolian colluvium	260.74	0.00	0%	42.31%	EN
Boland Granite Fynbos	on recent non-aeolian colluvium	3,402.49	1277.23	37.54%	41.87%	EN
Cape Flats Dune Strandveld	on Shale	187.00	13.02	6.96%	36.89%	VU
North Peninsula Granite Fynbos	on Granite	734.17	725.68	98.84%	35.62%	VU
Atlantis Sand Fynbos	on marine-derived acid sands	6,958.64	373.49	5.37%	35.56%	VU
Cape Flats Dune Strandveld	on sands over or on limestone	2,757.01	1188.24	43.10%	34.36%	VU
Peninsula Shale Fynbos	on Shale	314.11	312.78	99.58%	31.26%	VU
South Peninsula Granite Fynbos	on Shale	0.35	0.35	100.00%	28.83%	VU
North Peninsula Granite Fynbos	on recent non-aeolian colluvium	626.87	625.38	99.76%	26.85%	VU
Boland Granite Fynbos	on Granite	2,700.96	1204.66	44.60%	23.44%	VU
Hangklip Sand Fynbos	on sands	798.41	781.21	97.85%	23.28%	VU
Cape Flats Dune Strandveld	on Sandstone	149.60	127.03	84.91%	22.45%	VU
Atlantis Sand Fynbos	Strandveld/Fynbos transition	7,734.43	273.45	3.54%	13.39%	LC
Peninsula Sandstone Fynbos	on Mudstone	784.72	782.32	99.69%	11.32%	LC
Peninsula Sandstone Fynbos	on Sandstone	19,363.26	18479.75	95.44%	6.08%	LC
Southern Afrotemperate Forest		298.80	295.69	98.96%	0.83%	LC
Kogelberg Sandstone Fynbos	on Sandstone	10,608.32	6446.29	60.77%	0.59%	LC
Elgin Shale Fynbos	on Shale	241.73	30.02	12.42%	0.29%	LC
South Peninsula Granite Fynbos	on Mudstone	1.80	1.80	100.00%	0.00%	LC
Total area conserved		97 291.70	43 042.28	44.24%		

KEY:
CR = Critically endangered
EN = Endangered
VU = Vulnerable
LC = Least Concern

It is clear from the above table that there is a significant disparity in the conservation of certain vegetation types. Of the 46 types listed, 18 could be said to be well conserved, while the remaining types are only partially or poorly conserved. In total, approximately 44.24% of Cape Town's natural vegetation is under formal conservation, although some types have almost no formal conservation in place. Existing conservation initiatives must be maintained and extended in order to ensure the long-term survival of these unique vegetation types.



COMPONENTS OF SUSTAINABILITY

Biophysical - Conserving natural vegetation is a pivotal part of protecting and promoting biodiversity in Cape Town.

Economic - Conservation initiatives support job creation. Cape Town's natural environment is a strong tourist attraction and contributes to the important tourism sector in Cape Town.

Social - Natural vegetation plays an important role in providing quality recreational space.

POLICY LINKAGES

IMEP: Energy - Flora and Fauna - A commitment to the conservation of biodiversity in Cape Town.

MDG Goal 7: Target 9 - Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.

See also:

- Green space per capita
- Extent of invasion by alien invasive species
- Extent of urban sprawl

EXTENT OF INVASION BY ALIEN INVASIVE PLANT SPECIES

INDICATOR:

The spatial extent of infestation by alien invasive plants as both the geographical extent of infestation as well as the percentage gain on the previous year's extent.

Alien invasive plant species are defined as those species 'whose introduction and/or spread threaten biological diversity'[12]. Extensive areas of Cape Town's unconserved land are infested by alien invasive plants, especially Australian *Acacia* species, and invasive grasses. Alien invasive plants pose a serious threat to the globally unique biodiversity of Cape Town, for a number of reasons.

1. Alien invasive plants grow at a much faster rate than indigenous vegetation, and when established, crowd out the indigenous plants.
2. Alien invasive plants tend to consume significantly more water than indigenous vegetation and pose a threat to Cape Town's already scarce water supply. This phenomenon is easily observable along watercourses, where alien plants are often found to be growing densely.
3. Alien invasive plants tend to be especially inflammable. Fynbos does benefit from fire and a typical fynbos fire occurs once every 10 to 15 years and burns slowly at a low temperature. However, when these aliens are present they contribute to a much hotter and faster burning fire, which destroys indigenous vegetation seed banks and lowers its recovery potential.

Alien invasive plant species also pose a significant security problem in many low-income communities, as they provide screening for criminal activities. In 2005 and 2006 areas of dense alien vegetation in the Cape Flats were dubbed as the 'Bush of Evil', due to a number of rapes and murders which had taken place there. Action was taken by both residents of these communities and the City of Cape Town to cut back and clear these dangerously overgrown areas. The table below shows those alien invasive plants which have been identified as being particularly troublesome and widespread.

The City of Cape Town's Environmental Resource Management Department has embarked on a comprehensive programme of alien vegetation clearing within its 23 nature reserves. At this point in time, statistics are not available on alien clearing operations outside of the City's nature reserves, although significant progress has been made in the Table Mountain National Park.

	Species name	Common name	Region of origin
1	*Acacia saligna*	Port Jackson	Australia
2	*Acacia cyclops*	Rooikrans	Australia
3	*Leptospermum laevigatum*	Australian Myrtle	Australia
4	*Hakea gibbosa*	Rock Hakea / Rock Needlebush	Australia
5	*Eucalyptus spp.*	Blue Gum (and others)	Australia
6	*Myoporum insulare*	Manatoka	Australia
7	*Pennisetum clandestinum*	Kikuyu Grass	Central Africa (tropics)
8	*Echium plantagineum*	Paterson's Curse / Salvation Jane	Mediterranean
9	*Spartium junceum*	Spanish Broom	Mediterranean
10	*Bromus diandrus*	Ripgut Brome	Mediterranean
11	*Erodium spp.*	Heron's Bill	Mediterranean
12	*Solanum mauritianum*	Bugweed / Wild Tobacco	South America
13	*Eichornia crassipes*	Water Hyacinth	South America (tropics)

EXTENT OF INVASION BY ALIEN INVASIVE PLANT SPECIES - CONTINUED -

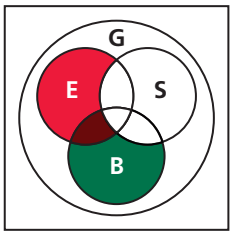
Alien invasives have proved difficult to eradicate and require regular follow-ups and monitoring. As of the end of 2006, the following progress has been made:

Nature reserve	Area of reserve (ha)	Percentage cleared	Hectares cleared
Blaauwberg Conservation Area	1,174.14	75%	880,6062
Bracken Nature Reserve	35.94	unknown•	unknown•
Dick Dent Nature Reserve	10.98	unknown•	unknown•
Durbanville Nature Reserve	5.83	unknown•	unknown•
Edith Stephens Wetland Park	34.00	70%	23,8
Harmony Flats Nature Reserve	18.55	90%	16,69104
Helderberg Nature Reserve	427.23	10%	42,72264
Kogelberg Nature Reserve	6,979.88	unknown•	unknown•
Lourens River Nature Reserve	2,999.10	1%	29,99105
Macassar Dunes Nature Reserve	740.96	25%	185,241
Mamre Nature Reserve	231.88	unknown•	unknown•
Perdekop	18.30	unknown•	unknown•
Raapenberg	14.73	unknown•	unknown•
Rietvlei Wetland Reserve	526.68	unknown•	unknown•
Rondebosch Common	40.26	unknown•	unknown•
Rondevlei Nature Reserve	232.61	75%	174,4564
Silwerboomkloof Nature Reserve	4.84	5%	0,242123
Tygerberg Nature Reserve	300.00	75%	225
Uitkamp Nature Reserve	29.31	unknown•	unknown•
Waterhof	0.54	unknown•	unknown•
Wolfgat Nature Reserve	263.90	unknown•	unknown•
Zandvlei Estuary Nature Reserve	207.67	80%	166,1325
Zeekoevlei Nature Reserve	348.68	75%	261,5091
Zoarvlei Nature Reserve	34.00	unknown•	unknown•
All Reserves (Total)	14,680.01	14%	2,006.39

- **Although the statistics on the percentage cleared are unavailable, interventions are in place in all reserves.**

In total, approximately 14% of City land under formal conservation has been cleared. However, it is important to note that a nature reserve in an urban context can never be fully cleared of alien vegetation, as seeds are carried in from outside the reserves by wind and animal vectors. Furthermore, alien plants are hardy and tough to completely eradicate, and therefore it may require a number of years of follow-up before an area can be deemed 'cleared'[13].

Although statistics for many of the smaller nature reserves are not available at this time, it is clear that most of Cape Town's large nature reserves have clear alien management programmes in place, and are making good progress. In order to ensure the long-term sustainability of biodiversity and water resources in Cape Town, these clearing programmes need to be maintained and expanded to biodiversity areas across the city, as a matter of urgency.



COMPONENTS OF SUSTAINABILITY

Biophysical - Alien invasive species crowd out local indigenous plants, having a devastating impact on ecosystems.

Economic - Alien invasive plants use up local water resources, and promote and fuel forest fires at a huge cost to the City.

POLICY LINKAGES

IMEP: Energy - Flora and Fauna - A commitment to the conservation of biodiversity in Cape Town.

MDG Goal 7: Target 9 - Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.

See also:

- Green space per capita
- Extent of invasion by alien invasive species
- Extent of urban sprawl

EXTENT OF URBAN SPRAWL

INDICATOR:

Percentage of low-density dwelling units in Cape Town and the average number of undeveloped hectares transformed in Cape Town.

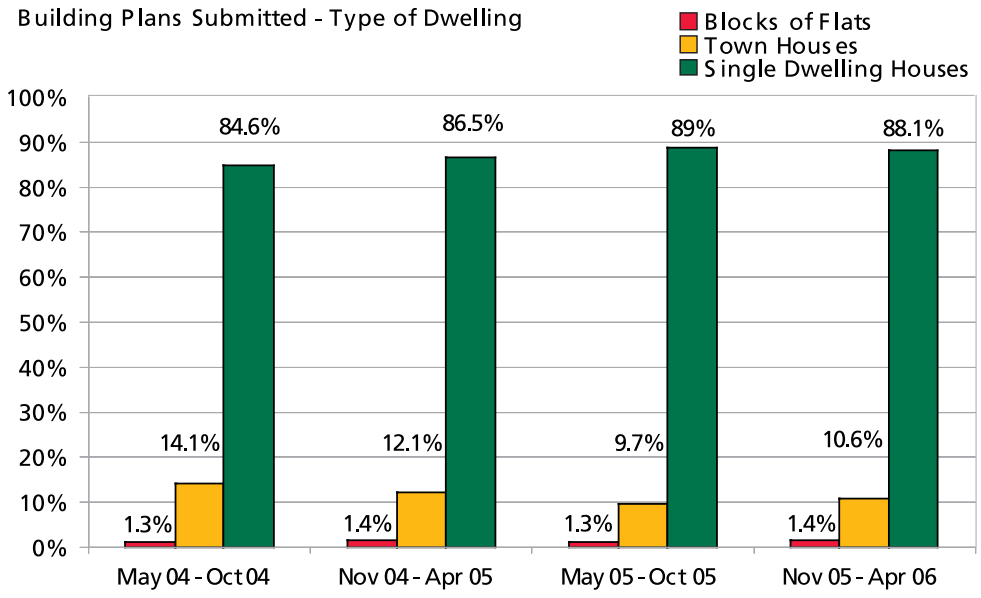
Urban sprawl refers to the expansion of the city into previously undeveloped or greenfield areas. In Cape Town this is particularly problematic, as much of the city's remaining undeveloped land is home to vulnerable, endangered, and critically endangered ecosystems. Outward sprawl also places a heavy burden on local government whose responsibility it is to provide services such as water, sewerage, and electricity to those areas. This can be a high-cost operation and may require many months to complete. The lack of efficient transport linkages to newly developing parts of the city is also a problem and contributes to growing congestion on the city's roads.

Statistics indicate that the majority of existing formal housing consists of single family low-density dwellings, and building plan statistics do not indicate any change in this pattern. Amongst wealthier home buyers large gardens are also an attractive feature, further adding to the problem. Low-density residential dwellings account for over 90% of properties in Cape Town and between 40% of 50% of formal dwelling units.

This distinction is important, as one high-density property will contain a number of dwelling units. Unfortunately, data on the number of hectares transformed annually was not available at the time of finalising this report.

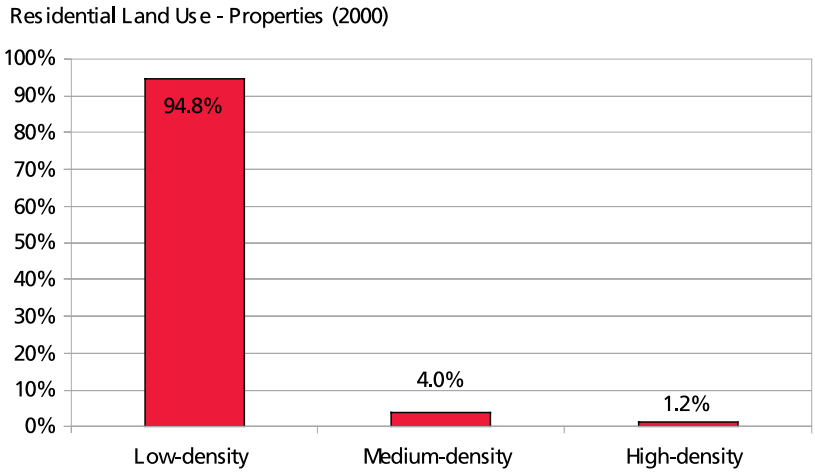
A number of management and development options are in place to address this problem. There is limited space in which to expand in the city, and therefore urban densification is a vital part of Cape Town's future town planning strategy. Brownfield and greyfield redevelopment, where previously developed but currently derelict sites are redeveloped for residential, commercial or industrial usage, are also strategies that the City is exploring and implementing. Finally, enforcement of the urban edge is essential. This means that no new large-scale developments should be approved beyond the city's current urban development footprint.

It is essential to curb urban sprawl in Cape Town in order to promote efficiency and integrated human settlements in the city as well as to conserve the city's unique and endangered biodiversity.

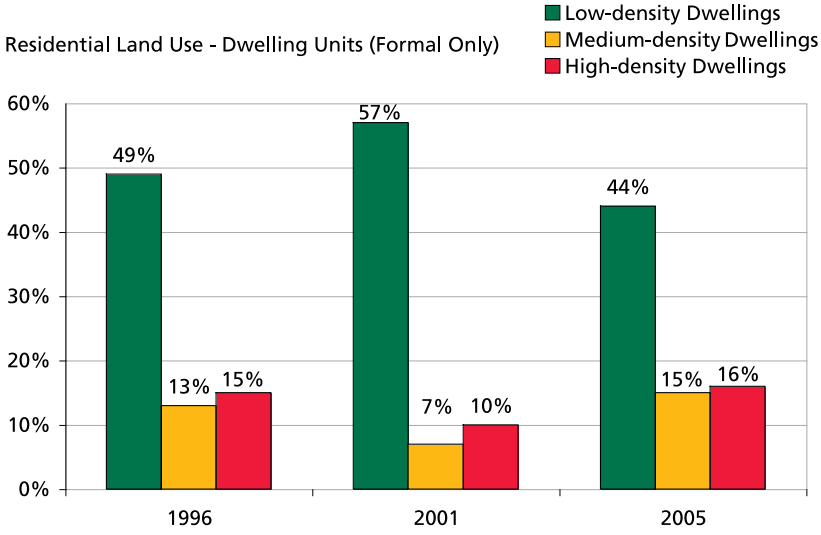


Source: City of Cape Town (2006) Building Plans Tracker

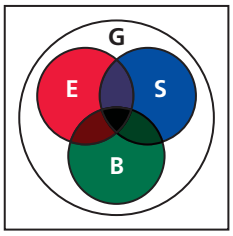
EXTENT OF URBAN SPRAWL - CONTINUED -



Source: City of Cape Town (2000) General Valuation



Source: Statistics South Africa General Household Survey, extracted by City of Cape Town Dept. of Stratefic Development Information and GIS



COMPONENTS OF SUSTAINABILITY

Biophysical - Urban sprawl into natural areas destroys local ecosystems.

Economic - The uncontrolled outward spread of a city has negative economic impacts in terms of increased travel costs for those on the periphery, and high costs for provision of services to those areas.

Social - The loss of natural land used for recreational or aesthetic enjoyment negatively impacts on people's quality of life.

POLICY LINKAGES

IMEP: Urbanisation and Housing - Recognition that environmental features and systems need protection from urbanisation.

Urban Environmental Accord: Action 8 - Adopt urban planning principles and practices that advance higher density, mixed use, walkable, bikeable and disabled-accessible neighbourhoods, which coordinate land use and transportation with open space systems for recreation and ecological restoration.

See also:

- Green space per capita
- Extent of natural vegetation conserved
- Extent of invasion by alien invasive species

WATER USE PER CAPITA

Indicator:

The daily volume of water used/consumed by all categories of water users within Cape Town per person.

South Africa is a water-scarce country and Cape Town is a particularly water-scarce city. Long, hot and dry summers create a situation wherein the demand for water is greatest during the season when supply is limited.

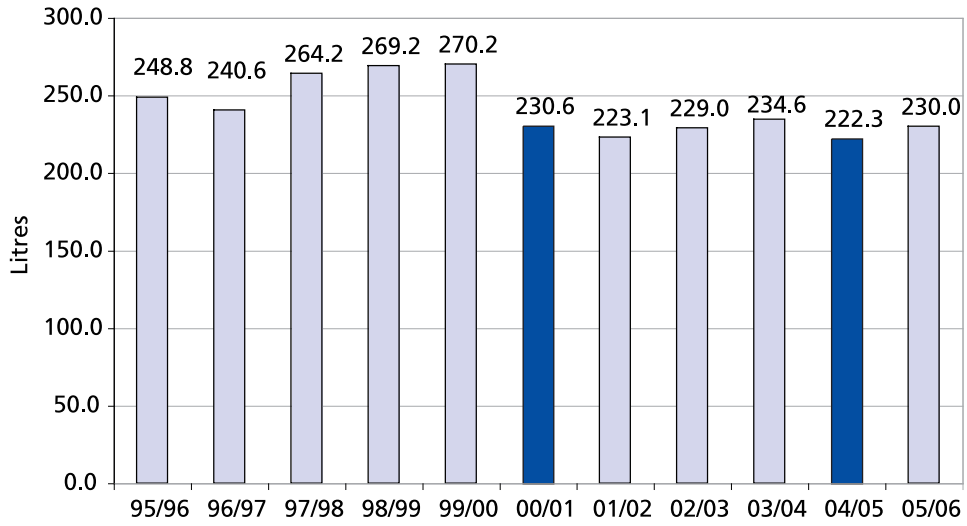
This indicator includes unaccounted water as in Cape Town much of this water is used, although it is not paid for. This includes free water supplied to informal settlements as communal standpipes and water used for fire-fighting purposes. A proportion of this water is lost to leaks. However, most leaks occur at the end user, due to leaky plumbing and dripping taps and not due to leaks in the municipal water system. An ongoing programme to address this problem has been initiated in a number of low-income areas. In this programme local community members are trained as plumbers and given the necessary skills and training to fix leaks. This provides both an income for the plumber and a long-term financial and environmental benefit to the City.

In the past 11 years annual water use in Cape Town has remained at a relatively stable level, ranging from between 240 billion to 288 billion litres per year. A significant drop in water usage was noted in 2000/1, when water restrictions were first put in place, and this decrease has been maintained since then. It is important to note that water restrictions mainly affect the wealthy population of Cape Town, as these are the largest users of water for non-essential purposes, and therefore these restrictions are likely to have little impact on the day-to-day life of Cape Town's poor. It does, however, mean that luxury activities such as watering large gardens and washing cars are severely restricted.

