



SOUTH AFRICAN NATIONAL CAPACITY SELF ASSESSMENT

Thematic Profile: Biodiversity

Final report

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November 2008

Prepared for:



**environment
& tourism**

Department:
Environmental Affairs and Tourism
REPUBLIC OF SOUTH AFRICA



EXECUTIVE SUMMARY

Introduction

South Africa is a signatory to the United Nations Convention on Biological Diversity, the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention to Combat Desertification (UNCCD). The National Capacity Self-Assessment (NCSA) was created to assist developing countries assess their capacity to meet obligations under these conventions and the Department of Environmental Affairs and Tourism (DEAT) and the United Nations Development Programmes (UNDP) commissioned an NCSA for South Africa. An NCSA is concerned with a country's capacity – the abilities of individuals, groups, organisations and institutions to address the priority environmental issues as part of the efforts to achieve sustainable development. This thematic report covers the country's capacity in relation to the United Nations Convention on Biological Diversity (CBD). The principal objectives of the CBD are the conservation and sustainable use of biological diversity, and the fair and equitable sharing of benefits arising from its utilisation.

Study approach

The study was based on information obtained from a literature review, semi-structured interviews with key stakeholders and a multi-stakeholder workshop. The study considered South Africa's capacity to meet its obligations under the CBD at the systemic, institutional and individual levels. The study was not an assessment of the extent to which South Africa has made progress in meeting its CBD commitments, nor did it seek to address specific issues at an institutional or individual level. Accordingly, it is not a strategic review of the organisational structures of the institutions involved in implementation of the CBD to assess whether such structures are appropriate. The study also did not identify the skills gaps and capacity building requirements of the managers or staff at any of the institutions. The study conducted a high level review of the existing capacity within the sector and the major shortcomings were identified.

South African biodiversity context

South Africa is one of the most biologically diverse countries in the world and three globally recognised biodiversity hotspots are found in the country. However, the State of the Environment Report published in 2006 concludes that the general state of South Africa's biodiversity is not good and is declining, with it unlikely to meet the CBD goal of reducing the rate of loss of biodiversity by 2010. The concerns are at both the ecosystem and species levels. The reduced capacity for ecosystems services, such as the provision of clean water and air, can have serious implications for South Africa achieving its sustainable development goals and improving the quality of life for its citizens. Major threats to biodiversity are habitat transformation, invasive alien species, unsustainable use of natural resources, pollution and climate change. By being a signatory to the CBD, South Africa has assumed a number of responsibilities in respect of the management of its biological resources. Meeting these obligations will contribute to improving the health of its biodiversity for the benefit of the country and its citizens. This study sought to address the question of whether it has the capacity to meet these CBD obligations.

Framework for environmental management in South Africa

South Africa has made significant progress towards creating a strong enabling framework for biodiversity management. The White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity, published in 1997, creates the overarching policy framework for biodiversity management. The National



Environmental Management: Biodiversity Act, 10 of 2004, (NEMBA) and National Environmental Management: Protected Areas Act, 57 of 2003, are the key legislative instruments to give effect to the biodiversity policy and are supported by regulations, frameworks, strategies and programmes that are being developed on an ongoing basis. The National Biodiversity Strategy and Action Plan (NBSAP) was published in 2005 and creates a framework and plan of action for the conservation and sustainable use of South Africa's biodiversity and the equitable sharing of benefits from its use. The National Biodiversity Framework (NBF) has been drafted and is in the approval process. The NBF seeks to co-ordinate and align the efforts of the multiple organisations and individuals involved in conserving and managing South Africa's biodiversity in support of sustainable development and it aims to focus attention on the most urgent strategies and actions by identifying a set of 33 Priority Actions to guide the work of the biodiversity sector for the next five years. It is expected that the NBF will be approved during 2008.

DEAT is the lead department for biodiversity management in the country and plays a key role in both biodiversity management and the implementation of the CBD. The South African National Biodiversity Institute (SANBI) was created under NEMBA and has a broad mandate related to biodiversity encompassing bioregional planning, policy, research, education, monitoring and reporting. Together with DEAT, SANBI plays an important role in coordinating implementation of South Africa's obligations under the CBD. Various institutions are responsible for environmental and biodiversity management, and thus the implementation of specific CBD-related commitments. This includes national government departments, such as the Departments of Water Affairs & Forestry (DWAF) and Agriculture; provincial conservation departments; conservation agencies such as SANParks and the provincial conservation agencies, and local government at the district and local municipality levels. Outside of government, the non-government organisations, education institutions, the scientific community and research institutions, businesses and industry in the private sector and local communities, all contribute to biodiversity management.

Systemic capacity

The study found that systemic capacity is generally strong as the enabling environment for biodiversity management in South Africa has been established. Specifically, the policy, legal and regulatory framework for biodiversity management is progressive and well developed, with much of the development having taken place after South Africa became a signatory to the CBD, which allowed it to incorporate its commitments under the CBD into relevant policies and legislation. However, in spite of the strong framework, biodiversity matters are not a high priority for government, for example, there are no specific biodiversity-related matters in the Government's Programme of Action of priority areas for 2008. This limited support potentially restricts effective implementation of the biodiversity policies.

One of the critical constraints that the study has highlighted at the systemic level is that the coordination structures for the biodiversity sector are not working efficiently. Biodiversity management in the country is fragmented across multiple stakeholders and implementing institutions in all three spheres of government as well as outside of government. The cooperative and coordination structures are critical to promote alignment of effort in priority areas, but these coordinating forums have either collapsed or are not functioning optimally. In particular, the Committee for Environmental Co-ordination (CEC) was established as the key forum to promote the integration and co-ordination of environmental functions by the relevant organs of state but has collapsed and has not have met since 2005. The CEC is in the process of being disbanded through legislative amendments. There are also concerns about

the relationships between DEAT and the provinces – Working Group 1 established under MINTEC continues to function, but the general view is that it could function more effectively.

Local government faces challenges in biodiversity management, including lack of political support for biodiversity, limited funding as available resources are channelled into socio-economic development priority areas, lack of understanding of environmental legislation and no dedicated environmental staff. While tools are being developed to support planning, land-use and development decisions at the local level, there seems to be a need for concerted capacity building at this level. Efforts are being made to support local government with DEAT and SANBI / DPLG having local government support programmes. The support to local government needs to be prioritised to ensure better integration of biodiversity considerations, including water policy, into land-use and development decisions at the local government level.

While there are a number of initiatives within industrial sectors that promote biodiversity friendly methods of production, there is generally not a wide-spread effort to integrate biodiversity matters in planning, decision making, land-use and production methods i.e. to “mainstream biodiversity”. This applies to business and industry, government and the general public. In government this is evidenced by not incorporating biodiversity into strategic and annual implementation plans nor allocating budget for its implementation as well as the non-compliance by many government departments in submitting and reporting on Environmental Implementation Plans and Environmental Management Plans. An awareness-raising programme of initiative, the CBD and the requirements under multi-lateral environmental agreements at senior levels in government could be considered.

Institutional capacity

Although the study did not undertake a detailed review of the institutions in the biodiversity sector, it did assess the institutional capacity at a general level. At the institutional level some capacity constraints were noted which lead to challenges in the country’s capacity to effectively implement the biodiversity mandate.

The new policies, legislation, strategies and programmes have created additional responsibilities both within DEAT and the implementing institutions. However, the additional responsibilities have not always been matched by an increase in financial and human resources to perform these additional responsibilities, placing strain on the system and the individuals in it. In particular, DEAT’s Biodiversity and Conservation Branch plays a pivotal role in biodiversity management in the country. Due to its many responsibilities, this branch seems to be struggling to effectively fulfil all its functions and further assessment is required to ensure that it is appropriately structured and with adequate budget and individual capacity to lead the biodiversity sector. In addition, back office support and administrative systems, including procurement and payment systems, play an important role in allowing institutions to effectively perform their functions, but have generally not received the priority they warrant, thereby hampering institutions especially conservation agencies from being effective.

There are instances where the roles and responsibilities of different institutions are uncertain, with the risk of duplicating functions or them not being performed at all. Such confusion can be formalised by way of a memorandum of understanding that defines the roles and responsibilities. Such an agreement might be useful between DEAT and SANBI in certain functional areas; the Marine & Coastal Management

Branch (MCM) of DEAT and SANParks regarding Marine Protected Areas, and DWAF, DEAT and MCM on managing biodiversity in freshwater aquatic systems.

Other institutional capacity constraints include the enforcement of legislation for illegal harvesting of particularly marine and forest resources.

Financial resources are an ongoing challenge for the sector, especially at provincial and local level, with government funding directed to other priorities that meet its social agenda. Donor funding for the biodiversity sector is also under pressure and innovative strategies are needed to secure a sustainable source of funding for the sector. It has been estimated that the implementation of the NBF over the next five years will cost in the order of R7.6 billion.

Individual capacity

At the individual level, South Africa faces capacity constraints and human capital development is possibly the single biggest challenge the sector faces. The general view is that the sector is unable to attract and retain suitably skilled individuals, especially in some specialised positions such as biosystematics researchers. There is a high level of staff turnover within government with many posts vacant. This has led to a loss of institutional memory and placed pressure on the remaining employees. The human capital development challenge has been recognised and SANBI is leading a Human Capital Development process which will develop a human capital development strategy for the environmental sector. This strategy will seek to address transformation and the challenge of scarce skills in the sector. The aim is to have a strategy document drafted by 31 March 2009.

Capacity assessment in respect of CBD responsibilities/issues

A capacity assessment was undertaken for each of the CBD obligations. The table below summarises the key findings.

Key to Table I

	Weak capacity – urgent response suggested
	Some capacity created, but needs enhancing
	Good capacity

Table I. Capacity Assessment Summary

CBD obligation	Capacity assessment		
	Systematic	Institutional	Individual
International Co-operation	South Africa has ratified and is party to numerous MEAs and regional initiatives	Units to focus on international cooperation	Limited understanding outside DEAT's International Co-operation & Resources (ICR) branch
Develop national strategies, plans or programmes	Well developed enabling framework; NBF identifies priorities for next 5 years, but implementation limited by weak intergovernmental relations; Many strategies, plans still under development.	Biome programmes need sustainable financing strategies;	Scarce human resources; Limited multi-disciplined personnel;



CBD obligation	Capacity assessment		
	Systematic	Institutional	Individual
Integration of biodiversity issues into sectoral and cross sectoral plans	<p>Within sector coordination structures not efficient</p> <p>Not enough co-ordination between institutions in development decisions</p> <p>Biodiversity not mainstreamed in other sectors</p>	<p>Institutions tend to work in isolation;</p> <p>Not enough coordination between branches of some institutions</p> <p>Loss of institutional memory;</p>	<p>Growing responsibilities -CBD not being priority;</p> <p>Lack of capacity at local government for integrating biodiversity into development decisions</p>
In-situ conservation	<p>Good policy & legislation;</p> <p>Stewardship programmes</p>	<p>Fragmented and decentralised structure for conservation sector could be reviewed</p>	<p>Vacant posts with high staff turnover and inability to attract and retain suitably qualified individuals</p>
Ex-situ conservation	<p>Millennium Seedbank Project and DNA Bank created</p> <p>Zoos?</p>	<p>SANBI has well developed ex situ conservation for flora with national botanical gardens network</p> <p>Fauna not well developed</p>	<p>Develop capacity for ex-situ conservation of fauna</p>
Sustainable use	<p>Lack of effective measures to combat over harvesting of natural resources.</p>	<p>Develop projects that will decrease pressure on natural resources</p>	<p>Enforcement capacity urgently to be strengthened including MCM and DWAF</p>
Minimising adverse impacts	<p>EIA regulations in place, but weak and under review;</p> <p>Bioregional plans to integrate biodiversity aspects into local planning</p>	<p>Weak integration of EIA with other licensing and authorisation processes</p>	<p>Lack of capacity in local government regarding qualifications and experience and with high staff turnover</p>
Monitoring	<p>Methods being developed;</p> <p>National Biodiversity Monitoring and Reporting Framework in development</p>	<p>Information and data gaps in some areas;</p> <p>Limited emphasis on monitoring by provincial agencies</p>	<p>Insufficient capacity for monitoring at provincial level</p>
Research	<p>National research strategy is NBF priority,</p> <p>Funding for research inadequate;</p>	<p>Strong research institutions;</p> <p>Not enough research focused on priorities;</p> <p>Information gaps;</p> <p>Limited funding and focus of museums away from research</p>	<p>Concerns re ageing scientists and brain drain</p> <p>Limited capacity in social sciences and resource economics;</p>
Technical, scientific co-operation and information sharing	<p>No clearing house mechanism;</p> <p>SANBI developing centralised and integrated biodiversity information systems</p>	<p>Research institutions and SANParks / SANBI participate in international fora and publish research</p>	<p>Concerns re ageing scientists and brain drain</p>

CBD obligation	Capacity assessment		
	Systematic	Institutional	Individual
Public Education and Awareness	SANBI in process of developing tools for this.	Many institutions have good communication tools – websites etc	Low level of awareness among politicians, senior government officials, business leaders, educators and society in general
Access to genetic resources, biotechnology and distribution of its benefits	ABS regulations in place Environmental Risk Assessment Framework for GMOs being developed	Uncertainty on impacts of GMOs on ecosystems	Need to build capacity to implement, enforce and monitor ABS regulations
Financial resources to support obligations	Funding from government and donors being directed to higher priority socio economic needs	Institutions generally under funded and not able to fully and efficiently meet mandates or perform all functions	Increase capacity of administrative and support systems to facilitate efficient spending of funding available to sector
Incentive measures	Fiscal measures drafted and in budget proposals; Other mechanisms still to be investigated and established	Mainly driven by NGOs and biome coordination units at this stage	Lack of resource economics capacity

Conclusion

In general South Africa has made good progress towards creating the capacity for effective biodiversity management, especially the top class enabling framework. There are shortcomings in implementation, but it is unrealistic to expect South Africa to address all these shortcomings simultaneously. More important is that it recognises the gaps and institutes measures, within the available financial and human constraints, to address these shortcomings within a realistic time frame. Priorities also need to be agreed to deal with the major gaps, which include the coordination of biodiversity management in the country, developing human capital for managing the sector and mainstreaming biodiversity in government, the private sector and society at large. The Priority Actions in the NBF will go some way to narrowing the gap if the target of achieving them by 2013 is achieved, with the establishment and implementation of the human capital development strategy for the biodiversity sector to address transformation and scarce skills a key intervention at the individual capacity level.

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ACRONYMS

ABS	Access and Benefit Sharing
BBOP	Business and Biodiversity Offset Program
B&C	Biodiversity and Conservation Branch (of DEAT)
BCLME	Benguela Current Large Marine Ecosystem
C.A.P.E	Cape Action for People and the Environment
CBD	United Nations Convention on Biological Diversity
CBNRM	Community Based Natural Resource Management
CEC	Committee for Environmental Coordination
CHM	Clearing House Mechanism
CMA	Catchment Management Agency
COP	Conference of the Parties
DEAT	Department of Environmental Affairs and Tourism
DPLG	Department of Provincial and Local Government
DST	Department of Science and Technology
DWAF	Department of Water Affairs and Forestry
EIA	Environmental Impact Assessment
EIP	Environmental Implementation Plan
EMP	Environmental Management Plan
EPWP	Expanded Public Works Programme
FSC	Forestry Stewardship Council
GEF	Global Environment Facility
GMO	Genetically Modified Organism
ICR	International Cooperation and Resources Branch (of DEAT)
IDP	Integrated Development Plan
ISRDP	Integrated Sustainable Rural Development Programme
MCM	Marine and Coastal Branch (of DEAT)
MEA	Multilateral Environmental Agreements
MEC	Member of Executive Council
MPA	Marine Protected Area
NBF	National Biodiversity Framework
NBSAP	National Biodiversity Strategy and Action Plan
NCSA	National Capacity Self Assessment
NEMA	National Environmental Management Act
NEMBA	National Environmental Management: Biodiversity Act
NEMPA	National Environmental Management: Protected Areas Act
NFA	National Forests Act
NGO	Non Governmental Organisation
NRF	National Research Foundation
NSBA	National Spatial Biodiversity Assessment
NWA	National Water Act
ODA	Official Development Assistance
PA	Protected Area
PBO	Public Benefit Organisation
PCI&S	Principles, Criteria, Indicators and Standards
PES	Payment for Ecosystem Services
PFA	Participatory Forest Management
RAF	Resource Allocation Framework
RDM	Resource Directed Measures
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SAMBF	South African Mining and Biodiversity Forum
SANAP	South African National Antarctic Programme
SANBI	South African National Biodiversity Institute



SANParks	South African National Parks Board
SETA	Sector Education and Training Authority
SKEP	Succulent Karoo Ecosystem Programme
SMME	Small Micro and Medium Enterprises
SRP	Social Responsibility Programme
STEP	Sub Tropical Thicket Ecosystem Planning
TOPS	Threatened or Protected Species
TFCA	Trans Frontier Conservation Area
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNESCO	United Nations Education, Scientific and Cultural Organisation
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
URP	Urban Renewal Programme
WWF-SA	World Wide Fund for Nature – South Africa

1 INTRODUCTION

1.1 *Context for Study*

South Africa is a signatory to the United Nations Convention on Biological Diversity (CBD). The principal objectives of the CBD are the conservation and sustainable use of biological diversity, and the fair and equitable sharing of benefits arising from its utilisation. South Africa has assumed obligations under the Convention – the Department of Environmental Affairs and Tourism (DEAT) is the lead agent for the implementation of these obligations.

The Convention is one of a number of regional and international agreements and conventions that have come into force over the last two decades, placing additional demands on the capacity of participating countries to effectively implement their various commitments. Accordingly, in May 1999 the Global Environment Facility (GEF) Council approved a strategic partnership between the GEF Secretariat and United Nations Development Programme (UNDP) to formulate a comprehensive strategic approach to develop capacities to meet global environmental challenges.

In September 2001, GEF established a source of funds to support this partnership. The National Capacity Self-Assessment (NCSA) was created to assist developing countries assess their capacity to meet obligations under the United Nations Convention on Biological Diversity, the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention to Combat Desertification (UNCCD).

It is in this context that DEAT and the UNDP commissioned an NCSA for South Africa. This thematic report covers the country's capacity in relation to the United Nations Convention on Biological Diversity.

1.2 *Background to the NCSA*

The NCSA is an assessment and planning exercise driven by country participants. Each country has flexibility in defining specific objectives and methods for the NCSA, but the common goal is to address priority national and global environmental issues, based on guidance from the Multilateral Environmental Agreements (MEA). The NCSA is concerned with a country's capacity – the abilities of individuals, groups, organisations and institutions, to address the priority environmental issues as part of efforts to achieve sustainable development. The NCSA is an opportunity to systematically assess priority needs and prepare a national capacity development plan – the objectives and actions required to improve the ability of individuals, institutions and systems to make and implement decisions, and to perform functions in an effective, efficient and sustainable manner.

In order to meet MEA responsibilities, each country will need the capacity to manage the following functions:

- to mobilise information and knowledge;
- to build consensus and partnerships among all stakeholders;
- to formulate effective policies, legislation, strategies and programmes;

- to implement policies, legislation, strategies, programmes and projects, including mobilising and managing human, material and financial resources; and
- to monitor, evaluate and report on progress.

For a country to perform these functions successfully, it needs capable individuals, effective institutions and organisations, and for participants to work together in a well-functioning political, economic and social system, i.e. it needs to create a conducive “enabling environment” (UNDP 2005). Adequate capacity is required at each of the individual, institutional and systemic levels, and the assessment will address all these levels.

The NCSA is guided by *A Guide for Self-Assessment of Country Capacity Needs for Global Environmental Management* (GEF 2001) and the *National Capacity Self Assessment Resource Kit* (UNDP 2005).

1.3 Objectives of the study

The primary goal of the NCSA is to determine national priorities for capacity development to better address global environmental issues. This will be done by analysing the country’s capacity requirements to implement the three conventions. By reviewing its capacity strengths, constraints and needs, actions to address the capacity requirements will be recommended. The capacity requirements for meeting the requirements of the CBD is the focus of the assessment contained in this thematic report, but it is recognised that the NCSA will need to explore the synergies between this convention and the other conventions – the UNCCD and UNFCCC - that are part of the broader NCSA process, as well as linkages with wider concerns of environmental management and sustainable development.

This study and report aim to assess the existing capacity of South Africa at the systemic, institutional and individual levels to meet its commitments under the CBD and to identify the capacity gaps in meeting these obligations.

According to the Terms of Reference, the objectives of the study included:

- Reviewing needs already identified in the DEAT Audit of Environmental Capacity Building, National Biodiversity Strategy and Action Plan, National Action Plan, Initial National communication Reports and the Community Based Natural Resources Management
- Identifying systematic issues with a bearing on environmental management.
- Considering internationally emerging issues (e.g. trade and environment) and assessing the South Africa’s capacity to deal with them.
- Examining human and institutional capacity in selected national, provincial and local authorities, NGOs, training, research and educational institutions, and the private sector;
- Providing an assessment of previous and on-going activities related to capacity building, outlining, existing constraints and strengths in the public and private sector institutions;
- Providing an assessment of existing capacities and gaps within selected pilot projects that form part of the Integrated Sustainable Rural Development Strategy and Urban Renewal Programme

- Reviewing the current capacity building programmes in each of the national government departments with regards to each of the thematic areas with a focus on Integrated Sustainable Rural Development Strategy and Urban Renewal Programme
- Examining and making recommendations on South Africa's capacity to conduct regular capacity assessments.

1.4 Structure of NCSA Report

The study approach is outlined in Chapter 2. Following this, background on the CBD and South Africa's situation with respect to the status and conservation of its biodiversity is outlined in Chapter 3. South Africa's current environmental management framework in terms of its policy and legislation, institutions, strategies and programmes, is described in Chapter 4. Its current capacity and capacity constraints in terms of its obligations under the CBD are reviewed in Chapter 5, and these are summarised in terms of overall systemic, institutional and individual capacity in Chapter 6. The final chapter provides a summary of systemic, institutional and individual capacity in relation to CBD obligations, and provides recommendations for addressing capacity constraints.

2 STUDY APPROACH

2.1 *General approach*

Due to the pressure to compile the NCSA, the scope of work and processes set out in the National Capacity Self Assessment Resource Kit (UNDP 2005) was limited to those activities that allowed the compilation of a Thematic Report within the available time. The general approach was to assess existing capacity for South Africa's commitments under the CBD. For purposes of the study, the main areas of responsibility under the CBD were identified, these areas being broadly aligned to the CBD articles. Systemic, institutional and individual capacity was assessed for each of these commitments. Information for the NCSA was obtained through literature reviews and semi-structured interviews with key stakeholders, and a multi-stakeholder workshop.

In undertaking the assessment, the following activities were undertaken:

Literature review of relevant policies, legislation, strategies, reports and other relevant documentation. To provide an understanding of the context and current status of environmental management in South Africa, relevant documents were reviewed. The list of documents reviewed included policies, legislation, including regulations, the National Biodiversity Strategy and Action Plan (NBSAP), reports to Convention bodies and annual reports of relevant organs of state. The most important documents reviewed included:

- The Biodiversity White Paper (DEAT 1997)
 - South Africa Country Study (DEAT 2005a)
 - National Biodiversity Strategy and Action Plan (NBSAP) (DEAT 2005b)
 - Sustainable Development Framework (DEAT 2008a)
 - The draft National Biodiversity Framework (NBF) (DEAT 2008b)
 - National Environmental Management Act, 1998 (NEMA)
 - National Environmental Management: Biodiversity Act, 2004 (NEMBA)
 - DEAT and SANBI annual reports for 2006/07 and 2007/08
2. **Information gathering.** This was done by holding semi structured interviews with key stakeholders in the environmental sector within the following institutions and sectors:
- DEAT
 - DWAF
 - SANBI
 - SANParks
 - CapeNature
 - NGOs
 - Academic and research institutions

A questionnaire was drafted and sent to all participants prior to the interview – a copy of the questionnaire is contained in Annexure 1. Interviews were held with the above stakeholders – where applicable interviews were held with various directorates or units in the institutions. A list of stakeholder representatives interviewed is set out in Annexure 2.

In addition to the interviews conducted, the questionnaire was emailed to all the provincial conservation or environmental departments as well as to all provincial conservation agencies (Annexure 2).

3. A **SWOT analysis** was developed based on the inputs from the literature review and interviews (Annexure 3).
4. Based on the previous activities, a **capacity assessment** was undertaken to assess existing capacity and the critical gaps in capacity.

2.2 Limitations of the study

Firstly, this study does not seek to evaluate or conclude on the extent to which South Africa is complying with its obligations under the CBD. The approach and procedures were not designed to assess compliance or progress towards meeting the targets, including the 2010 targets, but rather to address the capacity to meet the commitments over the medium to long term.

Secondly, the study has been undertaken at a high strategic level. While it has assessed capacity at the three levels of systemic, institutional and individual capacity, this has been done at a macro level for the biodiversity sector, and broad capacity challenges are identified. However, the study does not attempt to address specific issues at an institutional or individual level; for example, the study did not undertake a strategic review of, for instance, the organisational structures of each of the relevant institutions involved in implementation of the CBD to assess whether such structure is optimal. Nor did the study identify the skills gaps and training requirements of the managers or staff of any of the institutions. If such detailed outcomes are considered necessary based on the findings of this exercise, separate studies will need to be commissioned to undertake a strategic review / business plan at the institutional level or a detailed capacity assessment and needs analysis at the individual level.

Thirdly, the study was conducted within a short timeframe with the implication that it was not possible to contact and get the input of all the stakeholders who play a role in the biodiversity sector generally and with the implementation of the CBD specifically. For example, government departments such as the Departments of Agriculture and Science & Technology, as well as many of the research institutions were not included in the process, but would have been had more time been available. A further implication is that while the cooperation of those stakeholders approached was generally forthcoming and greatly appreciated, in certain instances practicalities prevented interviews being conducted with preferred institutions or individuals within the institutions. This was due to prior commitments including overseas travel, for example, and the meetings could not be rescheduled within the time frames of the study.

In spite of these limitations, the information obtained through the literature review and interview process is considered sufficient for the objectives of the study to be met, and for the most important capacity gaps to be identified. Additional time for the participation of further stakeholders may have provided the opportunity to fine tune certain of the findings, but it is unlikely that materially different conclusions would have been reached.

3 SOUTH AFRICA'S OBLIGATIONS UNDER THE CBD

3.1 *The South African biodiversity context*

3.1.1 Biodiversity status

South Africa is one of the most biologically diverse countries in the world. DEAT (2005b) notes that South Africa occupies only 2% of the world's surface area, but is home to 10% of the world's plants (about 24 000 species); 4.6% of its reptiles (288 species); 8% of its birds (800 species) and 5.8% of its mammals (close to 300 species). Marine biological diversity is high with over 11 000 species in South Africa's waters – this represents about 15% of global species and about 25% of the species found are endemic to South Africa.

Three globally recognised biodiversity hotspots, being areas with high concentrations of biodiversity but which are under serious threat, are found in South Africa – the Cape Floral Kingdom; the Succulent Karoo and the Maputaland-Pondoland-Albany centre of endemism. There are also 100 Important Bird Areas in South Africa.

Studies, including assessments undertaken for the Red Data List at a species level and the National Spatial Biodiversity Assessment (NSBA) at the ecosystems level, have highlighted that South Africa's biodiversity and ecosystem health is under threat and generally declining. Specifically (DEAT 2005b):

- Of the 948 plant taxa assessed, 414 (44%) are threatened with extinction;
- Of the 295 mammal species assessed, 57 (19.3%) are threatened (critically endangered, endangered or vulnerable) while a further 38 (12.3%) are near threatened;
- 59 bird species are threatened and another 64 near threatened;
- 20 (17.5%) of the 114 frog species assessed are threatened, including four critically endangered, and a further five species near threatened;
- 36% of freshwater fish are threatened;
- 34% of South Africa's terrestrial ecosystems are categorised as threatened with 5% critically endangered, mainly in the Fynbos and forest biomes;
- Of the 120 river ecosystems types, 82% are classified as threatened, with 44% critically endangered;
- 65% of the 34 marine bio-zones are threatened, with 12% critically endangered;
- South Africa has 259 estuaries which were classified into 13 estuarine zonal types – 77% of the estuary groups are threatened, with 23% of these critically endangered; and
- it is estimated that 50% of wetlands have already been destroyed or converted.

