

Strategic Plan for the Environmental Sector 2008 - 2013



**environment
& tourism**

Department:
Environmental Affairs and Tourism
REPUBLIC OF SOUTH AFRICA



REPUBLIC OF SOUTH AFRICA



Executive Summary

This strategic sector plan should be read as a forward looking common perspective for the sector by government under the custodianship of the Department of Environmental Affairs and Tourism, the provincial departments responsible for the environment and the public entities at both national and provincial level.

To a limited extent the plan also addresses the role for local government. It is therefore not developed as a new policy instrument but as a concise policy and programme communiqué and a platform for common programmes and priorities in the mid-term to long term.

It will therefore with time evolve into an integrated sector strategy but is currently not extensive as it does not include other environmental resource management functions under the mandate of other national departments as listed later in the document.

The plan has six main chapters and a forward looking conclusion which are briefly outlined below:

1. Introduction - Environment and Development

This part clarifies the purposes of the sector plan and provides a brief description of the structure.

The introduction scopes the composition of the sector, the legal and constitutional mandate and outlines high level strategic priorities for the sector. Strategic plan further locates environment within the broader development context and current developmental state paradigm, it begins to highlight the role of the sector in South Africa's development trajectory and discusses the sector from a "growth and development perspective.

It further provides an overview of the entire sector and the rationale of the plan as well as the process and methodology of developing it.

2. Vision

Since the plan is not a new policy pronouncement it reaffirms the vision as articulated within the White Paper on Environmental Management Policy (1997) and reiterates that the sector will seek to achieve this vision through the a sustainable development approach based on integrated and coordinated environmental management that addresses the socio-economic demands and imperatives of a development state.

3. Goals and Priority Areas of the Sector

This chapter further outlines specific challenges and priorities including the need to (1) provide leadership and coordination of government's approach to large, complex and cross-sectoral issues affecting the environment, and (2) effectively implement its own sectoral mandates within the context of new and evolving regulatory frameworks with additional responsibilities, and capacity constraints and opportunities.

4. Core Outcomes

Two key inter-related issues have been highlighted that are of concern to the sector as a whole, that require action across all of its institutions and for which strong leadership within government and society as a whole must be provided by the sector and those issues are (1) Implementation of sustainable development and (2) Developing appropriate response to the challenges of climate change.

Both issues have an implication for social development and the future of our economy as a whole. From a governance point of view, both of these issues are 'cross-sectoral' in their nature and therefore cannot be addressed by the environmental sector in isolation, but require integrated and coordinated policy and action across all sectors of government and society.

The sector is emerging from a period of legislative reform and is faced with significant challenges in the implementation of its own sector specific mandates within new and often incomplete regulatory frameworks. Over the next five years there is significant work to be done to complete the development of regulatory frameworks and to establish the systems and capacity to implement them. The second set of outcomes for the sector is one of delivery of its core areas of responsibility.

Within the context of the above, a set of core focus areas have been identified for the sector. These are broadly aligned to the main funding programme areas across the sector and to its core areas of statutory responsibility. For each core focus area, key priorities, outcomes, activities, targets and responsibilities for delivery have been identified).

The core focus areas are:

- Air Quality Management
- Waste and Chemicals Management

- Pollution Incident Management and Response
- Environmental Impact Management
- Conservation and Sustainable Use of biodiversity
- Marine and Coastal Management

Whilst the priorities, outcomes and activities are well spelt-out in the plan, the challenge remains inconsistency of targets in the areas where there is no commonly agreed sector wide targets particular at a provincial level. The unavailability of these targets is either as a result of varying provincial priorities and capacities but also the various stages at which national legislation is at e.g waste and coastal management is being developed or being implemented at various levels of government.

5. Means of Implementation

Section 4, which is entitled 'Means of Implementation' then addresses how the various 'challenges' to delivery of the outcomes will be addressed by the sector (listed below). Many of these are related to strengthening and refining the 'enabling environment' for delivery and are cross-cutting in their nature i.e. they are relevant to all of the core focus areas above and are experienced throughout the three spheres of government. Only if these challenges are addressed, can the enabling environment be created within which the sector will be able to work effectively and efficiently towards the achievement of its vision.

Means of Implementation will involve:

- Sharing responsibility and improving environmental governance
- Mainstreaming 'environment' into planning, growth and development
- Providing Support and Building Capacity
- Financing the sector

- Promoting compliance and strengthening enforcement
- Improving environmental information for decision making
- Communicating and raising awareness

With the process of legislative reform nearing completion, the primary challenge for the sector lies in the implementation of its legislation and mandates – i.e. delivery. Thus, over the next five year period the emphasis of the sector will shift from reforming legislation to grappling with challenges of implementation and delivery.

6. Implications – Conclusion

The sector plan concludes by identifying a cluster of implications which the implementation of the plan brings with it, but equally those implications which may arise as result of either action or inaction.

The conclusion primarily commits government to working towards a wider longer-term strategy that goes beyond the institutions mentioned as led by DEAT but to other institutions and state departments with specific, sometimes minimal but integral to the environmental challenges of the current.

7. Annexure

The annexure outlines the following:

1. Background to the Sector
2. A Summary of various multilateral Environmental agreements
3. Environmental Sustainability Indicators
4. A set of acronyms and commonly used terms.

The need for a Sector Plan

Since 1994, National, Provincial and Local Government institutions responsible for the Environment have been engaged in transforming and building capacity to meet the Constitutional imperative for a safe, clean and healthy environment which benefits both present and future generations.

Guided by this Constitutional imperative and by obligations arising from the international environmental agreements ratified by South Africa since 1994, an intensive policy, institutional and legislative transformation and development programme is currently taking place.

New legislative and policy requirements have major practical implications for implementation, particularly with respect to financial, technology, systems, material and human resource capacity required. Consequently, DEAT and National Treasury have instituted a budget reform process aimed at improving accountability, efficiencies and ensuring adequate financing of all sectors of government involved with the implementation, facilitation and support of environmental management and sustainable development in South Africa.

Given the need to now focus on implementation and to maximise efficiencies within the envelope of limited resources, MINMEC and MINTECH have identified the need to develop a common national sector wide strategic implementation plan for the environmental sector in South Africa.

This plan is to be informed by an understanding of where the sector is in its reform process and has at its core a clear statement of the medium term challenges and priorities faced by the sector.

The application of the sector plan

The sector plan has been produced primarily to identify the agreed key strategic priorities for action by the sector over the next 5 years. It is the intention that once it is approved, the sector plan then be used to communicate these priorities to the rest of government and the public in general.

It can be used to identify where partnerships are required between the sector, other government sectors, industry, and civil society and so on. Importantly, it can also be used as the basis upon which a motivation for necessary funds for the sector can be built.

In terms of its usefulness to the sector, it is intended that this plan provide the broad agreed strategic direction for the sector upon which the strategic plans for its component institutions are then based.

This plan has been prepared by the Department of Environmental Affairs in consultation with, the Provincial Environment Departments, the South African National Biodiversity Institute, South Africa National Parks and representatives of organised local government.



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1. Introduction

1.1 The context - environment and development

South Africa, like other developing countries around the world, is faced with the task of promoting economic development that meets the needs of its population while ensuring that the environmental systems and services on which people rely are not seriously damaged or destroyed. Striking the balance between these two imperatives of human well-being is arguably the greatest challenge of all.

Sound environmental management is essential for South Africa's economic growth and social development. Natural resources, both renewable and non-renewable, are the basis of production of food and energy, manufacturing inputs and the disposal and absorption of pollutants and waste. Human health and well-being depend on the effective and sustainable management of these natural resources.

Our economy and society is dependent on a range of goods and services provided by the environment which are essential for human survival, health and well-being, and economic prosperity. These relationships are particularly significant in rural areas and for the informal sector where the dependence on the natural resource base is most direct.

This value of the resource base is highlighted below:

- For example, it has been estimated that biomass used as a fuel source provides about 107 million tons of oil equivalent (or 2.5 tons per person) per year and more than a third of the country's population rely on fuel-wood for their daily energy needs¹.
- Renewable and non-renewable resources underpin a significant portion of the economy. Non-renewable mineral and energy resources have historically served as preferred levers for our economy.
- While these are not managed by the environmental sector the impact of the extraction and use of these resources must be carefully controlled and the economic returns from these finite resources invested in sustainable areas of the economy.
- Tourism is currently the fastest growing sector of the economy and in recent years the contribution of tourism to the economy has overtaken that of agriculture, with its contribution to GDP increasing from 4, 6 per cent in 1993 to 8, and 3 per cent in 2006.

Certain environmental goods and services can be readily valued where they underpin a discrete economic sector e.g. the revenue from nature-based tourism in South Africa in 2000 was about R10 billion and increasing numbers of community-owned tourism ventures are improving the well-being of previously marginalized groups of people.

For example, the value of the entire fishing industry, incorporating commercial, recreational and subsistence fishing, is estimated to be R4,5 billion per annum. In other areas, such as agriculture, the importance of ecosystems services is recognised but is more difficult to quantify in economic terms.

South Africans also derive substantial non-material benefits from their ecosystems, including recreational opportunities and aesthetic, cultural religious and spiritual benefits. These benefits have not been quantified but research and resource accounting in other countries clearly demonstrate their contribution to the well-being and cohesion of society.

The current rapid expansion of infrastructure nationally is placing pressures on the environment and requires constant oversight to ensure that environmental resources are properly protected. However, it is becoming increasingly clear that the heavy dependence of South Africa on its environment for this range of services is resulting in significant pressures on the environment. These pressures and suggested options for future management and intervention are described in some detail in the recent State of Environment Report - South African Environmental Outlook (2007).

It is the role of the sector in government to manage and protect the environment from degradation and to work with other partners in society in general towards securing its future sustainability.

There are also many global environmental challenges with major implications for the country. Top among these is climate change, which is predicted to have a major impact on local weather patterns, ecosystems, and water resources. Responses to climate change have potentially far-reaching implications for the economy, particularly the energy and transport sectors, as pressure grows to reduce dependency on fossil fuels.

An important management objective for the environment sector is to address these challenges while at the same time 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.

Effective management in the environment sector is also key to achieving sustainable development and meeting national development targets as well as the international Millennium Development Goals.



1.2 Legal and Institutional Framework for the Sector

Section 24 of the Bill of Rights states that everyone has a right to an environment that is not harmful to their health or well-being. 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.

In the three years leading to this plan, other key strategies for the sector have been developed and this plan seeks to maximise alignment with such as outlined below:

- National Framework for Sustainable Development (draft 2006)
- National Biodiversity Strategy & Action Plan (2005)
- National Biodiversity Framework (draft 2007)
- National Waste Management Strategy (1999)
- Climate Change Response Strategy (2004)

To empower government to defend the Constitutional environmental right of its people, a suite of legislation has been promulgated on biodiversity and protected areas, air quality management, environmental impact assessment and compliance and enforcement. Bills on coastal zone management and integrated waste management are in preparation. Existing environmental legislation includes:

- National Environmental Management Act (1998) (NEMA) establishes the concepts of participatory, cooperative and developmental governance and provides for structures to facilitate these.
- NEMA: Protected Areas Act (2003) and Protected Areas Amendment Act (2004) provide for the protection and management of ecologically viable areas.
- NEMA: Biodiversity Act (2004) sets out the mechanisms for managing and conserving biodiversity; protecting species and ecosystems; the sustainable use of indigenous biological resources; access to and sharing of the benefits arising from use of biological resources, as well as bio-prospecting.
- NEMA: Air Quality Management Act (2004) provides the basis for setting ambient air quality and emission standards.
- NEM Amendment Act (2003) (1st Amendment Act), deals with compliance and enforcement and provides for Environmental Management Inspectors (EMIs).

- NEM Amendment Act (2004) (2nd Amendment Act), deals with environmental impact management and provides for other tools such as strategic environmental assessment. New EIA regulations have been drafted in terms of this Act. These regulations address the weaknesses of the current regulations and provide a more streamlined approach to environmental impact management.
- NEM: Coastal Zone Management Bill provides for the sustainable development of the coastal environment.
- NEM: Waste Management Bill provides for waste management monitoring, management and control by all spheres of government.

1.3 Composition of the Sector

Environmental legislation clearly anticipates an expanded role for all levels of government in implementing the environmental function. This legislative reform is also starting to bring greater clarity to the sector, particularly for allocating environmental management functions in line with the Constitution.

Section 156 of the Constitution, together with Schedules 4 and 5; outline the powers and functions of national, provincial and local government. In terms of the Constitution, the environment is a Schedule 4A function. This means that it is a concurrent function, and thus shared between national and provincial government.

Environmental management in South Africa has a developmental focus, and operates under the framework provided by the National Environmental Management Act of 1998 (NEMA). According to NEMA, national government bears overall responsibility for the sector, creating a national framework and setting national norms and standards. Its role includes building the capacity of local government for environmental management.

At a provincial level, the main environmental activities are environmental impact assessments, conservation in relation to provincial nature reserves, and issuing and administering permits. Provinces are required to undertake bio-regional planning. They are also required to set provincial standards for substances that may be harmful to health and/or the environment.

Local government has a constitutional mandate to ensure that its citizens enjoy a safe and healthy environment. While the Constitution does not say how local government should do this, it allocates to local government powers and functions under part B of schedules 4 and 5. These include air and noise pollution; cleansing²; beaches and amusement facilities; refuse removal, refuse dumps and solid waste disposal; and municipal parks and recreation.

NEMA requires provincial government to ensure that municipalities adhere to their environmental implementation plans as well as adhere to sector principles in the preparation of municipal policy and programs.

The legislative and institutional framework for the management and protection of the natural environment in South Africa is complex and has resulted in the fragmentation of responsibility across various national departments, public entities and the three spheres of government.

A number of national departments are responsible for implementing legislation which impacts on elements of the environment (see Box 1 below).

Box 1: National departments with environmental management responsibilities and functions.

Department	Responsibility (as per legislation overseen by these departments)
Agriculture	Agricultural resources, pests, regulation of fertilisers, farm feeds and agricultural remedies, GMOs
Arts and Culture	National Heritage (including World Heritage Sites)
Environmental Affairs & Tourism	Air quality, pollution control and waste management, environmental impact management, biodiversity conservation, marine and coastal management
Health	Hazardous Substances
Land Affairs	Development Facilitation and principles governing land development, Land Use, Aquaculture, Animal Breeding
Minerals and Energy	Access to minerals and petroleum resources, nuclear energy, Mine related health and safety
Water Affairs and Forestry	Water resources, water services, Veld, Forests and Forestry, Mountain Catchments
Provincial and Local Government (dplg)	Municipal Planning, Integrated Development Plans, municipal service delivery, Disaster Management
Transport	Maritime Law, Movement of Substances, Harbours

However, the environmental 'sector' in the context of this plan is used to describe the group of government institutions led by DEAT (as the lead agent of the sector) which implement and deliver on the legislation overseen by DEAT i.e. Those which cover air quality, climate change, waste management, environmental impact management, biodiversity conservation, marine and coastal management and environmental law enforcement.

Government institutions involved include:

- National Department of Environmental Affairs and Tourism (DEAT).
- National Government entities: South African National Biodiversity Institute (SANBI); South African National Parks (SANParks); South African Weather Services (SAWS), Marine Living Resources Fund.
- Provincial departments with a responsibility for the environment and its management, conservation and protection – including provincial conservation authorities. Not all the nine provinces have established statutory authorities.
- Local government – and their specific departments dealing with environmental issues. The institutional arrangements for environmental management at this level are not consistent and differ from local to local with some convergence only at a level of the metros.

Those areas of environmental management and protection which lie within the remit of other government sectors (see Box 1) will not be considered within this sector plan as it is assumed that they will be covered within the sector plans prepared by the relevant 'lead' national department. However, where there are issues which cut across institutional boundaries, these will be mentioned and appropriate cooperative governance approached noted.

This sector plan also excludes 'tourism' as a function of DEAT. This sector is guided by its own strategic plan mainly within the economic clusters of government business at both national and provincial levels.

2. Vision of the sector

Our vision is informed by the environmental, social and economic and other fundamental human rights enshrined in our Constitution, and the global and national priorities captured in the MDG, JPOI and the government's macro socio-economic policies. It is a projection of our nation's aspirations of achieving a better quality of life for all now and in future, through equitable access to resources and shared prosperity.

The vision for the Environment Sector is that of: A prosperous and equitable society living in harmony with our natural resources.

This vision is articulated within the White Paper on Environmental Management Policy (1997) and has also been adopted by DEAT as its vision.

The sector will seek to achieve this vision through an integrated and coordinated environmental management that addresses:

- People's quality of life and their daily living and working environments
- The integration of economic development, social justice and environmental sustainability
- The sustainable use of social, cultural and natural resources
- The conservation and sustainable use of our biological diversity
- Public participation in environmental governance³

The strategic importance of the sector is unquestionably linked to its role in ensuring sustainable development, through protection of the natural resource base upon which the economy of the country and the well-being of its population depend.

However, in addition to the integration of sustainable development into its mandated areas of activity, the sector also has a role to play in coordinating and encouraging government and society to embrace and implement sustainable development.

This case is articulated clearly by North West Provincial Department of Agriculture, Conservation and Environment when describing the importance of its work.

"The economy relies heavily on an ecologically sound natural resource base, pollution and waste absorption activities such as mining, agriculture and tourism. Rural communities depend on these resources for their day-to-day survival. Access to this natural capital' provides a crucial contribution to livelihoods, an important buffer against poverty ... Without an ecologically sound natural resource base, clean air and clean water, economic growth and development is not feasible..- (Strategic Plan, NW Province Department of Conservation and Environment 2007-2010)."

The sector is committed to working towards the achievement of the vision for sustainable development and this Sector Plan and the actions and targets within it form part of the sector's contribution to the implementation of the environmental elements of the NFSD.

The vision is translated into goals, priorities and core focus areas, which guides how the sector intends to realise its vision, through the implementation of specific programmes and the achievement of certain targets.

3. Goals and Priorities for the Sector

3.1 Priority areas for activity

The purpose of the Sector Plan is to provide a strategic direction for the various institutions within the sector. In broad terms, the sector faces challenges in two specific areas in the coming years:

- To continue to provide leadership and coordination of government's approach to large, complex and cross-sectoral environmental issues – specifically: responding to climate change and championing sustainable development.
- To increase the effectiveness of the implementation of its own sectoral mandates within the context of new and evolving regulatory frameworks and capacity constraints.

3.1.1 Responding to Climate Change and Championing Sustainable development

The complex, cross-cutting issues such as sustainable development and response to climate change cannot be addressed by the environmental sector in isolation but require integrated and coordinated policy and action across all sectors of government and society. Many of the existing institutional arrangements within government and the sector are not conducive to delivering the cross-sectoral (and in the case of climate change, the cross-boundary) approaches that are required.

Over the next five years it will therefore be imperative that the sector is clear, coordinated and innovative in its own approach to these complex cross-cutting issues. It will also have a vital role to play in both championing and coordinating government activity in these two areas.

To be able to appropriately respond to these two cross cutting priorities, government and society will have to integrate them into their plans and programmes. In addition, specific sector programmes must also respond appropriately to the implications of climate change (as highlighted in the National Climate Change Response Strategy⁴) and take advantage of the emerging sustainable development goals as espoused in the National Framework for Sustainable Development.

3.1.2 Increasing the effectiveness of delivery of sectoral mandates

The second area of activity for the sector will be in working to achieve effective delivery of its core areas of responsibility. The sector is emerging from a period of legislative reform and is

faced with significant challenges in the implementation of its own sector specific mandates within new and often incomplete regulatory frameworks. Over the next five years there is significant work to be done to complete the development of regulatory frameworks and to establish the systems and capacity to implement them.

Within the context of the above, a set of core focus areas have been identified for the sector. These are broadly aligned to its core areas of statutory responsibility and their aim is to articulate the agreed strategic approach to be taken in each of these areas and to provide clear targets for the sector to work towards. Six core focus areas have been identified:

- Air Quality
- Waste and Chemicals Management
- Pollution Incident Management
- Environmental Impact Management
- Conservation and Sustainable Use of biodiversity
- Marine and Coastal Management

In each and every core focus area the link between the core focus areas and the two cross cutting priorities is demonstrated through programmes and targets.

3.2 Strategic Goals for Environmental Sustainability and Integrated Environmental Management

The work of the environment sector is firmly rooted within the overarching goal of sustainable development, as explained in section 2 above. Within the framework of the overarching goal of sustainable development, government has identified seven strategic goals for achieving environmental sustainability and integrated environmental management. These goals are interdependent and implementation must address all of them to be effective. It is vital to recognise that environmental concerns and issues cut across various sectors and functions. Therefore sustainable and integrated management of the environment depends on cooperation and initiatives from all sectors of society. Many supporting objectives address functions of other government departments that impact on the environment and will require their cooperation and commitment for effective implementation.

The strategic goals and their supporting objectives address the major issues government faces in its drive to achieve sustainable development and ensure an integrated system of

environmental management. The vision and policy principles have guided the choice of goals and objectives and have guided policy implementation in the last ten years.

This sector plan is aligned with the seven strategic goals for environmental sustainability and integrated environmental management and contains targets and programmes to take the sector and government closer to achieving these goals. The goals are shown in the box below. It should be noted that many of them are concerned with creating the enabling frameworks within which sustainability can be achieved. These issues are explored further within section 5 of this document. Goal 2 is the exception and is related to the core focus areas of the sector, the strategy for which is provided in section 4 below.

Box 2: Strategic Goals for Environmental Sustainability and Integrated Environmental Management

Goal 1 Effective Institutional Framework and Legislation

Create an effective, adequately resourced and harmonised institutional framework and an integrated legislative system, and build institutional capacity.

Goal 2 Sustainable Resource Use and Impact Management

Promote equitable access to, and sustainable use of, natural and cultural resources, and promote environmentally sustainable lifestyles. Integrate environmental impact management with all economic and development activities to achieve sustainable development.

Goal 3 Holistic and Integrated Planning

Develop mechanisms to ensure that environmental considerations are effectively integrated into the development of government policies and programmes, all spatial and economic development planning processes.

Goal 4 Participation and Partnerships in Environmental Governance

Establish mechanisms and processes to ensure effective public participation in environmental governance.

Goal 5 Empowerment and Environmental Education

Promote the education and empowerment of South Africa's people. Increase their awareness of, and concern for, environmental issues, and assist in developing the knowledge, skills, values, and commitment necessary to achieve sustainable development.

Goal 6 Information Management

Develop and maintain mechanisms to increase access to information and ensure effective management of environmental information.

Goal 7 International Cooperation

Develop mechanisms to deal effectively and in the national interest with international issues affecting the environment.

4. Key Outcomes for the Sector

4.1 Cross Sectoral Issues

4.1.1 Championing sustainable development

Where are we now?

South Africa played a prominent role in the lead-up to and hosting of the 2002 World Summit on Sustainable Development (WSSD) and by doing so, placed itself in a 'leadership' position in terms of sustainable development. At this summit it also committed to achieving the Millennium Development Goals and the Johannesburg Plan of Implementation (JPOI), which provides details on the action required. The JPOI comprises 37 time-bound targets, and in excess of 200 partnership agreements on water, energy, health, technology and biodiversity.

A key target of the MDGs is to integrate the principles of sustainable development into country policies and programmes. Many existing national instruments (strategies and plans) do incorporate the principles of sustainable development.⁵ Many institutions across government have prepared response strategies for relevant targets within the Johannesburg Plan of Implementation, including many provincial environment departments.

South Africa is now obliged by these international commitments, and by its constitutional principles and statutory laws to justify all national policies and development strategies in terms of sustainable development. The environmental sector is committed to ensuring that this is the case for its specific legislation, policies and strategies. The sector also has a key role in leading all sectors of government and society towards an understanding and implementation of sustainable development principles and practices – and this is the subject of this section.

Box 3: International milestones on sustainable development

International milestones leading to our National Strategy for Sustainable Development
The process to develop South Africa's NSSD is based on a number of key international milestones that signify the increased awareness of sustainability as an important component in development strategies: The United Nations Conference on the Human Environment, held in Stockholm in 1972, where the environment was recognised as a development concern The 1992 Rio Earth Summit, where Agenda 21 was agreed upon as a blueprint for sustainable development

International milestones leading to our National Strategy for Sustainable Development

A decade of UN summits and conferences between 1992 and 2002, in social, economic and environment related fields and widened the concept of sustainable development

The 2000 United Nations Millennium Summit resulting in adoption of the Millennium Development Goals were adopted

The World Summit on Sustainable Development, held in Johannesburg in 2002, which reaffirmed the commitment to sustainable development, placed poverty eradication at the centre of efforts to achieve sustainable development, and reinforced the notion of development that aims for equity within and between generations

One of the most important targets was captured in the summit plan calling on all states to "develop and elaborate National Strategies for Sustainable Development (NSSD) and to begin their implementation by 2005".

In developing a national strategy for South Africa, one of the most pressing challenges has been the need to develop a unified national vision for sustainable development - to guide and direct policy implementation; strengthen institutional and governance frameworks; establish an effective system for monitoring and evaluation; and to collectively set targets and identify short-, medium- and long-term actions for accelerated growth.

The South African government heeded this call, and in January last year Cabinet approved the framework for a South African NFSD (National Framework for Sustainable Development).. Subsequently, a draft 'National Framework for Sustainable Development' was produced in 2006, which proposes a national vision and principles, analyses the trends, and identifies strategic priority areas and a set of measures to guide the development of a more detailed strategy and action plan.

A key task for the sector in the short term is to complete this national framework and to develop the action plans required to provide the detailed strategy through which government and society can coordinate efforts in the implementation of sustainable development. This detailed strategy will also have to be accompanied by tools and processes for monitoring progress towards sustainable development.



With action plans in place, the sector will then have a responsibility to lead the agenda on Sustainable Development and to work within government and society to ensure that implementation takes place. This includes taking responsibility for ensuring that its own strategies, plans and actions are aligned to and contribute to the implementation of the NFSD.

At a provincial level, work has been initiated to ensure that environmental sustainability is incorporated into economic and land use activities and decision making. Several provinces have been particularly active in this regard.

The Western Cape Provincial Government has also published a Sustainable Development Implementation Plan and a Provincial Spatial Development Framework (NFSD 2006, p67). There is a need to see work of a similar kind take place across all provinces and at the local government level.