Between 1995 and 2005 the population of Cape Town has steadily increased, causing a drop in per capita water usage. The World Health Organisation (WHO) recommends that each person needs a minimum of 50 litres of water per day for basic cooking, drinking and hygiene requirements. On average, it

Daily Water Use per Capita

Water Restrictions 00/01 and 04/05



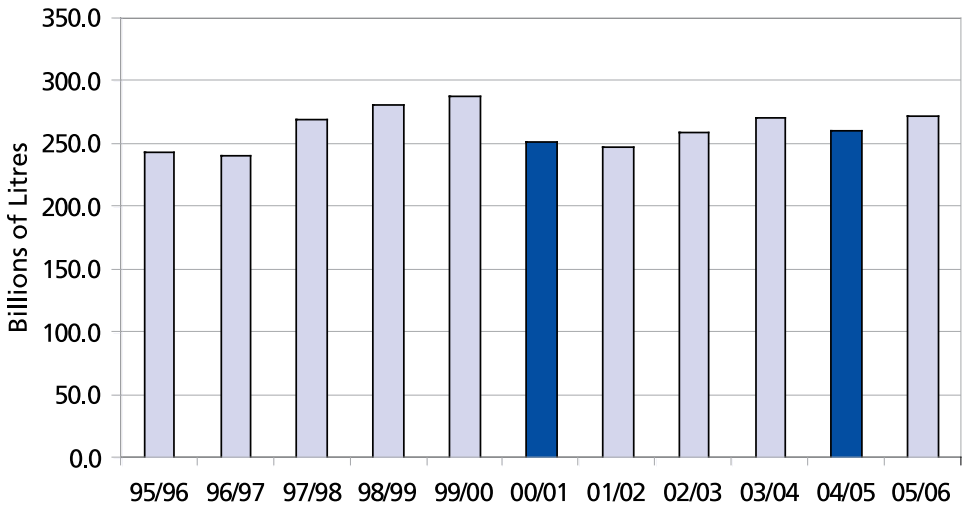
WATER USE PER CAPITA - CONTINUED -

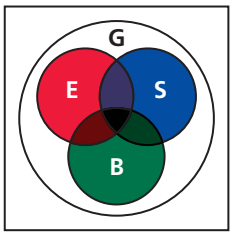
would appear as if Capetonians have enough water to meet these requirements. However, this does not take into account the fact that some users will use much more than 50 litres per day. Currently it is impossible to measure how much is used in informal households, due to the fact that most are not individually metered.

In order for Cape Town to meet its goal of becoming a Sustainable City, water use per capita needs to remain at these relatively low levels. A slight increase in use was noted in 2005/6, and therefore residents of Cape Town need to be careful to ensure that water conservation is a high priority, although water restrictions may no longer be in place.

Annual Water Use

Water Restrictions 00/01 and 04/05





COMPONENTS OF SUSTAINABILITY

Biophysical - Overuse of water resources by humans negatively impacts on natural inland water systems.

Economic - Business and industry require water and therefore accessibility and supply must be insured.

Social - Adequate access to safe water (including free access to water for the poor) is essential for ensuring an acceptable standard of living.

POLICY LINKAGES

IMEP: Urbanisation and Housing - Recognition that environmental features and systems need protection from urbanisation.

Urban Environmental Accord: Action 19 - Develop policies to increase adequate access to safe drinking water, aiming at access for all by 2015. For cities with potable water consumption greater than 100 litres per capita per day, adopt and implement policies to reduce consumption by 10% by 2015.

See also:

- Access to water
- Proportion of effluent reused

FRESH WATER QUALITY

INDICATOR:

Water quality in aquatic ecosystems. This indicator uses the South African Scoring System (SASS) for aquatic invertebrate fauna as a biological indicator of water quality.

The last River Health Survey was conducted during 2004 and 2005. Updated results will not be available when this report is published, but will be made available later in the year. Therefore results seen in this report are those that were reported on in the 2005 Sustainability Report.

In the previous report it was noted that almost two-thirds (65%) of sites were listed as fair or poor. This indicates that sensitive or endangered species may be lost or under particular threat in those areas. Those rivers that fall into the 'poor' category are significantly degraded and usually heavily invaded by alien vegetation.

Fresh water pollution in Cape Town is primarily caused by the discharge of treated sewage effluent and contaminated stormwater into the river system. Stormwater originating in unserviced or partially serviced informal settlements often contains significant amounts of untreated sewage as a result of residents dumping toilets buckets into the open environment or the stormwater system. Stormwater can also often contain a significant amount of dog faeces as a result of it not being cleaned away in urban areas, where it is then washed into the stormwater system. Failures in the wastewater management system can also contribute to the release of improperly treated sewage into stormwater systems. Polluted river water therefore often contains high levels of faecal coliform bacteria, suspended solids, and chemical nutrients, which can have substantial negative effects on both ecosystems and human health.

During late 2005, Eskom power failures resulted in sewage pump stations overflowing into surface water systems around Cape Town and the resulting pollution impacted the health of many water bodies.

At the end of 2006 an extensive fish kill occurred at Rietvlei, as a result of oxygen depletion. Reasons for this depletion are currently under investigation, but may be linked to high levels of water pollution. It was estimated that 80 tons of dead fish were removed to ensure that there would be no adverse human health effects and that decomposition did not contribute to nutrient loading within the system.

Rivers and wetlands are integral parts of ecosystems as they provide a habitat for a diverse variety of plants, fish, birds, mammals and insects. The associated riparian zone along rivers and around wetlands also supports a rich community of plants and animals that are specially adapted to this transitional environment and therefore the rich and unique biodiversity of Cape Town is dependant on the maintenance of healthy aquatic ecosystems.

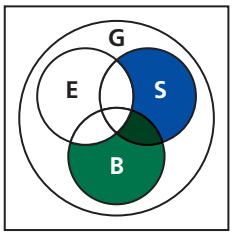
ASSESSED RIVER HEALTH	NATURAL	GOOD	FAIR	POOR
Southern Management Area (14 sites)	1	6	5	2
Eastern Management Area (11 sites)	2	2	4	3
Central Management Area (11 sites)	3	0	3	5
Northern Management Area (7 sites)	0	1	2	4
Total per category (43 sites)	6	9	14	14
Percentage per category (%)	14.0%	20.9%	32.6%	32.6%

FRESH WATER QUALITY - CONTINUED -

These ecosystems also have an important role to play in the provision of important services to the City, for example flood attenuation, dilution of pollutants, recreational opportunities, and aesthetic enjoyment, provided their functional integrity is maintained. It is therefore critical that management and rehabilitation of these fresh water systems is addressed in terms of conserving biodiversity and promoting the healthy functioning of ecosystems.

Cape Town supports the national poverty alleviation 'Working for Wetlands' programme which aims to rehabilitate degraded wetlands while providing jobs and skills to poor communities. In Cape Town, a number of projects of this nature have been initiated and are coordinated by participants of the Peninsula Projects Advisory Committee. This programme includes the rehabilitation of wetlands at Zeekoevlei, Disa River, Soetvlei, Zoarvlei and the Blaauwberg Conservation Area.

RIVER HEALTH	ECOLOGICAL INTERPRETATION	MANAGEMENT INTERPRETATION
Natural	No or negligible modification	Relatively little human impact
Good	Biodiversity and integrity largely intact	Some human-related disturbance, but ecosystems generally in good state
Fair	Sensitive species may be lost, tolerant or opportunistic species dominant	Multiple disturbances associated with the need for social-economic development
Poor	Mostly tolerant or opportunistic species dominating, alien species invasion, individuals often diseased	High human densities or extensive resource depletion



COMPONENTS OF SUSTAINABILITY

Biophysical - The quality of fresh water systems is a vital part of maintaining healthy ecosystems and ensuring biodiversity.

Social - Good quality fresh water systems have an important role to play in terms of both environmental services, as well as recreational opportunities.

POLICY LINKAGES

IMEP: Water Resources: A commitment to ensuring the quality of coastal, marine and inland waters.

IDP: Strategic Focus Area 1 - Sustainable urban infrastructure.

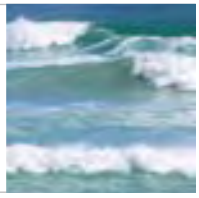
See also:

- Coastal water quality

COASTAL WATER QUALITY

INDICATOR:

Microbial water quality (using recreational guidelines) in coastal waters. - Source: City of Cape Town Coastal Water Quality Report 2005

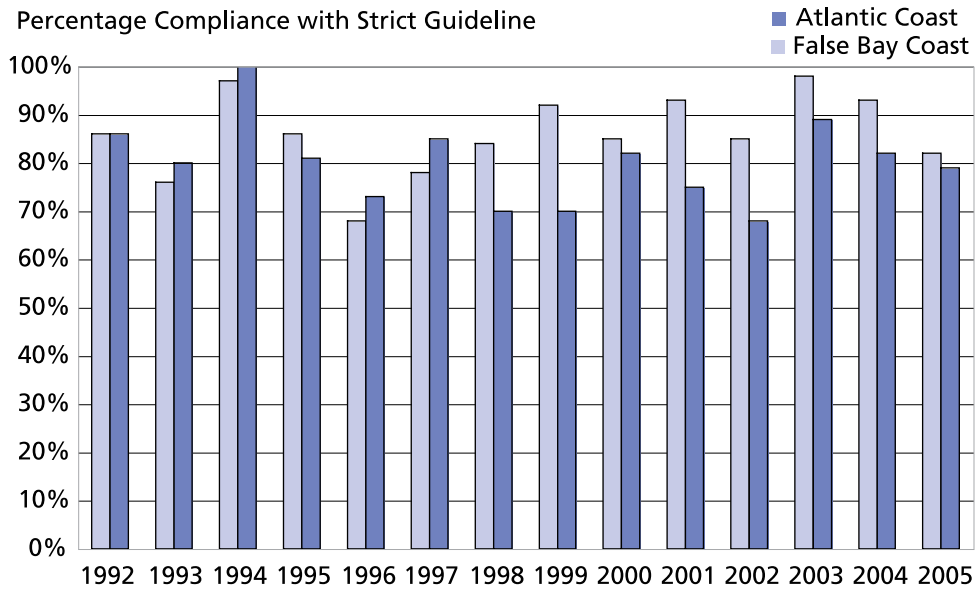


Coastal water quality is measured fortnightly on both the Atlantic and False Bay coasts and assessed according to the South African Water Quality Guidelines for Coastal Marine Waters (Volume 2: Recreational Use). This set of rules includes both a stringent and a relaxed guideline for faecal coliform counts. In order for a beach to comply, it must meet both guidelines.

Strict Guideline: 80% of samples must contain not more than 100 faecal coliform bacteria per 100 ml
Relaxed Guideline: 95% of samples must contain not more than 2 000 faecal coliform bacteria per 100 ml

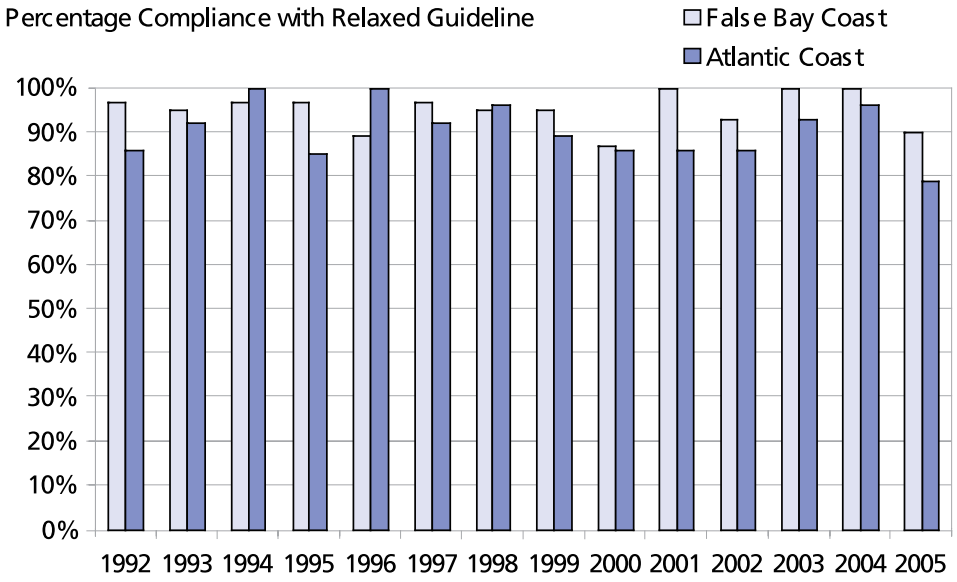
The graphs below show the percentage of beaches along both coastlines that comply with the required guidelines. In general, the False Bay coast has achieved a higher rate of compliance than the Atlantic coast. Unfortunately, in 2005 both the Atlantic and False Bay coasts reported poor levels of compliance.

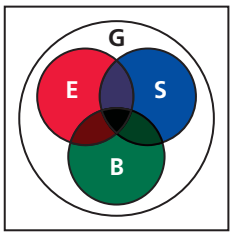
The primary reasons for coastal water pollution are the release of contaminated stormwater and improperly-treated sewage effluent into the marine environment. This happens for a number of reasons. Often stormwater originating in partially-serviced or unserviced informal settlements contains untreated sewage, as a result of residents dumping toilets buckets into the open environment or the stormwater system. After heavy rain, stormwater can also often contain a significant amount of dog faeces. This is a result of dog faeces not being cleaned away in urban areas, where it is then washed into the stormwater system. Improperly treated sewage effluent is another significant contributor to poor water quality in Cape Town. Wastewater treatment works release untreated effluent for a number of reasons: failure of the system due to dumping of chemicals into the sewerage system by industry; failure due to technical or mechanical breakdowns at the plant; and insufficient capacity of wastewater treatment works to handle the amount of effluent requiring treatment.



COASTAL WATER QUALITY - CONTINUED -

Therefore, in order to ensure an acceptable level of coastal water quality, the following actions are necessary. Firstly, the City needs to address the issue of improper and insufficient sewage disposal in informal areas. Secondly, ongoing cleansing operations in the city need to ensure the proper removal and disposal of dog faeces. Law enforcement officers also have a role to play in this regard, by issuing warning and fines to those who fail to dispose of their dog's faeces. Finally, and perhaps most critically, the City needs to address failures in the wastewater treatment system by increasing the capacity and number of treatment plants and ensuring regular maintenance to prevent the breakdown of equipment.





COMPONENTS OF SUSTAINABILITY

Biophysical - The quality of coastal water systems is a vital part of maintaining healthy coastal ecosystems and insuring biodiversity.

Economic - Clean, safe coastal water is necessary to ensure sustained tourism which is an important sector of the local economy.

Social - Adequate access to safe water (including free access to water for the poor) is essential for ensuring an acceptable standard of living.

POLICY LINKAGES

IMEP: Water Resources: A commitment to ensuring the quality of coastal, marine and inland waters.

IDP: Strategic Focus Area 1 - Sustainable urban infrastructure.

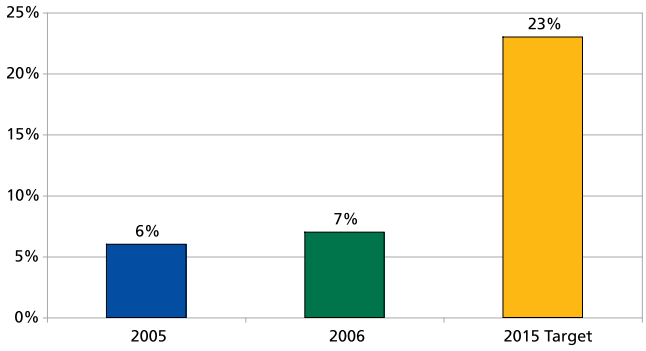
See also:

- Fresh water quality

PROPORTION OF EFFLUENT REUSED

INDICATOR:

The proportion of treated effluent (wastewater) that is reused as compared to the total amount of treated effluent received.



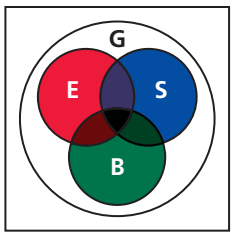
Cape Town is a water-scarce city and as such the implementation of water-efficient policies and technology is of key importance for the long-term sustainability of the city. The reuse of treated effluent offers the City an excellent opportunity to save potable water.

In 2005 approximately 6%, or 31 million litres per day, of wastewater treated in Cape Town was reused. In 2006 this increased marginally to 7%, or 38 million litres per day.

Treated effluent is available to the consumer at a significantly cheaper price than potable water. It is therefore an economically feasible alternative for certain industries, particularly where water is used as a coolant or for boilers, and is not involved in the production of food or other consumable products. Treated effluent is also popularly used worldwide as a water source for irrigation of large areas of cultivated lawn, especially sports fields and golf courses. The social benefits of using treated effluent are clear in the case of school and community sports, as the use of treated effluent enables the facilities to be maintained at a high standard with significantly reduced maintenance costs.

In 2005 the City of Cape Town completed significant upgrading of the Bellville, Parow and Kraaifontein wastewater treatment works, including the installation of additional pumps and filtering equipment[14]. In the same year, construction began on a tail-end dam at Potsdam WWTW in order to ensure a constant and reliable supply of treated wastewater to large consumers in the area. This dam has been designed and constructed in an environmentally sustainable manner. This dam will enable the City to improve its level of service and bring new consumers on board.

The City has clear and realistic goals for increasing the use of treated wastewater in Cape Town and expects the reuse of treated effluent to increase significantly in the near future. It has established an economically feasible target for the reuse of treated effluent of 23%, or 117 million litres per day, by 2015.



COMPONENTS OF SUSTAINABILITY

Biophysical - Reusing effluent means that less water needs to be drawn out of natural systems.

Economic - Treated effluent is available to industry at a cheaper rate than potable water, allowing large industries to operate more efficiently.

Social - Reuse of treated effluent for industrial activities means greater amounts of potable water are free to be used by residents. Treated effluent is often used for irrigation of sports fields, especially in poorer areas, providing an important recreational space for local communities.

POLICY LINKAGES

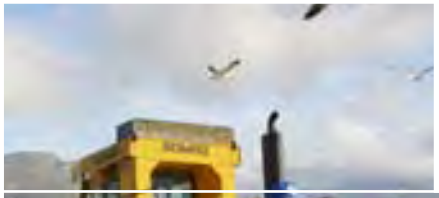
IDP: 2020 Goal - Water use and waste production down 30%.

IMEP: Water Resources - An acknowledgement that all residents of Cape Town have the right to clean, potable and adequate water resources.

Urban Environmental Accord: Action 21 - Adopt municipal wastewater management guidelines and reduce the volume of untreated wastewater discharges by 10% in seven years, through the expanded use of recycled water and the implementation of a sustainable urban watershed planning process that includes participants of all affected communities and is based on sound economic, social, and environmental principles.

See also:

- Water use per capita



LANDFILL LIFESPAN

INDICATOR:

The remaining available space or 'lifespan' for both general and hazardous waste in Cape Town's landfill sites, in terms of the number of remaining months or years in which the landfill can be operational.

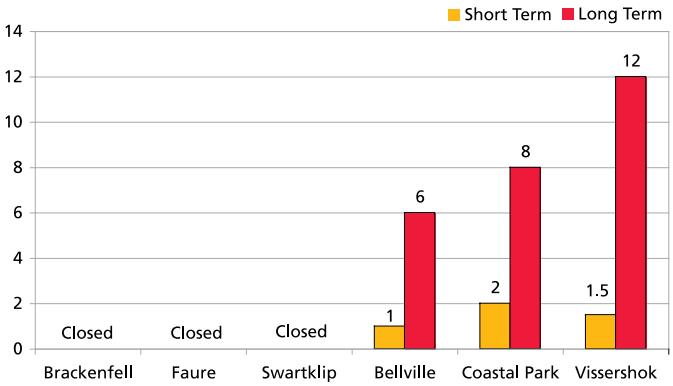
Cape Town is currently experiencing a landfill airspace problem. As can be seen from the graph, three of Cape Town's landfills have now reached capacity and are due to stop receiving waste in the near future. The remaining three are rapidly running out of space for the substantial amounts of waste generated by the city, although construction of new cells in those landfills is underway. Construction of a new regional landfill is expected to be completed in 2013 and will serve Cape Town and surrounding areas.

