



The state of *the environment*

Global, regional and national environmental assessments of the state of the environment are among the mechanisms used by DEAT to keep the environment under review. These include assessments of spatial biodiversity, as well as assessments of the state of the country's rivers, coasts and air.

Global assessments conducted over the past decade have revealed the following:

- **Millennium Ecosystem Assessment (2005):** Some 60% of ecosystems are being degraded or used unsustainably and their degradation could grow significantly worse before 2050, due to rapidly growing demands for food, fresh water, timber, fibre and fuel. Environmental degradation and loss of ecosystems are a barrier to the attainment of internationally agreed development goals.
- **Global International Waters Assessment (2005):** The ability of aquatic ecosystems to provide critical services has been weakened due to agricultural run-off, industrial and municipal discharges and unsustainable use of fresh water and living resources. Habitat modification has reduced biodiversity and changed community structures in many regions, causing significant social and economic losses.
- **Global Deserts Outlook (2006):** The impact of changes in precipitation and temperature patterns due to global climate change is likely to be hardest felt in desert margins and in desert montane areas. Drought episodes are projected to

become even more intense and frequent in the future.

- **Global Environment Outlook Yearbook (2006):** Indoor air pollution from solid fuel use may be responsible for between 800 000 and 2.4 million premature deaths each year.
- **Global Biodiversity Outlook 2 (2006):** Biodiversity is being lost at all levels. Only two-fifths of the world's ecological regions are reaching the 10% benchmark set out in the provisional framework for the 2010 biodiversity target. Habitats are being fragmented, affecting their ability to maintain biological diversity and deliver ecosystems. The average abundance of species is declining, showing a 40% loss between 1970 and 2000. Species in rivers, lakes and marshlands have declined by 50%. The threats causing biodiversity loss are generally increasing. These include an increase in invasive alien species, over-exploitation and nitrogen-loading, which lead to 'dead zones' in marine systems.
- **Scientific Assessment of Ozone Depletion (2006):** Abundances of ozone-depleting gases show a downward trend from their peak values in the late 1990s. Over the Antarctic, equivalent effective stratospheric chlorine is projected to

The ability of habitats to maintain biological diversity needs to be enhanced.



return to pre-1980 levels by around 2065, more than 15 years later than for mid-latitudes. Severe Antarctic ozone losses are expected to continue for at least the next 10 to 20 years.

The central message from these global assessments is that environmental degradation and loss of ecosystems present a barrier to the attainment of development goals.

Environmental outlook

The state of the South African environment is discussed in South Africa Environment Outlook. The purpose of the report is to provide information on the state of the environment, using the latest information available.

According to South Africa Environment Outlook, significant progress has been made in the area of environmental management. Laws and strategies have been developed that focus on key areas such as biodiversity, air quality, protected areas, urban and rural development, and waste and disaster management. Efforts to implement and enforce the policy framework have intensified. Results of improving environmental conditions include some fish stocks, which have recovered due to good management measures, and a slowing of habitat loss in some areas of the country. Programmes to rehabilitate ecosystems, while creating jobs, have received greatly increased budgets. The reality is that without these instruments and interventions, the situation could have been worse.

Sustainability in South Africa

International debates on tackling the mounting global environmental issues have raged since the 1970s. The emergence of the concept of sustainable development in the 1980s integrated the environment with development. The international community increasingly recognises the interdependence of the environment, society and the economy. These debates have strongly

influenced South Africa's development agenda, and the country has increased its efforts in participating in international and regional initiatives. Distinguished milestones for South Africa include the hosting of the World Summit on Sustainable Development in Johannesburg in 2002 and the central role played by the country in the formulation of the New Partnership for Africa's Development (NEPAD).

Despite this visibility in the international and regional arena, the environment is still at the periphery of socio-economic development. It is viewed and dealt with in the context of an overriding economic and social development agenda.

The wellbeing of South Africans, as well as economic development, is heavily reliant on the services that ecosystems supply, such as air, food, water, energy, medicines, recreational, spiritual and cultural benefits. Measures of environmental sustainability show that the country has exceeded its ecological carrying capacity. This is due mainly to South Africa's large energy footprint through high levels of carbon emissions.

