

# Environmental Affairs

Environment

South Africa is a land of variety and extremes; its climatic conditions, for example, vary considerably, notably from the coastal to the inland regions. Topographically it is also characterised by extremes, ranging from a narrow coastal plain to a steep escarpment and a large plateau.

The country boasts a remarkable diversity of species. Although it has a land surface area of 1,2 million km<sup>2</sup> – representing just 2% of the Earth's total land surface – South Africa contains almost 10% of the world's total known bird, fish and plant species, and more than 6% of the world's mammal and reptile species.

Government is committed to protect the country's rich biodiversity heritage for the benefit of all, and to create a prosperous and equitable society that live in harmony with its natural resources.

The Department of Environmental Affairs is mandated to formulate, coordinate and monitor the implementation of national environmental policies, programmes and legislation. Strategies are, therefore, in place to:

- protect, conserve and enhance the environment, and natural and heritage assets and resources
- plan, manage and prevent pollution and environmental degradation to ensure a sustainable and healthy environment
- provide leadership on climate-change adaptation and mitigation
- contribute to sustainable development, livelihood, and green and inclusive economic growth by facilitating skills development and job creation
- contribute to a better Africa and a better world by advancing national environmental interests through a global sustainable development agenda.

## **Budget and funding**

The total budget at 2012/13 for the Department of Environmental Affairs stood at R4,512,161 billion.

The Green Fund, which was established in 2012/13, was allocated R300 million. A further R380 million was allocated to the Department of Environmental Affairs for the Working

The Minister of Environmental Affairs, Ms Edna Molewa, launched the *National Biodiversity Assessment 2011 Report* on International Day for Biodiversity, celebrated annually on 22 May 2013. The assessment focuses on spatial biodiversity information, including species and ecosystems.

on Fire Programme and R750 million for the Working for Water Programme.

The Natural Resource Management Sub-programme received an additional R1,1 billion over the Medium Term Expenditure Framework period for Expanded Public Works Programme (EPWP) projects related to the Working for Water and Working on Fire subprogrammes. In addition, the South African National Parks (SANParks) received an additional allocation of R350 million over the medium term for infrastructure development.

Budget allocations for entities reporting to government were as follows:

- SANParks: R230,521 million
- South African Weather Service (SAWS): R250 million.
- South African National Biodiversity Institute (Sanbi): R421 million.
- iSimangaliso Wetlands Park Authority: R128 million.

## Legislation and policies

The framework within which the department fulfils its mandate is guided by a number of policies and legislation.

- The National Environmental Management Act (Nema), 1998 (Act 107 of 1998), establishes the concepts of participatory, cooperative and developmental governance in environmental management, as well as

The *National Environmental Compliance and Enforcement Report 2011/12* was published in November 2012. It included the work of the Environmental Management Inspectorate, commonly known as the Green Scorpions – a network of environmental compliance and enforcement officials from national, provincial and municipal government, tasked with implementing and ensuring compliance to environmental legislation.

principles for environmental management and provides for structures to facilitate these.

- The National Environmental Management: Biodiversity Act (Nemba), 2004 (Act 10 of 2004), reformed South Africa's laws regulating biodiversity. It sets out the mechanisms for managing and conserving South Africa's biodiversity and its components; protecting species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bioprospecting, including indigenous biological resources; and the establishment of Sanbi.
- National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003), provides for the protection and conservation of ecologically viable areas, the establishment of a national register of protected areas, as well as the proclamation and management of these areas.
- The National Environmental Management: Protected Areas Amendment Act, 2009 (Act 15 of 2009), provides for the assignment of national parks, special parks and heritage sites to SANParks.
- The National Environmental Management: Protected Areas Amendment Act, 2004 (Act 31 of 2004), provides for a national system of protected areas in South Africa as part of a strategy to manage and conserve the country's biodiversity.
- The National Environmental Management: Air Quality Act (AQA), 2004 (Act 39 of 2004), reforms the law regulating air quality to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development.
- The National Environmental Management: Integrated Coastal Management Act, 2008 (Act 24 of 2008), establishes a system of integrated coastal and estuarine management in the country; ensuring socially and environmentally responsible development and use.
- The National Environmental Management:

Waste Act, 2008 (Act 59 of 2008), reforms the law regulating waste management to protect health and the environment.

- The National Environmental Management Amendment Act, 2003 (Act 46 of 2003).
- The National Environmental Management Amendment Act, 2004 (Act 8 of 2004).
- The National Environment Laws Amendment Act, 2008 (Act 44 of 2008).
- The National Environmental Management Amendment Act, 2008 (Act 62 of 2008).
- The National Environment Laws Amendment Act, 2009 (Act 14 of 2009).
- The World Heritage Convention Act, 1999 (Act 49 of 1999), provides for the cultural and environmental protection and sustainable development of, and related activities in a world heritage site.
- SAWS Act, 2001 (Act 8 of 2001).
- Sea Shores Act, 1935, (Act 21 of 1935).
- Sea Birds and Seals Protection Act, 1973 (Act 46 of 1973).
- Dumping at Sea Control Act, 1980 (Act 73 of 1980).
- Sea Fishery Act, 1988 (Act 12 of 1988).
- Antarctic Treaties Act, 1996 (Act 60 of 1996).
- Marine Living Resources Act, 1998 (Act 18 of 1998).
- Prince Edward Islands Act, 1948 (Act 48 of 1948).

Other policy frameworks include:

- *The White Paper on National Climate Change Response, 2011*
- *The White Paper on Integrated Pollution and Waste Management, 2000*
- *The White Paper on Environmental Management, 1998*
- *The White Paper on Conservation and Sustainable Use of Biodiversity, 1997.*
- *White Paper for Sustainable Coastal Development in South Africa, 2000.*

During 2012, the following legislation was amended or pending promulgation:

- The amended regulations of Nemba, 2004 (Act 10 of 2004), were gazetted in August 2012.
- The regulations regarding fees for the provision of aviation meteorological services of

In July 2012, the Council of the Global Environment Facility extended funding of R25 million to the Department of Environmental Affairs aimed at strengthening wildlife forensic capabilities in southern Africa through the enhancement of forensic-based technologies. This forms part of efforts to combat wildlife crimes, such as rhino poaching and the illegal international trade in their horns.

the SAWS Act, 2001 (Act 8 of 2001) were gazetted in March 2012.

- The Western Cape Biosphere Reserves Bill was introduced in the provincial Parliament in March 2011. When the Bill is passed, South Africa will be the first country in the world to have adopted specific legislation in terms of which biosphere reserves are regulated.
- Government established a legal framework to manage radioactive waste as set out in the Nuclear Energy Act, 1999 (Act 46 of 1999) which came into effect in February 2000.

### National Framework for Sustainable Development (NFSD)

In 2008, Cabinet approved the South Africa NFSD. The approval signalled a new wave of thinking aimed at promoting the effective stewardship of South Africa's natural, social and economic resources. Following the approval of the NFSD, the National Strategy for Sustainable Development and Action Plan – also referred to as NSSD 1 (2011 – 2014) – was approved by Cabinet in November 2011, with an implementation time frame of 2011 to 2014.

The NSSD 1 builds on the 2008 NFSD, as well as several initiatives that address issues of sustainability in South Africa, and marks the continuation of a national partnership for sustainable development. The 1992 Rio Earth Summit, followed by the 2002 Johannesburg World Summit on Sustainable Development (WSSD), provided a platform to learn and begin to implement sustainability practices.

The 2012 Rio+20 identified two important themes to support the country's efforts: the green economy in the context of sustainable development and poverty eradication, and the

In July 2012, the International Wildlife Management Congress took place at Durban's International Convention Centre. It was hosted by American Maryland-based Wildlife Society in partnership with South African National Parks, the Wildlife and Environmental Society of South Africa, and the provincial wildlife authority Ezemvelo KwaZulu-Natal Wildlife. The theme of this year's congress was *Cooperative Wildlife Management Across Borders: Learning in the Face of Change*.

institutional framework for sustainable development. The following five strategic objectives were identified in the NSSD 1:

- enhancing systems for integrated planning and implementation
- sustaining our ecosystems and using natural resources efficiently
- towards a green economy
- building sustainable communities
- responding effectively to climate change.

The Department of Environmental Affairs will establish and oversee the National Committee on Sustainable Development that will operate in multifold among government spheres to engage civil society, non-governmental organisations (NGOs), the private sector, academia, independent reviewers and other multi-stakeholders

### The Green Economy Accord

In 2012, the National Development Plan was launched as a new economic framework for South Africa. It aims to create an additional 11 million jobs by 2030. The Green Economy Accord is the fourth accord of the New Growth Path Policy and sets out 12 commitments to give effect to the green economy.

The South African Government and its social partners signed the Green Economy Accord in November 2011 as an outcome of social dialogue on government's New Growth Path.

The accord facilitates a green partnership to create jobs, provide a spur for industrialisation and help to create a sustainable future for this and the next generation. It is one of a series of agreements in which social partners commit to

work together to achieve the goals of the New Growth Path.

### Climate Change Policy Framework

In July 2012, the Minister of Public Enterprises, Mr Malusi Gigaba, launched the Department of Public Enterprises' Climate Change Policy Framework for all state-owned companies (SOCs) under his portfolio.

The framework is to optimise the impact of the SOCs on the reduction of carbon emissions and development of the green economy without compromising the SOCs' financial viability. An announcement on the move towards a biofuels strategy and the signing of the United Nations' (UN) Global Compact by SOCs also followed.

The framework is intended to guide longer term actions required to put South Africa on a low-carbon development path and to ensure that the SOCs lead as agents of change in the process of building a green economy.