Even with the construction of new cells Cape Town's existing landfills are expected to be full by 2025. This timeframe is based on current rates of waste disposal. However, Cape Town's disposal of waste is growing, and if it continues to grow, these dates can be expected to be substantially brought forward. Although 2025 may seem far away to many citizens of Cape Town, in terms of long-term city planning this is a problem that needs to be urgently addressed.

Landfill site	Expected date of closure at current rates of waste disposal
Brackenfell	closed
Faure	closed
Swartklip	closed
Bellville	2013 – 2014
Coastal Park	2016 – 2018
Vissershok	2020 – 2025

Internationally, the use of landfills is increasingly seen as an unsustainable option, due to their negative ecological and social impacts. Landfills are also costly to maintain and occupy land which could be used for constructive purposes. Therefore, efforts are underway in most developed countries to reduce the reliance on landfill as a method of waste disposal.

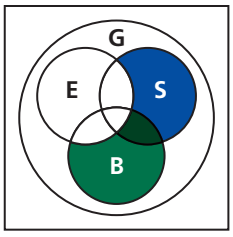
Landfill Lifespan Remaining (Years) at current rates of Waste Disposal



Waste minimisation efforts are focused on the three 'Rs' - reduce, reuse and recycle. Reduction of waste is the most important of these, and is focused on waste prevention through the redesign of products and packaging. Reuse simply involves reusing a product instead of throwing it away, such as a plastic shopping bag or plastic mineral water bottle. Recycling is a process whereby products such as glass, metal tins and a variety of plastics are melted down or ground up to be made into another kind of product. Recent rises in the price of certain raw materials, especially oil, means that recycling has become economically feasible for the first time.

Approximately 65% of the domestic waste stream consists of organic matter, including kitchen and garden waste. The remaining 35% contains significant amounts of recyclable materials including paper, glass, plastics, cans, and other metals[15].

The City of Cape Town Solid Waste Department is engaged in plans to significantly reduce the amount of waste sent to landfill, although these plans are not yet at the implementation stage. These plans include the separation of household waste in order to facilitate recycling, composting of most household organic waste, and recycling of paper, glass, metals and most types of plastic.



COMPONENTS OF SUSTAINABILITY

Biophysical - Expanding landfills into unused land negatively impacts on the ecology of those areas.

Social - Expanding landfills into unused land negatively affects people's enjoyment of natural open space and reduces land that can be used for housing or agriculture.

Other initiatives are focused on reducing waste at the source by working with retailers and distributors to reduce unnecessary packaging and reuse packaging, such as boxes and pallets, where feasible. Concrete plans as to how this will be achieved are not yet in place. However, the City is currently drafting a new Waste Management By-law, which will address many of these issues.

POLICY LINKAGES

IDP: Waste - A commitment to the need for an integrated waste management strategy.

Urban Environmental Accord: Action 4 - Establish a policy to achieve zero waste to landfills and incinerators by 2040.

See also:

- Waste disposal per capita

WASTE DISPOSAL PER CAPITA

INDICATOR:

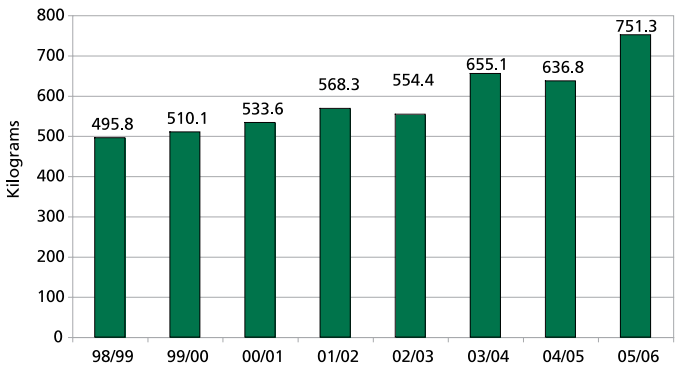
The amount of waste disposed per capita per year.

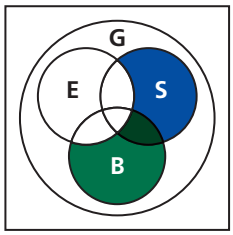
This indicator reports on the amount of waste sent to landfill each year in Cape Town. In addition to the waste sent to landfill, approximately 570 000 tonnes of garden waste are composted each year in Cape Town. This composting is carried out by private contractors employed by the City, and the good quality compost is then sold to the public for gardening and agricultural purposes. Composting of garden waste removes a significant amount of waste from the waste-stream sent to landfill and as such plays an important role in the conservation of landfill space.

However, almost 100% of household waste is sent to landfill, where it is buried. In Cape Town there is currently no waste separation at source and little waste separation at the landfill site, and so recycling of waste is almost impossible. Significantly, waste disposal per capita has grown substantially over the past eight years. In a sustainable society, waste disposal per capita should remain at constant levels over time, or show a slow decrease.

The increase in this indicator means that not only is the city as a whole throwing away more waste each year, but each individual citizen is producing more waste than the previous year. This is also indicative of an expansion of Cape Town's economy; as more people become economically active, and able to consume manufactured goods, the rate of waste generation increases.

The amount of waste disposed in Cape Town each year is a growing problem and, as highlighted in the previous indicator, one with no immediate solution. Possible solutions for curbing waste disposal include working with major retailers and distributors to reduce packaging waste at source, and the implementation of recycling programmes to remove the majority of recyclable and compostable items from the waste stream. This is a problem that needs to be urgently addressed, as the City's landfills are rapidly running out of space.





COMPONENTS OF SUSTAINABILITY

Biophysical - Expanding landfills into unused land negatively impacts on the ecology of those areas.

Social - Expanding landfills into unused land negatively affects people's enjoyment of natural open space, and reduces land that can be used for housing or agriculture.

POLICY LINKAGES

IMEP: Waste - A commitment to the need for an integrated waste management strategy.

Urban Environmental Accord: Action 6 - Implement 'user-friendly' recycling and composting programmes with the goal of reducing by 20% per capita solid waste disposal to landfill and incineration in seven years.

See also:

- Landfill lifespan

HIV/AIDS PREVALENCE

Indicator:

The prevalence of HIV/Aids per year, as determined by the Department of Health antenatal survey.

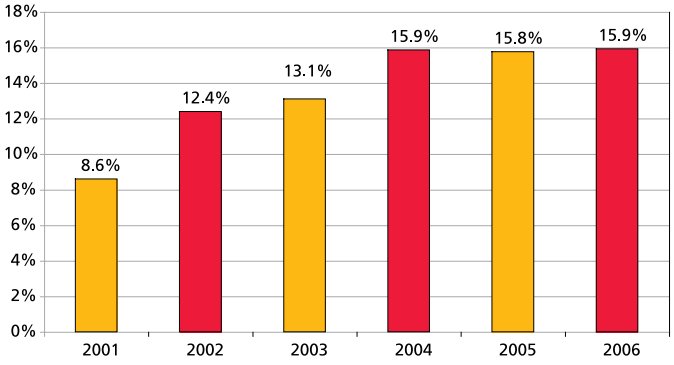
The prevalence of HIV/Aids in Cape Town is significantly lower than the national average of approximately 28%. However, a rate of almost 16% is still far higher than that for developed nations and represents over half a million Capetonians.

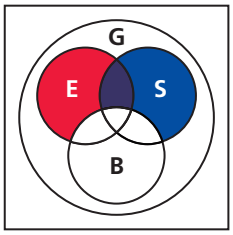
Life expectancy in South Africa has fallen significantly in the past decade due to the spread of HIV/Aids. The CIA World Fact Book estimates that life expectancy in South Africa stands at approximately 43 years of age. Due to the lower rate of HIV/Aids prevalence in Cape Town it can be determined that life expectancy would be higher than the national average, but still significantly reduced.

In 2001 HIV/Aids became the leading cause of death in Cape Town, and has remained so ever since. Reasons for this high death rate include high levels of poverty in those areas worst affected by HIV/Aids, lack of affordable access to ARVs and high levels of TB infection due to overcrowding and substandard living conditions.

The increase shown on the chart is more likely than not a reflection of better record-keeping and a higher rate of HIV/Aids testing, rather than a real increase in the percentage of citizens infected with HIV/Aids. It appears that the prevalence of HIV/Aids in the population has stabilised at approximately 16%, which may mean that efforts by the City, Provincial, and National departments of health to curb the rate of new infections have been successful. This average may be misleading, as statistics for each suburb or health district are not available at this time. In the past the rate of infection in poor, largely informal areas has been significantly higher than the rest of the city.

It is essential that the City of Cape Town, in partnership with Provincial and National Government continue to provide education and prevention programmes in order to ensure an ongoing decrease in the number of new infections.





COMPONENTS OF SUSTAINABILITY

Economic - Living with HIV/Aids reduces people's capacity to work and thus impacts negatively on both the economy and the individual's ability to meet their own basic needs.

Social - HIV/Aids is often stigmatised and infected individuals may find it hard to be accepted in their community; the psychological burden of coming to terms with the disease is also a concern.

POLICY LINKAGES

MDG Goal 6: Target 7 - Have halted by 2015, and begun to reverse the spread of HIV/Aids.

See also:

- Tuberculosis incidence
- Leading cause of death

TUBERCULOSIS INCIDENCE

Indicator:

The incidence (number of new cases per 100 000 population) of all forms of TB per year.

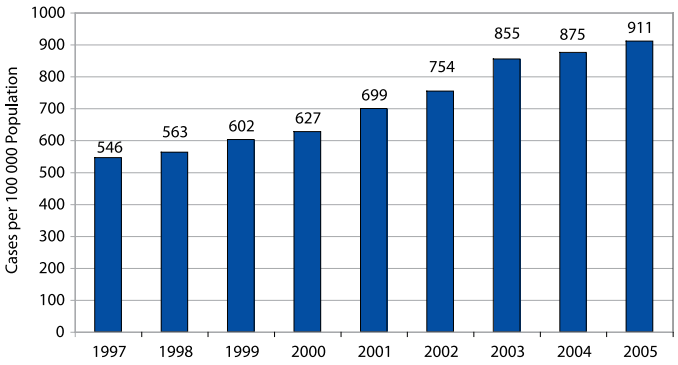
The incidence of TB is defined as the number of new cases per year per 100 000 population. The Western Cape has one of the highest incidences of TB in the country[16], second only to KwaZulu-Natal. Cape Town has a significantly higher rate of TB incidence than the South African average, with an all-time high incidence rate of 911 cases per 100 000 population in 2005. TB incidence tends to be significantly higher in dense urban environments and this tendency has been recognised in developed and developing countries worldwide.

Conditions in poor areas in Cape Town exacerbate the TB problem in the city. Overcrowding and damp, substandard living conditions promote the rapid spread of TB. Furthermore, the relatively high rate of HIV infection (16% citywide, but up to 28% in some low-income areas of Cape Town) means that a large percentage of the population are living with compromised immune systems, meaning that they develop TB significantly easier than if they were healthy.

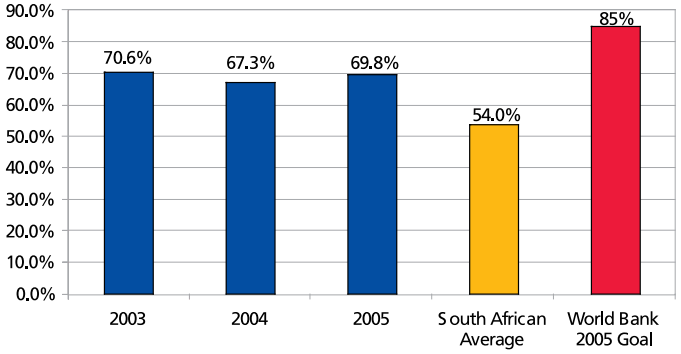
It is estimated that the co-infection rate (percentage of those infected with TB that also have HIV/Aids) of TB and HIV/Aids in South Africa is approximately 66.5%. However, in the Western Cape the co-infection rate is estimated to be a lower 50.5%. It has been acknowledged by the Department of Health that the Western Cape had a TB problem long before it had an HIV/Aids problem and that other underlying causes are to blame for this current epidemic.

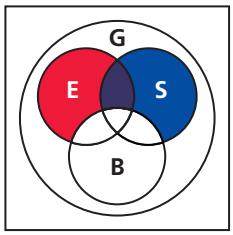
The cure rate in Cape Town and the Western Cape is the highest in the country[16], approximately 70% as compared to the national average of 54%.

The City of Cape Town is dedicated to assisting South Africa in achieving the Millennium Development Goals. As part of this commitment the City is tasked with reducing the number of new TB infections, while constantly improving the percentage of new patients cured. Unfortunately, the current cure rate, although higher than South Africa's average, is substantially below the World Bank 2005 target of 85%. New infections continue to grow, with 2005 seeing the highest incidence of new infections to date. In order to prevent the spread of infection, Cape Town must raise its cure rate and ensure that all TB patients complete the full course of medication, thereby preventing relapse and beginning to halt the spread of the disease.



Percentage of New Smear Positive TB Patients Cured





COMPONENTS OF SUSTAINABILITY

Economic - Suffering from TB reduces people's capacity to work and thus impacts negatively on both the economy and the individual's ability to meet their own basic needs.

Social - TB negatively affects people's health, often for long periods of time, and therefore reduces quality of life.

POLICY LINKAGES

MDG Goal 6: Target 8 - Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases.

See also:

- HIV/Aids prevalence
- Leading cause of death

LEADING CAUSE OF DEATH

INDICATOR:

The top five leading causes of death per year.

The top five leading causes of death from 2001 to 2005 provide a mixed picture of disease in Cape Town. The statistics show a co-occurrence of long-term non-communicable diseases, often referred to as lifestyle diseases, and communicable, infectious disease. This pattern of cause of death is somewhat unusual outside of South Africa. The so-called 'lifestyle' diseases – Ischemic Heart Disease and Cerebrovascular Disease – are the leading causes of death in most Western developed countries.
They are indicative of a wealthy population as well as high levels of medical treatment which have reduced the death rate from infectious, but readily treatable, diseases. However, most developed countries have low rates of HIV/Aids and TB.

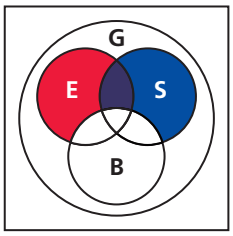
Deaths from HIV/Aids and TB are associated worldwide with poverty, lack of education and lack of access to medical treatment. These statistics reflect the stark contrasts that are present in Cape Town, and indicate that although South Africa is in many ways a developed country, it is still dealing with many health issues characteristic of a developing country.

A key plan of action in reducing deaths from HIV/Aids and TB must include universal access to anti-retroviral treatment when such treatment becomes necessary, as well as programmes to improve compliance with TB treatment. Prevention campaigns are widespread. However, new strategies are needed in order to reduce the increasing rate of HIV and increase public compliance with TB treatment.

Cerebrovascular and Ischemic heart diseases are characteristic of wealthier populations, because they are most often caused by modern lifestyles. High blood pressure, high cholesterol, obesity, diabetes and smoking are all risk factors that lead to increased chances of developing these diseases. Prevention of these conditions includes eating a diet low in animal fats, refined sugars, and salt, engaging in moderate exercise at least three times a week, abstaining from smoking, limiting alcohol consumption and ensuring regular monitoring of blood pressure.

Although communicable diseases such as HIV/Aids and TB are a pressing issue that needs significant attention, it is also necessary for the City to address the high incidence of 'lifestyle' diseases in the population. Strategies include education programmes implemented at a schools and primary health care facilities on ways to prevent these diseases, as well as encouraging citizens to undergo regular monitoring of blood sugar and blood pressure.

	2001	2002	2003	2004	2005
1	Ill-defined and unknown causes	HIV/Aids	HIV/Aids	HIV/Aids	HIV/Aids
2	Cerebrovascular diseases	Cerebrovascular diseases	Ill-defined and unknown causes	Ill-defined and unknown causes	Cerebrovascular diseases
3	HIV/Aids	Ill-defined and unknown causes	Cerebrovascular diseases	Cerebrovascular diseases	Ill-defined and unknown causes
4	Ischemic heart disease	Ischemic heart disease	Ischemic heart disease	Ischemic heart disease	Ischemic heart disease
5	Assault by firearm	Assault by firearm	Pulmonary Tuberculosis	Pulmonary Tuberculosis	Pulmonary Tuberculosis



COMPONENTS OF SUSTAINABILITY

Economic - A high incidence of communicable and infectious diseases places a significant strain on the public health system, and reduces people's ability to work and provide for their own basic needs.

Social - Living with chronic diseases, HIV/Aids, and TB negatively affects people's health and well-being and reduces quality of life.

POLICY LINKAGES

MDG Goal 6: Target 7 - Have halted by 2015 and begun to reverse the spread of HIV/Aids.

MDG Goal 6: Target 8 - Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases.

See also:

- HIV/Aids prevalence
- Tuberculosis incidence
- Incidence of murder

INCIDENCE OF MURDER

INDICATOR:

The murder rate, defined as the number of murders reported per 100 000 population per year.

Source: South African Police Service (Crime Statistics) and City of Cape Town Dept. of Strategic Development Information (Population Statistics)

In previous years Cape Town has been criticised for having one of the highest murder rates in the world. In the preceding Sustainability Report it was noted that Cape Town has a murder rate 10 times higher than that of New York City.

The high murder rate in the city has had significant negative social impacts. In 2005 and 2006 a spate of 'Bush of Evil' murders of children and teenagers in the Cape Flats caused an outcry in local communities, with community leaders demanding that more action be taken to protect their people. Murder is an extremely distressing crime for family members and friends to deal with, and can lead to the traumatisation of entire communities, as seen in these cases.

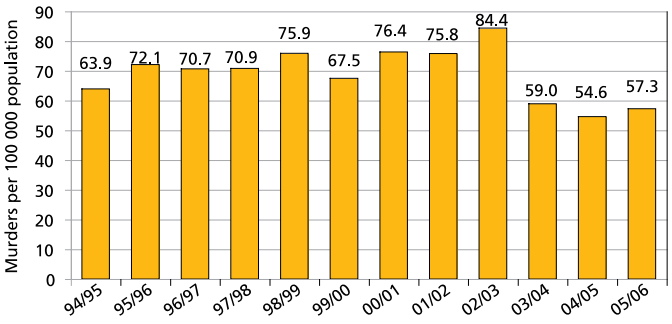
Crime is not only a social ill, but has economic implications as well. The high murder rate of South Africa generally, and Cape Town specifically, has tarnished the city's international reputation. A high crime rate has a significant negative impact on tourism and foreign direct investment, both of which are key contributors to the South African economy.

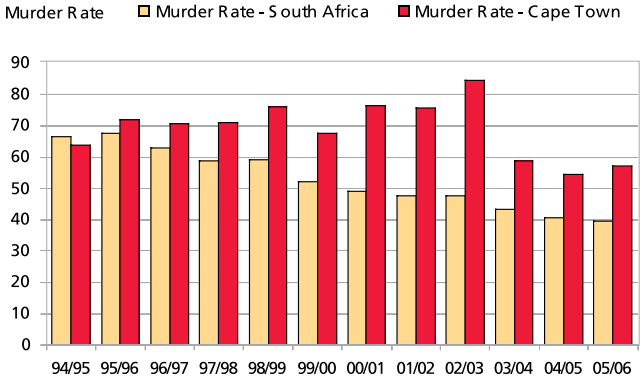
Cape Town is responsible for approximately 10% of South Africa's murders although it has only 7% of the country's population. In 2003/04 the murder rate in Cape Town appears to have dropped significantly and remained at a lower rate than in the previous 10 years. Although a murder rate of 57.3 murders per 100 000 population is still unacceptably high and well above the national average, it is encouraging to note that the rate has dropped off significantly.