The condition of biodiversity and ecosystems is therefore of major concern. Not only does this potentially reduce the capacity for ecosystem services such as clean water, it also has serious implications for South Africa achieving its sustainable development goals and improving the quality of life of all its citizens.

The state of the environment report produced in 2006 (DEAT 2006b) concluded that the general state of biodiversity is not good and is declining. Furthermore, South

Africa is unlikely to meet the CBD goal of reducing the rate of loss of biodiversity by 2010.

3.1.2 Local-level threats to biodiversity

Local-level threats facing biodiversity include (DEAT 2005a, DEAT 2005b, DEAT 2008b):

- **habitat transformation and degradation** due to deforestation, agricultural activities, urban development, coastal development, mining and industrial development;
- the growing occurrence of **invasive alien species** – it is estimated that some 180 species infest about 8% of South Africa's surface area;
- **unsustainable utilisation** of natural resources, including overgrazing, harvesting of plants for medicinal purposes and illegal harvesting of especially marine resources;
- aquatic ecosystems are under pressure from **over-abstraction of water** for a range of uses, including agricultural irrigation and industrial and residential consumption; and
- domestic, industrial, agricultural and marine **pollution**

3.1.3 International issues affecting South African biodiversity

Climate Change

Climate change is considered the most significant environmental issue facing humanity today. South Africa emits more greenhouse gases per person than many industrialised countries due mainly to its reliance on coal for electricity with the energy sector responsible for 91% of total carbon dioxide emissions in 1994 (DEAT 2006b). Part of the NCSA project is a thematic report on climate change, and this study does not attempt to pre-empt the results of that study. However, climate change will have a potentially severe impact on South Africa's biodiversity with the projected decline in the reduction of the area covered by the current biomes of up to 55% in the next 50 years (DEAT 2008b). The largest losses are predicted to occur in the western, central and northern parts of the country. Less rainfall and higher temperatures could lead to more extinctions as plants and animals migrate towards the less affected eastern parts of the country and ecosystem services could be comprised (DEAT 2006b, DEAT 2008b). There will also be potentially dramatic impacts on aquatic systems with reduced freshwater flows into river systems and rising sea levels.

A detailed assessment of South Africa's response to climate change and its capacity to meet its obligations under the UNFCCC is contained in the Thematic Report on Climate Change. However, it is noted that South Africa has been pro-active in its response to the issue with the National Climate Change Response Strategy compiled in 2004 and cabinet approving the long term mitigation strategy in 2008. DEAT has established an Air Quality and Climate Change Chief Directorate in its Environmental Quality and Protection Branch. A National Committee on Climate Change has been established. South Africa has been active in international developments and acceded to the Kyoto Protocol and has established a number of projects under the Clean Development Mechanism. It plays a leading role in international climate change negotiations particularly in the Africa and Group of 77 blocks and is involved

in various climate change research and communication initiatives. (DEAT 2006b, DEAT 2008e).

International trade

International trade agreements affect production standards, the pricing of goods and services on international markets and the relative competitiveness of different countries in the markets for different goods and services. These agreements can therefore have both direct and indirect effects on biodiversity. For example, trade agreements that increase the competitiveness of the wine industry might indirectly impact on biodiversity through the expansion of viticulture in biodiversity rich areas of the Western Cape. Direct effects might include international controls on forestry methods. It is thus important to consider both the direct and indirect impacts of international trade agreements.

There is an increasing trend for developed countries to link MEAs to international trade, using environmental standards as trade barriers and defending bio-piracy rights that compromise the intellectual property rights of local communities (DEAT 2008e). Accordingly, trade and environmental issues form part of the Doha Development Agenda negotiations at the World Trade Organisation. These include negotiations on the prohibition of fishery subsidies that contribute to over-fishing with the fisheries sector identified as a priority given its importance to the livelihoods of small scale fisheries. The relationship between the World Trade Organisation and MEAs in terms of specific trade obligations and trade liberalisation in environmental goods and services is also receiving attention (DEAT 2008e).

DEAT has been actively participating in technical negotiations to ensure an integrated position between the Department of Trade and Industry and DEAT to ensure a balanced approach between trade and its impact on the environment. Cooperation with other government departments to ensure favourable outcomes for the environment is important.

Shared river basins

South Africa shares some of its major river basins with neighbouring countries. These include major source areas (e.g. Lesotho) as well as downstream areas (e.g. Mozambique). Botswana and Namibia share large parts of South Africa's largest river basin. Management of biodiversity in these basins is thus highly dependent on international agreements that secure adequate environmental flows for these systems.

3.1.4 Conservation measures

To support the effective conservation of biodiversity, South Africa has a long established system of formal protected areas, with the first protected areas established in the late 19th century. The National Environmental Management: Protected Areas Act of 2004 (NEMPA) provides for the protection and conservation of ecologically viable areas representative of South Africa's biological biodiversity, natural landscapes, seascapes and the management of these areas. Certain of the protected areas are declared as national parks under the Act and are managed by SANParks. There is also a network of provincial protected areas managed by the relevant provincial institutions. While South Africa has the goal of having 10% of its territory classed as protected areas in line with IUCN recommendations, it is still some way off this target with only about 6% of the terrestrial area currently protected in about 400 protected areas. Apart from the formally protected areas, privately owned conservancies, private reserves and farms also contribute to biodiversity

conservation to an extent. Estimates are that private land used for wild life purposes such as private reserves and game ranches comprises about 13% of the country's surface area.

South Africa also has a goal to have 20% of its coastline declared as Marine Protected Areas (MPAs). The declaration of additional MPAs in recent years has increased the proportion of the coastline that is protected, but there is still an urgent need to protect offshore habitats due to the threats posed by offshore fishing, mining and pollution.

South Africa is committed to the conservation of its biological diversity, as demonstrated by it becoming a signatory to the CBD in 1995. In addition, it is actively involved in six Trans Frontier Conservation Areas (TFCAs). TFCAs aim to encompass transboundary ecosystem management, integration of conservation with sustainable socio-economic development and the promotion of regional cooperation for peace. South Africa has signed a TFCA protocol and is in the process of implementing TFCAs with all six of its neighbouring countries – Mozambique, Swaziland, Zimbabwe, Botswana, Namibia and Lesotho. Other initiatives that contribute to the conservation of biological diversity are the five Biosphere Reserves (Kogelberg, Cape West Coast, Waterberg, Kruger to Canyon and Cape Winelands) which are not protected by any specific legislation, but are registered with the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the World Heritage Sites, with the World Heritage Convention being incorporated into South Africa law.

3.2 The Convention on Biological Diversity (CBD)

This section provides an overview of the Convention on Biological Diversity by briefly reviewing its history, objectives, provisions and institutional arrangements. Information contained hereunder has been sourced mainly from the *Handbook of the Convention on Biological Diversity including its Cartagena Protocol on Biosafety, 3rd edition* (Secretariat of the Convention on Biological Diversity 2005).

The Convention on Biological Diversity opened for signature at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in June 1992. It came into force on 29 December 1993 and currently has 191 Parties.

The principal objectives of the Convention are:

- the conservation and sustainable use of biological diversity, and
- the fair and equitable sharing of benefits arising from its utilisation.

The Convention translates its guiding objectives of conservation, sustainable use and equitable sharing of benefits into binding commitments in its substantive provisions contained in Articles 6 to 20. These articles contain key provisions on, among others:

- measures for the conservation of biological diversity, both in situ and ex situ;
- incentives for the conservation and sustainable use of biological diversity;
- research and training;
- public awareness and education;
- assessing the impacts of projects on biological diversity;
- regulating access to genetic resources;

- access to and transfer of technology; and
- the provision of financial resources.

In addition to its substantive provisions, the Convention establishes institutional arrangements which provide a mechanism for the further development and monitoring the implementation of the Convention through meetings, work programmes, reviews and negotiations. Three institutions are established by the Convention:

- the Conference of the Parties (COP),
- the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and
- the CBD Secretariat.

The Convention also establishes a financial mechanism for the provision of financial resources to developing country parties, and provides for the establishment of a clearing-house mechanism (CHM) for scientific and technical cooperation. The Convention enables the COP to establish additional subsidiary bodies as it deems necessary for the implementation of the Convention.

The governing body of the Convention is the **COP**, established under Article 23, which contains a list of functions of the COP. Its key functions are to review the implementation of the Convention and to guide its development. Other important functions of the COP include:

- adoption of the budget,
- the consideration of national reports,
- the adoption of protocols or annexes and
- the development of guidance to the financial mechanism.

COP meetings are held every two years. To date, there have been nine ordinary meetings of the COP with the most recent (COP 9) having taken place in Bonn, Germany, during May 2008. Meetings of the COP are open to all Parties to the Convention, as well as to observers from non-Parties, intergovernmental organisations and non-governmental organisations. The COP also serves as the meeting of the Parties to the Cartagena Protocol on Biosafety.

The COP can also hold extraordinary meetings with the first and only such extraordinary meeting held in Cartagena, Colombia, in February 1999, to consider and adopt the first protocol to the Convention, a protocol on biosafety. However, as agreement on the text of the biosafety protocol was not forthcoming, the extraordinary meeting was suspended and resumed in Montréal in January 2000, where it concluded its work and adopted the Cartagena Protocol on Biosafety.

The implementation of an initial medium-term programme of work saw the evolution of a process for the development of COP decisions and the application of the general principles of the Convention to specific thematic areas and cross-cutting issues. In addition, at its second meeting, the COP decided that the ecosystem approach should be the primary framework of action to be taken under the Convention.

The COP has initiated work on seven thematic work programmes, addressing marine and coastal biodiversity, agricultural biodiversity, forest biodiversity, the biodiversity of inland waters, dry and sub-humid lands biodiversity, mountain biodiversity and island biodiversity.



Article 25 of the Convention establishes an open-ended intergovernmental scientific advisory body, the **Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA)** to provide the COP with advice and recommendations on scientific, technical and technological aspects of the implementation of the Convention. Specific functions of SBSTTA include:

- Providing scientific and technical assessments of the status of biodiversity;
- Preparing scientific and technical assessments of the measures taken to implement the Convention;
- Identifying innovative, efficient and state of the art technologies and know how, and advising on how to promote their development;
- Providing advice on scientific programmes and international cooperation in research and development; and
- Generally responding to scientific, technical and technological and methodological questions asked by the COP.

SBSTTA submits its advice to the COP in the form of recommendations. The COP considers SBSTTA advice on relevant issues before adopting its decisions.

Article 24 establishes a **Secretariat**, whose principal functions are to prepare for, and service, meetings of the COP and other subsidiary bodies of the Convention and to coordinate with other relevant international bodies. The host institution of the Secretariat is United Nations Environmental Programme (UNEP). The Secretariat is located in Montreal, Canada.

The Secretariat provides administrative support to the COP, SBSTTA and other Convention bodies. It represents the day-to-day focal point for the Convention, organises all meetings under the Convention, and prepares background documentation for those meetings. The Secretariat plays a significant role in coordinating the work carried out under the Convention with that of other relevant institutions and conventions, and represents the Convention at meetings of other relevant bodies. The Parties to the Convention have established trust funds to meet the costs of administering the Convention, including the costs of the Secretariat. All Parties contribute to the budget of the Convention.

Article 21 establishes a mechanism for the **provision of financial resources** to developing countries for purposes of the Convention. In Article 20, developed countries undertake to provide “new and additional financial resources to enable developing country Parties to meet the agreed full incremental costs” of implementing the obligations of the Convention. Article 39 designates the Global Environment Facility (GEF) on an interim basis to operate the financial mechanism of the Convention, and the GEF continues to fulfil this function. The financial mechanism functions under the authority and guidance of, and is accountable to, the COP. The COP determines the policy, strategy, programme priorities and eligibility criteria relating to the access to and utilisation of the financial resources. COP 1 adopted comprehensive guidance for the financial mechanism.

The GEF reports to each meeting of the COP on its implementation of the guidance. The GEF is managed by a Council, which is composed of 32 members representing some 166 participant States. Projects of the GEF are undertaken by Parties to the Convention and the Implementing Agencies of the GEF: UNEP, UNDP and the World Bank.

Paragraph 3 of Article 18 anticipated the establishment of a clearing-house mechanism (CHM) to promote and facilitate technical and scientific cooperation with



the aim of developing meaningful and effective action to enhance the implementation of Articles 16 to 19 of the Convention. Programme element 2 of the programme of work, on information systems, focuses on the development or strengthening of national, regional and international systems for gathering and dissemination of relevant information on technology transfer and cooperation and technical and scientific cooperation. It also invests the CHM with a central role in the dissemination and exchange of information and the facilitation of cooperation.

In the course of its consideration of specific issues, the COP established a number of other subsidiary organs with limited and defined mandates. These include:

- Working Group on Biosafety;
- Working Group on Access and Benefit-sharing;
- Working Group on Article 8(j) and Related Provisions – this relates to local indigenous knowledge;
- Intergovernmental Committee for the Cartagena Protocol;
- Working Group on Protected Areas;
- Working Group on Review of Implementation of the Convention; and
- Compliance Committee under the Cartagena Protocol on Biosafety.

In 2002, the COP adopted a Strategic Plan for the Convention wherein it urged Parties, States, intergovernmental organizations and other organizations to review their activities, especially their national biodiversity strategies and action plans in the light of the Strategic Plan for the Convention on Biological Diversity. The Strategic Plan will be updated at COP-10 in 2010.

The Strategic Plan was adopted to guide the Convention's further implementation at the national, regional and global levels. The purpose of the Strategic Plan is to effectively halt the loss of biodiversity so as to secure the continuity of its beneficial uses through the conservation and sustainable use of its components and the fair and equitable sharing of benefits arising from the use of genetic resources.

In accordance with the Strategic Plan, the Parties to the Convention committed themselves to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth. This target was subsequently endorsed by the World Summit on Sustainable Development and the United Nations General Assembly and was incorporated as a new target under the Millennium Development Goals.

3.3 South Africa's obligations under the CBD

South Africa's obligations under the CBD are provided in detail in Box 1. In summary they include:

- international co-operation;
- develop conservation plans, strategies and programmes;
- mainstreaming biodiversity;
- in situ conservation;
- ex situ conservation;
- sustainable use of biodiversity;
- minimizing adverse impacts;
- monitoring;
- research;



- technical co-operation and information sharing;
- public education and awareness;
- access to genetic resources, biotechnology and their benefits;
- financing; and
- incentive measures.

Box 1. South Africa's responsibilities under the CBD

Cooperation

5 Cooperate with other contacting parties in respect of areas beyond national jurisdiction

Measures for conservation and sustainable use

6 (a) Develop national strategies, plans or programmes for conservation and sustainable use of biological diversity, reflecting the relevant measures set out in the CBD

6 (b) Integrate conservation and sustainable use of biological resources into relevant sectoral or cross sectoral plans, programmes and policies

Identification and Monitoring

7 (a) Identify important components of biological diversity for conservation / sustainable use

7 (b) Monitor these components of biological diversity identified in 7 (a), with attention on those requiring urgent conservation measures and those with greatest potential for sustainable use

7 (c) Identify processes and categories of activities likely to have significant adverse impact on biological diversity and its sustainable use and monitor effects

7 (d) Maintain and organise data from monitoring activities in 7 (a), (b) and (c)

In-situ conservation

8 (a) Establish a system of protected areas to conserve biological diversity

8 (b) Develop guidelines for selection, establishment and management of PAs

8 (c) Regulate or manage biological resources important for conservation of biological diversity – within and without PAs

8 (d) Promote protection of ecosystems, natural habitats and maintenance of viable populations in natural surroundings

8 (e) Promote environmentally sound and sustainable development in areas adjacent to PAs

8 (f) Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species through development and implementation of plans or management strategies

8 (g) Establish means to regulate, manage and control risk associated with use and release of living modified organisms resulting from biotechnology

8 (h) Prevent introduction of, control or eradicate those alien species which threaten ecosystems, habitats and species

8 (i) Provide the conditions needed for compatibility between present uses and the conservation of biological diversity and the sustainable use of its components

8 (j) Respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity; promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices

8 (k) Develop necessary legislation and/or other regulatory provisions for the protection of threatened species and populations

8 (l) Where a significant adverse effect on biological diversity has been determined pursuant to Article 7, regulate or manage the relevant processes and categories of activities;

8 (m) Cooperate in providing financial and other support for in-situ conservation outlined in 8 (a) to (l), particularly to developing countries

Ex-situ conservation

9 (a) Adopt measures for the ex-situ conservation of components of biological diversity

9 (b) Establish and maintain facilities for ex-situ conservation of and research on plants, animals and micro-organisms

9 (c) Adopt measures for the recovery and rehabilitation of threatened species and for their reintroduction into their natural habitats under appropriate conditions

9 (d) Regulate and manage collection of biological resources from natural habitats for ex-situ conservation purposes so as not to threaten ecosystems and in-situ populations of species, except where special temporary ex-situ measures are required under 9 (c)



9 (e) Cooperate in providing financial and other support for ex-situ conservation outlined in 9 (a) to (d) and in the establishment and maintenance of ex-situ conservation facilities in developing countries

Sustainable use of components of biological diversity

10 (a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making

10 (b) Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity

10 (c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements

10 (d) Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced

10 (e) Encourage cooperation between governmental authorities and private sector in developing methods for sustainable use of biological resources

Incentive measures

11 Adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity

Research and training

12 (a) Establish and maintain programmes for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components; provide support for such education and training for the specific needs of developing countries

12 (b) Promote and encourage research which contributes to the conservation and sustainable use of biological diversity, particularly in developing countries, inter alia, in accordance with decisions of the Conference of the Parties taken in consequence of recommendations of the Subsidiary Body on Scientific, Technical and Technological Advice

12 (c) Promote and cooperate in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources

Public Education and Awareness

13 (a) Promote and encourage understanding of the importance of, and the measures required for, the conservation of biological diversity, as well as its propagation through media, the inclusion of these topics in educational programmes

13 (b) Developing educational and public awareness programmes, with respect to conservation and sustainable use of biological diversity

Impact Assessment and minimising adverse impacts

14 (a) Introduce appropriate procedures requiring environmental impact assessment of proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and allow for public participation in such procedures

14 (b) Introduce appropriate arrangements to ensure that the environmental consequences of programmes and policies that are likely to have significant adverse impacts on biological diversity are duly taken into account

14 (c) Promote, on the basis of reciprocity, notification, exchange of information and consultation on activities which are likely to significantly affect adversely the biological diversity of other States or areas beyond the limits of national jurisdiction, by encouraging the conclusion of bilateral, regional or multilateral arrangements

14 (d) In the case of imminent or grave danger or damage to biological diversity within the area under jurisdiction of other States or in areas beyond the limits of national jurisdiction, notify immediately the potentially affected States of such danger or damage, as well as initiate action to prevent or minimize such danger or damage

14 (e) Promote national arrangements for emergency responses to activities or events which present a grave and imminent danger to biological diversity and encourage international cooperation to supplement such national efforts and, where appropriate and agreed by the States or regional economic integration organizations concerned, to establish joint contingency plans

Access to genetic resources

15.2 Create conditions to facilitate access to genetic resources for environmentally sound uses by other Contracting Parties and not to impose restrictions that run counter to the objectives of the Convention

15.6 Develop and carry out scientific research based on genetic resources provided by other Contracting Parties with the full participation of, and where possible in, such Contracting Parties



15.7 Take legislative, administrative or policy measures, with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources on mutually agreed terms.

Access to and transfer of technology, including biotechnology

16.1 To provide and/or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment.

16.3 Take legislative, administrative or policy measures with the aim that Contracting Parties, in particular those that are developing countries, which provide genetic resources are provided access to and transfer of technology which makes use of those resources, on mutually agreed terms, including technology protected by patents and other intellectual property rights

Exchange of information

17.1 Facilitate the exchange of technical, scientific, socio-economic research and such other information, from all publicly available sources, relevant to the conservation and sustainable use of biological diversity, taking into account the special needs of developing countries

Technical and scientific cooperation

18.1 promote international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity, where necessary, through the appropriate international and national institutions

18.2 promote technical and scientific cooperation with other Contracting Parties, in particular developing countries, in implementing the Convention, inter alia, through the development and implementation of national policies. In promoting such cooperation, special attention should be given to the development and strengthening of national capabilities, by means of human resources development and institution building

18.4 encourage and develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies

18.5 subject to mutual agreement, promote the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention

Handling of Biotechnology and distribution of its benefits

19.1 take legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities by those Contracting Parties, especially developing countries, which provide the genetic resources for such research, and where feasible in such Contracting Parties

19.2 take all practicable measures to promote and advance priority access on a fair and equitable basis by Contracting Parties, especially developing countries, to the results and benefits arising from biotechnologies based upon genetic resources provided by those Contracting Parties. Such access shall: be on mutually agreed terms

19.3 provide any available information about the use and safety regulations required by that Contracting Party in handling such organisms, as well as any available information on the potential adverse impact of the specific organisms concerned to the Contracting Party into which those organisms are to be introduced

Financial resources

20.1 To provide, in accordance with its capabilities, financial support and incentives in respect of those national activities which are intended to achieve the objectives of the Convention, in accordance with its national plans, priorities and programmes

Reports

Submission of reports on measures and effectiveness in meeting obligations

3.4 CBD Reporting

In 2006, DEAT prepared and submitted South Africa's Third National Report to the Convention on Biological Diversity. A summary of this report will not be provided here, but where relevant, the report has been used in the capacity assessment in this study. This NCSA thematic report does not assess the progress that South Africa



has made in implementing the CBD and accordingly does not provide any information in this regard from the Third National Report to the CBD.

The Fourth National Report to the Convention on Biological Diversity is due in March 2009. SANBI, in partnership with DEAT, has embarked on a process to draft this report with the assistance of Anchor Environmental Consultants.

4 FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT

This section summarises the framework for environmental management in South Africa in terms of the institutional, policy and legal framework as well as existing strategies for biodiversity conservation.

4.1 Policy and legislative framework

4.1.1 Policy

South Africa is party to various multilateral agreements. Apart from the biodiversity obligations assumed under the Convention, South Africa has adopted the Millennium Development Goals and the Johannesburg Plan of Implementation. While these frameworks are primarily concerned with sustainable development, they recognise the linkages between biodiversity and development particularly the threats to development of biodiversity loss. South Africa's global commitments are supported at the regional level through multi- and bi-lateral agreements and strategies.

The process of developing an enabling policy and legislative framework for environmental management has incorporated South Africa's international and regional obligations and its national priorities, contained primarily in the Bill of Rights and the Constitution, to produce policies, strategies, legislation, programmes and plans.

Since the advent of the democratic government in 1994, South Africa has embarked on an extensive process to introduce new policies in line with its democratic constitution. The policies have sought to dismantle the discriminatory laws of the past and create a society based on the principles of equity, non-racialism and non-sexism. The ultimate goal of the changes is to improve the quality of life of all the people by addressing the poverty and inequality that still prevails in the society.

There is recognition of the importance of a healthy environment in the Bill of Rights in the Constitution. This is discussed in more detail below, but this recognition has seen a dramatic overhaul of the policies affecting the environment since 1994. Table 1 sets out the key policies that have been released since 1994.

Table 1. Policies Relevant to Biodiversity Management

Area	Policy Instrument
Water	National Water Policy (1997)
Forests	White Paper on Sustainable Forest Development in South Africa (1996)
Land Reform	White Paper on Land Policy (1997)

Area	Policy Instrument
Regional planning and development	White Paper on Spatial Planning and Land Use Management (2001)
Sustainable Development	National Framework for Sustainable Development in South Africa (2008)
Marine Resources	Marine Fisheries Policy (1999)
Coastal Resources	Coastal White Paper (2000)
Environmental Management / EIA	White Paper on Environmental Management Policy for South Africa (1998)
Nature Conservation / Protected Areas	White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity (1997)
Bio-prospecting and benefit sharing	White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity (1997)
Pollution Control	White Paper on Integrated Pollution and Waste Management (2000)

4.1.2 Legislation

International framework

South Africa's ratification of the Convention on 2nd November 1995 had several legal implications which needed to be incorporated in the framework of the country's domestic legislation. In terms of its Constitution, South Africa is bound by international agreements. The Convention sets out broad principles rather than specific legally binding provisions. These principles have been incorporated firstly into the policy framework as contained in the Biodiversity White Paper and thereafter included in the relevant pieces of legislation.

Constitutional implications

It is necessary to consider the biodiversity management policy in the context of the Constitution generally, and specifically with regard to the allocation of powers and functions contained therein, as the policy cuts across many national government departments and impacts on national, provincial and local government.

The constitution provides for a single sovereign state in which the national government has full powers to pass legislation on matters other than those which fall within a functional area of the exclusive competence of the provinces. The provinces have only those powers and functions allocated to them by the Constitution.

The Constitution allocates certain powers concurrently to national and provincial spheres of government, and certain powers exclusively to the provinces. These are described in Schedules 4 and 5 respectively of the Constitution. Mechanisms are provided by the Constitution to enable the national and provincial spheres of government to perform functions for other levels of government on an agency or delegation basis. This may be through the delegation of executive functions - whereby the delegating agency retains responsibility for the function; or through assignment - in which case legal and executive functions and powers are handed over to the agency in question. Agencies outside of government can be given specific tasks on a contractual basis.

Most functional areas of relevance to the conservation and use of biodiversity are set out in Schedule 4 of the Constitution, which describes functional areas of concurrent national and provincial legislative competence. These concurrent responsibilities include many functional areas relevant to the conservation and use of biodiversity



such as agriculture, environment, nature conservation, pollution control, regional planning and development, soil conservation, urban and rural development, and tourism. National competencies of relevance include land reform, water resources, forest resources, marine resources and national parks and botanical gardens.

Concurrent competence means that both national and provincial government are empowered to pass and implement legislation relating to specific functional areas. Where there are conflicts between national and provincial government concerning a functional area listed within Schedule 4, certain rules are provided to resolve such conflicts.

The executive authority of the provinces includes the authority to implement provincial legislation; implement national legislation within the functional areas listed in Schedules 4 and 5; develop and implement provincial policy and coordinate provincial departments and administration. However, a province has executive authority only to the extent that it has the administrative capacity to assume effective responsibility. Pursuant to section 100 of the Constitution, the national executive enjoys a power of supervision over the provincial administration, enabling the national executive to intervene where the province cannot or does not fulfil an executive obligation. The national government is however required to assist provinces, by legislative and other measures, to develop the administrative capacity needed for the effective exercise of their powers and performance of their functions.

The "environmental right"

A right that is entrenched in the Bill of Rights of South Africa's Constitution is the "environmental right". This right has important implications for the development of legislation to give effect to the Convention. It states:

"Everyone has the right -

- (a) to an environment that is not harmful to their health and well-being; and
- (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that
 - (i) prevent pollution and ecological degradation;
 - (ii) promote conservation; and
 - (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

Property rights

The recognition of property rights has been a historical cornerstone of South African common law, and has been incorporated in the Bill of Rights as section 25 of the Constitution. As much of South Africa's biodiversity falls under private land ownership, it is important to consider the property clause of the Bill of Rights in the context of the Convention and the management of biodiversity.

Under South African common law, the state has the authority to regulate and control the manner in which any property, including biological resources, is conserved and exploited. The property clause of the Bill of Rights reinforces this common law position, but provides that no-one may be "deprived" of property unless this is in terms of a law of general application and is not arbitrary. The section further stipulates that compensation is only payable if there is expropriation, and does not refer to the situation where there is only deprivation. This implies that the state, through legislation, is empowered to introduce regulations on properties to achieve the conservation and sustainable use of biodiversity.

No discussion on land and property rights will be complete without consideration of the land restitution process and its implications on biodiversity and conservation management, particularly the network of protected areas. The Restitution of Land Rights Act (22 of 1994), as amended, provides for the restitution of land in respect of which persons or communities were disposed during apartheid. A Commission for the Restitution of Land Rights was established under this Act and claims were lodged with the Commission by claimants under the Act. At the date of this report, the process of settling the land claims was still in process.

The establishment of South Africa's protected areas often involved moving communities from the identified land, so it comes as no surprise that a number of claims were lodged on protected areas by communities – in September 2007, it was estimated that some 122 land claims on protected areas had not been settled.