### Role players

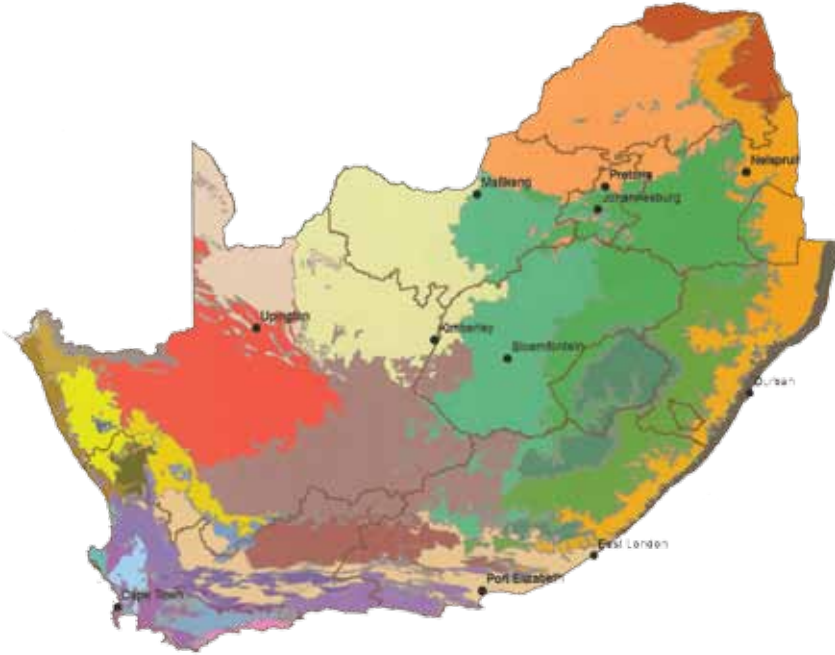
#### South African National Biodiversity Institute (Sanbi)

Sanbi was formed in September 2004 through Nemba, 2004. The Act expanded the responsibilities of Sanbi's forerunner, the National Botanical Institute, which was flora-focused, to include responsibilities relating to the full spectrum of South Africa's biodiversity.

Sanbi is a respected authority in research and has an unmatched research record in the indigenous, naturalised and alien flora of

The devil worm (*halicephalobus mephisto*), a tiny worm found in South Africa, is officially one of the 10 strangest species discovered in 2011. The International Institute for Specie Scouting at the University of Arizona, United States of America, in collaboration with experts around the world, annually updates the list of bizarre newly discovered fauna and flora. The worm, which is only half a millimetre long, was discovered in deep cracks in South African gold mines, between 0,9 km and 3,6 km below the surface – deeper underground than any known species can survive.

Bioregions of South Africa



- |  |   |
|--|---|
|  Northwest Fynbos Bioregion                   |  Southern Namib Desert Bioregion       |
|  Southwest Fynbos Bioregion                   |  Gariep Desert Bioregion               |
|  Southern Fynbos Bioregion                  |  Bushmanland Bioregion               |
|  South Coast Fynbos Bioregion               |  Upper Karoo Bioregion               |
|  Western Fynbos-Renosterveld Bioregion      |  Lower Karoo Bioregion               |
|  Eastern Fynbos-Renosterveld Bioregion      |  Drakensberg Grassland Bioregion     |
|  West Coast Renosterveld Bioregion          |  Dry Highveld Grassland Bioregion    |
|  East Coast Renosterveld Bioregion          |  Mesic Highveld Grassveld Bioregion  |
|  Karoo Renosterveld Bioregion               |  Sub-Escarpment Grassland Bioregion  |
|  Namaqualand Cape Shrublands Bioregion      |  Central Bushveld Bioregion          |
|  Dry Highveld Grassland Bioregion           |  Mopane Bioregion                    |
|  West Strandveld Bioregion                  |  Lowveld Bioregion                   |
|  Richtersveld Bioregion                     |  Sub-Escarpment Savanna Bioregion    |
|  Namaqualand Hardeveld Bioregion            |  Eastern Kalahari Bushveld Bioregion |
|  Namaqualand Sandveld Bioregion             |  Kalahari Dunneveld Bioregion        |
|  Knersvlakte Bioregion                      |  Albany Thicket                      |
|  Trans-Escarpment Succulent Karoo Bioregion |  Indian Ocean Coastal Belt           |
|  Rainshadow Valley Karoo Bioregion          |   |

Source: *Vision Endangered Wildlife Trust Seventeenth Annual*

southern Africa and beyond. Its research management covers systematics and collections expansion, conservation and applied biodiversity science, and climate change. Sanbi is also responsible for ensuring that biodiversity knowledge influences policy, management and decision-making.

Its biome programmes, which focus on South Africa's biodiversity hotspots, ensure that the country's most important biodiversity regions, such as the grasslands, wetlands and succulent Karoo, are protected in a sustainable and beneficial way.

Sanbi is increasingly embracing biodiversity in its broadest sense through inclusion of the country's fauna as part of its taxonomic research mandate. It is coordinating a catalogue of all South Africa's species (at least 100 000), including animals, through the South African Tree of Life Project.

The institute operates environmental education programmes within its national botanical gardens, while outreach greening programmes focus on promoting indigenous gardening at disadvantaged schools in surrounding areas.

Sanbi is South Africa's official body to facilitate access to the Adaptation Fund, set up to help developing countries cope with climate change. It was established by the parties to the Kyoto Protocol of the UN Framework Convention on Climate Change (UNFCCC) to finance concrete adaptation projects and programmes in developing countries that are parties to the protocol.

### iSimangaliso Wetland Park Authority

As an area of exceptional and outstanding universal heritage significance, the iSimangaliso Wetland Park was inscribed as South Africa's first world heritage site in December 1999.

The park has received recognition under three of four natural criteria recognised by the World Heritage Convention: it has outstanding examples of ecological processes, superlative natural phenomena and scenic beauty, and exceptional biodiversity and threatened species.

iSimangaliso is 332 000 ha and comprises 9% of South Africa's coastline. It includes five ecosystems (marine, coastal dunes, lake systems, wetlands and woodlands). The species lists for the park are the longest in the region. Of the species listed in the park, 56 are endemic to KwaZulu-Natal, 108 to South Africa and 467 are listed as threatened and endangered in South Africa. The park also has four Ramsar sites.

iSimangaliso is located in one of South Africa's poorest rural areas and has been largely under claim. All but three of the land claims settlements have been concluded and a series of co-management agreements have been signed with land claimants. The management of such a diverse asset in an area of extreme poverty and high expectations requires an adaptive and inclusive approach.

### South African Weather Service (SAWS)

The SAWS strives to provide useful and innov-

#### Important dates on the world's environmental calendar:

- World Wetlands Day: 2 February
- National Water Week: 19-25 March
- Earth Day: 20 March
- World Water Day: 22 March
- World Meteorological Day: 23 March
- Earth Hour: 27 March
- Earth Day: 22 April
- National Bird Week: 3 – 9 May
- International Day for Marine Biological Diversity: 22 May
- World Environment Day: 5 June
- World Oceans Day: 8 June
- World Day to Combat Desertification: 17 June
- National Harbour Week: 1 to 7 September
- World Water Week: 5 – 11 September
- International Day for the Protection of the Ozone Layer: 16 September
- International Coastal Clean-up Day: 18 September
- World Car Free Day: 22 September
- World Tourism Day: 27 September
- Weedbuster Week: 4 – 8 October
- World Habitat Day: 5 October
- National Marine Week: 11 – 15 October
- International Mountain Day: 11 December

ative weather, climate and related products and services through the following:

- enhancing observational data and communications networks
- effectively developing and managing talent within the sector
- enhancing collaborative partnerships and effectively disseminating weather services products to the users
- utilising cutting edge technology to convert data into meaningful products and services for risk mitigation
- advancing the science of meteorology, research and relevant applications
- enhancing fiscal discipline and resource mobilisation to ensure sustainability.

In its continued efforts to carry out its legal mandate, the work of SAWS is guided by five key strategic goals:

- ensuring the continued relevance of the organisation in delivering meteorological related products and services in compliance with all applicable regulatory frameworks
- ensuring effective management of stakeholder, partner and key client relations
- addressing the short-term viability and long-term sustainability of the entity's revenue and ensuring continued fiscal discipline
- ensuring continuous organisational effectiveness and efficiency
- ensuring the availability of strategy-driven human capital capacity for the performance of the SAWS.

### South African National Parks (SANParks)

SANParks' primary mandate is to oversee the conservation of South Africa's biodiversity, landscapes and associated heritage assets through a system of national parks. Its mandate is based on the following core values:

- conservation management through the national parks system
- constituency building and people-focused eco-tourism management
- corporate governance and sound business and operational management.

SANParks plays a significant role in the pro-

A pair of black eagles, nesting at the Walter Sisulu National Botanical Gardens in Roodepoort, Gauteng, has a webcam trained on their nest to broadcast the hatching of their chicks on the internet. The eagles are thought to have been nesting in the same spot for 35 years, raising chicks in a semi-urban environment. The webcam feed is available on [www.africam.com](http://www.africam.com).

motion of South Africa's nature-based tourism or ecotourism business, targeted at both international and domestic markets. The ecotourism pillar provides for the organisation's much-needed self-generated revenues from commercial operations.

The work of SANParks focuses on building strategic partnerships at international, national and local levels, in support of the conservation of the natural and cultural heritage of South Africa. It has to ensure that South Africans participate and get involved in biodiversity initiatives, and that all its operations have a synergistic existence with neighbouring communities for their educational and socio-economic benefit.

In 2012, SANParks was responsible for the management of 22 national parks.

## Environmental resources

### National botanical gardens

Sanbi manages the nine national botanical gardens, classified as conservation gardens, in five of South Africa's nine provinces. Together, they conserve more than 7 500 ha of natural

In 2012, two new velvet worm species were discovered in the Western Cape. The Department of Botany and Zoology at Stellenbosch University found significant differences in the make-up of the worms, which qualifies them as a new species. The worms live in rotten logs and are difficult to find. Researchers had previously identified unique species in Australia, New Zealand and Brazil, but the species found in the Western Cape is distinct. The velvet worm, which is a critical indicator of ecosystems health, is nocturnal, preying on small insects as part of the food chain.



vegetation. The gardens, which collectively attract over a million visitors a year, are signatories to the International Agenda for Botanic Gardens in Conservation, which was launched in 2000, and are founding members of the African Botanic Gardens Network.

The national botanical gardens are natural escapes close to some of the country's urban centres, offering visitors a taste of the country's uniquely rich and colourful biodiversity. They feature facilities such as restaurants, function rooms and conference venues and include activities such as hikes, picnics and shopping.

The botanical gardens are:

- Kirstenbosch, Cape Town
- Pretoria
- Harold Porter, Betty's Bay
- Walter Sisulu, Roodepoort
- Hantam, Nieuwoudtville
- Free State, Bloemfontein
- Karoo Desert, Worcester
- KwaZulu-Natal, Pietermaritzburg
- Lowveld, Nelspruit

### National Herbarium

The National Herbarium, situated within the Pretoria National Botanical Garden, houses the largest collection of scientific plant specimens in southern Africa, with over one million specimens.