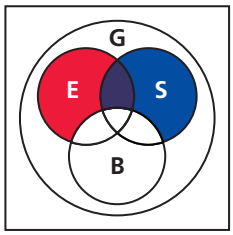
At this point, it is not certain what the cause of this change is. Sudden changes in crime statistics can often be blamed on changes in reporting rates. However, murder is internationally considered to be one of the most accurate and reliable crime statistics because the presence of a body indicates that a crime has been committed, independent of the public's willingness to report a crime.

Although the exact causes for this positive change are not immediately apparent, it is an unquestionably encouraging trend. The fact that the murder rate appears to have been lowered significantly for the past three years indicates a sustained positive change, although a slight increase in 2006 was noted. Continued hard work and vigilance by the Police Services will contribute to a further lowering of this crime rate, although their achievement to date must be recognised.

Murder Rate 1994 - 2006







COMPONENTS OF SUSTAINABILITY

Economic - High levels of crime discourage international investment and tourism.

Social - High levels of crime increase stress levels among residents and create an atmosphere of fear and distrust.

POLICY LINKAGES

IDP: 2020 Goal - Levels of violent crime reduced by 90%.

IMEP: Safety and Security - A commitment to crime prevention and reduction.

See also:

- Leading cause of death

INCIDENCE OF RAPE AND INDECENT ASSAULT

Indicator:

The rape and indecent assault rates, defined as the number of cases reported per 100 000 population per year.

Source: South African Police Service (Crime Statistics) and City of Cape Town Dept. of Strategic Development Information (Population Statistics).

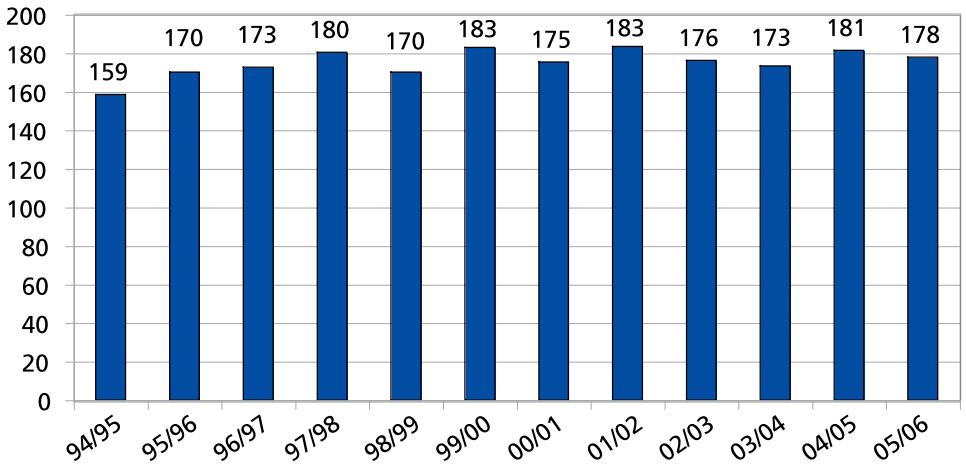
This indicator has been modified from the previous report in order to include statistics on indecent assault, as well as rape. In South Africa the definition of rape is narrow, and excludes a number of crimes of a similar nature. This includes rape of a man by a man, anal rape and object rape.

These crimes are classified as indecent assault, a less serious crime and one which carries a lighter sentence. Rape survivors' rights groups (such as Rape Crisis and POWA) have argued for the inclusion of these crimes in the definition of rape in order to acknowledge the seriousness of the offence, and ensure that offenders are subject to an appropriate level of justice. The proposed Sexual Offences Amendment Bill (Bill 50-03), first released in draft format in 2002 includes many crimes currently classified as indecent assault, in the category of rape. Unfortunately, the enactment of this bill has been delayed and it has been referred to the National Council of Provinces for further analysis.

The rate of rape in Cape Town is unacceptably high with over 5 700 cases of rape and indecent assault reported in 2006. Cape Town is responsible for approximately 9% of South Africa's cases of rape and indecent assault, although it only has around 7% of the country's population. The rate has remained shockingly high since 1994 and has shown slight increases both in Cape Town and nationally.

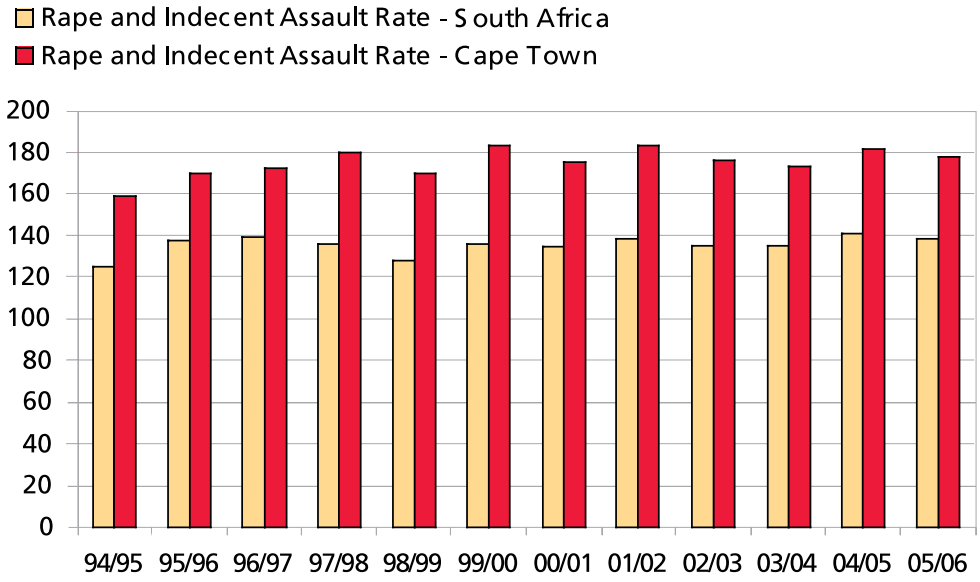
Although all crimes can have potentially traumatic effects on the victims, rape and indecent assault are especially traumatic events. The psychological consequences are significant with many survivors experiencing fear of going out, inability to sleep, flashbacks to the event and other symptoms of Post-traumatic Stress Disorder. The physical consequences of rape can also be devastating due to the increased likelihood of HIV transmission and the violent and rough nature of the act. Post-exposure prophylaxis is available to those who have been raped. However, this requires the survivor to report the crime, something which

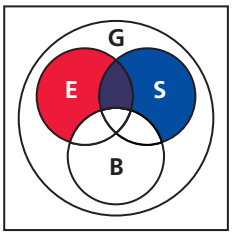
Rape and Indecent Assault Rate



INCIDENCE OF RAPE AND INDECENT ASSAULT - CONTINUED -

many feel unable to do. The high rate of rape in Cape Town also creates a culture of fear among female citizens, and places an unfair burden on women to ensure their own safety.
According to statistics calculated by the Medical Research Council, fewer than one in nine women report rape to the police[17]. Estimates by the SAPS have put the number of reported rapes as low as one out of 35[18]. The discrepancy in the figures is to be expected as research into this extremely sensitive topic is fraught with difficulties. Furthermore, it is the unfortunate reality that one woman may experience a number of rapes and sexual assaults over her lifetime and is unlikely to report all of them, especially if they occur within a romantic relationship or marriage. Additionally, historically low prosecution rates of around 7%[19], and high-profile media reports of lenient sentencing of rapists contribute to underreporting.
It is unclear how best to tackle this pressing issue. What is clear is that the City cannot do it alone – partnerships with local communities, NGOs and Community-Based Organisations (CBOs) are a vital part of combating this crime. Ultimately, rape and indecent assault are symptomatic of a greater dysfunction in society, and therefore solving the problem will require working closely around social structures and inequalities that contribute to the prevalence of this kind of crime.





COMPONENTS OF SUSTAINABILITY

Economic - High levels of crime discourage international investment and tourism.

Social - High levels of crime increase stress levels among residents and create an atmosphere of fear and distrust.

POLICY LINKAGES

IDP: 2020 Goal - Levels of violent crime reduced by 90%.

IMEP: Safety and Security - A commitment to crime prevention and reduction.

INCIDENCE OF INDUSTRIAL AND COMMERCIAL CRIME

INDICATOR:

The industrial and commercial crime rates, defined as the number of cases reported per 100 000 population per year.

Source: South African Police Service (Crime Statistics) and City of Cape Town Dept. of Strategic Development Information (Population Statistics).

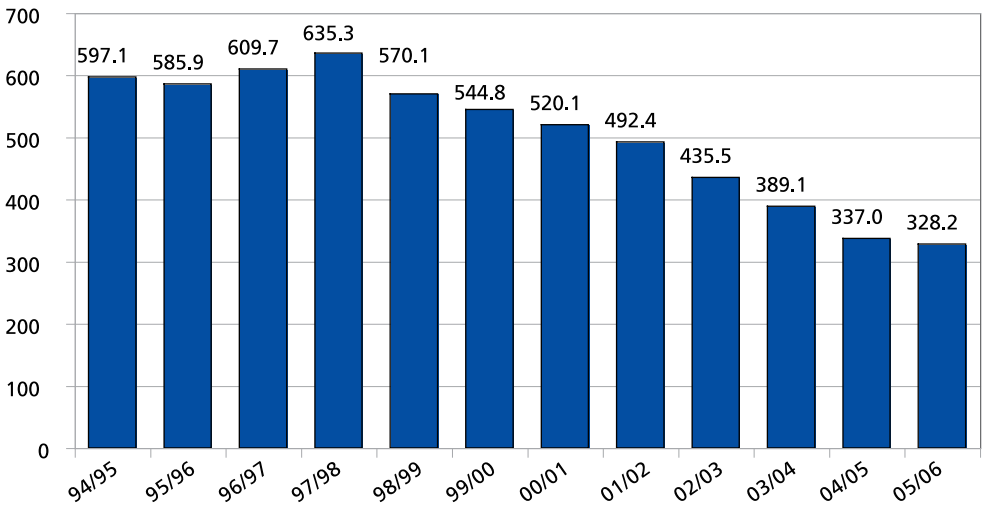
This indicator is defined as the number of crimes directed at industry or commerce, per 100 000 population. This includes burglary at business premises, robbery at business premises and commercial crimes such as fraud and forgery. It is extremely encouraging to note that there has been a steady and sustained decline in all types of crime within this category.

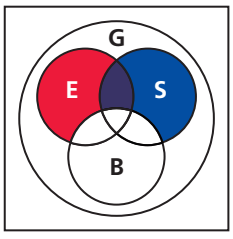
This can be attributed to a number of factors. Firstly, improved physical security systems at business premises have made a significant impact, as business owners have become aware of the risk that unsecured premises face. Secondly, and perhaps more importantly, an improvement in anti-fraud and anti-corruption practices in the workplace, together with improved electronic security systems within financial institutions have greatly contributed to a drop in commercial crime.

The SAPS Commercial Crimes Division and the Scorpions unit have played a significant role in reducing this type of crime. The prosecution of numerous high-profile offenders have sent a clear message that this kind of crime will not be tolerated. Significantly, the initial drop in this category of crime coincided with the completion of the reorganisation of the SAPS Commercial Crimes Division in 1997[20], which substantially improved their efficiency and effectiveness.

It is essential for Cape Town's economic future that crimes against commerce and industry continue to decline. This creates a considerably more desirable business environment for local and foreign investors, thereby encouraging economic growth in the city.

Industrial and Commercial Crime Rate





COMPONENTS OF SUSTAINABILITY

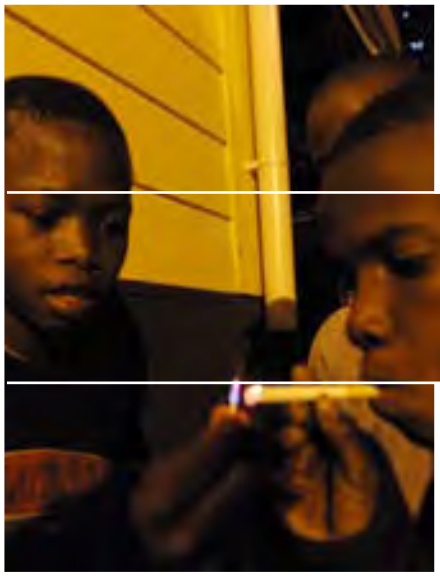
Economic - Economic - High levels of crime discourage international investment and tourism.

Social - High levels of crime increase stress levels among residents and create an atmosphere of fear and distrust.

POLICY LINKAGES

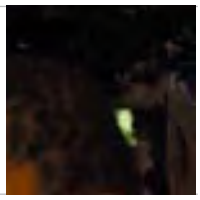
IDP: 2020 Goal - Levels of violent crime reduced by 90%.

IMEP: Safety and Security - A commitment to crime prevention and reduction.



DRUG USE AND DRUG-RELATED CRIME

INDICATOR: The number of drug-related crimes reported per 100 000 population per year and the number of people seeking treatment for drug and alcohol addiction per year.
Source: South African Police Service (Crime Statistics) and City of Cape Town Dept. of Strategic Development Information (Population Statistics).



This indicator is included for the first time in this report. Owing to the severe increase in this type of crime over the past three years, it was deemed necessary to include it in order to monitor progress. Drug-related crime includes the unlawful possession and use of drugs, as well as unlawful dealing in drugs.

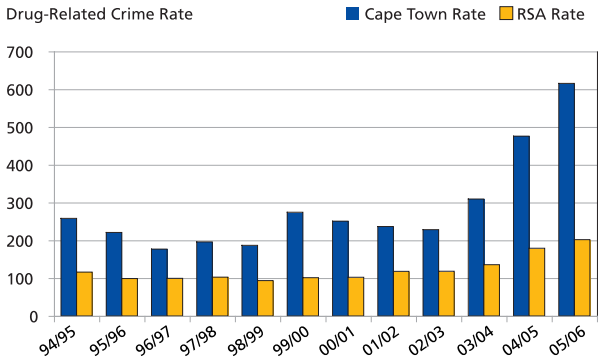
It is clear that Cape Town has a considerably higher rate of drug-related crime than the South African average. Cape Town accounts for 21% of South African's drug-related crime, although it has only 7% of the country's population. Cape Town's drug-related crime has increased by 62% since 2001, to reach an all-time high of over 600 drug-related crimes per 100 000 population.

In 2004 methamphetamine, or 'tik' as it is known in Cape Town, emerged as a significant contributor to the drug problem in Cape Town[21].

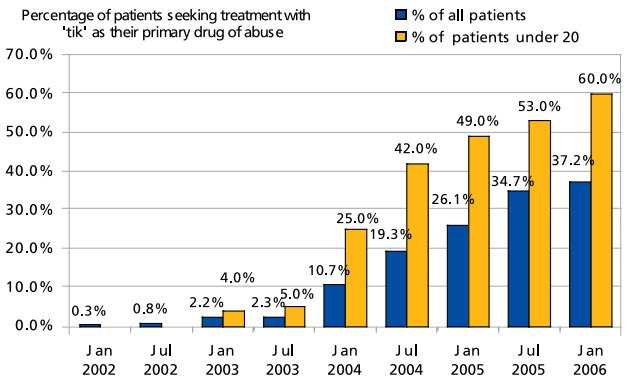
By mid 2005, methamphetamine had become the primary drug of abuse by patients under the age of 20 seeking treatment at Cape Town's drug counselling centres. One of the reasons why methamphetamine abuse has grown to such an extent is the fact that it is cheap, widely available and produces feelings of great power and confidence in the user, which means that it is extremely attractive to teenagers.

Methamphetamine use has largely replaced the Mandrax-marijuana combination that was previously the drug of choice amongst Cape Town's youth. Although all illegal drugs have significant health and social impacts, the rise of methamphetamine is a particularly worrying trend. Long-term use of methamphetamine, a powerful stimulant, has been strongly associated with an increase in violent behaviour, typified by states of extreme rage[22]. Whilst long-term use of depressants such as marijuana, Mandrax and heroin has serious negative health effects on the user, these drugs are not associated with violent behaviour in the same way.

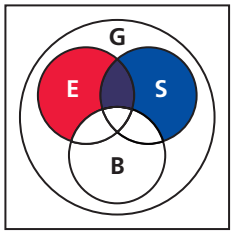
Urgent action is required from all relevant stakeholders in Cape Town - the City, Provincial and National Government, NGOs, CBOs and the private sector - in order to address this escalating problem. The long-term social impacts of high levels of drug abuse amongst the youth of the city could spell disaster for the city's future.



Source: SACENDU, 2006



Source: SACENDU, 2006



COMPONENTS OF SUSTAINABILITY

Economic - High levels of drug abuse and addiction among learners and youth have negative implications for the economy, as the ability to learn and work productivity suffer.

Social - Increasing levels of drug addiction exacerbate poverty, reduce quality of life and fuel crime. Long-term use of 'tik' causes violent outbursts and uncontrollable rage, putting individuals and communities at risk.

POLICY LINKAGES

IDP: 2020 Goal - Levels of violent crime reduced by 90%.

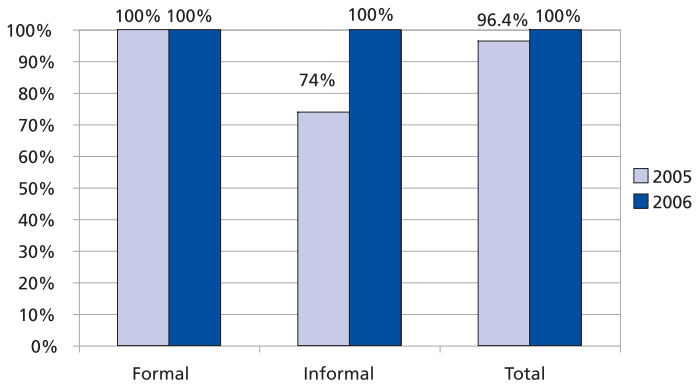
IMEP: Safety and Security - A commitment to crime prevention and reduction.

See also:

- Incidence of murder
- Incidence of rape
- Incidence of commercial and industrial crime

ACCESS TO WATER

INDICATOR: The percentage of both formal and informal households with access to safe drinking water at the basic service level. The 'basic service level' is defined as the presence of a tap within 200 m of a dwelling unit, with at least one tap per 25 dwelling units.

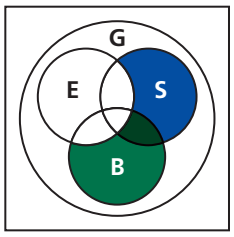


Access to clean, safe water is a fundamental human need. Water is required for drinking, cooking, washing and watering crops. The use of contaminated or untreated water for these purposes is a considerable health hazard. Therefore it is excellent to note that 100% of residents in Cape Town have access to a clean, safe water source within 200 m of their home, including a six-kilolitre free monthly allowance in formally metered areas.

According to the Department of Water Affairs and Forestry, the free basic allowance of six kilolitres of water per month per household is enough to provide each member of a family of eight with 25 litres per day. However, in order to ensure proper health and hygiene practice and prevent the spread of water-borne and water-washed diseases, the WHO recommends a minimum of 50 litres of water per person daily. The WHO asserts that it is difficult to ensure that laundry and bathing are adequately carried out at a basic level of service[23]. Furthermore, they have called attention to the moderate health risk faced by residents of informal settlements using community standpipes, as they are often unable to collect enough water.

Although 100% of Cape Town's citizens have access to basic water supplies, the next challenge the City of Cape Town faces is maintenance and improvement of the level of service. It is vital that ongoing maintenance work of community standpipes and local water supply infrastructure is continued into the future.

Ideally, each resident of Cape Town should have access to clean, safe water within their own home. However, this can only be achieved when all housing in the city is formalised, a process which is expected to take many years.



COMPONENTS OF SUSTAINABILITY

Biophysical - The use of water resources for human consumption negatively affects the natural environment unless it is monitored and controlled.