Awareness of these challenges is, however, improving. There is better communication and dissemination of information to stakeholders. The environment is increasingly being kept under review, in line with global trends, through the compilation of local, provincial and national state of the environment reports. In the context of the push for accelerated growth, to be achieved partly through the Accelerated and Shared Growth Initiative of South Africa (AsgiSA), the major challenge is to improve the understanding of the dependence of the economy and human wellbeing on the sustained provision of ecosystem services. South Africa's National Strategy for Sustainable Development was designed with this in mind.

What affects our environment?

The major drivers of environmental change are population growth, economic activities,

governance, and levels of technology and innovation. The size and structure of the population influences production and consumption patterns and the manner in which resources are used.

The South African population increased exponentially from 5.17 million people in 1904 to 46.9 million in 2004, with a high average annual growth rate of 3.34% since 1975. This means that there are eight times as many people as there were a century ago, trying to survive on as many (and in some cases less) resources such as food, water, shelter, sanitation, clothing, energy, transport, education and employment.

Along with the growth rate that has decreased since 1995, life expectancy has declined dramatically since 1998. It is now below 50 years. This is largely attributable to the effects of HIV and Aids. Despite an emerging middle class, South Africa has experienced a widening of the wealth gap, with more poor people being vulnerable to droughts, floods and hazardous environments.

The macro economy has grown steadily since 1994, but it has been characterised as 'jobless' growth, with increasing levels of unemployment. The economy has undergone a transition from a primary economy based on resource extraction, to a tertiary one focused on manufacturing and financial services. However, primary sector activities like mining, agriculture and forestry still contribute substantially to environmental degradation. The larger economy and consequent increase in demand for resources has resulted in unsustainable levels of consumption, particularly of energy and water, and has increased the generation of wastes and pollutants. In addition, the increased demand for land for housing, particularly in the peri-urban areas, has seen the conversion of natural areas to many formal and informal settlements across the country.

South Africa is playing a more important role in regional and international governance and is signatory to many bilateral and

multilateral agreements. A largely adequate and progressive environmental governance framework has been put in place since 1999, but significant implementation and enforcement challenges still require focused attention.

Technology and innovation are important influences on the environment. Rapid progress in communication and information technology has improved the availability and flow of environmental information, and cleaner production and renewable energy are receiving more attention, although we are yet to see any tangible benefits in terms of improvements in the state of the environment.

Environmental governance

South Africa's largely adequate environmental governance framework aims to manage natural resources and ecosystems in a fair and sustainable way. Recent governance efforts have focused on specific issues such as protected areas, biodiversity and air quality, and on strengthening environmental governance in provincial and local spheres of government, and in the private sector.

Since 1999, there has been a steady increase in budget allocations for environmental management in government, although those at local and provincial level remain inadequate. A comprehensive budget reform process is underway for the environmental sector, which includes the development of a medium-term sector plan. The first cycle of environmental management and implementation plans was successfully concluded.

It is encouraging that civil society and the private sector are increasing their participation in environmental management and accountability, and environmental information has been more widely available to the public in the past decade, although public consultation processes still need to be improved. The corporate sector has made substantial progress with the development

of a governance code of conduct and the launch of the Social Responsibility Index on the Johannesburg Securities Exchange. However, most companies struggle to report adequately on environmental impacts or performance against environmental targets and many corporations do so purely for public relations reasons.

These positive steps have not been met with rigorous implementation, compliance, monitoring or enforcement, particularly at provincial and local government levels. A suite of constraints hinders progress towards sustainable development, most notably insufficient capacity and skills.

Land

Cultivation, degradation and human settlements are the main agents of transformation of land, having converted 18% of the land surface by 2002, with human settlements having increased the most, owing to migration towards the cities and the consequent increases in demand for land, particularly in peri-urban areas. Access to land in these areas remains difficult. Benefits are not adequately accruing to beneficiaries of the land reform programme, mainly because of a lack of financial and technical support after handover. Political targets for land reform appear unattainable, given the lack of capacity and funds for supporting beneficiaries. Productivity of land

in commercial agricultural areas is increasing despite decreases in the area planted for the major cereal crops of wheat and maize.