The Crompton Herbarium in Cape Town focuses mainly on the flora of the winter-rainfall region of southern Africa, while the KwaZulu-Natal Herbarium in Durban primarily focuses on the flora of the subtropical eastern region of South Africa, in particular the flora of the province.

### Protected areas

The Convention on Biological Diversity, to which South Africa is a signatory, required that 10% of terrestrial and 20% of marine biodiversity be conserved by 2010.

There are a number of management categories of protected areas in South Africa, which conform to the accepted categories of the International Union for Conservation of Nature (IUCN).

By mid-2011, South Africa had 528 protected areas, of which 20 were marine, totalling 7,5 million ha or 6,2% of the land area.

South Africa aims to expand the conservation areas under formal protection to the international standard of 10% of the total area of the country. The department works closely with landowners to ensure their participation in the Stewardship Programme, which allows land owners to use their land for biodiversity and conservation purposes. This is aimed at expanding the country's conservation estate.

### Scientific reserves

Scientific reserves are sensitive and undisturbed areas managed for research, monitoring and the maintenance of genetic sources.

Access is limited to researchers and staff. Examples of such areas are Marion Island and the Prince Edward Islands near Antarctica.

### Wilderness areas

These areas are extensive, uninhabited and underdeveloped, and access is strictly controlled with no vehicles allowed. The highest management priority is the maintenance of the intrinsic wilderness character.

Wilderness areas include the Cederberg Wilderness Area and Dassen Island in the

Only about 6% of South Africa's land is covered by protected areas. The Mountain Zebra-Camdeboo Project aims to improve the conservation status of the land to create a corridor between the two national parks. It will provide private landowners with the option to protect their land from environmental threats while maintaining current land use.

The project's area covers about 530 000 ha and includes sections of four biomes – grassland, Nama Karoo, thicket and savanna – as well as six major vegetation types and a globally important birding area.

It is envisaged that the corridor will consist of a mosaic of SANParks-managed and privately owned and managed properties, which are expected to stimulate economic development and tourism while protecting the area from inappropriate development.

Western Cape, and the Baviaanskloof Wilderness Area in the Eastern Cape.

## National parks

South Africa's national parks are among the key drawcards for tourism in South Africa. They also play a major role in conservation.

South Africa has the following national parks:

- Addo Elephant National Park
- Agulhas National Park
- Augrabies Falls National Park
- Bontebok National Park
- Camdeboo National Park
- Garden Route (Tsitsikamma, Knysna and Wilderness) National Park
- Golden Gate Highlands National Park
- Karoo National Park
- Kgalagadi Transfrontier Park
- Kruger National Park
- Mapungubwe National Park
- Marakele National Park
- Mokala National Park
- Mountain Zebra National Park
- Namaqua National Park
- Table Mountain National Park (which incorporates the Cape of Good Hope, Table Mountain and Silvermine nature reserves)
- Tankwa Karoo National Park
- West Coast National Park.

SANParks is committed to contributing to economic growth and transformation by creating decent jobs and sustainable and quality livelihoods. National parks are integral to the country's job creation agenda, with more than 10 000 people already employed by the national parks.

Through the infrastructure development programme and EPWP, the organisation ensures that national parks are important components of economic stimulus through enterprise and social development, such as job creation.

## Transfrontier conservation areas (TFCAs)

A TFCA is a cross-border region. The conservation status of the areas within a TFCA ranges from national parks, private game reserves and communal natural-resource management

In August 2012, the Zoological Society of London and the World Conservation Union (IUCN) in a joint report, *Spin Less*, announced that a fifth of the world's invertebrates could be faced with extinction. The report indicated that earthworms, butterflies, bees, clams and corals could disappear from the Earth for ever if people didn't interact more carefully with the environment.

The IUCN's Survival Commission said in a statement that invertebrates were indispensable if life on Earth was to continue. A team of conservation scientists studied 12 000 invertebrates on the IUCN Red List, and found that 20% were on the verge of extinction. Invertebrates that live in fresh water are most at risk of extinction, followed by those that live on land and in the sea.

areas to hunting-concession areas.

Although fences, highways, railway lines or other barriers separate the constituent areas, they are managed jointly for long-term sustainable use of natural resources. Unlike in transfrontier parks, free movement of animals between the components of a TFCA is not always possible.

TFCAs aim to facilitate and promote regional peace, cooperation and socio-economic development. The success of TFCAs depends on community involvement. In turn, TFCAs provide local communities with opportunities to generate revenue.

The seven TFCAs are the:

- Ai-Ais/Richtersveld (Namibia, South Africa)
- Great Limpopo Transfrontier Park (Botswana, South Africa, Zimbabwe)
- Greater Mapungubwe (former Limpopo-Shashe)
- Kavango-Zambezi (Angola, Botswana, Namibia, Zambia, Zimbabwe)
- Kgalagadi Transfrontier Park (Botswana, South Africa)
- Lubombo Transfrontier Conservation and Resource Area (Mozambique, South Africa, Swaziland)
- Maloti-Drakensberg Transfrontier Conservation and Development Area (Lesotho, South Africa).

In July 2012, South Africa hosted the 11th BASIC Ministerial Coordination Meeting on Climate Change in Johannesburg. The meeting was aimed at implementing an agreement reached at the previous ministerial meeting held in New Delhi in March 2012. The BASIC group of countries consisting of Brazil, South Africa, India and China is playing an increasingly important role in international environmental governance.

### Biosphere reserves

Biosphere reserves exist in partnership with a range of interested landowners, and can incorporate development, provided it is sustainable, while still protecting terrestrial or coastal ecosystems.

The UN Educational, Scientific and Cultural Organisation's (Unesco) Man and the Biosphere Programme addresses the impact of man on the environment by studying the social, ecological and economic implications of biodiversity loss. It then takes steps to minimise this through the sharing of knowledge, research and monitoring, education and training and multilateral decision-making.

Biosphere reserves are nominated by their governments for inclusion in the Man and the Biosphere Programme.

Whether they are terrestrial, freshwater, coastal or marine in nature, all are experimental areas where different approaches to integrated environmental management (IEM) are tested. This is important as it helps to deepen knowledge of what works in conservation and sustainable development.

South Africa's biosphere reserves include:

- Vhembe, situated in the north-east of Limpopo, which includes the northern part of the Kruger National Park; the Makuleke Wetland, which is protected under the Ramsar Convention; the Soutpansberg and Blouberg biodiversity hot spots; and the Makgabeng Plateau.
- The 100 000-ha Kogelberg Reserve on the country's southern coast is in the middle of the Cape Floral Region and home to 1 880 different plant species, 77 of which are found only in this region.

- The Cape West Coast Biosphere Reserve starts in Cape Town in the southern suburb of Diep River and stretches up the west coast as far as the Berg River, encompassing parts of the Cape Floral Region. The reserve includes the Ramsar-protected Langebaan Lagoon as well as Dassen Island, which is home to a penguin colony.
- The Cape Winelands Biosphere Reserve includes a part of the Cape Floral Region, as well as the wine-growing region.
- In the north there is the Waterberg Biosphere Reserve, an area of some 400 000 ha in Limpopo. It is an important catchment area for the Limpopo Basin, with four large rivers originating within its borders – the Lephale, Mokolo, Matlabas and Magalakwena rivers.
- The Kruger-to-Canyons Biosphere Reserve stretches from the Kruger National Park to the Blyde River Canyon. It is an important conservation area as it covers three biomes.
- In November 2012, the Gouritz Cluster Biosphere Reserve was recognised by Unesco in terms of the Man and Biosphere Programme.

### World heritage sites

A Unesco World Heritage Site is a place (such as a forest, mountain, lake, desert, monument, building, complex or city) that is listed by Unesco as being of special cultural or physical significance. The programme catalogues, names, and conserves sites of outstanding cultural or natural importance to the common heritage of humanity. While each World Heritage Site remains part of the legal territory of the state wherein the site is located, Unesco considers it in the interest of the international community to preserve each site.

South Africa has seven world heritage sites proclaimed by Unesco:

- Robben Island: Situated 11 km offshore from Cape Town, the island is most famous as the place where Nelson Mandela was imprisoned. It is now home to the world-renowned Robben Island Museum and has become a popular tourist attraction.
- The iSimangaliso Wetland Park was listed

as South Africa's first World Heritage Site in December 1999 in recognition of its natural beauty and unique global values. The 332 000 ha park contains three major lake systems, eight interlinking ecosystems, 700-year-old fishing traditions, most of South Africa's remaining swamp forests, Africa's largest estuarine system, 526 bird species and 25 000-year-old coastal dunes – among the highest in the world. The name iSimangaliso means miracle and wonder.

- Cradle of Humankind consisting of the the hominid fossil sites at Swartkrans, Sterkfontein and Kromdraai: The world heritage status of Sterkfontein's fossil hominid sites was extended in July 2005 to include the Taung skull fossil site in North West and the Mokopane Valley in Limpopo. The Cradle of Humankind has one of the world's richest concentrations of hominid fossils, that provide evidence of human evolution over the past 3,5 million years. Found in Gauteng and North West, the fossil sites cover an area of 47 000 ha. The remains of ancient forms of animals, plants and hominids are encased in a bed of dolomite deposited around 2,5 billion years ago. In April 2010, a new species of hominid, *Australopithecus sediba*, estimated to be two million years old, was discovered in the Cradle of Humankind.
- Ukhahlamba-Drakensberg Park (a mixed natural and cultural site) is a world heritage site covering 242,813 ha (2 428 km<sup>2</sup>) of area. The park spans parts of both South Africa, in KwaZulu-Natal, and Lesotho. The park includes Royal Natal National Park, a provincial park, and Drakensberg National Park, which covers part of Drakensberg, the highest mountain in southern Africa. In November 2000, the uKhahlamba-Drakensberg Park was added to the World Heritage List. The park is also in the List of Wetlands of International Importance (under the Ramsar Convention).
- Mapungubwe Heritage Site: In September 2011, the Department of Environmental Affairs, SANParks and Coal of Africa Limited signed an historical Memorandum of Agree-

ment (MoA) as part of the environmental authorisation issued in accordance with Nema, 1998, to ensure the integrity of the Mapungubwe Cultural Landscape World Heritage Site. According to the MoA, the integrity of the World Heritage Site will be maintained through comprehensive biodiversity offset programmes, thereby optimising benefits to local communities.