Social - It is essential that all citizens have adequate access to safe water, including free access to water for the poor.

POLICY LINKAGES

IDP: 2020 Goal - Universal access to basic services.

IMEP: Water Resources - An acknowledgement that all residents have the right to clean, potable and adequate water sources.

MDG Goal 7: Target 10 - Halve by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

Urban Environmental Accord: Action 19 - Develop policies to increase adequate access to safe drinking water, aiming at access for all by 2015. For cities with potable water consumption greater than 100 liters per capita per day, adopt and implement policies to reduce consumption by 10% by 2015.

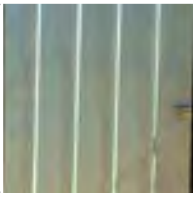
See also:

- Water use per capita
- Access to sanitation

ACCESS TO SANITATION

INDICATOR:

The percentage of both formal and informal households with access to adequate sanitation, defined as flush toilets connected to the sewerage system.

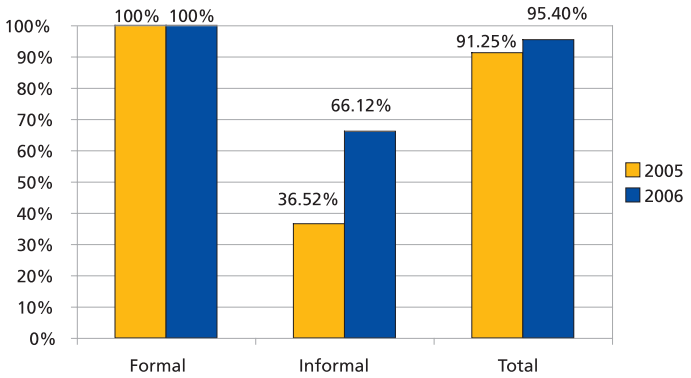


Access to clean, good-quality sanitation is an essential factor in the creation of dignified human settlements, a key goal of the City of Cape Town. The provision of basic sanitation is also an important part of the Millennium Development Goals, in terms of improving the lives of slum dwellers around the world.

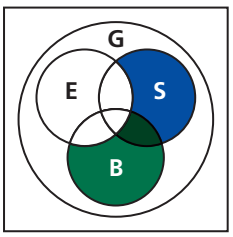
It is therefore very encouraging to note that between 2005 and 2006 access to basic sanitation in informal areas increased by almost 30%, leading to an overall rate of access to basic sanitation of over 95%.

Basic sanitation is defined by the City of Cape Town as one flush toilet per five households. However, the definition of household is not exact, and this means that each flush toilet can be shared between as few as 20 people, or as many as 40 people. As yet, there are no national or international conventions on the number of people per toilet facility. However, the Sphere Project, an international organisation involved in disaster planning and mitigation, recommends one flush toilet per 20 people as the minimum required in emergency situations in order to prevent the spread of disease[24]. They also recommend that separate, demarcated, toilets are provided for male and female use. Therefore, the basic toilets provided by the City are, at best, considered to be emergency facilities.

Approximately 44% of informal residents have no access to basic sanitation, and many residents of informal settlements still use the bucket system. The ideal method of disposal when using the bucket system is burial. However, more often than not toilet buckets are simply dumped into open land, or directly into the stormwater system. This has serious negative downstream impacts on fresh water and coastal ecosystems. Furthermore, those residents without access to basic sanitation are at considerable risk of developing moderate to severe illness as a result of contact with improperly disposed faeces. Illnesses such as diarrhoea, cholera, hepatitis A, typhoid and other enteric fevers, skin infections, and infestation by parasitic worms are possible risk factors in an area with improper or absent sanitation.



The City has established its own realistically achievable goal of 100% access to basic sanitation by 2020. In order to prevent the spread of disease, and promote dignified living environments in informal settlements, it is essential that the City continues its programme of implementing basic sanitation, and that it does so in a swift and efficient manner.



COMPONENTS OF SUSTAINABILITY

Biophysical - Lack of sanitation impacts negatively on the natural environment as excess nutrients from human waste lead to nutrient overloading of inland water systems.

Social - Lack of access to sanitation means that many are more susceptible to disease and live under undignified conditions.

POLICY LINKAGES

IDP: 2020 Goal - Universal access to basic services.

IMEP: Urbanisation and Housing - A recognition that shelter and services are needed for a growing population.

MDG Goal 7: Target 10 - Halve by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

See also:

- Water use per capita • Access to water
- Fresh water quality • Coastal water quality

PERCENTAGE OF INFORMAL HOUSING

Indicator:

The percentage of informal housing in relation to formal housing, as well as the growth in number of informal dwellings.

Housing is considered a basic human need, as it is essential both for survival and shelter from the elements as well as for social needs such as comfort, security and a sense of ownership and permanence.

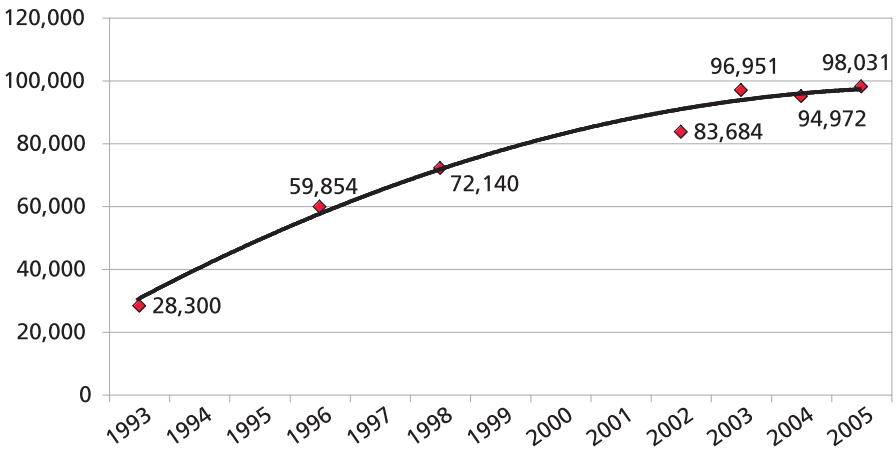
Roughly 13% (approx. 400 000 people) of Cape Town's population live in informal dwellings[25], defined as unserviced wood and iron structures. These dwellings form part of larger settlements, which may be fully or partially serviced, or completely unserviced by water, electricity or sanitation.

The growth of informal settlements in Cape Town after 1993 has been dramatic. This occurred as a result of the removal of the apartheid era access controls to the city, allowing free movement and migration from other parts of the country. Cape Town (and other big cities) is an attractive place for many poor South Africans, especially from the rural Eastern Cape, who migrate in order to find better job opportunities and an improved quality of life. By 2004 it was clear that the number of informal dwellings was levelling off and 2005 saw little growth from the previous year. This is due partially to the ongoing formalisation of dwellings in low-cost housing programmes, as well as a decrease in the number of migrants arriving in Cape Town.

Informal settlements are faced with a number of problems and life in an informal settlement can be fraught with difficulties. Informal dwellings are often insecure and prone to damage from flooding, wind and fire. Many settlements are also only partially serviced and require upgrading with water, sanitation and electricity where appropriate. As such, it can be hard to maintain a decent quality of life. Overcrowding and disease due to lack of services and substandard housing add to the burden of life in an informal settlement.

Furthermore, informal settlements tend to be located on the periphery of the city. This means that they are usually far from economic opportunities and that the residents may have to spend a large portion of their day commuting, and a substantial

Number of Informal Dwellings 1993 - 2005



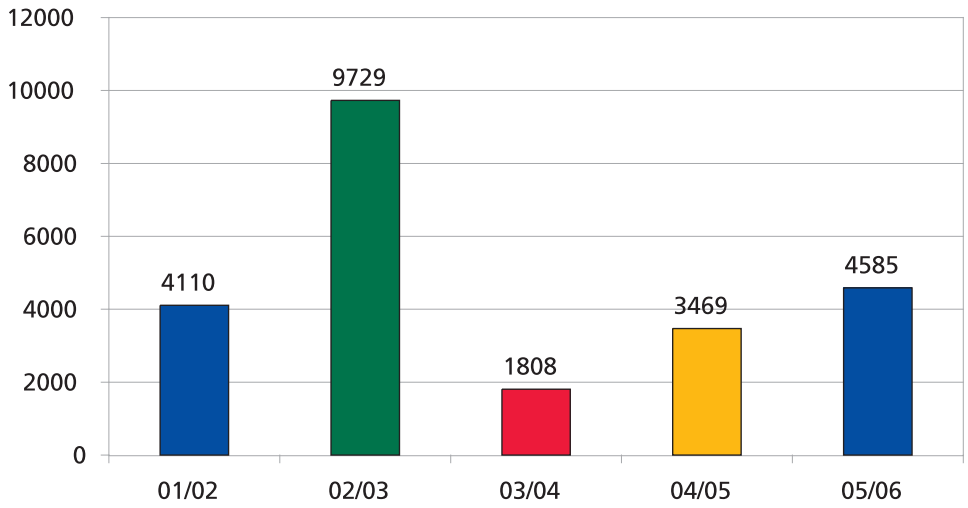
Source: City of Cape Town Department of Strategic Information

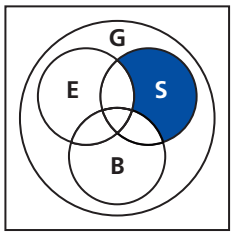
PERCENTAGE OF INFORMAL HOUSING - CONTINUED -

percentage of their household income on transport costs. Adding to the problem is the fact that many informal areas are not serviced by rail, and therefore transport is limited to the already congested road network.

The City of Cape Town is in the process of addressing the housing backlog which currently stands at approximately 300 000 dwellings. It is clear that the City cannot address this problem alone, and therefore ongoing partnerships with Provincial and National Government are essential. In the 2005/06 financial year the City built 4 585 new houses as part of its ongoing Integrated Human Settlements Programme. Although the number of houses built per year decreased dramatically after 2002, progress is being made in reducing the housing backlog.

Number of low-cost dwelling units built





COMPONENTS OF SUSTAINABILITY

Social: - Living conditions in informal settlements can be extremely hard for residents; the number of people who live in substandard conditions should be reduced.

POLICY LINKAGES

IDP: 2020 Goal - Universal access to basic services.

IMEP: Urbanisation and Housing - A recognition that shelter and services are needed for a growing population.

MDG Goal 7: Target 11 - Have achieved by 2020 a significant improvement in the lives of at least 100 million slum dwellers.

See also:

- Access to water
- Access to sanitation
- Incidence of fires in informal settlements

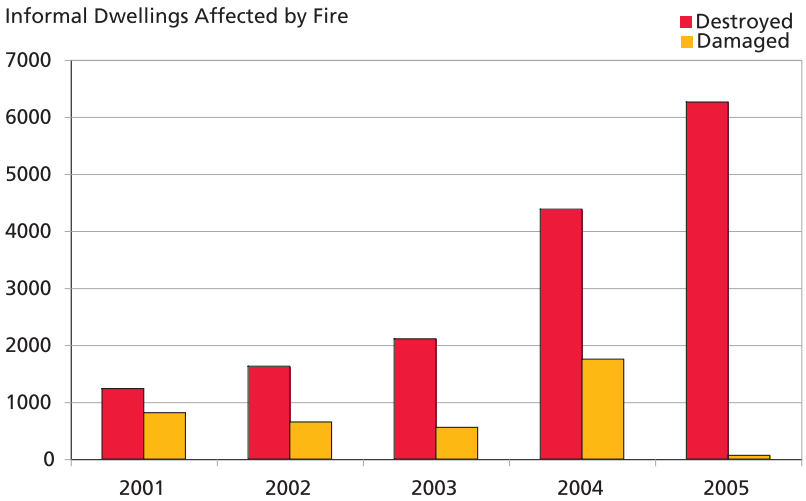
INCIDENCE OF FIRES IN INFORMAL SETTLEMENTS

INDICATOR: The incidence of fires in informal settlements, measured as the number of units damaged or destroyed by fire each year. The term 'informal dwelling' is defined as a 'wood and iron structure', and therefore includes backyard shacks.
Source: University of Cape Town Disaster Mitigation for Sustainable Livelihoods Programme, extracted from the Mandisa System

Informal settlements in Cape Town have grown significantly since 1993, although since 2003 growth has begun to level off. By 2005 approximately 400 000 of Cape Town's over 3.2 million residents were living in informal settlements.

Space in existing serviced informal settlements is extremely limited and therefore these settlements have grown more crowded over time. Many settlements are densely overcrowded, with the space between shacks often being as little as half a metre. As few settlements are serviced with electricity, an expensive commodity, most residents rely on alternative forms of energy for heating, lighting and cooking. The use of paraffin stoves for cooking and heating and candles for lighting is widespread in Cape Town; wood fires are less common.

Unfortunately, the pervasive use of naked flames in the household, in combination with the flammable nature of many of the materials used in shack building, means that fires are common in informal areas. Paraffin stoves are notoriously dangerous. In 2003 the Paraffin Safety Association of South Africa (PASASA) tested the five most commonly used pressure-type stoves and the four most commonly used wick-type stoves and found that all posed a moderate to serious risk of starting a fire[26]. None of these stoves met the required SABS standards for paraffin safety. It was determined that the pressure-type stoves could withstand being knocked over, but were prone to overheating, thereby creating a dangerous risk of explosion. The wick-type stoves were more hazardous and universally burst into flames when knocked over. These stoves were also prone to leakage, therefore creating dangerous pools of liquid fuel within the home. PASASA has labelled these paraffin appliances as 'firebomb stoves', as they are responsible for most informal settlement fires in Cape Town. PASASA is conducting an ongoing campaign in paraffin-using communities to mitigate some of the risks associated with these stoves, through education on how best to operate the stoves.



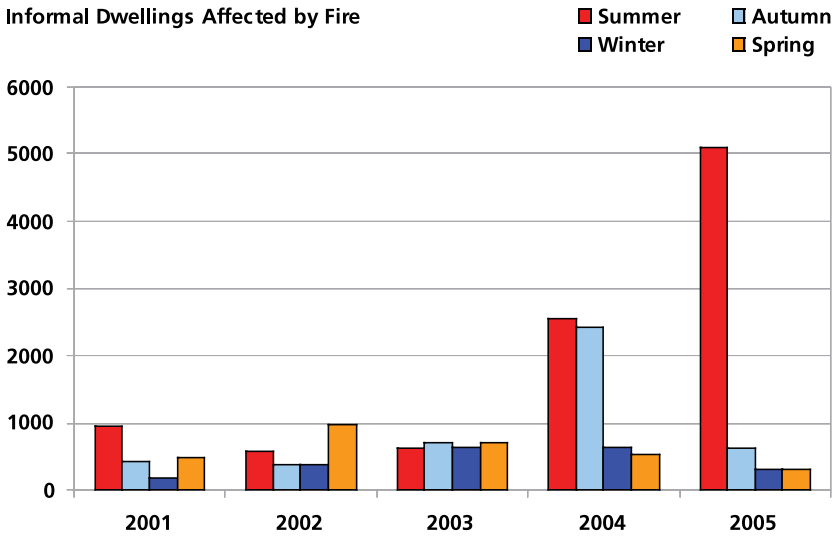
INCIDENCE OF FIRES IN INFORMAL SETTLEMENTS - CONTINUED -

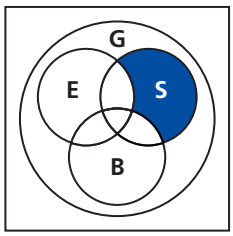
PASASA is also strongly involved in lobbying parliament to ban these faulty appliances, and is conducting ongoing research and development of cheap, safe paraffin stoves.

The crowded and uncontrolled layout of many settlements means that it is often almost impossible for fire fighters and trucks to reach the affected shacks, and therefore the fire may spread rapidly before fire fighters are able to contain it. Fires are also most common in summer, when hot, dry and windy conditions create runaway infernos.
It is not uncommon for more than 50 shacks to be destroyed in one incident, leaving at least 200 people homeless and destitute. In 2005 more than 6 000 shacks were destroyed, over 4 000 of these in one incident in Langa.

These fires are devastating for those affected, many of whom lose all their possessions in the flames. Many residents, mostly children, have been severely burned in fires, leading to permanent injury or death.

The human cost of fires in informal settlements is immeasurable, the suffering and loss experienced by those affected is severe. The ongoing use of dangerous paraffin appliances, in combination with the overcrowded nature of informal areas means that this problem is worsening year by year. It is clear from statistics that the number of dwellings affected is growing at a rapid rate, with 2005 being the worst year yet. In order to promote a decent standard of living in informal settlements, the problem of runaway fires must be urgently addressed.





COMPONENTS OF SUSTAINABILITY

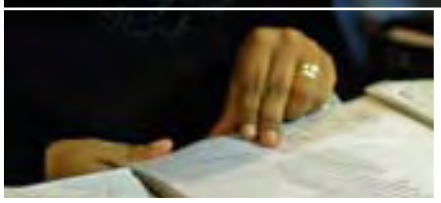
Social - The incidence of fires in informal settlements is a significant safety problem which can lead to loss of life and possessions, and permanent injury.

POLICY LINKAGES

IMEP: Energy - A commitment to sources of energy with the least impact on the environment and health of communities.

See also:

- Access to water
- Percentage of informal housing



ADULT LITERACY

Indicator:

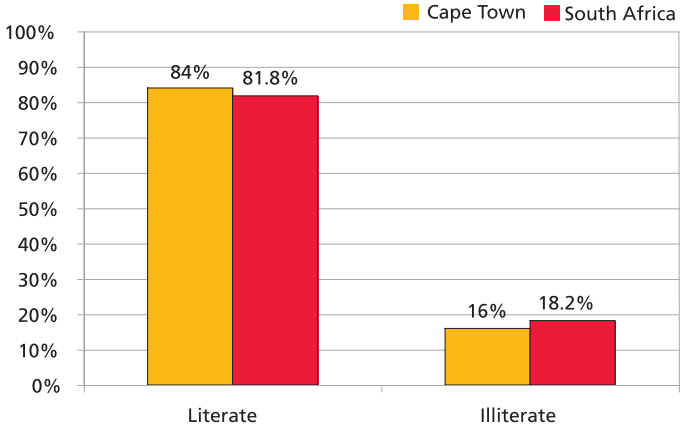
The percentage of people ages 18 years and above who are able to read and write.

The UN declared literacy a basic human right over 50 years ago as part of the Universal Declaration of Human Rights, and has designated the decade of 2003 to 2012 as the decade of 'Literacy as Freedom'[27].

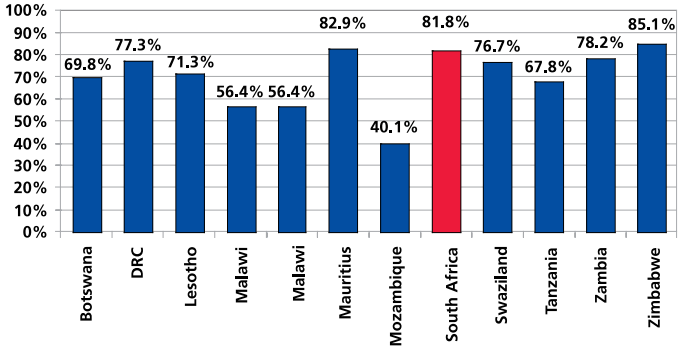
The association of literacy with freedom is a crucial one. Literacy is a necessary prerequisite for education, as well as for skilled employment. Illiteracy, therefore, is strongly linked with unemployment, poverty and an inability to improve one's quality of life. In order to function as a member of modern society it is necessary to be literate, as it is necessary to be able to read in order to make informed decisions about many key aspects of modern life, including health care, banking, and shopping.

In Cape Town, adult literacy remained at approximately 84% in 2005. This compares favourably with the national adult literacy rate of 81.8%.