Population growth, however, is outstripping the increase in productivity and – considering the increase in exports and imports – there is a resulting decline in national food supply per person. Land degradation and desertification continue to affect communal areas of the former homelands most severely, which contributes significantly to exacerbating poverty and declining ecosystem services and biodiversity.

Biodiversity and ecosystem health

Positive steps have been taken to protect our biodiversity, but increasing population pressure and consequent land-use change, over-exploitation, invasion by alien vegetation, land degradation and the threat of climate change are placing the continued provision of ecosystem services at risk. Too little of our terrestrial (only 6%) and aquatic ecosystems (7% of total river length and 18% of wetlands) are formally protected. Aquatic ecosystems, including wetlands, are in the worst condition of all the ecosystems. Only 26% of rivers are intact, 54% are critically endangered and more than 50% of wetlands have been destroyed. There is a mixed picture for terrestrial ecosystems, of which 34% are threatened. Despite marine and coastal systems being in acceptable condition

overall, some components are worsening. Estuaries are generally in good condition, but they are worsening, specifically around urban areas. Significantly reducing the rate of biodiversity loss by 2010 will require an unprecedented effort.

Inland water

The demands on South Africa's already scarce water resources are increasing and projections are that, by 2025, there will be a national deficit in available water. Already, 10 out of 19 water management areas experience water deficits, with irrigation and water for basic needs in urban areas being the two largest consumers of water. Climate change is expected to increase the variability and intensity of rainfall, as well as increasing it along part of the eastern escarpment and decreasing it in the western parts of the country. Runoff in the western parts of the country may decline by 10% by 2015.

Water quality appears to be variable between catchments and over time. Eight of the 19 catchments have quality restrictions that exceed target quality ranges. Nitrate levels appear to be stable or improving, while salinity levels are deteriorating or stable. These and other factors have increased pressure on South Africa's aquatic ecosystems, including wetlands. We have severely degraded river ecosystems, and the discharge of untreated effluent continues to grow. The multitude of demands (ecological, domestic, industrial, and agricultural) need to be balanced equitably, and the recently released National Water Resource Strategy is seen by the Department of Water Affairs and Forestry to be the main driver for ensuring that the balance can be achieved.

According to the department however, there should be sufficient water of suitable quality to meet South Africa's expectations with respect to maintaining a strong economy, improved social standards and healthy aquatic ecosystems for the near future – provided that the resources are carefully managed and wisely allocated and utilised

in line with the strategy. There is a need for all water-use sectors to focus on the water and waste management hierarchy, which states that minimisation at source is the first priority, followed by maximising reuse or recycling as far as possible, treating to a suitable standard, and disposing or discharging to the environment only if necessary.

Marine and coastal resources

Several areas of the marine and coastal system have improved since 1999. Successes include the recovery of pelagic fish resources since the collapse in the 1960s. Several mariculture ventures are working well and there has been an increased awareness and demand for access to non-consumptive uses. This is related partly to improvements in management and protection of the marine and coastal environment, including the extension of marine protected areas, improvement of many of the regulations governing the marine environment and allocation of long-term fishing rights.

Despite these improvements, there are areas of serious concern. Over-exploitation and misuse of resources remains the major factor affecting the integrity of marine and coastal ecosystems. Widespread uncontrolled coastal development is transforming natural habitat and there are large increases in the volume of wastewater discharge into estuaries and the sea. Certain fisheries, notably linefish and abalone, show a dramatic decline through overexploitation, while catch rates of fish have declined since the unsustainable peak in 1960. In addition, climate change is seen as a major threat in the marine and coastal areas, which could adversely affect people's livelihoods. Efforts are now needed to improve enforcement so as to ensure sustainable use of the marine and coastal environment.

Atmosphere

The quality of our air remains one of South Africa's most pressing environmental issues, while climate change is high on the world's agenda. The deteriorating quality of our

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atmosphere is posing serious threats to people's health. Pollutant concentrations, particularly for sulphur dioxide and particulates, exceed health thresholds in major urban areas across the country, mainly due to emissions from power stations, industrial activities, household fuel burning and vehicles. Indoor pollutant concentrations in wood- and coal-burning households that have no electricity also frequently exceed health limits.