Over the next five years the sector will...

Identify how the NFSD relates to other strategic planning documents produced by government, such as growth and development strategies. The NFSD recommends that implementation of international agreements requires an integrated inter-departmental approach.

Champion a national sustainable development agenda and develop a means of monitoring progress towards achievement of sustainable development.

The sector will achieve this by

- Completing and publishing the National Framework for Sustainable Development and developing action plans for its implementation across all sectors and spheres of government.
- Driving and overseeing implementation of the NFSD and related sustainable development issues across government – and reporting on progress made against targets within the MDGs and JPOI.
- Specifically ensuring its own plans, strategies and activities are aligned to the NFSD, and thus to the MDGs and JPOI.
- Provincial environment departments have an equivalent leadership role to play at the provincial and local government level.
- The whole sector (national, provincial and local government) also has an obligation to ensure that commitments are integrated into their own policies and plans – and that these are then implemented and progress monitored and reported to DEAT.

- All institutions within the sector must also specifically ensure that targets within the NFSD which relate to them are fulfilled within the timeframes included within the NFSD. DEAT will lead the sector in ensuring that this is achieved.

4.1.2 Responding to Climate Change

Where are we now?

Although South Africa is still a developing economy, our dependence on coal-driven energy sources and the energy intensity nature of our economy have resulted in an extremely high carbon emission level per unit of gross national product, compared to the rest of the world. We have emission levels equivalent to that of developed nations such as the United Kingdom. We are also located in one of the regions most susceptible and vulnerable to climate change, and we appear already to be experiencing the early effects of global warming and climate variability.

Average land and sea surface temperatures have increased, sea level is rising, rainfall patterns have changed, and the intensity and frequency of extreme weather events have increased.

Other potential changes include increased incidence of floods and droughts and more severe temperature inversions, which will exacerbate air pollution problems. Such changes in climate will significantly affect all components of the natural environment, various sectors of the economy, such as agriculture, fishing and tourism, human health, and, therefore, the well-being of all South Africans. Changes in terrestrial ecosystems and species distributions are already being correlated with climatic changes over the sub-continent, and the pace of these changes is expected to accelerate.

Given these risks, addressing the challenge will require a broad range of mitigation and adaptation activities. Mitigation involves reducing emissions, while adaptation involves measures to increase the capability to cope with impacts.

While many responses to climate change overlap with those of human vulnerability, several points are worth mentioning.

Reducing emissions in South Africa will require improving the sustainability of production and consumption. Economic growth is still firmly linked to energy-intensive resource consumption⁶. Reducing emissions therefore means improving energy efficiency, increasing the use of renewable energy sources, implementing cleaner technologies, and moving toward a zero-waste economy. As yet, too little attention has been paid to large-scale energy

efficiency and renewable energy interventions. A strong drive to develop cost-effective alternative sources of energy is required. This should include providing solar, wind, wave, hydrogen, nuclear, and biomass alternatives via a decentralized network of energy generation entities.

No mitigation effort, no matter how rigorous, will prevent the climate from changing. Adaptation is therefore an essential component of our response strategy. It will require strategies that are linked to planning and decision-making processes at all levels, such as AsgiSA, the Integrated Sustainable Rural Development Programme, the Urban Renewal Programme, provincial growth and development strategies, and integrated development plans. Also, management plans for ecosystems and conservation areas will need to incorporate climate adaptation strategies. Specifically for biodiversity conservation, the management of biodiversity outside formal reserves is likely to become increasingly important.

Climate change is therefore one of the most serious and urgent environmental issues facing the international community. Within South Africa it is an issue which has an increasingly high political profile and for which there is a demand to see a clear and integrated approach to action developed across all sectors of society. Climate change strategy has two dimensions as the country is both an important contributor to the global problem and also highly vulnerable to its impacts.

For these reasons, climate change in South Africa must be considered both as an environmental and developmental issue.

A national response to climate change has to address two issues:

- **Mitigation:** the reduction of the intensity of climate change effects through the reduction of greenhouse gas emissions. At present there is no clear national strategy or implementation plan in place with regards to greenhouse gas reduction.
- **Adaptation:** the recognition of the effects of climate change and adaptation to these conditions. The process of adaptation requires an understanding of vulnerability of systems to climate change. Adaptation measures which will be required include suitable urban and settlement planning to address changed hydrological regimes; addressing greater climate variability in the agriculture sector; and improved disaster prevention and response management to extreme weather events. With respect to biodiversity conservation measures required include water conservation; preserving ecological corridors along key climatic gradients and other adaptations to protected areas expansion and planning; and maintaining the functioning of fresh water

ecosystems such as wetlands and rivers to increase the resilience of ecosystems to climate change.

South Africa has ratified the United Nations Framework Convention on Climate Change (UNFCCC) and its associated Kyoto Protocol – and much of the work of the environmental sector of government (and particularly of DEAT) in the past has been driven by responding to the obligations of this convention and to developing and representing South Africa's position at its annual negotiations. In recent years, additional activity has taken place across all spheres of the sector and within other sectors in response to rising concern about climate change and the need to take action at all levels (see box 4 below).

In addition to work within the government sector, South Africa has developed strong research programmes (on both mitigation and vulnerability/adaptation) which support the decision-makers and provide a robust platform of knowledge upon which policy and action can be based.⁶

Box 4: Summary of the key areas of current government activity on climate change

At the national level, an Inter-Ministerial Committee on Climate Change has been established to examine emerging information on climate change and align government planning with this. The Committee is currently overseeing the Long Term Mitigation Scenario process.

A National Committee on Climate Change (NCCC) has been in operation of several years. This is a stakeholder forum consisting of representatives from across the sectors of government (and all three spheres), business and civil society. This provides DEAT with guidance and input on climate change policy, actions and negotiating positions.

A National Climate Change Response Strategy was published by DEAT in 2004. This has been followed by a range of work in other departments on climate change related issues. This provided a series of strategic objectives, principles and proposals for addressing climate change. The Western Cape has also developed its own climate change strategy and action plan for the province (draft 2007).

A Long Term Mitigation Scenario process is currently underway to develop realistic long term climate action scenarios for South Africa (final report due in late 2007). One purpose of the process is to analyse the costs and benefits of various mitigation pathways.

A national greenhouse gas inventory is in preparation, led by DEAT and being carried out in partnership with business and industry.

A Designated National Authority for the Clean Development Mechanism (CDM) has been established within the DME and South Africa is beginning to benefit from its first phase of approved CDM projects.



The priority for the sector now is to build on what has been achieved so far in terms of strategy and planning for climate change in order to deliver actions and activities which will make a significant impact in terms of mitigation and adaptation.

Climate change responses, both adaptation and mitigation, will largely come from non-environmental government departments and from the private and civic sectors of society. Therefore, what is needed in the next five years is for the environment sector to provide strong leadership, direction and coordination for government and civil society as a whole on this issue – and to ensure that significant strides are made in the transition from planning of climate change response measures to their implementation. Implementation will depend on innovative and effective approaches being found which enable and encourage different sectors and spheres of government and society to work together.

Within the sector, the leadership role will come from DEAT but with important planning and implementation roles at the local and provincial levels. Actions addressing mitigation and adaptation will not necessarily be led from the same institution. With regards to mitigation strong leadership will come from the DEAT, working with the DME, DTI and related departments.

Adaptation responses, while still requiring national leadership, can often more easily be developed at the regional or local scale. Despite this distinction, all spheres of government have important roles to play in both adaptation and mitigation responses, and some municipalities are leading the way in developing local mitigation strategies.

Municipalities and provinces are already playing a role in developing local and regional climate strategies, particularly for adaptation. The Western Cape Provincial government has produced a Climate Change Strategy and Action Plan for the province, which is an important advance in identifying detailed actions at the provincial level. It would be beneficial for this exercise to be repeated across the other provinces. Current practice also shows that an important element of adaptation strategies is developing partnerships with the private, NGO and CBO sectors.

National sector departments should continue to support other spheres of government in these actions, through the development of national sector strategies and action plans, the provision of information and projections, and through planning for adaptation responses that require national attention – such as national scale water resource management, national disaster prevention, preparedness and relief plans and so forth.

South Africa remains an important country in the international climate negotiations. The

sector, led by the national department, must continue to play a role to support the UNFCCC processes and a strong global agreement to address climate change.

Over the next five years the sector will...

Provide strong leadership and clear direction for government and society in developing and implementing appropriate and effective responses to climate change, both mitigation and adaptation, within the context of a long term national climate policy.

Ensure that provincial and local spheres of government integrate potential climate vulnerability into local and regional planning.

Provide leadership to ensure that climate change mitigation is integrated into national energy, industrial and economic policy within the framework of the national climate policy.

Support the private sector and civil society in understanding and responding to climate change.

Continue to play an active role in international climate change discussions towards a global solution to the climate change challenge.

On the basis of sound local research and analysis understand the implications of a post-2012 global climate change regime for South Africa and prepare for this.

The sector will achieve this by...

- Completing the Long Term Mitigation Scenario Planning process so that stakeholders understand and are focused on a range of ambitious but realistic scenarios of future climate action both for themselves and for the country.
- Improving the understanding of potential climate change impacts on South African and the vulnerability of various sectors of the society and the economy to these impacts.
- Developing a National Climate Change Policy to advance the current Climate Change Response Strategy.
- Developing and implementing climate change plans, including both mitigation and adaptation, at the municipal and provincial levels where appropriate, with a view to integrating climate change planning with sub-national spatial and development.
- Taking the lead in ensuring that other sectors of government integrated climate change considerations into the planning and strategies – using the available inter-governmental climate change structures.
- Supporting policy and decision-making processes by developing and providing

access to an enhanced climate change related information base to decision-makers to ensure that decisions are informed by knowledge of the most recent information available.

- Establish policies and programmes that will incentivise and support mitigation actions by the private sector and key state owned enterprises.
- Understanding and using indigenous knowledge and experience in managing climate variability and vulnerability.
- Updating the national Greenhouse Gas Inventory and including it as a sustainably managed component of the South African Air Quality Information System.
- Developing the 2nd National Communication to the United Nations Framework Convention on Climate Change.
- Participating actively in international climate change negotiations in the global and national interest with a base of sound national information.
- Accessing international financial and technical resources in support of climate change planning and appropriate technology transfer including maximising the benefits of the international CDM.
- Strengthening international cooperation on climate change via a range of initiatives with other developing nations, with countries facing similar climate change challenges, and with countries seeking global solutions to climate change.

How the sector will work together...

- The DEAT will continue in its key co-ordination role through its secretariat role of the National Climate Change Co-ordinating Committee (NCCC).
- The Inter-Ministerial Committee on climate change will continue to coordinate national policy and ensure policy integration by key departments outside the environment sector. Mitigation actions are likely to be largely led by the Departments of Minerals and Energy, Transport, Public Enterprises and Trade and Industry – with DEAT acting in a coordination, cooperation role and 'watchdog' role.
- At the same time the environment sector will need to work with key national departments including Agriculture, Water Affairs and Forestry, Health and Provincial and Local Government in ensuring that climate vulnerability is taken into account in planning in these sectors.
- The South African Weather Services will support climate change responses by the collation of data and identification of climate change trends especially improving indications of increasing local climate variability and increased extreme weather events and hazards. SAWS will continue to play a scientific role through the monitoring of atmospheric gas concentrations relevant to climate change and participation in international networks.

Table 1 : Summary of strategy for delivering sector outcomes for sustainable development and climate change

Existing long-term Commitments already made by government: Achievement of Millennium Development Goals by 2014: MDG related to the environment is MDG7: Ensure environmental sustainability. Target: Integrate principles of sustainable development into country policies and programmes and reverse the loss of environmental resources. Key international environmental agreement: UNFCCC and associated Kyoto Protocol. Required commitments within this (related primarily to reporting and submission of information) – are included within the table			
Outcomes to be achieved in period of the sector plan	How (means/activities)	Who (Responsibilities)	Proposed Targets ⁸ (what by when)
National Sustainable Development Agenda initiated and progress evident	Completion of the National Framework for Sustainable Development	DEAT (lead agent)	Completion and publication in 2007
	Development of Implementation plans and monitoring of the NFSD	All institutions in sector (and across government)	2007-2010 Implementation underway and Annual reporting by all institutions against agreed indicators and targets
	Development of annual environmental sustainability reports and assessments	DEAT	National State of Environment Report produced 2007 NSOER Thematic updates produced 2008-09 and 2009-2010 2010 target: Environmental status reports produced for rural nodes (6 in total) Bi-Annual CSD Country Reports produced

Outcomes to be achieved in period of the sector plan	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
	Development and publication of a National Climate Policy	DEAT in collaboration with all sectors	Policy published in 2008/09
	Continued and improved effective use of the national climate change coordinating structures such as the NCCC and the IMC	DEAT, Provinces, Municipalities and the private sector and civil society	Improve multi-stakeholder participation in climate change dialogue
	Development of long-term mitigation scenarios for the country.	DEAT	Draft LTMS by end 2007 High-level consultation process including consultation with industry within 2007/8 Discussion at the IMC and Cabinet level within 2007/8 Policy process leading to a Climate Policy within 2008/9
Provincial and local spheres of government integrate potential climate vulnerability into local and regional planning.	Development of a National Adaptation Plan	DEAT	Publication of plan by 2012
	Continued development of Municipal and Provincial Adaptation Plans where appropriate	Provinces and Municipalities	2009
Integration of climate policy into national energy, industrial and economic policy	Development and implementation of sectoral mitigation plans Continued engagement of municipalities in local sustainable energy planning and related climate change mitigation activities Supporting the development of energy efficiency and renewable energy policies Supporting the development of a National Integrated Transport policy to promote public and alternative transport in collaboration with the Department of Transport	DEAT in collaboration with other national departments Provinces and Municipalities	Development of two sectoral mitigation plans by end 2008 Implementation of sectoral plans from 2008 onwards
Active role in international climate change discussions	Continued fulfilment of reporting commitments under UNFCCC Attendance, preparation for and engagement at the UNFCCC and Kyoto Protocol meetings and related forums.	DEAT in collaboration with other members of the SA delegation to the UNFCCC	2nd National Communication submitted to the UNFCCC within 2007/8 JPOI Commitment: <i>(a) Meet all commitments and obligations under the United Nations Framework Convention on Climate Change;</i>
Understand the implications of a post-2012 global climate change regime for South Africa and prepare for this.	Development and maintenance of greenhouse gas inventory. Other policy and strategy actions outlined above	DEAT	Greenhouse Gas Inventory developed by end 2008.
Support the private sector and civil society in understanding and responding to climate change	Increased awareness and research Continued engagement through the NCCC, the LTMS, the GHG emissions inventory development and other processes	SAWS, SAMBI and other research agencies DEAT, Provinces and Municipalities	A sector wide Strategy inclusive of commitments by industry and civil society by 2010

4.2 Core Focus Areas for the Sector

Six core focus areas have been identified for the sector, which reflect the primary areas of responsibility for the sector as a whole (in addition to the responsibilities held under the cross-sectoral issues discussed in section 3.1 above). These areas are the same as the broad programme areas found in DEAT and many of the provincial environment departments.

The core focus areas are

1. Air quality
2. Waste and Chemicals Management
3. Pollution Incident Management
4. Environmental Impact Management
5. Conservation and Sustainable Use of Biodiversity
6. Marine and Coastal Management

Each of these contributes in some way to the achievement of the outcomes for the two cross sectoral issues dealt with in section 4.1 above.

The matrix below (box 5) provides a simplified illustration of the contribution to and linkages between the core focus areas of the sector and sustainable development and climate change.

Box 5: Relationship between sector focus areas

	Sustainable Development	Climate Change Mitigation	Climate Change Adaptation
Air Quality	Poor air quality has a negative and costly impact on human health and economic productivity	Effective air quality management tools needed to reduce GHG emissions	
Waste and Chemicals Management	Sustainable waste services are needed for human health and protection of crucial resources, such as soil and water	Waste disposal is an important contributor to greenhouse gases. Waste minimisation aligned with industrial efficiency.	
Pollution Incident Management	Effective pollution control required for the protection of natural systems and human health	Cleaner production and pollution control is closely aligned to GHG reductions	
Environmental Impact Management	Effective planning and management needed to balance social, economic and environmental pressures	Environmental planning is crucial in developing a lower carbon development path	Effective EIM required to address climate change impacts, such as sea level rise

	Sustainable Development	Climate Change Mitigation	Climate Change Adaptation
Conservation and Sustainable Use of biodiversity	Protection of environmental systems and services, especially those underpinning rural livelihoods	Land use management to reduce the country's overall carbon balance	Climate change impacts on biodiversity need to be understood and managed. Helping communities adapt to changed ecosystems
Marine and Coastal Management	Managing renewable resources for social, economic and environmental reasons		Effective management of future impacts of climate change on marine and coastal systems and livelihoods

4.2.1 Air Quality

Where are we now?

The quality of South Africa's air remains one of its most challenging environmental issues and is an issue that has been raised on several occasions at Presidential and Provincial Izimbizos, specifically in terms of the impacts it has on the health and welfare of South Africa's population. Pollutant concentrations, particularly for sulphur dioxide and particulates, exceed recognized thresholds and are generally worsening in a number of the country's urban areas. The most common sources of atmospheric emissions that impact on air quality in South Africa include:

- Electricity generation – power stations for the national grid.
- Industrial and commercial activities and non-domestic fuel-burning appliances operated by businesses, schools, and hospitals.
- Transport – petrol- and diesel-driven vehicle tailpipe emissions, vehicle-entrained road dust, brake- and tyre-wear fugitives and rail- and aviation-related emissions.
- Waste treatment and disposal – waste incineration, landfills, and wastewater treatment work.
- Residential – household combustion of coal, paraffin, liquid petroleum gas, dung, and wood.
- Mining – fugitive dust releases and spontaneous combustion emissions.
- Agricultural – crop residue burning, intestinal fermentation, and fertilizer and pesticide application.
- Tyre-burning, wildfires, and fugitive dust from open areas.



The health impact related to indoor air pollution in fuel burning, largely low-income, households remains the most serious national air pollution problem. Emerging air pollution issues, such as Nitric Oxide and Ozone, are closely associated with the transportation sector, especially road transport (SAEO, 2006). Air quality is the highest environmental priority for many provinces, and is of particular importance to those with a high density of industrial facilities and dense settlements.

South Africa is responding to its air pollution challenges in various ways. These include legislative reform, revision of ambient air quality limits, proactive planning by local authorities, and sector-specific controls.

The promulgation of the National Environmental Management: Air Quality Act (AQA) (No. 39 of 2004) reflected a move towards a more rigorous approach towards air quality management in the country. The effective implementation of the Act will be the major thrust over the next five years. Key elements of the AQA include:

- Establishment of a clear institutional and planning framework for air quality management addressing vertical and horizontal government coordination. This includes the publication of a National Framework for achieving the air quality objectives of the AQA.
- Source-based approaches to the management control and licensing of identified activities, emitters and fuels that have a significant detrimental effect on the environment.
- Allowing for alternative pollution reduction measures including market incentives and disincentives, voluntary programmes and information and awareness.
- Providing for access to information and public consultation.

Credible and readily available data has been a consistent problem with regard to air quality management. The process of developing a South African Air Quality Information System (SAAQIS) has therefore been initiated in order to ensure that appropriate measures to improve air quality are taken and that their benefits can be measured clearly.

There is a very small pool of skilled air quality specialists in South Africa relative to the scale of the management task. For example, there are currently only five national air pollution control officers. This limited expertise constrains the ability to effectively implement air quality management strategies.

Over the next 5 years the sector will...

- Develop and maintain an effective governance framework for air quality management, as provided for in the AQA, so as to ensure that the unacceptable current and future impacts of atmospheric emissions are minimized, mitigated or managed (Working Group 2: Environmental Quality Management, Work Plan 2007-2008).
- Create sufficient capacity in the public sector to effectively implement air quality planning, management and enforcement.
- Ensure that there are significant improvements in air quality in declared priority areas. Ambient air quality standards to be promulgated in terms of the AQA will be used as performance indicators.
- Improve indoor and ambient air quality in dense, low-income urban settlements.
- Make comprehensive and reliable air quality information easily accessible to all stakeholders.

The sector will achieve this by...

- Managing an efficient transition from the provisions of the Atmospheric Pollution Prevention Act (No.45 of 1965) to the National Environment Management: Air Quality Act which will come fully into effect by the end of 2009. Including:
- Replacing the administration by DEAT of Registration Certificates issued for scheduled processes under APPA with the administration by provinces and municipalities of Atmospheric Emission Licenses (AELs) for listed activities under the AQA.
- Moving from the current limit values for ambient air quality as published in Schedule 2 of the AQA to national ambient air quality standards.
- Publishing the National Framework for Air Quality Management which will detail the approaches for achieving the objectives of the AQA.
- Ensuring that all obligations of Government as contained in the AQA and the National Framework have been discharged, including listing of activities and the development of air quality management plans at provincial and local authority level.
- Developing sufficient human resource capacity within the recipient authorities (provinces and municipalities). Capacity development will include the training of municipal and provincial officials in atmospheric emission licensing, compliance monitoring and enforcement. This will be supported by the development of a licensing manual and other documentation and will build on capacity development already underway in the Metro municipalities.

- For the next five years the focus of the transfer of authority and capacity development will be on the 23 District Municipalities that been identified as having poor or potentially poor air quality.
- Expanding skills in the sector through the consideration of improving tertiary level training; development of in-service training and internships; and preparation of guidelines and manuals for air quality management.
- Continuing and escalating compliance monitoring and enforcement activities (against existing Registration Certificates under APPA) to increase the impact of existing regulatory approaches. In the short term this will be done through inspection programmes led by the DEAT EQP Branch targeting specific industry sectors. As licensing authority is devolved to municipalities and provinces compliance and enforcement functions will accordingly be carried out by EMI's at these levels.
- Ensuring that all municipalities with poor or potentially poor air quality have prepared air quality management plans.
- Developing and implementing two priority area air quality management plans for areas that have been identified as having problems with poor air quality (Vaal Triangle airshed and Highveld priority areas). The DEAT will also assist provinces to identify provincial priority areas.
- Developing and implementing the South African Air Quality Information System (SAAQIS) in partnership with the South African Weather Service (SAWS) which will ensure that a strong basis exists for air quality management actions. This will be supported by improving local air quality monitoring facilities and capacity. SAAQIS will be developed incrementally with key functionality being in place by 2012.
- Developing and implementing a strategy, in cooperation with the Departments of Health, Minerals and Energy and Science and technology, to address poor indoor and ambient air quality in dense, low-income settlements.

- Developing a national air quality reference laboratory as either a single physical laboratory or a "virtual laboratory" acting as a coordinating institution. The laboratory will also perform outreach, support and accreditation functions.

How the sector will work together...

The sector will work together through the ongoing interactions that occur in the Air Quality Management Forums, as well as the Annual Air Quality Management Governance Lekgotla.

The National–Provincial Air Quality Officers' Forum is a subset of the existing MINTEC Working Group II (WGII). Quarterly WGII deliberations on air quality management issues act as the deliberations of the National–Provincial Air Quality Officers' Forum.

National, provincial and local government at the Metro and District level will work together to ensure that there is the necessary capacity, in terms of human resources and systems development, to take on the licensing responsibilities as envisaged in the AQA. Provincial–Municipal Air Quality Officers' Forums already exist in the three key industrialised provinces of Gauteng, Western Cape and KwaZulu-Natal. In order to facilitate the efficient, effective and cohesive functioning of these forums, DEAT has provided all provincial Air Quality Officers with generic terms of reference for such forums.

The effective development and implementation of the priority area air quality management plans is also dependent on the provinces, local government and a number of national departments working together in a manner that supports the objectives of inter-governmental co-operation due to the nature of the issues and jurisdictions such plans cover. This also includes accessing funds from their own budgetary processes to support specific elements of the plans developed.

Table 2 : Summary of strategy for delivering outcomes for air quality

Outcomes to be achieved in period of the sector plan	How (means/activities)	Who (Responsibilities)	Proposed Targets ⁹ (what by when)
Effective air quality management plans and strategies in place	Publication of the National Framework for Air Quality Management	DEAT	2007/8
	Development of national Priority Area Air Quality Management Plans	DEAT	2 plans in place by 2008/9
	Development of provincial Priority Area Air Quality Management Plans	Provinces	2 plans (dependent on provincial requirements)
	Development of municipal air quality management plans	Municipalities (DMs and Metros)	28 (23 identified DMs and all the Metros) by 2009/10
Develop and maintain an effective governance framework for air quality management, as provided for in the AQA	Develop ambient air standards for priority pollutants	DEAT (with SA Bureau of Standards)	8 by 2007/8
	Initial set of listed activities identified with associated emission standards	DEAT	Initial set of listed activities in place by 2008/9
	Declaration of priority controlled emitters and controlled fuels	DEAT	2 controlled emitters and 2 controlled fuels declared by 2008/9
	AQA licensing provisions are fully functional at local government level.	DEAT, DMs and Metros	Establishment and operation of licensing systems in Metros and District Municipalities by 2009. 100 APPA Registration Certificates reviewed and converted to Atmospheric Emission License format by 2008/9 APPA repealed in 2009/10
	Continued and escalated compliance and enforcement activity against APPA Registration Certificates during the transition period whilst the new provisions under AQA are introduced.	Led by DEAT EQP Branch with input from relevant provinces and municipalities	1200 EMIs designated by 2011/12 200 EMIs trained in compliance monitoring by 2011/12 72 continuous stack emission reports submitted by 2011/12
	License fee protocol and implementation manual published	DEAT	Manual published by 2008/9

Outcomes to be achieved in period of the sector plan	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Measurable improvement in ambient air quality in Priority Areas	Implementation of national Priority Area Air Quality Management Plans and monitoring of changes in ambient air quality	DEAT with relevant provinces, municipalities and other stakeholders	2 plans in implementation by 2009/10
Make comprehensive and reliable air quality information easily accessible to all stakeholders.	Development and Implementation of the South African Air Quality Management Information System (SAAQIS)	DEAT and SA Weather Services	50 government ambient air quality monitoring stations in place by 2011/12 By 2012 core components of SAAQIS are operational as a public-access web-based system covering the whole country including: facility for local emission inventories; a national greenhouse gas emissions inventory; database of listed activities and norms and standards; library of scientific literature and air quality policy and legislation; available air quality management plans; other guidelines.
	Publishing of air quality management and information publications	DEAT	Ten core publications to be published as per details in the National Framework including an Atmospheric Emissions License Manual and 2 Cleaner Production Best Practice Guidelines by 2009/10
Create sufficient capacity in the public sector to effectively implement air quality planning, management and enforcement.	Training of municipal and provincial officials in atmospheric emissions licensing	DEAT, Provinces, DMs and Metros	100 officials trained by 2008/9 via the APPA registration certificate review process
	Designation of municipal air pollution control officers	DEAT and DMs/Metros	3 designated by 2008/9
Improve indoor and ambient air quality in dense, low-income urban settlements.	Strategy for addressing indoor and ambient air quality in dense, low-income urban settlements published and implemented.	DEAT with DME, DST and DoH as well as provinces and municipalities	Strategy published by 2008/9 Implementation started by 2008/9 including performance monitoring

Note: See the draft National Framework for Air Quality Management (2007) Appendix 2 for detailed air quality management performance indicators

4.2.2 Waste and Chemicals Management

Where are we now?