The risk that the land restitution process potentially poses to protected areas, and thus to the management of South Africa's biological resources, was recognised by the national Ministers of Land Affairs and Environmental Affairs and Tourism. Accordingly, in May 2007, the Ministers entered into a Memorandum of Agreement which, *inter alia*:

- Acknowledged the legitimate right of claimants to restitution of land;
- Acknowledged that the existing Protected Areas are of national and international significance whose continued conservation is non-negotiable and must be managed in perpetuity as protected conservation areas;
- Accepts the principle that the ownership of the land by the claimants, without physical occupation, does not necessarily compromise the continued conservation and management of Protected Areas;
- Proposes the co-management of Protected Areas involving claimants in a manner that is sustainable, effective and compatible with the conservation and development mandates governing protected areas;
- Accepts that post-settlement land use, including eco-tourism, must be compatible with biodiversity and Protected Area legislation and
- States that land in Protected Areas shall not be alienated other than to an organ of state – effectively, the claimants can only sell the land back to the state.

A number of claims on Protected Areas have been settled, while others are at various stages of the settlement process, which generally takes a number of years to finalise. The culmination of the process is a land settlement agreement between the state and the claimants, and thereafter a process of engagement which results in a co-management and benefit sharing arrangement between the new land owners and the conservation agency responsible for the management of that particular Protected Area. For the community to participate meaningfully in the co-management, capacity building within the community will be required.

Legislation

For biodiversity to be effectively managed requires the involvement of many diverse sectors and areas of public administration –this causes a high degree of fragmentation, with legislation being spread across many different departments, at both national and provincial levels. The situation is further complicated as some pre-1994 legislation is still in force, in whole or part, while the process of updating the legislative framework is in process. Moreover, “independent homelands” created under apartheid had their own legislation – with these homelands now incorporated into the provinces, it creates a complex situation where national and provincial legislation, including that from the former homelands, is in force.

At the national level, a concerted effort has been made to update and harmonise the biodiversity related legislation – this has been done under the National Environmental Management Act, 107 of 1998, (NEMA) which aims to

“provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state”.

NEMA thus provides an overarching framework and establishes principles for environmental legislation, with separate acts passed to further define and support its objectives in relevant functional areas, such as protected areas, coastal management, air pollution; waste management etc.

Chapter 3 of NEMA provides for procedures for environmental governance and requires national departments that exercise functions that may impact on the environment to prepare Environmental Implementation Plans (EIPs), while those national departments that exercise functions involving management of the environment are required to prepare Environmental Management Plans (EMPs) – these plans must be updated every four years. Chapter 6 of NEMA (sections 25 through 27) deals with International Obligations and Agreements. This provides for, inter alia, annual reporting by the Minister to Parliament. Table 2 sets out the main pieces of relevant environmental legislation.

Table 2. Environmental Legislation

Area	Legislation
Water	National Water Act, 36 of 1998
Forests	National Forests Act, 84 of 1998
Land Reform	Various including <ul style="list-style-type: none"> ▪ Restitution of Land Rights Act, 22 of 1994 ▪ Restitution of Land Amendment Rights Act, 48 of 2003
Regional planning and development	<ul style="list-style-type: none"> ▪ Municipal Systems Act ▪ Land Use Management Bill
Marine Resources	Marine Living Resources Act, 18 of 1998
Coastal Resources	<ul style="list-style-type: none"> ▪ NEM: Integrated Coastal Management Bill ▪ Sea Shore Act (1965)
Nature Conservation / Protected Areas	<ul style="list-style-type: none"> ▪ NEM: Protected Areas Act, 57 of 2003 ▪ Threatened or Protected Species Regulations
Heritage Sites	World Heritage Convention Act, 49 of 1999
Environmental Management	Environmental Impact Assessment (EIA) Regulations issued under National Environmental Management Act, 107 of 1998
Bio-prospecting and benefit sharing	<ul style="list-style-type: none"> ▪ NEM: Biodiversity Act, 10 of 2004 ▪ Bio-prospecting, access and benefit sharing regulations
Pollution Control	NEM: Waste Bill; NEM: Air Quality Act, 39 of 2004
Sustainable Development	No specific legislation, but incorporated in various acts

NEMBA

The National Environmental Management: Biodiversity Act, 10 of 2004, (NEMBA) is of particular importance with respect to South Africa's commitments under the CBD. This act sought to resolve the fragmented nature of biodiversity related legislation at national and provincial levels by consolidating different laws and giving effect to the



principle of co-operative governance, while dealing with the commitments under the CBD.

In line with the objectives of the CBD, NEMBA provides for:

- i. The management and conservation of biodiversity in South Africa and the components of such biodiversity
- ii. The use of indigenous biological resources in a sustainable manner
- iii. The fair and equitable sharing amongst stakeholders of the benefits arising from bioprospecting involving indigenous biodiversity.

Regulations have been issued under NEMBA to give effect to its provisions, including Regulations on Bioprospecting, Access and Benefit Sharing which came into effect on 1 April 2008, and Threatened and Protected Species Regulations (TOPS) which came into effect on 1 February 2008.

In brief summary, the aims of the various chapters of NEMBA are set out below as these provide a clear link to how South Africa has responded to its CBD obligations at the legislative level.

Chapter 2 of NEMBA establishes SANBI as a national institution to focus on biodiversity. SANBI came into existence in September 2004 and has a broad mandate contained in NEMBA that requires it to fulfil a critical role in South Africa meeting its commitments under the CBD.

Chapter 3 of NEMBA calls for the preparation and adoption of a National Biodiversity Framework (NBF) to be reviewed and amended every five years. As noted in section 4.3.2 below, a draft NBF has been prepared and was gazetted for public comment during 2007. Based on comments received, it has been revised but has not yet been formally approved or adopted. The NBF must provide for an integrated, co-ordinated and uniform approach to biodiversity management by organs of state, NGOs, the private sector, local communities and other stakeholders. It must identify priority areas for conservation action and the establishment of protected areas, while being consistent with the principles of NEMA and international agreements to which South Africa is a signatory. It must also reflect regional co-operation on issues of biodiversity management in southern Africa. The NBSAP is the basis for the draft NBF.

It is noteworthy that the EMPs and EIPs required under NEMA, as well as the municipal Integrated Development Plans (IDP) must be aligned with both the NBF and any applicable bioregional plan, which is required under chapter 3 of NEMBA. A process is under way to prepare these bioregional plans which will consist of a map of critical biodiversity areas and accompanying land use guidelines. These plans will provide biodiversity input into multi-sectoral planning and assessment processes such as IDPs, Strategic Development Frameworks and Strategic Environmental Assessments.

Chapter 4 of NEMBA aims to ensure the sustainable use of biodiversity by providing for the protection of threatened ecosystems and species through preparation of lists of ecosystems and species requiring protection as well as drafting regulations that require permits to carry out certain threatening processes or activities. A process, led by SANBI and including DEAT, DWAF and others is underway to classify ecosystems, with the level of threat classified as critically endangered, endangered or vulnerable. A phased approach to the classification is being followed with initial focus on terrestrial ecosystems and aquatic ecosystems (rivers / wetlands, estuaries and the marine environment) to follow.

Chapter 5 of NEMBA aims to prevent the unauthorised introduction and spread of invasive and alien species and to ensure that environmental impact assessments are carried out for genetically modified organisms where appropriate.

Chapter 6 sets out the framework for the regulation of bioprospecting, access and benefit sharing (ABS) and seeks to regulate bioprospecting involving indigenous biological resources and the export from South Africa of these indigenous resources, as well as to provide for the fair and equitable sharing of benefits from bioprospecting. The ABS regulations mentioned above give effect to this chapter of NEMBA.

4.2 Institutional arrangements

The management of biological diversity in South Africa is guided primarily by the White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity (DEAT 1997) ("the Biodiversity White Paper"). This policy document was drafted largely in response to South Africa becoming a signatory to the Convention in 1995.

Responsibility for management of biological diversity is allocated between various government departments and agencies at the national, provincial and local level (Table 3). South Africa's Constitution makes certain areas of management an exclusive national competence; other functions fall exclusively in the provincial jurisdiction while many functions are a concurrent legislative competence of national and provincial government. The administration of certain functions takes place at the local government level, such as beaches and municipal parks.

Table 3. National government institutions and the extent of their competencies

Sector	Main role	Nat	Prov	Local
Environment	Overall biodiversity and conservation management including marine and coastal management	DEAT		
Water & Forestry	Protection of water resources and promotion of sustainable forest management	DWAF		
Agriculture	Soil, land cover, combating of aliens and pests	DA		
Land Affairs	Land tenure	DLA		
Provincial and Local Government	Municipal planning, development and spatial planning (IDPs and Strategic Development Frameworks), local environmental management, disaster management	PLG		
Science and Technology	Research support	DST		
Arts and Culture	Museums	DAC		
Education	Education and research	DoE		



The management and conservation of biodiversity is generally not undertaken directly by government but by provincial conservation departments and / or separately-created statutory bodies or conservation agencies that manage biodiversity and protected areas in the provinces. SANParks is such an agency and all provinces, other than Gauteng, Free State and the Northern Cape now have their own conservation agencies. In these three provinces, conservation management falls directly under the provincial conservation department.

This allocation of responsibilities makes cooperative governance between the national, provincial, and local spheres of government essential for the effective implementation of the policy. Cooperation between different government departments is also important as biodiversity issues are of relevance to virtually every government institution.

The Biodiversity White Paper recognises that to successfully implement the Convention requires integration of the conservation and sustainable use of biodiversity into relevant sectoral or cross-sectoral plans, programmes and policies. Accordingly, it recommended that relevant government institutions draft a biodiversity management plan based on guidelines developed by DEAT. These plans needed to reflect the integration of biodiversity considerations in the relevant budgets.

The roles of the key players involved in the management of biodiversity are summarised below.

4.2.1 The Department of Environmental Affairs and Tourism (DEAT)

DEAT is the Focal Point for the implementation of the Convention and plays a leadership role in implementing the provisions of both the Convention and South Africa's biodiversity and conservation policy. Specifically, the Biodiversity White Paper (DEAT 1997) recognises DEAT's role as:

- promoting global, regional, and national cooperation and coordination with regard to the conservation of biodiversity;
- formulating and reviewing policy;
- strengthening communication networks with the provinces, and other national government departments and institutions;
- promoting and facilitating the integration of biodiversity considerations into sectoral and cross- sectoral plans, programmes and policies;
- establishing, administering and managing required coordinating structures; and
- organising the participation of national and provincial government in relevant international fora.

In broad terms, DEAT is thus responsible for the formulation of policy and legislation; ensuring compliance with environmental policies and laws; monitoring; managing international relationships and facilitating co-ordination of the environmental functions of the various organs of state. A number of statutory bodies responsible for implementing biodiversity policies and legislation also fall under DEAT. These bodies include SANParks, SANBI and the iSimangaliso Wetland Park Authority, formerly known as the Greater St. Lucia Wetland Park Authority.

4.2.2 The Department of Water Affairs and Forestry (DWAF)

DWAF is responsible for water and forest resource legislation (DEAT 2005a).

Water resources

The National Water Act, 36 of 1998, (NWA) is the primary legislation dealing with the protection of water resources. The purpose of this act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled taking a number of factors into account, including "the protection of aquatic and associated ecosystems and their biological diversity". Integrated water resource management is required to balance the protection of water resources with economic and social development. User involvement in water resource management is through the reserve determination process and the establishment and operation of catchment management agencies (CMAs) for the 19 Water Management Areas across the country. Central government will delegate water resource management at the catchment level to each CMA which will be required to develop a catchment management strategy, including biodiversity considerations. The mandate of a CMA is contained in the NWA to be:

- Managing water resources in a water management area;
- Co-ordinating the functions of other institutions involved in water related matters; and
- Involving local communities in water resource management.

The aim of water resources management is to ensure that the country's water resources are protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner for the benefit of all people (DWAF 2007a). The primary legislation dealing with the protection of water resources is Chapter 3 of the NWA. This chapter applies to both freshwater systems, including rivers and wetlands, and estuaries which form the interface between the marine and freshwater environments.

The National Water Resources Strategy (DWAF 2004) is the implementation strategy of the NWA and provides the framework within which water resources will be managed. The strategy sets out the policies, strategies, objectives, plans, guidelines, procedures and institutional arrangements for the protection, use, development, conservation, management and control of the country's water resources.

The NWA prescribes that the responsible agency, DWAF, implements the following measures:

- *Classify Water Resources.* The first stage in the protection process is to develop a system to classify the nation's water resources. The resource class will define the condition of the system according to its ecological integrity. The classification system must establish guidelines and procedures for determining different classes of a resource. Water management activities should also aim to improve the class of system by improving the health of the ecosystem over time. Setting the desired future state must involve co-operative participation by all users of a resource.

Draft regulations for the Establishment of a Water Resource Classification System have been gazetted for public comment (DWAF 2008b). These regulations refer to a 7-step classification procedure that has been developed to determine the class of a water resource as one of three classes.

- *Determine the Reserve.* The environmental reserve for a system comprises of the following:
 - Basic human needs reserve, which includes sufficient water to meet the basic human needs of all people dependant on a resource.
 - Ecological reserve, which requires that there is sufficient water of the correct quality available to sustain dependant aquatic ecosystems.

Procedures for determining the Reserve are also contained in DWAF (2008b). Water required to meet basic human needs and to maintain environmental sustainability is a guaranteed right, whilst water for other purposes will be subject to a system of administrative authorisations whereby water users have to be licensed under the NWA (DWAF 2004).

- *Set Water User Quality Requirements.* The water user quality requirements for each water resource will be set according to the class of the resource and the Reserve based on procedures contained in DWAF (2008b).

The NWA makes provision for user involvement in water resource management via two main mechanisms, namely the reserve determination process, and the development and operation of catchment management agencies (CMAs). CMAs are established under the NWA to manage water resources at catchment level in co-operation with local stakeholders. CMAs in all 19 water management areas are still in the process of being established, with DWAF providing personnel, infrastructure and financial support, although the demands on DWAF are greater than anticipated (DWAF 2007a).

The Resource Directed Measures (RDM) Directorate is responsible for implementing Chapter 3 of the NWA. RDM's objective is the protection of water resources to ensure that equity between generations is not compromised when undertaking water allocations under the NWA. The role of RDM is to provide a framework for sustainable utilisation of water resources to meet ecological, social and economic objectives and to audit the state of South Africa's water resources against these objectives. In particular the unit is responsible for:

- Developing policies, strategies, systems, methodologies and guidelines for resource directed measures, particularly the Reserve determination, water resources classification and specification of associated resource quality objectives.
- Determining and updating the Reserve in significant water resources.
- Prioritisation, piloting and coordination of RDM implementation.
- Capacity building and technical support for RDM implementation.
- Developing indicators and assessing the state of the nation's water resources.
- Auditing implementation of RDM and resource quality against the Resource Quality Objectives and the Reserve.

The ecologically sound management of South Africa's rivers is crucial as the health of a river impacts directly on its capacity to provide goods and services to support the population and its activities in the vicinity of the river. The River Health Programme was established in 1994 and uses biological indicators (e.g. fish communities, riparian vegetation and aquatic invertebrate fauna) to assess the health of river systems. A review of rivers under this programme in 2006/07 highlighted that 40% of rivers are in a good state; 32% in a fair state and 28% in a poor state (DWAF 2007a). Factors impacting most on the health of rivers are illegal water abstractions which



result in modification of the in-stream habitat, the destruction of riparian vegetation, and invasion by alien species. DEAT (2006b) notes that the health of rivers is generally good to fair in the upper reaches and tributaries, fair to poor in the lower reaches and poor in urban areas.

Other noteworthy CBD related matters are:

- South Africa has entered into several regional agreements for the management of transboundary water courses as evidenced by bilateral and multilateral agreements such as the Tripartite Permanent Technical Commission between South Africa, Mozambique and Swaziland; South Africa Mozambique Joint Water Commission and the Orange-Senqu River Basin Commission (DWAF 2007a).
- The Water Research Commission was established to promote coordination, co-operation and communication of water research and development, funding water research according to priorities, promoting effective transfer of information and knowledge and ensuring capacity building in the water sector (DWAF 2007a).
- DWAF administers the Working for Water Programme which is a labour intensive EPWP programme designed to effectively manage alien invasive species in South Africa.

Forestry resources

The Forestry Branch of DWAF is responsible for implementation of the National Forests Act, 84 of 1998 (NFA). The NFA regulates indigenous forests, plantations and woodlands, and these three types of forest fall under the jurisdiction of DWAF. The Forestry Branch of DWAF consists of various directorates responsible for different aspects of forest management, as well as regional offices responsible for implementing the operational functions of the branch.

This act aims to promote the sustainable management and development of forests and woodlands, create the conditions necessary to restructure the commercial forestry in State Forests and promote greater participation of communities in all aspects of forestry. The act also provides for the protection of forests and trees with forests defined to include natural forests, woodlands and plantations. All trees occurring in natural forests are protected under this act and a further list of protected trees has been published (DEAT 2005a).

DWAF have developed a Principles, Criteria, Indicators and Standards (PCI&S) framework that will be applied to forest management in the country, regardless of who is managing the forest. The PCI&S contains a set of 24 criteria that will be used to measure progress towards the realisation of the forestry vision, and includes a broad spectrum of issues including that biodiversity of natural forests is preserved.

Chapter three of the NFA makes provision for special measures to protect forests and trees by, inter alia, prohibiting the destruction of natural forests; providing powers to declare forests protected areas and measures to protect trees and to control and remedy deforestation. DWAF is responsible for enforcement of the provisions of the NFA.

Forests are increasingly under pressure with conversion to agriculture, development and settlement pressure, especially in coastal forests, illegal logging, bark-stripping and harvesting of medicinal plants the major threats to natural forests.

A National Forest Type Classification system has been undertaken to classify the various forest types occurring within South Africa, with 26 national forest types classified, including three azonal types that occur in small or linear locations like riverine forests and estuaries. Four of these forest types are listed as threatened. Of the different forest types, the information regarding the location and status of woodlands is reported to be lacking. Woodlands form a transition area between forests and grasslands, and have not been afforded as much attention as the more distinct forest types, but are an important resource, especially in relation to poverty alleviation as they are a source of medicinal plants, fuelwood, wild fruits and wooden utensils (DWAF 2007b). Woodlands are under threat, but efforts at management are hampered by lack of information.

Other relevant matters in relation to the forestry sector are:

- DWAF has adopted a policy of Participatory Forestry Management (PFM) that focuses on the inclusion of neighbouring communities who depend on and utilise forest resources in forest management.
- The list of protected trees under the NFA has been revised and contains 47 protected species.
- The Champion Tree Programme has been initiated to protect individual trees or groups of trees that are considered to be of national conservation or historical importance.
- Many forests in South Africa have attained Forestry Stewardship Council (FSC) accreditation.
- South Africa is a party to the SADC Protocol on Forestry, a regional policy framework to facilitate cooperation in forestry.
- DWAF has developed a comprehensive and scientifically objective forest type classification for the country.
- DWAF has developed the National Forest Inventory, a GIS with shapefiles of more than 16 000 forest patches larger than 2ha.
- Forest conservation planning has progressed to scientific analyses of biodiversity levels of forests at forest group level, and the setting of conservation targets at these levels. The overall target to have 23% of all natural forests protected is already exceeded. A preliminary listing of high conservation value forest patches has been produced.
- Systems for remote sensing of forests are being tested.
- DWAF has drafted a document - Policy, Principles and Guidelines for Control of Developments Affecting Natural Forests (DWAF 2008a) – that aims to ensure effective protection and sustainability of natural forests through control over development and land-use changes affecting forests and to serve as a basis for a uniform approach to decision-making. These guidelines should be applied at a provincial level in the EIA process and at the local government level for land-use and development decisions, ideally being incorporated into the IDP process.
- DWAF has cooperated with DEAT and SANBI on the National Protected Area Expansion Strategy and the listing of threatened forest ecosystems.

DWAF is in the process of delegating its management responsibility for forests to focus on its policy formulation and regulatory role. This is being achieved through the transfer of responsibility for certain forests to SANParks and some of the provincial conservation agencies. The forests transferred include some of the larger systems such as the Knysna Forest. Transfers are still taking place as it is a long and complicated process due to the technical and legal issues (de-proclaiming them as forest protected areas and proclaiming them as protected areas under NEMPA) as well as the human resource issues as labour legislation needs to be complied with



and unions are involved in the negotiations. The transfer of forests will include staff and budgets.

4.2.3 Other national government departments

Several other national government departments play an important role in the implementation of the Convention and biological diversity management, while other departments are not directly involved in environmental management but their activities have an impact on the environment. Relevant departments that implement environmental management or impact on the environment include the Departments of Agriculture; Land Affairs; Trade and Industry; Foreign Affairs; Health; Transport; Housing; Welfare and Population Development; Arts, Culture, Science and Technology; Finance and the South African National Defence Force.

The role of other national departments that have a role in biodiversity management is summarised briefly as follows (DEAT 2005a):

- The **Department of Agriculture** is responsible, *inter alia*, for the management of agricultural resources including soil and agri-biodiversity. The key piece of legislation is the Conservation of Agricultural Resources Act, 43 of 1983, which aims to promote the conservation of soil, water sources, vegetation and the combating of weeds and invader plants.
- The **Department of Land Affairs** is responsible for land related functions. Its importance to biodiversity is through legislation that has been promulgated by it and the **Department of Provincial and Local Government** that influence spatial planning, development and land use at a local level with the Integrated Development Plans (IDPs) of local government a key tool.
- The **Department of Science and Technology** funds several key public entities with supporting functions to biodiversity research such as the National Research Foundation (NRF).
- The **Department of Arts & Culture** administers museums which have in the past played an important biodiversity role through their collections, but have recently become more focused on heritage aspects.
- The **Department of Education** is responsible for education and research institutions such as universities that offer biodiversity courses and undertake research.

4.2.4 Institutions for Co-operative Governance

For South Africa to meet its obligations under the Convention requires the commitment of the various national departments to cooperating with one another; to developing and implementing sectoral biodiversity management plans and to allocating appropriate budgets to incorporate biodiversity management in the activities of the departments. The role of DEAT in coordinating and monitoring the activities of these departments is critical. The following intergovernmental structures are of relevance to the environmental sector:

- Ministerial forums (**MINMEC**) promote co-operative governance between national line function ministers and their provincial counterparts. MINMEC comprises the Minister and Director General of DEAT and the provincial ministers / Members of Executive Councils (MECs) for environmental affairs;
- MINMEC is supported by the technical committee (**MINTEC**) and interaction with the provinces takes place through this structure which was established to facilitate co-ordination between DEAT and the provincial environmental



departments. MINTEC comprises the Director General of DEAT, representatives of SANBI and SANParks and the heads of department responsible for environmental management and biodiversity conservation in the provinces;

- Four **Working Groups** have been established under MINTEC. Working Group 1 focuses on biodiversity and heritage, while Working Group 2 deals with environmental impact management, Working Group 3 with planning and cross-cutting issues (capacity building, environmental education, state of environment reporting and Agenda 21 implementation) and Working Group 4 with law enforcement;
- The Committee for Environmental Co-ordination (**CEC**) was established under NEMA as the institution to promote co-operative governance and procedures for co-ordinating environmental functions exercised by all organs of state. However, this structure has collapsed and is in the process of being disbanded under an amendment to NEMA.

4.2.5 National statutory bodies

The South African National Biodiversity Institute (SANBI) and the South African National Parks Board (SANParks) are statutory bodies who fulfil a crucial role in ensuring that South Africa's biological heritage is conserved and used sustainably.

SANParks manages national protected areas. SANBI's mandate is contained in the National Environmental Management: Biodiversity Act, No. 10 of 2004 (NEMBA) and is very broad encompassing bioregional planning, policy, biodiversity research, education, monitoring and reporting. Its role is possibly best captured by its mission statement which is "to champion exploration, conservation, sustainable use, appreciation and enjoyment of South Africa's exceptionally rich biodiversity for all people" (SANBI 2008, page 2). SANBI was established partly in response to South Africa's obligations under the CBD and its mandate charges it to take responsibility for many of these obligations. It also plays a crucial role in supporting and advising both the National Minister and DEAT on biodiversity-related matters.

4.2.6 Provincial Government

The functions of the provincial governments with regard to the implementation of the Convention and biodiversity management policy are generally similar to those of national government. Emphasis at the provincial level is on formulating policies and strategies which are locally applicable but which are aligned with national biodiversity objectives. Environment and conservation departments in each province should ensure collaboration between the provincial conservation agencies and other departments responsible for activities concerning the conservation and use of biodiversity within the province. The provinces play a greater role than national government in executing the policies, often through conservation agencies established by provincial legislation.

The Biodiversity White Paper (DEAT 1997) recognises that provincial environment and conservation departments and agencies should fulfil an essential function by:

- conserving the country's biodiversity,
- participating in and coordinating efforts to ensure the development and management of an effective and representative protected area system,
- providing conservation extension services,
- regulating and monitoring the use of biological resources,



- preventing the loss of biodiversity,
- developing and managing protected areas,
- promoting sustainable development outside protected areas, through the forging of appropriate partnerships with communities, non-governmental organisations (NGOs), the private sector, and other government departments. Building such partnerships may require the involvement of communities in the management of protected areas through co-management or other appropriate mechanisms.

4.2.7 Local Government

Local government is faced with particular challenges in implementing the Convention and environmental policy as this sphere of government typically has limited capacity, infrastructure and resources to effectively implement policies. The Biodiversity White Paper (DEAT 1997) recognises some functions of local government to be:

- ensuring that biodiversity considerations are effectively integrated into local strategies, plans and programmes;
- instituting and participating in public education, awareness and training programmes;
- developing management plans for local resources that are under pressure;
- ensuring that biodiversity considerations are integrated into land-use planning procedures for rural and urban areas; and
- encouraging and preparing municipal open space systems which play a positive role in conserving and using biological resources sustainably.

Municipalities are required to prepare Integrated Development Plans (IDPs), which include a Spatial Development Framework (SDF) that sets guidelines for land-use management and development in the municipality. Environmental considerations have to be incorporated into IDPs and each SDF must contain a strategic assessment of the environmental impact of the SDF.

4.2.8 Other key players

To effectively implement the Convention, strong partnerships are required between organs of state, non-governmental organisations (NGOs), community-based organisations, holders of traditional knowledge, the private sector, the scientific community and private individuals. The Biodiversity White Paper (DEAT 1997) recognises the limited capacity of government to implement the policy contained therein and that support is needed by government by entering into partnership arrangements wherever necessary with different groupings to ensure that mechanisms and procedures are in place which facilitate cooperation.

The primary role of the **scientific community** is to provide the information required to achieve the goals and objectives of the Convention and environmental policy. Government's intention is to build on the available capacity and to improve knowledge and understanding of South Africa's biodiversity to provide guidance to policy-makers and resource managers. There are numerous national facilities that support biodiversity research. These include (DEAT 2005a):

- Academic institutions
- The South African Environmental Observation Network (**SAEON**) whose function it is to establish a network of research sites and networked

information management systems to act as a long-term research and monitoring facility for the South African environment.

- The South African Institute for Aquatic Biodiversity (**SAIAB**) is a national research facility based in Grahamstown that focuses on the conservation and wise use of African fishes and aquatic biodiversity.
- South African National Antarctic Programme (**SANAP**).
- Council for Scientific and Industrial Research (**CSIR**) is a statutory research council. Two of its research areas have a biodiversity theme – Biosciences includes research in bioprospecting and products, and Natural resources and the environment focuses on many areas that have a biodiversity theme such as coupled land, water and marine ecosystems, forestry resources and water futures.
- The Agricultural Research Council (**ARC**) conducts research in agriculture with many of its research areas closely linked to biodiversity.

Business and industry play important roles including complying with the conservation and environmental regulations; accepting social responsibility for biodiversity by adopting additional voluntary measures wherever possible and appropriate; and developing economic activities that support the conservation and sustainable use of biodiversity. This includes participation by many South African businesses in the **Business and Biodiversity Offset Program (BBOP)** which is a partnership between companies, governments and conservation experts to explore biodiversity offsets. The **South African Mining and Biodiversity Forum (SAMBF)** established in January 2005, engages on discussions on partnerships between mining companies and conservationist nongovernmental organisations, as well as regulatory issues and developments involving mining and biodiversity.

Many successful efforts in South Africa to conserve and sustainably use biodiversity have come about through the commitment of **conservation and development NGOs**. These organisations play a crucial role in realising the goals and objectives of the Convention through the implementation of specific projects and programmes. NGOs also provide an essential independent monitoring and "watchdog" role, to ensure adherence to the commitments of the Convention. A crucial role is played by NGOs engaged in development work, capacity-building and environmental educational and training programmes.