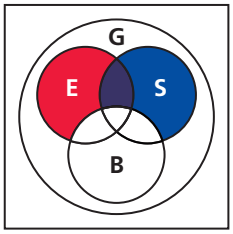
Unfortunately, there has been no improvement in literacy since the previous reporting period, and this is not likely to change significantly in the near future. The reason for this is that the illiterate adult population of Cape Town are overwhelmingly between the ages of 40 and 85, and therefore unlikely to pursue further education. As time goes by, and the aged and largely undereducated population dies, the literacy rate can be expected in improve significantly. In an effort to combat illiteracy in the middle-aged and elderly population many libraries around the city offer adult literacy classes.



Adult Literacy in SADC Countries



Source: International Literacy Explorer - www.literacyonline.org



COMPONENTS OF SUSTAINABILITY

Economic - High levels of adult literacy mean a more skilled workforce, which is able to build a better economy.
Social - Literacy allows one to function properly in modern society and allows people to get better jobs and therefore improve their quality of life.

POLICY LINKAGES

IDP: 2020 Goal - Less than 5% of the population illiterate.
MDG Goal 2: Achieve universal primary education.

See also:

- Highest level of education achieved
- Unemployment

HIGHEST LEVEL OF EDUCATION ACHIEVED

INDICATOR:

The highest level of education achieved by residents of Cape Town.

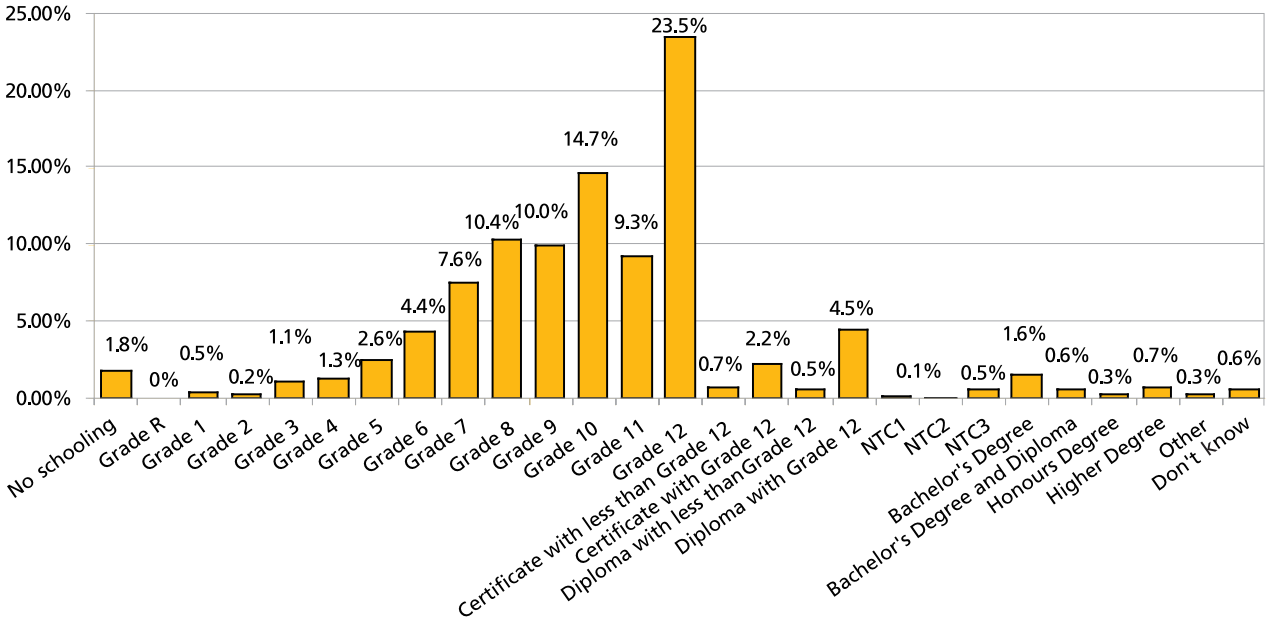
In 2005 it was determined that almost 45% of people over the age of 18 have completed matric or a higher qualification, while 58% of those over the age of 15 have completed Grade 10 (Standard 8) or higher. In South Africa, school is compulsory until the age of 15, the age at which most learners will be in Grade 10.

Unfortunately, this also means that the majority of residents over the age of 18 (55%) have not been able to complete their school education, while 42% of residents over the age of 15 have not been able to complete up to Grade 10. Many of those who have not been able to complete the minimum expected level of school were educated during the apartheid era, and as such left school prior to the age of 15 due to inequality, inefficiency, and lack of proper teaching in the school system.

Therefore, over the next 10 to 20 years, one would expect the picture of Cape Town's education levels to change somewhat, in a positive direction. It is less likely today than ten years ago that a learner will leave school before age 15 due to an increased standard of teaching and education, and the restoration of equality and dignity in the school system.

The matric pass rate is another useful indicator of the state of education in Cape Town. As the graph shows, the matric pass rate peaked at around 85% in 2003, while in that year 87% of those learners who wrote exams, passed. This also indicates that a significant number of students drop out of their matric year before they have the opportunity to write exams. In 2004 and 2005, that pass rate dropped by approximately 3%. However, a significant improvement has been noted since 1997, when the pass rate was as low as 74%.

Highest Level of Education Achieved (people over 15)



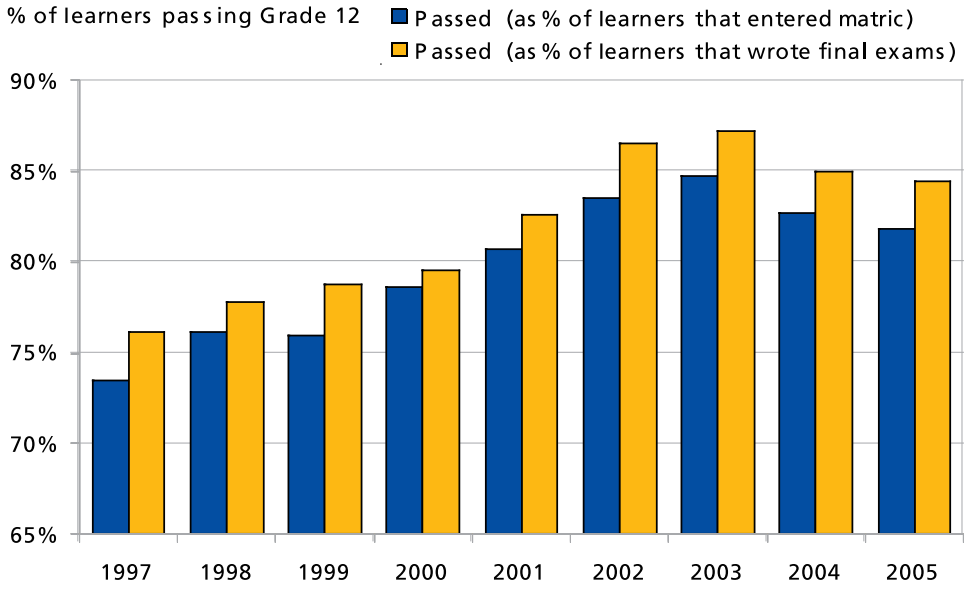
Source: Statistics South Africa - General Household Survey 2005

HIGHEST LEVEL OF EDUCATION ACHIEVED - CONTINUED -

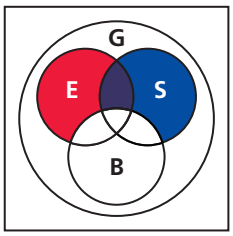
It is important for the future of Cape Town, and South Africa in general, that the matric pass rate remains high and is further improved. This indicator needs to be watched carefully in future in order to determine whether further downward trends will be noted. If this is the case, urgent action needs to be taken to determine what the cause of the lowered pass rate may be, and how best to rectify the situation.

It is problematic that a significant percentage of residents have not been able to finish matric, and have therefore not had the benefit of tertiary education. Most of these people will not be able to find skilled employment, and will therefore be unlikely to be able to improve their income and quality of life. Tertiary education is the key to building the country's economy, as it is at tertiary institutions where the country's future professionals are educated.

Schools and education in Cape Town are primarily the responsibility of the Provincial Government of the Western Cape. Therefore, it is of the utmost importance that the City of Cape Town works in partnership with Provincial and National Government in efforts to improve education in general, and the matric pass rate in particular.



Source: Western Cape Department of Education



COMPONENTS OF SUSTAINABILITY

Economic - An educated population means a more skilled workforce, which is able to build a better economy.

Social - Higher levels of education allow people to get better jobs and therefore improve their quality of life.

POLICY LINKAGES

IDP: 2020 Goal - Universal access to basic services.

IMEP: Urbanisation and housing - A recognition that shelter and services are needed for a growing population.

MDG Goal 2: Achieve universal primary education.

See also:

- Adult literacy
- Unemployment
- Poverty and income disparity

UNEMPLOYMENT

INDICATOR:

The percentage of the economically active population that is unemployed.

An unemployed person is defined by Statistics South Africa as those people within the economically active population (i.e. people over the age of 15, and below retirement age) who do not have work, want to work and are available to start work within two weeks.

In the previous Sustainability Report it was reported that unemployment in Cape Town had doubled between 1997 and 2004. This was an important indicator of the pressing social and economic challenges facing the city.

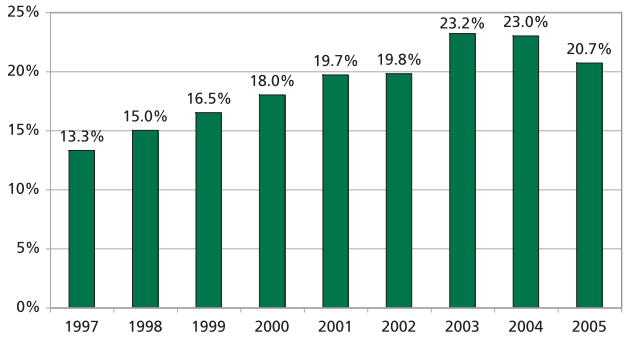
It is therefore very encouraging to note a drop of 2.3% in unemployment in 2005. This is the first significant drop in this indicator since monitoring began in 1994.

According to the 2006 State of Cities Report, Cape Town has the second lowest level of unemployment among the nine metropolitan areas of South Africa, with Buffalo City having the highest, at almost 40%. It has long been noted there appears to be little correlation between overall economic growth in a city, and employment levels. This is true of Cape Town, as although the GGP has grown significantly since 1993, levels of unemployment continued to rise over this time period, indicating that economic growth alone is not sufficient to grow jobs in the city.

It is therefore difficult to ascertain the reason for the drop in unemployment in 2004 and 2005 and too soon to determine whether or not this decrease will be maintained. Possible explanations for the increase in employment in the city include the wide-spread and increasing use of the Expanded Public Works Programme (EPWP) introduced in 2003 as a means of simultaneous employment and skills training. It has equipped many previously unemployed people with essential skills and work experience.

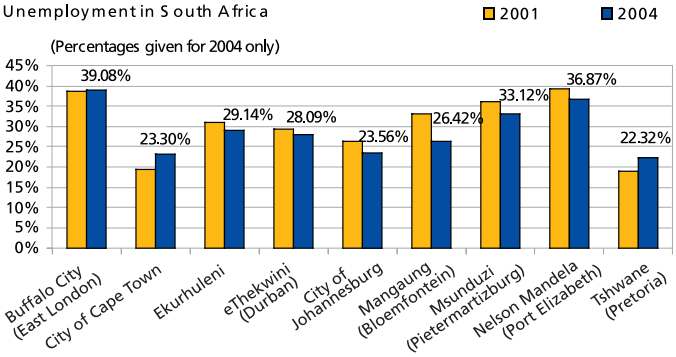
Continued economic growth in Cape Town, coupled with improved adult education and training programmes and on the job training initiatives (e.g. EPWP) are therefore key parts of an integrated strategy for job creation.

Unemployment in Cape town

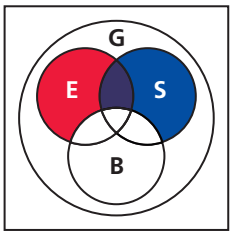


Source: Quantec (2006)

Unemployment in South Africa



Source: South African Cities Network (2006) State of Cities Report



COMPONENTS OF SUSTAINABILITY

Economic - A high level of unemployment means that a large percentage of the workforce is not utilised; creating sustainable jobs brings more money into the economy.

Social - Unemployment means that people often cannot meet their basic needs and therefore cannot achieve an acceptable quality of life.

POLICY LINKAGES

IDP: 2020 Goal - Unemployment less than 8%.

IMEP: Economy - A commitment to the creation of jobs and the reduction of poverty.

MDG Goal 1: Target 1 - Halve between 1990 and 2015, the proportion of people whose income is less than $1 a day.

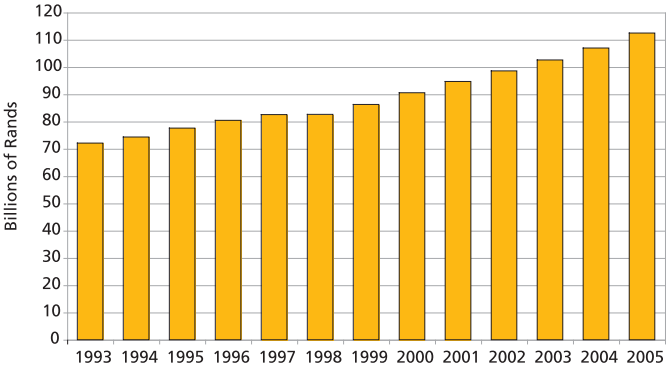
See also:

- Adult literacy • Highest level of education achieved
- Poverty and income disparity • Gross geographic product

GROSS GEOGRAPHIC PRODUCT (GGP)

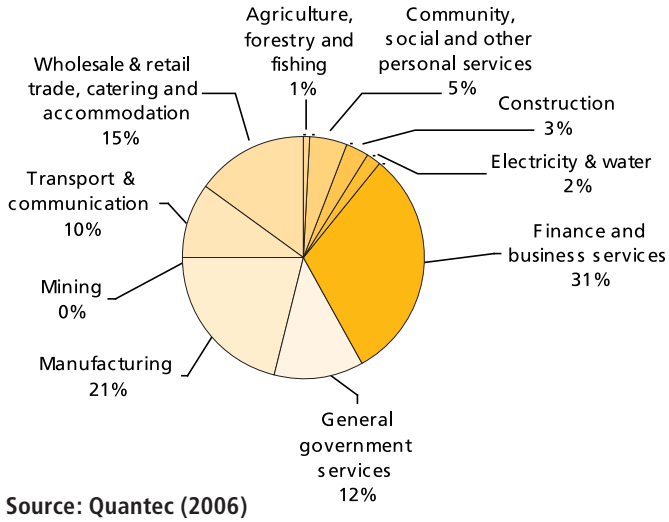
INDICATOR:

The total value of goods and services by sector per year.
The indicator reflects the gross geographic product for the period 1993 to 2005, based on 2000 prices.



Source: Quantec (2006)

Average GGP by category 1993 - 2006



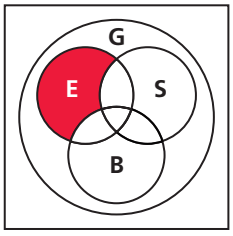
Source: Quantec (2006)

In 2005 the GGP (the total value of goods and services produced in the Cape Town city area) of Cape Town was approximately R112.5 billion. This was an increase of almost five and a half billion rand, or 4.9% from 2004's R107 billion.

Since 1993 Cape Town's GGP has experienced an average growth rate of 3.9% per year, although some years have experienced significantly more or less growth. While encouraging, it is worth noting that this growth rate is still below the national target of 4.5% annual economic growth for 2005 - 2009.

The GGP per capita is approximately R35 000 in 2005. However, use of GGP or GDP per capita figures to determine average income and wealth have long been criticised for being inaccurate, disguising the real disparities in wealth. Firstly, the population number used to calculate GGP includes a significant number of people who are not economically active, either due to age (e.g. school learners), or lifestyle choice (e.g. homemakers), therefore it is not an accurate indicator of income. Furthermore, as an indicator of wealth it masks the reality that many individuals subsist on far less than R35 000 per year, while others live on significantly more. Finally, it fails to take into account the fact that a significant proportion of this wealth circulates within companies, the benefits of which are not felt by the general population.

Although the use of GGP for the above mentioned purposes would not be meaningful, the overall picture is a positive one. The value of the economy of Cape Town continues to grow at a steady rate, with 2005 experiencing the largest growth in the past 11 years. Good economic growth is associated with increasing job opportunities and increases in the quality of life in the region. If current growth trends continue Cape Town may expect to reach the national growth rate target in the near future.



COMPONENTS OF SUSTAINABILITY

Economic - A real growth in GGP means that there is more money circulating in the economy, creating better opportunities for business and employment.

POLICY LINKAGES

IDP: 2020 Goal - Average real per capita income doubled, while reducing inequality.

IMEP: Economy - A commitment to the creation of jobs and the reduction of poverty.

See also:

• Adult literacy • Highest level of education achieved • Poverty and income disparity • Gross geographic product

POVERTY AND INCOME DISPARITY

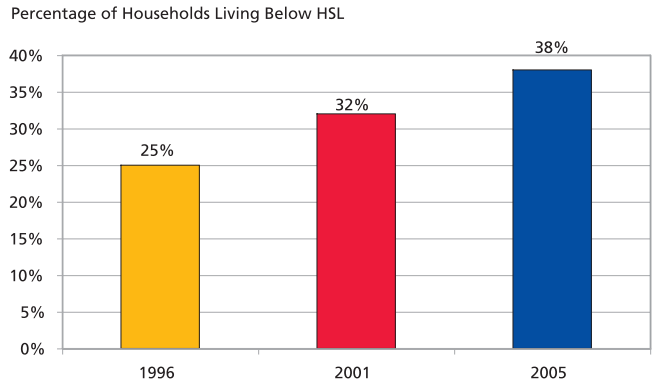
INDICATOR:

The percentage of people earning below R2,50 a day (PPP equivalent of $1).

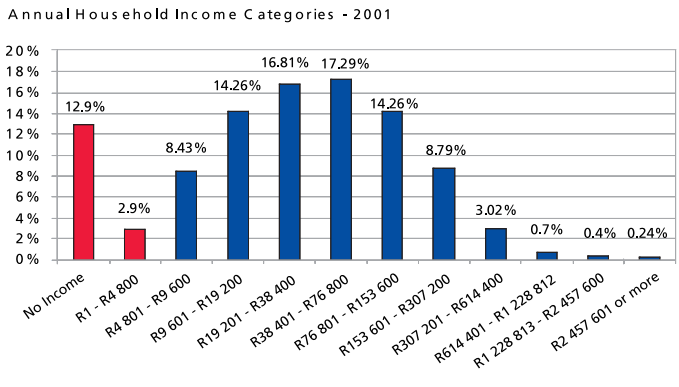
Cape Town is a city of contrasts, and nowhere is this more evident than in the disparity between the richest and poorest members of society. Poverty is a difficult concept to quantify, and as such two different measures of poverty are used in this indicator. Defining a poverty line is a difficult and often contentious exercise, as the cut-off point can be seen as arbitrary.
Those earning just above and just below the poverty line may well experience the same standard of living, yet one group is defined as 'poor', while the other is not. This problem is not easily solved. However, the purpose of a poverty line is not necessarily to divide and count the number of people in each category. Rather, the value lies in its ability to show trends from year to year. If the number of people living below the poverty line is increasing from year to year then it is clear that a problem exists, regardless of exactly where the line is drawn.

The first poverty line used is the percentage of people earning below $1 (R2,50) a day, or the percentage of households earning less than R3 650 a year. This has been identified as a key indicator by the UNDP, who defines this as 'extreme poverty'. Millennium Development Goal One is to eradicate extreme poverty by 2015. It is important to note that a Purchasing Power Parity exchange rate has been used here, according to international best practice, and not the official exchange rate. This indicator is difficult to measure, as income data in South Africa is measured in categories which do not necessarily correspond to international or national poverty lines, and therefore the nearest category available is that of households earning less than R4 800 a year. According to this definition approximately 16% of households in Cape Town are living in extreme poverty.