Historically, South Africa followed an 'end of pipe' waste management approach which focused on the disposal of waste at landfills. The environmental risks associated with landfill operations, reduced land availability for new landfills, and the valuable recyclable resources (like glass, metal, paper and some types of plastics) discarded at landfills have made the 'end of pipe' approach incompatible with the aims of sustainable development.

A new approach was required, emphasising waste avoidance and bringing South Africa in line with international best practice in waste management through a new National Waste Management Bill which has been widely consulted since 2003.

The Bill emphasises the waste avoidance approach and will set South Africa on the path to better and more sustainable waste management nationally. The target is to incorporate the public comments and have the final draft passed by Cabinet and promulgated as the new National Waste Management Act in July, 2007. Once promulgated, the new Act will replace the Environment Conservation Act No. 73 of 1989, along with sections of other legislation.

This section includes all those functions which are 'broadly' related to waste and chemicals management and which are a responsibility of the sector i.e.

- waste minimisation/ reduction
- waste management (covering disposal and collection)
- remediation of sites contaminated or degraded through previously inadequate management and disposal of waste
- chemicals management

Legislative reform

The national waste management legislative framework is currently under reform. The Waste Management Bill drives an approach to waste management that is based on the need to reduce the amount of waste generated, recover materials where possible, recycle and reuse. Within this approach, disposal to landfill is seen as a last option. In the long run, this approach to waste management will result in major cost reductions for municipalities and business. However in the short run, the institutionalisation of such an approach, including the establishment of infrastructure and operational capacity will result in a short term increase in costs.

Thus, the task for the sector in the next five years is to concentrate on the roll-out and implementation of the new legislation, supported by activity to provide the capacity and resources required to enable this.

In addition to the broad legislative framework, a priority for the sector is also to continue to expand the policy and regulations governing the sector to ensure that current gaps in this area are addressed. For example, there is a need for policy on incineration of waste and for standards for adequate waste management, particularly for the provision of waste services, to assist in reducing the backlog in service provision across the country.

In addition to the reform of national legislation, many provinces are also developing new legislation to address issues in this area and this process must be continued through the period of the sector plan.

The current waste management objectives of concern to the sector fall into four areas:

- To reduce the amount of domestic and hazardous waste being generated in the country.
- To ensure that all waste is disposed of adequately - in a manner which is not detrimental to the environment.
- To provide adequate waste collection services across the country, thus ensuring protection of the environment from unmanaged waste, and providing the population with access to a basic service.
- To address the remediation of areas where waste has not been managed adequately and has had a detrimental impact on the environment.

Waste Reduction/minimisation

The National Waste Management Strategy (1999) emphasises the need to move away from excessive focus on waste treatment and move more towards waste prevention and minimisation. The Polokwane declaration on waste management sets the following specific targets for waste management in South Africa:

- To reduce the volume of waste generated by 50 per cent by 2012;
- To reduce the volume of waste being disposed of by 25 per cent by 2012; and
- To develop a plan for zero-waste by 2022.

The greatest challenge in meeting waste minimisation targets will be faced by local government, which is mandated with waste collection, disposal and management functions. A major shift in emphasis at the local level is required from disposal towards waste minimisation and recycling. National and provincial government will support local government in this regard. The sector will also step-up its interaction and engagement with industry to encourage producers to reduce waste and improve management of waste, focusing initially on prioritized waste streams. Efforts will be made to involve local communities in this process.

Waste Management (disposal and collection services)

Increased effectiveness in government's performance of waste services is a high priority for the sector. In particular, there is an urgent need to:

- **Ensure more effective operation and regulation of waste disposal facilities.** A significant number of the waste disposal facilities in South Africa are currently operating illegally (without a permit) primarily due to a lack of resources and capacity within municipalities to ensure that the facilities are managed to a standard that meets minimum requirements for permitting. Resource constraints are not the sole reason for poor management and greater emphasis needs to be placed on compliance monitoring and enforcement to ensure that more sites are permitted and are in compliance with their permits. DEAT is embarking on a five year national programme to identify all un-permitted sites and to support municipalities to bring sites to an acceptable standard for permitting. A particular priority is to ensure safe and legal management of hazardous waste sites given the intrinsically high impact these sites can have on the environment if poorly managed.

The sector has much work to do in terms of determining the financing requirements for bringing all disposal sites to required standards. Local government will need to identify funding options for the required capital expenditure – including local revenue sources and the possibility of representations to Provincial Treasuries and National Treasury for additional funds via the Municipal Infrastructure Grant (MIG).

- **Increase access to regular waste collection services.** About half of South Africa's population still do not have regular waste collection services. Schedule 5 of the Constitution provides local government with exclusive authority over the functions of cleansing; refuse removal; refuse dumps; and solid waste disposal. Provincial governments have a role in monitoring and providing support to local government and ensuring that the allocated responsibilities in relation to waste management are effectively performed.

Within the next year, DEAT and the Department of Provincial and Local Government will work together to produce a 'Sector Master Plan' on waste services which will address many of these issues.

- **Achieve increased compliance with waste related multi-lateral environmental agreements.** At present this only refers to the Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (Basel Convention). Administration of permits required under this convention is the responsibility of the Department of Trade and Industry but with input from DEAT (EQP Branch). Responsibility for monitoring compliance with this convention is not well defined. DEAT will lead the sector in clarifying roles and responsibilities under this convention and communicating any requirements of the sector to the relevant institutions.

Remediation

At present, the requirement for remediation is understood across the sector yet little activity is taking place in practice. Work is required by the sector to understand the scale of the task and then to identify the funding and resources required to carry out the remediation work required. Much of the problem stems from old municipal disposal sites which have not been adequately managed in the past. Thus the onus will rest with local government to fund and carry out remediation required. However, given the clear funding challenges faced by local government in the areas of waste management, the sector as a whole will investigate this problem and identify a strategy for addressing remediation. This is closely linked to the programme of improved regulation of waste disposal outlined above.

In general, DEAT will take a leadership role in ensuring that provinces and local governments fully understand their mandates as regards to waste related issues, as well the mandates of other key national departments i.e. DWAF and the Department of Health.

The sector will establish discussion and capacity building forums to encourage communication between spheres of government on waste issues. This model has proven it effective in the area of air quality management and is recommended for application in the waste focus area.

Chemicals Management

The management and regulation of hazardous and potentially hazardous chemicals is carried out under a wide range of legislation and by a number of national departments creating a potentially fragmented and inconsistent management system. There is also the potential for certain chemicals or components of chemical life-cycles to remain outside of the scope of regulatory oversight.



The main role of the environment sector is to support current regulatory measures but also, where these measures may be insufficient, to ensure that chemicals are managed in a manner which does not cause a detrimental impact to the environment.

International best practice is moving towards a life-cycle approach to chemicals management which addresses production, transport, storage, distribution, use and disposal of chemicals in a coordinated manner. Understanding and moving towards the life-cycle approach to chemicals management is a current challenge for South Africa.

South African has specific international commitments with regard to chemicals management. These include the Prior Informed Consent (PICs) and Persistent Organic Pollutants (POPs) agreements, under the Rotterdam and Stockholm Conventions respectively, which have not yet been translated into national regulatory requirements. Provinces and local authorities are also unclear about their roles in this area which is of increasing concern to them.

The formalisation of these international commitments and a clear indication of the relative roles and responsibilities of different spheres and departments of government is an important issue for the sector over the next five years.

Over the next 5 years the sector will...

- Shift the emphasis of waste management in the public and private sector towards waste minimisation.
- Improve performance in waste collection to show measurable progress towards universal access to adequate household refuse removal services.
- Significantly improve the management and control of waste disposal sites nationally
- Prioritise remediation activities to address contamination and degradation of the environment caused by poor past management of waste sites and other improper waste management practices.
- Promote the concept of cleaner production.
- Ensure that institutional and regulatory clarity is achieved with regard to chemicals management in the country, including the definition of clear goals for the country and delineation of the roles of the three spheres of government.
- Ensure that South African is able to meet its international commitments with regards to the PICs and POPs conventions and is able to use these agreements to protect the country from improperly managed chemicals.

The sector will achieve this by...

- Promulgating the Waste Bill.
- Developing and implementing a plan to roll-out the provisions of the Waste Bill (including identification of capacity and funding gaps related to its implementation).

- Fully implementing a waste information system.
- Developing and implementing a landfill permitting plan to address the problems of unlicensed landfills – and to identify funding sources to assist with upgrading of infrastructure.
- Implementing a strategy to address service provision issues to address the backlog in the provision of services to un-served communities – this will also include analysis of funding and capacity gaps and strategies to address these.
- Identifying and agreeing realistic targets for waste minimisation.
- Working with industry to develop clearer production and waste minimisation approaches/ strategies.
- Increasing awareness raising and education to try to influence consumption patterns and reduce waste generation by the general public.
- Understanding its responsibilities under the Basel Convention and putting systems in place to facilitate implementation of these responsibilities.
- Developing programmes to ensure delivery of South Africa's obligations as regards the sound management of chemicals.
- Instituting a review of chemicals management in South Africa. This to be used as a basis for developing a comprehensive chemicals management system for the country, with an associated implementation plan.

How the sector will work together...

Addressing the overarching problem of un-served areas with regard to waste management will require national government to work closely with provinces and local government to ensure that the necessary planning is done and funding sourced for the implementation of sustainable solutions.

Addressing landfill management will require DEAT and Provinces, once they are allocated responsibility for regulation of landfill sites, to work closely with local authorities. This will require “developmental regulation” where the regulatory authorities provide both support and oversight and enforcement functions. Continued cooperation with DWAF will be required as this Department was previously responsible for landfill site regulation and is yet to complete a full handover of this function. DWAF will also retain interest in waste disposal to ensure continued protection of the country's water resources.

Integrated Waste Management Plans will be key tools for ensuring that local government activities are in alignment with objectives of national government in this area and that service delivery targets for local government are established and implemented.

Table 3: Summary of Strategy for delivering outcomes for Waste and Chemicals Management

Existing long-term commitments by the sector for waste prevention and minimisation (Polokwane Declaration, 2001):			
To reduce the volume of waste generated by 50 per cent by 2012; To reduce the volume of waste being disposed of by 25 per cent by 2012; and To develop a plan for zero-waste by 2022. International commitments also made under the Basel Convention (Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal) (although permits under this convention are administered by the Department of Trade and Industry)			
Outcomes to be achieved in period of the sector plan	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Reduced amount of waste being disposed of.		Environment Sector	<i>Overall Target:</i> Reduce waste generation and disposal by 50% and 25% by 2012 (Polokwane Declaration, 2001)
	Develop industry agreements to promote waste minimization and recycling.	DEAT	New industry agreements in place by 2012. Recycling targets for paper by 2007/8 Targets for plastics and tyres by 2008/9
	Implement the National Cleaner Production Strategy.	DEAT	Award scheme for cleaner production by 2009/10
	Establish local recycling programmes	Municipalities	
Waste management services are delivered effectively	Prepare an enabling legislative and policy framework Identify resource and funding requirements	DEAT	Waste Bill promulgated in 2007/8 Norms and standards developed as per DEAT Strategic Plan Costs of Waste Bill and other key programmes identified by 2007/9 DEAT Guidelines series on waste management planning published as per DEAT strategic plan
	Develop appropriate sector strategies	DEAT with Provinces	Health care waste strategy and action plan by 2007/8 Hazardous waste management strategy by 2009/10 Waste minimisation strategy by 2009/10
	Development of approved hazardous waste management plans by provinces and integrates waste management plans by municipalities.	DEAT and Provinces and local government	At least 6 provinces have hazardous waste management plans by 2008/9 All District Municipalities and Metro's to have IWMP's by 2009/10

Outcomes to be achieved in period of the sector plan	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Improve performance in waste collection to show measurable progress towards universal access to adequate household refuse removal services	Targeted strategy to achieve waste services backlog Develop appropriate norms and standards for refuse removal services	DEAT and local government	Strategy developed by 2007/8 20% reduction in national refuse removal backlog by 2009/10
Develop a monitoring and evaluation framework for waste management	Develop and implement waste management information system. Promote research and development on waste and pollution	DEAT and Provinces	Waste management information system implemented by 2010 in all Provinces. Research needs and research programme and priorities developed by 2008/9
Substantial improvement in management and permit compliance of waste disposal sites	Develop and implement Landfill permitting programme	DEAT in partnership with provinces and local government.	50% reduction in number of un-permitted landfill sites by 2009/10
Prioritise remediation activities to address contamination from poor past management of waste sites and other poor waste management practices	Develop national database of priority sites – in conjunction with landfill permitting process (see above) Establish targeted clean-up programme for priority sites and materials	DEAT in with Provinces and local government. Supported by Depts of Agriculture and DWAF	Resource requirements outlined and resources mobilised for remediation programme by 2007/8 Disposal of obsolete agricultural pesticides initiated by 2007/8 National database of contaminated sites developed by 2008/9 60 % progress in clean-up of sites
Effective Chemicals Management in the Country	Instituting a review of chemicals management in South Africa.	DEAT and other key national departments including Health, Labour, DTI and Transport.	2008 review completed
	Designing a comprehensive chemicals management system for the country, with an associated implementation plan.	DEAT and other key national departments including Health, Labour, DTI and Transport	2009

Outcomes to be achieved in period of the sector plan	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Effective management of multilateral environmental agreements addressing hazardous and potentially hazardous chemicals	Development of an implementation plan to address South Africa's obligations with regards to the Persistent Organic Pollutants and Prior Informed Consent agreements (Rotterdam and Stockholm Conventions)	DEAT with key national departments, including Health, Agriculture, Trade and Industry, and Labour	2009
	JPOI Commitment: <i>Section 23 (in Chapter 3 Changing Unsustainable Patterns of Consumption and Production)</i> (a) Promote the ratification and implementation of relevant international instruments on chemicals and hazardous waste, including the Rotterdam Convention on Prior Informed Consent Procedures for Certain Hazardous Chemicals and Pesticides in International Trade (b) Implement a harmonized system for the classification and labelling of chemicals as soon as possible with a view to having the system fully operational by 2008.	DEAT	JPOI Targets: <i>Section 23 (in Chapter 3 Changing Unsustainable Patterns of Consumption and Production)</i> SCP Strategies 2010 Chemical labelling system by 2009

4.2.3 Pollution Incident Management

Where are we now?

Pollution incidents when they occur, often impact several media (e.g. air, water, soil) and can have serious impacts on both natural resources and human welfare. It is thus vital that there is an effective response mechanism in place within government to ensure that pollution incidents are dealt with in a way which minimises harmful impacts on both society and the environment.

With the fragmentation of responsibility for the environment - impacts of pollution incidents often involve more than one sector of government (most commonly, the environment and water sectors). Coordination across sectors in terms of responsibility for ensuring clean-up and remediation (as well as for coordinating investigation and prosecution efforts if required) is therefore often essential.

Management and response to pollution incidents also often requires cooperation within the environmental sector across spheres. Local government often has a critical part to play in terms of provision of emergency services if required. There is also a requirement for DEAT and provincial environment departments to communicate to determine which sphere of government will act as overseeing authority to ensure that an incident is adequately dealt with. The level of government which is involved will in many cases relate to the type, scale and impact of the incident involved. At present there is no agreed classification system in place to guide this decision.

Section 30 of NEMA does provide for a process for ensuring that information on 'emergency' incidents is received by government. This section also places the onus on the 'Responsible Person' to contain, clean up and carry out required remediation following an emergency incident. The role of government (the Relevant Authority) under section 30 is to receive information on the incident and then to ensure that adequate procedures are followed by the Responsible Person.

However, to date this section has been difficult to implement in practice. The term 'emergency incident' is not clearly defined and thus there is no clarity in terms of when this section of NEMA should be enacted. The section has not provided the clarity required in terms of which sphere of government is responsible for oversight of 'emergency' pollution incidents and fails to provide a framework for coordination of effort across sectors.

There is thus a definite need within the sector to clarify a process through which coordination both between sectors and within the sector is achieved when a pollution incident occurs – to ensure that effective management and response is achieved and through this that impacts on the environment are minimised.

Within South Africa there is no dedicated 'superfund' to provide funds for the management of pollution incidents. As a result, government institutions are often slow to respond as there may not be readily available funds to implement a response. There may therefore be a need to review funding requirements for incident response to ensure that institutions are able to intervene when necessary to reduce impacts to the environment.

Over the next 5 years the sector will...

- Work with other sectors to ensure that the environmental impacts of pollution incidents are dealt with in an effective manner, with input from government coordinated and mobilised quickly when required.

- Ensure that there is clarity across all sectors as to when and how input is required from national departments and spheres of government.

The sector will achieve this by...

- Developing guidelines (in conjunction with other relevant sectors) for management and response to pollution incidents (including post-incident investigation and enforcement activities).
- Developing and implementing an information management system for collating accurate information on incidents and responses to these - and linking this information to efforts on compliance and enforcement.
- Reviewing the effectiveness of section 30 of NEMA- with a view to ensuring there is a clear and effective legislative basis for government response to incidents with significant potential effect on the environment.
- Reviewing the effectiveness of current funding arrangements for government intervention in pollution incidents.

How the sector will work together...

DEAT will lead the sector to review current arrangements for pollution incident management and response – involving all relevant sectors across government. All spheres of the sector will be involved in this process.

Table 4: Summary of Strategy for delivering outcomes for Pollution Incident Management

Outcomes to be achieved in period of the sector plan	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Effective and coordinated processes for pollution incident in place	Development of guidelines for management and response to pollution incidents	DEAT EQP Branch (lead) , other relevant sectors, provinces and municipalities	Guidelines in place 2008
	Development and implementation of pollution incidents and response information management system	Development led by DEAT EQP Implementation – DEAT, provinces and municipalities	Information management system in place 2008
	Production of national annual reports on pollution incident management and response	DEAT EQP branch to lead	Development of reporting format by 2008 Submission of annual reports by all national and provincial environment departments – from 2009 onwards Production of consolidated national annual report on pollution incidents – and their management and response – from 2009 onwards
	Review of legislative basis for pollution incident response	DEAT	2009
	Review of effectiveness of current funding arrangements for pollution incident management and intervention	DEAT	2009-10
	Coordinate timely and accurate reporting of emergency incidents by responsible persons	DEAT EQP Branch	2010 target: review of and coordinated response to 90% of emergency incident reports received
Marine	Tbc	DEAT MCM	Tbc

4.2.4 Environmental Impact Management (EIM)

Where are we now?

In 1997, South Africa took a proactive step towards better environmental protection through the implementation of Environmental Impact Assessments (EIAs), which were mandatory for all new developments with potential environmental impact. As beneficial as the EIAs were for environmental quality, the lengthy application process created a bottleneck in development, which hampered the national priorities of economic growth and job creation. So the branch set about revising the EIA regulations to streamline the application process while maintaining stringent environmental protection. The review took five years, and was one of the most exhaustive consultation and revision processes in South African environmental legislation history.

The environmental sector is currently within a period of change with regard to EIM. In 2006, a new set of regulations for EIM under the National Environmental Management Act (NEMA) were gazetted. This has required the competent authorities within the sector to change their systems and processes to comply with the contents of the new regulations. Work has also begun to ensure that applicants and interested and affected parties are made aware of the new regulations and the implications these have on EIA processes.

Over the next 5 years, the sector will have to continue this process of rolling-out the new regulations. However, this period will also require the sector to address some of the more fundamental challenges with the implementation of environmental impact management it now faces.

Presently, the sector focuses its EIM approaches on the use of one particular tool – the EIA. The current reliance on and over-use of the EIA approach has been due primarily to the lack of alternative EIM tools available for use both by applicants and competent authorities. The reliance on the relatively inflexible EIA process which is costly and time consuming to administer, places a significant burden on resources within the competent authorities. This combination of lack of alternative tools, inefficiencies within the EIA system itself – and a shortage of capacity and resources within both DEAT and provincial environment departments has resulted in significant backlogs in processing of EIA applications. The net result is a perception among developers and the general public that the EIA process is an inhibiting factor as far as development is concerned.

In addition, there is also uncertainty as to the effectiveness of the EIA process in managing the environmental impacts of developments and qualifying activities. Whilst the existing system does have many benefits and has had significant positive impacts – it is also clear that an

inconsistency in quality of authorisations issued through the EIA process, and a low level of monitoring and enforcement of breaches with these authorisations have reduced its effectiveness.

It is thus a priority of the sector over the next five years to address all of the issues above through:

- Improving the efficiency and effectiveness of the EIA system.
- Developing a broader 'toolkit' of EIM approaches and instruments.
- Developing capacity and provide support – to ensure that regulators, practitioners and interested and affected parties are equipped to implement their roles within the EIM system effectively and efficiently.

To enable the above to take place, continued reform of the legislative and regulatory framework for environmental impact management is required.

Box 6: Evolution of current legislative and regulatory framework for EIM

The evolution of South African legislation for the statutory implementation of environmental impact management (EIM) commenced on 9 June 1989 with the promulgation of the Environmental Conservation Act, Act 73 of 1989 (ECA). This Act authorised the then Minister of Environmental Affairs to identify, by regulation, certain activities which may not be undertaken without prior consideration of the environmental impacts thereof.

After several years of inter-departmental negotiations the first environmental impact assessment (EIA) regulations were issued on 5 September 1997. A year later, on 19 November 1998, the ECA was superseded by the National Environmental Management Act, Act 107 of 1998 (NEMA). However, the ECA regulations remained in force until 21 April 2006 when the comprehensive EIA regulations in terms of NEMA were promulgated. The preceding period of nine years was devoted to a process of extensive intra- and extra-governmental negotiations and consultations to develop the NEMA regulations. As a consequence, the first amendment thereof is already under consideration. This assessment will be continuous and the regulations can thus be regarded as being in a state of active evolution.

This reform process will focus on amending chapter 5 of NEMA and revising the 2006 NEMA EIA regulations to increase the efficiency of the EIA process – but also to make provision for the use of alternative EIM tools (i.e. 'rationalisation' of the EIA process). Mechanisms being considered include:

- Identification (and prescription) of sensitive environments (ecologically or culturally sensitive – or environments of compromised quality) – and the identification of additional activities that would only require EIA authorisation if occurring in such areas.
- Development and adoption of Environmental Management Frameworks for geographical areas. Compliance with – or development in accordance with these frameworks would then result in 'pre-approval' or exclusion from EIA requirements of certain pre-determined activities.
- Pre-approvals of exclusions – as specified by means of approved sector policies or guidelines.
- Class or group applications.
- Refinements of thresholds to address province specific needs and challenges.

An additional factor which has been gradually increasing the administrative burden on both applicants and competent authorities – has been the proliferation of sector-specific environmental authorisations, permits and licenses many of which are required for one development but relate to the regulation of different activities under different pieces of legislation. The sector is thus currently working on amendments to Chapter 5 of NEMA which will provide for the rationalisation of environmental authorisation processes and will, in practice, allow an Environmental Authorisation issued through an EIA process to be expanded to include the requirements set in Specific Environmental Management Acts (SEMAs).

This integration will thus achieve a 'one process – one permit' situation. Whilst the sector may not achieve widespread implementation of 'integrated permitting' in this way in the next 5 years, this is a goal for the future and the next five years will see establishment of the required legislative framework – and the consideration and development of appropriate 'routes' for its implementation in practice.

Over the next 5 years the sector will...

Continue to roll out the implementation of the new regulations for EIA

Continue to reform and improve the EIM approach within South Africa – and to do this specifically through the following:

- Development and implementation of an effective and efficient EIA system.
- Development and implementation of a wider range of EIM tools.
- Providing for rationalised environmental authorisation processes and identifying options and approaches for its implementation into the future.
- Building of capacity and provision of support across the sector for regulators, practitioners and interested and affected parties.

The sector will achieve this by...

Rolling out of regulations will be achieved by...

- Creation of appropriate administrative systems and processes for the implementation of the new EIA regulations
- Establishment of programmes for the training of administrators in the regulations and in the application of the administrative systems and processes
- Creation of channels for the effective communication of information on the regulations and interpretation of the regulations to competent authorities, practitioners, applicants and interested and affected parties.

Improving efficiency and effectiveness of EIAs will be achieved by....

- Development of best-practices, guidelines, manuals and standard operating procedures and the promotion of the sharing of these between all competent authorities. This will include guidelines and templates for the production of robust environmental authorisations, performance targets etc.
- Continuing reform of the legislative and regulatory framework to ensure increased effectiveness and efficiency of the EIA process – and provision for the development of a broader set of EIM approaches in South Africa.
- Development and implementation of electronic/ web based application, permitting and information management systems to support regulatory activity (e.g. the NEAS¹⁰ system being developed and rolled out by DEAT).

Development and implementation of a wider range of EIM tools will be achieved by...

- Development of a national strategy and action plan for Environmental Impact Management – which will identify the future agreed approach to EIM and how and when this is to be implemented. This is a key strategic activity for the sector over the next 5 years,
- Analysis of capacity and resource requirements for EIM for the sector. This analysis will be used to inform the development of the strategy (above) and to guide recruitment, the generation and distribution of funds, skills and other resource requirements across the sector.