Communities and individuals are increasingly playing a crucial role in the conservation and sustainable use of biodiversity. The land restitution process, particularly the transfer of ownership of publicly-owned land such as protected areas, estuaries and coastal land to communities, is providing momentum to the involvement of communities in conservation activities. The roles vary from community to community and include:

- assuming ownership and managing the protected area in a co-management arrangement with a conservation agency;
- managing and using local resources to ensure their conservation and sustainable use;
- applying local knowledge and skills to assist in monitoring and inventory work; and
- rehabilitating degraded ecosystems.

Many community-based activities require training and have the potential for creating economic opportunities through direct jobs and support industries by the supply of goods and services to the conservation and associated tourism industry.



Traditional healers, farmers and others with local knowledge play an important role in developing guidelines for the protection and use of traditional knowledge, and procedures for benefit-sharing. These groups also play a monitoring role.

4.3 *Strategies and guidelines*

Strategies have been drafted which seek to address biodiversity loss and development pressures on ecosystems and natural resources; combat the effects of desertification and deal with the impact of climate change on the environment, communities and the economy. The relevant strategies include the following:

- National Biodiversity Strategy and Action Plan (NBSAP),
- National Climate Change Response Strategy;
- Energy Efficiency Strategy;
- Renewable Energy Policy;
- National Water Resources Strategy;
- National Disaster Management Strategy;
- Cleaner Production Strategy;
- National Land Care Programme;
- National Action Programme for Desertification; and
- National Action Programme Combating Land Degradation to Alleviate Rural Poverty.

In addition, a **Strategic Plan for the Environmental Sector** for 2008 to 2013 is in the process of being developed to highlight common programmes and priorities in the medium to long term. Conservation and sustainable use of biodiversity is a core area that the strategic plan will focus on, as is marine and coastal management. Once finalised, this strategic plan should be read in conjunction with this NCSA Thematic Profile to identify capacity requirements and constraints for the sector in implementing the strategic plan. It will also have a bearing on South Africa's capacity in terms of meeting its obligations under the CBD.

4.3.1 **National Biodiversity Strategy and Action Plan**

In keeping with its commitments under the CBD, South Africa issued *South Africa's National Biodiversity Strategy and Action Plan* (NBSAP) in 2005 (DEAT 2005b). NBSAP sets out a framework and plan of action for the conservation and sustainable use of South Africa's biological diversity and the equitable sharing of benefits from its use. It is supported by a country study (DEAT 2005a), based on a rapid assessment of the country's biodiversity, socio-economic and political context.

During the process of developing the NBSAP, a comprehensive national spatial assessment of the status of biodiversity at the ecosystem level was carried out. This National Spatial Biodiversity Assessment (NSBA) used systematic biodiversity planning techniques to determine the conservation status of ecosystems and identify national priorities for conservation action. The underlying principles of this planning exercise are representation (the need to conserve a representative sample of biodiversity patterns, including ecosystems, habitats and species) and persistence (the need to conserve ecological and evolutionary processes that allow biodiversity to persist over time).

The NSBA dealt with terrestrial, river, estuarine and marine environments and a report on each of these components was produced. The determination of ecosystem

status was based on how much of an ecosystem's original area remained in tact relative to a number of thresholds with an ecosystem classified as Critically Endangered where between 16% and 36% (depending on the ecosystem) of the ecosystem remained. The Endangered classification applied where between the critically endangered threshold and 60% of the habitat remained while those with between 60% and 80% remaining were classified as vulnerable. The results of this assessment have already been noted above in section 3.1.

The NBSAP provides an overview of the key issues, constraints and opportunities identified in the stocktaking and assessment phase. The goal of the NBSAP is to conserve and manage terrestrial and aquatic biodiversity to ensure sustainable and equitable benefits to the people of South Africa, now and in the future. Five strategic objectives support the attainment of this goal, and for each strategic objective, lists the desired outcomes (Box 2). The goal, strategic objectives and outcomes are critical as they in large measure respond to the South Africa's obligations under the Convention. For each of the outcomes, the NBSAP then identifies Activities necessary to support the achievement of the outcome. These activities are summarised in the National Biodiversity Implementation Plan which firstly sets out the 15 year targets for each Strategic Objective. Thereafter, for each of the Outcomes, 5-year targets and indicators are identified. Finally, the Activities are prioritised (using a classification of Urgent, High and Medium); the lead agency is identified together with the support partners and the role of DEAT is clarified.

Box 2. Strategic objectives and outcomes of the NBSAP

Strategic Objective 1

An enabling **policy and legislative framework** integrates biodiversity management objectives into the economy.

Outcomes

1. the value of biodiversity to the economy and to people's lives is quantified and monitored to inform policy, strategy and action
2. biodiversity considerations are integrated into macro-economic, trade, industrial and fiscal policy
3. biodiversity considerations are integrated into resource management policy and legislation
4. a national biodiversity planning and assessment framework informs all decisions regarding land and resource use and spatial development

Strategic Objective 2

Enhanced **institutional effectiveness and efficiency** ensures good governance in the biodiversity sector

Outcomes

1. the biodiversity sector is transformed and representative of South Africa
2. co-operative governance at all levels results in improved biodiversity management
3. institutions with biodiversity-related responsibilities are effective, efficient and adequately capitalised
4. financial resources for biodiversity management are adequate, and effectively and efficiently used
5. information management systems, research priorities and monitoring and evaluation frameworks are in place and effectively supporting biodiversity management
6. a comprehensive and proactive national communication, awareness raising and advocacy strategy reaches targeted sectors and facilitates conservation and wise use of biodiversity
7. proactive engagement and co-operation with the international community enhances conservation and sustainable use of shared resources and globally important biodiversity in South Africa

Strategic Objective 3



Integrated terrestrial and aquatic management across the country minimises the impacts of threatening processes of biodiversity, enhances ecosystem services and improves social and economic security

Outcomes

1. national initiatives to manage terrestrial and aquatic ecosystems are co-ordinated, developed and implemented with full stakeholder participation to contribute to the sustainable socio-economic development
2. key production sectors and industries integrate biodiversity into their products and services
3. a multi-agency national programme deals with the full suite of impacts posed by invasive species across the landscape and seascape
4. an integrated national programme facilitates adaption to the predicted impacts of climate change on biodiversity across the landscape and seascape
5. effective management and control measures to minimise the potential risks to biodiversity posed by Genetically Modified Organisms (GMOs)
6. effective waste management and pollution control measures limit the impacts of pollution on biodiversity management
7. research and monitoring programmes support integrated management of terrestrial and aquatic ecosystems

Strategic objective 4

Human development and well-being is enhanced through the **sustainable use** of biological resources and equitable sharing of benefits

Outcomes

1. an equitable access, rights and responsibilities regime promotes sustainable use of biological resources
2. partnerships between government, the private sector, organised civil society and communities encourage entrepreneurship, innovation, investment and action at local level
3. the ecological and social sustainability of extractive use of biological resources is researched, assessed and monitored, and opportunities for improvement are identified and implemented
4. use of biological resources is well managed to maximise sustainable benefits

Strategic Objective 5

A **network of conservation areas** conserves a representative sample of biodiversity and maintains key ecological processes across the landscape and seascape

Outcomes

1. biodiversity priority areas identified in the NSBA are refined in provincial, regional and local systematic biodiversity plans
2. the protected area network is secured, expanded and managed to ensure that a representative sample of biodiversity and key ecological processes are conserved
3. biodiversity is effectively managed in key ecological and high priority fragments of natural habitat across the landscape and seascape
4. management plans for species of special concern ensure their long term survival in the wild
5. research and monitoring programmes support the establishment and effective management of conservation areas.

4.3.2 Draft National Biodiversity Framework (NBF)

Chapter 3 of NEMBA requires that a National Biodiversity Framework be developed and updated every five years. A draft NBF was gazetted for public comment during 2007. Based on comments received, it has been revised and is still in the process of being approved through the various government and parliamentary processes. It is understood that one of the requirements from MINTEC was that a costing exercise be performed to estimate the costs of implementing the NBF. At the time of writing this costing exercise was still under way. The results could be used as a proxy to estimate the costs, and hence the financial capacity, required for South Africa to

meet its obligations under the CBD. It is anticipated that the NBF will be approved during 2008.

The final draft of the NBF (DEAT 2008b) identifies the purpose of the NBF as being to provide a framework to co-ordinate and align the efforts of the many organisations and individuals involved in conserving and managing South Africa's biodiversity in support of sustainable development. It aims to focus attention on the most urgent strategies and actions required for conserving and managing biodiversity and to identify the roles and responsibilities of key stakeholders. The NBF builds on both the NSBA and the NBSAP and is informed by these documents

The NBF identifies a set of 33 Priority Actions which provide an agreed set of priorities to guide the work of the biodiversity sector for the next five years. These priority actions are aligned to the five strategic objectives of NBSAP that are spelt out above. The NBF will be reviewed every five years to review progress and priorities and realign efforts.

The NBF addresses the relationship between conservation and development, identifying that the challenge is not whether development takes place, but where and how development takes place. It recognises that sustainable use and conservation of biodiversity is a multi-sectoral effort that requires co-ordination and alignment between many different organisations and individuals both within and outside of government. The biodiversity sector is developing tools that support and streamline environmental decision making to ensure that development is appropriate, with the bioregional plans required in NEMBA being key in identifying critical biodiversity areas, including ecological corridors, and important catchments, and giving land use planning and decision making guidelines.

Where appropriate, the relevant priority actions of the NBF will be discussed under the Capacity Assessment section of this report. Of particular relevance to capacity is Priority Action 7, which requires the establishment and implementation of a human capital development strategy for the biodiversity sector to address transformation and scarce skills.

4.3.3 National Framework for Sustainable Development

In July 2008, DEAT released the National Framework for Sustainable Development (DEAT 2008a). The purpose of this framework is to set out South Africa's national vision for sustainable development and specify strategic interventions in order to re-orientate South Africa's development path in a more sustainable direction. It proposes a national vision, principles and areas for strategic intervention and will act as a guideline for the development of the national strategy and action plan. This action plan and the mobilisation of resources will take place in the second phase of the process, while the third phase will involve the roll-out, implementation, monitoring and review of the action plan.

The vision, as set out in the framework (DEAT 2008a, page 8) is:

“South Africa aspires to be a sustainable, economically prosperous and self-reliant nation state that safeguards its democracy by meeting the fundamental human needs of its people, by managing its limited ecological resources responsibly for current and future generations, and by advancing efficient and effective integrated planning and governance through national, regional and global collaboration.”

The framework further identifies five strategic priority areas for action and intervention that are necessary to reach the desired state of sustainable development. These priority areas are (DEAT 2008a):

- Enhancing systems for integrated planning and implementation;
- Sustaining ecosystems and using natural resources efficiently;
- Economic development via investing in sustainable infrastructure;
- Creating sustainable human settlements; and
- Responding appropriately to emerging human development, economic and environmental challenges

The framework thus recognises the role that ecosystems play in sustainable development and highlights the need for maintaining the health and integrity of terrestrial and aquatic ecosystems in underpinning sustainable development.

4.3.4 Framework for Market-based Instruments to Support Fiscal Reform

National Treasury (2006) released a draft policy paper entitled *A Framework for Considering Market-Based Instruments to Support Environmental Fiscal Reform in South Africa*. The policy paper aims to outline the role that market-based instruments, specifically environmentally-related taxes and charges, could play in supporting sustainable development in South Africa and to outline a framework for considering their potential application.

The paper focuses on fiscal reform and the policies and measures capable of contributing to both the state's fiscal requirements and environmental objectives. It does this by identifying appropriate interventions to correct market failures in environmental management; proposes principles and criteria for assessing environmentally related taxes and presents options for fiscal reform measures – this covers existing environmentally related taxes and charges in the transport and solid waste sectors, as well as options for new taxes and tax incentives (such as property rate rebates for conservation friendly land uses) for achieving environmental objectives. The paper concludes that market-based instruments may have advantages over traditional regulatory “command and control” type approaches.

The paper was issued in 2006, and while it has not been revised or issued as a final policy document, certain of the measures suggested therein have been implemented by the Minister of Finance in the annual budget process. Specifically, in the 2008 budget speech, the Minister of Finance noted that tax reforms to encourage biodiversity conservation by private landowners will be considered. Landowners will receive an income tax deduction for preserving habitats and biodiversity on their land - the deduction will cover expenses incurred in developing and implementing an approved conservation management plan under either NEMBA or NEMPA. The deductions will be limited to income derived from the land.

Moreover, the existing Public Benefit Organisations (PBO) framework, that deals with entities such as NGOs, will be reviewed for impediments to tax deductions for property donated to a PBO or parastatal conservation agency where that property is declared a nature reserve or national park under NEMPA. A similar review will be conducted for estate duty, transfer duty, or donations tax exemptions for properties bequeathed, sold or donated to a PBO for declaration as a protected area under that act.

4.3.5 Other developments

The biodiversity sector is dynamic, especially at this stage of development where there is a concerted effort to create an enabling framework for biodiversity management by fine tuning policies and legislation; drafting regulations, strategies and national frameworks and creating national programmes. These current initiatives will contribute to the country meeting its CBD commitments.

Many of the documents are still in the process of being drafted and have not yet been released for public comment or approved. It has thus not been possible to review all of the documents to assess their impact on the capacity in relation to the CBD.

However, the main documents and initiatives are highlighted below. These are either documents of a strategic nature or documents that will serve as tools for implementation of policies.

- National Biodiversity Framework (DEAT 2008b) drafted and in process of being approved as discussed above
- National Protected Area Expansion Strategy drafted and going through approval process
- Invasive Alien Species Regulations are being drafted
- Criteria for listing of Threatened Ecosystems – approved by MINTEC
- State of Biodiversity Indicators developed
- Norms and Standards for Biodiversity Management Plans for Species
- Norms and Standards for Biodiversity Management Plans for Ecosystems
- Guidelines for publishing Bioregional Plans – gazetted during 2007

4.4 *Environmental programmes and projects*

Various multi-sectoral programmes have been initiated either at an international level or within South Africa that support the objectives of the CBD, with many of them linking biodiversity conservation with socio-economic development in line with government's social objectives. These include initiatives with development or social emphasis and those with conservation emphasis, as follows:

Programmes/projects with **development/social emphasis:**

- Programmes under the umbrella of the national Expanded Public Works Programme (EPWP) such as
 - DEAT under its Social Responsibility Programme (SRP);
 - The Coast Care Programme (under DEAT);
 - Working for Water (under DWAF);
 - Working on Fire (under DWAF); and
 - Working for Wetlands (under SANBI).
- Integrated Sustainable Rural Development Programme (ISRDP)
- Urban Renewal Programme (URP)
- Community Based Natural Resource Management (CBNRM)

Programmes/projects with **conservation and/or mainstreaming biodiversity emphasis:**

- Biome planning programmes such as
 - Cape Action for People and the Environment (C.A.P.E),
 - the Sub-tropical Thicket Ecosystem Planning (STEP) and
 - the Succulent Karoo Ecosystem Programme (SKEP)
- The Grasslands Programme
- People and Parks
- Large Marine Ecosystem Programmes:
 - BCLME and
 - ASLME
- Trans Frontier Conservation Areas (TFCA)
- Biosphere Reserves
- World Heritage Sites
- Blue Flag Beach Programme
- Green Scorpions / Environmental Courts
- Business and Biodiversity Offset Programme (BBOP)

It is beyond the brief of this study to review and assess the capacity-related aspects of all of these programmes as part of the NSCA process. However, a review of the capacity building programmes in DEAT with a focus on the Integrated Sustainable Rural Development Programme (ISRDP) and the Urban Renewal Programme (URP) has been undertaken, as outlined below.

4.4.1 The Integrated Sustainable Rural Development Programme and Urban Renewal Programme

A large portion of the country's population is located in rural areas which were part of the homelands' system under apartheid, and the urban townships. These areas face challenges such as high unemployment, lack of access to basic services and housing backlogs with the majority of the population lacking the necessary skills to be absorbed into the formal sector. People in these areas rely heavily on the government social grants, subsistence and the informal sector for their livelihoods.

To address the above challenges, the State President announced the ISRDP and URP in 2001. The aim of these initiatives is to conduct a sustained campaign against rural and urban poverty and underdevelopment, bringing in the resources of all three spheres of government in a co-ordinated manner. This entails investment in economic and social infrastructure, human resource development, enterprise development, enhancing the capacity of local government, poverty alleviation and the strengthening of the criminal justice system.

The national Department of Provincial and Local Government (DPLG) is the national co-ordinating ministry for the strategies. Eight urban and thirteen rural nodes, being those characterised by the greatest concentration of poverty, were selected for inclusion in the strategies.

The vision of the ISRDP and URP, as articulated in DPLG (2006), page 11, is to

“attain socially cohesive and stable rural communities with viable institutions, sustainable economies and universal access to social amenities, able to attract and retain skilled and knowledgeable people, who are equipped to contribute to growth and development”.

The ISRDP and URP are not separate programmes with their own budget allocations. Rather, they are strategies that seek to maximise the impact of public investments in the nodes. This can only be achieved by coordination between the three spheres of government.

The ISRDP/URP operates within the legislative context created by the Municipal Systems and Municipal Structures Acts. The Integrated Development Plans (IDP) that local authorities have to produce are especially important to the ISRDP / URP – these IDPs involve a high level of community participation in all aspects of development, from project design and selection through implementation to operation and maintenance. Implementation of decisions arrived at through the IDP process is achieved by drawing on amalgamated resources comprising the municipal budget, the commitments of the national departments such as DEAT, the Department of Housing and DWAF amongst others, and other sources including donors and the private sector.

District municipalities in rural areas and, in some instances Metros in urban areas, in collaboration with local municipalities within each node, are the primary vehicles for delivery of the ISRDP/URP at local level. Nodes are expected to achieve two overall objectives:

- strengthen capacity within the municipalities; and
- the efficient and effective delivery of development projects.

These objectives are based on strengthening local institutions and creating partnerships between local government, public entities, NGOs and the private sector.

DPLG (2006, page 15) identifies the overall objective of the ISRDP and URP as being “to work together with communities and other partners, to alleviate poverty and improve the quality of life in rural and urban areas through improved co-ordination and viable institutions that address social, economic, environmental and governance needs”. This overall objective has been broken down into the following six core objectives:

- Co-ordination and integration: To achieve integrated service delivery through co-ordinated planning, resource allocation and implementation by government and other stakeholders;
- Efficient and effective local government: To strengthen the capacities of local government entities so as to facilitate the inputs of various stakeholders in order to deliver integrated services responsive to community priorities;
- Participation and empowerment: To enhance the capacities of communities to articulate their priorities and participate in planning, implementation, monitoring and evaluation of their IDPs and the ISRDP / URP;
- Sustainable economic growth: All ISRDP / URP nodes achieve economic growth (including job and income creation and increased productivity) and equity, based on redistribution and empowerment;
- Sustainable social development: Supporting social change that promotes the well-being and access to social services of rural communities; and
- Environmental sustainability: Access and benefit sharing occurs in ISRDP / URP nodes where programmes are implemented that protect, conserve and ensure sustainable use of natural resources.

Environmental sustainability is thus a core objective of the ISRDP and URP strategies, and in this way should contribute to the country's CBD obligations. This study has not assessed whether the ISRDP or URP do indeed contribute to South



Africa meeting the CBD obligations, but has reviewed DEAT's support of these strategies with a focus on capacity development.

DEAT has responded to the ISRDP and URP strategies by:

- Investing in projects in the ISRDP / URP nodes, and
- Providing local government support.

These responses are summarised below.

Social Responsibility Programme projects

As noted above, relevant national departments are encouraged to invest in the ISRDP and URP nodes as the strategies do not have their own dedicated budgets for projects in the nodes. DEAT's Social Responsibility Programme (SRP) is part of the national Expanded Public Works Programme and addresses the department's core responsibilities while contributing to job creation, skills development, SMME development and the upliftment of households, especially those headed by women.

DEAT (2007a) notes that in support of the URP and ISRDP, its SRP ensures that 40% of the programme funding is allocated to these nodes, while also providing dedicated technical and human resource support. To achieve this, the application form for new project applications has to identify whether the project is located in a node, and both the local and district municipality have to submit letters of support for the project with the application.

DEAT will only support a project application if it meets certain criteria, including that the project must support DEAT's mandate. Accordingly, the project must fall within one of the SRP five focus areas. The focus areas that have particular relevance to the ISRDP and URP are Sustainable Land Based Livelihoods (which includes rehabilitation of wetlands, landscape rehabilitation and sustainable use of natural resources); Working on Waste and Working for the Coast (includes dune and estuary rehabilitation).

Based on a Provincial Progress Report dated 29 September 2008 extracted from the SRP Performance Management System (DEAT 2008d), DEAT had approved 95 projects and committed R495 million to projects in the ISRDP and URP nodes. Some of the projects were still being implemented and the amount actually expended on the projects to this date was R423 million. In addition, the projects had generated 3.163 million temporary job days and created 455 permanent jobs. These figures reflect all the projects approved by DEAT in the nodes, including tourism related projects, and not all of the projects directly benefit biodiversity. However, many of the projects do have activities that benefit biodiversity and these activities include (DEAT 2008d):

- Upgrading provincial nature reserves including game fencing erection and electrification, establishment and upgrade of management roads and upgrade of management facilities;
- Rehabilitating the ecology by, for example, replanting indigenous plants;
- Alien invasive species clearing;
- Rehabilitation of coastal forests;
- Establishing indigenous plant nurseries including seed collection;
- Tree planting and beautification as well as environmental rehabilitation;
- Greening of public open spaces, including upgrading parks;
- Coastal clean up and rehabilitation of dunes;



- Waste management awareness amongst communities and establishing recycling facilities;
- Establishing Community Nature Reserves;
- Wetlands rehabilitation;
- Establishing environmental centre for environmental, tourism and skills training;
- Rehabilitation of catchment areas;
- Establishing resource gardens for communities as an alternative to using sensitive swamp forest and wetland areas;
- Improvement of management and conservation infrastructure in protected areas including field ranger outposts and anti-poaching facilities;
- Supporting coastal co-management by introducing techniques to improve yields by re-seeding mussels.

Table 4 summarises the DEAT funded projects in the ISRDP and URP nodes by province. The number of projects, project budget, amount spent and temporary job days created to 29 September 2008 are shown for all the DEAT projects in the nodes, while the number of projects and budget is also shown for those projects that have a biodiversity aspect. For many of these latter projects, the biodiversity aspect is not necessarily the only project activity as most of the projects have multiple activities and outcomes and not all the project budget will be used for biodiversity-related activities, but this does provide some indication of DEAT's support of biodiversity within the nodes. About 59% of projects and 70% of the total budget have been directed towards projects that seek to achieve some biodiversity outcomes.

Local Government Support

Apart from the capacity created through the projects it funds in the ISRDP and URP nodes, DEAT has initiated an innovative Local Government Support programme. This programme is not unique to the ISRDP and URP nodes but is available to all Metros and district municipalities in the country. While not all the Metros and municipalities have joined the programme, all the district municipalities and Metros in the ISRDP and URP nodes have done so.

Table 4. DEAT SRP projects in ISRDP and URP nodes (DEAT 2008d)

Province	All projects				Projects with Biodiversity aspect	
	No. of projects	Budget	Spent to 29/09/08	Job days created to 29/09/08	No. of projects	Budget
Eastern Cape	33	R177m	R155m	1,272,611	20	R110m
Free State	12	R58m	R46m	336,108	8	R42m
Gauteng	3	R24m	R14m	47,794	1	R10m
KwaZulu Natal	35	R161m	R154m	1,176,703	19	R141m
Limpopo	6	R29m	R16m	89,956	4	R18m
Mpumalanga	4	R12m	R6m	96,126	3	R9m
Northern Cape	1	R12m	R11m	65,761	0	0
Western Cape	1	R22m	R21m	78,286	1	R22m
TOTAL	95	R495m	R423m	3,163,345	56	R342m



Under this programme, DEAT appoints community environmental workers at the assistant director level to be permanently located in the relevant district municipality or Metro with the primary objectives of building capacity at the local level and supporting DEAT funded projects. The appointment of these community environmental workers is at DEAT's cost with the district municipality required to provide office space and a supervisor, or key contact person in the municipality. The DEAT community environmental workers have the following key areas of focus as contained in their job description:

- Developing planning tools and initiatives according to the DEAT mandate and legislation. This includes activities to facilitate the implementation of environmental programmes;
- Capacity building initiatives for the municipalities. This area is important from a CBD capacity perspective as it is a key mechanism to build the local government capacity with regard to CBD implementation. Activities undertaken include disseminating information on DEAT legislation and capacitating the municipalities to implement this legislation. In this regard, DEAT is currently drafting an environmental legislation booklet for municipalities;
- Supporting, facilitating and monitoring the implementation of DEAT projects within the municipal area;
- Alignment of environmental and tourism programmes with the municipal planning process by participation in the IDP process and structures. DEAT has developed an Environmental IDP Toolkit specific to each province to ensure that environmental matters are incorporated in the IDP process;
- Engagement with stakeholders and DEAT counterparts, including parastatals, provincial departments and agencies.

Although DEAT only has one appointed community environmental worker in each metro or district municipality, the brief of that official extends to the underlying local municipalities within that district. There were 42 community environmental workers appointed throughout the country at the end of March 2008.

5 OVERALL CAPACITY ASSESSMENT

Based on the literature review, stakeholder feedback obtained in this study and an analysis thereof, the capacity for the biodiversity sector is summarised hereunder in terms of overall systemic, institutional and individual capacity.

5.1 *Systemic capacity*

5.1.1 Policy framework

South Africa has a well developed and progressive policy framework for biodiversity management. The overhaul of its policy framework post-1994 afforded it the opportunity to incorporate its commitments under MEAs such as the CBD into its policy framework. Apart from the Biodiversity White Paper, several policies have been published in the last ten years for other areas that impact on biodiversity management, such as water, forests, marine and coastal resources and environmental management. In addition, there is ongoing development of strategies and frameworks to support implementation of the policy and legislation, with the recently released framework for sustainable development an example.

No significant shortcomings were noted with regard to the current policy framework for biodiversity management in South Africa. If anything, the policy framework is too sophisticated for the existing institutions to be able to fully support, as discussed further below. For example, while policies support the use of co-management and market-based instruments, there is still excessive reliance on government regulation. This in itself puts additional pressure on government resources.

5.1.2 Legal and regulatory framework

As with the policies discussed above, South Africa has re-drafted most of its legislation in the 14 years since its first democratic elections. It has drafted a comprehensive set of environmental legislation under the overarching framework of NEMA. NEMBA is the key piece of legislation relating to biodiversity management and deals specifically with many of the commitments assumed under the CBD. NEMBA also creates SANBI with a mandate closely aligned to the CBD commitments. Apart from NEMBA, there is other legislation in place that covers many of the responsibilities under the CBD such as protected areas, water, forests and marine living resources. Some legislation, such as the Integrated Coastal Management Bill has been drafted but not yet promulgated, but in general the legislation is largely in place with few gaps.

The development of regulations to support the legislation is ongoing, with important regulations that have come into effect in the last few years including those for environmental impact assessments, access and benefit sharing and threatened or protected species. The alien invasive species regulations have not been finalised but are in process.

With the focus to date having been on drafting policies and legislation, there seem to be some shortcomings in the effective enforcement of the legislation. This might be partly ascribed to the additional responsibilities that the implementing institutions have assumed not been matched by increased financial budget, with the result that

the institutions have not always been able to hire additional staff to enforce legislation or to fully train staff.

5.1.3 Management accountability framework

All government departments and agencies in South Africa have to submit their strategic plans, annual implementation plans and annual reports to parliament, either national or provincial, and to account to the portfolio committees that parliament has established. There is thus a high level of accountability through this mechanism. The annual reports are available to the public.

However, what is possibly less clear in certain instances is the roles and responsibilities of all the institutions involved in the biodiversity sector. Clarifying and formalising the division of roles and responsibilities among the following institutions could be considered:

- DEAT and SANBI for certain functions where there is the potential for overlap;
- MCM, SANParks, the provincial conservation agencies and municipalities, *inter alia*, relating to management of coastal and estuarine MPAs;
- DEAT, including MCM, and DWAF for the mandate, responsibilities and roles regarding biodiversity management and conservation of freshwater systems.

5.1.4 Economic framework

The government departments and agencies receive the bulk of their funding from government through the legislated processes. The appropriation is directly to the national or provincial departments while the agencies in turn receive operating grants from their mother departments. As noted elsewhere in this report, the amount of government funding available for biodiversity is likely to come under pressure due to the other socio-economic priorities of government. Foreign donor funding has also been an important source of funding for the sector, but indications are that this is also likely to come under pressure in the future due to biodiversity not being a priority area for most donors and the view that South Africa as a middle-income country should not be a major beneficiary of donor funds.