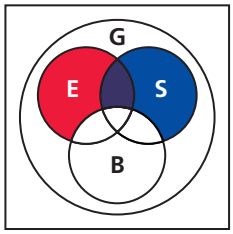
The second is the percentage of people living below the Household Subsistence Level (HSL) of R2 250 per month, for a family of four. The HSL is defined as the minimum theoretical amount required by a household to maintain a minimum level of health and decency in the short term[28], and is the most widely used measure of poverty in South Africa. This consists of the total costs incurred on food, transport, fuel, utilities, cleaning and washing equipment and rent. In 2005 approximately 38% of households were living below the HSL and therefore unable to maintain a decent standard of living[29].



Source: City of Cape Town - State of Cape Town Report 2006.



Source: Statistics South Africa - Census 2001



COMPONENTS OF SUSTAINABILITY
Economic - A large number of people living in poverty means that many are economically inactive. This impacts on the wider economy of an area.
Social - It is extremely difficult for people to live a dignified lifestyle when they are often unable to meet their basic needs.

POLICY LINKAGES
MDG Goal 1: Eradicate extreme poverty.
IDP: 2020 Goal - Average real per capita income doubled, while reducing inequality.
IMEP: Economy - A commitment to the creation of jobs and the reduction of poverty.

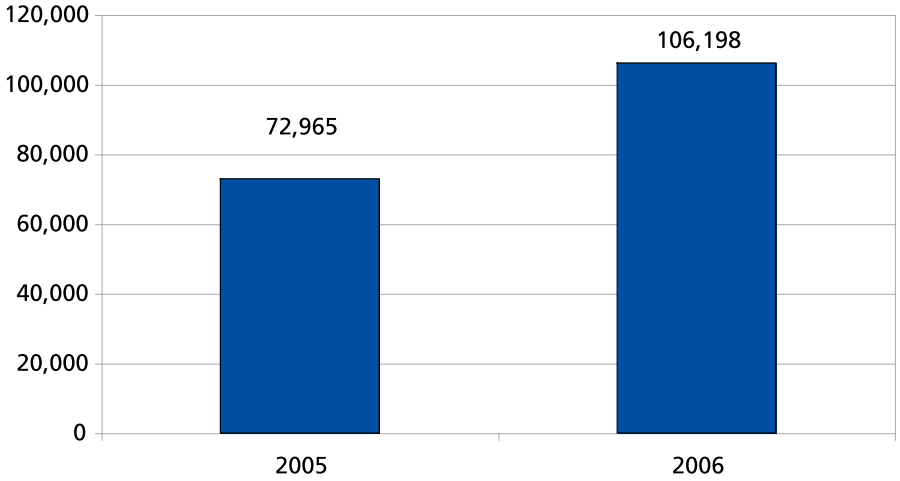
See also:
- Unemployment

PUBLIC EDUCATION, TRAINING AND AWARENESS PROGRAMMES

INDICATOR:

The total number of participant person days for public education and awareness programmes in which the City is involved each year.

Number of Participant Person Days of Education, Training and Awareness Programmes



Data for Departments of Environmental Resource Management, Catchment Management, and Economic and Human Development only.

Currently, four line functions within the City of Cape Town provide significant, dedicated education, awareness and training programmes to the public. These are the Departments of City Health, Economic and Human Development, Environmental Resource Management and Catchment and Stormwater Management.

It is clear that there has been significant growth since 2002, as the City has come to understand that public education programmes are a key part of good governance and achieving sustainability. The City cannot achieve sustainability alone – it requires the participation of a variety of non-governmental stakeholders, including the general public. Education, training and awareness programmes that are targeted at improving social, environmental and economic sustainability among the general public are key factors in improving sustainability in the city, as well as improving the quality of life of those targeted by the programmes.

Education and awareness programmes are largely aimed at improving knowledge and consciousness about a variety of issues, primarily environmental education. In 2006 the Youth Environmental Schools (YES) programme saw a record number of 30 352 primary school learners from a variety of social and economic backgrounds participating in three days of dynamic and hands-on environmental education. The Catchment Management Department, in partnership with the Two Oceans Aquarium, has run a highly successful puppet show on water-related issues since 2003, which reaches over 50 000 learners a year.

Training programmes are somewhat different, and provide a more intensive approach to public education. This involves focused workshops and programmes aimed at building skills and capacity, primarily to provide participants with better economic opportunities. The Economic and Human Development Department runs a Job Centre, which provides training and

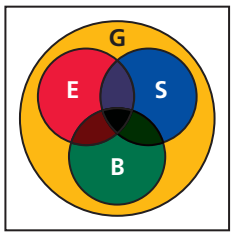
PUBLIC EDUCATION, TRAINING AND AWARENESS PROGRAMMES - CONTINUED -

networking opportunities to those seeking employment, as well as a Voucher Programme for small business owners and entrepreneurs in order to provide them with improved skills and the ability to run their business in a sustainable manner. They also run a Schools Entrepreneurship Programme which equips high schools learners with key small business training.

The Department of City Health does not carry out these programmes itself, but employs a number of NGOs to do so. Programmes primarily focus on HIV/Aids prevention and treatment, the importance of good nutrition and the implementation of good hygiene practices. In 2006 they employed 17 NGOs for this purpose. Statistics on the number of participant person days for City Health programmes were not available at the time of finalising this report.

This indicator was recalculated since the previous report, and contains data from a number of additional departments, which was not previously available. Therefore, comparisons cannot be made with previous data.

It is clear from the graph that a large number of participant person days (defined as the number of people involved in a programme, multiplied by the number of days they participated) of education, awareness and training programmes are carried out each year. In 2006 over 100 000 participant person days of education programmes were carried out by the departments of Environmental Resource Management, Catchment Management, and Economic and Human Development. This indicates a significant increase since 2005. These programmes provide an important service to the people of Cape Town, and are a key method of improving the quality of life for many residents of the city.



COMPONENTS OF SUSTAINABILITY

Biophysical - Education on environmental issues contributes to conservation in the city.

Economic - Education and training programmes build capacity and teach people a wide range of skills that are useful in furthering their economic opportunities.

Governance - The implementation of education and awareness programmes is a key aspect of good governance.

Social - Education and training programmes promote social development, especially among disadvantaged youth.

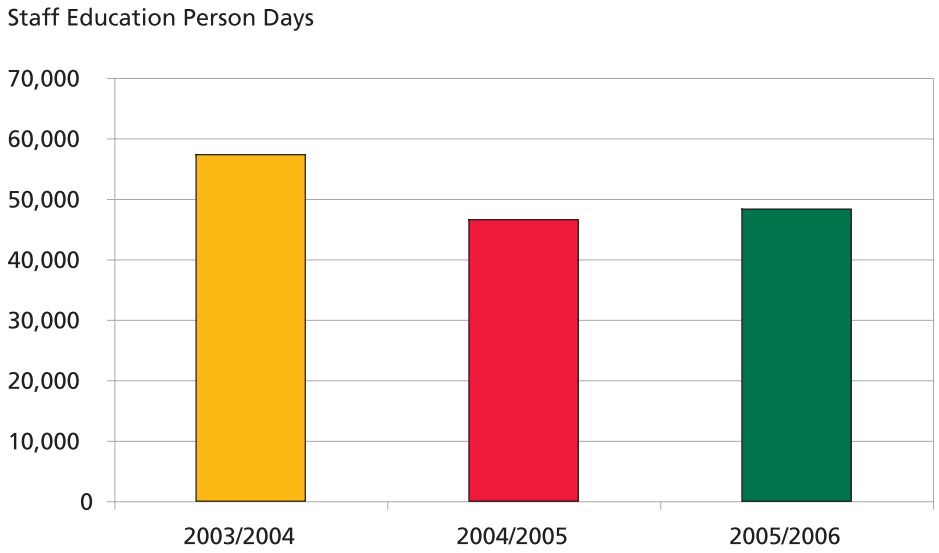
POLICY LINKAGES

IMEP: Environmental Education - A commitment to promoting environmental education and awareness.

STAFF EDUCATION, TRAINING AND AWARENESS PROGRAMMES

INDICATOR:

The total number of participant person days for staff education, training, and awareness programmes which the City runs each year.



Many people think that education ends when one leaves school or tertiary education. However, lifelong education and training is an important tool to promote personal growth, increase organisational efficiency and ensure that employees remain up to date with changes in technology. The ongoing education of City of Cape Town staff is of great benefit to both individual employees, and the City as an organisation.

In 2005 the 22 275 staff of the City of Cape Town participated in education, training and awareness programmes, totalling 48 288 person days, or approximately two days per person.

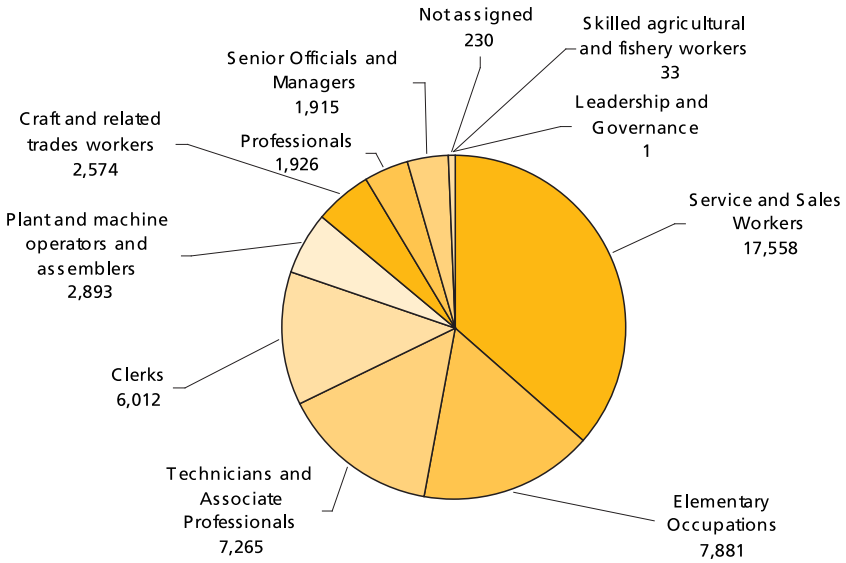
Staff training education and awareness programmes can take many forms. A number of programmes are designed to increase staff capacity and efficiency through training in the use of new equipment. This includes machinery used by the City's service functions, equipment used by the City's Scientific Services Department, and computers used by most office-based staff. Health education programmes, especially those dealing with HIV/Aids are also a key component of staff awareness. Senior management and professionals have also benefited from workshops on management and leadership, conflict resolution, legal responsibilities and good working practices.

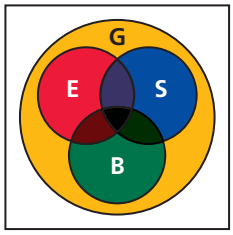
By far the most person days were allocated to the training and education of service and sales workers and those in elementary occupations. This is to be expected, as these employees constitute the majority of the City workforce. A significant number of person days were also dedicated to technicians and machine operators, as this kind of work requires ongoing training due to the rapid pace of technological change.

Although a drop was noted in the number of person days from 2003/2004 to 2004/2005 this can be accounted for by a number of reasons. Firstly, the City's staff complement decreased over the period 2003 – 2006. Secondly, it is not always necessary to conduct the same number of training and education workshops from year to year, as topics differ and many staff do not require yearly training.
What is important to note is that a significant number of person days of education, training and awareness programmes have been carried out over the past three years. This has had a positive impact both on the efficiency of the organisation, as well as the personal growth and development of staff members.

STAFF EDUCATION, TRAINING AND AWARENESS PROGRAMMES - CONTINUED -

Person days of Education per Occupational Category





COMPONENTS OF SUSTAINABILITY

Biophysical - Education on environmental issues contributes to conservation in the city.

Economic - Education and training programmes build capacity and teach people a wide range of skills that are useful in furthering their economic opportunities.

Governance - Building skills of local government staff allows the City to operate better and more efficiently.

Social - Education and training programmes raise awareness of social issues in the workplace and wider society, and provide important tools for resolving conflicts.

POLICY LINKAGES

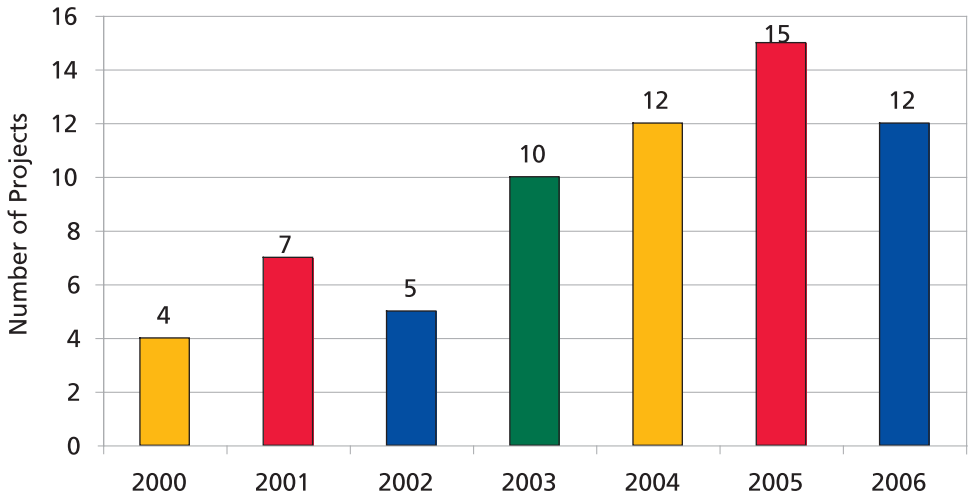
IMEP: Environmental Education - A commitment to promoting environmental education and awareness.

IMEP: Environmental Governance - A commitment to effective environmental governance in Cape Town.

LOCAL AGENDA 21 PROJECTS

INDICATOR:

The number of Local Agenda 21 (LA21) projects undertaken by the City of Cape Town, specifically supporting joint initiatives with civil society and business.



Agenda 21 was developed at the 1992 United Nations Conference on Environment and Development (UNCED), more commonly known as the Earth Summit. Agenda 21 is a comprehensive action plan setting out methods for reducing human impact on the environment and improving quality of life. Local Agenda 21 (LA21) refers to the implementation of this action plan at a local level, and is seen as a means through which cities can promote sustainable development. The key principle behind LA21 is 'think global, act local'.

The following principles are fundamental to LA21[30]:

- integration of social, economic and ecological issues
- a multi-sectoral approach to problem-solving involving all sectors of the community
- taking a long-term view of society and its problems
- working within ecological limits to produce sustainable societies
- local government and civil society partnerships
- linking local issues to global problems and impacts
- promoting equity, justice and accountability

A Local Agenda 21 partnership was established in 2000 between Cape Town and the City of Aachen, in Germany. The objectives of this partnership include the implementation of projects both in Aachen and Cape Town, awareness raising and learning through exchanges. The partnership began in 2000 with only four projects and has continued to grow considerably over the years.

2005 was a particularly eventful year for Local Agenda 21 in Cape Town, with the City actively involved in 15 projects and events. 2006 saw a slight drop to 12 projects, but in general the trend since 2000 has been an overwhelmingly positive one. The following are just some of the projects undertaken under the auspices of LA21 in 2006.

Bicycle Recycle Project

This project began in 2001 when disused bicycles were collected in Aachen and sent to Cape Town in order to be refurbished. These bicycles are then sold to underprivileged community members for a nominal fee. The Bicycling Empowerment Network coordinates this project, and provides road safety and bicycle maintenance workshops to the recipients. In 2006 Cape Town won the Shimano ICLEI Cities Enjoy Bicycles Award for the Bicycle Recycle Project.

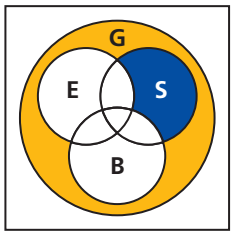
Mural Global Project
The aim of this project is the promotion of sustainable development and ongoing international partnerships through art. The theme of all the murals painted as part of this project is related to sustainability and raising awareness about environmental and social issues.

Bauwagen (Greening Wagon) Project
The Bauwagen is a mobile wagon that visits underprivileged schools and community organisations and provides materials and support for greening initiatives. This includes the planting of decorative gardens for recreational and aesthetic enjoyment, as well as the establishment of food gardens.

Luhlaza - Inda School Partnership
This ongoing school partnership promotes environmental, science and art education, and cultural exchange across a variety of backgrounds. In March of 2006 a group of five learners from Luhlaza Secondary School in Khayelitsha were given the opportunity to visit their partner school - Inda-Gymnasium - in Aachen, for three weeks. In October 2006 a group of learners from Germany completed the exchange when they made a similar visit to Luhlaza.

LA21 Community Festival
This festival was held for the second time in 2006. The aim of the festival is to engage local communities in fun activities, while promoting community self-organisation and social cohesiveness. The inclusion of traditional and cultural activities at the festival contributes to a sense of identity and pride in the communities involved. It also serves to promote and showcase worthwhile and successful projects, and gain increased community involvement in these initiatives. In 2006 the festival involved communities from Atlantis, Elsie's River, Khayelitsha and Manenberg, and included a concert, workshops, open days at two environmental centres, and a soccer tournament.

Local Agenda 21 is a holistic method of working towards sustainability, while engaging and empowering local communities. As such, the principles of LA 21 provide important tools for a variety of line functions in the City, and need to be adopted and implemented, where appropriate.



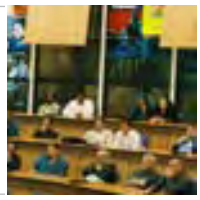
COMPONENTS OF SUSTAINABILITY
Social - Growth of civil society and government partnership is important for social development in the city.
Governance - Engaging with communities is a key aspect of good governance.

POLICY LINKAGES
IMEP: Environmental Governance - A commitment to effective environmental governance in Cape Town.

CAPITAL BUDGET SPENT

INDICATOR:

The proportion of the capital budget allocated to the City of Cape Town in relation to the amount of the budget spent within a financial year.



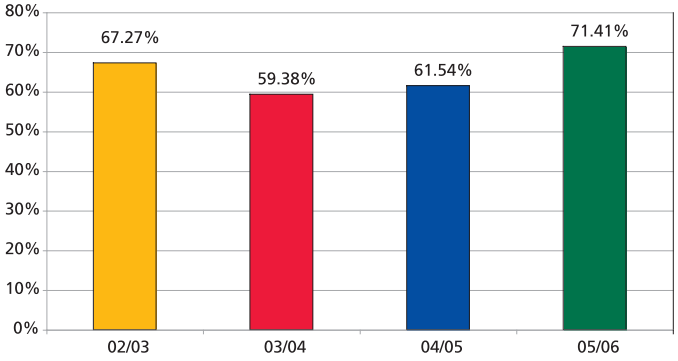
The capital budget is that portion of the annual City budget which is allocated to projects which require substantial capital outlay. These are typically infrastructure-type projects, and therefore have a vital role to play in improving the living conditions and quality of life of all residents of Cape Town. Capital budget projects include the building of housing, municipal health clinics, roads, electricity infrastructure, sewerage and associated wastewater treatment works, as well as the provision of recreational spaces such as parks and nature reserves.

In the previous Sustainability Report it was reported that in the 2003/2004 and 2004/2005 financial years, significant underspending of the capital budget had taken place. 2003/2004 saw the lowest percentage spending (59.4%) take place, while 2004/2005 saw the lowest per capita budget allocation (R467,73) since the formation of the Unicity in 2001.