How the sector will work together

DEAT and the provincial environment authorities are the main role players in this area of the sector. DET will act in a leading and coordinating capacity over the next five years in the further development of the legislative and regulatory framework for EIM. The role of municipalities is currently limited to 'applicant' although their extensive role in local level planning and economic development means that they must have an in-depth understanding of the EIM processes. Both provincial and national government will work with local government to increase its understanding in this regard.

Table 5: Summary of strategy for delivering outcomes for Environmental Impact Management

Outcomes to be achieved in period of the sector plan	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
A refined regulatory framework for EIAs and other EIM tools	Amend and implement NEMA EIM provisions and the EIA regulations	DEAT	2007-08 Amendments to regulations finalised. 2008-09 and onwards: implementation of amended regulations 2007-08: Amendments to NEMA promulgated
	Development and implementation of a strategy for Environmental Impact Management	DEAT and provinces (lead agent: DEAT)	2007-08: develop and publish strategy 2008-09 onwards: implementation and monitoring of strategy
Increased performance in the minimisation, mitigation and management of negative impacts of development on the environment - through effective and efficient regulation of activities	Process applications for the environmental authorisation of development projects within stipulated timeframes	DEAT Provinces	2007-08: 50% of all applications nationally processed within timeframes 2008-09: 70% of all applications nationally processed within timeframes 2009-10: 80% of all applications nationally processed within timeframes DEAT has set itself specific targets for its processing performance – which are set at the same percent as above for the same years.
	Develop, implement and produce guidelines, protocols, manuals and so on for the efficient processing of applications for environmental authorisation of development projects	DEAT Provinces	2006-07: Produce guidelines 2007-08 onwards: apply to all DEAT authorisations
	Develop and present training courses for EIA administrators	DEAT	Annual target: 3 courses executed per year All provinces involved in receiving training
	Complete a number of Environmental Management Frameworks and Sensitive Area Identification projects	Provinces	2007-08: 3 new EMFs initiated. Previous EMFs implemented and audited 2008-09: 3 new EMFs initiated. Previous EMFs implemented and audited 2009-2010 3 new EMFs initiated. Previous EMFs implemented and audited No targets specified beyond 2010. 2007-08: 1 new identification project initiated 2008-09: 1 new identification project initiated 2009-2010: sensitive areas published in the gazette

Outcomes	How (means/ activities)	Who (Responsibilities)	Proposed Targets (what by when)
Increased national, provincial and local EIM governance capacity	Carry out a provincial EIM capacity audit and needs analysis	DEAT Provinces	Complete needs analysis in 2005-06
	Develop and implement training and decision support tools as per needs analysis	DEAT Provinces	2007-08: develop tool 2008 -09 – 2009-10: implement in selected provinces
	Develop and provide training course on new EIA regulations	DEAT	Annual target: 3 modules rolled out (but subject to change dependent on assessment of training needs)
	Develop and implement EIA specific compliance and enforcement strategies and annual compliance monitoring plans	DEAT Provinces	Target – as per agreed in national compliance monitoring strategy
	Develop and implement electronic web-based information management and permitting system (national system rolled out across provinces)	DEAT Provinces	NEAS by 2008
Increased incidence and 'quality' of involvement in EIA processes by stakeholders	Develop and implement a strategy and action plan for I&AP EIM capacity building	DEAT and provinces	2007-08: Strategy and Action plan in place 2008-09: annual implementation
	Investigate and develop mechanisms for assisting qualifying applicants	DEAT and provinces	2007-08: investigation and recommendations complete 2008-09: Develop and implement mechanisms



4.2.5 Conservation and Sustainable Use of Biodiversity

Where are we now?

South Africa is one of the most biologically diverse countries in the world and has a rich and spectacular array of terrestrial, aquatic and marine ecosystems.

These resources underpin the livelihoods of the majority of South Africans and contribute significantly to the country's economy. Nevertheless, South Africa's biodiversity is increasingly threatened by human activities, which in turn threaten the very resource base upon which we depend.

South Africa's biodiversity provides an important basis for economic growth and development –through the provision of natural resources and vital ecosystem services.

The country is one of the most biologically diverse countries in the world (containing over 10% of the planet's plant species and 7% of its reptile, bird and mammal species (SAEO 2007)). However, South Africa's biodiversity is increasingly threatened by human activities which in turn threaten the resource base upon which its population depends.

The need to protect vulnerable components of biodiversity from threatening processes through the establishment of conservation areas is widely accepted as one of the primary ways to conserve biodiversity directly.

These conservation areas include:

- the formal statutory protected areas (Type 1),
- the less formal protected areas e.g. mountain catchment areas, state forests (Type 2),
- informal landowner activities such as game farms and conservancies (Type 3).

South Africa has a long history of proclaiming conservation areas. However, the historic establishment of conservation areas was ad hoc, focussing on land with low agricultural potential or high tourism potential. The resultant conservation area network is therefore biased towards some ecosystems, and is far from wholly representative of the diversity of biomes and habitat types in the country.

Although South Africa is renowned internationally as a country of abundant national parks, we

are still short of meeting our national targets for land and sea areas under protection. The 2010 target is to have 8% of our land area and 20% of our coastline under protection. Over the longer term, the total land under formal protection will increase to 12%. These long-term targets translate to around 5.4 million hectares for land (an increase of about 50% on the current conservation estate) and about 1.8 million hectares of marine areas (28 times the current area under protection). Expanding our parks (and the tourism and income generation opportunities that go with them) is a key priority for the Department in preparation for the 2010 World Cup, and R181 million has been allocated for land purchases to grow the parks.

The recent national State of Environment Report (DEAT 2007) and the National Biodiversity Framework (DEAT draft January 2007) both cite the following as the major threats to biodiversity:

- Loss, fragmentation and degradation of natural habitat in terrestrial and aquatic ecosystems
- Invasive alien species
- Over-exploitation
- Climate Change (NBF 2007 draft, pvii)

Despite the presence of an extensive protected areas network in South Africa, many of the areas of highest biodiversity lie outside the borders of protected areas and are currently experiencing great pressure. The result is rapid biodiversity loss in many areas although the absence of comprehensive and accurate data on biodiversity across the country means that policy-makers do not have an accurate assessment of the situation at present. However, there is sufficient information in place to provide a starting point for action and analysis.

Much of the work of national and provincial government in recent years has been focused on continuing the updating and reform of the legislative and regulatory frameworks for conservation and sustainable use of biodiversity. As for other areas of the sector, one of the main challenges is now to complete this reform process, to develop the strategies and implementation plans to guide implementation and to identify the resources required to ensure implementation can be carried out effectively.

A summary of the achievements in terms of legislative and regulatory reform – and production of related strategies and action plans is included in box 7. It should be noted that the issue of resources required is still to be determined.

Box 7: Recent progress made on legislative reform and the publication of regulations, strategies and implementation plans for biodiversity and conservation.

The National Environmental Management: Protected Areas Act and National Environmental Management: Biodiversity Act were promulgated in 2003 and 2004 respectively. With the legislative reform completed at national level, the focus of last few years has been on the development of regulations and implementation strategies for these Acts. This work continues, with the following now completed:

- National Biodiversity Strategy and Action Plan (NBSAP) in 2005 which provides a long term strategy for the conservation and sustainable use of South Africa's biodiversity. Production of this document was a requirement under the Convention on Biological Diversity (CBD).
- National Biodiversity Framework (NBF) (as provided for under the Biodiversity Act). This draws from both the NBSAP and NSBA¹¹ and focuses attention on the immediate priorities for attention by the sector. A draft has been produced for public comment (January 2007).
- Regulations for the proper administration of special nature reserves, national parks and World Heritage Sites (2005). In compliance with these regulations, management plans for 19 national parks have been produced and a protected areas register developed. Management plans have also been produced for a large number of provincial reserves.
- The National Action Programme (NAP) – a strategy to combat land degradation and alleviate rural poverty was developed and approved by Cabinet in 2004. The production of this document was a requirement under the United Nations Convention to Combat Desertification. The main priority of the NAP is to coordinate an integrated approach to addressing the physical, biological and socio-economic aspects of the processes of desertification and land degradation.
- Community based natural resource management guidelines were developed and launched in 2003. These provide a framework for the implementation of community based land management related projects across the country.
- A Guideline regarding the determination of bioregions and the preparation and publication of bioregional plans has been prepared and will be gazetted for public comment in 2007.
 - Regulations for Threatened or Protected Species (TOPs) have been published.
 - A list of Threatened or Protected Species has been published.
 - The Protected Areas Register has been developed. The first level of information is now active on the world wide web.

In addition to the above, work is continuing on the following:

- Regulations in terms of the NEM: Biodiversity Act are in preparation (on Alien and Invasive Species; Bioprospecting; Access and Benefit Sharing. Due for publication in 2007).
- An elephant management policy statement (norms and standards for this in preparation).
- Norms and standards for the hunting industry (to be published in 2007)
- Listing of threatened or protected ecosystems.
- Norms and standards for Biodiversity Management Plans for Species.
- Environmental Risk Assessment Framework for Genetically Modified Organisms (GMOs).
- Regulations for the Knysna and Wilderness protected environments;
- Standard regulations for provincial nature reserves in terms of the Act;
- The development of indicators and a monitoring the performance with regard to the management of protected areas.

At a provincial level, progress has also been made in reforming and updating provincial biodiversity legislation in many provinces. There is a need for provinces to commit to continuing and completing this process, with a view to alignment with the national acts and rationalization of the law, especially in those provinces where there has been little activity.

Significant progress has also been made in the establishment and development of Transfrontier Conservation Areas. To date, six agreements have been signed between South Africa and the immediate neighbouring countries towards the establishment of six TFCAs, covering a land area of 9 716 444 hectares. Tourist access facilities (border posts) have also been constructed in the TFCAs to facilitate cross border tourism.

In terms of coordinating and prioritising the work of the sector, a first attempt at this has been provided through the publication of a draft National Biodiversity Framework. Whilst not yet an approved document, it is intended that the NBF will provide the framework for action by the sector in terms of biodiversity and conservation over the next 5 years. The NBF builds upon a series of objectives identified for the biodiversity sector within the National Biodiversity Strategy Action Plan (NBSAP) – but provides a series of priority actions for each.

There are five broad areas of activity outlined in the NBF, which are centred on the 5 long term (20 year) objectives outlined in the National Biodiversity Strategy Action Plan (NBSAP 2005):

- SO1: an enabling policy and legislative framework integrates biodiversity management objectives into the economy.
- SO2: Enhanced institutional effectiveness and efficiency ensures good governance in the biodiversity sector.
- SO3: Integrated terrestrial and aquatic management minimises the impacts of threatening processes on biodiversity, ecosystem services and improves social and economic security.
- SO4: Human development and well being is enhanced through sustainable use of biological resources and equitable sharing of benefits.
- SO5: a network of conservation areas conserves a representative sample of biodiversity and maintains key ecological processes across the landscape and seascape.

Priority actions for each of these objectives for the next five years have been identified within the NBF and targets and responsibilities allocated. These details are provided in table 7 below.

The NBF has been developed through a systematic process which resulted in a list of priorities for the sector. However, whilst it contains a list of priorities, these are not presented in a ranked or hierarchical manner. Thus, in terms of implementation and use of resources, there is little in the way of guidance as to 'where to start' or where to allocate scarce resources. An implementation plan for the NBF is thus required which will identify an 'internal priority' within the list of actions contained within the document.

This is a key requirement if the most important 'building blocks' upon which many other initiatives and actions rest are to be put in place. For example, within the context of sustainable development, the greatest challenge facing the sector is to ensure that both conservation of biodiversity and development can take place (as opposed to positioning the two in an either/or situation). Thus the issue is now where and how development takes place (NBF 2007 draft).

In order to enable this to happen, the sector has to establish a spatial understanding of the location, extent and sensitivity of its key biodiversity resources – and develop this understanding at a 'fine scale' for the areas of highest priority and sensitivity. Only with this in place, can the planning and land-use decision making processes in the country be influenced by biodiversity concerns. In addition incentives and mechanisms need to be found which will encourage the sustainable use and management of biodiversity by communities and landowners and to minimize the impact of developers.

Both of these issues are raised in the NBF and stated as priorities for action. However, it is apparent that these actions are fundamental to the success of other work in the sector and should be considered for prioritisation above others. Of specific importance is to ensure that the institutions charged with carrying them out have the capacity and resources to do so.

For example, some provinces are already in the process of preparing bioregional plans (also known as conservation plans or spatial biodiversity plans). These incorporate both aquatic and terrestrial features and identify critical biodiversity areas for which land-use planning and decision-making guidelines are then produced. At time of writing (July 2007) three provinces have completed spatial biodiversity plans (Gauteng, KZN, Mpumalanga), two more are in preparation (Eastern Cape and North West Province), and initial discussions are underway in the remaining provinces. However, it is clear that there are significant financial constraints within these remaining provinces which need to be addressed by the sector if the country is to have a spatial understanding of its important biodiversity resources for all provinces. The biodiversity planning process is reliant on research programmes, especially in the areas of taxonomy and ecosystem services. Work is also needed to identify key research areas to assist in this process and to provide resources to fund these.

In addition to the need to prioritise fundamental 'building block' actions over others within the NBF, there are also several issues of concern to the sector which have not been dealt with within the NBF – or require further work in order to provide detailed guidance for implementation. For example:

- The need to identify and clarify mechanisms for improving cooperation between sectors: both in terms of developing policy and management of biodiversity. This is critical to ensure integrated management of ecosystems can be delivered in practice. A priority area for work in this regard is the conservation of freshwater biodiversity (where the mandate for water quality lies with DWAF and the mandate for the biodiversity lies with DEAT). In this case there is an urgent need for inter-departmental cooperation to ensure the future conservation of this vulnerable biodiversity resource – at the level of both policy development and implementation.
- The need for improved communication and cooperation between the spheres. Much more communication and engagement is required between national and provincial spheres of government on the practical issues to be addressed in the implementation of biodiversity conservation – including the management of protected areas.
- The need to refer to and include reference to the future expansion strategy for protected areas - and for targets for management and monitoring of protected areas.¹²

- The need for a greater emphasis on developing approaches to protecting natural ecosystems and species from the effects of climate change (i.e. adaptation strategies for biodiversity) – especially for areas outside protected areas. Opportunities for this exist within the enabling regulations for protected environments under the NEM Protected Areas Act and for Biodiversity Management Plans and Agreements under the NEM Biodiversity Act.
- The need for rationalisation and consolidation of institutional arrangements for conservation and protected areas management at the provincial level. DEAT and the Western Cape are currently reviewing institutional arrangements in this regard – the findings of which may prove to be useful in this debate.
- The need for improved performance in regulation of authorised activities. Permitting, monitoring and enforcement must be made more efficient and effective. Capacity for all of these activities is a constraint in both national and provincial spheres of government. The current EMI¹³ registration and training programme will assist with this.
- The need to transform the conservation and hunting industries to ensure that access to the economic benefits of the industry is provided to previously disadvantaged groups and individuals. This remains one of the least transformed sectors of the economy and its transformation is a priority for national and provincial governments. Transformation of the 'biodiversity' sector is covered in the NBF and is to be addressed primarily through a capacity building programme. However, the sector should also set firm targets for transformation of both the conservation and hunting industries in South Africa, to ensure that action in this area is prioritised and monitored.

Over the next 5 years the sector will...

- Continue to develop the NBF to ensure that it covers all areas of concern for the sector – and provides adequate detail on how key priorities should be implemented in practice.
- Concentrate on implementation of the NBF.
- Facilitate its implementation through improving communication, engagement and support between spheres and with other sectors of government who play a pivotal role in the conservation of biodiversity.

From a regional perspective, the sector will also aim to deliver the specific priorities for action within the NBF:

- Strengthen and improve the development of integrated management and tourism plans of the transfrontier conservation areas.

- Develop and implement appropriate incentives for biodiversity conservation and its sustainable use in cooperation with neighbouring countries.
- Develop, implement and strengthen programmes for international scientific collaboration, sharing of information and technology transfer.
- Develop and implement a coordinate regional programme to increase awareness, knowledge and appreciation of biological resources at various levels.
- Strengthen the research and development capacity of the protected area system – and research programmes to support key biodiversity initiatives, such as bio-regional planning.

Table 7 below contains the priority actions, responsibilities and targets set out within the NBF for implementation by the sector.

The sector will achieve this by...

- Continuing to develop the NBF to ensure that it covers all significant issues for the sector – and provides additional guidance on priorities for action (i.e. prioritisation of the priorities it contains!).
- Driving the implementation of the NBF, integrating the priority activities and targets into institutional operational plans, monitoring and reporting on progress as required by the NBF.
- Identifying the capacity and resource requirements for implementation of the NBF and ensuring that required resources are mobilised.

How the sector will work together...

DEAT and SANBI are the lead agencies for many of the priority activities within the NBF and are thus responsible for 'driving' the implementation of the document. In addition, these two organisations have a vital role to play in catalysing actions of other lead agents, especially those whose core business is not biodiversity but whose active collaboration is required in order to achieve the NBF targets. Provinces particularly appreciate the role played by SANBI in the sector but require more communication and support from the national department in fulfilling their responsibilities.

Provincial environment departments have a key role to play in ensuring that biodiversity considerations are integrated into planning and development strategies (provincial and municipal), resource management and resource use regulations and guidelines. Key to achieving this will be the development of spatial biodiversity plans for all provinces as a short-term priority. The reform of provincial biodiversity legislation must also continue to ensure that it is aligned with national legislation.



For local government, the priority is to ensure that biodiversity concerns are integrated into IDPs and SDPs for municipalities and to ensure that systems are put in place for the control and management of 'priority' resources at the local level.

The NBF recognises that capacity is a significant constraint across all spheres of the sector and it contains activities related to building capacity in biodiversity conservation and management.

Table 6: Summary of the strategy for delivering outcomes for conservation and sustainable use of biodiversity

Outcomes	How (means/ activities)	Who (Responsibilities)	Proposed Targets (what by when)
Optimal health and integrity of ecosystems and their processes achieved	Continued development and internal prioritisation of the NBF and production of prioritised action plan	Lead Agents DEAT & SANBI	NBF completed and published by end 2007
	Identification of resource and capacity implications of NBF Effective implementation of the National Biodiversity Framework	Lead Agents: DEAT & SANBI Implementation of relevant elements of the Framework by all institutions within the sector	Fulfilment of the '2012' targets contained within the Framework
	Regular monitoring of progress in implementation of the NBF – as per the M&E requirements within the document (all institutions to report to DEAT on progress with implementation – 2 years before the end of the 5 year cycle of the NBF	All	Report on progress with implementation 2010

Table 7: Summary of objectives, priority actions and targets from the NBF (draft 2007)

Strategic Objective	Priority Actions for 2007-2012	Lead Agencies	2012 target
SO1: An enabling policy and legislative framework integrates biodiversity management objectives into the economy	Make the case for the value of biodiversity as a cornerstone of sustainable development Integrate biodiversity considerations into fiscal policy Integrate biodiversity considerations into land use planning and decision-making, by developing tools for supporting and streamlining environmental decision making Develop a regulatory framework for the prevention, containment and eradication of invasive alien species (IAS) Develop a regulatory framework for access and benefit sharing (ABS)	DEAT, SANBI, bioregional programme coordination units DEAT, SANBI, National Treasury, bioregional programmes DEAT, SANBI, provincial environmental affairs departments DEAT DEAT	Partial economic valuation of South Africa's biodiversity is completed and has been presented to key decision makers and the public At least two fiscal instruments and/or market mechanisms for biodiversity conservation are developed and pilots are underway Ecosystem guidelines for environmental assessment, generic terms of reference for biodiversity specialist studies in EIAs, a decision-making framework to guide trade-offs where these are unavoidable, and a policy for biodiversity off-sets have been developed and are being applied nationally IAS regulations are fully implemented by all issuing and competent authorities ABS regulations are finalised and published
SO2: Enhanced institutional effectiveness and efficiency ensures good governance in the biodiversity sector	Establish and implement a capacity building programme within the biodiversity sector to address transformation Improve biodiversity information management Establish and implement a national biodiversity research strategy	SANBI, DEAT, SANParks, provincial conservation agencies, tertiary education institutions, relevant SETAs SANBI SANBI, DST, DEAT (MCM), Water Research Commission, National Research Foundation, CSIR, museums, others eg ORI, SAABI, ...	National biodiversity conservation capacity building programme, reflecting specific employment equity targets for all key research and implementing agencies in the biodiversity sector Web-enabled one-stop-shop for biodiversity information established, recognised and extensively used by managers and professionals A national biodiversity research strategy is developed, recognised by all key stakeholders and is guiding allocation of research efforts

Strategic Objective	Priority Actions for 2007-2012	Lead Agencies	2012 target
	Establish and implement a national monitoring and reporting framework for biodiversity Establish a national programme to build the capacity of local government to include biodiversity opportunities and constraints in municipal planning and operations Establish pilot projects to explore mechanisms for integrated natural resource management at the district and local level Support the development and strengthening of bioregional programmes	SANBI, DEAT, DWAF, provincial conservation authorities, bioregional coordination units, SANParks SALGA, SANBI, DPLG, DEAT, bioregional programme coordination units, provincial conservation authorities Provincial conservation authorities, SANBI, DPLG, SALGA, DEAT, bioregional programme coordination units DEAT, SANBI, bioregional programme coordination units	National biodiversity monitoring and reporting framework is established and being used as the basis for annual reports to parliament and is informing policy direction and implementation. Monitoring and evaluation frameworks for provincial conservation authorities and bio-regional programmes feed into the national monitoring and reporting framework A national programme to build municipal capacity has been established and is underway, focusing initially on municipalities with, for example, high numbers of threatened ecosystems. Pilots for district natural resource coordinators and/or other mechanisms for integrated natural resource management are underway in at least four districts. The co-ordination units of the five existing bioregional units are funded by government and effective management structures have been established. At least two new bioregional programmes have been established (marine, freshwater)
SO3: Integrated terrestrial and aquatic management minimises the impact of threatening processes on biodiversity, enhances ecosystem services and improved social and economic security	Develop provincial spatial biodiversity plans that identify geographic priorities for biodiversity conservation Publish bioregional plans in terms of the Biodiversity Act List threatened and protected ecosystems in terms of the Biodiversity Act Work with key production sectors to minimise loss and degradation of natural habitat in threatened ecosystems and critical biodiversity areas	Provincial conservation authorities, SANBI Provincial conservation authorities, SANBI DEAT, SANBI, provincial conservation authorities Provincial conservation authorities, bioregional programme co-ordination units, relevant industry sector organisations, SANBI, Agri-SA	At least 6 provinces have spatial biodiversity plans in place, with the necessary in-house capacity to maintain and update them. Should be all provinces because these are 2012 targets At least 7 bioregional plans have been published and are being used routinely to inform land use planning and decision making ditto Threatened or protected ecosystems have been identified and listed and the list has been updated at least once. Appropriate supporting material is available, and listed ecosystems are routinely taken into account in land-use planning and decision-making

Strategic Objective	Priority Actions for 2007-2012	Lead Agencies	2012 target
	Implement the IAS regulations and put in place other control mechanisms and monitor implementation Implement the cross-sector policy objectives for conservation of inland water biodiversity Incorporate biodiversity conservation objectives in the work of Catchment Management Agencies Develop and implement effective measures for management and control of activities relating to Genetically Modified Organisms in order to manage their impact on the environment	DEAT (including MCM), DWAF, DoA, provincial conservation authorities, bioregional programme coordination units, SANBI, SANParks, local authorities DWAF, DEAT, SANBI, DoA, provincial conservation authorities DWAF, CMAs DEAT, DST, DTI, DoA, DWAF, SANBI	Guidelines for biodiversity friendly production of biofuels have been developed and are being applied by biofuel producers An 'eco-red meat' certification scheme has been developed At least three other production sectors have developed wise practice guidelines to minimise their impact on biodiversity. Control, monitoring and eradication plans are in place for priority alien invasive species that threaten ecosystem, habitats or indigenous species System to monitor implementation plans A portfolio of inland water conservation areas has been identified and mechanisms for implementing appropriate management of these areas are being piloted in at least three Water Management Areas All CMAs that are established and operational have integrated quantitative freshwater biodiversity targets and national biodiversity priority areas into their Catchment Management Strategies. Environmental Management System for GMOs has been developed and is routinely used
SO4: Human development and well being is enhanced through sustainable use of biological resources and equitable sharing of benefits	Address illegal and unregulated fishing and seafood trade, especially of line fish and abalone Develop an implementation strategy for bio-prospecting regulations Facilitate the development of the natural products sector	DEAT (MCM) just DEAT no DEAT MCM, South African Sustainable Seafood Initiative (SASSI), coastal provinces, WWF-SA (Marine Programme), SANBI [not a responsibility of coastal provinces] DEAT DEAT, IUCN, SANBI, DTI, DST, DAC, research institutions, NGOs	Linefish status reports are updated, recovery plans are implemented for 6 species and the ecosystem approach is implemented in all major commercial fisheries Implementation strategy for bio-prospecting regulations has been developed and milestones or targets identified in the strategy are being reached Facilitate international trade Facilitate certification

Strategic Objective	Priority Actions for 2007-2012	Lead Agencies	2012 target
	Improve knowledge of sustainable extractive use of terrestrial resources	SANBI, research institutions	Grow domestic demand through increased awareness Strengthen natural products enterprises and supply chain management Knowledge of the extent of harvesting and limits to sustainable extractive use of at least ten medicinal plants is developed, and species management plans have been developed for at least five medicinal plants in collaboration with user groups
SO5 A network of conservation areas conserves a sample of biodiversity and maintains key ecological processes across the landscape and seascape	Establish and strengthen provincial stewardship programmes Establish additional National Botanical Gardens	DEAT (including MCM), SANParks, provincial conservation authorities, SANBI DEAT (including MCM), SANParks, provincial conservation authorities DEAT, provincial conservation agencies, NGOs, SANBI, local authorities SANBI, DEAT	Protected area expansion strategy finalised and supported by all key implementing agencies Complete, up-to-date map of protected areas widely available Protected areas register fully populated 8.5% of terrestrial area and 20% of marine area is included in the protected area network At least five provinces have active stewardship programmes At least two new National Botanical Gardens established
Proposed additional objective & actions to supplement the contents of NBF A system of ecologically viable protected areas representative of South Africa's biological diversity, its natural landscapes and seascapes.	Expansion strategy completed to ensure 10% of South Africa's terrestrial area is in formal protected areas. Completing the Register of Protected Areas Monitoring of the system Management of the protected areas in the system	DEAT, protected area management authorities (including SANParks, GSLWPA, provincial authorities)	Formal protected area estate at 8,5% of South Africa's terrestrial area Up to date, interactive register, with all layers complete Programme of monitoring developed and implementation initiated Management plans for all protected areas requiring them signed off by the Minister or MEC as the case may be

Strategic Objective	Priority Actions for 2007-2012	Lead Agencies	2012 target
Priorities for regional co-operation in the next five years	Strengthen and improve the development and implementation of management plans for the transfrontier conservation areas Develop and implement appropriate incentives for biodiversity conservation and its sustainable use in cooperation with our neighbouring countries Develop, implement and strengthen programmes for regional scientific collaboration, sharing of information and technology transfer Develop and implement a coordinated regional programme to increase awareness, knowledge and appreciation of biological resources at various levels Strengthen the research and development (R&D) capacity of the protected areas system Suggestions by consultees of the sector plan process as additions to this section: Strengthen regional research capacity for effective biodiversity conservation (especially in the fields of taxonomy and ecosystem services) Linking biodiversity and climate change	DEAT in cooperation with relevant implementing agencies of the neighbouring countries, SANParks DEAT in cooperation with relevant agencies in SADC SANBI and relevant institutions in neighbouring countries DEAT and relevant regional institutions DEAT and relevant regional institutions, research and academic institutions	Six integrated management and tourism plans in place – and reviewed every five years At least one regional incentive scheme for biodiversity conservation in place One uniform regional information system in place An appropriate regional awareness, information and knowledge on biological resources at various stakeholder levels strategy in place An appropriate regional R&D approach for biodiversity initiatives in place



4.2.6 Marine and Coastal Management

Where are we now?