- Cape Floral Region, the smallest of the six recognised floral kingdoms of the world, is an area of extraordinarily high diversity and is home to more than 9 000 vascular plant species, of which 69% are endemic. Much of this diversity is associated with the fynbos biome. The economical worth of fynbos biodiversity, based on harvests of fynbos products (e.g. wildflowers) and eco-tourism, is estimated to be in the region of R77 million a year.
- Richtersveld Cultural and Botanical Landscape: The site covers 160 000 ha of dramatic mountainous desert in the north-west of South Africa. It is the only area where the Nama still construct portable rush-covered domed houses, or *Iharu oms*.

### Habitat and wildlife management areas

These areas are subject to human intervention, based on research into the requirements of specific species for survival. They include conservancies; provincial, regional or private reserves created for the conservation of species habitats or biotic communities; marshes; lakes; and nesting and feeding areas.

In May 2012, government and landowners of the Vredefort Dome signed a Memorandum of Agreement, taking the site a step closer to becoming a new World Heritage Site and protected under South African law. The signing of the memorandum paved the way for the proclamation of the area and appointment of a management authority that will serve as a precursor for the development of an integrated management plan.

The site has been recognised on the Unesco Heritage List, being described as having outstanding universal value to humankind.

### Protected land and seascapes

These areas are products of the harmonious interaction of people and nature, and include natural environments protected in terms of the Environment Conservation Act, 1989 (Act 73 of 1989), scenic landscapes and historical urban landscapes.

### Sustainable-use areas

These areas emphasise the sustainable use of protected areas such as the Kosi Bay Lake System in KwaZulu-Natal.

Nature areas in private ownership are proclaimed and managed to curtail undesirable development in areas with high aesthetic or conservation potential.

Conservancies are formed to involve the ordinary landowner in conservation. Landowners can establish a conservancy where conservation principles are integrated with normal farming activities.

### Wetlands

The IUCN identifies wetlands as the third most important support system on Earth.

By 2012, about 115 000 wetlands, covering over four million hectares, comprising close to 4% of the country's total surface area, had been mapped in South Africa. They are part of the natural infrastructure for gathering, managing and delivering water for human use.

Rhino poaching statistics released in January 2013 by the Department of Environmental Affairs reveal that 668 rhinos were poached in South Africa in 2012. This represents an increase in the previous record of 448 animals killed for their horns in 2011. In March 2013, rhino poaching statistics indicated that the Kruger National Park remained the hardest hit, with 15 rhino poached for their horn since 20 February 2013. Twelve rhino had been poached in KwaZulu-Natal and North West provinces each, while eight had been poached in Limpopo and seven in Mpumalanga.

Of the 50 people arrested, 47 were alleged poachers and three had been charged with the illegal trade in rhino horn following their arrest in possession of three rhino horn, during a raid in Johannesburg in February 2013.

Wetlands support a range of specialised plant, insect and mammal life and also supply food, grazing, building and craft material to people. They are able to improve water quality, reduce flood impacts, control erosion and sustain river flows. Of special importance is the role wetlands play in ensuring a steady supply of clean water for communities and helping government save hundreds of millions of rands that would be required to set up purification plants/facilities.

South Africa was one of the first six countries to become a signatory to the Convention on Wetlands of International Importance, called the Ramsar Convention, when it came into force in 1975. It is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

The Department of Environmental Affairs is responsible for the South African Wetlands Conservation Programme, which ensures that South Africa's obligations in terms of the Ramsar Convention are met.

South Africa's Ramsar sites include:

- Barberspan
- Blesbokspruit Nature Reserve
- De Hoop Vlei
- De Mond (Heuningnes Estuary)
- Kosi Bay
- Langebaan
- Makuleke Wetlands
- Ndumo Game Reserve
- Ntsikeni Nature Reserve
- Nylsvley Nature Reserve
- Orange River Mouth Wetland
- Prince Edward Islands in Antarctica
- Seekoeivlei
- St Lucia
- turtle beaches and coral reefs of Tongaland
- Ukhahlamba-Drakensberg Park
- Verlorenvlei Nature Reserve
- Wilderness Lakes.

South Africa is seen as a leader in wetlands rehabilitation. Working for Wetlands is a government initiative to preserve the country's wetlands. It was launched in 2001, and since

then a number of wetlands have been rehabilitated. The damage to wetlands currently done can be reversed, as is seen at Rietvlei Dam in Gauteng.

The programme is implemented by Sanbi on behalf of the departments of environmental affairs; of agriculture, forestry and fisheries; and of water affairs. It forms part of the Government's EPWP, which seeks to draw unemployed people into the productive sector of the economy.

Government has pledged more than R75 million. Rehabilitation is ongoing, with attention to poverty-stricken areas being of major concern.

## Marine protected areas (MPAs)

MPAs conserve natural environments and assist in the management of fisheries by protecting and rebuilding economically important stocks. They are also used to develop and regulate coastal ecotourism opportunities.

Government shares joint responsibility for South Africa's MPAs with SANParks and Ezemvelo KwaZulu-Natal Wildlife.

South Africa's MPAs include the:

- Aliwal Shoal MPA, KwaZulu-Natal
- Betty's Bay MPA, Western Cape
- Bird Island MPA, Eastern Cape
- De Hoop MPA, Western Cape
- Dwesa-Cwebe MPA, Eastern Cape
- False Bay MPA, Western Cape
- Goukamma MPA, Western Cape
- Hluleka MPA, Eastern Cape
- iSimangaliso MPA, KwaZulu-Natal
- Langebaan Lagoon, Sixteen Mile Beach, Malgas Island, Marcus Island, Jutten Island MPA, Western Cape
- Pondoland MPA, Eastern Cape.
- Robberg MPA, Western Cape
- Sardinia Bay MPA, Eastern Cape

In June 2012, the Deputy Minister of Water and Environmental Affairs, Ms Rejoice Mabudafhasi, was recognised for her contribution to and leadership role in women and environmental issues at an award ceremony held during the Rio+20 United Nations Conference on Sustainable Development.

In September 2012, the second Eco-Logic Awards function was held at Maropeng. Companies and individuals were recognised in 12 categories for ecological practices that are making a difference in managing the planet. The winners were:

Biodiversity: Endangered Wildlife Trust  
 Climate change: Food and Trees for Africa  
 Eco-innovation: Bottlenox  
 Energy saving: RISO copiers  
 Recycling: Rocking the daisies  
 Water award: EcoWash  
 Youth award: Generation Earth  
 Eco Angel award: Marcelle Meredith of the NSPCA  
 Community award: Oyster Bay Reserve  
 Eco Warrior award: Braam Malherbe  
 Lifetime Achievement award: Clive Walker.

- Stilbaai MPA, Western Cape
- Table Mountain MPA, Western Cape
- Trafalgar MPA, KwaZulu-Natal
- Tsitsikamma MPA, Western Cape.

## Zoological gardens

Established in 1899 and given national status in 1916, the National Zoological Gardens (NZG) of South Africa in Pretoria is the largest zoo in the country and the only one with national status. Over 600 000 people visit it yearly.

It plays a major role in the conservation of wildlife, maintaining one of the largest animal collections in Africa, and has over 8 000 individual animal specimens representing over 500 species.

The species are managed across two facilities stretching into the provinces of Gauteng (Pretoria) and Limpopo (Mokopane). About 70% of the species are of African origin and 30% of global representation.

As a member of the World Association of Zoos and Aquariums and the African Association of Zoos and Aquaria, the NZG participates in several endangered species management programmes and successfully breeds several endangered species of both continental and global significance.

Among the endangered species the NZG contributes in conserving are the cheetah,

In September 2012, South Africa and Vietnam signed a Memorandum of Understanding (MoU) to address the ongoing poaching of rhinos.

The MoU on Cooperation in the Field of Biodiversity Conservation and Protection will cover cooperation between South Africa and Vietnam in the field of biodiversity management, law enforcement, compliance with the Convention on International Trade in Endangered Species and other relevant legislation.

rhino, ground hornbill, red-billed oxpecker and several endangered antelope species.

The 85-ha zoo in Pretoria houses 3 117 specimens of 209 mammal species, 1 358 specimens of 202 bird species, 3 871 specimens of 190 fish species, 388 specimens of four invertebrate species, 309 specimens of 93 reptile species, and 44 specimens of seven amphibian species.

The Johannesburg Zoological Gardens' core business is the accommodation, enrichment, husbandry and medical care of wild animals.

It also plays an important role in conservation projects of both indigenous and internationally endangered animals. The zoo joins other conservation organisations in programmes involving:

- wattled crane recovery
- amphibian conservation
- ground hornbill breeding and off-site surveys
- vulture conservation
- chimpanzee conservation with the Jane Goodall Institute

The Endangered Wildlife Trust is a major partner.

### Breeding centres

There are a number of game-breeding centres in South Africa. The NZG of South Africa is responsible for the management of the Lichtenburg Biodiversity Conservation Centre, which covers an area of some 6 000 ha, and the Mokopane Biodiversity Conservation Centre, covering 1 333 ha.

The two centres supplement the zoo's breeding programme for various endangered animals, and the zoo's own animal collection.

The Lichtenburg Biodiversity Conservation Centre houses, among other animals, Père David's deer, which is extinct in the wild, pygmy hippopotamus, white rhino, the endangered addax, and scimitar-horned and Arabian oryx. Large herds of impala, springbok, zebra, blesbok and red hartebeest also roam the area.

About 32 ha of the wetland area at the centre have been developed into a system of dams and pans, which serve as a natural haven for waterbirds such as spoonbills, kingfishers, ibises and herons.

The Mokopane Biodiversity Conservation Centre is home to an abundance of exotic and indigenous fauna such as lemur, the rare tsessebe, roan antelope and black rhino.

The De Wildt Cheetah and Wildlife Centre, situated near Pretoria, is best known for its highly successful captive-breeding programme that contributed to the cheetah being removed from the endangered list in the *South African Red Data Book – Terrestrial Mammals* in 1986.

De Wildt also breeds a number of rare and endangered African species. The most spectacular of these is the magnificent king cheetah, which is a true cheetah, but with a variation of coat patterns and colouring. De Wildt also plays a major role in breeding and releasing wild dogs. It has donated breeding nuclei of the highly endangered riverine rabbit and suni antelope to the Kruger National Park.

The De Wildt Vulture Unit is a rehabilitation and holding facility for injured, poisoned and disabled vultures.