Owing to the energy intensity of our economy, South Africa contributes disproportionately to global carbon emissions. The country's carbon emissions increased by 9% between 1990 and 1994, and its dependence on fossil fuels for the generation of energy is largely to blame.

The country is also particularly susceptible to the effects of climate change. Its effects on human and natural systems are becoming evident. Prognoses of the outcomes of climate change include a net drying of the western half of the country and a possible increase in rainfall along the eastern escarpment, with a shorter rainfall season possible in the Western Cape. Some of the major impacts of the change and increasing variability of the climate include health issues (including the spread of malaria), changes in the distribution and availability of water resources, changes to biodiversity and ecosystems, and changes in patterns of agriculture.

It is imperative that appropriate mitigation and adaptation strategies are implemented to deal with these critical issues. Improved air quality legislation is now in place and, assuming that its implementation is successful, some improvements in air quality are likely.

Human settlements

Urban areas and populations are increasing, which result in overwhelming development challenges. Nearly 58% of South Africa's population now lives in urban areas. Settlements across the country vary in terms of quality of life and the social amenities that

they offer. Depending on the type of settlement people live in, they enjoy greater or lesser measures of health, access to schooling, services, housing, employment and safety. The successes in the delivery of electricity and water to communities contrast to the inadequate access to sanitation, with 50% of the population still not receiving regular waste collection. There is a severe housing backlog in cities, and pressures on transport and energy infrastructure are increasing. In some areas, settlements are encroaching on high-value agricultural land and scenic locations that have tourism potential. These and other challenges are compounded by severe shortages of capacity and resources, in particular technical engineering skills at the municipal level.

There is a need for a more integrated approach to urban and rural development, exploration of strategies in support of improving the implementation of the land reform programme, strengthening local governance and overcoming the socio-economic and political inequalities in settlements. To this end, it is critical that environmental considerations be incorporated into local planning processes, such as spatial development frameworks and integrated development plans.

Human vulnerability to environmental change

In South Africa, the interaction between socio-political circumstances and environmental conditions and change determines the vulnerability of people. The major causes include deepening poverty, unemployment, and HIV and Aids, poor levels of disaster readiness, susceptibility to climate change and variability, and people's inability to cope with extreme weather events, including droughts and floods. Household food security is a major concern in the face of climate variability. In addition, a deteriorating state of the environment, poor past land-use planning and patchy success in the delivery of services such as sanitation and clean water are increasing the exposure of people to environmental disasters. These include dangers arising from mining areas,

contaminated water sources and houses with high levels of indoor air pollutants. The most vulnerable people include those who are marginalised, those who lack access to land, capital, literacy and other assets, and those who are female, young, sick or disabled. These groups lack the capacity to cope with environmental stresses. Affluent groups located in unstable locations may also be vulnerable, however.

In the face of a rapidly changing environment, it is crucial that people's capacity to cope with change improves. Fostering public participation in decision-making, building social networks, fighting poverty, and reducing HIV and Aids are integral in addressing the situation. Disaster readiness, through improving early warning systems and networks for disseminating information, is critical.

National Framework for Sustainable Development

A process for developing a framework for sustainable development has been underway since the signing of the Johannesburg Plan of Implementation at the World Summit for Sustainable Development in 2002.

The National Framework for Sustainable Development (NFSD), which was approved by Cabinet in 2008, proposes a national vision, principles, trends, strategic priority areas and a set of measures to guide the development of a more detailed national strategy and action plan for sustainable development. It maps out a vision and pathway to a more sustainable future. The vision statement is as follows: "South Africa aspires to be a sustainable, economically prosperous and self-reliant nation state that safeguards its democracy by meeting the fundamental human needs of its people, by managing its limited ecological resources responsibly for current and future generations, and by advancing efficient and effective integrated planning and governance through national, regional and global collaboration."