A specific responsibility of the sector is to manage the development, sustainable use and orderly exploitation of our marine and coastal resources, as well as protecting the integrity and quality of our marine and coastal ecosystems.

The marine and coastal resources of South Africa are rich and diverse and provide important social and economic benefits for the population, particularly those people living in coastal areas. South Africa's 3 751km coastline is a natural asset, serving as a major shipping trade route, home to a vast biodiversity of marine and coastal species, provider of food and jobs for many of our people, and attracting growing numbers of tourists each year.

However, increasing human and environmental pressures on marine and coastal ecosystems are changing the functioning and structure of many of their components and are in many cases, leading to over-exploitation, degradation and resource loss.¹⁴ The primary role of the sector is to protect marine and coastal ecosystems and biodiversity, and to ensure that opportunities are available for sustainable use (whether consumptive or non-consumptive) of these resources in an equitable way.

In terms of functions within the sector, it is important to clarify that competence for 'marine' issues lies solely at the national level – residing with the Marine and Coastal Management Branch of DEAT. However, responsibilities for coastal management are shared across all three spheres of government with provinces playing a pivotal role linking national policy and strategy – to action at a local level. In addition, marine and coastal issues are dealt with under separate pieces of legislation (marine – under the Marine Living Resources Act and coastal management under the new Integrated Coastal Management Bill). This separation will be maintained in this section of the sector plan to try to provide clarity on roles and responsibilities in this area.

With respect to Marine resources – the on-going challenge for the sector is to ensure sustainable consumptive use of marine biodiversity resources.

This must also be done in a manner which ensures equitable access to resources in order to redress the barriers to resource use experienced by previously disadvantaged communities in the past. Transformation of the fishing industry has made good progress, but continues to be an issue of importance for the sector.

In 2005, DEAT MCM embarked on a process of allocating long-term commercial fishing rights in fisheries sectors ranging from the more accessible to the most capital intensive fisheries.

A General Fishing Policy and 20 specific policies were developed in 2005/06 to guide this process. By the end of March 2006 almost all the long-term rights in the respective fishing sectors had been allocated. There is now a need to carefully monitor fish stocks to detect over-exploitation or negative impacts on the integrity of marine ecosystems.

Research is a primary function of the sector – particularly research to determine the state of fish stocks and modelling of Total Allowable Catch (TAC) and Total Allowable Effort (TAE) for the important commercial fish species – and is an essential input into the long term rights allocation process.

South Africa is also working towards the implementation of an ecosystem approach to fisheries management. This goal was identified at the WSSD in 2002 and progress towards its fulfilment is being made, particularly in work being done through collaboration with neighbouring coastal countries through the Benguela Current Large Marine Ecosystem (BCLME) programme which is allowing fish stocks in this area to be managed jointly and holistically on a regional basis.

DEAT MCM is also responsible for preventing and eliminating illegal marine activity. South Africa now has a fleet of Environmental Protection Vessels (EPVs) which operate in both South African and SADC waters. In 2005-06 171 Fisheries Control Officers had been stationed at 31 locations to conduct patrols and inspections. However, it should be noted that DEAT MCM experiences critical capacity and resourcing challenges in these areas. In terms of capacity, there is an urgent need for additional technical and enforcement skills in the sector. A financial resource to fund operation of the EPVs is also a critical issue at present and currently uses a significant proportion of the total MCM annual budget.

South Africa has designated Marine Protected Areas and the primary challenge for the sector in the next five years is to increase the effectiveness with which these are managed. There are also specific areas where expansion of the network would increase the representativeness of the system (e.g. to include off-shore marine ecosystems). A strategic approach to further expansion of the marine protected area network is needed in order to guide the selection and designation of any further areas.

In the face of changes in climate and the impacts this may have on ocean currents, marine species and ecosystems, a priority for the sector over the next five years is to increase its understanding of the potential impacts of climate change on the marine environment – and the vulnerability of these ecosystems to such changes. DEAT currently has insufficient knowledge in this area and additional research is needed to provide the platform of understanding upon which any adaptation strategies could be based in the future.

In terms of coastal management, challenges facing the sector are related primarily to minimising pressure on the coastal zone from human activities. In particular:

- The control of development in the coastal zone (which is transforming natural habitats, disrupting coastal ecosystems and reducing their resilience). Commercial developments including mining are the greatest cause for concern.
- ensuring sustainable consumptive use coastal biodiversity resources.
- encouraging the development of responsible marine aquaculture activities (this is a rapidly increasing activity in the coastal zone which is to be encouraged given its role in providing a source of fish to supplement natural fish stocks – however, strict control is required to ensure that this industry (which does provide some inherent risks to the environment) is managed in a sustainable way). Control is to be achieved primarily through the EIA process, the development of guidelines for the industry and amendments to the Marine Living Resources Act).
- Protection of estuarine ecosystems from pollution and waste water resulting primarily from land-based activities.

As for marine resources, there is also a need for additional research on the potential impacts of climate change and the vulnerability of coastal ecosystems to changes in climate. There is also a need for additional compliance and enforcement activity in relation to consumptive use of coastal resources and environmental authorisations for developments.

In all of these areas, the challenge for the sector is to ensure effective cooperative governance. Coastal zone management is governed under very fragmented set of institutional arrangements which require significant effort in terms of communication and coordination to be effective. At present there is an urgent need to improve the performance of all institutions involved in this regard. The production of coastal management plans by both provincial and local municipalities are an important tool in this regard and emphasis should be placed in ensuring that all coastal provinces and municipalities have one in place.

For both marine and coastal management, there is a need for the sector to continue to work on the development of an effective legislative and regulatory framework for marine and coastal zone management – and to ensure that this is implemented effectively. In the next five years this will involve promulgation of the Integrated Coastal Management Bill, amendment to the Marine Living Resources Act.

It should be noted that a National Biodiversity Framework has been developed (draft January 2007) which contains many actions and targets which are relevant to both marine and coastal management. Thus the sector will work with its colleagues within SANBI, provincial environment departments and the Biodiversity and Conservation Branch of DEAT to implement the relevant actions within the NBF.

Over the next 5 years the sector will...

Marine:

- Continue to work towards the equitable and sustainable use of marine natural resources and implementation of an ecosystem approach to the management of marine resources.
- Reduce levels of illegal fishing.
- Improve the effectiveness of existing marine protected areas and develop a strategy to guide any future expansion of the network.
- Increase its knowledge of the vulnerability of marine ecosystems to climate change
- Improve the financial management of the MLRF.

Coastal:

- Improve protection of marine and coastal areas from unsustainable development.
- Contribute to the enhancement of livelihoods of coastal communities.
- Ensure the marine aquaculture industry is developed and managed in a manner which is sustainable and prevents negative impacts on marine and coastal biodiversity.
- Work with provincial government, local authorities, DWAF, Department of Agriculture and other relevant sectors to decrease impacts from land-based activities on estuarine ecosystems.

The sector will achieve this by...

Marine

- Distributing long term commercial fishing rights and other concessions equitably and sustainably.
- Taking steps to allow recovery of overexploited resources – such as certain linefish and abalone.
- Establishing additional commercial fishing opportunities where appropriate and where fish stocks can support this.
- Encouraging non-consumptive use of marine resources where feasible.
- Increasing compliance and enforcement activity and effectiveness – through increasing numbers, skills and resources available for fisheries control officers. FCOs will be a component of the national Environmental Management Inspectorate. MCM branch will work with the EMI unit in the EQP Branch to develop and deliver the training and development required by the specialist FCOs.
- Increasing research efforts to focus on increasing understanding of the vulnerability of marine and coastal ecosystems to climate change.

- Implementing the relevant components of the National Biodiversity Framework (i.e. those that relate to the conservation and management of marine biodiversity). This framework contains strategy for the consolidation and expansion of the marine protected areas network and the production of management plans for these areas.
- Developing and implementing sound and robust financial management systems for the MLRF

Coastal

- Developing and implementing integrated coastal planning and management systems
- Increasing control of unsustainable coastal developments
- Implementing sustainable livelihoods programmes in coastal areas.
- Developing and implementing opportunities for sustainable non-consumptive activities within coastal and marine areas
- Developing guidelines and a regulatory framework for marine aquaculture – and working with provinces to ensure sound application of the EIA process to aquaculture development applications
- Implementing all relevant sections of the National Biodiversity Framework – as they pertain to the conservation and sustainable use of marine biodiversity (including ecosystems).

How the sector will work together...

As noted above, the three spheres of government hold responsibilities for the marine and coastal environment and so cooperation and coordination of effort is vital.

The lead agent for marine and coastal management is the DEAT Branch 'Marine and Coastal Management' based in Cape Town. This branch is responsible for protection and management of the marine environment and is also lead agent for coastal management. Thus for marine issues it is both the lead agent and is responsible for implementation (in terms of fisheries this includes regulation, permitting, monitoring and enforcement). For coastal issues, responsibilities for implementation are distributed between the three spheres.

The MCM Branch is responsible for implementation of the relevant sections of the National Biodiversity Framework which relate to marine and coastal environments and will work with relevant partners to ensure implementation.

Provinces have responsibilities for elements of coastal management and carryout integrated coastal management and planning (including interventions to prevent and remove illegal development in coastal areas).

Coastal municipalities are responsible for many day-to-day management activities for coastal management in the area above the high water mark (e.g. planning, engineering, beach management and tourism). They have a responsibility to develop coastal management plans and are supported by their province in this activity.

Coordination, cooperation and partnership are vital activities – both within the sector (between the three spheres of government in coastal areas) and between governmental and non-governmental coastal role players. The priority cooperative governance challenge for this area of the sector is to improve coordination and integration of coastal and marine resource management.

Table 8: Summary of strategy for delivering outcomes for Marine and Coastal Management

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Equitable and sustainable access to marine natural resources	Distribution of long-term fishing rights and other concessions (equitably and sustainably)	DEAT	All rights allocated 2006-07: Allocation of additional total allowable effort (TAE) in large pelagics (Tuna/ swordfish)
	Creation of additional commercial fishing opportunities	DEAT	2006-07 2(4) KZN round herring (Eteres); EC Rock lobster; EC deep sea crab; Abalone ranching 2007-08: 2(5) cage farming, WC sea urchins, sea cucumbers, bullia, WC round herring 2008-09: 3 Deep sea crab PEI, orange roughy, seaweed farming/culturing 2009-10: 1 Antarctic Krill
Effective regulation of marine and coastal resource use	Complete review of the MLRA regulations	DEAT	Review complete in 2006-07 (?)
	Amend MLRA		Act amended in 2008-09; Amended legislation implemented from 2009-10
	Promulgate marine aquaculture policy		Policy promulgated 2008-09
	Improve cost recovery re. contracts for marine consumptive and non-consumptive users	DEAT and Coastal provinces – no.	2006-07: electronic permitting 2007-08: Recover 100% of costs 2008-09: Recover 100% of costs
	Increase level and quality of permitting and licensing activities	DEAT Coastal provinces – no	Target to be agreed
	Increase compliance monitoring, surveillance and enforcement activity (both marine and coastal resources)	DEAT Provinces	2010 target: number of enforcement officers per km of coastline
	Increase conviction rate for illegal fishing	DEAT	Annual target: 75-80% conviction rate (baseline is 75%)

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Conserved integrity of marine and coastal ecosystems and biodiversity	Implementation of relevant sections of the National Biodiversity Framework i.e. Establish and implement a national biodiversity research strategy Implement the IAS regulations and put in place other control mechanisms and monitor implementation Address illegal and unregulated fishing and seafood trade, especially of line fish and abalone Finalise the twenty year protected areas expansion strategy, underpinned by the national biodiversity targets Implement Phase 1 of the twenty year expansion strategy	DEAT MCM	See NBF for relevant targets
Marine and coastal areas protected from unsustainable development	Promulgation of the Integrated Coastal Management Act	DEAT	Act promulgated in 2006-07
	Establish institutional structures for regulation under the Act	DEAT – lead agent	2007-08 :Structures established
	Implementation of the Act	DEAT A 7& Coastal Provinces, and Coastal Municipalities	2008-09 – 2009-10: Implementation started and continuing
	Monitoring and implementation of coastal zone management initiatives	DEAT MCM Coastal Provinces Coastal Municipalities	Compliance monitoring strategy in place for 4x4 and Marine Protected Area (MPA) regulations 2007-08: Implementation of compliance monitoring strategy for 4x4 and MPA regulations 2008-09 – 2009-2101: new coastal zone monitoring requirements identified and system implemented
	Development and implementation of effective planning and development mechanisms and incentives for effective coastal management (WP)	DEAT & Coastal provinces	Target to be agreed
	Development and implementation of mechanisms and incentives to reduce physical development in high risk coastal areas (WP)	DEAT & Coastal Provinces	Target to be agreed

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Enhanced livelihoods of coastal communities	Coordination and implementation of sustainable coastal livelihood programmes based on the natural environment	Coastal provinces (lead agents)	Target to be agreed
	Implementation of national Coastcare EPWP programme	DEAT & municipalities 9as per the EPWP programme)	continuous
Increased information and early warning on climate and environment	Management of Research Bases	DEAT	Continuous
	Management of Supply Vessel	DEAT	Annual target: 1 successful voyage per year to each of the three bases (Antarctica, Marion Island, Gough Island)
	Support and management of Research Programmes	DEAT	Target to be agreed
Improved financial management of the MLRF	Develop improved financial system	DEAT MCM	System developed by 2008
	Implement system		System in use from 2008-09 onwards



5. Means of Implementation

The previous section of this plan outlined the intentions of the sector for the next five years. These were stated as 'outcomes' and sets of activities to be carried out to achieve these outcomes were listed. However, the primary challenge for the sector is not in determining what its purpose is and what it wants to achieve. The process of legislative reform has largely addressed this and has provided a framework within which government can now work towards its defined goals. With the process of legislative reform nearing completion, the primary challenge for the sector lies in the implementation of its legislation and mandates – i.e. delivery. Thus, over the next five year period the emphasis of the sector will shift from reforming legislation and establishing regulatory frameworks – to grappling with challenges of implementation and delivery.

In order to do this, work is required to further develop and refine the 'enabling environment' for delivery – i.e. the systems, processes, frameworks, resources, information bases etc. upon which effective delivery will depend. This is the focus of this section of the plan.

Most of the elements of the enabling environment for delivery are prevalent across all the spheres and programme areas of the sector and thus are in essence 'crosscutting'. They therefore require sector-wide, coordinated approaches which consider how the challenges are dealt with by the sector as a whole – rather than by individual spheres or programme areas.

The key elements of the enabling environment which require attention are as follows:

- Shared responsibility and improving environmental governance
- Mainstreaming 'environment' into planning, growth and development
- Providing Support and Building Capacity
- Financing the Environmental Sector
- Promoting compliance and strengthening enforcement
- Improving environmental information for decision making
- Communicating and Raising Awareness - thus ensuring citizen participation

5.1 Sharing responsibility and improving environmental governance

The term environmental governance can be interpreted in many ways. In this section, it is used to include the frameworks within which the sector works and the manner in which it works. As such, it involves the following:

- making 'cooperative governance' work
- improving performance and accountability of sector institutions
- transforming government and the sector

5.1.1 Legislative and policy reform

Where are we now?

At the national level, significant progress has been made in reforming environmental legislation with the promulgation of NEMA (and amendments), the NEM: Biodiversity Act, NEM: Protected Areas Act, NEM: Air Quality Act.

In addition, Important policy documents produced in recent years include White Papers on: Environmental Management Policy (1997), Integrated Pollution and Waste Management (2000) and Sustainable Coastal Management (2000).

Currently, processes are underway in the development of an Integrated Coastal Management Bill, a Waste Bill and additional amendments of NEMA and the Marine Living Resources Act. Of particular concern at present is the continued fragmentation of environmental legislation and the increase this has led to in terms of proliferation of environmental authorisations issued by the sector. This increasing number of authorisations leads to an increased administrative burden for officials and makes compliance and enforcement activities all the more difficult. There is some work underway to make legislative provision for the rationalisation and integration of environmental authorisations. At a provincial level, progress to reform provincial legislation is underway in many provinces, although there is also inactivity in this area in others.

Over the next five years the sector will....

- Complete the reform of national legislation currently underway
- Continue to produce regulations required under recent legislation
- Realise a rationalisation of some forms of environmental authorisation
- Continue to develop policy (national and provincial) required to guide the functions of the sector
- Continue to reform provincial legislation

This will be achieved by...

- The promulgation of the Coastal Management Bill, the Waste Bill and the amendments to NEMA and the Marine Living Resource Act.
- Developing and gazetting regulations norms and standards, and guidelines under the NEM: Biodiversity Act, NEM: Air Quality Act.
- Reforming key provincial legislation on an on-going basis across all provinces including proposing amendments to NEMA to make provision for rationalisation and integration of environmental authorisations (through the EIA process).
- Reviewing the administrative implications of the fragmented legislative framework and large number of environmental authorisations it provides for – with a view to finding approaches to reduce administrative burdens and improve efficiency.

How the sector will work together...

- DEAT will lead the process for national legislation, policy and regulations.
- DEAT and Provinces (through MINTEC) will identify priorities for revision of provincial legislation and policy – the process of which will then be driven by provinces.

5.1.2 Cooperative governance

Where are we now?

Environmental functions are fragmented horizontally (e.g. between national departments) and vertically (across the three spheres of government). Thus, despite the reform of legislation which has taken place above, there remains within the sector a level of confusion as to where the responsibilities lie for certain environmental functions. In particular, there is significant uncertainty at the local government level as to the environmental functions of municipalities.¹⁵

Local government also has a responsibility to conduct its business in a way that is consistent with sustainable development principles (see Box 3.7) and to integrate environmental issues into its planning processes. This is a very broad mandate, the implications of which are not well understood by many municipal officials.

Without cooperative governance, roles and responsibilities can overlap and become indistinct, the system is fragmented and uncoordinated, and no adequate and efficient implementation and enforcement can take place.¹⁶

As a result of the fragmentation of functions, there is a need for communication and

cooperation both horizontally (i.e. between sectors/ across spheres) and vertically (i.e. within the sector/ between spheres). In addition, the nature of 'the environment' and sustainable development is such that virtually every sector of government has responsibilities or mandates which may impact on the environment. This makes the sector's role (and DEAT's in particular) in ensuring that the environment as a whole is protected and sustainably managed, very challenging indeed.

The function of Cooperative Government is thus to:

- Ensure that institutions within the sector can work together to achieve effective implementation of sectoral responsibilities
- Ensure that institutions from different sectors can work together to achieve effective environmental management and protection. This is an emerging need given the trend towards trying to manage ecosystem, catchments and human settlements as holistic entities requiring integrated approaches to management and protection.
- Ensure that responsibility for 'environmental decision-making' is clearly understood across the sector and that the environmental sector can position itself strongly in decisions that are taken by other sectors which affect the environment

Two frameworks for cooperative governance currently exist:

- i) The Framework for "cooperative environmental governance" provided by section 12 of NEMA (which establishes the Committee for Environmental Coordination (CEC) and creates the obligation on all national departments and provinces to produce Environmental Impact Plans (EIPs) and/or Environmental Management Plans (EMPs)
- ii) The more recent framework contained within the Intergovernmental Relations (IGR) Act. This introduces new mechanisms for implementing cooperative governance, such as 'Implementation Protocols' and 'Joint Programmes'.

In addition, the sector has established a MINMEC and MINTEC – to facilitate 'vertical' cooperation i.e. to enable national and provincial environmental decision-makers to communicate and cooperate on sector priorities.

The DG of DEAT also participates in national government DG Clusters as a means of integrating discussion of environmental issues into wider government discussions. Despite the presence of the above, cooperative governance remains a challenge to implement both within the sector and across sectors. Factors influencing this include:

'Horizontal' cooperation:

- The 'newness' of the IGR mechanisms means that there have been few instances of implementation of these mechanisms and their potential has yet to be tested widely. However, on paper they hold great potential for the sector.

'Vertical' cooperation

- MINMECs and MINTECs seem to work relatively well in coordinating communication and activity between national and provincial spheres although there is a general demand from within the sector for more less formalised interaction between the spheres.

Over the next five years the sector will...

- Increase clarity within the sector on the mandates related to the environmental sector for local government.
- Improve the effectiveness of 'vertical' cooperative governance within the sector.
- Provide clarity on mechanisms and approaches for achieving cooperation with other sectors (horizontal cooperation at all levels – i.e. national, provincial and local).

The sector will achieve this by ...

- Clarifying and communicating the environmental functions of local government.
- Ensuring that issues related to the powers and functions of the environment sector are thoroughly addressed in work to clarify powers and functions led by DPLG.
- Identifying mechanisms for more frequent and meaningful engagement with local government (in policy and decision-making).
- Committing to making cooperative governance work by giving time and resources (at all levels) to intra-sectoral communication, discussions and decision-making.
- Reviewing the effectiveness of EIPs and EMPs and recommending improvements if necessary to the documents, how they are prepared and how they should be used.
- Examining all options provided for cooperative approaches within the IGR Act – and communicating options and guidelines within the sector.

How the sector will work together...

- DEAT will lead the sector in discussions as to how to improve cooperative governance and communication within the sector – and between sectors. However, this process must include representation from all spheres of the sector and all institutions.
- DEAT will also lead on the review of the CEC and EIPs/EMPs and work with provinces and other national sectoral departments to identify future options for horizontal high-level interaction which will be effective and which all parties concerned will engage with fully.

- DEAT will lead a process of examining options within the IGR Act and providing the sector with guidance on this, although this process should include discussions with any institutions which have already implemented mechanisms within this Act to incorporate lessons learned.
- DEAT will represent the sector within high level national forums, such as the DG clusters. The Sector will support the DG in this process through the provision of information, clarification of issues and effective implementation of its responsibilities.
- All institutions within the sector will commit time and effort (at all levels) to making cooperative governance work.

5.1.3 Sector Performance and accountability**Where are we now?**

Current activity with regard to sector performance and accountability is taking place in three forms at present:

- i) Adoption by the public sector (including the environmental sector) of the Batho pele principles - as a framework for improved service delivery and customer service focus.
- ii) Monitoring of elements of performance of the sector by DEAT.
- iii) Formal monitoring and evaluation of the performance of institutions within the sector through government wide monitoring and evaluation processes.

Batho Pele principles:

- *Batho Pele* means 'people first' and the *Batho Pele* policy contains a set of principles which outline the commitment of the public sector to service delivery and recognise the need for a customer service orientation in the delivery of public services. The principles are contained in box 8.
- DEAT and the provincial environment departments now include objectives and activities which relate to the implementation of these principles within their strategic and business plans.

Box 8: Batho pele principles

Consultation: Citizen consultation around the level of, and quality of public service to be provided, where possible to be given a choice about services that are offered.

Service Standards: Citizens must be informed regarding the level and quality of service to expect.

Access: All citizens must have access to public services that they are entitled to.

Courtesy: Citizens must be treated with courtesy and consideration.

Information: Citizens must be adequately and accurately informed regarding public services they are to receive.

Openness and transparency: Citizens must be informed about the administrative processes of national and provincial government

Redress: Citizens must have access to redress mechanisms where the standard of service delivery has not been met, and effective remedies must be put in place.

Value for money: Public services must be attained through efficient use of resources to ensure that citizens receive value for money

Sector monitoring

Performance of institutions within the sector is currently monitored by DEAT using some key indicators:

- Compliance with relevant prescripts and policies
- Level of compliance with government framework
- Compliance with specific requirements of NEMA (e.g. EIP/ EMP prepared and submitted)

This is done mostly through the preparation of compliance audit reports.

Best practice suggests that the sector should also be using environmental monitoring and the identification of trends in the state of condition of the environment – as a method for monitoring the performance of the sector over time. However, this will require the sector to make a shift towards committing itself to achieving specific environmental outcomes and targets against which its performance will be measured. At present, this approach is rarely adopted probably based on an insufficient understanding of current state of the environment or of desired future states it wants to achieve for this to be a reality. However, this approach is recognised as best practice in many other countries and is one which the sector will strive to establish.

Government – wide monitoring and evaluation

The sector, like all others in government, has an obligation to monitor and report on its performance in implementation of its mandates and specific programmes. National Treasury

requires the sector to produce a 'chapter' for the Intergovernmental Fiscal Review process (every two years) when the sector must report on its expenditure in relation to outputs delivered.