With traditional sources of funding for biodiversity sector under pressure, the sector needs to find innovative new ways to augment its funding. The “Working for” programmes such as Working for Water provide an example of such innovation that has leveraged funds which are beneficial for poverty alleviation as well as biodiversity – in 2006/07 R470 million was spent on this programme, employing 29 470 people while 813 471 ha were treated for alien invasive species (DWAF 2007). The potential to secure funding from various sources including parastatals and the private sector through systems of Payments for Ecosystem Services is receiving attention mainly from the biome and ecosystem programmes, especially for water catchments and carbon sequestration projects. These initiatives should be supported but at the same time attention should be given to creating the appropriate capacity at the institutional and individual levels to effectively and efficiently manage the programmes.

5.1.5 Systems level resources

In order for the biodiversity sector to function efficiently and effectively, it requires human, financial and information resources. At present it could be argued that the sector is lacking in respect of these resources. However, steps have been initiated to deal with the shortcomings. Specifically:

- The Human Capital Development strategy process has been initiated, and will seek to address the transformation and scarce skills in the sector. This initiative is discussed in further detail below.
- The costing exercise for the NBF suggest that over the five years of the NBF, the cost of implementing the NBF objectives will amount to some R7.6 billion (EnAct 2008). Of the total, R3.4 billion is not budgeted for in current plans and is additional funding that will need to be secured. Human resource and administrative costs are the major components of the cost estimate (EnAct 2008).
- South Africa has relatively strong capacity in terms of biodiversity-related research which has generated a wealth of information over time. There are, nevertheless, considerable data gaps that still need to be filled. For example, funding for forestry research is inadequate resulting in a lack of adequate floristic and faunal data at the national forest type level. This limits conservation targets being set and implemented at this level, particularly conserving a representative sample. Further research is critical for forest and woodland conservation planning. In addition, research on the impacts on climate change impacts on forests is lacking. Similarly, there are data gaps that limit conservation planning for other biomes and ecosystem types, such as wetlands.
- Data gaps notwithstanding, the most pressing issue is to be able to access as much existing information as possible for planning and decision-making purposes. DEAT, SANBI and DWAF already collate and house considerable biodiversity information, and access to information has improved considerably with the advent of the internet web. SAEON has also recently set up a database that will house baseline and long-term biodiversity monitoring data. A further advance is that SANBI is developing as a one-stop shop for biodiversity information by creating electronic databases and these will be made available on its website.

5.1.6 Processes and relationships

One of the major constraints that the study has highlighted is that the coordination structures for the biodiversity sector are not working efficiently, as highlighted by the collapse of the CEC. Part of the problem might be attributed to biodiversity not being institutionalised by government departments; for example there is no focal point for the CBD within DWAF's Water Branch and there has only recently been an official delegated as the CBD contact person within the Forestry Branch.

There are also concerns about the level of co-ordination between DEAT and the provinces. Working Group 1, the MINTEC working group that focuses on biodiversity, theoretically provides the forum to achieve good co-ordination, and meets regularly, but the sense is that it is not working as efficiently as it should. Problems cited include weakness of leadership, agendas and documents being sent out too late to allow adequate preparations for meetings, minutes coming out late, and a lack of follow up on actions. Notwithstanding these problems, the committee continues to meet and function and has produced some important outputs, such as the elephant management guidelines. However, indications are that the structure could be better managed and generally be used more effectively.

Of even more concern might be the relationships between national-level institutions and local government and Catchment Management Agencies, Landcare Committees, and the like. Efforts are being made in this regard with DEAT and SANBI / DPLG both having local government-support programmes. The support to local



government needs to be prioritised to ensure better integration of biodiversity considerations, including for example water policy, into land-use and development decisions at the local government level. This will require building capacity in local government and catchment management agencies to incorporate biodiversity and water resource considerations into IDPs and catchment management strategies.

Another example of the lack of coordination and communication between national departments is that prospecting and mining authorisations are issued in State forests without DWAF having been consulted.

5.2 Institutional capacity

This study is not a detailed review of DEAT, SANBI or any of the other agencies or government departments involved in biodiversity management. Accordingly, no conclusions are reached on the various institutions' structures and whether this is optimal for them to deliver on the country's CBD commitments. It is noteworthy that at the time of this exercise three provincial agencies had embarked on exercises to review their business models and develop business cases – these agencies are CapeNature, Mpumalanga Tourism & Parks Agency and Eastern Cape Parks. The respective processes were still in process and thus were not reviewed, nor were the consultants engaged as part of this study, but the outcomes, when available, might provide some interesting insights into the capacity shortcomings at a provincial agency level.

However, during the process of engaging various stakeholders in the sector, a number of observations were made regarding the biodiversity sector in relation to the structure, roles and responsibilities. These observations are summarised below as they impact on the country's capacity and need to be brought into account in planning for capacity.

5.2.1 DEAT

Clarity of mandate

DEAT's role as the lead department in the biodiversity sector is critical in providing leadership and co-ordinating the environmental sector. It is recognised that DEAT has a broad mandate that extends way beyond biodiversity management. Apart from the tourism responsibilities, its functions are derived from many policies and pieces of legislation, as well as it being responsible for 28 MEAs, 33 bi-lateral agreements and four TFCA agreements (DEAT 2008c). DEAT's role in biodiversity management is contained in the Biodiversity White Paper and has been summarised in 4.2.1.

Within DEAT, the Biodiversity and Conservation Branch's (B&C) role is to ensure the regulation and management of all biodiversity, heritage and conservation matters. Its functions are to manage the conservation of the TFCAs and PAs; to promote and conserve biodiversity, cultural and local natural resources and ensure the sustainable utilisation of resources for the benefit of the people of South Africa; and to provide programme management support to SRP projects. The branch comprises two chief directorates – Biodiversity & Heritage and Protected Areas & TFCAs.

B&C has a crucial role in biodiversity management and the implementation of the steps towards fulfilling the CBD commitments. Apart from NEMBA and NEMPA which support the achievement of the CBD objectives, B&C is responsible for other



MEAs, such as CITES, World Heritage Convention, Ramsar and the UNCCD. It plays an important role in various forums within the sector, including Working Groups 1 and IV; MINMEC and MINTEC. It fulfils the secretariat role for Working Group 1. B&C is also responsible for drafting, sometimes with SANBI or others, many of the policies, frameworks and strategies that have been referred to in this document. For example, it was involved in drafting the NBF and Protected Areas Expansion Strategy. Most of the regulations or norms and standards for biodiversity management are the responsibility of B&C, such as TOPS, ABS, Alien Invasive Species regulations, amongst many others. Its focus in the next three years will be on expansion of the conservation estate to meet the 2010 target; implementation of Elephant and Threatened and/or Protected Species Regulations; Development of a Performance Management System Framework for Protected Areas; ensuring community beneficiation; resolution of land claims in protected areas; development of instruments for the mitigation of threats to biodiversity such as AIS regulations and it is working towards the proclamation of three more World Heritage Sites (DEAT 2008f).

B&C also assumes responsibilities in the development of new plans or strategies, as it is involved in drafting relevant documents, has to consult stakeholders, manages the documents through the approval process and is involved in monitoring and reporting once the provisions of the documents come into effect.

DEAT's many other responsibilities and functions impact on its ability to effectively play its biodiversity co-ordination role for the sector, which is a fundamental function especially coordinating between other national departments and the national and provincial implementing institutions. The collapse of the CEC and the sub-optimal functioning of Working Group 1 on biodiversity may be attributable to insufficient capacity in DEAT.

CBD matters are reportedly not prioritised by DEAT officials. This could be attributed to the many responsibilities and limited human capacity noted elsewhere in this report and to the high turnover of staff with new staff not receiving proper training on the CBD and hence not appreciating the requirements.

Effectiveness of structure and management

An aspect that requires attention is the internal DEAT institutional and governance arrangements with respect to the CBD. The current situation is understood to be that DEAT's Biodiversity and Conservation Branch (B&C) is responsible for coordinating implementation and monitoring of the CBD commitments, while the International Co-operation and Resources Branch (ICR) is the "relationship manager" with the CBD secretariat and structures – this will include governance (complying with CBD processes for example), submitting reports and attending relevant meetings. For the system to work efficiently, ICR requires technical support and input from B&C. In turn, B&C needs to obtain and coordinate the inputs from MCM, SANBI and the other implementing institutions.

The DEAT structure is reportedly not working efficiently, causing frustrations on all sides and limiting South Africa from meeting the governance standards of the CBD. The current structure needs to be reviewed for efficiency; for example, as B&C and ICR are different branches, the officials have no authority over each other where assistance is slow or not forthcoming. This can lead to finger-pointing with no one taking responsibility for non-performance.

Human resources



There is reportedly a lack of understanding of CBD requirements by DEAT staff, especially on the processes, governance and reporting matters where an understanding of international political processes, negotiation and diplomacy is important. Building an understanding of these processes and requirements amongst DEAT staff involved in the CBD, and possibly staff in other institutions such as SANBI, SANParks, national departments and the provinces, should be considered as a broader understanding of the context may facilitate cooperation and delivery of relevant information timeously.

DEAT experiences a high level of staff turnover and has a number of vacancies in its structure. Its biodiversity related areas are not immune from the trends. The consequences of this are:

- extra pressure and responsibilities on remaining staff;
- a loss of institutional memory as new staff take time to acquire the knowledge and experience of the specific issues. This is of particular concern in relation to the CBD obligations which are best dealt with by experienced officials who have a good understanding of the CBD, its requirements and the relevant implementing institutions for the various responsibilities of the CBD.

While B&C seems to have a core of skilled and dedicated staff, the impression gained is that the responsibilities, which continue to grow, outweigh the available capacity which has not kept pace with the growth in responsibilities.

Management of financial resources

DEAT receives the bulk of its funding from central government through the appropriation process. DEAT then allocates the available budget to its various programmes. DEAT also generates some revenue internally and receives foreign aid. In addition, the Marine Living Resources Fund was established in terms of the Marine Living Resources Act. It is responsible for the development and sustainable use of South Africa's marine and coastal resources and receives revenue from the fishing licenses.

Although the financial systems were not assessed during the process, indications are that DEAT has adequate financial management systems as it received an unqualified (clean) audit report for 2007/08. Furthermore, it has financial and risk management systems, internal controls and corporate governance in place, such as an Audit Committee.

Information resources

No problems with access to existing information were identified, but the efficiency of data access is likely to improve once the SANBI databases are fully established.

5.2.2 SANBI

Clarity of mandate

SANBI's mandate is clearly set out in NEMBA. It was previously the National Botanical Institute with a focus on plants and has done remarkably well in transforming itself to a broad-based biodiversity organisation with areas of responsibility in bioregional planning, policy, biodiversity research, education, monitoring and reporting.

SANBI plays an important support role to DEAT in the area of biodiversity management generally and in meeting the CBD commitments specifically. Possibly due to the ongoing development of SANBI as it expands the functions it performs,

there seem to be some “grey” areas for certain functions and whether these roles and responsibilities fall primarily under DEAT or SANBI. While the review did not highlight specific cases where functions have not been performed due to this possible confusion, the potential for duplication of functions or for functions to fall between the two institutions was noted, and it is recommended that this risk be proactively addressed by meeting and agreement between DEAT and SANBI of their respective roles.

Effectiveness of structure and management

There are still some gaps in its structure, partly due to a revised organogram that has recently been approved and is still in the process of being implemented. SANBI has indicated a 21.5% vacancy rate in its structure. However, its new CEO has been in office for a year and all indications are that it is well on the path to creating the capacity and skills to meet its mandate and play the pivotal role in the biodiversity sector that NEMBA requires from it. The Human Capital Development Strategy process that is underway will provide further momentum to SANBI's transformation to a fully fledged biodiversity organisation. .

Human resources

The above comments on the structure and management also apply to SANBI's human resources. Its challenge may be to find suitable multi-skilled individuals who are able to contribute at the integrated technical, policy and implementation levels that SANBI's mandate requires it to do.

Management of financial resources

SANBI obtains most of its funding from the operation grant it receives from DEAT – R111 million in 2007/08. This grant covers salaries and operational expenses of SANBI. Funding is also received from DEAT for EPWP for programmes such as Working for Wetlands and capital development projects in national botanical gardens. SANBI also generates foreign funding for biodiversity and environmental projects. In 2007/08, SANBI received 68.4% of its total income from DEAT, which is similar to 2006/07 when it received 70.5% of its income from DEAT (SANBI 2008). While the management of these financial resources was not specifically assessed by way of systems and internal control review, indications are that SANBI has adequate internal control and risk management systems in place to adequately manage its financial resources. It received an unqualified audit opinion in 2007/08 and corporate governance structures such as a functioning audit committee.

5.2.3 The conservation agencies

Clarity of mandate

A model that has emerged is that conservation management is generally no longer undertaken directly by government but by separately-created public entities, the conservation agencies. SANParks is such an agency and all provinces, other than Gauteng, Free State and the Northern Cape now have their own agencies. In these three provinces, conservation management falls directly under the provincial conservation department.

In certain provinces, the on-reserve mandate is with the conservation agency while the off-reserve mandate is with the provincial department. This has the potential to cause confusion and potentially restricts the protected area expansion ambitions of conservation agencies.

Effectiveness of structure and management

This review has not critically evaluated the conservation agency model to assess the effectiveness, or otherwise, of the conservation agencies. However, a number of observations are made and presented below - these factors are highlighted due to the importance of the agencies in creating the capacity for the country to meet its obligations under the CBD.

- The agencies are better able to mobilise external funding by retaining internally-generated revenue from tourism, game sales etc, as well as from donors for project-specific funding, for example EPWP projects such as Working for Water and DEAT's Social Responsibility Programme.
- The agencies have independent non-executive boards of directors and are able to appoint skilled individuals who can contribute to the agency at a strategic level.
- Some agencies house both the provincial conservation and tourism agencies. This model has not been assessed against a stand-alone conservation agency model but is likely to bring with it both advantages (such as cost savings) and disadvantages (such as conflict of interest between tourism and conservation objectives).
- The agencies are accountable to a number of different stakeholders, adding to the reporting and compliance burdens, with cost and capacity implications. The agencies are accountable to their own board of directors, the provincial "mother" department, the provincial Member of the Executive Council, the provincial portfolio committee and the provincial treasury as the provisions of the Public Finance Management Act still apply to the agencies. In instances, the interests of these parties have not been aligned, leading to uncertainty and instability within the agencies.

With the above background, the following matter is raised for consideration:

- **.Overall sector structure.** The model for environmental management is based on the exclusive national or provincial and concurrent competencies contained in the Constitution. However, this has resulted in a decentralised and fragmented sector, with the scarce skills spread amongst many role players in the three spheres of government, and a lack of coordination between the efforts of the various provinces in addressing biodiversity issues. A review of the structure of the sector and particularly whether a centralised biodiversity management model can lead to more effective implementation should be considered.

A further concern is that some agencies do not seem to have the support and administration systems to effectively support their core operations.

Human resources

Amongst the provincial agencies where information was obtained, the lack of human capacity is a common complaint. This relates to the high number of vacant posts in the structures and the inability to attract and retain suitably qualified individuals for the positions.

Management of financial resources

A motivation for establishing an agency is that it will be able to become self-financing through the revenue it generates primarily from tourism in its protected areas, thereby reducing the financial burden on the state and freeing up the funding for other socio-economic priorities. However, the experience and reality is that these agencies are not, and are never likely to be, self-financing. Biodiversity is a public



good and provides substantial public benefits from water to unpolluted air and a clean and healthy environment that can be used for recreational and cultural purposes. Accordingly, there is an obligation on the state to fund biodiversity management. This message needs to be made to relevant politicians who may be of the view that the government's obligation to fund the agencies has reduced as a result of the creation of these statutory bodies.

5.2.4 DWAF

Clarity of mandate

Apart from DEAT, DWAF is the national department with the most important role in biodiversity management as it is responsible for forest and water resources. Both forests biodiversity and inland water biodiversity are amongst the seven CBD thematic programmes, highlighting the import role of DWAF. As with DEAT, this study did not undertake a review of DWAF, its structures or individual capacities in relation to biodiversity management and the CBD, and the comments that follow are based on a high level review and interviews held with a limited number of DWAF officials. Based on these observations and findings, it may be considered necessary to undertake additional review of DWAF.

DWAF is in the process of delegating its management responsibility on forests to focus on its policy formulation and regulatory role. This is being achieved through the transfer of responsibility for certain forests to SANParks and some of the provincial conservation agencies.

There is confusion about the mandate, responsibilities and roles between DEAT and DWAF regarding management and protection of biodiversity in freshwater aquatic resources. Water falls within DWAF's mandate, biodiversity in DEAT's mandate and estuaries in MCM's mandate.

Effectiveness of structure and management

An important distinction is that the environment and nature conservation are concurrent national and provincial competencies while both forest and water resources are an exclusive national competency. The implication of this is that while the provinces all have provincial conservation departments and some conservation agencies, there are no provincial forest or water departments. Instead, DWAF has regional offices that represent its interests in the provinces. In theory at least, this should make coordination easier for DWAF in its areas than for DEAT.

There is limited understanding and support within DWAF, including at management level, of DWAF's responsibilities and role for biodiversity management and its obligations under the CBD.

DWAF's participation in the CBD and other international processes has been sporadic, uncoordinated and lacking continuity. This can be ascribed to the multiple functions of DWAF and the lack of officials to perform all of them. Since May 2008, DWAF has appointed a focal point for the CBD in its Forestry Branch and this should assist in ensuring that CBD matters receive attention, but the position needs to be institutionalised and not rely on the incumbent individuals. There is no focal point within DWAF's Water Branch for the CBD, meaning that its implementation is dealt with on an ad-hoc basis and is not coordinated or institutionalised.

There is a severe lack of law enforcement and scientific support staff at both national office and in the regional offices. In its 8 regional offices the Forestry Branch has 25 officials responsible for forest biodiversity planning and enforcement to cover more than 50,000 dispersed and often remote forest patches. For example, the problem is considered to be most critical in the Eastern Cape where approximately 60% of the total area of indigenous forests in South Africa is located. This is also one of the poorest provinces with the least capacity to manage and enforce legislation - the Eastern Cape has only one enforcement officer for the entire province. There is limited capacity in the regional offices in the provinces to fulfil all their tasks, including processing water use licenses.

Human Resources

53% of posts related to forest biodiversity are vacant. High staff turnover occurs, especially losing staff to the private sector, and posts can take up to six months to fill. Forestry scientists are scarce and it is difficult to fill these posts. This has a direct impact on operations, for example, progress in the auditing processes for the roll-out of the PCI&S has been slow due to capacity constraints in the regions.

5.2.5 Research institutions

South Africa has excellent capacity in biodiversity-related research within its research institutions, particularly Universities, some of which are world class. South Africa boasts a number of academic research staff that are world leaders in the conservation biology field, and generates research outputs of high international standing within this field. However, there is some concern regarding the emigration of skilled academics from the country and the decreased standard of preparedness of students entering tertiary institutions.

5.2.6 NGOs and other stakeholders

South Africa is fortunate to have a well-developed environmental NGO sector with a number of well-capacitated and effective organisations. This study has not assessed the NGO sector in great depth, but the important role of NGOs in a range of functions from programme management and project implementation to accessing funds for biodiversity and developing new initiatives, such as the industry sector certification schemes, is acknowledged. NGOs provide support to government at various levels from policy development to project implementation.

NGOs seem to be evolving from fund raising organisations to implementation agents, with a strong focus on delivery and the impact of the projects, which is sometimes lacking in government institutions. NGOs have the added advantage of not having the bureaucratic decision making and administrative processes that government departments and agencies are compelled by law to follow. The NGOs in general seem to favour a model where they can partner government by providing resources and capacity – this could include, for example, jointly implementing projects or the secondment of staff from the NGO to government which is already happening in certain instances.

In addition to the NGOs, there are a number of individuals with valuable experience in biodiversity matters who are no longer formally employed in the sector, having left for reasons that include retirement and lack of career opportunities. Efforts to positively engage these individuals in appropriate areas of biodiversity management should be considered. While further study will be required to fully assess the potential and the roles that can be fulfilled, it is anticipated that this could range from

mentoring / coaching at the local, provincial or national level to advising on conservation management matters and implementation of projects under the various programmes. Another example might be for an NGO or individual to fulfil the secretariat role for Working Group 1 and the successor forum to the CEC.

The human and financial capacity constraints of government institutions are generally acknowledged. The principle of entering into partnerships with NGOs and appropriately-skilled individuals should be embraced. Further review and analysis could be undertaken to develop a strategy and plan for such partnerships and to implement appropriate partnerships.

5.2.7 Local government

The review of the ISRDP and URP (see Chapter 4) provided some insight in the capacity of local government with regard to integration of environmental issues into planning and projects. Although a thorough assessment and evaluation of the effectiveness of DEAT's responses to the ISRDP and URP was not conducted, general conclusions can be drawn based on the limited review performed. Although the following issues were noted in relation to the ISRDP and URP, these lessons probably apply to varying degrees to other local government structures. DEAT (2006b) notes that local government faces many resource and capacity constraints that hamper implementation of the environmental legislation and most municipalities do not have the skills or resources to integrate environmental considerations into development planning.

There are numerous challenges that limit the effective implementation of environmental policy and legislation in municipalities. These general challenges have been identified to include:

1. Lack of political buy-in to environmental matters, with the municipal focus primarily on service delivery and local economic development opportunities that support job creation and poverty alleviation;
2. Limited budget allocation to environmental programmes;
3. Confusion on municipal responsibilities with regard to environmental management as certain functions are concurrent competencies while others are a national or provincial competence. For example, under the constitution, local government is responsible for implementing certain environmental matters such as air pollution and waste management but with the regulation thereof a concurrent competency of national and provincial government;
4. Limited capacity in municipalities to implement environmental related programmes, partly due to lack of understanding of environmental legislation, with it being understood that most municipalities do not have environmental departments; the exception generally being the Metro councils;
5. Municipalities not "taking ownership" of DEAT funded projects, thereby negatively impacting the ongoing sustainability and effectiveness of the projects. For example, municipalities do not support projects by allocating operational budget once the project is handed over to them or the local community beneficiaries
6. Other challenges faced by local government include corruption, high staff turnover and high levels of outsourcing (DEAT 2006b).

A general conclusion is that although environmental sustainability is one of the six core objectives of the ISRDP / URP strategy, it is not a priority under the programmes with the improvement of service delivery, especially provision of basic

services, and development opportunities the focus. It was noted that environmental issues are seldom highlighted in planning or reporting on the programmes.

DEAT's interventions in terms of the allocation of SRP projects to the nodes and its Local Government Support programme are positive developments to be welcomed and encouraged. In particular, the appointment of the community environmental workers to the district municipalities creates an invaluable channel of communication between national and local government for environmental matters, including the CBD obligations of the country in general and local government in particular. It is not known how effective the community environmental workers are in raising awareness and building capacity in the municipalities and this will need to be evaluated in a separate study. However, it is likely to differ from municipality to municipality depending on various factors including the skills, experience and competence of the community environmental worker and the receptiveness of the municipality to the support offered by DEAT. Further evaluation of this programme is required to assess the skills development requirements of the community environmental workers, particularly in relation to the CBD, and also to identify how to maximise the linkage that DEAT has created between itself and the districts in relation to the CBD commitments, including the development of monitoring and evaluation tools at the district level.

With the important and growing role of local government in both implementing and influencing environmental matters, including biodiversity, it seems clear that interventions are needed to build the capacity within these municipalities. There are already a number of initiatives and programmes in place such as the DEAT Local Government Support programme; the SANBI / DPLG Municipal Biodiversity Programme and Project Consolidate which has been developed to make municipalities function more efficiently (DEAT 2006b). However, the sense is that there is limited coordination between these programmes. A possible approach might be to undertake a review of existing support programmes and put in place mechanisms for cooperation and coordination, as well as specific capacity building programmes. Such an exercise will need to involve DPLG and the South African Local Government Association. It is important that any capacity building including awareness-raising at the political and senior management level within local government.

A recent assessment of the financial management of local municipalities in the Eastern Cape suggested that there are dire problems in financial management at the municipal level. Not one of the municipalities was given a clean audit, and some were found to be severely mismanaged. Inefficient financial management is thus likely to contribute to the lack of success in mainstreaming biodiversity conservation at the local government level.

5.3 Individual capacity

5.3.1 Overview

This assessment did not include a detailed human capacity evaluation for the institutions involved in biodiversity management by, for example, identifying the qualifications, experience and skills required for the functions performed and undertaking a skills audit to identify gaps and capacity building needs. Nor was any attempt made to identify the skills required by individuals to perform their functions so as to meet the CBD responsibilities. For these reasons and because capacity at the individual level is common to all the areas of responsibility under the CBD, the

individual capacity will be addressed at a biodiversity sector level rather than for each CBD responsibility.

A common response, and indeed for many respondents a major gap, is that South Africa's biodiversity sector is lacking human capacity to effectively manage biodiversity, and by extension, fulfil its obligations under the CBD. This view is supported by a survey undertaken by Rodwell (2008) to identify the priority areas for biodiversity and conservation funding interventions for the Tony and Lisette Lewis Foundation South Africa. The results are based on the responses from 35 leaders in the environmental sector and the five priority areas are identified to be:

1. Human Capital Development with demographic transformation of middle / senior leadership capacity in the biodiversity sector (Raised by 81% of participants);
2. Sound management of protected areas (54%);
3. Establishing and strengthening conservation awareness and competence among policy and decision makers in government, industry and the corporate sector (45%);
4. Developing capacity to implement NEMBA and conservation legislation at local government and municipal level (36%); and
5. Pressing threats to South Africa's biodiversity (36%)

This study highlighted the need for a coordinated sector response and approach for a long term strategy to develop human capacity in the sector. SANBI, with the support of the Tony and Lisette Lewis Foundation South Africa, is leading a Human Capital Development process which will develop a human capital development strategy for the environmental sector. This strategy will seek to address transformation and the challenge of scarce skills in the sector. At the time of drafting this report, the process to appoint a consultant to develop the strategy was underway with the aim of having a strategy document drafted by 31 March 2009. Such a strategy and its successful implementation is a critical for developing the individual capacity for South Africa to meet its commitments under the CBD and will hopefully go a long way to addressing some of the challenges that this study has highlighted.

In the absence of the Human Capital Development strategy and without a detailed study and evaluation along the lines spelt out in the introductory paragraph above, the exact nature of any gaps in individual capacity within the sector is difficult to specify. Respondents and interviewees in this study identified various areas where interventions are required to build capacity within the institutions with the following being those that should be given priority: project management, financial management, compliance to relevant regulatory requirements and social facilitation.

In addition, a number of blockages in the current system have been identified and these should be given appropriate attention if South Africa in the medium to long term is going to provide sufficient human resources, both in quantity and quality, to adequately manage its biodiversity.

Lack of human capacity is due to both a lack of staff within institutions which is exacerbated by their growing responsibilities and the need to spread scarce skills among too many institutions, as well as a lack of appropriate skills among existing

staff. The latter is due to changing skill requirements, inefficient training programmes and transformation through affirmation action.

5.3.2 Vacancies and staff turnover

A challenge that institutions face is the high level of vacancies within these institutions, as well as the turnover of staff within the institutions. For example, DEAT (2008c) reported that at 31 March 2008 it was experiencing a vacancy rate of 18.7% (28%), while this rose to 19.6% (25%) vacancy for critical occupations. Figures in brackets are the comparative figures as at 31 March 2007 (DEAT 2007b). These vacancies are spread across all its programmes with vacancy levels for critical occupations in selected programmes being: natural sciences related occupations 20.6% (40%); nature conservation and oceanographic occupations 41.4% (48%); regulatory inspectors 13.9% (18%) and senior managers 21.7% (19%). In 2008 there were 350 unfilled posts in DEAT, of which 157 were in critical occupations. DWAF at 31 March 2007 had 14.5% of its posts vacant, but this increased to 19.6% for critical posts (DWAF 2007a). Vacancies are also a challenge at the provincial level, for example, Eastern Cape Parks Board reporting a 36% vacancy rate and Mpumalanga Tourism & Parks Agency a 71% vacancy rate in 2007. DEAT (2006b) notes that provinces experience high staff turnover and vacancy rates.