The Hoedspruit Endangered Species Centre in Mpumalanga was established as a breeding programme for the then endangered cheetah.

The Cape of Good Hope Society for the Prevention of Cruelty Against Animals opened its first short-term wildlife rehabilitation centre in May 2012, offering 24-hour emergency service and short-term care to wild animals in need. Rehabilitation centres allow injured and sick wild animals to recover from trauma before being released back into the wild, or offer them a safe place to live the rest of their lives should they not be able to be returned to their natural habitat.

The centre caters for, among other animals, five species of vulture: Cape griffins as well as white-backed, hooded, whiteheaded and lap-pet-faced vultures. The centre is also known for its wild-dog breeding programme.

The Hoedspruit Research and Breeding Programme includes the rare black-footed cat, vulnerable African wild cat, ground hornbills (in cooperation with the NZG in Pretoria), bald ibis and the endangered blue crane. Elephant, white rhino, buffalo, caracal, sable antelope, bushbuck and tsessebe have also been cared for and rehabilitated there.

### Aquariums and oceanariums

There are aquariums in Pretoria, Port Elizabeth, Cape Town, Durban and East London.

The Aquarium and Reptile Park of the NZG in Pretoria is the largest inland aquarium in Africa, with the largest collection of freshwater fish. It is also the only aquarium in South Africa that exhibits a large variety of marine fish in artificial sea water and the only inland aquarium housing ragged-tooth sharks.

The Port Elizabeth Oceanarium is one of the city's major attractions. Exhibits include an underwater observation area, a dolphin research centre, various smaller tanks containing 40 different species of bony fish and two larger tanks that display sharks and stingrays. East London aquarium will be 82 years old in 2013, making it South Africa's oldest aquarium.

At the Two Oceans Aquarium situated at the Victoria and Alfred Waterfront, Cape Town, more than 3 000 specimens represent some 300 species of fish, invertebrates, mammals, birds and plants supported by the waters along the Cape coast.

The aquarium at uShaka Marine World in Durban incorporates both fresh and sea water species, and is the fifth-largest aquarium in the world by water volume. It comprises Sea World, Dolphin World, Beach World, and Wet and Wild World.

Sea World incorporates a unique shipwreck-themed aquarium, a penguin rookery and a 1 200-seater dolphin stadium, the largest dolphinarium in Africa.

### Snake and reptile parks

The Port Elizabeth Snake Park at Bayworld has a wide variety of South African and foreign reptiles, including tortoises, boa constrictors, pythons, crocodiles, lizards and deadly venomous snakes such as cobras, mambas and rattlers. Rare and threatened species, including the Madagascar ground boa, are housed in realistically landscaped glass enclosures.

The Aquarium and Reptile Park at the NZG in Pretoria houses 80 reptile species from all over the world.

The Hartbeespoort Dam Snake and Animal Park near Pretoria features one of the finest reptile collections in southern Africa. It offers seal shows and snake-handling demonstrations.

The Pure Venom Reptile Farm is one of the largest of South Africa's reptile parks. It is situated inland from Shelly Beach, on KwaZulu-Natal's South Coast.

The CrocRiver Enviro Park in Nelspruit is the largest facility of its type in Africa. The park offers, among other things, turtle, crocodile and fish ponds; the water monitor lizard pond; and the Desert House, in which a desert-like atmosphere has been created, and which is home to the reptile gallery where indigenous and exotic reptiles from all over the world are displayed.



The giant Moreton Bay wild fig tree of Australian origin (*Ficus macrophylla*) at the main entrance of the National Zoological Gardens in Pretoria now occupies a place on the Champion Tree List. The tree has the second-largest canopy of any single tree in South Africa. It is 27 m high and has a trunk circumference of 11,9 m. At its widest, the crown is 43,1 m. The tree is thought to have been planted more than 100 years ago.



Khamai Reptile Centre's primary aims are conservation, breeding of endangered reptiles and education. Located outside Hoedspruit in Mpumalanga, it offers a close-up look at many local as well as exotic snakes, crocodiles and lizards.

## Managing environmental resources

### Private sector involvement

In South Africa, numerous private bodies are involved in conservation activities. More than 400 organisations concentrate on conservation, wildlife and the general environment, while more than 30 botanical and horticultural organisations concentrate on the conservation of the country's fauna and flora. These include among others:

- BirdLife South Africa
- Botanical Society of South Africa
- Centre for Rehabilitation of Wildlife
- Conservation International
- Delta Environmental Centre
- Dolphin Action Protection Group
- EcoLink

The 2012 *Red List for Birds* issued by the International Union for Conservation (IUCN), indicated that three bird species in South Africa were under threat.

- The white-backed vulture, the most widespread and common vulture in Africa, was uplisted by two categories: from near-threatened to endangered.
- The grey crowned crane was uplisted from vulnerable to endangered.
- The crowned eagle, a widespread species in sub-Saharan Africa, was globally uplisted from least concern to near-threatened.

Birdlife South Africa also warned that mining activity near sensitive eco-systems was increasingly placing South Africa's birds under severe threat.

The IUCN *Red List of Threatened Species* (also known as the IUCN Red List or Red Data List), founded in 1963, is the world's most comprehensive inventory of the global conservation status of biological species.

- Endangered Wildlife Trust
- Ezemvelo KZN Wildlife
- Green Trust
- Keep South Africa Beautiful
- KwaZulu-Natal Sharks Board
- National Conservancy Association of South Africa
- Peace Parks Foundation
- Southern African Foundation for the Conservation of Coastal Birds
- Trees and Food for Africa
- Wildlife and Conservation Society of South Africa
- World Wildlife Fund of South Africa.

### Rhino poaching

In an effort to fight the escalation in rhino poaching, the National Biodiversity Investigators Forum was established specifically for multi-departmental cooperation and information-sharing with various law enforcement bodies.

In addition, the interim National Wildlife Reaction Unit will be established as a permanent unit and the South African National Defence Force is monitoring the 350-km national border in the Kruger National Park, as well as other borders with neighbouring countries. During 2013, an additional 150 rangers will be also be deployed to the Kruger National Park to add to the current 500, to address this crime.

The department will furthermore implement a decision to deploy conservation specialists at key designated ports of entry and exit through which the international trade in endangered species can be exported and imported.

### Marine pollution and sustainability

South Africa has one of world's busiest shipping routes and has experienced many oil spills over the years. It is estimated that 80% of the world's tanker traffic passes South Africa's coast.

The then Department of Environmental Affairs and Tourism developed the National Contingency Plan for the Prevention and Combating of Pollution from Ships, in consultation with the South African Maritime Safety Authority and the Department of Transport. This

includes disposing of, recovering or stabilising the spilt oil and rehabilitating the environment.

With 80% of the marine pollution emanating from land-based activities, the Department of Environmental Affairs will be implementing the national Programme of Action for land-based sources of pollution, while refining strategies for combating marine pollution from oil spills.

The department has embarked on a process to adopt a new protocol on land-based sources of marine pollution under the amended Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean.

The department has also developed the Cape Zone Oil Spill Plan.

### Protecting the coastline

To counter illegal activities along the coastline, as well as the country's 1 155 000-km<sup>2</sup> Exclusive Economic Zone (EEZ), the former Department of Environmental Affairs and Tourism boosted its compliance unit with the appointment of more than 80 fishery-control officers and 100 honorary fishery-control officers, after the implementation of the Honorary Fishery-Control Officers Policy.

The department took delivery of four environmental-protection vessels as part of measures to protect marine and coastal resources, namely the *Lillian Ngoyi*, *Ruth First*, *Victoria Mxenge* and *Sarah Baartman*. They patrol up to the 200 nautical-mile limit from the shore and the most remote reaches of the EEZ as well as around the Prince Edward Islands. The vessels also conduct multilateral patrols in the Southern African Development Community (SADC) coastal states.

### Vessel monitoring

The department is making it obligatory for fishing vessels to have satellite technology on board so its movements can be monitored.

Five coastal nations in the SADC have taken the innovative step of linking their vessel-monitoring systems. South Africa, Namibia, Angola, Mozambique and Tanzania have signed a Memorandum of Understanding that will allow

The Department of Environmental Affairs hosted the fifth People and Parks Conference in September 2012. The conference was inspired by the World Parks Congress, which emphasised the need to consider communities as key stakeholders in parks management under the theme *Benefits Beyond Boundaries*. The conference deliberated on the issue of resolving land claims, and outlined the areas of cooperation between government and communities in an attempt to resolve claims that are within protected areas.

More than R497 000 was made available by government for seven provinces to implement projects, an initiative that had led to over 4 874 employment opportunities.

them to share information about the movement of licensed boats along the southern African coast.

### Chemicals and waste management

South Africa has taken a number of steps to promote environmentally sound management of chemicals and waste throughout its life cycle, including being a party to a range of multilateral environment agreements and an active member in instruments on chemicals and waste. These include:

- the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
- the Stockholm Convention on Persistent Organic Pollutants
- the Montreal Protocol on Substances that Deplete the Ozone Layer
- Basel Convention on the Control of Transboundary Movement of Hazardous Wastes
- the Strategic Approach to International Chemicals Management which is governed by the International Conference on Chemicals Management.

South Africa has been playing a significant role in the ongoing negotiations on the Intergovernmental Negotiating Committee to Prepare a Globally Legally Binding Instrument on Mercury, including research on the coal dependent power/electric stations and on the situational analysis of mercury in the country.

In July 2012, the *SA Agulhas II* embarked on a 26-day shakedown cruise to the edge of the ice shelf in Antarctica and sailed back to Cape Town in August 2012.

A group of marine scientists from the Department of Environmental Affairs, the South African Weather Service, the Council for Scientific and Industrial Research, and the universities of Stellenbosch, Rhodes and Cape Town took part in the trip. Its purpose was to test all ship systems under full operational conditions and to train researchers. A wide variety of vertical and towed probes, nets and underwater photographic equipment was deployed and their associated on-board processing systems were fully tested.

In an effort to align fragmented legislation, the department established a National Multi-Stakeholder Committee for Chemicals Management to facilitate coordination.

Cabinet approved the National Waste Management Strategy (NWMS) in November 2011. The NWMS has eight key goals namely:

- promoting waste minimisation, re-use, recycling and recovery of waste
- ensuring effective and efficient delivery of waste services
- growing the contribution of the waste sector to the green economy
- ensuring that people are aware of the impact of waste on their health, well-being and the environment
- achieving integrated waste management planning
- ensuring sound budgeting and financial management for waste services
- providing measures to rehabilitate contaminated land
- establishing effective compliance with and enforcement of the Waste Act.