In addition, in 2004 a Government-Wide Monitoring and Evaluation System (GWM&E) was established by the Presidency. This is in its initial establishment phase at present, but will be rolled out country-wide to all public sector institutions by mid 2007. The purpose of this system is to contribute to improved governance and to information on programmes to ensure: transparency and accountability, promotion of service delivery, compliance with statutory and other regulations – and the promotion of a 'learning culture' within the public sector. Information will be collated on four levels:

- Overall government performance
- Individual institutional performance
- Progress in implementation of programmes
- Information on Impact

All institutions in the sector will have to provide information to this system. DEAT has already established an 'M&E' internal structure to support its inputs.

Over the next five years the sector will...

- Improve its implementation (and monitoring of implementation) of the *Batho Pele* principles.
- Improve monitoring and reporting of performance of its institutions and the sector as whole – and taking steps to move towards an outcomes based planning and monitoring approach.
- Comply with the reporting requirements of the Government-wide Monitoring and Evaluation System.

The Sector will achieve this by...

- ensuring standards are set for the *Batho pele* principles and that these are implemented within each institution.
- improve systems within the sector for monitoring and reporting on key areas of performance.
- work towards setting environmental 'outcomes' based targets (which measure the state of the environment) towards which the sector can work and which can thus be used to judge performance of the sector.
- establish and implement the systems to comply with the GWM&E system



How the sector will work together...

- DEAT will lead the sector in the development of standards and systems required.
- All institutions will establish systems required to collate and report on information required for sector monitoring and GWM&E reporting.

5.1.4 Transformation of the sector

Where are we now....

Despite much work having taken place to transform the environment sector government to ensure that it is representative of the South African population, there remains a concern that many areas of the sector have not achieved the levels of representation required and that this reflects a legacy of past discrimination and inequality within the sector. The biodiversity and conservation area of the sector is of specific concern (NBF 2006 draft).

All institutions contain transformation targets within their strategic and business plans. However, a significant constraint to achievement of these targets is the shortage of skills within previously disadvantaged groups which provides difficulties for institutions in filling vacancies, contributing to BBBEE and transformation of the sector.

"In spite of growing numbers of jobs in the biodiversity conservation sector, young previously disadvantaged South Africans do not necessarily perceive career opportunities or career paths in the conservation sector. At the same time the shortage of conservation managers and professionals holds back the development of the sector and the achievement of biodiversity goals" (National Biodiversity Framework 2006, draft).

Over the next five years the sector will...

- Increase representation of previously disadvantaged groups within the sector (in terms of employment and procurement).
- Increase broad based participation in the key economic areas of the sector like wildlife breeding, hunting, commercial fishing and marine aquaculture.
- Increase participation of disadvantaged communities in environmental services like, impact assessment, monitoring and enforcement.

The sector will achieve this by...

- Working to increase the capacity of previously disadvantaged individuals to access employment within the sector – by ensuring that capacity building programmes are targeted to previously disadvantaged groups and individuals.
- Setting specific targets for those areas of the sector and its associated industries which have been identified as requiring transformation (conservation, hunting).
- Working with tertiary institutions to develop courses and training required by the sector in the areas where BBEEE targets have been set – and providing bursaries to facilitate entry to previously disadvantaged individuals to these courses.
- Continuing its commitment to meeting targets for transformation and BBBEE within the sector (including employment and procurement).

How the sector will work together...

- DEAT will lead the sector in the setting of targets for BBBEE for the sector and will monitor and report on performance.
- All institutions responsible for planning and delivery of capacity building will ensure that previously disadvantaged individuals and groups are targeted through this.

Table 9: Summary of strategy for sharing responsibility and improving environmental governance

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Legislative and Policy Reform: Complete suite of reformed and updated legislation at national and provincial level	Promulgate Coastal Zone Bill, the Waste Bill and the NEMA (Chapters 2&E) Amendments Amendments to NEMA to make provision for rationalisation and integration of environmental authorisations (through the EIA process) Update and reform provincial legislation on an on-going basis	DEAT Provinces	2007-08 2008-09 Targets for provincial legislation to be agreed between DEAT and provinces
Progress towards completion of regulatory frameworks	Develop and gazette regulations norms and standards, and guidelines under the NEM: Biodiversity Act , NEM; Air Quality Act	DEAT	2009
More efficient regulatory systems	Review the administrative implications of the fragmented legislative framework and large number of environmental authorisations it provides for – with a view to finding approaches to reduce administrative burdens and improve efficiency	DEAT and provinces	2008
Clarification of Mandates Clear understanding within the sector on the mandates related to the environmental sector – and the implications these have for the activities of each sphere of government	Clarify and communicate the implications of these mandates for all institutions within the sector	DEAT	2008-09
	Ensure that issues related to the powers and functions of the environment sector are thoroughly addressed in work to clarify powers and functions led by DPLG	DEAT	Initiative consultation with DPLG 2008-09
Making cooperative governance work Effective 'vertical' cooperative governance within the sector	identify mechanisms for more frequent and meaningful engagement with local government (in policy and decision-making), including cooperation agreements and IGR forums	DEAT (lead) Provinces Local Government	2008
	Commit time and resources (at all levels) to intra-sectoral communication, discussions and decision-making	All	Set annual target (to be agreed)
Clearly understood mechanisms and approaches for achieving cooperation with other sectors (at all levels – i.e. national, provincial and local)	Review the effectiveness of EIPs and EMPs and recommend improvements if necessary to the instruments.	DEAT Provinces	2009
	Examine all options provided for cooperative approaches within the IGR Act – and communicate options and guidelines within the sector	DEAT	2008

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
The sector is positioned strongly within national and provincial spheres in terms of environmental decision-making	Ensure sectoral issues are strongly and effectively represented within high level cross-sectoral forums, such as the DG clusters	DEAT	Continuous
Increasing citizen participation Effective formalised structures for citizen participation	Increase the participation in and effectiveness of consultation and advisory forums such as NEAF, NCCC Every Legislation and policy will be subjected to public comments	DEAT	Continues
Increased participation levels in environmental policy making and implementation at the local level, particularly among the poor, disadvantaged and rural communities	Continued consultation with communities and stakeholders via Imbizos	All	4 Imbizos held per year
	Implementation of capacity building and awareness raising programmes for stakeholders in civil society	All	Communications and Outreach targets
Improved access to environmental information	Ensure use of two official languages for written communication and all other official languages for consultation with the public	All	2008
	Monitor compliance of the sector with the Constitution, Promotion of Access to Information Act (no. 2 of 2000), Promotion of Administrative Justice Act (PAJA) (no. 26 of 2000) and NEMA	All	Publish Annual PAIA report
Sector Performance and accountability Improved performance of the sector in terms of the Batho pele principles	Set standards for the <i>Batho pele</i> principles and that these are implemented within each institution	All	Standards set by 2008 Standards to be implemented by 2008
Improved monitoring and reporting of performance of its institutions and the sector as a whole	Improve systems within the sector for monitoring and reporting on key areas of performance and taking steps to move towards an outcomes based planning and monitoring approach	DEAT	2008 Performance Scorecard Effective performance monitoring and reporting system in place by 2008
Compliance of the sector with the reporting requirements of the Government-wide Monitoring and Evaluation System	Establish and implement the systems to comply with the GWM&E system	All	By 2008 All systems required for GWM&E system in place by 2008

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Transformation of the Sector Increased representation of previously disadvantaged groups within the sector (in terms of employment and procurement)	Increase the capacity of previously disadvantaged individuals to access employment within the sector – by ensuring that capacity building programmes are targeted to previously disadvantaged groups and individuals.	DEAT, Provinces, agencies	200 HDI Interns 2 Learnerships per year
	Continue to set and meet targets for transformation and BBBEE within the sector (including employment and procurement)	All	Targets for conservation industry set by 2009 Targets for hunting industry set by 2009 Capacity building programmes in place to develop skills in conservation

5.2 Mainstreaming the environment into strategic development planning and decision-making

Where are we now....

There is a need to 'mainstream' the environment into many different levels and sectors of society if sustainable development is to be achieved in practice. The behaviour of consumers, the corporate sector, investors and other sectors of government – must all be influenced by environmental concerns and issues. However, the 'mainstreaming' of the environment into planning, growth and developmental strategies and processes is a key issue for the sector which if achieved will facilitate the achievement of many of its objectives.

The need is for environment considerations to be effectively embedded in the key tools and decision making processes the Government is using to take its development strategy forward. Too much reliance has been placed in recent years on using specific environmental management tools (such as the EIA process) to achieve sustainable development – with the result that EIAs are seen as impediments to development. Rather, the environment needs to be given adequate and balanced consideration within instruments such as provincial growth and development strategies, spatial development frameworks (provincial and local) and Integrated Development Plans (local).

In general, the proposed amendments to NEMA Chapter 5 (which aim to increase the number of EIM tools available) will go some way to reducing reliance on the EIA process to protect the environment – and promote the use of broader, more strategic approaches that will in effect

lead to greater mainstreaming of the environment into land use planning and decision making processes. Such approaches include Environmental Management Frameworks and spatial maps of environmentally sensitive areas, such as the spatial biodiversity plans currently being produced at the provincial level. These instruments will encourage the strategic consideration of environmental issues, leaving the project –level EIA process to be used as a last resort.

This shift towards a more strategic inclusion of environmental issues is beginning to take place. Provincial and Local Growth and Development strategies are beginning to reflect the benefits of environmental considerations, in some cases demonstrating a thorough understanding of the services the environment provides to communities and the benefits of maintaining or enhancing these services.

SANBI is working with provinces to assist them in the production of bioregional plans (spatial biodiversity plans) – to ensure that each province has an understanding of the location and nature of critical areas for conservation and can integrate this information into its spatial development planning. The Bioregional plans are also being used in many areas by municipalities to inform their SDF and IDP processes (see section 4.2.5 for more on bioregional planning approaches).

DEAT is working in partnership with some of the provinces on the production of IDP toolkits to assist municipalities in understanding and integrating environmental issues into their IDPs.

In terms of mainstreaming into larger growth and development strategies, the National Framework for Sustainable Development (and its eventual action plans) will be a key means

of ensuring that mainstreaming of the environment takes place at the national level. This framework is also vital in demonstrating that addressing the environmental pillar of sustainability supports a number of national developmental imperatives.

The challenge for the sector over the next five years is to fulfil the shift towards the mainstreaming of the environment into growth and development planning – across all spheres of government.

At the national level, DEAT needs to take leadership on this issue to ensure that National Departments also reflect environmental imperatives in the work and planning they do.

Over the next five years the sector will...

- Ensure that the environmental considerations are firmly embedded in all key
- Government planning and development documents and approaches including
- Growth and Development strategies and Spatial Development Frameworks.

The sector will achieve this by:

- Promulgating amendments to legislative which make provision for strategic EIM tools (see section 4.2.4 for details)
- Developing guidance on and best practise examples of how environmental issues can be incorporated into Growth and Development Strategies and Spatial Development Frameworks.
- Demonstrating how other approaches to planning based on environmental principles such as bioregional planning and EMFs can be used to enhance the benefit of existing approaches such as IDPs.

How the sector will work together...

The sector will do this by working together to ensure that the environment is considered in all planning and development processes in a rigorous manner that supports alignment and effective use of resources. The use of alternative approaches will be used to add value, and not replace mandated approaches to planning and development.

Table 10: Summary of Strategy for mainstreaming the environment into planning, growth and development

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Strengthened environmental element of Provincial and local government planning and development processes	Participation by DEAT in NSDP, PGDS and IDP review processes	DEAT	Participation in all review processes
	Expanded set of EIM tools in place	DEAT	See section 3.2.5. above for targets
	Development of environmental toolkits for use by District Municipalities in IDP processes	DEAT	Target: 2007-08 Capacity building toolkits for use by district municipalities in all provinces
	Development of spatial biodiversity plans (conservation plans) for provinces	Provinces	Target (from NBF): 2012: 6 provinces with spatial biodiversity plans in place and capacity in place to support these
	Development of bioregional plans as per the NEMBA		Target 9 from NBF) 2012: 7 bioregional plans published

5.3 Mainstreaming the environment into large scale public events

Where are we now...

With the 2010 FIFA World Cup™ less than three years away, as the host country, South Africa is presented with unique planning opportunities and challenges. The challenge is to balance the scales of development on the one hand with environmental sustainability on the other. South African Cities have already begun to feel the impact of preparation towards 2010.

The opportunities provided in terms of development and poverty upliftment are immense, but so too, is the need to ensure that such interventions are sustained beyond 2010.

Therefore, a proposed 'Green Arena' strategy for South Africa will aim to organise and implement the 2010 FIFA World Cup™ in an environmentally responsible manner and to use the publicity around the event to promote responsible environmental living. It is essential to ensure that the World Cup be hosted in a sustainable manner with minimum negative impact on the environment.

The effective use of the various planning instruments is key to promoting an event that not only does the host nation proud but does so within the parameters of the situation faced by the country.

Greening is a new phenomenon that is fast becoming the way for countries and cities to host an international event. The principles of the greening process include:

- Environmental best practice,
- Social and economic development,
- Education and awareness,
- Monitoring, evaluation and reporting and,
- Leaving a positive legacy.

South Africa has during WSSD 2002; event organizers were determined to reduce, re-use and recycle as much waste as possible and implement interventions that would collectively diminish the environmental "footprint" of the event. During WSSD 2002, important public awareness initiatives mobilizing and involving the public in sustainable development best practice projects were embarked upon.

The objectives of the greening programme are to create a platform to:

- Raise Environmental Awareness using the 2010 opportunity
- Minimise the environmental impact
- Leave a positive Legacy
- Strengthen the case for mainstreaming sound environmental consideration into major programmes
- Contribute to the broader objectives of hosting an African World class event

To achieve these objectives the sector will need a well coordinated Greening 2010 campaign that has both tangible (legacy) and intangible (minimum impact) broad based benefits (inclusive) to the South African population. Such a Campaign should build a sustainable partnership with various stakeholders and mobilise individuals and organisations to support environmental initiatives in the future and in the lead up to 2010.

Over the next five years the sector will...

- Implement a series of sustainability projects related to the 2010 FIFA World Cup™
- Implement a series of Legacy Projects and Capacity Building initiatives
- Plan and implement work in order to sustain the green agenda post 2012

The sector will achieve this by...

Sustainability projects:

A number of projects which can be implemented by all the 2010 Greening partners include:

- Climate Change
 - o Carbon offsets for Cup participants
 - o 2010 Carbon Fund
- Water Management
- Waste
- Inclusion: awareness-raising of communities especially in host cities
- Energy Efficiency and Renewable Energy Initiatives

Legacy Projects and Capacity building

- Sport and Environment Fund
- Sustainable Procurement
- The development of a event greening guidelines



Sustaining a Greening Agenda – 2010 to 2013

The following work will be carried post 2010

- An environmental Assessment of the 2010 Cup
- Improving Strong Relations and supporting a Sport and Environment Commission
- Sports and Environment Awards
- Provide a resource portal and modelling system of greening of sporting and cultural events information at the international and national level

A detailed strategy for implementation of the above is currently in preparation and will be rolled out in 2008 - 2011.

5.4 Providing Support and Building Capacity

Where are we now?

There is a need in the sector to provide support and build capacity in the following broad areas:

- Government environment officials – to implement specific environmental mandates.
- Government officials in general – to understand and integrate environmental issues into wider plans and processes.
- Politicians (particularly at the provincial and local levels e.g. Mayors, Councillors).
- Regulated community – to understand regulatory frameworks, provide required information on application for permits etc.
- Civil society – to access and then participate in government consultation processes on the environment.

Thus, in addition to increasing capacity within its own institutions, the effectiveness of the sector will also depend on its institutions working with stakeholders outside the sector to increase their capacity to understand environmental issues, legislation and regulatory frameworks – and to enable them to participate effectively (this is dealt with in more detail in section 5.8 (Communication, Raising Awareness and Increasing Citizen Participation)).

The most urgent task, however, is to provide support and build capacity within the institutions of the sector - to enable them to effectively implement their functions. Across the sector, many institutions in the three spheres of government cite 'lack of capacity' as the primary constraint faced when attempting to perform their functions. In this context, the term 'capacity' refers to a range of issues, such as:

- Staff numbers
- Skills and knowledge of staff (ranging from general management and communication skills – through to technical skills in the areas of air quality, environmental engineers, biodiversity conservation and management, EIM, inspection, investigation)
- Institutional structures and processes
- Infrastructure and equipment
- Funds
- Information to support decision making (see section 5.7)

However, although 'capacity' is often cited as a serious constraint to the work of the sector, not enough accurate analysis has yet been carried out to identify the specific capacity requirements of each institution upon which to develop budgets, recruitment and training strategies required to address the issue. Development of this information is a vital activity for the sector in the short term.

Despite the lack of accurate figures, commentary from across the sector implies that lack of capacity is prevalent in all institutions within the sector but is more severe in the 'implementation' arms of the sector i.e. provincial and local government.

Capacity constraints at the provincial level have significant impacts in several areas including the processing of EIAs, the compilation of waste management plans and the enforcement of environmental legislation.

Within local government, capacity needs affect even the most basic of activities, with many municipalities not having adequate technical capacity, or in severe cases, not yet having established environmental structures or systems. Fundamentally, many municipalities are not clear about their environmental mandates and with insufficient budgets allocated to environmental management activities, capacity and thus effectiveness remains low.

DEAT and its national entities also have capacity needs – mostly in technical positions, although DEAT also requires increased staff complements to implement emerging priority activities, such as regulation (permitting, compliance monitoring & enforcement). In all institutions, high staff turnover is an additional factor resulting in loss of institutional memory and providing a significant barrier to achieving an overall increase in capacity over time.

In terms of government institutions within the sector, capacity is required 'across the board' (i.e. in all areas and activities) – but lack of capacity is hampering the delivery of several key sectoral priorities in particular:

- Implementation of Regulatory activity (i.e. permitting, compliance monitoring and enforcement).
- Development of Plans (both specific environmental plans (e.g. AQMPs, IWMPs etc and integration of environmental issues into broader plans such as PGDS, IDPs).
- Service delivery – (e.g. waste management services, refuse collection, protected area management and so on).

Several areas of the sector (e.g. biodiversity, air quality) have been developing strategies to address capacity constraints in the past few years. DEAT and provinces have been developing and 'rolling-out' IDP 'Toolkits' to try to increase understanding of environmental legislation and local government mandates by municipalities. Provinces have also been developing and implementing capacity building approaches internally and with local government. Many of these approaches are in early stages of implementation but are believed to be showing dividends. In addition, DEAT has developed a local government support strategy and has placed 'Community Environment Workers' (CEWs) within district municipalities to increase input on environmental issues into district planning systems and processes (e.g. IDPs).

In terms of broader context, capacity has been recognised by government in general as a priority issue requiring urgent attention. Most activity has focused on capacitating local government, primarily because of the decentralization and delegation of powers to local government via the Constitution, and the failure of many municipalities to deliver their increasing number of responsibilities effectively.

In general, two approaches have been used by government to address capacity shortages:

- Provision of 'support' to fill gaps required to improve governance (e.g. develop legislation, deliver services & infrastructure, assist existing officials). Support is often provided from outside an institution and in many cases fails to also build capacity or transfer skills to existing officials.
- Capacity building programmes – but with a focus on achieving 'outputs' in the context of urgency for delivery. These often also fail to build sustainable institutional capacity (DPLG/ GTZ 2006).

The Department of Provincial and Local Government (DPLG) has been leading activity on capacity building and initially produced a National Capacity Building Framework to "establish an integrated capacity building structure and guidelines, which will steer capacity building strategies towards enabling municipalities towards fulfilling their Constitutional duties, and to perform their powers and functions as developmental local government entities".

This Framework was followed in 2006 by the Five Year Strategic Framework for Local Government which identifies "mainstreaming of hands-on support"¹⁷ for local government to improve municipal governance, performance and accountability" as one of its three strategic objectives for the next five years. The approach is thus focusing on the provision of support but in the understanding that any support provided works towards an outcome of increasing municipal capacity.

This strategic agenda is an important document for the environmental sector to understand and implement. It places the onus on national and provincial government to prioritize support for municipalities through the actions identified in the strategic agenda. It also specifies that all national and provincial sector departments must implement guidelines on supporting local government, dedicate personnel and financial resources to supporting municipalities and reflect support strategies in their strategic and business plans. Provinces have specific responsibility for developing 'municipal support plans' and to coordinate and monitor hands on support to provinces (via the Office of premier and Premier's Coordination Forum).

The National Skills Development Strategy (2005-2010) is another initiative of government which may provide opportunities for the sector to develop skills, although this potential may be under-developed at present given the absence of a SETA¹⁸ specifically dedicated to environmental professionals.

A priority for the environmental sector is thus to understand its capacity needs and develop a strategy to address these – but within the imperative of ensuring that its approach is based on and integrated into the overarching framework and approach to capacity building being developed by government as a whole. This is particularly important with regard to capacitating local government.

DEAT has prepared a 5 year local government support strategy (containing a strategy for direct support of municipalities from DEAT). A Local government support strategy which identifies how DEAT and provinces in combination will provide support to local government has also been produced.

Over the next 5 years the Sector will...

- Achieve increased awareness, understanding and integration of environmental issues within institutions and planning processes (see mainstreaming the environment – section 5.2 above).
- Achieve a measurable increase in capacity (of officials, institutions and politicians) – resulting in increased effectiveness in performance of functions across the sector.

- Achieve increased participation in environmental consultation processes – as a result of increased capacity of stakeholders.

The sector will achieve this by:

- Carrying out skills and capacity assessments (audits) for all environmental institutions at national and provincial level.
- Ensuring that environmental skills and capacity are adequately assessed via the DPLG competency Framework and National Government Skills audit for local government.
- Developing and implementing a national strategy for support and capacity building for the environment sector– to cover all spheres of government and focusing both on environmental officials and other officials and politicians.
- Approving and implementing the (draft) Local Government Support Strategy for Environment and Tourism Sectors – and ensuring that this is aligned to the Five Year Strategic Agenda for Local Government. (With the intention being that this would be integrated into a wider support and capacity building strategy for the sector once prepared?).
- Building on existing programmes and approaches – and incorporating lessons learned into new initiatives.
- Reviewing the role of Community Environmental Workers with a view to increasing their effectiveness in capacity building and support.
- Establishing a reporting, monitoring and evaluation system to monitor the effectiveness of the capacity building strategy (and its activities) on an on-going basis.
- Achieving integration/ mainstreaming of environmental capacity building into existing support and capacity building programmes for local government– particularly those emanating from:
 - Five Year Strategic Framework for Local Government
 - National Skills Development Programme
- Ensuring capacity building (e.g. skills transfer, building of institutional capacity) is an integral component of any support projects or other out-sourced projects commissioned by the sector.

- Increasing use of learnerships and bursaries as a means of increasing access to the sector at the entry-level.
- Developing strategies and approaches for increasing staff retention (for example, developing a COR (Code of Remuneration) for environmental professionals in the government sector).
- Increasing access to environmental related information by all stakeholders.
- Developing and implementing national strategy for capacity building of stakeholders (containing topic specific strategies e.g. coastal communities, compliance promotion to industry/ EIA applicants etc.).

How the sector will work together...

- DEAT and Provinces have defined roles to support local government – and to plan and allocate resources for this function. This obligation has been formalised within the Five Year Local Government Strategic Agenda.
- Within the sector, there are many initiatives emerging which are topic specific (e.g. capacity building strategy for biodiversity, air quality, general support and capacity building for IDP processes) and which are being driven by different institutions (e.g. DEAT, provinces, SANBI).
- To ensure activities are coordinated and targeted towards priorities, the sector will produce a coordinated strategy (the National Capacity Building Strategy – as noted above). Specifically, there is a need to coordinate activity at the municipal level to ensure that municipal environment departments are not bombarded with a series of un-linked programmes in an Adhoc way – but receive targeted and integrated support and capacity building programmes.
- Development of a common capacity building programme to ensure sharing of resources and best practice within the sector.

Table 11: Summary of strategy for providing support and building capacity

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Public and Government institutions empowered to make environmentally-informed decisions	See activities under 'mainstreaming the environment'	DEAT	Annual Reports on State of Environment M7 E System based on a set of Environmental Indicators
...in addition	Develop and implement tools and programmes to support and input to municipal IDP programmes (e.g. toolkits, CEW involvement with IDP processes)	Provinces DEAT (CEWs) Agencies	Toolkits in place for use by District Municipalities in all provinces by 2007-08 Review of toolkits 2009-2010
	Participation of DEAT and PEDs in IDP forums	DEAT Provinces	2008
Sufficient capacity within institutions in the sector to enable them to effectively implement their functions. (long term....in next five years anticipate making progress towards this)	Carry out skills and capacity assessments (audits?) for all environmental institutions Ensure that environmental capacity is included adequately in DPLG Competency Frameworks and National Government Skills Audit (local government)	All	Targets to be agreed
	Develop and implement a national strategy for support and capacity building for the environment sector	DEAT, Provinces, Municipalities, Agencies Led by DEAT Involve SALGA	2008
	Approve and implement the (draft) Local Government Support Strategy for Environment and Tourism Sectors – and ensuring that this is aligned to the Five Year Strategic Agenda for Local Government	DEAT	2008
	Continue to roll out media-specific training and capacity building on environmental legislation, processes and management – specifically in areas where new regulatory functions are being established (air, waste, environmental compliance and enforcement) (integrate these into the strategy once completed)	DEAT Provinces	2008
	Review the role of Community Environmental Workers with a view to increasing their effectiveness in capacity building and support	DEAT District Municipalities	Review complete in 2008



Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
	Achieve integration/ mainstreaming of environmental capacity building into existing support and capacity building programmes for local government– particularly those emanating from: - Five Year Strategic Framework for Local Government - National Skills Development Programme	DEAT	2008
	Fulfil all requirements of the 5 Year SFLG and NSDP programmes	DEAT Provinces Agencies	Fulfil requirements on annual basis
	Include capacity building as an integral component of any support projects or other out-sourced projects commissioned by the sector	DEAT Provinces Municipalities Agencies	2008
	Increase the use of learnerships and bursaries as a means of increasing access to the sector at the entry-level	All	2008
	Develop strategies and approaches for increasing staff retention (for example, developing a COR (Code of Remuneration) for environmental professionals in the government sector)	All DEAT to lead on national initiatives e.g. COR	2008

5.5 Financing the environmental sector

Where are we now?