DEAT experienced an overall staff turnover of 31% in 2007/8 with a turnover of 18.5% for the critical occupation posts. This is up from 2007 where the comparatives were 15.1% and 11.6% respectively. It can take six months or more to fill a post in government, although shorter time frames are experienced by the agencies.

Data are not available for all the other national and provincial departments and agencies, but respondents have indicated that both vacancies and staff turnovers are challenges that they experience.

Reasons provided for the difficulty in attracting staff to fill vacant posts include:

- Limited pool of suitably qualified and experienced candidates;
- Limited suitable previously disadvantaged individuals available to meet transformation targets;
- Salaries not competitive in sector;
- Stress related to unrealistic work pressures and demands.

The consequences of the vacancies and turnover are the loss of institutional memory and that it places even more burden on the already pressurised system and individuals within the system.

5.3.3 Additional responsibilities within institutions

The tremendous strides that South Africa has made in creating a high quality enabling environment through updated and relevant legislation, policies, regulations and programmes is highlighted elsewhere in this report. However, the reality is that all these legislative and regulatory requirements need to be implemented and monitored, and the various programmes implemented at a project level. These additional responsibilities have fallen mainly on the existing institutions and staff, and in general the extra responsibilities have not been matched by an increase in the financial and human resources to these responsible institutions. This extra burden has placed increased pressure on the individuals in the system – sometimes without

requisite training or a full understanding of the new responsibilities - with the result that they are often not able to deliver or implement the new policies.

There is still ongoing development of plans, programmes and strategies in the sector – as highlighted in this report – and even more will come about by implementing the provisions of the NBF. It thus seems that the pressure on the individuals involved in environmental sector management will continue to increase unless there is political commitment to increase the capacity of the institutions and individuals to deal effectively with the new responsibilities.

5.3.4 Inefficient use of scarce skills due to decentralised management model

In line with South Africa's Constitution, management of the environment takes place in all three spheres of government and across many departments and agencies. A full assessment of this model has not been undertaken, nor have alternative models been explored. However, a consequence of this model is that the existing biodiversity technical and management skills are widely spread across the different organs of state and other stakeholders such as NGOs, throughout the country. The demand for individuals with biodiversity technical and management skills arguably exceeds the supply of such individuals entering the system, placing yet further pressure on those that are employed in the sector. Plans need to be put in place to ensure optimal utilisation by the sector of the scarce skills.

5.3.5 Suboptimal training and development

While institutions are spending significant amounts on training and development of their staff and are meeting the legislated minimum requirements in this regard, the general view of respondents is that training provided is not optimal. Some observations are:

- Amounts are spent on training to meet legislated requirements rather than been informed by training requirements. This results in a supply rather than demand driven approach with sub-optimal training being provided;
- The quality of training provided by training service providers was questioned. Even though these providers are accredited, there is a feeling that they are not providing the quality of training expected;
- The efficiency of the SETAs was questioned and comments were made that the SETA is adding little value and not meeting its objective of ensuring that the skills requirements of the sector is identified nor that the training is of the appropriate quality. The sector falls under the Tourism and Hospitality SETA (THETA) and this may not be appropriate.

In light of the skills shortage in the sector, it is essential that training takes place, but more importantly that such training be appropriate, specifically that it be based on the needs and requirements of those being trained and that it be of adequate quality to make a positive impact.

5.3.6 Changing skill requirements

Management of the environment in modern times is a multi-faceted and complex task. It is no longer sufficient to have only technical skills in a specialist area to be an effective environmental manager. "Soft skills", such as the ability to communicate effectively with local communities, tourists and the public are an essential tool. So

too is an understanding of the policy and legislative requirements. Increasingly, the ability to manage processes by utilising project management principles and understanding the financial situation applies in most areas of the environmental management sector.

If South Africa is to fully meet its obligations under the CBD, it is important that a pool of multi-skilled environmental managers be developed to be the future leaders of the sector.

5.3.7 Transformation through affirmative action

The transformation of South Africa is an ongoing process, with employment equity being committed to by all major institutions and organisations in the biodiversity sector. This presents a challenge in filling positions in the environmental sector, particularly in the scientific field where there is a limited pool of appropriately-skilled black graduates. One of the causes of this skills shortage may be the perception that there are limited job opportunities within the biodiversity sector, especially in specialised areas like biosystematics, but the problem also stems from the lack of science and maths training in black schools. As a result of these shortages, affirmative action has resulted in the appointment and promotion of staff into positions for which they are inadequately skilled or experienced, resulting not only in a reduction of delivery from those posts but also in the excessive levels of stress experienced by many of those staff.

6 CAPACITY ASSESSMENT IN RESPECT OF CBD RESPONSIBILITIES

Systemic and institutional capacity and capacity constraints are assessed for each of the main areas of responsibility under the CBD. This is done by summarising the systemic and institutional capacity that South Africa has created to meet its responsibilities under the CBD, listing the current capacity constraints identified, and listing the Priority Actions that have been set out in the draft NBF to address this area. While the NBF has not yet been approved, it is an essential document for biodiversity management in the country – apart from being required by legislation, it is the tool that will give effect in the short term to the NBSAP, and therefore the provisions of the CBD. The 33 Priority Actions in the draft NBF have targets to meet by 2013. If successfully implemented, these priority actions will go a long way towards filling the capacity gaps.

6.1 *International co-operation*

South Africa is party to various MEAs relating to biodiversity as well as to regional initiatives. It is actively involved in the creation and management of Transfrontier Conservation Areas with its neighbours. Planning for these TFCA's is well advanced, and the focus is now on implementation to realise the biodiversity and socio-economic benefits.

In relation to water resources, South Africa has entered into several regional agreements for the management of transboundary water courses as evidenced by bilateral and multilateral agreements such as the Tripartite Permanent Technical Commission between South Africa, Mozambique and Swaziland; South Africa Mozambique Joint Water Commission and the Orange-Senqu River Basin Commission (DWA 2007a).

The NBF contains a number of specific Priority Actions in relation to regional cooperation. These actions are in addition to the 33 Priority Actions for domestic attention.

Table 5. International cooperation: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Systemic capacity	<ul style="list-style-type: none"> ▪ Party to various MEAs including CBD, CITES and Ramsar ▪ Party to various agreements relating to water resources ▪ Member of African Union and NEPAD; supports environmental initiatives including Environmental Initiative Plan ▪ Regional co-operation through being signatory to Southern African Development Community (SADC) protocols including Protocols on Wildlife, Water and Forests ▪ Six TFCA protocols signed ▪ Implementing SKEP biome programme with Namibia ▪ Party with Angola and Namibia to Benguela Current Large Marine Ecosystem initiative ▪ Co-operates on various international research initiatives including research base at Antarctica
Institutional Capacity	<ul style="list-style-type: none"> ▪ DEAT International Co-operation and Resources Branch established ▪ TFCA units established in DEAT and SANParks ▪ MCM responsible for Antarctica



	<ul style="list-style-type: none"> ▪ DWAF international water agreements ▪ SANBI has collaborated and been involved in a number of African research initiatives
Systemic capacity constraints	<ul style="list-style-type: none"> ▪ TFCAs have been established through signature of various protocol agreements, but implementation of the TFCA plans need to receive attention so that the biodiversity and socio-economic benefits can be realised
NBF Priority actions	<ul style="list-style-type: none"> ▪ Strengthen and improve the development of integrated management and tourism plans of the TFCAs and transboundary World Heritage Sites (#R1) ▪ Develop and implement appropriate incentives for biodiversity conservation and its sustainable use in cooperation with our neighbouring countries (#R2) ▪ Develop, implement and strengthen programmes for international scientific collaboration, sharing of information and technology transfer (#R3) ▪ Develop and implement a coordinated regional programme to increase awareness, knowledge and appreciation of biological resources at various levels (#R4) ▪ Strengthen the research and development capacity of the protected area system (#R5)

6.2 *Develop national strategies, plans or programmes*

South Africa has been in a unique situation given the transformation process embarked on after the democratic elections in 1994 as the review and overhaul of its policy and legislative framework allowed it to incorporate the obligations it assumed in MEAs such as the CBD as an integral part of its new policies and legislation. This it has done very successfully as the general view is that South Africa now has an excellent enabling framework.

Much of the focus to date has been on drafting these policies and getting the legislation in place. Recent efforts have focussed on drafting supporting regulations, frameworks and strategies that support the legislation. This process is ongoing with the approval of the NBF an important step as the focus will shift to implementing the 33 priority actions identified therein. A number of these actions are finalisation of supporting frameworks and strategies. Should all of these actions be successfully fulfilled, by 2013 South Africa should have a comprehensive and holistic structure for biodiversity management.

A number of ecosystem and biome programmes have been established to protect the ecosystems of special concern. Programmes are in place in the Cape Floral Kingdom; Succulent Karoo, grasslands, Wild Coast and marine ecosystems. These biome programmes provide good models of co-operative governance with positive impacts on biodiversity management and thus an essential mechanism that supports achievement of the CBD obligations. These programmes have been initiated with external funding, mainly from GEF. The activities under the programmes will need to be taken over by the relevant conservation agencies once the external funding is used up, including the employment of staff and allocation of the operating budget.

Programmes have been established under the EPWP umbrella. These include Working for Water, Working for Wetlands and Working on Fire, as well as DEAT's SRP programmes. These programmes both support biodiversity objectives and contribute to government's socio-economic agenda by creating jobs, providing



training and encouraging establishment of local SMMEs. These programmes have not been individually assessed in this study, but generally seem to have been successful in achieving their dual aims.

Table 6. National Strategies and Plans: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Systemic capacity	<ul style="list-style-type: none"> ▪ NBSAP drafted ▪ NSBA developed and planning for 2010 update in process ▪ Some provinces have provincial spatial biodiversity plans (KZN, Eastern Cape, Mpumalanga and Gauteng) while others are in process (North West, Free State) ▪ National Biodiversity Framework drafted and in approval process ▪ Criteria for identifying threatened or protected ecosystems in development by SANBI ▪ Norms and Standards for Biodiversity Management Plans for species of special concern published ▪ Various ecosystem and biome programmes in place: Cape Floral Kingdom; Succulent Karoo, Grasslands, Wild Coast and Marine
Institutional Capacity	<ul style="list-style-type: none"> ▪ DEAT lead environmental and biodiversity department in the country ▪ SANBI mandated to perform many of the biodiversity functions required by the CBD under NEMBA ▪ NBF assigns responsibility to lead agents to implement priority actions therein by 2013 ▪ Programme co-ordination units oversee implementation of ecosystem and biome programmes ▪ National government, provincial government and agencies and NGOs implementing various biodiversity programmes, for example Working for Water programme to eradicate and control invasive alien species
Systemic capacity constraints	<ul style="list-style-type: none"> ▪ Some provinces do not have spatial biodiversity plans ▪ Bioregional plans required by NEMBA are not in place, although draft guidelines for preparing these plans gazetted. These bioregional plans should be finalised and mechanisms developed to ensure that they are incorporated into land use planning and decision making ▪ Criteria for threatened or protected ecosystems still being developed ▪ Norms and Standards for threatened ecosystems not yet developed ▪ Invasive Alien Species Regulations not finalised yet, although in process of being drafted ▪ Identify and establish priority new programmes for threatened biomes, especially aquatic systems such as rivers
Institutional capacity constraints	<ul style="list-style-type: none"> ▪ Mechanisms to ensure sustainability of current biome programmes once external funding stops
NBF Priority actions	<ul style="list-style-type: none"> ▪ Establish and implement a human capital development strategy for biodiversity sector to address transformation and scarce skills (#7) ▪ Strengthen the regulatory framework for species of special concern (#5) ▪ Strengthen the development and strengthening of biome and ecosystem programmes (#14)

	<ul style="list-style-type: none"> ▪ Develop provincial spatial biodiversity plans in additional provinces (#16) ▪ Publish bioregional plans in terms of NEMBA (#17) ▪ List threatened or protected ecosystems in terms of NEMBA (#18) ▪ Develop Biodiversity Management Plans for species of special concern and threatened ecosystems (#19) ▪ Implement the Invasive Alien Species regulations (#21)
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6.3 Integration of biodiversity issues into sectoral and cross sectoral plans (mainstreaming biodiversity)

During 2007, DEAT undertook a review of the cooperative governance structures under NEMA (DEAT 2007c). The findings of this study are:

- the collapse of the Committee for Environmental Co-ordination (CEC) that was established under NEMA as the key forum to promote the integration and co-ordination of environmental functions by the relevant organs of state and to promote the objectives of the EIPs and EMPs. The CEC comprises the Director Generals of 10 national government departments under the chairmanship of the Director General of DEAT. The committee should meet at least four times a year, but had not met since 2005, although its sub-committees continued to function;
- non compliance by the CEC with the provisions of NEMA relating to:
 - frequency of meetings,
 - reports to the Minister and parliament,
 - lack of qualitative review and
 - engagement on the procedures for cooperative governance;
- general non-compliance by state departments and provinces through late submissions of reports, EIPs and EMPs. The EIPs and EMPs should be prepared every four years, with progress reports on the plans prepared annually. DEAT is tasked to ensure compliance with the plans;
- the lack of value and impact of the above reports;
- poor implementation of the EIPs and EMPs once drafted; and
- the need for strengthened cooperative governance.

The above findings paint a gloomy outlook for both environmental cooperation between national departments and for the seriousness with which the EIPs and EMPs, and by implication environmental management matters, are treated. These plans are often prepared by consultants to ensure compliance with NEMA to prevent an audit query and qualification, instead of being seen as an important part of the departments' obligations.

A draft Bill submitted in July 2008 proposes the abolition of the CEC but gives the Minister the right to establish any forum or advisory committee and to determine its composition and functions.

An example of the lack of coordination and communication between departments is that prospecting and mining authorisations are issued in State forests without DWAF having been consulted.

A general observation is that while the commitment to environmental matters varies between departments, environmental management is generally not institutionalised



and often relies on the commitment of individuals to highlight and deal with environmental issues within the departments. It is desirable to introduce mechanisms to ensure that government at all levels treats biodiversity and its management as an important part of its obligations rather than as a compliance issue. Ideally, each government department that is involved in environmental management or whose activities have an impact on the environment, including local government, should have a designated position at an appropriately senior level as the focal point charged with responsibility for all environmental matters including preparation, implementation and monitoring of EMPs and EIPs and participation in coordinating forums. The job description for the position and key performance indicators of the unit within the department should include environmental matters so that they are reported on a quarterly basis and can be monitored. Appropriate budget should be allocated to environmental activities.

DEAT's model of appointing officials to district municipalities as community environmental workers has potential as it gives DEAT direct access to the municipalities and creates a two way channel of communication. In addition, the appointment of a counter-part reporting line within the municipality obliges someone in the municipality to take responsibility for environmental matters. This programme should be monitored as there could be advantages to replicating something similar for other national departments and in the provinces.

The following additional observations are pertinent with regard to government:

- The South African government has multiple, and sometimes conflicting, priorities with the objective of creating a better life for all its citizens through poverty alleviation. It is therefore no surprise that its focus is on socio-economic development and the delivery of basic services, while other priorities are land reform, crime, health, education, the 2010 World Cup and the energy crisis and the need for Eskom to respond to it. Conservation and environmental matters are seen as secondary, and often in conflict to the other state priorities. The low priority for biodiversity-related matters is highlighted by the fact that there are no specific biodiversity actions in Government's Programme of Action which sets out the state's priorities and programmes for the year. As long as this situation persists, the political support for the environment and biodiversity is likely to remain limited;
- Each province is required by NEMA to produce an EMP – this is the responsibility of the provincial environmental department. However, the other provincial departments should be involved in the process of preparing and implementing the EMP. It is understood that this support and participation is often not forthcoming, with the implication that departments are unlikely to implement the plans if they were not involved in the preparation. In addition, there are generally not structures to coordinate the environmental activities and impacts across the various departments at the provincial level;
- Local government is an important role player in management of the environment. DEAT has established a local government support programme described elsewhere in this document, while SANBI also supports local government through the Municipal Biodiversity Programme with DPLG that aims to ensure that biodiversity priorities are mainstreamed in integrated development planning, economic development, resource use and land use planning. However, many municipalities, especially the smaller ones, do not have environmental units, partly due to lack of financial resources and other priorities.

Key sectors identified in the NBF (DEAT 2008b) that contribute to pressures on biodiversity are cultivation, including the possible future cultivation of biofuels; plantation forestry; mining; commercial fishing; property development especially coastal development; energy production; construction and infrastructure development and livestock farming. There should be a focus on integrating biodiversity into the planning and operations in these sectors through appropriate engagement and developing mechanisms to integrate biodiversity issues into the management practices, with this already underway in certain sectors through the biome programmes. In addition, the banking and financial sector plays an important role in providing finance for developments and is also an important sector to engage and encourage to adopt biodiversity considerations in its investment and lending decisions. It is encouraging that the first Social Responsibility Index was launched on the Johannesburg Stock Exchange in 2004 (DEAT 2006b).

Table 7. Mainstreaming biodiversity: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Systemic capacity	<ul style="list-style-type: none"> ▪ EIPs and EMPs to be produced by national departments and provinces under NEMA ▪ MINTEC and MINMEC structures for sector coordination ▪ Working Group 1 for biodiversity coordination between DEAT, SANBI, SANParks and provinces ▪ National Biodiversity Planning Forum meetings held annually to share lessons relating to spatial biodiversity planning ▪ DEAT in process of developing IDP toolkits and environmental law handbooks for local government ▪ Threatened or Protected Species (TOPS) regulations effective during 2008
Institutional Capacity	<ul style="list-style-type: none"> ▪ DEAT has responsibility to fulfil coordination role for sector ▪ Local government support programmes by both DEAT and SANBI / DPLG (Municipal Biodiversity Programme) ▪ National Freshwater Biodiversity Collaboration in process of being established to coordinate freshwater cross-sector policy objectives ▪ Working for Water programme focussed on eradication of alien invasive species ▪ Provinces are issuing authorities for TOPS licences
Systemic capacity constraints	<ul style="list-style-type: none"> ▪ Committee for Environmental Co-ordination has collapsed and in process of being disbanded by NEMA Amendment Bill – need to establish new functional national coordination forum ▪ Mechanisms to facilitate integration of biodiversity into decisions and planning in all spheres of government ▪ Some national departments have not updated and submitted EIPs and EMP as required by NEMA, in spite of one year extension granted by Minister ▪ Working Group 1 for Biodiversity not functioning optimally - to be reviewed and corrective measures implemented to facilitate optimal functioning, including significantly enhancing DEAT capacity in the biodiversity and conservation area so that it can fulfil its leadership role. Consideration to be given to splitting the biodiversity and PA issues into separate forums to facilitate focus ▪ Unclear whether DWAF or DEAT mandated with conservation of freshwater biodiversity - clarify fresh water biodiversity conservation mandate and ensure effective functioning of National Freshwater Biodiversity Collaboration

Institutional capacity constraints	<ul style="list-style-type: none"> ▪ Various departments and spheres of government whose activities impact on the environment work in isolation ▪ Local government has limited resources at metro, district and local municipality to integrate management of biodiversity and natural resources in spatial planning, land use and development decisions ▪ Establish and ensure that Catchment Management Agencies are functioning effectively – this may require training and capacity building activities for CMA members
NBF Priority actions	<ul style="list-style-type: none"> ▪ Finalise the regulatory framework for the prevention, containment and eradication of invasive alien species (#4) ▪ Establish national programme to build capacity of municipalities to include biodiversity opportunities and constraints in their planning and operations (#12) ▪ Establish pilot projects to explore mechanisms for integrated natural resource management at district level (#13) ▪ Implement cross-sector policy objectives for conservation of inland water biodiversity (#22) ▪ Incorporate biodiversity conservation objectives in the work of Catchment Management Agencies (#23)

6.4 *In-situ conservation*

A National Protected Areas Expansion Strategy has been drafted and is in the process of being approved – this will guide the expansion of the protected area system towards South Africa meeting its targets for areas under formal protection. Financial resources for acquiring land will be a constraint and other mechanisms for increasing conserved areas such as stewardship and community conservation initiatives are receiving attention.

Table 8. In situ conservation: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Systemic capacity	<ul style="list-style-type: none"> ▪ NEMPA main legislative tool for PAs ▪ NEMPA allows for co-management of PAs by land owner or other suitable organisation – effectively increases scope of incorporating private and community land into PA formal network ▪ National Protected Areas Expansion Strategy drafted and in approval process ▪ Planning underway for 2010 update of NSBA
Institutional Capacity	<ul style="list-style-type: none"> ▪ SANParks and various provincial departments and conservation agencies mandated to manage protected areas ▪ DEAT maintains PA register ▪ MCM manages Marine Protected Areas ▪ SANBI manages national botanical gardens
Systemic capacity constraints	<ul style="list-style-type: none"> ▪ National guidelines on stewardship programmes required ▪ National Botanical Gardens Expansion Strategy required per NBF ▪ Measures for conservation of priority fresh water systems to be developed – currently under way with Fresh Water Ecosystem Project ▪ Planning and focus on incorporating private land into conservation network to enable targets (8% of land surface by 2010) through conservancies, mega-reserves / conservation corridors and biosphere reserves, for example, as funding for acquisition of land



	for PA by state limited
Institutional capacity constraints	<ul style="list-style-type: none"> ▪ Focus required on building capacity of both provincial conservation agencies and communities to effectively implement co-management agreements especially for restituted land where ownership of PA is transferred to claimant communities ▪ Financial and human resource limitations prevent effective management of current PA network – high staff turnover and vacancies ▪ Administrative and support systems not always fully functional to support conservation management ▪ Expansion of PA network by implementing National Protected Area Expansion Strategy needs to ensure allocation of adequate resources to prevent further strain on exiting systems and individuals ▪ Limited capacity to effectively manage MPAs ▪ Increase stewardship programmes by implementing in other provinces (currently Western Cape, KZN and Northern Cape have programmes)
NBF Priority actions	<ul style="list-style-type: none"> ▪ Finalise the twenty-year Protected Area Expansion Strategy, underpinned by the national biodiversity targets in the NSBA, refined for biomes, provinces and marine biozones (#29) ▪ Implement first phase of the National Protected Areas Expansion Strategy (#30) ▪ Establish and strengthen provincial stewardship programmes (#31) ▪ Strengthen programmes that support the informal conservation area system (#32)

6.5 Ex-situ conservation

The *ex-situ* conservation for flora is well progressed with SANBI playing a leading role through the network of botanical gardens as well as the Millennium Seedbank Project and the DNA Bank. Although there are some programmes underway for fauna, these tend to focus on threatened species (e.g. cheetah, blue crane), and a general observation is that the *ex-situ* conservation for fauna is not well advanced.

Table 9. Ex-situ conservation: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Systemic capacity	<ul style="list-style-type: none"> ▪ Permits required for collection and removal of indigenous flora and fauna from protected areas
Institutional Capacity	<ul style="list-style-type: none"> ▪ National Zoological Gardens in Pretoria conserves certain species of fauna native to South Africa ▪ Nine National Botanical Gardens, managed by SANBI, established for purpose of research, public awareness and <i>ex-situ</i> conservation of indigenous floral species ▪ SANBI in partnership with Kew Royal Botanical Gardens manages the Millennium Seedbank Project and has established a DNA Bank ▪ Approximately 70 herbaria in country ▪ Agricultural Research Council maintains <i>ex-situ</i> facilities for agriculturally important species ▪ Breeding programmes for certain threatened fauna species such as cheetah and blue crane



Systemic capacity constraints	<ul style="list-style-type: none"> ▪ Limited progress with ex-situ conservation of animal species
NBF Priority actions	<ul style="list-style-type: none"> ▪ Develop and implement a national botanical gardens expansion strategy (#33)

6.6 Sustainable use of components of biological diversity

The sustainable use of biodiversity is an area that appears in need of attention. Further research is required into establishing sustainable levels that can inform natural resource utilisation management plans that integrate the biodiversity and socio-economic aspects. The unsustainable use of resources, particularly marine resources, as well as the harvesting of plants for medicinal purposes, is one of the major threats to biodiversity in the country and the general view is that the human and financial capacity to enforce the regulations needs to be enhanced.

Table 10. Sustainable use: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Systemic capacity	<ul style="list-style-type: none"> ▪ Marine Living Resources Fund established to fund enforcement ▪ National Forests Act (NFA) provisions prohibit destruction of natural forests and protect listed trees
Institutional Capacity	<ul style="list-style-type: none"> ▪ MCM responsible for enforcing marine regulations ▪ DWAF regional forestry offices responsible for enforcement of NFA provisions
Systemic capacity constraints	<ul style="list-style-type: none"> ▪ Marine Living Resources Fund inadequate for enforcement of fishing regulations ▪ Recovery plans to be developed and implemented for key fish species ▪ Need to increase knowledge to understand the limits to sustainable levels of utilisation to inform management plans for natural resource use – to cover access and permits; harvesting methods; seasons; monitoring etc. Initial focus to be in priority species, particularly plants, as contained in TOPS regulations
Institutional capacity constraints	<ul style="list-style-type: none"> ▪ More effective policing of illegal fishing, especially line fish and abalone ▪ Strengthen capacity of MCM to implement and enforce recovery plans ▪ Improve provincial and local capacity to monitor and enforce fishing regulations ▪ Strengthen DWAF's enforcement capacity in the regions ▪ Establish authority to set standards for natural products that will facilitate trade in products – to deal with certification of products, labelling, packaging standards etc
NBF Priority actions	<ul style="list-style-type: none"> ▪ Address illegal and unregulated fishing and seafood trade, especially of line fish and abalone (#25) ▪ Improve knowledge of sustainable extractive use of terrestrial resources, especially medicinal plants (#28)

6.7 *Impact Assessment and minimising adverse impacts*

South Africa issued revised EIA regulations under NEMA that came into effect during 2007. DEAT acknowledges that there are problems in the execution and administration of EIAs and initiated a project to review the effectiveness and efficiency of the environmental impact assessment process in South Africa. At the time of writing, this review was still in process and the recommendations from this review need to be assessed in relation to the capacity requirements for environmental management.

Many development activities require licensing from DWAF and/or environmental authorisation under the EIA regulations, for which DEAT or more commonly, the provincial environmental department, is the responsible agency. A development application may be turned down by either department. It is important that communication between the provincial environmental department and DWAF's regional office is maintained throughout the process, and that the applicant is aware of progress and the implications of both processes.

There is currently a lack of coordination between DEAT, the provincial environmental departments and DWAF regarding these applications. Communication between DEAT and/or the relevant provincial environmental department and DWAF should take place early in the process to ensure that environmental and water issues are integrated in the decisions and formal structures could be put in place for such communication and cooperation.

Water policy also needs to be better integrated into land-use and development decisions at the local level. This may require building capacity to incorporate water resource considerations into IDPs and catchment management strategies.

Table 11. Impact assessment: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Systemic capacity	<ul style="list-style-type: none"> ▪ Revised EIA regulations came into effect during 2007 making it mandatory to obtain approval for listed processes ▪ Biodiversity to be integrated into local spatial, land use and development planning through bioregional plans and IDPs
Institutional Capacity	<ul style="list-style-type: none"> ▪ DEAT and provincial departments competent authority to issue environmental authorisations ▪ DWAF issues water licenses
Systemic capacity constraints	<ul style="list-style-type: none"> ▪ Develop and implement an Environmental Risk Assessment Framework for GMOs ▪ National Disaster and Risk Management Strategy to deal with activities that present a grave and imminent danger to biodiversity
Institutional capacity constraints	<ul style="list-style-type: none"> ▪ In spite of significant improvement in overall situation, some capacity constraints still seem to exist for dealing with environmental authorisation process ▪ Limited coordination between DEAT and provincial environmental departments (EIA) and DWAF (water license) on development applications ▪ Tools are being developed to incorporate biodiversity into local government planning, land-use and development decisions, but this will need to be accompanied by measures to raise awareness and provide the individual skills for processing the applications at local level



NBF Priority actions	<ul style="list-style-type: none"> ▪ Integrate biodiversity considerations in land-use planning and decision making by developing tools for supporting and streamlining environmental decision making. This includes biodiversity offsets (#3) ▪ Publish bioregional plans in terms of NEMBA (#17) ▪ Develop and implement effective measures for management and control of activities relating to Genetically Modified Organisms in order to manage their impact on their environment (#24)
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6.8 Monitoring

SANBI is mandated to monitor and report on the state's of South Africa's biodiversity, threatened or protected species and ecosystems. One of the NBF Priority Actions is to establish and implement a national monitoring and reporting framework for biodiversity, and SANBI is in the process of developing this framework.