The five pathways are as follows:

- Enhancing systems for integrated planning and implementation
- Sustaining our ecosystems and using resources sustainably
- Investing in sustainable economic development and infrastructure
- Creating sustainable human settlements
- Responding appropriately to emerging human development, economic and environmental challenges

In April 2006, National Treasury published for public comment a framework for considering market-based instruments to support environmental fiscal reform in South Africa. The first paragraph of the executive summary echoed the NFSD: "Sustainable development is about enhancing human wellbeing over time and managing a broad portfolio of economic, social and environmental assets that society has at its disposal in order to sustain a flow of consumption. As the South African economy continues to develop, it is increasingly important to ensure that it does so in a sustainable way and that issues of poverty and inequality are effectively addressed. It is, therefore, important to appreciate that it is not just the quantity of growth that matters, but also the quality." This document represented a significant milestone in government's effort to ensure sustainability in all aspects of its operations and to give monetary value to the environment.

Aligning economic policy with section 24 of the Constitution is not simply about preserving the environment. It is also about preventing wasteful expenditure on avoidable system failures. Furthermore, it is about creating new opportunities for driving non-material forms of growth that improve quality of life for all. South Africans have come to realise that the process of democratisation and establishing good governance can only be guaranteed if it is based on a sound economic and socio-economic framework that is environmentally sustainable. Equitable access to and ownership and control of renewable and

non-renewable natural resources by all South Africans is critical to the country's survival.

The environment plays an essential role in determining future opportunities and constraints for growth and development. Past development has emphasised the exploitation and optimisation of South Africa's mineral and natural resources with little concern for long-term environmental impacts. It has neglected the development of the country's human resources and largely ignored constraints arising from the finite character of non-renewable natural resources and the ecological cycles that sustain renewable natural resources. Wildlife and ecotourism are important components of the country's natural resource base. Nature-based tourism depends on unspoilt scenery, well-conserved biodiversity, and clean air and water, which are supported by ecosystem processes and environmental health.

Sustainable economic development

In the context of South Africa as a developing country, the growth and development needed to improve the quality of life enjoyed by South Africans must be integrated with the sustainable use of environmental resources. Growth and development both depend on the use of natural, social and cultural resources from the environment, but they relate to the use of these resources in different ways.

Environmental sustainability emphasises the interdependence of social and economic development and environmental protection. It places necessary economic growth in the context of the sustainable use of natural, social and cultural resources as the basis of economic activity and decision-making. To ensure sustainable economic development, economic policy-making should factor in two fundamental threats: the negative impact that persistent poverty and inequality could have on development when the existing number of households start to reach their consumption limits and as debt levels and higher interest rates kick in, and the underlying depletion of natural resources, such as energy

security and efficiency, water quality, soil and land degradation and climate change.

The environmental sector has contributed to sustainable economic development through its own policies, tools and activities. However, the sector also has a key role to play in leading all sectors of government and society towards an understanding and implementation of sustainable development principles and practices.

In an increasingly global context, the environment is key to the very survival of life. It is linked to global security in light of issues such as climate change, loss of biodiversity and diminishing water resources. The South African economy is reliant on the country's soil resources for agriculture, on its fish resources for food, on its biodiversity for tourism and ecosystem services, on its herbs and medicinal plants for health care, and on its coal and mineral resources for industry. The many rural communities are particularly dependent on the country's natural resources for their survival. This vulnerable sector will be hardest hit if environmental degradation is not curbed.

Section 24 of the Constitution of South Africa states that everyone has a right to an environment that is not harmful to their health or wellbeing. It places an obligation on the state to protect the environment through legislative and other measures to prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources, while promoting justifiable economic and social development.

South Africa's fundamental objective for policies and legislation since 1994 has been sustainability and equitable access to resources. The National Environmental Management Act (NEMA) notes: "The environment is held in public trust for the people. The beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage."

The act endorses the concept of sustainable development based on integrated and coordinated environmental management that addresses people's quality of life and their daily living and working environments, equitable access to land and natural resources, the integration of economic development, social justice and environmental sustainability, more efficient use of energy resources, the sustainable use of social, cultural and natural resources, and public participation in environmental governance.

An important management objective for the environmental sector is to address these challenges, while keeping the regulatory burdens on the private and public sector low. Environmental regulations are being implemented in line with international best practice to provide appropriate environmental protection while promoting a conducive climate for economic investment.

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