In February 2011, the National Domestic Waste Collection Standards came into effect to provide a uniform framework within which domestic waste should be collected in South Africa. The standards guide municipalities on how to provide acceptable, affordable and sustainable waste-collection services.

In assisting municipalities to accelerate waste collection services, the department has

undertaken a range of training programmes in 2011/12, including 325 landfill operators, 250 councillors and about 147 waste official and CFOs on the solid waste tariff model.

## Recycling

The National Recycling Forum (NRF) is a non-profit organisation created to promote the recovery and recycling of recyclable materials in South Africa. Members of the NRF include representatives of:

- the formal recycling industry in South Africa
- government departments
- regional recycling forums
- local government-based organisations
- local government utilities and co-opted advisory members

To promote the interests of its members and the formal recycling industry in South Africa, the NRF:

- provides a national communication forum for key players in the field of recycling
- interacts with central and provincial government to encourage the recycling of glass, paper, plastics, tin-plate steel, used oil and electrical and electronic waste
- facilitates the formation of regional forums that draw their memberships from enthusiastic and interested volunteers as well as small recyclers, in the major centres of South Africa.
- encourages the establishment of buy-back centres and drop-off points through the activities of its members in the various centres.

Collect-a-can, one of the oldest recycling initiatives in South Africa, has been instrumental in creating a culture of recycling in South Africa. It has obtained local and international acclaim for its contribution towards protecting the environment, as well as its significant contribution to job creation and poverty alleviation.

Since its inception in 1993, the recovery rate for used beverage cans for southern Africa has grown significantly from 18% in 1993, to 72% for 2011. Collect-a-Can has introduced millions of school children to the idea of caring for the environment through its schools competition. In addition, it annually pays out more than

R20 million to an estimated 100 000 collectors, most of whom have no other source of income.

In August 2012, the Integrated Industry Waste Tyre Management Plan of the Recycling and Economic Development Initiative of South Africa was gazetted for immediate implementation. The benefits of the plan include ensuring that the negative environmental impact of tyres are minimised, as well as ensuring coordinated industry action.

This approach will extend the lifespans of landfill sites at a time when land contestation is high and land availability for development of landfill sites is scarce.

### Climate change and air-quality management

As part of efforts to address climate change, the National Climate Change Response Policy was approved in October 2011, and was formally published as a White Paper in the *Government Gazette*.

The policy presents government's vision for an effective climate change response, and the long-term, just transition to a climate-resilient and lower carbon economy and society.

Government continues to engage actively and meaningfully in international climate change negotiations, specifically with the UNFCCC.

Air quality also remains an important and challenging environmental issue in South Africa. The legislation governing air-quality management in South Africa is the AQA, 2004.

Various technical and legislative tools have been developed to roll-out and monitor the implementation of national environmental management. These include, among others:

- National Framework for Air Quality Management
- air quality model by-laws
- Air-Quality Management Planning Manual
- National Ambient Air-Quality Standards and Listed Activities and the Minimum Emission Standards.

Several of these tools are currently under review to build momentum around the ongoing implementation of the AQA.

The South African Air-Quality Information System (Saaqis) contains the latest updated data of locations and can give the status of air quality or pollution for a specific day and time on their website: [www.saaqis.org.za](http://www.saaqis.org.za).

A number of air-quality monitoring stations, mostly in Mpumalanga, eThekweni Municipality, the City of Johannesburg and the City of Tshwane report to Saaqis.

### Environmental impact management

South Africa's environmental impact assessment (EIA) regulations came into effect in August 2010, signalling the start of the official implementation of a new regime aimed at improving the efficiency and effectiveness of EIA.

The EIA regulations:

- streamline the EIA process
  - introduce an approach where impact on the environment gets more attention
  - introduce a listing notice dedicated to activities planned for predefined sensitive areas.
- The Environmental Assessment Practitioners' (EAP) Association of South Africa aims to:
- achieve effective quality assurance in environmental assessment practice in South Africa
  - promote the empowerment of black and female professionals within the environmental assessment field
  - encourage continued professional development for EAPs in South Africa
  - promote awareness of the purpose and practice of environmental assessment in South Africa.

Under the theme *Green Economy: Does it Include You?*, Environment Month 2012 recognised the significance of the green economy as one of the key elements in government's New Growth Path, as well as in the Industry Policy Action Plan.

Celebrated every June, National Environment Month encourages citizens and businesses to make environmentally friendly choices. These include taking action such as reduce, reuse and recycle.

The Department of Environmental Affairs has put in place a new and improved EIA and management regime. In addition, the department is moving towards alternative approaches to environmental impact management.

There is a concerted effort by the department to move towards an integrated permitting system. The department is already fully integrating waste and EIA permitting processes and some provinces have followed suit.

### National Environmental Impact Assessment and Management Strategy (EIAMS)

The National EIAMS was launched in February 2010. At the 10 Years of EIA in South Africa Conference in 2008, it was agreed that the system giving effect to the objectives of IEM, as indicated in Section 23 of Nema, 1998, was inadequate. It was further agreed that an EIAMS should be formulated for South Africa. A desired future was sketched and agreement reached that the strategy should be developed and implemented to map the road to achieving such a system.

The EIAMS consists of voluntary and regulated instruments in the next five years, where:

- regulated EIA is used only when it is the most appropriate tool
- EIAM occurs within a strategic context of environmentally informed spatial instruments, sector strategies and policies

Estimates from the World Wide Fund for Nature predict that total paper consumption is set to rise from the current 400 million tons to about 500 million tons by 2020. South African businesses are urged to recycle unwanted paper to help reduce their environmental impact.

According to the Paper Recycling Association of South Africa, for every ton of paper recycled:

- three cubic metres of landfill space is saved, reducing municipalities' transport costs and freeing up landfill space
- 17 trees are saved, which means they could be used in other ways
- energy saved from paper recycling in South Africa per year is sufficient to provide electricity to 512 homes for a year.

- authorities have enough capacity with skilled and experienced officials
- other stakeholders have the capacity and skills to ensure maximum impact on the effectiveness and efficiency of the strategy
- government regulatory processes have been integrated and aligned
- government, EAPs, developers, and the community are equally committed to making it work.

### 4x4 regulations

The Strategy Towards Co-Regulation of the Off-Road Sector in South Africa is aimed at minimising the impact of off-road driving on the environment by giving direction to off-road users and owners to develop and use inland routes in sensitive areas responsibly. The strategy applies to the inland recreational use of off-road vehicles, including two-wheel, three-wheel and four-wheel vehicles, which include 2x4 and 4x4 motor vehicles, quad bikes and motorbikes.

This strategy was approved by the Minister in May 2009, who then mandated the National Off-Road Workgroup to develop an implementation framework for the strategy. A key outcome of the strategy was the development, drafting and implementation of national norms and/or standards, with a supportive enabling legislative framework, to facilitate environmental compliance, responsible tourism and long-term sustainability of the off-road industry.

The banning of off-road vehicles in coastal zones has enabled several shore-breeding birds, especially the Damara tern and the African black oystercatcher, to breed successfully on beaches again. The number of loggerhead and leatherback turtles hatching successfully on KwaZulu-Natal's northern beaches also increased since the ban was enforced.

### Coastal management

Oceans cover three quarters of the Earth, hence the importance of protecting it.

There is recognition of the challenges regarding the management of ocean spaces in South Africa's adjacent ocean areas.

Of the 200 estuaries found along the South African coast, 25% are in a degraded state. This is due to inappropriate developments along the banks of estuaries and in their catchment areas. The department will focus its attention proactively on these degraded systems and prioritise developing management plans to improve the functioning of estuaries in associated hinterlands.

The Buoy Oceans Monitoring System, which will provide information on the state of the oceans at Storms River in the Tsitsikamma National Park, is the first in a series of observation and monitoring platforms, which will form the basis of the South African National Oceans and Coastal Monitoring System.

The Department of Environmental Affairs also reviewed the Recreational Water Quality Guidelines for Coastal Waters. The ultimate intention is to develop effective early warning systems to pre-empt the catastrophic impacts of possible hazards.

Between 2011 and 2012, the department deployed a range of new equipment on and around the coast of South Africa covering the coastline, shelf waters, the deeper continental slope environment, very deep offshore regions and coastal weather systems.

### Erosion and desertification

According to the UN Environment Programme, desertification affects 900 million people in 99 countries as 24 Mt of topsoil are lost to erosion annually. The resultant land degradation costs Africa about US\$9 billion every year.

Most South African soil is unstable. The country loses an estimated 500 million tons of topsoil annually through erosion caused by water and wind.

About 81% of South Africa's total land area is farmed. However, only 70% of this area is suitable for grazing. Overgrazing and erosion diminish the carrying capacity of the veld and lead to land degradation. This process has already claimed more than 250 000 ha of land in South Africa.

South Africa is a signatory to the United Nations Convention to Combat Desertification

Rhinos were named the 2012 Newsmaker of the Year by the National Press Club in Pretoria. The onslaught on South Africa's rhino population has resulted in much debate throughout the world and has united people to rally behind campaigns against their poaching.

A record number of 668 rhinos were poached in 2012 – one every 13 hours. It is critical for governments, companies, individuals and the media to take action to stop the killing of rhinos.

(UNCCD), which was ratified in September 1997. The main objectives of the convention include cooperation between governments, organisations and communities to accomplish sustainable development, especially where water resources are scarce.

The purpose of the convention is to support member countries in Africa to prevent desertification and its consequences. These countries support one another at technical and scientific level, as they share similar climatic conditions.

South Africa also acts as coordinator for the Valdivia Group for Desertification.

The group consists of Australia, New Zealand, Argentina, Chile, Uruguay, South Africa and Brazil. The aim is to, among other things, foster scientific and technological cooperation.

South Africa has introduced legislation such as the Nemba, 2004 to promote the conservation of biodiversity, and fight desertification and land degradation.

In September 2012, the Department of Environmental Affairs: Integrated Coastal Management Act, 2008 (Act 24 of 2008) was shortlisted for the prestigious 2012 World Future Policy Award.