Table 12. Monitoring: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Systemic capacity	<ul style="list-style-type: none"> ▪ State of Biodiversity Indicators developed ▪ National Biodiversity Monitoring and Reporting Framework being developed by SANBI ▪ River Health Programme established
Institutional Capacity	<ul style="list-style-type: none"> ▪ SANBI mandated to monitor and report to Minister on state of South Africa's biodiversity; threatened or protected species and ecosystems and alien invasive species ▪ SANParks and other agencies have monitoring programmes, mainly for threatened mammal species ▪ NGOs such as Endangered Wildlife Trust, BirdLife South Africa and Botanical Society, and university units such as Avian Demography Unit involved in monitoring programmes for threatened species
Systemic capacity constraints	<ul style="list-style-type: none"> ▪ Indicators for monitoring not fully developed - finalise species and ecosystem indicators ▪ Need national system for monitoring PA management effectiveness ▪ Long term monitoring of impact of GMOs released into the environment ▪ Ongoing monitoring of status of marine species
Institutional capacity constraints	<ul style="list-style-type: none"> ▪ Provincial conservation authorities undertaking limited monitoring - mechanisms to create structures at provincial level to monitor indicators ▪ Research and monitoring programmes generally not coordinated – SANBI to play this role
NBF Priority actions	<ul style="list-style-type: none"> ▪ Establish and implement a national monitoring and reporting framework for biodiversity (#11)

6.9 Research

SANBI is mandated to coordinate and promote research on biodiversity. One of the NBF Priority Actions is to establish and implement a national biodiversity research strategy. Various institutions are involved in research – these include universities, museums, national departments and research institutions such as the Water Research Commission, Agricultural Research Council, South African Institute of Aquatic Biodiversity, South African Environmental Observation Network (SAEON) and South African Network for Coastal and Oceanic Research (SANCOR).

The role of museums was not specifically addressed during the study, but concerns were expressed by various stakeholders that a lack of funding and the focus of museums as cultural rather than scientific bodies was leading to a loss of staff and this was a risk to biodiversity research, especially the collections that the museums house.

While South Africa has a well-regarded scientific community who publish and present research internationally, gaps might be the lack of multi-disciplinary research, especially integrating the social sciences into biodiversity research as well as incorporating local indigenous knowledge into research.

Of the different forest types, the information regarding the location and status of woodlands is reported to be lacking. Woodlands form a transition area between forests and grasslands, and have not been afforded as much attention as the more distinct forest types, but are an important resource, especially in relation to poverty alleviation as they are a source of medicinal plants, fuelwood, wild fruits and wooden utensils (DWAF 2007b). Woodlands are under threat, but efforts at management are hampered by lack of information.

Table 13. Research: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Systemic capacity	<ul style="list-style-type: none"> ▪ Department of Science and Technology (DST) developed a National Research and Development Strategy in 2002 that included bioscience and bio-research as one of five key focus areas ▪ National Research Foundation provides funding to support research ▪ DST has developed a national policy on indigenous knowledge ▪ Inter-governmental committee on Indigenous Knowledge Systems includes DST, DEAT, Department of Agriculture, Department of Trade and Industry and Department of Health
Institutional Capacity	<ul style="list-style-type: none"> ▪ SANBI mandated to <ul style="list-style-type: none"> ○ coordinate and promote the taxonomy of biodiversity ○ undertake and promote research on indigenous biodiversity and sustainable use ▪ SANParks has active research programme with 423 projects registered ▪ Various institutions involved in research – universities, museums, national departments and research institutions ▪ Centres of excellence created under national strategy – Centre for Invasion Biology (Stellenbosch) and Centre of Excellence in Birds (UCT)



Systemic capacity constraints	<ul style="list-style-type: none"> ▪ Research in biodiversity not coordinated ▪ Multi-disciplinary research including the social sciences and biodiversity lacking ▪ Gaps exist in state of knowledge and data for animal species. SANBI is aware of this and will be putting in place measures to address the shortcomings ▪ Training programmes and capacity building of emerging scientists in fields of taxonomy and biosystematics needed ▪ Seem to be gaps in incorporating local indigenous knowledge into biodiversity management ▪ A partnership approach to research could be considered to co-ordinate the research efforts and allocate priority research to relevant experts ▪ Research budgets have been reduced, especially in conservation agencies
Institutional capacity constraints	<ul style="list-style-type: none"> ▪ Forest research to inform conservation planning and climate change impacts is lacking ▪ Museums have important zoological collections. They fall under the Department of Arts & Culture and are increasingly seen as cultural rather than scientific institutions, and suffer from lack of funding and staff shortages. Interventions are needed to avert a crisis with the potential to lose valuable data housed in museums ▪ Explore potential to create more centres of excellence in Higher institutions in key areas of research
NBF Priority actions	<ul style="list-style-type: none"> ▪ Fill key biodiversity information gaps (#8) ▪ Establish and implement a national biodiversity research strategy (#10)

6.10 Technical, Scientific Co-operation and Information Sharing

While a number of departments and institutions, including SANBI and SANParks, are involved in international collaboration on sharing information, South Africa does not have a national clearing house mechanism as required by the CBD.

Table 14. Information sharing: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Institutional Capacity	<ul style="list-style-type: none"> ▪ South Africa's government, agencies such as SANBI and SANParks and research institutions publish and distribute literature on biodiversity through various channels including journals, international symposia and websites. ▪ Several international collaborations for cooperation, research and information sharing by institutions such as DEAT, SANBI, MCM and SANParks
Systemic capacity constraints	<ul style="list-style-type: none"> ▪ National Clearing House Mechanism for CBD no longer operational and needs to be re-established
Institutional capacity constraints	<ul style="list-style-type: none"> ▪ Decision on focal point for National Clearing House Mechanism – DEAT or SANBI

6.11 Public Education and Awareness

An awareness of the importance of biodiversity and the need for its conservation should be created amongst government and business leaders as this will encourage biodiversity matters to be integrated into business' plans and strategies. *Indalo Yethu* is a project that originated at the World Summit on Sustainable Development (Johannesburg 2002). It is an independent trust of DEAT, and functions as an endorsement brand promoting greening and eco-friendly practices. WWF-SA has a programme that aims to achieve this and the Wilderness Leadership School offers experiential education by offering wilderness trails to, *inter alia*, corporate clients.

The benefits of functioning ecosystems, including the contribution to human health and welfare and the economic benefits from, *inter alia*, the tourism sector, needs to be re-enforced in the minds of politicians, business leaders and society in general. It is encouraging that SANBI in its new structure has a "Biodiversity Mainstreaming and Planning" directorate which has the objective to "internalise the goals of biodiversity conservation and the sustainable use of biological resources into economic sectors and development models, policies and programmes, and in so doing, integrate it into human behaviour" (SANBI 2008, page 39). SANBI is in the process of establishing various data bases and aims to develop as a one-stop shop for biodiversity information with electronic data bases that are made available on its website.

Table 15. Public awareness: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Systemic capacity	<ul style="list-style-type: none"> ▪ Spatial information available to land use decision makers and planners on SANBI website (Biodiversity GIS) ▪ Land Use Decision Support (LUDS) tool developed to support land use decisions by performing automated biodiversity assessment for selected sites ▪ SANBI Integrated Biodiversity Information System (SIBIS) Project which aims to centralise biodiversity information databases and provide web interface to make info available to public ▪ Indalo Yethu established to design and implement environmental awareness campaign
Institutional Capacity	<ul style="list-style-type: none"> ▪ SANBI mandated to collect, generate, process, coordinate and disseminate information about biodiversity and sustainable use, including maintaining databases ▪ DEAT has directorate for Sector Education and Training ▪ SANBI has Biodiversity Education & Empowerment directorate ▪ Southern African Wildlife College provides training for conservation managers ▪ Various education and outreach programmes by inter alia SANBI (garden based Biodiversity Education and Empowerment, Outreach Greening and Greening the Nation) and SANParks (Kids in Parks) ▪ NGOs involved in biodiversity education and training including Wildlife and Environment Society of South Africa (WESSA) and Wilderness Leadership School
Systemic capacity constraints	<ul style="list-style-type: none"> ▪ Many stakeholders are involved in Environmental Education from government departments, education institutions and NGOs. However, the impression is that efforts are not co-ordinated and there is no overarching framework to set standards, content for curricula etc.



Institutional capacity constraints	<ul style="list-style-type: none"> ▪ Education programmes to focus on raising awareness and building the capacity of teachers to maximise the impact of the programmes ▪ The holistic approach suggested for education and building capacity in the biodiversity sector follows later in the document with the Human Capital Development Strategy for the sector a key document
NBF Priority actions	<ul style="list-style-type: none"> ▪ Improve biodiversity information management and access (#9)

6.12 Access to Genetic Resources and Benefit Sharing

South Africa has recently issued regulations on Bio-prospecting, access and benefit sharing. This came into effect in February 2008 and provides for Material Transfer and Benefit Sharing Agreements. The NBF recognises the shortcomings in this area and has a number of Priority Actions to deal with them.

Table 16. Genetic resource benefit sharing: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Systemic capacity	<ul style="list-style-type: none"> ▪ Regulations on Bio-prospecting, access and benefit sharing came into effect in 2008. This provides for Material Transfer and Benefit Sharing Agreements ▪ Department of Agriculture focal point for International Treaty on Plant Genetic Resources for Food and Agriculture
Institutional Capacity	<ul style="list-style-type: none"> ▪ DEAT and provinces designated as issuing authorities for permits under regulations
Institutional capacity constraints	<ul style="list-style-type: none"> ▪ Uncertain if provinces have adequate human resources to act as issuing authority for permits under ABS regulations ▪ General need for building capacity in all government departments to implement the ABS regulations
NBF Priority actions	<ul style="list-style-type: none"> ▪ Finalise regulatory environment for bioprospecting, access and benefit sharing (#6) ▪ Develop an implementation strategy for bio-prospecting, access and benefit sharing regulations (#26) ▪ Develop the natural products sector (#27)

6.13 Financial Resources to Support CBD Obligations

A common response is that there is not enough money available for biodiversity management in South Africa. A recent costing exercise for the draft NBF suggests that R7.6 billion will be required over the next 5 years to implement the Priority Actions of the NBF and that an additional R3.4 billion is required, being the shortfall between the total requirement and the amounts budgeted by the implementing institutions (EnAct 2008). Some concerns are as follows:

- What are the sources of funding and what is the future trend likely to be for each of these?
- If more funding is made available to the biodiversity sector, does it have the capacity to spend the money, especially the public sector? In this context “capacity to spend” encompasses both the skills and abilities of the



individuals in the institutions, which incorporates technical, project management, financial and HR management skills, and the administrative support systems and processes such as decision making, procurement, payment processing, monitoring and reporting.

- With funding always likely to be a scarce resource, what mechanisms are in place to ensure that the available funding is effectively spent. This point encompasses ensuring that money is directed to priority areas, as well as mechanisms to measure the impact of the expenditure.

With this background, the section describes the sources of funding for biodiversity management.

Government

Government is the major financial contributor to biodiversity management. To accurately estimate the contribution to the sector will require a thorough analysis. In line with the constitutional requirements, funding is allocated at a national level to DEAT as well as to other national departments involved in biodiversity management such as DWAF. This is done through the Medium Term Expenditure Framework (MTEF) mechanism. In addition, the provincial departments and conservation agencies are allocated funding through their respective provincial legislatures. Apart from this various levels at which funding is provided, the multiple uses of the funds makes it difficult to measure how much is actually used for biodiversity management. For example, DEAT also has a tourism mandate, amongst others, and a substantial portion of the funding it receives from government is used for tourism-related and other non-biodiversity activities. The conservation agencies, such as SANParks, also have tourism and hospitality management functions, but at the same time earn revenue from tourism that is retained to finance the conservation and tourism operations; for example in the 2006/07 financial year SANParks' total revenue was R927 million, of which R595 million was generated from tourism-related activities (SANParks 2007).

According to its 2008 annual report (DEAT 2008c) DEAT received a government grant of R2,790 million, an increase of 35% from 2007. In turn, it transferred amounts to its statutory bodies as follows:

Table 17. Amounts received and transferred by DEAT (DEAT 2008c)

	2006/07 financial year (R000)	2007/08 financial year (R000)
Grant received by DEAT	2 061 804	2 790 521
Transferred by DEAT to:	6.13.1	6.13.2
SANParks	137 740	191 456
SANBI	94 972	110 696
iSimangaliso	16 627	18 169

The direct funding commitment of government to the environmental and biodiversity sectors is unlikely to increase dramatically in the foreseeable future owing to the socio-economic priorities. To motivate for an increase in funding, the sector needs to be able to demonstrate that biodiversity contributes to government's socio economic goals.

The additional responsibilities of biodiversity management institutions, particularly the Biodiversity and Conservation Branch (B&C) Branch of DEAT and at provincial and

local level, has not been matched by an increase in funding to fulfil these functions, resulting in

- “Unfunded” mandates;
- Limited financial and human capacity to implement the requirements; and
- Possibly in an attempt to fulfil all the functions, many of the functions are done but none of them are done properly i.e. lack of focus and prioritisation stretches the already limited resources further.

Donor funds

The second important source of funding for biodiversity management is donor funds. These funds are accessed in numerous ways as follows:

1. Funding is made available to South Africa through Official Development Assistance (ODA) on a state-to-state basis through bi-lateral agreements with the funds flowing through National Treasury. The sectoral priorities of the sponsoring country are funded through ODA and few countries prioritise biodiversity.
2. Over and above the ODA, international donors, including development finance institutions, aid agencies and foundations, enter into arrangements outside of the government systems to provide funding to institutions such as SANBI or to NGOs. This funding is generally project specific with an agreement entered into between the donor and the local institution to regulate the basis on which the funding is provided which will include project deliverables / outcomes, time frames, reporting and other requirements.
3. Multilateral arrangements. GEF is the main source of this funding for the biodiversity sector and its role in the financing mechanism for the CBD has been described above.

GEF funds are allocated to developing countries under the Resource Allocation Framework (RAF), which allocates funds to recipient countries based on each country's potential to generate global environmental benefits and its capacity, policies and practices to successfully implement GEF projects. Funding is provided on a four year replenishment cycle with the current cycle ending in 2010. South Africa's allocation under this cycle is \$22.4 million, of which \$1.9 million is unutilised (GEF 2008). The National Grasslands Biodiversity Programme (\$8.3 million) and development, empowerment and conservation in the Greater St. Lucia Wetland Park (\$9 million) are the main projects funded by the current RAF allocation.

An important element of the GEF funding is that the country is required to co-finance all projects as a pre-condition for the funding. Since inception, GEF has financed 13 biodiversity projects in South Africa to the tune of \$51.85 million with the co-financing provided by South Africa \$238.2 million, or 4.6 times what GEF has provided (GEF 2008).

GEF has provided substantial support to biodiversity in South Africa, especially in the biome and ecosystem programmes such as C.A.P.E, SKEP and more recently with the Grassland programme.

4. Local corporate or individual donors, including bequests, contribute mainly to NGOs. A separate exercise will need to be undertaken to determine the

amount of funding available to NGOs for biodiversity but it is likely to be substantially less than government funding. For example, WWF-SA is probably the largest NGO in South Africa and it has about R80 million available annually – this amount covers all its programmes and not only biodiversity.

Some of the considerations related to donor funding are:

- The biome programmes such as C.A.P.E and SKEP have not been reviewed, but indications are that these programmes have achieved a number of successes. An observation is that external funding plays an important role in allowing implementing agents to fulfil their biodiversity management mandate, *inter alia* through these biome and other programmes such as Working for Water. However, where this funding is for long-term programmes that contribute to the core mandates (alien invasive clearing and stewardship programmes might be relevant examples), the external funding is generally only a short to medium term measure. For the programmes to be sustainable and effective in the long term, the agency needs to plan adequately at the outset to take over both the human resources and allocate sufficient ongoing operating budget to continue the programmes. Local agencies need to be able to absorb the programmes once the donor funding comes to an end.

For example, CapeNature will need to take over a number of activities from the C.A.P.E programme such as its stewardship initiatives. CapeNature has undertaken an exercise that shows that when the C.A.P.E funding terminates on 30 June 2009, it will need to employ an additional 17 personnel with an annual additional cost implication of R5.8 million in the 2009/10 financial year, increasing to R6.4 million the following year. This puts added pressure on the agency that is already facing financial challenges as it estimates a shortfall in funding in 2009/10 of R78 million, rising to R104 million the following year, if it is to effectively perform all the functions required to meet its mandate.

- The processes and requirements for donor funding can be onerous. This ranges from the detailed requirements for project proposals to the often time-consuming and bureaucratic decision-making procedures of the donors and the subsequent reporting requirements once the projects are underway. Many local institutions do not have the capacity or skills to comply with the requirements, potentially putting the funding at risk.

The trend from donors is that amounts available for the environment and biodiversity seem to be decreasing. Biodiversity is not a priority focus area under the bi-lateral ODA arrangements. In addition, donors are changing the way they support countries, with grants used less than before as they move towards providing technical assistance (such as is happening with the German agencies, DED and GTZ) and a shift towards concessional loans favoured by the World Bank.

Table 18. Financing: systemic and institutional capacity and capacity constraints, and relevant NBF Priority Actions.

Systemic capacity	<ul style="list-style-type: none"> ▪ All departments and agencies receive government grants through legislated processes ▪ International donor funding received, including from GEF through CBD finance mechanism ▪ Local private and corporate donors, mainly to the NGO sector ▪ Conservation agencies retain internally generated revenue
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Institutional Capacity	<ul style="list-style-type: none"> ▪ DEAT in its International Co-operation and Resources Branch has a directorate responsible for co-ordinating international donor funding ▪ NGOs actively raise funding from donors ▪ Programme units for biome and ecosystem programmes
Systemic capacity constraints	<ul style="list-style-type: none"> ▪ Co-ordination of donor funding to ensure that available funds are channelled to priority areas. However, care needs to be taken not to “over bureaucratise” the process that could delay or lose the funding
Institutional capacity constraints	<ul style="list-style-type: none"> ▪ Budget allocation to biodiversity is made at different spheres of government through legislated processes, rather than centrally. This decentralised model may impact on the financial resources available at provincial and local levels to implement priority national biodiversity actions
NBF Priority actions	<ul style="list-style-type: none"> ▪ MINTEC requested costing exercise be undertaken for implementation of NBF. This process was still in progress at the time of this report and the outcomes are not known.

6.14 Incentive measures

Market mechanisms have been introduced to encourage biodiversity friendly methods of production, with the aim of reducing the loss of natural habitat, over-abstraction of water resources and over-harvesting of marine resources. The mechanisms involve labelling and certification schemes to accredit the production methods, and this provides an opportunity to charge premium prices. Most of these programmes have been initiated by Non Governmental Organisations (NGOs) such as World Wide Fund for Nature South Africa (WWF-SA) or through the biome programmes such as C.A.P.E. Participation is generally voluntary. Initiatives are under way in the following sectors:

- wine (Biodiversity and Wine Initiative, or BWI);
- fishing (Southern African Sustainable Seafood Initiative or SASSI which classifies fish species as green, orange or red according to population status; and By-Catch Reduction Programme);
- honey (badger friendly labelling);
- indigenous cut flowers;
- sugar;
- rooibos tea;
- potato;
- red meat;
- citrus;
- tourism (Fair Trade in Tourism);
- forestry (Forestry Stewardship Council standards);
- mining (Mining and Biodiversity Forum);
- agriculture; and
- retail.

These initiatives are at different stages of development. The success thereof has not been assessed during this study, but it is encouraging that there such initiatives are in place across a broad range of sectors and it is clear that gains have been made. It is likely that only a proportion of the participants in these sectors are involved in the initiatives and the challenge will be to firstly increase the number of participating

sectors and secondly to have wide spread acceptance and compliance of the participants in the sectors. The role of the consumer is also important as they can bring pressure to bear on the sector participants. Ultimately there has to be financial benefit to the participants for the initiatives to be sustainable and this suggests a premium price that the consumer will have to bear.

Fiscal measures have also been introduced in an attempt to reduce the loss of remnant patches of important natural habitat on private farm lands through tax relief, but the success of this is still to be evaluated.

Nevertheless, South Africa has a long way to go in terms of implementation of the broad range of economic incentive measures available for the achievement of biodiversity conservation goals, such as tradeable use rights and payments for ecosystem services. There is a general lack of understanding of these measures and the way in which they work under different circumstances. This is linked to the lack of resource economics capacity in South Africa.

Table 19. Incentive measures: systemic and institutional capacity, NBF Priority Actions and remaining capacity constraints that need to be addressed.

Systemic capacity	<ul style="list-style-type: none"> ▪ Draft Environmental Fiscal Reform framework released ▪ Incentive measures for biodiversity conservation included in 2008 budget ▪ Various initiatives, driven by NGOs and biome programme project coordination units, to mainstream biodiversity in the private sector through certification programmes
Institutional Capacity	<ul style="list-style-type: none"> ▪ Several important NGOs recognise the potential for incentive measures and are building capacity in this area
Systemic capacity constraints	<ul style="list-style-type: none"> ▪ General lack of investigation or implementation of the broad suite of potential incentive measures for biodiversity and lack of capacity to implement such mechanisms
Institutional capacity constraints	<ul style="list-style-type: none"> ▪ The sustainability of certain of the current sector initiatives is in question where the programmes are funded through donor funds and managed by biome project co-ordination units that have a limited life
NBF Priority actions	<ul style="list-style-type: none"> ▪ Make the case for valuing biodiversity as a cornerstone of sustainable development (#1) ▪ Integrate biodiversity considerations into fiscal policy through environmental fiscal reform (#2) ▪ Work with key production sectors to minimise loss and degradation of natural habitat in threatened ecosystems and critical biodiversity areas (#20)

7 SUMMARY AND RECOMMENDATIONS

7.1 Capacity Assessment Summary

The key findings of the NCSA study for the biodiversity sector have been highlighted above.

	Weak capacity – urgent response suggested
	Some capacity created, but needs enhancing
	Good capacity

Table 21 is an attempt to synthesise the findings in tabular form for each of the levels of capacity (systemic, institutional and individual) for each of the CBD commitments. A colour coding system is used as reflected in Table 20. In addition, the main points are noted in the box.

Table 20. Key for Capacity Assessment

	Weak capacity – urgent response suggested
	Some capacity created, but needs enhancing
	Good capacity

Table 21. Capacity Assessment Summary

CBD obligation	Capacity assessment		
	Systematic	Institutional	Individual
8			
International Co-operation	South Africa has ratified and is party to numerous MEAs and regional initiatives	Units to focus on international cooperation	Limited understanding outside DEAT's International Co-operation & Resources (ICR) branch
Develop national strategies, plans or programmes	Well developed enabling framework; NBF identifies priorities for next 5 years, but implementation limited by weak intergovernmental relations; Many strategies, plans still under development.	Biome programmes need sustainable financing strategies;	Scarce human resources; Limited multi-disciplined personnel;
Integration of biodiversity issues into sectoral and cross sectoral plans	Within sector coordination structures not efficient Not enough co-ordination between institutions in development decisions Biodiversity not mainstreamed in other sectors	Institutions tend to work in isolation; Not enough coordination between branches of some institutions Loss of institutional memory;	Growing responsibilities -CBD not being priority; Lack of capacity at local government for integrating biodiversity into development decisions

CBD obligation	Capacity assessment		
	Systematic	Institutional	Individual
8			
In-situ conservation	Good policy & legislation; Stewardship programmes	Fragmented and decentralised structure for conservation sector could be reviewed	Vacant posts with high staff turnover and inability to attract and retain suitably qualified individuals
Ex-situ conservation	Millennium Seedbank Project and DNA Bank created Zoos?	SANBI has well developed ex situ conservation for flora with national botanical gardens network Fauna not well developed	Develop capacity for ex-situ conservation of fauna
Sustainable use	Lack of effective measures to combat over harvesting of natural resources.	Develop projects that will decrease pressure on natural resources	Enforcement capacity urgently to be strengthened including MCM and DWAF
Minimising adverse impacts	EIA regulations in place, but weak and under review; Bioregional plans to integrate biodiversity aspects into local planning	Weak integration of EIA with other licensing and authorisation processes	Lack of capacity in local government regarding qualifications and experience and with high staff turnover
Monitoring	Methods being developed; National Biodiversity Monitoring and Reporting Framework in development	Information and data gaps in some areas; Limited emphasis on monitoring by provincial agencies	Insufficient capacity for monitoring at provincial level
Research	National research strategy is NBF priority, Funding for research inadequate;	Strong research institutions; Not enough research focused on priorities; Information gaps; Limited funding and focus of museums away from research	Concerns re ageing scientists and brain drain Limited capacity in social sciences and resource economics;
Technical, scientific co-operation and information sharing	No clearing house mechanism; SANBI developing centralised and integrated biodiversity information systems	Research institutions and SANParks / SANBI participate in international fora and publish research	Concerns re ageing scientists and brain drain
Public Education and Awareness	SANBI in process of developing tools for this.	Many institutions have good communication tools – websites etc	Low level of awareness among politicians, senior government officials, business leaders, educators and society in general

CBD obligation	Capacity assessment		
	Systematic	Institutional	Individual
8			
Access to genetic resources, biotechnology and distribution of its benefits	ABS regulations in place Environmental Risk Assessment Framework for GMOs being developed	Uncertainty on impacts of GMOs on ecosystems	Need to build capacity to implement, enforce and monitor ABS regulations
Financial resources to support obligations	Funding from government and donors being directed to higher priority socio economic needs	Institutions generally under funded and not able to fully and efficiently meet mandates or perform all functions	Increase capacity of administrative and support systems to facilitate efficient spending of funding available to sector
Incentive measures	Fiscal measures drafted and in budget proposals; Other mechanisms still to be investigated and established	Mainly driven by NGOs and biome coordination units at this stage	Lack of resource economics capacity

It is unrealistic to expect South Africa to address all these shortcomings simultaneously. Far more important that it recognises the gaps and ensures that appropriate processes are put in place, within the available financial and human constraints, to address these shortcomings within a realistic time frame. Priorities also need to be agreed to deal with the major shortcomings, which include the coordination of biodiversity management, developing human capital for managing the sector and mainstreaming biodiversity in government, the private sector and society at large.

There are a number of initiatives and studies in progress that will contribute towards both identifying the capacity gaps and putting measures in place to address them. These initiatives, which are summarised below, will add to the understanding of the capacity needs and measures to address them. These include the NBF, the development of a Human Capital Development Strategy and the fourth national report to the CBD.

The NBF, which is expected to be approved during 2008, will guide the biodiversity sector over the next five years. Many of the priority actions in the NBF are directed at addressing capacity shortcomings. Successful implementation of the NBF, which in large part will depend on rigorous monitoring on the path to achieving the 2013 targets, will go a long way to closing these gaps.

A process has been initiated to develop a Human Capital Development Strategy for the sector. This strategy will be available by the end of March 2009 and should provide a road map of how the sector can address the capacity gaps at the individual level in the medium to long term.

The fourth national report to the CBD is due in March 2009. This report will assess the progress that South Africa has made in meeting its CBD commitments, including the 2010 targets. While its purpose is not to address capacity to implement the CBD, an assessment of the progress, particularly identifying those areas where South Africa is not meeting its commitments, will provide a guide to the priority areas where capacity building interventions are required.

8.1 Recommendations

The following recommendations have been distilled from the foregoing. It would also be advisable to pay heed to lessons learned in other countries in overcoming capacity constraints.

8.1.1 Systemic capacity

1 **Review the overall structure of the biodiversity sector.**

- 1.1 A review of the overall structure of the biodiversity sector could be considered, although any process will need to give due consideration to the Constitution and the concurrent and exclusive areas of competency contained therein.
- 1.2 There may be merit in considering a centralised biodiversity management model in preference to the current fragmented and decentralised structure to facilitate better coordination between the implementing institutions, an alignment of national and provincial priorities and a pooling of resources to provide the critical mass required for more effective biodiversity management and implementation of the CBD commitments;

2 **Clarify and formalise the roles and responsibilities of overlapping institutions (e.g. through memoranda of agreement)**

- 2.1 DEAT and SANBI for certain functions where there is the potential for overlap;
- 2.2 MCM and SANParks relating to management of MPAs;
- 2.3 DEAT, DWAF and DoA for the mandate, responsibilities and roles regarding management of terrestrial biodiversity;
- 2.4 DEAT (including MCM) and DWAF for the mandate, responsibilities and roles regarding management and conservation of freshwater and estuarine systems;

3 **Strengthen co-operative governance** between DWAF, DEAT, DoA, conservation agencies, provincial environment departments and local government.