The budget for the national DEAT is R2.02 billion (2006/7) which makes up 0.8% of the total budget allocation to national departments. The breakdown of this budget is shown in the box below. The combined provincial expenditure for 2006/7 is R1.38 billion with relatively large differences in expenditure between provinces.

Box 9: National expenditure by programme, 2003/04 – 2009/10

	2006/07	2007/08	2008/09	2009/10
R thousands	Preliminary outcome	Medium-term estimates		
Administration	150 101	156,784	164,963	175,019
Environmental Quality and Protection	214 801	245,977	249,132	258,121
Marine and Coastal Management	303 119	333,845	313,105	334,641
Biodiversity and Conservation	286 908	369,540	401,148	415,270
Sector Services and International Relations	550 121	860,511	964,475	1,021,310
Total	1 505 050	1,966,657	2,092,823	2,204,361

A significant portion of the DEAT budget is made up of transfers to the public entities reporting to the Minister including the SA Weather Service, the Marine Living Resources Fund, SA National Parks, the iSimangaliso (previously Greater St Lucia) Wetland Park Authority, and the SA National Biodiversity Institute. The DEAT budget over the three year planning period shows a relatively sharp increase in the 2007/8 financial year of 26% followed by increases of 8% and 7% in the subsequent two years. This demonstrates an above inflation increase in national funding for the sector. Much of the rationale for the increased expenditure is the need to support the implementation of the new regulations and legislation within the sector.

The fastest growing expenditure within the DEAT has been within the department's social responsibility programme, mainly because the Department's share of the Expanded Public Works Programme has increased. The programme has been allocated R538m, R570m and R645m in 2007/8, 2008/9 and 2009/10 respectively. The programme promotes job creation,

community training, and infrastructure development by implementing projects in sustainable land-based livelihoods, coast care, people and parks, tourism, and waste disposal and recycling projects. These projects are mostly in the rural and urban nodes prioritized by government as part of its Integrated Sustainable Rural Development Programme and Urban Renewal Strategy.

There is additional expenditure outside of the national and provincial budgets via the various public entities, particularly the national and provincial conservation bodies. Local government also budgets for environmental management services including the provision of solid waste collection and disposal. Much of this additional expenditure is financed from own sources which include park and accommodation fees in the case of conservation bodies and refuse collection and disposal charges at the municipal level.

To date, there has been no clear official motivation on behalf of the sector that insufficient financial resources are the primary obstacle to achieving sector objectives. However, it appears that in some areas limited financial resources do prevent some objectives from being met. Certain sub-sector plans, such as those for biodiversity and conservation and waste management and pollution control, specifically identify insufficient financial resources as a constraint. Further, the institutional and human resource capacity constraints identified in Section 4.3 above imply that significant expenditure will be required to develop and retain the skilled staff required to implement sector strategies.

At the local level it appears that solid waste services lag behind other basic municipal services, partly due to smaller budget allocations being made available via the national Municipal Infrastructure Grant to solid waste infrastructure, and due to waste services receiving inadequate operational budgets at the municipal level. The large backlog in ensuring that waste disposal sites are brought to an adequate standard for permitting will impose substantial new capital expenditure requirements for the sector over the next five years. Given the new regulatory powers over air quality management at the Provincial and Local Government level there is also significant risk that air quality management will not be sufficiently resourced in the near term.

Given the new regulatory initiatives in the sector it is very important to understand the implementation costs of new regulation and legislation. This has been done to a limited extent for some regulation but has not been comprehensively undertaken. The sector therefore does not have a clear indication of budgetary requirements for the implementation of new



programmes nor cost implications for regulated sectors to meet government objectives. It is a priority that the sector generates sound estimates of required expenditure to identify areas where further revenue is required to meet sector objectives. Improved and expanded budget estimates are also needed to justify funding requests to national and provincial treasuries.

A difficulty facing the sector is that environmental expenditure at times needs to be justified on the basis of the prevention of environmental costs and on public good grounds. There has been progress in the valuation of environmental goods and services and the valuation of environmental costs but the sector still faces the challenge of providing sound quantifications of environmental costs and benefits in support of additional budget allocations for the protection of environmental public goods.

The environment sector has historically generated little of its own revenue, aside from conservation bodies. This is likely to change over the next five years for a number of reasons. There is the growing acceptance of the need to recover the administrative costs of authorisations directly from the polluter. For example, the new Air Quality Act and Waste Management Bill both provide for the recovery of costs for the provision of licenses. This has the potential to raise additional revenue to finance costs of authorisations and compliance monitoring. The Environmental Fiscal Reform process of the National Treasury provides further impetus to raising revenue through the implementation of the polluter pays principle.

The EFR policy outlines a clear framework for the establishment of environmental charges and taxes. This opens many new opportunities for the use of economic instruments in support of environmental objectives and has the ancillary objective of raising revenue for the fiscus and for environmental authorities. Although the EFR framework has been established by the National Treasury it is incumbent on the environmental authorities (at all spheres of government) to develop practical instruments within this framework.

Over the next 5 years the sector will...

- Secure adequate financial resources to meet sector objectives based on a sound understanding of the costs of implementation of environmental legislation at all spheres of government.
- Increase own sources of revenue from the increased implementation of the polluter pays principle through user charges and other mechanisms.
- Develop the Environmental Fiscal Reform policy into a practical approach to efficiently addressing environment sector objectives.

The sector will achieve this by...

- Drawing on the capacity audits outlined in Section 5.4 to identify clear human resource, technical capacity and infrastructure needs to meet the objectives of the sector.
- Undertaking evaluations of the cost implications, both implementation and compliance costs, of new environmental legislation and regulation in line with the new Regulatory Impact Assessment procedures being developed by the National Treasury and the Presidency.
- The expansion of own revenue sources within the sector – including the introduction of appropriate charges for environmental authorisations and compliance across the sector to ensure implementation of the polluter pays principle. This will include the use of user charges for atmospheric emission licenses; charging for authorisations under the new Waste Management Act; consistent user charges for solid waste disposal and others.
- Ensuring that effective cross subsidisation is in place within the conservation sector. While some popular protected areas can raise significant revenues not all protected areas can be self-financing. This may require review and rationalization of resource allocation in relation to biodiversity values and significance of the protected area.
- Establishing economic instruments for environmental protection within the Environmental Fiscal Reform framework in collaboration with the National Treasury. Economic instruments will be developed to support biodiversity management and environmental quality. Specifically:
 - With respect to biodiversity protection instruments will be developed which encourage private landowners to contribute their own resources to effective biodiversity management. These may include incentives such as income tax deductions for expenditure on controlling invasive alien species and estate duty provisions that encourage philanthropy towards the environment. Mechanisms will also be developed to support the payment for ecosystem services, and reinvestment of the revenues generated in securing the health of ecosystems.
 - Resource use charges for atmospheric emissions (pollution taxes) will be evaluated for introduction in support of traditional licensing approaches to air quality protection.

How the sector will work together...

The costing of environmental legislation will be led by the national department but will require input and support from all implementation agencies and authorities. The operational authorities are typically best placed to undertake cost assessments and to prepare projections of budget needs. The inputs of provincial and local spheres of government are especially important to ensure that unfunded mandates in respect of environmental management responsibilities are neither delegated nor assigned.

A range of organisations should contribute to a better understanding of the benefits of environmental protection. Important ecosystem valuation work already undertaken should be extended by appropriate institutions, such as SANBI and SANParks, while the national DEAT should continue to support research on the valuation of other environmental costs. At a more local level specific valuation studies will contribute to developing a national understanding of the public good benefits of a sound environmental management system. User charges can be designed and implemented at all spheres of government. For purposes of consistency the

national department should either establish national charges (for example, under the AQA) or provide guidance on the principles for establishing user charges. It is important to work in collaboration with the National Treasury in the elaboration of new economic instruments. Similarly, the line function departments should be involved in consultation on economic instruments which impinge on other sectors. These would include the Department of Agriculture in the case of biodiversity and the Department of Trade and Industry in the case of industrial pollution taxes.

Table 12: Summary of strategy for financing the environmental sector

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Adequate financial resources secured for the sector	Evaluation of costs of implementation of environmental legislation at all spheres of government.	DEAT (lead agency) Provincial Government Local Government	Waste Act costing by 2008 Air Quality Act costing by 2008 Coastal Management Act costing by 2008
	Improved and expanded valuations of environmental goods and services and environmental protection to support budget requests	DEAT (lead agency) Provincial Government	Natural resource valuation projects carried out in two sectors by 2010 Environmental cost assessments carried out in two sectors by 2010
Increased share of own of revenue	Implementation of the polluter pays principle through user charges and other mechanisms.	DEAT (lead agency) Provincial Government Local Government	Establishment of user charges approach for AQA licenses by end 2007 and implementation of approach from 2008 Establishment of user charges approach for Waste Act licenses by end 2008 and implementation of approach from 2009
Increased use of economic instruments for environmental protection	Establish economic instruments for environmental protection within the Environmental Fiscal Reform framework in collaboration with the National Treasury	DEAT (lead agency) National Treasury	Process established within DEAT for the development of economic instruments by 2008
		DEAT	Research initiated for instruments in the air quality management sector by 2008 An air resource use charge (pollution tax) framework developed by 2008 and pilots underway by 2009
		SANBI (lead agency) DEAT	Research initiated for instruments in the biodiversity sector by 2008 At least two fiscal instruments and/or market mechanisms for biodiversity conservation are developed, and pilots are underway by 2010



5.6 Promoting compliance and strengthening enforcement

Where are we now?

“South Africa has progressive governance framework for environmental management at national level, but the lack of enforcement and implementation of policy and legislation on the ground is a major hindrance to ensuring environmentally sustainable development”

Throughout the sector, within all programme areas and spheres of government, the need for increased compliance and enforcement activity is a priority.

Specific challenges facing the sector include:

- Incomplete regulatory frameworks. The legislative framework for environmental regulation is still in transition – legislation has been issued for some areas (e.g. marine, biodiversity, air quality) but is still in the process of approval for others (Waste, coastal management). As a result, not all the 'regulatory authorities' have been identified in legislation (i.e. those authorities responsible for permitting and monitoring of compliance) – and in some cases where they have been identified, responsibility has not yet been transferred (e.g. air quality licensing functions under AQAct).
- Few systems and procedures in place to support permitting, monitoring and enforcement – or to provide guidance to officials as to how this should be done
- Inconsistent quality of authorisations issued – there is a specific need to ensure that authorisations (e.g. permits, RoDs) are both 'monitorable' and 'enforceable'
- Low levels of resources are available to fund this activity – across all institutions. Insufficient numbers of staff exist to tackle the large scale of the task and as a result there are low levels of activity and activity is often reactive in its nature (i.e. only takes place in response to an incident or complaint). Increasing compliance levels will necessitate a much higher level of pro-active compliance monitoring activity to take place (routine inspections to check compliance).
- There are severe technical skills shortages. Many institutions which are responsible for regulating the use of the environment do not have sufficient staff in place with the technical skills to carry out monitoring and enforcement activities (e.g. process engineers, biodiversity specialists, EIM experts)
- Little 'compliance promotion' is being done by the sector in order to increase awareness within the regulated community as to how to comply – and to encourage voluntary compliance

However, despite this, some progress has been made by the sector in the past few years:

- A process has started to train and designate Environmental Management Inspectors (EMIs) across the three spheres of government and within each of the main programme areas with a mandate for regulatory activity (biodiversity, marine and coastal, air quality, waste). Basic training courses have been designed and delivered (coordinated by the EQP Branch in DEAT and EMIs have been designated in institutions across the country. However, there is a great need to extend the training of these officials to provide them with the knowledge of standard operating procedures and the technical skills required to implement compliance and enforcement responsibilities effectively.
- Working Group IV now provides strategic guidance for compliance monitoring and enforcement – for all parts of the sector involved in this activity (biodiversity, marine and coastal, EQP). Through this approach a coordinated approach can be developed and lessons and knowledge shared. Working group IV intends to align strategies for compliance and enforcement across all three areas of activity.
- DEAT, SANParks and many of the provinces are establishing compliance and enforcement units to drive this activity forward and to develop systems and approaches to guide officials in their duties.
- DEAT EQP Branch is developing a national strategy for compliance monitoring to guide the sector on development of the systems and processes required to support compliance and enforcement activity for air, waste and EIA authorisations over the next 5 years (in preparation).
- DEAT has initiated a series of joint enforcement programmes to target specific sectors of industry for compliance inspections (e.g. Ferro metals industries, Refineries). These programmes carry out integrated inspections and monitor compliance with any environmental authorisation in place for a facility (e.g. APPA permit, ECA permit for waste disposal, EIA authorisation). These programmes have been greeted with enthusiasm by all officials involved and have as an additional objective, the transfer of skills from external consultants assisting with the inspections to government officials
- DEAT is developing a national compliance and enforcement information management system to collate and report on information from inspections and enforcement activities.

Despite the above, some key challenges remain for the sector.

The EMI registration and training process has completed its first phase for which the funding of training was provided by DEAT (supported by international donors). This situation has now changed – with the costs of training now having to be paid by the institutions from which the EMIs originate. The total cost to these institutions of having officials attend EMI training is now

significant and may act as a barrier to the attendance of officials at required training. There are doubts within the sector as to the effectiveness of this approach and a re-examination of funding arrangements may be required at the end of the current phase of training.

Within the EQP element of the sector, compliance and enforcement activity is currently very low and is characterised by low staff numbers and low skill levels across the sector. A strategy is currently being developed to address this and to increase the level of capacity and activity taking place across the sector for air, waste and EIA related monitoring. However, in the short term the responsibility for developing procedures and systems and for training officials in other institutions in the application of these, will fall to the DEAT Directorate Compliance Monitoring. This unit will also be responsible for carrying out urgent compliance inspections whilst capacity is built elsewhere to do this. As a result, this unit will require additional capacity, funding and resources over the next five years (but particularly in the short term 1-3 years) to support them in this activity.

Over the next five years the sector will...

- Increase compliance and enforcement activity across the sector.
- Increase the success rate of enforcement activity (increase number of successful prosecutions/convictions).
- Achieve increased voluntary compliance by the regulated community (compliance promotion).

The sector will achieve this by:

- Completing the development of regulatory frameworks and ensuring there is clarity on which institutions are responsible for authorisations, compliance monitoring and enforcement for each.
- Dedicating increased funds and staff to compliance and enforcement activity (targeting this in the short term to dedicated units responsible for developing systems and processes and increasing the capacity of other institutions – such as the DEAT EQP Directorate Compliance Monitoring and the Directorate Enforcement).

- Completing existing 'joint' compliance and enforcement programmes and rolling out additional programmes to more sectors of industry.
- Continuing to train and designate EMIs for all areas of the sector.
- Increasing the level of training provided to increase practical capacity to carry out inspections and investigations.
- Increasing the quality (monitorability and enforceability) of authorisations issued.
- Developing and implementing a national compliance and enforcement strategy for each programmatic area of the sector.
- Carrying out awareness raising and capacity building for the judicial service in environmental legislation.
- Developing and implementing a strategy for 'compliance promotion' for all areas of the sector – to promote voluntary compliance by the regulated communities involved.

How the sector will work together...

Responsibility for regulatory activity is fragmented across many institutions (DEAT, SANParks, Provinces and local government).

However, DEAT will lead the sector in:

- Completing regulatory frameworks and clarifying regulatory roles and responsibilities for all new frameworks.
- Training and designation of EMIs.
- Awareness raising for the judiciary.
- Provision of support to the sector through the development and roll out of systems, processes and information management system for compliance and enforcement (for EQP. What is the situation for the rest of the sector)? This process will be done with participation and input from all regulatory authorities.
- Development of and management of joint programmes for monitoring and enforcement of industry.

All institutions will be responsible for motivating for additional funds for this activity and for ensuring that staff required for carrying out these activities is in place.

Table 13: Summary of strategy for promoting compliance and strengthening enforcement

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Increased compliance and enforcement activity across the sector	Completion of the development of regulatory frameworks and clarification of roles and responsibilities for authorisations, compliance monitoring and enforcement for each.	DEAT	Target to be agreed (WG IV)
	Dedication of increased funds and staff to compliance and enforcement activity	All regulatory authorities	Target to be agreed (WG IV)
	Completion of existing 'joint' compliance and enforcement programmes and rolling out of additional programmes to more sectors of industry	DEAT (lead) & involving affected provinces and local authorities	Target to be agreed (WG IV)
	Continued training and designation of EMIs for all areas of the sector Continued training of enforcement and criminal justice officials	DEAT Provinces	Annual targets contained within the DEAT strategic plan. Target for 2009-2010: total of 850 EMIs designated Target for 2009-2010: Total of 1000 people trained
	Development of templates and guidance to ensure increased monitorability and enforceability of authorisations issued	DEAT Provinces	Target to be agreed (WG IV)
Increased success rate of enforcement activity (increase number of successful prosecutions/ convictions)	Development and implementation of a national compliance and enforcement strategy (for EQP) Development of strategies for MCM and Biodiversity and Conservation Increase conviction rate in cases of significant non-compliance	DEAT (EQP), provinces DEAT MCM DEAT B&C/ SANParks, provinces	Preparation and approval of strategy 2007-08 Target to be agreed (WG IV) Reach and maintain 75-80% conviction rate on annual basis
Increased voluntary compliance by the regulated community (compliance promotion)	Development and implementation of a strategy for 'compliance promotion' for all areas of the sector	DEAT Provinces	Target to be agreed (WG IV)

5.7 Improving environmental information for decision making

Where are we now...

There are four main areas of activity within the sector at present which are designed to improve environmental information available for decision-makers:

- Monitoring of environmental conditions and trends (environmental monitoring).
- Development of indicator sets to assist in the measurement of various factors: environmental quality, sustainable development, performance of government.
- Development of information management systems and datasets.
- Implementation of research and development – by or on behalf of the sector.

Monitoring of environmental conditions is a crucial element in understanding the state of the environment but also in detecting changes in the environment (which may in turn be used to reflect the performance of the sector and the effectiveness of its policies and decision-making). Monitoring information also enables the scientific community to build models (e.g. climate models) and ensures that vital warnings of natural weather events which can lead to drought or floods can be provided. The South African Weather Service (SAWS) is responsible for a significant monitoring network which must be maintained to ensure that the information required by decision-makers is available.

Following the recent process for development of the National State of Environment Report (South African Environmental Outlook) and the National Framework for Sustainable Development – a set of environmental sustainability indicators has been developed. Work is now underway to ensure that information gathered on performance against these indicators can be collated into a web-based indicator database. The indicator set is shown in Appendix C. In the past the information management systems used in environmental decision-making have been extremely limited in their effectiveness. The realization that this was the case is reflected in the numerous information management requirements in the legislation that have emerged since the environmental law reform process began.

This implies a level of information management system development and capacity is required, that is likely to become a severe impediment to effective and efficient environmental management in the future if not addressed proactively.

Work is taking place across the sector to develop urgently needed information managementsystems like a South African Air Quality Information System (SAAQIS), Waste

Information System (WIS), a web-based system for biodiversity information; a protected areas register and a compliance and enforcement information management system.

There is also a need to shift towards integration of information systems, to provide in essence 'one-stop-shops' for information for a particular area of the sector. SANBI is working towards the creation of such an approach for biodiversity information.

In addition, it is becoming increasingly important for the sector to be able to access and use information that is traditionally held in other sectors or institutions. For example, spatial information held by the Agricultural Research Council, information on water resources held by DWAF and so on. Thus a major focus in the next 5 year period will be the development of an integrated GIS system (Enterprise GIS) to collate all information on the environment which may be of use to the sector.

State of Environment reporting has moved forward significantly in the country. Whilst not mandatory, most provinces now have a current State of Environment Report, as do some of the larger municipalities. The national report has recently been updated (published July 2007). Work will be on-going to maintain reports in a relevant and up-to-date form and to develop a state of environment internet portal.

Finally, scientific research and development remains a fundamental activity for the sector-required to provide the understanding of the environment upon which sound decision-making can be based and for the development of new and innovative approaches to the conservation and management of natural resources. The sector must become much more effective at identifying and communicating its research needs – ensuring that research programmes are coordinated and targeted towards national priorities.

SANBI continues to provide this strategic process for the biodiversity and conservation area of the sector. DEAT has worked with Department of Science and Technology and a number of leading research institutions in South Africa to developing a Research and Development Strategy for climate change.

Over the next five years the sector will...

- Continue to provide the key environmental monitoring information required to support the work of the sector.
- Improve access to information through the integration of information management systems and development of a 'one-stop-shop' approach to communicating and providing access to information.

- Move towards a much more spatially-oriented approach to information collation, management and presentation
- Continue to develop the State of Environment reports process as a means of increasing the understanding of the environment and the pressures it is experiencing
- Develop a more strategic approach to the planning and funding of research and development needs – focusing on national research priorities for the core focus areas of the sector

The sector will achieve this by:

- Maintaining the environmental monitoring systems required to supply the sector with vital information on environmental quality and conditions
- Continuing to develop, refine and publish indicator sets – and establish reporting processes against these
- Developing information management systems and ensuring integration of these systems where required in order to make the information more accessible and meaningful

- Continuing to update geospatial information on the environment – integrating systems from other sectors where possible
- Developing state of environment reports at national and provincial level
- Developing research and development priorities and strategies for each of the core focus areas of the sector.

How the sector will work together...

- In general, development of information management systems and indicator sets is led by the national spheres of the sector (DEAT, SAWS, SANBI and so on), although all rely on information collected across all three spheres of government.
- A standardised approach to the measurement and reporting of environmental information must therefore be followed by all involved.
- Research priorities and strategies must be identified at a national level – to ensure that requirements from across the sector are collated and communicated in a coordinated and targeted manner.

Table 14: Summary of strategy for improving environmental information for decision making

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Effective monitoring and early-warning systems in place	Development and improvement of indicator sets Development of web based indicator database	DEAT	Annual Indicator reports (>2007)
	Reporting on environmental sustainability indicators	DEAT, provinces, Public entities	Annual reports submitted
	Continued updating of geospatial environmental and sustainable development information	DEAT	100% of supplementary data obtained and integrated into information systems by 2010 GIS data sets for 10 nodes completed by 2010 Development of Enterprise GIS by 2009

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Information management systems in place to support the work of the sector	Development and implementation South African Air Quality Information System Waste Information System National Environmental Authorisations System Development and implementation of compliance and enforcement information management system Development and implementation of Web-enabled one-stop-shop for biodiversity information.	DEAT SAWS provinces DEAT provinces DEAT Provinces DEAT provinces DEAT SANBI	Target: (NAQF) 2012: Core web-based components operational 2010: operational in all provinces Target 2012 (from NBF) information system established, recognised and extensively used by managers and professionals
Accurate understanding of state of environment and progress towards sustainability	Production of next SA Sustainability Outlook Report Provincial state of environment reports (voluntary)	DEAT Provinces	2010 report Revised Provincial Reports by 2009
Scientific capacity in place to support natural resources management	Development of research strategy for biodiversity Research strategy for climate change implemented Research strategy for pollution and waste management Preparation of research strategies for other areas of the sector (marine, air)	DEAT SANBI DEAT (DST) DEAT provinces	2012: Research strategy Target:2007-08 Research and development strategy agreed



5.8 Communicating, raising awareness and increasing citizen participation

Where are we now...

Since 1994, South Africa has extended participation to diverse voices from civil society, as shown by the consultative processes undertaken to compile the Constitution, the CONNEP process to develop the White Paper on Environmental Management Policy, the various institutions set up to promote participation around the country, as well as significant progress in the representation of women in parliament.

Substantial public participation has taken place in policy development, but less in decision-making and implementation. The participation of the poor, disadvantaged, and rural communities (including women, youth, indigenous peoples, and subsistence farmers), has, in the past, been insufficient. These groups are severely constrained regarding access to information, to communication networks, to transport, and, thus, to participatory processes. However, greater emphasis is now being placed on engaging poor communities.

Currently, there is a need to raise awareness both of environmental issues and of governance processes in order to broaden public participation in processes that touch on environmental concerns. In addition, behavioural change is needed on an individual level to support the initiatives and legislation Government implements.

Compliance promotion is thus a vital tool which will be crucial in the future if increased compliance with environmental legislation is to be achieved. The sector must thus be more effective in communicating the value of services that the environment provides to communities and the key role that the environment plays in economic development.

All of the above point to the need for the sector to become more effective in communicating its role and the value of the environment to the rest of society and to continue to increase its activities in the area of environmental education.

Within the sector, there are several current initiatives to try to facilitate input to policy and decision making:

- Imbizos held between the sector and communities (e.g. the series of Imbizos held by DEAT MCM with fishing communities, Imbizos held with communities in relation to poverty relief programmes)
- Formal participation forums

In terms of formal participation forums, the National Environmental Advisory Forum (NEAF) is a statutory body, established on 24 February 2005 in terms of Chapter 2 of NEMA. It is a multi-stakeholder advisory forum to provide the Minister with strategic advice on issues of environmental management and governance, and on appropriate methods of monitoring compliance with the principles set out in Chapter 2, Section 2 of NEMA.

The National Committee for Climate Change (NCCC) is a similar sort of advisory forum for national government on climate change, which brings together representatives from national departments, provinces, local government and civil society – and its primary purpose is to assist government in the development of 'positions for climate change negotiations and the development of national policy and strategy on climate change.

There is a specific need for institutions within the sector to become more 'accessible' to the public in this regard – and to develop a better connection to people on the ground.

Over the next five years the sector will...

