



Environment

The South African Government remains committed to contributing to finding solutions to the problem of global warming, as its effects will be felt particularly by the developing countries. South Africa participated in the World Wide Fund Living Plan Conference, which took place in Johannesburg in November 2013. Government's focus on the green economy was the basis for a lot of policy positioning in the country's economic cluster.

Although it has a land surface area of 1,2 million km² – 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.

At regional level, the provincial conservation agencies are major role players, and independent statutory organisations such as South African National Parks (SANParks) and the South African National Biodiversity Institute (Sanbi) are valuable partners in the country's conservation efforts.

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 and is 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
- Convention to Combat Desertification
- Convention on Migratory Species
- Nagoya Protocol.

Important dates:

World Wetlands Day: 2 February

National Water Week: 19 to 25 March

Earth Day: 20 March

World Water Day: 22 March

World Meteorological Day: 23 March

World Environment Day: 5 June

World Oceans Day: 8 June

World Desertification Day: 17 June

National Arbour Week: 1 to 7 September

International Day for the Protection of the Ozone Layer: 16 September

World Tourism Day: 27 September

World Habitat Day: 4 October

National Marine Day: 20 October

Projects, programmes and initiatives

South Africa's Green Economy Modelling Report

Focusing on four of the nine focus areas of a green economy (natural resource management, agriculture, transport and energy), the report explores the question of whether equal or higher growth could be attained with a more sustainable, equitable and resilient economy. As a developing country, South Africa is an emerging market with an abundant supply of natural resources, ranking as the third most mega-diverse country in the world. As such, there is a need to balance economic and other development goals with those of environmental preservation. *The Green Economy Modelling Report* was launched in 2013.

In partnership with the United Nations (UN) Environment Programme (UNEP) and with support from the UN Development Programme (UNDP), the Department of Environmental Affairs (DEA) embarked on developing a green economy model for South Africa.

South African Carbon Disclosure Project (CDP)

According to the CDP Report of November 2013, leading South African corporates performed well ahead of the global norm in reporting their carbon emissions, with 83 of the companies making up the JSE 100 participating in the seventh edition of the CDP – the second-highest response rate after Europe, where 90% of companies responded.

Fears are increasing over future climate change impacts with more extreme weather events. There is also growing corporate awareness of the need to assess physical risks posed by climate change and to build resilience. For investors, the risk of stranded assets has been brought to the fore by the work of Carbon Tracker. They calculate around 80% of coal, oil and gas reserves are unburnable, if governments are to meet global commitments to keep the temperature rise below 2°C. This has serious implications for institutional investors' portfolios and valuations of companies with fossil fuel reserves. The performance is higher than the 81% of the Global 500 sample and well ahead of their BRICS-bloc counterparts, with 56% of the Brazil 80, 19% of the China 100, 27% of the India 200 and 18% of the Russia 50 responding.

Role players

South African National Biodiversity Institute

Sanbi is South Africa's official body for facilitating access to the Adaptation Fund, set up to help developing countries cope with climate change.

In June 2013, South Africa launched a R300-million training, mentoring and workplace-based learning project aimed at building a pool of young, capable professionals for the country's biodiversity and natural resource management sector.

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 the 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.

iSimangaliso Wetland Park

The Lake St Lucia System is the most important estuary and a key nursery for fish on the southeast African coast.

The iSimangaliso Wetland Park covers 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.

Areas of conservation Protected areas

By mid-2013, South Africa had 528 protected areas, of which 20 were marine, totalling 7,5 million ha or 6,2% of the country's 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.

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

Biomes

There are eight major terrestrial biomes, or habitat types, in South Africa. These biomes are divided into 70 veld types. The biomes are the Savanna, Nama-Karoo, Succulent Karoo, Grassland, Fynbos, Forest, Thicket and Desert. The Fynbos Biome is one of only six floral kingdoms worldwide.

South African National Parks

SANParks' primary mandate is to oversee the conservation of South Africa's biodiversity, landscapes and associated heritage assets through a system of national parks.

The national parks are:

- Addo Elephant National Park
- Agulhas National Park
- Ai-Ais/Richtersveld Transfrontier 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 the leading conservation authority in all national parks around South Africa and responsible for 3 751 113 ha

of protected land in 20 national parks. A transfrontier conservation area (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 areas to hunting-concession areas. TFCAs allow tourists easy movement across international boundaries into adjoining conservation areas.