The award is granted by the World Future Council, which chooses one topic on which policy progress is particularly urgent. The 2012 award was dedicated to exemplary coastal and ocean policies and for the theme, the council partnered with the United Nations Secretariat of the Convention on Biological Diversity, the Global Environment Facility and the Food and Agriculture Organisation of the United Nations, with support from the Okeanos Foundation for the Sea.

As part of the UN international campaign to tackle global environmental deterioration and in particular combat dry land degradation, which cover up to one-quarter of the world's land surface, the UN has designated 17 June as the World Day to Combat Desertification. This date marks the anniversary of the adoption of the UNCCD. The theme for 2012 was *Healthy Soil Sustains Your Life: Let's go Land Degradation Neutral*.

The observance of the World Day to Combat Desertification was celebrated one week before the Rio+20 Conference, in Rio de Janeiro, Brazil in June 2012.

## Biodiversity

Biodiversity plays a crucial role in sustainable development and poverty eradication.

In February 2013, South Africa ratified the Nagoya Protocol, which provides for measures to regulate the use of the indigenous fauna and flora of a country as well as their associated traditional knowledge.

South Africa was the first country in 2013 and the 12th country overall to ratify the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation to the Convention on Biological Diversity. South Africa became party to the Convention on Biological Diversity in 1995.

The Nagoya Protocol is a legally binding agreement outlining a set of terms prescribing how one country will gain access to another country's genetic resources and how the benefits derived will be shared.

In October 2012, the Green Building Council of South Africa officially launched the Green Star SA Public and Education Building rating tool at its annual convention in Cape Town. The tool will be used to assess and assign a rating based on the environmental merits of new or significantly refurbished public and education building developments. It consists of eight environmental-impact categories for assessment and one innovation category with ratings possible at the design and post-construction phases.

South Africa is the third most biodiverse country in the world, after Indonesia and Brazil. These countries harbour most of the Earth's species and collectively contain more than two thirds of global biodiversity.

South Africa is home to approximately 24 000 species, around 7% of the world's vertebrate species, and 5,5% of the world's known insect species (only about half of the latter have been described).

In terms of the number of endemic species of mammals, birds, reptiles and amphibians, South Africa ranks as the fifth richest country in Africa and the 24th richest in the world.

Marine biodiversity is also high, with more than 11 000 species found in South African waters, which is about 15% of global species. More than 25% of these species (or 3 496 species) are endemic to South Africa, many of which are threatened, especially in river ecosystems (82%) and estuaries (77%).

As a biodiversity-rich country, South Africa is committed to the conservation and sustainable management of biological resources and is a signatory to the following biodiversity-related multilateral agreements:

- Convention on Biological Diversity Cartagena Protocol on Biosafety
- Ramsar Convention
- Convention on International Trade in Endangered Species (Cites)
- UNCCD
- Convention on Migratory Species.

The National Biodiversity Strategy and Action Plan (NBSAP) is aimed at establishing a framework and plan of action for the conservation and sustainable use of South Africa's biodiversity and the equitable sharing of benefits derived from this use.

A scientific, systematic biodiversity assessment for the country was carried out in 2004 to spatially support the NBSAP, titled the National Spatial Biodiversity Assessment (NSBA).

The NSBA was updated in 2012, forming the National Biodiversity Assessment (NBA 2011), with many significant findings requiring conservation action.

The NBA 2011 provides a new national map of areas that are important for climate change resilience, supporting functional, stable landscapes in the long term.

In addition, marine and coastal habitat types and wetland ecosystem types have been identified and mapped for the first time, and the estuarine functional zone has been mapped for the first time for all estuaries. The NBA 2011 will lay the foundation for the revision of the NBSAP.

The National Biodiversity Framework (NBF), published in 2009, provides a framework to coordinate and align the efforts of the many organisations and individuals involved in conserving and managing South Africa's biodiversity, in support of sustainable development. The NBF is a requirement of the Nemba, 2004.

Three internationally recognised biodiversity hotspots (areas with especially high concentrations of biodiversity, which are under serious threat) are found in South Africa. They are the:

- Cape Floral Kingdom (equivalent to the fynbos biome)
- Succulent Karoo (shared with Namibia)
- Maputaland-Pondoland-Albany Centre of Plant Endemism, which stretches from the Albany Centre in the Eastern Cape, through the Pondoland Centre of Plant Endemism and KwaZulu-Natal, the eastern side of Swaziland and into southern Mozambique and Mpumalanga.

The Succulent Karoo Biome is one of only two arid biodiversity hotspots in the world, the other being the Horn of Africa.

There are eight major terrestrial biomes, or habitat types, in South Africa, which are divided into 70 veld types.

## National biodiversity biomes

### Savanna Biome

The Savanna Biome is the largest biome in southern Africa, occupying 46% of its area, and over a third of South Africa. It is an area of mixed grassland and trees, and is generally known as bushveld.

In June 2012, SANParks launched the second phase of the SANParks Kudu Green School Initiative at the Pilanesberg National Park. This environmental programme was started in 2010, targeting urban schools to enable learners to understand climate's influence on society, as well as appreciation of their environment.

In the Northern Cape and Kalahari sections of this biome, the most distinctive trees are the camel thorn (*acacia erioloba*) and the camphor bush (*tarchonanthus camphoratus*).

In Limpopo, the portly baobab (*adansonia digitata*) and the candelabra tree (*euphorbia ingens*) dominate. The central bushveld is home to species such as the knob thorn (*Acacia nigrescens*), bushwillow (*combretum spp.*), monkey thorn (*acacia galpinii*), mopani (*colophospermum mopane*) and wild fig (*ficus spp.*). In the valley bushveld of the south, euphorbias and spekboom trees (*portulacaria afra*) dominate.

Abundant wild fruit trees provide food for many birds and animals in the Savanna Biome. Grey loeries, hornbills, shrikes, flycatchers and rollers are birds typical of the northern regions.

The subtropical and coastal areas are home to Knysna loeries, purple-crested loeries and green pigeons. Raptors occur throughout the biome. The larger mammals include lion, leopard, cheetah, elephant, buffalo, zebra, rhinoceros, giraffe, kudu, oryx, waterbuck, hippopotamus and many others.

About 8,5% of the biome is protected. The Kruger National Park, Kgalagadi Transfrontier Park, Hluhluwe-Umfolozi Park, iSimangaliso Wetlands Park and other reserves lie in the Savanna Biome.

### Nama-Karoo Biome

The Nama-Karoo is the third-largest biome in South Africa, covering about 20,5% of the country or more than 260 000 km<sup>2</sup>. It stretches across the vast central plateau of the western half of the country. This semi-desert receives little rain in summer.

Rainfall varies from about 200 mm a year in the west to 400 mm a year in the north-east.



Summer is very hot and winter is very cold with frequent frost.

Most of the plants are low shrubs and grass. Many plants are deciduous. Trees such as the sweet thorn (*acacia karoo*) are usually only found along rivers or on rocky hillsides.

Common animals include the bat-eared fox, ostrich, spring hare, tortoises and brown locust. The riverine rabbit is a threatened species found in the Nama-Karoo Biome.

This biome includes the Namaland area of Namibia, and the central Karoo area of South Africa.

Because of low rainfall, rivers are non-perennial. Cold and frost in winter and high temperatures in summer demand special adaptation by plants.

Only 1% of the Nama-Karoo Biome falls within officially protected areas, of which the Karoo and Augrabies national parks are the largest.

Overgrazing and easily eroded soil surfaces are causing this semi-desert to advance slowly on the neighbouring savanna and grassland biomes.

### Grassland Biome

The Grassland Biome is the second-largest biome in South Africa, covering an area of 339 237 km<sup>2</sup> and occurring in eight of South Africa's nine provinces. It is one of the most threatened biomes in South Africa, with 30% irreversibly transformed and only 1,9% of the biodiversity target for the biome formally conserved.

The Grassland Biome provides essential ecosystem services, such as water production and soil retention necessary for economic development. It holds important biodiversity of global and domestic significance and value.

Trees are scarce and found mainly on hills and along riverbeds. Karee (*rhus lancea*), wild currant (*rhus pyroides*), white stinkwood (*celtis africana*) and several acacia species are the commonest.

The Grassland Biome has the third-largest number of indigenous plant species in the country.

Eight mammal species endemic to South Africa occur in the wild in this biome.

The area is internationally recognised as an area of high species endemism for birds. Birds commonly found in the area include the black korhaan, blue crane and guinea-fowl.

### Succulent Karoo Biome

The Succulent Karoo Biome covers a flat to gently undulating plain, with some hilly and "broken" veld, mostly situated to the west and south of the escarpment, and north of the Cape Fold Belt.

One of the natural wonders of South Africa is the annual blossoming of the Namaqualand wild flowers (mainly of the family *asteraceae*), which transforms the semi-desert of the Northern Cape into a fairy land. After rain, the drab landscape is suddenly covered from horizon to horizon with a multicoloured carpet of flowers (from August to October, depending on the rainfall).

This is a winter-rainfall area with extremely dry and hot summers. Succulents with thick, fleshy leaves are plentiful. Most trees have white trunks to reflect the heat.

The quiver tree (*aloe dichotoma*) and the human-like elephant's trunk (*pachypodium namaquanum*) are prominent in the Richtersveld. Grass is scarce.

The animal life is similar to that of neighbouring biomes (Fynbos and Nama-Karoo).

The biome includes 2 800 plant species at increased risk of extinction.

### Fynbos Biome

The Fynbos Biome is one of the six accepted floral kingdoms of the world. This region covers only 0,04% of the Earth's land surface.

Fynbos, which is found mainly in the Western Cape, is the name given to a group of evergreen plants with small, hard leaves (such as those in the Erica family). It is made up mainly of the protea, heathers and restio, and incorporates diverse plant species (more than 8 500 kinds, of which more than 6 000 are endemic).

The Fynbos Biome is famous for the protea, which is South Africa's national flower. The

biome also contains flowering plants now regarded as garden plants, such as freesia, tritonia, sparaxis and many others.

Protected areas cover 13,6% of the Fynbos Biome and include the Table Mountain and Agulhas national parks.

This biome is not very rich in bird and mammal life, but does include the endemic Cape grysbok, the geometric tortoise, the Cape sugarbird and the protea seed-eater. baboon, honey-badger, caracal, rhebuck and several types of eagle and dassies are found in the mountains.

### Forest Biome

South Africa's only significant natural forests are those of Knysna and Tsitsikamma in the Western and Eastern Cape respectively.