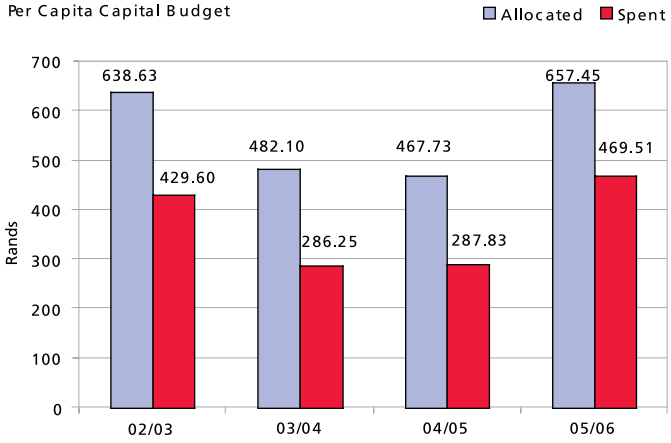
It is therefore worth noting that in the 2005/2006 capital budget spending increased dramatically, with R657,45 being allocated per person, of which 71.4% was spent during the financial year. Although this is still a sizeable underspend, it is also a dramatic improvement of almost 10% since the previous financial year. It is also important to note that in 2005/2006 the highest amount per capita was allocated and spent since the formation of the Unicity.

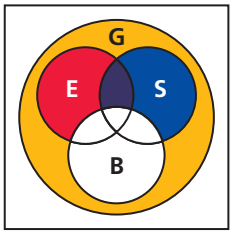
In order to promote economic and social development in the city, as well as ensure an improved quality of life for all citizens, proper capital budget spending is necessary.

Percentage of Capital Budget Spent



Per Capita Capital Budget





COMPONENTS OF SUSTAINABILITY

Economic and Social - In order for economic and social development to take place in a sustainable manner, government must make the most of its capital budget.

Governance - Proper spending of the capital budget is a key aspect of good governance.

POLICY LINKAGES

IDP: 2020 Goal - A top corporate governance city.

ELECTION TURNOUT

Indicator:

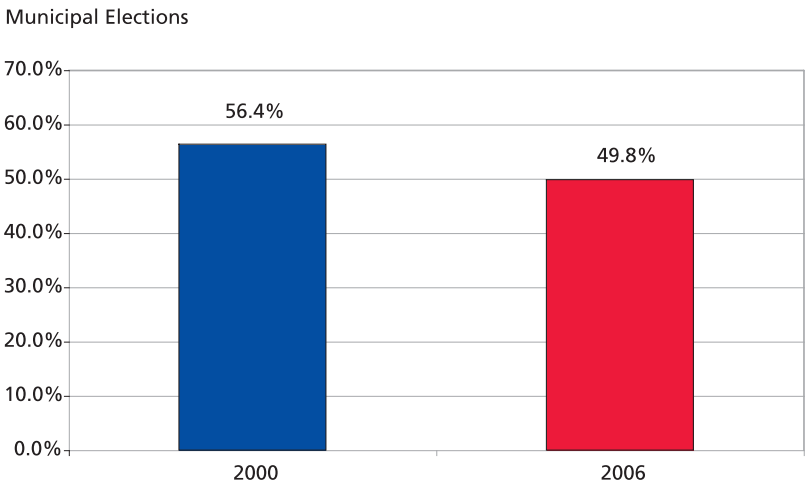
The percentage of registered voters turning out on voting day for municipal elections.

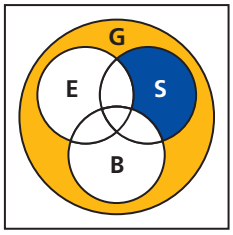
In March 2006 Cape Town held its municipal elections. This was a hotly contested election surrounded by much media coverage and publicity. Therefore it is unexpected to see that the turnout for this election was just under 50%, a decrease of almost 7% since the previous municipal elections in 2000.

Typically, voter turnout in municipal elections is significantly lower than that in national elections, and in most mature democracies is relatively low. However, due to the controversial nature of the 2006 municipal election one would have expected an increase, rather than a decrease in voter turnout.
The two most likely explanations for decreased voter turnout are satisfaction with the present government, and voter apathy. Due to the tense political situation in Cape Town it is unlikely that satisfaction is the correct reason for this lowered turnout. The Institute for Democracy in South Africa (IDASA) suggests that floor-crossing may be a powerful contributor to voter apathy.

IDASA has undertaken research which provides compelling evidence that floor- crossing directly contributes to a feeling of disillusionment with the democratic process amongst voters, who may begin to feel as if their vote doesn't matter. Cape Town and the Western Cape have seen significant floor-crossing activity in recent years. This activity is usually accompanied by significant publicity, and many high-profile and often negative media reports.

Voter turnout is especially poor among young people, many of whom are simply not interested in the process and are often ignorant of the choices available to them. It is also clear from statistics made available by the IEC that voter turnout in poorer areas of Cape Town is especially low. This may be due to a sense by residents that voting makes no difference to them, as their living conditions and quality of life remain poor after 10 years of democracy. In order to best reflect the feelings of Cape Town's population and lend greater legitimacy to elections, increased voter turnout should be encouraged.





COMPONENTS OF SUSTAINABILITY

Social - Low election turnout is indicative of voter apathy and disillusionment with the democratic process.

Governance - Local government is able to operate in a more stable manner if it has popular support.

APPENDIX A

Goals of the Cape Town Integrated Metropolitan Environmental Policy (IMEP)

See website: www.capetown.gov.za/environment

Goal	Description
1. Air	A commitment to reducing the incidence of all forms of air pollution and the potential environmental health risks associated with air pollution.
2. Water resources	A commitment to ensuring that the quality of coastal, marine and inland waters of Cape Town is suitable for the maintenance of biodiversity, the protection of human health and a commitment to the principle that all Cape Town inhabitants have the right to clean, potable and adequate water sources.
3. Landforms & soils	A commitment that recognises that the conservation and enhancement of landforms and soils in Cape Town is essential.
4. Fauna & flora	A commitment to the conservation of biodiversity in Cape Town.
5. Cultural heritage	A commitment to ensuring that the diverse cultural heritage of the City of Cape Town is preserved protected and enhanced.
6. Urbanisation & housing	A commitment to recognising that shelter and services are needed for a growing population, while at the same time recognising that environmental features and systems need protection.
7. Infrastructure	The recognition that the supply and delivery of infrastructure can both improve our living conditions and cause environmental impacts.
8. Transportation	A commitment to the recognition that transportation is needed for access to facilities and work opportunities, but consumes valuable resources and contributes to environmental degradation.
9. Energy	Recognising the importance of energy and its role in development and the negative effects that energy production may have on the environment, a commitment to sources of energy with the least impact on the environment and health of communities.
10. Waste	A commitment to the need for an integrated waste management strategy that addresses both the production and disposal of solid and liquid wastes, as well as the safe collection, transport and disposal and the reduction of illegal dumping.
11. Economy	A commitment to the recognition that the environment of Cape Town is its greatest asset and that sustainable development requires economic growth, the creation of jobs and the reduction of currently high levels of poverty in Cape Town.
12. Environmental health	A commitment to the Constitution of South Africa which guarantees the right of all South Africans to an environment which is not detrimental to their health and well-being.
13. Environmental education	A commitment to supporting and promoting appropriate environmental education and awareness throughout Cape Town and within local government structures.
14. Safety & security	In recognising that many communities in Cape Town experience an unacceptable incidence of crime, a commitment to supporting crime prevention and the reduction of crime is needed.
15. Environmental governance	Recognising that effective environmental governance in Cape Town is in the process of being established and a commitment to this establishment.

APPENDIX B

Goals of the City of Cape Town Integrated Development Plan (IDP) 2005/2006

See website: www.capetown.gov.za/IDP

Our vision is to establish Cape Town as:

- A sustainable city that offers a future to our children and their children;
- A dignified city that is tolerant, non-racist and non-sexist;
- An accessible city that extends the benefits of urban society to all and builds the capacity of its people;
- A credible city that is well governed and trusted by its people;
- A competent city with skills, capabilities and a competitive edge;
- A safe and caring city that cares for its citizens and values the safety and security of all who live, work and play in it;
- A prosperous city known for its ability to compete globally in the 21st century and its commitment to tackling the challenges facing South Africa, the Southern African Development Community and the African continent; and
- A city known for its leadership in Africa and the developing world.

Our IDP 2020 goals

To give substance to our vision and to link our vision to our strategies the City of Cape Town has embraced a bold set of goals to be achieved by the year 2020:

1. 100% improvement in key human development indicators;
2. Less than 5% of population in informal settlements;
3. Universal access to basic services;
4. Levels of violent crime reduced by 90%;
5. Water use and waste production down 30%;
6. Access to safe green space within walking distance for all;
7. Renewable energy share equal to 10% of energy consumed;
8. Average real per capita doubled while reducing inequality;
9. Unemployment less than 8%; and
10. Less than 5% of the population illiterate.

Strategic framework

In support of Council's vision and goals for 2020, five strategic themes are proposed focused on socio-economic development and improved service delivery:

- Integrated human settlement;
- Economic growth and job creation;
- Access and mobility;
- Building strong communities; and
- Equitable and effective service delivery.

Running through each of these strategic themes and in support of the first aspect of the City's vision, namely that of a Sustainable City, is the directive to ensure that sustainability runs through the City's broad development programme.

APPENDIX C

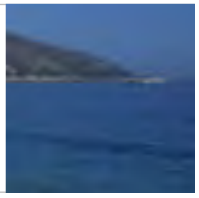
Goals and Targets of the United Nations Millennium Declaration

See website: www.mdg.un.org

Goal #	Goal and Targets
Goal 1	**Eradicate extreme poverty and hunger**
	Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day
	Halve, between 1990 and 2015, the proportion of people who suffer from hunger
Goal 2	**Achieve universal primary education**
	Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling
Goal 3	**Promote gender equality and empower women**
	Eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels of education no later than 2015
Goal 4	**Reduce child mortality**
	Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate
Goal 5	**Improve maternal health**
	Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio
Goal 6	**Combat HIV/Aids, malaria and other diseases**
	Have halted by 2015 and begun to reduce the spread of HIV/Aids
	Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases
Goal 7	**Ensure environmental sustainability**
	Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources
	Halve, by 2015, the proportion of people with sustainable access to safe drinking water
	Have achieved, by 2020, a significant improvement in the lives of at least 100 million slum dwellers
Goal 8	**Develop a global partnership for development**
	Develop further an open, rule-based, predictable, non-discriminatory trading and financial system (includes a commitment to good governance, development, and poverty reduction – both nationally and internationally)
	Address the special needs of the least developed countries (includes tariff- and quota-free access for exports, enhanced program of debt relief for and cancellation of official bilateral debt, and more generous ODA for countries committed to poverty reduction
	Address the special needs of landlocked countries and small island developing states (through the Program of Action for the Sustainable Development of Small Island Developing States and 22nd General Assembly provisions)
	Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term
	In co-operation with developing countries, develop and implement strategies for decent and productive work for youth
	In co-operation with pharmaceutical companies, provide access to affordable essential drugs in developing countries
	In co-operation with the private sector, make available the benefits of new technologies, especially information and communications technologies

APPENDIX D

Green Cities Declaration



See website: www.mdg.un.org

United Nations Environment Programme Signed by World Mayors on World Environment Day, June 5th 2005, in San Francisco

Vision and implementation

THE 21 ACTIONS that comprise the Urban Environmental Accords are organised by urban environmental themes. They are proven first steps toward environmental sustainability. However, to achieve long-term sustainability, cities will have to progressively improve performance in all thematic areas.

Implementing the Urban Environmental Accords will require an open, transparent and participatory dialogue between government, community groups, businesses, academic institutions and other key partners. Accords implementation will benefit where decisions are made on the basis of a careful assessment of available alternatives using the best available science.

The call to action set forth in the Accords will most often result in cost savings as a result of diminished resource consumption and improvements in the health and general well-being of city residents. Implementation of the Accords can leverage each city's purchasing power to promote and even require responsible environmental, labor and human rights practices from vendors.

Between now and the World Environment Day 2012, cities shall work to implement as many of the 21 Actions as possible. The ability of cities to enact local environmental laws and policies differs greatly. However, the success of the Accords will ultimately be judged on the basis of actions taken. Therefore, the Accords can be implemented though programmes and activities even where cities lack the requisite legislative authority to adopt laws.

The goal is for cities to pick three actions to adopt each year. In order to recognise the progress of cities to implement the Accords, a City Green Star Programme shall be created. At the end of the seven years a city that has implemented:

19 to 21 actions shall be recognised as a ★★★★ City

15 to 18 actions shall be recognised as a ★★★ City

12 to 17 actions shall be recognised as a ★★ City

8 to 11 actions shall be recognised as a ★ City

Green Cities Declaration
Urban Environmental Accords

Energy

Action 1: Adopt and implement a policy to increase the use of renewable energy to meet 10% of the city's peak electric load within seven years.

Action 2: Adopt and implement a policy to reduce the city's peak electricity load by 10% within seven years through energy efficiency, shifting the timing of energy demands and conservation measures.

Action 3: Adopt a citywide greenhouse gas reduction plan that reduces the city's emissions by 25% by 2030, and which includes a system for accounting and auditing greenhouse gas emissions.

Waste Reduction

Action 4: Establish a policy to achieve zero waste to landfills and incinerators by 2040.

Action 5: Adopt a citywide law that reduces the use of a disposable, toxic or non-renewable product category by at least 50% in seven years.

Action 6: Implement 'user-friendly' recycling and composting programmes, with the goal of reducing by 20% per capita solid waste disposal to landfill and incineration in seven years.

Urban Design

Action 7: Adopt a policy that mandates a green building rating system standard that applies to all new municipal buildings.

Action 8: Adopt urban planning principles and practices that advance higher density, mixed use, walkable, bikeable and disabled-accessible neighbourhoods that coordinate land use and transportation with open space systems for recreation and ecological restoration.

Action 9: Adopt a policy or implement a programme that creates environmentally-beneficial jobs in slums and/or low-income neighbourhoods.

Urban Nature

Action 10: Ensure that there is an accessible public park or recreational open space within half a kilometer of every city resident by 2015.

Action 11: Conduct an inventory of existing canopy coverage in the city; and then establish a goal based on ecological and community considerations to plant and maintain canopy coverage in not less than 50% of all available sidewalk planting sites.

Action 12: Pass legislation that protects critical habitat corridors and other key habitat characteristics (e.g. water features, food-bearing plants, shelter for wildlife, use of native species, etc.) from unsustainable development.

Transportation

Action 13: Develop and implement a policy which expands affordable public transportation coverage to within half a kilometer of all city residents in ten years.

Action 14: Pass a law or implement a programme that eliminates leaded gasoline (where it is still used); phases down sulfur levels in diesel and gasoline fuels, concurrent with using advanced emission controls on all buses, taxis, and public fleets to reduce particulate matter and smog-forming emissions from those fleets by 50% in seven years.

Action 15: Implement a policy to reduce the percentage of commuter trips by single-occupancy vehicles by 10% in seven years.

APPENDIX D - CONTINUED -

Environmental Health

Action 16: Every year, identify one product, chemical, or compound that is used within the city that represents the greatest risk to human health and adopt a law and provide incentives to reduce or eliminate its use by the municipal government.

Action 17: Promote the public health and environmental benefits of supporting locally grown organic foods. Ensure that 20% of all city facilities (including schools) serve locally grown and organic food within seven years.

Action 18: Establish an Air Quality Index (AQI) to measure the level of air pollution and set the goal of reducing by 10% in seven years the number of days categorised in the AQI range as 'unhealthy' or 'hazardous'

Water

Action 19: Develop policies to increase adequate access to safe drinking water, aiming at access for all by 2015. For cities with potable water consumption greater than 100 liters per capita per day, adopt and implement policies to reduce consumption by 10% by 2015.

Action 20: Protect the ecological integrity of the city's primary drinking water sources (i.e. aquifers, rivers, lakes, wetlands and associated ecosystems).

Action 21: Adopt municipal wastewater management guidelines and reduce the volume of untreated wastewater discharges by 10% in seven years through the expanded use of recycled water and the implementation of a sustainable urban watershed planning process that includes participants of all affected communities and is based on sound economic, social, and environmental principles.

APPENDIX E

Full list of contributors and sources

No.	Indicator	Sources	Organisation
1	Air Quality Exceedences	Grant Ravenscroft Hennie Schrader Sally Benson	City of Cape Town
2	Renewable energy supplied as percentage of total	Brian Jones Shirene Rosenberg	City of Cape Town
3	Energy use per sector	Mark Borchers	Sustainable Energy Africa
4	Carbon dioxide per capita	Apie J Peens (Petroleum product sales) Brian Jones Alison Hughes (Coal use database)	ChevronTexaco City of Cape Town UCT: Energy Research Centre
5	Public and private transport	Mark Skriker	City of Cape Town
6	Green space per capita	John Bennet Fiona Grimmet	City of Cape Town
7	Extent of natural vegetation conserved	Patricia Holmes	City of Cape Town
8	Extent of invasion by alien invasive species	Patricia Holmes Erika Foot	City of Cape Town
9	Extent of urban sprawl	Ken Sinclair-Smith	City of Cape Town
10	Water use per capita	Jaco de Bruyn	City of Cape Town
11	Fresh water quality	Candice Haskins	City of Cape Town
12	Coastal water quality	City of Cape Town: Coastal Water Quality Report 2005	City of Cape Town

No.	Indicator	Sources	Organisation
13	Proportion of effluent reused	Jaco de Bruyn	City of Cape Town
14	Landfill lifespan	John Barlow Deon Rhode	City of Cape Town
15	Waste disposal per capita	Deon Rhode	City of Cape Town
16	HIV/Aids incidence	Ivan Toms Bryan Chute Ivan Bromfield	City of Cape Town
17	TB incidence	Ivan Toms Bryan Chute Ivan Bromfield	City of Cape Town
18	Leading cause of death	Ivan Toms Bryan Chute Ivan Bromfield	City of Cape Town
19	Incidence of murder	SAPS Website	South African Police Service
20	Incidence of rape	SAPS Website	South African Police Service
21	Incidence of commercial/ industrial theft	SAPS Website	South African Police Service
22	Drug use and drug-related crime	SAPS Website South African Community Epidemiology Network on Drug Use	South African Police Service South African Community Epidemiology Network on Drug Use
23	Access to water	Jaco de Bruyn	City of Cape Town
24	Access to sanitation	Jaco de Bruyn	City of Cape Town
25	Percentage of informal housing	Elvira Rodriques Janet Gie Craig Haskins John Sterne	City of Cape Town
26	Incidence of fires in informal settlements	Gillian Fortune	UCT: Disaster Mitigation for Sustainable Livelihoods Programme
27	Adult literacy	Statistics South Africa: General Household Survey	City of Cape Town
28	Highest level of education achieved	Statistics South Africa: General Household Survey Theo Hamman	Statistics South Africa Provincial Government of the Western Cape
29	Unemployment	City of Cape Town: State of Cape Town Report 2006	City of Cape Town
30	Gross geographic product	Marsha Orgill	City of Cape Town
31	Poverty and income disparity	Craig Haskins Statistics South Africa: Census 2001	City of Cape Town Statistics South Africa
32	Public education and awareness programmes	Elvirena Coetzee (Environmental Resource Management) Randall Adriaans (Catchment Management) May Lewis and Washiefa Wouterson (City Health) Carlo Vizzi (Economic and Human Development)	City of Cape Town
33	Staff education and awareness programmes	Fred Sherwet	City of Cape Town
34	Number of Local Agenda 21 projects	Grace Stead	City of Cape Town
35	Capital budget spent	Karen Fourie	City of Cape Town
36	Election turnout	Independent Electoral Commission website	Independent Electoral Commission

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Cape Town's natural environment is known for its beauty and biodiversity, providing essential resources and offering natural assests on which much of our economy depends.

Our rich history of people and their culture, religious, political and economic practices has given us a particular and precious heritage in Cape Town.

Cape Town has an impressive and constantly evolving urban environment. We need to create a more equitable and harmonious living environment.

CITY OF CAPE TOWN | ISIXEKO SASEKAPA | STAD KAAPSTAD

THIS CITY WORKS FOR YOU

IMEP
Integrated Metropolitan Environmental Policy City of Cape Town

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