The seven TFCAs are as follows:

- Ai-Ais/Richtersveld
- Kgalagadi Transfrontier Park
- Kavango-Zambezi
- Greater Mapungubwe
- Great Limpopo Transfrontier Park
- Lubombo Transfrontier Conservation and Resource Area
- Maloti-Drakensberg Transfrontier Conservation and Development Area

A biosphere designation is given by the UN Educational, Scientific and Cultural Organisation (Unesco) to special landscapes where people are collaborating to ensure their environmental integrity as the basis for their economic development.

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

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 several protected bird species.
- The Cape Winelands Biosphere Reserve includes a part of the Cape Floral Region, as well as the wine-growing region.
- The 400 000 ha Biosphere Reserve, in the Waterberg in Limpopo 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.
- The Gouritz Cluster Biosphere Reserve is also recognised by the Unesco in terms of the Man and Biosphere Programme.

The other biosphere reserves in South Africa are:

- Kogelberg Reserve
- Cape West Coast Biosphere Reserve
- Cape Winelands Biosphere Reserve
- Waterberg Biosphere Reserve
- Kruger-to-Canyons Biosphere Reserve.

By December 2013, more than 850 young environmental monitors had been appointed to work in protected areas across the country.

World Heritage Sites

South Africa has seven World Heritage Sites proclaimed by Unesco, namely:

- Robben Island
- iSimangaliso Wetlands Park
- the hominid sites at Swartkrans, Sterkfontein and Kromdraai (known as the Cradle of Humankind)
- Ukhahlamba-Drakensberg Park (a natural and cultural site)
- Mapungubwe Heritage Site
- Cape Floral Kingdom
- Richtersveld Cultural and Botanical Landscape
- Vredefort Dome.

Wetlands

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.

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.

South Africa's Ramsar sites include:

- Barberspan
- Blesbokspruit Nylsvley 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
- the turtle beaches and coral reefs of Tongaland
- Ukhahlamba-Drakensberg Park
- Verlorenvlei Nature Reserve
- Wilderness Lakes.

Marine protected areas (MPAs)

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

South Africa's MPAs include the:

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

In April 2013, WWF South Africa presented the DEA with a Gift to the Earth Award. The department received this accolade following the formal gazetting of the declaration of the Prince Edward Islands MPA – South Africa's first offshore MPA.

The Prince Edward Islands form an important global biodiversity hotspot, which was subject to rampant poaching during the late 1990s.

Protection of this island group significantly contributes to the conservation of global biodiversity and the fragile southern oceans, in particular.

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.

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. The Endangered Wildlife Trust is a major partner.

Mitchell Park in Durban is the country's second oldest zoo after the Pretoria zoo. There are about 30 projects on the cards for the zoo, including cheetah and chimpanzee enclosures.

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 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.

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

The Hoedspruit Endangered Species Centre in Limpopo was initially established as a breeding programme for the then endangered cheetah. It caters for, among other animals, five species of vulture: Cape griffins as well as white-backed, hooded, whiteheaded and lappet-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.

The Port Elizabeth Oceanarium's 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 was 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.

Snake and reptile parks

The Port Elizabeth Snake Park at Bayworld has a wide variety of South African and foreign reptiles.

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.

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 Croc River Enviro Park in Nelspruit, Mpumalanga is the largest facility of its type in Africa.

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

Protecting 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 the:

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

Protecting the coastline

To counter illegal activities along the coastline, as well as the country's 1 155 000-km² Exclusive Economic Zone (EEZ), the department appointed more than 80 fishery control officers and 100 honorary fishery control officers.

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.

The vessels 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 coastal states.

Recycling

The National Recycling Forum is a non-profit organisation created to promote the recovery and recycling of recyclable materials in South Africa.

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. Collect-a-Can has introduced millions of school children to the idea of caring for the environment through its schools competition.

Rhino poaching

South Africa protects about 93% of the remaining white rhino population in Africa and nearly 83% of the continent's combined population of black and white rhinos.

In 2013, 1 004 rhino were poached in South Africa. To fight this escalation, the National Biodiversity Investigators' Forum was established to improve multi-departmental cooperation and information sharing with law-enforcement institutions.