Other reasonably large forest patches that are officially protected are in the high-rainfall areas of the eastern escarpment (Drakensberg mountains), and on the eastern seaboard. Forest giants such as yellowwood (*podocarpus spp.*), ironwood (*olea capensis*) and lemonwood (*xymalos monospora*) dominate.

The indigenous forests are a magical world of ferns, lichens and colourful forest birds such as the Knysna loerie, the endangered Cape parrot and the rameron pigeon. Mammals include the endangered samango monkey, bushpig, bushbuck and the delicate blue duiker.

### Thicket Biome

The Thicket Biome is the second-smallest biome in South Africa, and is known for its high biodiversity.

Subtropical thicket ranges from closed shrubland to low forest, dominated by evergreen succulent trees, shrubs and vines.

It is often impenetrable and has little herbaceous cover. Roughly 20% of the species in the Thicket Biome are endemic to the biome.

The Thicket Biome, which is predominantly in the Eastern Cape, supports four species of tortoise: the leopard tortoise (*geochelone pardalis*), angulate tortoise (*chersina angulata*), tent tortoise (*psammobates tentorius*) and parrot-beaked tortoise (*homopus areolatus*).

### Desert Biome

True desert is found under very harsh environmental conditions, which are even more extreme than those found in the Succulent Karoo and the Nama-Karoo biomes. The climate is characterised by summer rainfall, but also by high levels of summer aridity. Rainfall is highly variable from year to year. Desert is found mostly in Namibia, although it does occur in South Africa in the lower Orange River Valley.

The vegetation of the Desert Biome is characterised by the dominance of annual plants (often annual grasses). This means that after a rare season of abundant rain, the desert plains can be covered with a sea of short annual grass, whereas in drier years, the plains appear bare with annual plants persisting in the form of seeds.

Perennial plants are usually encountered in specialised habitats associated with local concentrations of water. Common examples of such habitats are broad drainage lines or washes. Nearer the coast, coastal fog also governs the distribution of certain species commonly associated with the desert.

The Desert Biome incorporates abundant insect fauna, which includes many tenebrionid beetles, some of which can use fog water. There are also various vertebrates, including reptiles, springbok, ostrich, gemsbok, snakes and geckos.

Some areas in this Biome are formally protected in the Richtersveld National Park.

### International cooperation

South Africa has signed several international conventions, treaties, protocols and other agreements, which has strongly regarding the principles of sustainable development.

These multilateral environmental agreements include among others, the:

- Convention on Biological Diversity (ratified in 1995)
- Cartagena Protocol on Biosafety (South Africa became a party in 2003)
- Kyoto Protocol (signed in 2003)
- UN Convention to Combat Desertification

- (signed in 1995, ratified in 1997)
- World Heritage Convention (ratified in 1997)
  - Convention on Wetlands of International Importance (Ramsar Convention) (ratified in 1975)
  - Convention on the Conservation of Migratory Species (acceded in 1991).

### **United Nations Framework Convention on Climate Change (UNFCCC)**

South Africa ratified the UNFCCC in 1997, which is aimed at:

- implementing urgent action, from 2013 to 2020, including the adoption of a second commitment period under the Kyoto Protocol; and a number of institutional mechanisms such as the Green Climate Fund
- acknowledging the inadequate commitments to reduce emissions made thus far; a work programme was agreed upon to increase pre-2020 levels of ambition
- action for the future with the negotiation of a legal agreement for the period beyond 2020.

The UNFCCC entered into force in 1994. The Conference of the Parties (COP) to the UNFCCC has been meeting annually to assess progress in dealing with climate change. The COP is the supreme body of the convention and is its highest decision-making authority.

With 195 parties, the UNFCCC has near universal membership and is the parent treaty of the 1997 Kyoto Protocol. The Kyoto Protocol has been ratified by 193 of the UNFCCC parties.

Under the protocol, 37 states, consisting of highly industrialised countries and countries undergoing the process of transition to a market economy, have legally binding emission limitation and reduction commitments.

The ultimate objective of both treaties is to stabilise greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system.

The launch of the negotiation to shape the new global climate change agreement and first discussions on how to raise ambition took place at the UNFCCC in Bonn in May 2012,

In 2012, South African Airways joined an internationally benchmarked and transparent carbon offset programme that will enable passengers to make voluntary contributions to offset the effects of climate change. Customers can buy carbon offset credits with their air tickets in a single transaction on [www.flysaa.com](http://www.flysaa.com).

which prepared decisions for adoption at the UNFCCC in Qatar later in 2012.

One of the central outcomes of the meeting in South Africa was to pave the way for a legal agreement under the UN Climate Convention applicable to all parties, to be completed by 2015 and to come into effect from 2020.

### **United Nations Commission on Sustainable Development (CSD)**

The UN CSD was established by the UN General Assembly in December 1992 to ensure effective follow-up of the UN Conference on Environment and Development, also known as the Earth Summit.

From its inception, the CSD was highly participatory in structure and outlook, by engaging in its formal proceedings a wide range of official stakeholders and partners through innovative formulae.

At the UN Conference on Sustainable Development (Rio+20), member states agreed to establish a high-level political forum that will subsequently replace the Commission on Sustainable Development.

### **Convention on International Trade in Endangered Species of Wild Fauna and Flora (Cites)**

South Africa was a founding member of the Cites Treaty, which was adopted on 3 March 1973, but only came into force on 1 July 1975.

Signed by 149 countries, Cites is an international agreement between governments to protect endangered species against over-exploitation through regulations regarding imports and exports and in some cases prohibiting trade.

Cites was drafted as a result of a resolution adopted in 1963 at a meeting of members of the IUCN. Today, it accords varying degrees

of protection to more than 30 000 species of animals and plants, whether they are traded as live specimens, fur coats or dried herbs.

### Montreal Protocol on Substances that Deplete the Ozone Layer

16 September 2012 marked the 25th anniversary of the Montreal Protocol. This date coincides with the International Day for the Preservation of the Ozone Layer, the UN commemorative day that marks the date when the treaty was established in 1987.

The theme for the 2012 celebration, *Protecting our Atmosphere for Generations to Come*, emphasised the extraordinary collaboration and environmental benefits achieved by the international community through the operation of the Montreal Protocol.

The Montreal Protocol is an international treaty designed to protect the ozone layer by phasing out the production and consumption of numerous substances responsible for ozone depletion. The protocol has been recognised as a global success, demonstrated by the massive elimination of production and consumption of chlorofluorocarbons (CFCs), halons, carbon tetrachloride, methyl chloroform, and chlorobromomethane worldwide since it came into force in 1987.

South Africa, which became a signatory to the Montreal Protocol in 1990, has phased out CFCs, halons, methyl chloroform and carbon tetrachloride.

This makes it the only developing country in the world that has achieved so much in line with the phase-out schedule for developed countries. Although South Africa is classified as a developing country, its consumption of these substances is equal to that of some developed countries.

### World Summit on Sustainable Development (WSSD)

South Africa hosted the WSSD in September 2002 in Johannesburg. The agreements reached then are a guide to action that will take forward the UN Millennium Summit Declaration's goal of halving world poverty by 2015,

and will incorporate decisions taken by world bodies since the Rio Earth Summit in 1992.

The most notable success was getting the world to turn the UN Millennium Declaration into a concrete set of programmes and to mobilise funds for these programmes.

Targets set at the summit will have an enormous impact, including the following:

- the number of people without basic sanitation and access to safe drinking water to be halved by 2015
- collapsed fish stocks to be restored by 2015
- chemicals with a detrimental health impact to be phased out by 2020
- energy services to be extended to 35% of African households over the next 10 years.

### United Nations Conference on Sustainable Development (Rio+20)

Rio+20 refers to the UN Conference on Sustainable Development which took place in Rio de Janeiro, Brazil in June 2012. The meeting took place 20 years after the landmark 1992 Earth Summit in Rio, when more than 108 heads of state agreed to work together to develop national strategies to reduce carbon emissions, stabilise greenhouse gas, protect forests from destruction, and pay for their share of the damage caused to the Earth through pollution.

At the Rio+20 Conference, world leaders, along with thousands of participants from the private sector, NGOs and other groups, came together to shape how countries could work together to reduce poverty, advance social equity and ensure environmental protection on an increasingly crowded planet.

The official discussions focussed on two main themes: how to build a green economy to achieve sustainable development and lift people out of poverty; and how to improve international coordination for sustainable development.

The most important thing to come out of the Rio+20 talks was that 50 of the 193 member states of the UN have launched new energy strategies, while private investors have pledged more than US\$50 billion to help carry

out his goal to double the share of global renewable energy and the rate of energy efficiency improvement by 2030.

### **Urban environmental management**

The Urban Environmental Management Programme is a partnership between 11 government institutions, from all three spheres of government, namely national, provincial and municipal. The programme alleviates poverty through improved service delivery within the environmental management of urban areas.

Started in April 2006, the programme is a continuation of more than 10 years of environmental collaboration between South Africa and Denmark.

### **Conclusion**

Following the approval of the National Climate Change Policy by Cabinet in 2011, the department's work going forward is geared towards ensuring the implementation of the policy, and meeting the ambient air-quality standards.

An area of great concern to the environment sector is the plundering of natural resources, especially the ongoing slaughtering of the rhino population – a grave reality that calls for drastic measures.

The latest statistics show that 32 rhinos were killed in South Africa in January 2013 alone, of which 18 were poached in the Kru-

ger National Park, six in North West and five in KwaZulu-Natal. In 2012, a record number of 668 rhinos were killed.

The department is increasing its capacity to address current and future potential wildlife crimes and will continue to use all the legal instruments and other resources at its disposal nationally to stop this scourge.

Internationally, it will continue to play an active role in supporting and contributing towards global forums, including Interpol's Wildlife Crime meetings, the Cites Rhinoceros Task Force, the regional Rhino and Elephant Security Group and other rhino management groups and initiatives.

Another top priority for the department over the medium term is to provide support to local governments in the areas of air-quality management, waste management, biodiversity management, coastal planning and open-space planning.

The department will also focus on strengthening compliance and enforcement activities; drawing linkages between climate change, the green economy and sustainable development; aligning governance systems with the new outcomes approach; and paying particular attention to ensuring that environmental assets and natural resources are valued, protected and continually enhanced.

## Acknowledgements

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*Business Report*

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*Estimates of National Expenditure, 2012*, published by National Treasury

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*The Times*

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