- Become more effective in communicating the value and role of the environment and the environmental sector
- Ensure that the general level of environmental awareness is increased throughout the country
- Ensure that education and awareness of environmental legislation and regulations is carried out with a view to increasing levels of compliance (this is discussed within section 4.5 above)
- Consolidate and improve the effectiveness of formalised structures for citizen participation
- Work towards increasing participation levels in environmental policy making and implementation at the local level, particularly among the poor, disadvantaged and rural communities
- Facilitate increased participation through improving access to information

The sector will achieve this by:

- Developing detailed communication strategies to support the implementation of environmental initiatives, and Developing an approach to behavioural change that can be incorporated into such communication strategies.
- Support the Department of Education in the development and implementation of environmental components of the curriculum

- Planning and implementing specific environmental awareness and educational activities aimed at individuals, communities and sectors of society currently creating impact on the environment
- Increasing the participation in and effectiveness of consultation and advisory forums such as NEAF, NCCC
- Continuing to consult with communities and stakeholders via Imbizos and increasing it language reach through the introduction of more than one official language for written communications
- Implementing capacity building and awareness raising programmes for stakeholders in civil society (see section 5.3 below)
- Improving access to information and Ensuring the sector is in compliance with the Constitution, Promotion of Access to Information Act (no. 2 of 2000), Promotion of Administrative Justice Act (PAJA) (no. 26 of 2000) and NEMA (which guarantees access to information on the state of the environment and threats to it)

How the sector will work together....

- DEAT will lead the sector in developing and ensuring a consistent approach to communication strategies to achieving behavioural change in all stakeholders.
- Support the Department of Education in terms of the development of formal approaches to environmental education within schools and tertiary institutions
- All institutions within the sector will develop environmental educational programmes and activities to support their areas of work. National institutions such as DEAT, SANBI and SANParks will provide leadership in this regard.
- DEAT will lead on ensuring that the NEAF and other national participatory/ advisory forums (such as the NCCC) run effectively and frequently.
- All institutions within the sector will carry out capacity building for stakeholders and residents and ensure that there is stakeholder involvement and consultation in all planning processes.
- All institutions will establish systems to provide information to stakeholders and will ensure that they are compliance with the legislation related to access to information.

Table 15: Summary of strategy for communicating, raising awareness and increasing citizen participation

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Improved communication by the sector	Media Relations Strategy targeted at improving community radio coverage of Environmental Issues International Liaison to raise the profile of South Africa environmental performance international Outreach, Stakeholder Liaison and Community Relations Improvement focusing on people contact Consolidation of a Environment Brand National Liaison And Intergovernmental Communications with a focus and priority of other departments with environment functions	DEAT Provinces	Annual Strategies for Communications Environment and Media Conventions and Capacity Programme An Integrated Co-branding strategy A calendar of Environment Days and Events for all users (public, industry and civil society)

Outcomes	How (means/activities)	Who (Responsibilities)	Proposed Targets (what by when)
Communities, private sector and civil society are empowered to access government consultation processes	Develop and implement a national strategy for capacity building of stakeholders (containing topic specific strategies e.g. coastal communities, compliance promotion to industry/ EIA applicants etc.)	All	2008
	Develop mechanisms for increasing access to environmental related information by all stakeholders. Utilisation of Community Development Workers to improve access to information	All	Continues
	Continue to develop and deliver regular and targeted environmental awareness raising events across the sector	All	To be agreed
	Develop and implement localised environmental initiatives to promote and encourage environmental education and responsibility	Provinces Local government	To be agreed
Effective & formalised structures & processes for citizen participation are in place	Increase the participation in and effectiveness of consultation and advisory forums such as NEAF, NCCC Every Legislation and policy will be subjected to public comments	DEAT	Continues
Increased participation levels in environmental policy making and implementation at the local level, particularly among the poor, disadvantaged and rural communities	Continued consultation with communities and stakeholders via Imbizos	All	4 Imbizos held per year
	Implementation of capacity building and awareness raising programmes for stakeholders in civil society	All	Communications and Outreach targets
Improved access to environmental education	Ensure use of two official languages for written communication and all other official languages for consultation with the public	All	2008
	Monitor compliance of the sector with the Constitution, Promotion of Access to Information Act (No. 2 of 2000), Promotion of Administrative Justice Act (No. 26 of 2000) and NEMA in terms of access to information.	All	Standards set by 2008 Standards to be implemented from 2008

6. Conclusion and Emerging Implications of the Plan

The contents of this plan, and in particular its development within the context of sustainable development, indicate the need to consciously consider the environment as an area of priority in ensuring that the overall development strategy for the country delivers on its goals and growth targets.

The plan presents a major opportunity to increase the capacity of the sector to achieve sustainable development through targeted interventions in the key areas of science and technology, information and communication technology, and sustainability-oriented research and development.

In addition, it indicates that there is an opportunity and a necessity to incorporate sustainability and a livelihoods approach into LED in order to foster sustainable employment creation and to establish anti-poverty projects that focus on mobilising existing resources, social networks, local savings and skills.

Despite a strong and growing commitment from government and other sectors of society to more effectively manage and safeguard South Africa's natural resource base, there remains a need to ensure that this objective is married to planned large-scale infrastructure investments and social development strategies.

To make sure that this plan becomes a practical reality in everyday life, new capacities and skills will be required across the sector and society. Building the capacity of local government is clearly a major priority. The sector must also do more to foster collaboration with other sectors of society through approaches such as multi-sectoral partnerships, community empowerment and direct engagement with communities.

The sector plan will undoubtedly impose additional fiscal burdens on the three tiers of government. The specific costs of effectively implementing the plan must therefore be assessed and various instruments for revenue generation and prioritisation developed.

In order to generate reliable and adequate information to support decision-making, the sector will need to develop and implement a sector-wide R&D strategy in collaboration with the country's public and private research institutions. Increased investment in sustainability science and technologies that link directly to the infrastructure programme are required. Areas requiring more attention include: building materials, transportation, energy systems, sewage treatment, water efficiency systems, and how to use market incentives to dematerialise urban systems.

Systems for integration lie at the heart of improving governance for sustainable development and environmental management. Sustainable resource use criteria need to be built into all levels of programme and development planning and implementation in order to provide these activities with a sustainable resource use perspective. Only in this way can development projects be designed to be ecosystem and resource enhancing rather than environmentally destructive.

National policy and directives do not explicitly identify resource efficiency and security as a priority. This current omission provides an opportunity to introduce sustainable resource use criteria into the strategic funding of infrastructure across all sectors (municipal, bulk water storage, energy, roads, harbours, railways, buildings, etc.).

7. Appendices

7.1 Appendix A: Background to the Sector

The White Paper on Environmental Management Policy for South Africa is an overarching framework policy which undertakes to give effect to the many rights in the Constitution that relate to the environment, as well as those relating to governance, such as the legal standing of parties, administrative justice, accountability and public participation.

Furthermore, the White Paper on Environmental Management Policy for South Africa defines the essential nature of sustainable development as a combination of social, economic and environmental factors. It takes ownership of sustainable development as the accepted approach to resource management and utilisation, thus entrenching environmental sustainability in policy and practice.

The vision of the White Paper on Environmental Management Policy for South Africa is one of a society in harmony with its environment. The policy sought to unite the people of South Africa in working towards a society where all people have sufficient food, clean air and water, decent homes and green spaces in their neighbourhoods, enabling them to live in spiritual, cultural and physical harmony with their natural surroundings.

In developing and implementing government's national policy on environmental management, the Department of Environmental Affairs and Tourism lead the pursuit of achieving environmental sustainability in the context of South Africa's current situation. The sector's role is to focus and prioritise goals and objectives requiring action by government. They include a commitment to:

- Ensure the development and implementation of integrated environmental management systems in both public and private sectors. These systems will identify and control environmental impacts in order to secure environmental sustainability.
- develop and implement effective education and information strategies to increase public awareness and understanding of environmental issues.
- develop structures, processes and procedures and implement programmes to ensure effective and appropriate participation in environmental governance.
- Develop mechanisms to deal effectively with international cooperation on environmental governance.

In addition the sector undertakes to:

- promote better understanding of sustainable development in all spheres of our society and of what is required to achieve it.
- take the lead in securing the implementation of integrated, holistic, equitable, participatory, effective and sustainable environmental management practices.
- Pursue constant improvement in government's understanding of sustainable development. To this end it undertakes to:
- monitor and report on the state of our environment.
- seek constant improvements in best practice to secure sustainable development
- Deploy it to implement this policy effectively, efficiently and accountably.

Because the environment means different things to different people it is necessary to start by defining what it means. In this plan the word environment refers to the conditions and influences under which any individual or thing exists, lives or develops. These conditions and influences include:

- the natural environment including renewable and non-renewable natural resources such as air, water, land and all forms of life.
- the social, political, cultural, economic, working and other factors that determine people's place in and influence on the environment.
- Natural and constructed spatial surroundings, including urban and rural landscapes and places of cultural significance, ecosystems and the qualities that contribute to their value.

Within the framework of the overarching goal of sustainable development, government has identified seven strategic goals for achieving environmental sustainability and integrated environmental management. These goals are interdependent and implementation must address all of them to be effective. It is vital to recognise that environmental concerns and issues cut across various sectors and functions. Therefore sustainable and integrated management of the environment depends on cooperation and initiatives from all sectors of society. Many supporting objectives address functions of other government departments that impact on the environment and will require their cooperation and commitment for effective implementation.

The strategic goals and their supporting objectives address the major issues government faces in its drive to achieve sustainable development and ensure an integrated system of environmental management. The vision and policy principles have guided the choice of goals and objectives and have guided policy implementation in the last ten years

The legislative and institutional framework for the management and protection of the natural environment in South Africa is complex and has resulted in the fragmentation of responsibility across various national departments, public entities and the three spheres of government.

A number of national departments are responsible for implementing legislation which impacts on elements of the environment (see Box 1)

Box 1: National departments with responsibilities for the natural environment

Department	Responsibility (as per legislation overseen by these departments)
Agriculture	Agricultural resources, pests, regulation of fertilisers, farm feeds and agricultural remedies, GMOs
Arts and Culture	National Heritage
Environmental Affairs & Tourism	Air quality, pollution control and waste management, environmental impact management, biodiversity conservation, marine and coastal management
Health	Hazardous Substances
Land Affairs	Development Facilitation and principles governing land development
Minerals and Energy	Access to minerals and petroleum resources, nuclear energy, Mine related health and safety
Water Affairs and Forestry	Water resources, water services, Veld, Forests and Forestry, Mountain Catchments
Provincial and Local Government (dplg)	Municipal Planning, integrated development plans, municipal service delivery, Disaster Management
Agriculture	Genetically Modified Organisms, Land Use, Aquaculture, Animal Breeding
Transport	Maritime Law, Movement of Substances, Harbours

However, the environmental 'sector' is a term used in government to describe the group of government institutions led by DEAT (as the lead agent of the sector) to implement and deliver on the legislation overseen by DEAT i.e. Those which cover air quality, climate change, waste management, environmental impact management, biodiversity conservation, marine and coastal management and environmental law enforcement.

Government institutions involved include:

- National Department of Environmental Affairs and Tourism (DEAT)
- National Government entities: South African National Biodiversity Institute (SANBI); South African National Parks (SANParks); South African Weather Services (SAWS), Marine Living Resources Fund.
- Provincial departments with a responsibility for the environment and its management, conservation and protection – including provincial conservation authorities. Not all the nine provinces have established statutory authorities.
- Local government – and their specific departments dealing with environmental issues. The institutional arrangements for environmental management at this level are not consistent and differ from local to local with some convergence only at a level of the metros

South African National Biodiversity Institute (SANBI)

The South African National Biodiversity Institute (SANBI) is responsible for biodiversity management, education and research and promotes the wealth of indigenous floral and faunal life of southern Africa. SANBI has three systematic research and collection centres, four bioregional programmes, conservation and sustainable use centres, eight county-wide national botanical gardens and equally well distributed environmental outreach, education and ecosystem rehabilitation programmes.

SANBI's strategic focus for the medium term (2007/08-2009/10) will be on; leadership on biodiversity knowledge management and information dissemination highlighting the status and trends in South Africa; co-coordinated research on the composition, value, status, functioning and dynamics of South Africa's biodiversity; managing a national system of bioregional programmes implementing priority components of the NBSAP; continued support for SADC, NEPAD and multilateral environmental arrangements; further develop and manage national botanical gardens; monitor biodiversity in South Africa and provide guidelines and best practices relating to the identification and conservation of threatened species and ecosystems as well as sustainable use of biodiversity; implement rehabilitation programmes that systematically target threatened ecosystems and continue supporting the goals of the Expanded Public Works Programme.

South African National Parks (SANParks)

South African National Parks (SANParks) is a statutory organisation governed by the National Environmental Management: Protected Areas Act (2003). SANParks is primarily engaged in nature conservation as well as the tourism and hospitality industry. The organisation manages a system of 21 national parks that are representative of the country's biodiversity, cultural heritage and unique national features.

Apart from the ongoing conservation scientific and research work, the strategic focus in the medium term will include amongst others, the strengthening of the programme management for the Transfrontier Conservation Areas as well as instituting of special plans and preparations for leveraging the opportunities availed by the 2010 World Cup. The strategic programmes for the organization will be underpinned by the drive for broad-based organizational and industry transformation. Biodiversity conservation, cultural heritage management, ecotourism and commercial development (in excess of 3 million visitors per year), and constituency building and the involvement of local communities are regarded as the core indicators of performance.

South African Weather Service (SAWS)

The South African Weather Service was established in accordance with the South African Weather Service Act (2001). The objectives of the South African Weather Service (SAWS) are to: maintain, extend and improve the quality of meteorological services; ensure the ongoing collection of meteorological data over South Africa and surrounding southern oceans; and fulfil government's international obligations under the Convention of the World Meteorological Organisation and the Convention of the International Civil Aviation Organisation as South Africa's aviation meteorological authority.

For the future, a major strategy of the South African Weather Service is to modernise and recapitalise its observations network and infrastructure through the deployment of proven observational, information processing and communications technologies. The major part of this recapitalisation plan is the replacement of the fairly old C Band weather radar network of the Weather Service with modern and sophisticated S-band Doppler weather radars. The implementation of a business strategy on improving commercial revenue from the weather using industries is also underway.

Marine Living Resources Fund (MLRF)

The Marine Living Resources Fund (MLRF) was established in terms of the Marine Living Resources Act (1998). The MLRF was established to create a mechanism that would allow for the costs incurred as a result of services rendered to the industry to be redeemed on the basis of a "user pays" principle. The main source of income for the MLRF is the revenue generated from levies on fish products; licence fees and permits; fines and confiscations; and harbour fees. This revenue constitutes the main source of funding the operations of the Branch: Marine and Coastal Management (MCM), whilst personnel expenditure is funded by the vote of the Department of Environmental Affairs and Tourism (DEAT). The Fund was listed as a Public Entity in 2001.

In addition to its ongoing strategic priorities and mandates, the important focus areas for the forthcoming financial year include the implementation of upgraded financial management systems; the development of cost recovery and revenue management policies, strategies for the effective monitoring and management of marine oil pollution; and the promotion and facilitation of advances in the Aquaculture industry.

iSimangaliso Greater Wetlands Park (IGWP)

The iSimangaliso Greater Wetlands Park, which manages South Africa's first world heritage site, is entering into its fifth year of operation. Its objectives include conservation of the Wetland Park's world heritage values, ensuring local economic development and transformation, and optimising tourism development.

7.2 Appendix B South Africa's Engagement with Multi-lateral Environmental Agreements

MEA	Date ratified, signed or acceded
Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks	Ratified: June 2003 (acceded)
Agreement on the Conservation of Albatrosses and Petrels	Signed and ratified: 6 November 2003
Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention)	Acceded to and ratified by May 1994; came into force: 3 August 1994
United Nations Framework Convention on Climate Change	Signed: 15 June 1993, 27 August 1997 (although DEAT submission to parliament indicates 1994) Ratified: 29 August 1997

MEA	Date ratified, signed or acceded
Kyoto Protocol	acceded to in July 2002
Convention on Biological Diversity	Ratified: 2 November 1995
Biosafety Protocol currently under debate	
United Nations Convention to Combat Desertification	Acceded to: June 1994; signed: 1995; ratified: 30 September 1997
Convention on International Trade in Endangered Species of Wild Life and Fauna	Ratified: 1973; came into force: October 1975
Convention on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade or the 'Rotterdam Convention'	Signed: September 1998; ratified: 4 September 2002
Convention on the Conservation of Antarctic Marine Living Resources	Acceded to: September 1980; ratified: 1982 (the Montreal Amendments to the Protocol (1997) have yet to be ratified)
Protocol for the Protection of the Ozone Layer (Montreal Protocol)	Acceded to: 15 January 1990; ratified: 15 January 1990
Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the East and Central African Region and related Protocol (Abidjan Convention)	Ratified: 5 November 2002 (acceded)

MEA	Date ratified, signed or acceded
Convention for the Protection, Management and Development of the Marine and Coastal Environment of the East African Region and related Protocols (Nairobi Convention)	Ratified: 5 November 2002 (acceded)
Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention)	Ratified: 10 July 1997
Stockholm Convention on Persistent Organic Pollutants	Signed: 21 May 2001; ratified: 4 September 2002
Southern African Developing Countries Protocol on Fisheries	Signed: 14 August 2001; ratified: July 2003
Southern African Developing Countries Protocol on Wildlife Conservation and Law Enforcement in the Southern African Development Community	Signed: 18 August 1999; ratified: October 2003
Transfrontier Conservation Areas Initiative - Ai-Ais/Richtersveld Treaty - Kgalagadi Transfrontier Park Agreement - Greater Limpopo Transfrontier Park Treaty - Lubombo Transfrontier and Resource Area (Lubombo Protocol)	Signed and ratified: 1 August 2003 Signed and ratified: 12 May 2000 Signed and ratified: 9 December 2002 Signed and ratified: 22 June 2000

Note:

*When a government representative signs an international convention on behalf of the country, a State becomes party to that convention. The Convention is later ratified by the government, which signifies agreement to be bound by the convention. If the state does not sign the convention when it was open for signature, but later formally agrees to be bound by the convention, a government accedes to the convention.

Source: <http://www.environment.gov.za; urquhart> (2002)7



7.3 Appendix C Sustainability Indicators

Environmental sustainability indicators

- Change in Emissions of greenhouse gases as ratio of GDP/per capita
- Change in Consumption of ozone depleting substances
- Change in Concentration of criteria air pollutants in urban areas
- Change in Ratio of fertilizer & pesticide consumption to agricultural produce
- Change in Land affected land degradation and desertification
- Change in Land productivity versus potential
- Change in Arable and permanent crop land area
- Change in Wood harvesting intensity
- Change in Exploitation of fossil fuels for the generation of energy
- Change in Algae concentration in coastal waters
- Change in Annual withdrawal of ground and surface water as a percent of total available water
- Change in Availability of surface water per person
- Change in BOD and COD in water bodies
- Change in Salinity levels
- Change in Concentration of faecal elements in freshwater

- Change in number of ISO 14.001 certificates issued
- Change in Public spending on the environment as % of total budget
- Change in General waste produced per income group per year
- Change in Waste recycling and re-use

Institutional sustainability indicators

- Existence of a National Sustainable Development Strategy
- **Change in ethics:** Codes of conduct, existence and effectiveness of institutional arrangements to deal with corruption, number of corruption cases, sources of exposure of corruption, protection of whistleblowers
- **Change in regulatory quality:** ease of access to services & opportunities, individual & company tax policy & patent rights protection
- **Change in govt effectiveness & efficiency:** transaction costs, service quality, bureaucratic delays, public satisfaction with services
- Change in participation in and implementation of global agreements
- **Change in good governance goals:** Efficiency, effectiveness, responsiveness & participation, equity, transparency, accountability, flexibility, integration, innovation.
- **Change in good governance outcomes:** Degree of vision & goal achievement, affordability, fairness, developmental, stability, democracy, empowerment, citizen satisfaction, adequacy & future availability of remaining resources to meet desired outcome levels within specified time frames, review of lessons learnt.

7.4 Appendix D

AQMP	Air Quality Management Plans
ASGI-South Africa	Accelerated and Shared Growth Initiative for South Africa
BBEE	Broad-based Black Economic Empowerment
BEE	Black Economic Empowerment
CBD	Convention on Biological diversity
CBO	Community Based Organisation
CDM	Clean Development Mechanism
CEC	Committee for Environmental Co-ordination
CERS	Certified Emission Reductions
CFC	Chlorofluorocarbon
CH ₄	Methane
CITES	Convention on International Trade in Endangered Species
CO ₂	Carbon Dioxide
CPI	Consumer Price Index
CSD	Commission for Sustainable Development
CSI	Corporate Social Investment
CSIR	Centre for Scientific and Industrial Research
DEAT	Department of Environmental Affairs and Tourism
DME	Department of Minerals and Energy
DoH	Department of Housing
DPLG	Department of Provincial and Local Government
DPSA	Department of Public Service and Administration
DST	Department of Science and Technology
DTI	Department of Trade and Industry
DWAF	Department of Water Affairs and Forestry
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIP	Environmental Implementation Plan
EMI	Environmental Management Inspector
EMP	Environmental Management Plan
EPWP	Expanded Public Works Programme
EQ&P	Environmental Quality and Protection
ESI	Environmental Sustainability Index
FDI	Foreign Direct Investment
FET	Further Education and Training
FOSAD	Forum of South African Directors General
GDP	Gross Domestic Product
GEAR	Growth, Employment and Reconstruction strategy
GEF	Global Environmental Facility

GEM	Gender Empowerment Measure
GHG	Greenhouse Gas
GISP	Global Invasive Species Programme
GMO	Genetically Modified Organism
GNI	Gross National Income
GNP	Gross National Product
GWM&ES	Government-wide Monitoring and Evaluation System
HDI	Human Development Index
HGI	Human Gender-related Development Index
HIV	Human Immunodeficiency Virus
HPI	Human Poverty Index
IDP	Integrated Development Plan
IEG	International Environmental Governance
IGFR	Intergovernmental Fiscal Review
IMWP	Integrated Waste Management Plan
IPCC	Intergovernmental Panel on Climate Change
ISRDP	Integrated Sustainable Rural Development Programme
IWMS	Integrated Waste Management Strategy
JIPSA	Joint Initiative on Priority Skills Acquisition
JPOI	Johannesburg Plan of Implementation
KZN	KwaZulu-Natal
LA21	Local Agenda 21
LED	Local Economic Development
MAR	Mean Annual Runoff
MCM	Marine and Coastal Management
MDG	Millennium Development Goals
M&E	Monitoring and Evaluation
MEA	Multilateral Environmental Agreements
MLRA	Marine Living Resources Act
MPA	Marine Protected Area
MTEF	Medium Term Expenditure Framework
MTSF	Medium Term Strategic Framework
NBSAP	National Biodiversity Strategy and Action Plan
NCCC	National Committee on Climate Change
NDA	National Department of Agriculture
NEAF	National Environmental Advisory Forum
NEDLAC	National Economic Development and Labour Council
NEMA	National Environmental Management Act
NEMAQA	National Environmental Management: Air Quality Act



NEMBA	National Environmental Management Biodiversity Act
NEMPA	National Environmental Management Protected Areas Act
NEPAD	New Partnership for Africa's Development
NGO	Non Government Organisation
NSBA	National Spatial Biodiversity Assessment
NSDP	National Spatial Development Perspective
NSI	National System of Research and Innovation
NFSD	National Framework for Sustainable Development
NSSD	National Strategy for Sustainable Development
NWA	National Water Act
NWMS	National Waste Management Strategy
NWRS	National Water Resource Strategy
OECD	Organisation for Economic Co-operation and Development
PEAF	Provincial Environmental Advisory Forum
PGDS	Provincial Growth and Development Strategy
POPS	Persistent Organic Pollutants
PSSD	Provincial Strategy for Sustainable Development
R&D	Research and Development
RD&I	Research, Development and Innovation
RDP	Reconstruction and Development Programme
RHP	River Health Programme
SABS	South African Bureau of Standards
SACN	South African Cities Network
SADC	Southern African Development Community

SAEO	South Africa Environment Outlook
SANBI	South African National Biodiversity Institute
SANParks	South African National Parks
SAQA	South African Qualifications Authority
SD	Sustainable Development
SDI	Spatial Development Initiative
SEA	Strategic Environmental Assessment
SKEP	Succulent Karoo Ecosystem Programme
SO2	Sulphur Dioxide
SOE	State-owned Enterprise
SoE	State of the Environment
SoER	State of the Environment Report
SRI	Social Responsibility Index
TB	Tuberculosis
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Convention on Climate Change
URP	Urban Renewal Programme
WfC	Working for the Coast
WMA	Water Management Area
WSSD	World Summit on Sustainable Development

8. Footnotes

1. South African Environment Outlook 2007
2. Generally understood to include litter collection and cleaning of public places such as treetops and beaches.
3. This statement is also taken from the White Paper on Environmental management Policy (1997).
4. See section 4.1.2 for more details.
5. These are listed in section 11.2 of the NFSD (2006 draft)
6. The Department of Science and Technology has also developed a research and development strategy for climate change in South Africa.
7. i.e. emissions generated through municipal activities, such as lighting buildings, municipal vehicles etc. Much of this work was done through a Cities in Climate protection programme funded by ICLEI
8. these targets are taken primarily from the National Framework for Air Quality and DEAT Strategic Plan
9. these targets are taken primarily from the National Framework for Air Quality and DEAT Strategic Plan
10. NEAS National Environmental Authorisations System
11. National Spatial Biodiversity Assessment (NSBA) was completed in 2005 and provides a spatial picture of the location of South Africa's threatened and under-protected ecosystems.
12. EMI: Environmental Management Inspector programme. For more information – see section 4.5
13. South African Environment Outlook DEAT 2007
14. These activities and targets have been taken largely from the DEAT strategic plan
15. Much of the confusion stems from the fact the 'the environment' is considered a concurrent legislative responsibility of national and provincial government within the Constitution, while some 'environmental' responsibilities are classified as 'local government matters' within Schedules 4 and 5 of the Constitution (such as Air Pollution). The term 'environment' is not well defined and is open to some interpretation.
16. South African Environment Outlook DEAT 2007
17. Hands on support is the deployment of external expertise to a municipality for purposes of facilitating the unblocking of challenges faced by the municipality. It is predominantly focused on addressing establishment problems that negatively impact on the ability of the municipality to deliver services and promote economic growth. In certain instances it can be targeted at directly accelerating delivery of basic services and promoting economic growth (DPLG GTZ 2006)
18. SETA: Sector Education and Training Authority

[illegible]



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