- 3.1 Coordinate communication, processes and decision-making for development applications that require EIA and water licenses. Formal procedures for coordination should be established,
- 3.2 Cooperation and coordination should be extended to local government to integrate biodiversity and water resource considerations into land-use and development decisions and this may require assistance and capacity building of local government,
- 3.3 Training and awareness-raising of the CBD and DWAF's responsibilities and role in its implementation at all levels of DWAF staff, including managers and regional staff. Biodiversity management and CBD-related matters need to be institutionalised by including them as a key performance area in managers' performance agreements and allocating budget to the activities,
- 3.4 Formalise and improve relations between DWAF and other government departments, including the Department of Minerals & Energy and local government, to ensure that forestry biodiversity considerations are incorporated in development decisions such as mining authorisations and the IDP process;



- 3.5 The NGO sector should be considered in sector coordination initiatives.
- 4 ***Strengthen development planning and decision mechanisms.***
- 4.1 Mechanisms need to be introduced in the municipal spatial development planning process that ensure that they are compatible with regional conservation planning objectives as well as with stakeholder needs.
- 4.2 SEA and in particular, EIA, processes need to be reviewed and updated in such a way that they have greater weight in development decision-making and are better able to support regional biodiversity conservation goals.
- 5 ***Strengthen conservation extension services.***
- 5.1 Post settlement support is needed for the land reform process to integrate biodiversity considerations into land-use planning and decisions by the successful claimants. Mechanisms such as community conservation areas can increase the conservation footprint, with support from government in the form of technical assistance through extension services, training programmes to build capacity of the communities, supply of game to stock the area etc.
- 6 ***Strengthen the partnership approach.***
- 6.1 Develop and implement a sector strategy for a partnership approach to optimise the knowledge, experience and contributions of the private sector, NGOs and experienced individuals to assist DEAT, DWAF, provincial and local institutions in appropriate aspects of biodiversity management.
- 7 ***Establishment of a National Biodiversity Forum***
- 7.1 Establish a forum involving all stakeholders within the sector as well as bodies outside of the sector (e.g. other government departments, business), for the discussion of CBD-related issues and presentation of results of action plans such as NBSAP and NBF and assessments such as the NCSA can be presented.
- 8 ***Research and monitoring***
- 8.1 Devise a strategy to fill information gaps that will assist in fine-scale conservation planning, such as for woodlands
- 8.2 Ensure monitoring and evaluation of actions included in the NBSAP.
- 9 ***Review financing strategies.*** The debate about financial capacity and the funding requirements for the biodiversity sector can be better informed now that the costing for the NBF has been completed as the assumed deficit between the required funding for biodiversity management and the current availability can be quantified and mechanisms can be developed to bridge the divide. However, the general view is that the challenges and responsibilities for environmental and biodiversity management are increasing at a faster rate than available funding. In this light, the financial resources for the sector need to be assessed and an appropriate response and strategy developed. A number of matters that should be considered are discussed below.
- 9.1 Government expenditure will continue to be directed towards those sectors that alleviate poverty and meet its social agenda – government rightfully expects a social return on its investment. Currently the priorities exclude biodiversity. A challenge that the sector should

embrace is to come up with innovative programmes that cause a major paradigm shift in the way that government views the environment and biodiversity. This will need to demonstrate to government that biodiversity is a tool for achieving its social objectives such as job creation, human development and poverty alleviation. This has happened to an extent with DEAT's SRP projects, but the perception is still that biodiversity is an impediment to development rather than a potential source of socio-economic benefits. If government is to be convinced to increase its commitment to funding biodiversity, the sector will have to demonstrate that increased funding will have both direct socio-economic and biodiversity benefits.

- 9.2 The biodiversity sector will need to be strategic in the way that it accesses donor funding. As with government, donors may need to be convinced of the socio-economic benefits of biodiversity. In addition, most donors have expressed the view that given South Africa's middle-income status, ODA funding will diminish after 2010 (DEAT 2008e). An integrated approach for project funding proposals will also be of benefit, for example, funding is more readily available for climate change and biodiversity aspects can be incorporated into such projects. Each donor's strategy will need to be understood in view of the changing trends in their requirements with customised funding proposals that address the specific donor's objectives. However, care must be taken to ensure that funding fits into an institution's strategy, rather than allowing the available funds to dictate the strategy i.e. the ownership of the project must vest with the ultimate beneficiary and not the donor. In addition, at project inception plans need to be in place to absorb the human resources and provide the ongoing financial commitment once the donor funding terminates. In this way, donor funds should be seen as catalysts in priority areas rather than as a core and ongoing funding source.
- 9.3 The corporate sector remains an important potential source of funding. The financial incentives and mechanisms that were the subject of the Treasury (2006) discussion document should be explored further. In line with the earlier discussion on mainstreaming biodiversity, programmes and mechanisms should be developed so that businesses contribute to biodiversity as part of their core operating budgets rather than through Corporate Social Investment as is the current tendency; the biodiversity sector needs to address this with business and find ways to secure funding for programmes from business that contribute to both the business objectives and biodiversity. Mechanisms such as biodiversity off-sets can be further explored. So too should creative ways of using public private partnerships as a tool for mobilising funds from the private sector especially in areas where government is lacking capacity, such as research.
- 9.4 The potential for Payment for Ecosystem Services (PES) is already receiving attention with studies and pilot schemes, particularly around water catchments and carbon trading, in progress. These studies should be supported and expanded with the aim of making PES a reality.
- 9.5 Any financing strategy must consider the capacity of the sector to effectively spend the additional funding – any increase in funding needs to run in parallel with enhanced human capacity in areas such as project, financial and human resource management, and strengthened back office and support systems.

8.1.2 Institutional capacity

- 10 ***Review internal structure wrt CBD and clarify allocation of new/changed responsibilities in DEAT.***
- 10.1 Further review DEAT's B&C Branch to assess whether it is sufficiently structured and capacitated to effectively fulfil its leading role in the biodiversity sector, and ensure alignment of its many and increasing roles and responsibilities to its structure, staffing and budget allocation. This is necessary as the high level assessment in this study found that interventions are needed to strengthen B&C so that it can fulfil its leadership role in the biodiversity sector. In particular its cross sectoral and provincial co-ordination role should receive priority to give renewed life and vigour to the successor to the CEC and Working Group 1 (see below);
- 10.2 The appointed focal person within DEAT for the CBD should be a senior official with a good understanding of the CBD and the function being performed so that the liaison with the CBD secretariat is effective and requests for assistance can be delegated to the correct directorate within DEAT.
- 11 ***Improve the functioning of Working Group 1***
- 11.1 DEAT should critically review the functioning of Working Group 1 and dedicate adequate resources so that this body can fulfil its mandate and make the significant contribution to biodiversity management that it is capable of doing, by guiding the provinces and ensuring a consistent approach to addressing priority biodiversity issues across the country. Part of the assessment should be to consider a dedicated budget for this committee to subsidise the costs incurred by the provinces of attending the meetings, as well as for DEAT to procure external support for the functioning of the committee should this be desirable. Consideration could also be given to dealing with biodiversity and protected area matters in separate forums to streamline and focus the functioning of the structure.
- 12 ***Review internal structure of DWAF wrt implementation of integrated water resource management.***
- 12.1 Review the structure of DWAF in terms of its efficiency in implementation of water policy and supporting the requirements of the CBD, with particular attention to achievement of integrated water resource management
- 12.2 Appointment of a focal point for the CBD within DWAF at a senior decision-making level to champion biodiversity. Adequate resources and budget should be allocated to ensure that biodiversity and CBD matters are integrated into cross-cutting areas with appropriate accountability and reporting.
- 13 ***Introduce strategies to increase pool of scientists***
- 13.1 It is important that a wide range of institutions, including DEAT and DWAF is involved in the Human Capital Development Strategy process to ensure that its requirements are included in the strategy

14 Address lack of enforcement capacity throughout the sector**15 Raise appreciation of CBD and related MEAs among staff of DEAT, DWAF, SANBI, SANParks and provinces**

- 15.1 Staff involved in MEAs to receive training on international political, negotiation and diplomacy processes to facilitate better understanding of MEAs, including the CBD.
- 15.2 Create a broad-based understanding of the processes and requirements regarding MEAs and in so doing, instil a culture that integrates MEA requirements, especially the CBD, into planning and implementation processes;
- 15.3 Understand institutional responsibilities and role in the implementation of CBD-related matters

8.1.3 Individual capacity

Based on the inputs from respondents as summarised above, it is clear that the human capacity of South Africa to effectively meet its CBD commitments faces challenges. An appropriate long term strategy needs to be developed and implemented and the Human Capital Development process mentioned above is welcomed. The strategy should be holistic, integrated and coordinated across the sector. There are a multitude of different stakeholders with different interests that need to be involved and support the process, the strategy and its implementation. These stakeholders range from education and training institutions at all three levels (General, Further and Higher education and training); research institutions; training service providers; the Departments of Labour, Education, Science & Technology, the Sector Education and Training Authorities (SETA); NGOs, labour unions and national and provincial organs of state involved in environmental management. It is also important that the national imperative of transformation be an integral part of any human capital development strategies.

An idealistic aim for the sector might be to co-ordinate efforts at all levels so that the current under-supply of suitable candidates can be turned into an over-supply in the future, where biodiversity management institutions are spoilt for choice in filling vacant positions.

Factors to consider in addressing human development are summarised below.

1. During the **educational stages** (General Education & Training or GET, Further Education & Training or FET and Higher Education & Training or HET), the sector needs to be proactively involved at all levels to make the appropriate impacts for proving suitably qualified job seekers for the environmental sector. Specifically this could include:
 - o Build capacity of educators with regard to teaching environmental subjects and providing course material for biology-related subjects;
 - o Include environmental education in the social sciences;
 - o Influence the selection of subjects by learners including raising awareness of career opportunities in sector;
 - o Develop measures to increase the number of school leavers that enter the environmental sector;

- Sit on advisory boards of HET institutions to influence courses and curriculum offered to learners. For example, it is understood that very few universities offer botany as a major subject these days and this could have a significantly negative impact on the sector in the longer term. Similarly, the integration of social science studies into environmental courses needs attention;
- Establish partnerships with HET institutions for internships where practical experience is a course requirement, and developing and monitoring suitable internship programmes;
- Explore alternative routes to higher education for learners and school leavers who cannot afford further study by, for example, developing part time courses or learnerships that allow individuals to earn while they are studying;
- Provide financial assistance and bursary schemes especially at the Masters and PhD levels to develop research capacity.

2. At the **institutions**

- Create a culture of learning within all institutions involved with biodiversity management;
- Institutionalise the transfer of knowledge to counteract the loss of institutional memory caused by turnover of staff by, for example,
 - Implement mentoring and coaching programmes for the new generation of biodiversity managers, possibly by using experienced individuals who have left the sector (as discussed above);
 - Consider management development programmes for promising young graduates that gives them exposure to various units within an institution, with such programmes possibly even being across institutions to provide wider exposure – for example, time could be spent both in government at DEAT, SANBI and SANParks, and outside of government with NGOs as part of a structured development programme;
 - Develop and implement induction courses that provide an appropriate introduction to environmental and biodiversity management, including the CBD, rather than focussing only on institutional matters such as human resource policies;
- The mandate and functions of each institution need to be understood to identify the skills required to perform these functions. Such an alignment is stating the obvious, but is often overlooked. This can be achieved by aligning a performance management system for the institution and officials such that the annual institutional performance targets relate directly to that institution's mandate and strategy. In turn, these targets are cascaded to become the individual performance targets for management in the various units and then to lower levels of management and staff through annual performance contracts to ensure that there is accountability for the achieving the targets. Such an approach also facilitates monitoring and reporting of the targets;
- Holistic systems from recruitment strategy to ongoing training and development with a focus on professional development programmes; career-pathing and succession planning; performance management



systems linked to performance incentives; wellness programmes and mechanisms to retain staff should be implemented;

- Develop monitoring and evaluation mechanisms to measure the effectiveness of training conducted and the return on investment; and
- Build capacity in the administrative and support units, including creating an appreciation of biodiversity and the environment in support staff. For example, some head office conservation agency staff have never even visited a reserve and this could be included in the induction course.
- Explore measures to entrench environmental awareness in other government departments.

3. At the **sector level**:

- Adopt a partnership approach with stakeholders to facilitate coordination and cooperation through appropriate agreements such as memoranda of understanding, and sector forums;
- Investigate the development of a sector career portal that provides full information to aspiring entrants to the sector; job opportunities as well as a tracking mechanism that can be used as a monitoring tool;
- Enter into partnerships with HET institutions to expand the existing Centres of Excellence into other important biodiversity areas;
- Create learning networks between institutions and training service providers in the sector, to ensure that training courses offered are relevant and of the requisite quality;
- Engage with SETA structures to ensure that appropriate skills development programmes are developed and implemented for the environmental sector;
- Focus on communities and the role they play in environmental management, particularly with the land transformation process and co-management models that are being developed for protected areas and community conservation areas, so that the capacity of communities to participate meaningfully in the process and to contribute to the management of biodiversity and the environment is enhanced.

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10 ANNEXURE 1 - QUESTIONNAIRE

NCSA – SOUTH AFRICA CAPACITY ASSESSMENT CONVENTION FOR BIOLOGICAL DIVERSITY

1. Mandate and responsibility

- 1.1 What is the mandate of the institution / unit?
- 1.2 What are the key policies and legislation that the institution / unit is responsible for implementing?
- 1.3 Are there appropriate delegations of authority in place?
- 1.4 What programmes, procedures, regulations, have been put in place to meet the mandate, policy and legislative responsibilities?
- 1.5 Are the responsibilities under the Convention for Biological Diversity included in the strategy and annual implementation plans?
- 1.6 How is the institution structured to meet its mandate and responsibilities?
- 1.7 Are there major gaps or shortfalls in the policy, legislative and regulatory framework?
- 1.8 Are there any overlaps, conflicts within the mandate, legislation or internal structure that prevent it performing its functions? If so, what are the reasons for this?
- 1.9 Highlight any successes and challenges in meeting the mandate / performing functions.

2. Capacity

2.1 Finance

- 2.1.1 Where is finance obtained?
- 2.1.2 Percentage contribution from each source?
- 2.1.3 Are the sources of funding considered appropriate?
- 2.1.4 How is funding secured and what are the conditions for expenditure (time frames, reporting etc)?
- 2.1.5 Is the funding sufficient to perform functions? If not, provide estimate of how much is finance is needed?
- 2.1.6 Are any mandated functions not performed due to lack of financial resources?

2.2 Personnel

- 2.2.1 How many posts are there in the approved structure?
- 2.2.2 Are all the approved posts filled (provide % filled and vacant)? If not, why? How often is the staff below full compliment? How long does it take to fill a post?
- 2.2.3 Are all posts funded in terms of budget allocation?
- 2.2.4 Are there properly documented job descriptions for all posts that align to the mandate and responsibilities?
- 2.2.5 Is it possible to find suitably skilled and qualified staff to fill vacant posts?
- 2.2.6 Has the size of the institution / unit increased or decreased over the last 5 years? Why?
- 2.2.7 What is the turnover of staff on an annual basis? If high, what is the reason for this?
- 2.2.8 To what extent are core functions outsourced to consultants?



- 2.2.9 Are staff sufficiently trained to meet the job descriptions?
- 2.2.9.1 Is there a Skills Place Work Plan?
- 2.2.9.2 Are training programmes offered / provided?
- 2.2.9.3 Is there an induction course for new employees? Are responsibilities under the Convention on Biological Diversity included?
- 2.2.9.4 Are there user manuals / tool kits for staff to assist in performing functions?
- 2.2.9.5 Is there a management development plan to equip staff to fill management roles?
- 2.2.9.6 Identify areas where capacity building is required.

3. Relationships and Co-ordination

3.1 Cross sectoral / Inter-Institutional

- 3.1.1 What structures / processes have been put in place to ensure co-operative governance with other government departments/institutions to facilitate mandates being met?
- 3.1.1.1 To what extent are established structures such as Committee for Environmental Co-ordination; MINTEC and MINMEC participated in?
- 3.1.1.2 Are there other structures where formal interaction takes place with other organs of state and spheres of government, including provincial and local government?
- 3.1.1.3 Are there any memorandums of understanding with organs of state and spheres of government?
- 3.1.1.3.1 If so, in which areas?
- 3.1.1.3.2 If not, would an MOU be a useful tool to facilitate dialogue?
- 3.1.1.4 In what way does the institution/ unit interact with the upper and lower levels of responsibility? (Reporting, information sharing, decision making)
- 3.1.1.5 Are the relationships above considered effective?
- 3.1.1.5.1 If not why? Are there any overlaps, conflicts etc?
- 3.1.1.5.2 What structures / mechanisms could improve relationships?
- 3.1.2 What is the relationship with
- 3.1.2.1 research organisations?
- 3.1.2.2 educational organisations?
- 3.1.2.3 Are there formal structures, mechanisms or processes in place to support each other? Are these effective – if not, how could they be improved?

3.2 Public participation

- 3.2.1 What structures and mechanisms are in place with regard to society (communities, civil society, private sector and the general public) to
- Ensure public participation
 - Provide access to information
 - Create awareness/educate on environmental matters, specifically those related to the Convention on Biological Diversity
- 3.2.2 In what way does the institution / unit utilise the expertise, technology, and information from society / NGOs to meet the mandate and perform functions?



11 ANNEXURE 2 – STAKEHOLDER CONSULTATION

Table 22. List of Stakeholders Interviewed

Institution	Unit	Person interviewed	Position
DEAT	Biodiversity & Conservation Directorate	Wilma Lutsch Kiruben Naicker	Director: Biodiversity Conservation Deputy Director: Biodiversity Planning
DEAT	Biosafety & GMO Directorate	Wadzi Mandivenyi	Director: Biosafety & GMO
DEAT	Planning and Coordination Directorate	Keleabetswe Tlouane	Director: Planning and Coordination
DEAT	MCM Branch	Herman Oosthuizen	Deputy Director: Ecosystem Utilisation and Conservation
DEAT	Social Responsibility, Policy & Projects Chief Directorate	Aubrey Moloto Nomfundo Mbatyazwa Langanani Dombo	Director: Project Implementation Deputy Director: Local Govt Support Deputy Director: Local Govt Support
DEAT	International Marine and Biodiversity Cooperation Chief Directorate	Maria Mbengashe	Chief Directorate: International Marine and Biodiversity Cooperation
DEAT	International Governance & Relations Chief Directorate	Zaheer Fakir Merlyn van Voore	Chief Director: International Governance & Relations Senior Policy Advisor: Int Relations
SANBI	Biodiversity Mainstreaming	Kristal Maze	Chief Director
SANBI	Biosystematics and Collections	Maureen Wolfson	Director
SANBI	Biodiversity Education & Empowerment	Donavan Fullard	Acting Director
SANBI	Biodiversity Policy	Mandy Driver	
SANBI	Training & Development	Rene du Toit	
SANBI	Capacity Development: C.A.P.E	Glenda Raven	
SANParks	Conservation Services	Peter Novellie	Co-ordinator: Conservation Services
DWAF	Woodlands Natural Forests	Izak van der Merwe Hlobisile Sithole	Assistant Director Assistant Director
DWAF	Resource Directed Measures	Harrison Pienaar	Chief Director:
Cape Nature	Scientific Services / HR / Finance / Conservation	Kas Hamman Linden Madlala Rowena Vaughn Fanie Bekker	
NGO sector	WWF	Morne du Plessis	CEO
UCT	Zoology	Prof. Jenny Day	Professor
NMMU	Botany	Prof. Richard Cowling	Professor

Table 23. List of Stakeholders to whom questionnaires were sent via email.

Institution	Unit	Person emailed	Response received
Western Cape Province Department of Environmental Affairs and Development	Environmental Affairs	Anthony Barnes	None
CapeNature	CEO	Lucille Meyer	Questionnaire completed and interviews held with executive management team
Eastern Cape Department Economic Affairs, Environment & Tourism	Environment	Albert Mfenyana	None
Eastern Cape Parks Board	CEO	Nokulunga Maswana	Questionnaire completed
KwaZulu-Natal Department Agriculture and Environmental Affairs	Environmental Affairs	Omar Parak	Questionnaire completed
Ezemvelo KZN Wildlife	Acting CEO	Bheki Khoza	None
Mpumalanga Tourism & Parks Board	Acting CEO	Abe Sibiya	Questionnaire not completed, but annual report sent
Free State Department of Tourism, Environment and Economic Affairs	Environmental Management	Buti Mathebula	None
Northern Cape Department of Tourism, Environment & Conservation	Deputy Director General	Mrs. Mokhali	None
Gauteng Department of Agriculture, Conservation & Environment	Head of Department	Dr. Steven Cornelius	None
North West Department of Conservation & Environment	Conservation	Mr. Moremi	None
Limpopo Tourism & Parks Board	CEO	Benny Boshielo	None
BirdLife SA	CEO Policy and Advocacy	Mark Anderson / Carolyn Ah Shene	Response received and discussion held
Endangered Wildlife Trust	CEO / Conservation	Yolan Friedman / Christine Mentzel	Response received and discussion held
WESSA	CEO / Environmental Education	Mumsie Gumede / Jim Taylor	Response received
NMMU	Centre for African Ecology	Prof. Graham Kerley	None
UKZN	Centre for Environment Agriculture and Development	Mark Dent	None
CSIR	Natural Resources and the Environment	Jeanne Nel	None

In most cases where responses were not forthcoming, follow up was done via email and telephone calls.

12 ANNEXURE 3. SWOT ANALYSIS

The Strength Weakness Opportunity Threat (SWOT) analysis aims to consolidate and interpret the findings from the review of the commitments to the CBD. The SWOT analysis assists in identifying gaps in capacity by looking at strengths and weaknesses in existing structures, policies and approaches to the CBD.

The SWOT analysis was undertaken as a desktop exercise by critically reviewing and analysing the results of the literature review and interviews. The following key areas of responsibility are separately analysed:

- Legislation, institutional and cross sector arrangements (Table 24)
- Biodiversity management (Table 25)
- Research, information and monitoring (Table 26)
- Training and education (Table 27)
- Financial mechanisms and incentives (Table 28)
- Individual capacity (Table 29)

Table 24. SWOT Legislation, institutional and cross sector arrangements

Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ Well developed policy, legislative and regulatory framework ▪ Policy and legislation aligned to the CBD commitments ▪ DEAT lead department for environmental management in the country and focal point for CBD implementation ▪ Creation of SANBI with mandate closely aligned to CBD commitments ▪ Local government support programmes by DEAT and SANBI / DPLG ▪ DEAT IDP toolkits and environmental legislation handbooks for local government 	<ul style="list-style-type: none"> ▪ Lack of consultation and consideration of biodiversity in issuing prospecting and mining licenses ▪ Collapse of Committee for Environmental Co-ordination (CEC) meaning there is no coordination structure with other national departments ▪ Non compliance of national departments and provinces with developing EIPs and EMPs ▪ Non compliance of national departments and provinces with reporting on EIPs and EMPs ▪ Working Group 1 not functioning optimally ▪ Certain regulations, such as alien invasive species, not yet approved ▪ Provincial environmental departments generally lack legal power to ensure cooperation of other provincial departments on environmental planning and management ▪ Lack of integration of biodiversity and water into development decisions through EIA process at provincial level and at local level

Opportunities	Threats
<ul style="list-style-type: none"> ▪ Minister to establish efficient cross departmental structure to replace CEC in terms of new legislation ▪ Revitalise Working Group 1 on Biodiversity to play a leading role in biodiversity management ▪ Capitalise on the channel to district municipalities created by the DEAT local government support programme ▪ Bioregional Plans to be tool for local government in land use planning and development decisions 	<ul style="list-style-type: none"> ▪ Responsibilities under new legislation not matched by increase in financial or human capacity in the implementing institutions ▪ Inadequate monitoring of compliance with policy and legislation ▪ Relationships between stakeholders in the sector are based on individual relationships and are not institutionalised ▪ Lack of clarity on roles and responsibilities in certain areas, <ul style="list-style-type: none"> ○ between DEAT and SANBI; ○ Marine and Coastal Management (MCM) and SANParks for Marine Protected Areas (MPAs) and provinces where the on reserve and off reserve mandates are not with the same department or agency ▪ Decentralised biodiversity management structure with responsibilities spread between various departments and spheres of government

Table 25. SWOT Biodiversity Management

Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ NSBA and provincial conservation plans identify key areas for protection ▪ Expansion of land under protection through biome programmes ▪ National Protected Areas Expansion Strategy drafted ▪ Stewardship programme in place in certain provinces ▪ Biosphere reserves established ▪ Annual National Biodiversity Planning Forum to share lessons and address key matters 	<ul style="list-style-type: none"> ▪ Alien Invasive Species Regulations not yet issued ▪ Lack of strong administrative and back office support systems impacts on ability of conservation agencies to function effectively ▪ MPAs not representative of coastal and marine biodiversity
Opportunities	Threats
<ul style="list-style-type: none"> ▪ Extend stewardship programmes to other provinces ▪ Incorporate community conservation areas created as part of land reform process into conservation network ▪ Partner with NGOs on project implementation 	<ul style="list-style-type: none"> ▪ Limited financial resources to acquire land to expand Protected Area network ▪ Framework for protecting aquatic systems not finalised ▪ Illegal and unregulated fishing ▪ Unsustainable over-harvesting of terrestrial natural resources ▪ MCM capacity to manage Marine Protected Areas

Table 26. SWOT Research, Information and Monitoring

Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ SANBI to fulfil lead role in coordinating research ▪ Wide range of institutions involved in biodiversity research ▪ Well regarded scientific community who publish and participate in international forums ▪ Flora well researched with good data bases ▪ Public participation processes for developing policy, legislation and regulations 	<ul style="list-style-type: none"> ▪ No Clearing House Mechanism ▪ Research budgets have been reduced in conservation agencies ▪ Experienced research staff have left institutions ▪ Museums fall under Department of Arts & Culture and are not functioning optimally due to financial limitations and staff shortages ▪ Museums seen as cultural not scientific bodies ▪ Research fragmented and not addressing priority needs ▪ Limited research in social sciences within biodiversity sector ▪ Knowledge gaps in animals ▪ Forest research to inform conservation planning and climate change impacts is lacking
Opportunities	Threats
<ul style="list-style-type: none"> ▪ Develop online electronic database for biodiversity information including spatial and species (e.g. taxonomic, biological, distribution, conservation status) information - similar to Australian Biological Resources Study. SANBI is moving in this direction with the Integrated Biodiversity Information System and SA Biodiversity Information Facility ▪ Address research shortcomings through national biodiversity research strategy ▪ Partnerships between SANBI and research institutions – create shared learning networks ▪ Extend biodiversity awareness amongst corporate and business leaders through structured programmes 	<ul style="list-style-type: none"> ▪ Limited pool of scientists, especially black scientists, to replace ageing pool of current scientists ▪ Loss of collections, data and information from museums ▪ Limited funding available for research ▪ Research funding systems do not encourage multi-disciplinary research

Table 27. SWOT Training and Education

Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ Most institutions spend substantial amounts on training ▪ A number of government and NGO led environmental education and outreach programmes ▪ SANBI published resources for teachers and learners (grades 10 to 12) on the CBD 	<ul style="list-style-type: none"> ▪ Sector Training and Education Authority (SETA) not functioning optimally ▪ Training reactive and not responding to institution or individual requirements ▪ Generally weak external training providers for sector ▪ No systems to monitor impact and effectiveness of training
Opportunities	Threats
<ul style="list-style-type: none"> ▪ Human Capital Development Strategy for the sector to provide framework for long term planning to address current shortfalls ▪ Engage with process of reforming SETA structure to incorporate natural resource management requirements ▪ Co-ordinate internship programmes including cross-sectoral programmes ▪ Capacitate teachers on biodiversity education ▪ Partnerships with Higher Education and Training Institutions to provide input on courses to develop key skills for sector ▪ Explore alternative routes to higher education for individuals with limited financial resources 	<ul style="list-style-type: none"> ▪ Lack of co-operation and coordination between stakeholders in education and training sector ▪ Curriculum at all levels of education not sufficiently geared to environmental sector requirements, especially producing multi-disciplinary graduates

Table 28. SWOT Financial Mechanisms and Incentives

Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ Draft framework for using market instruments for environmental fiscal reform developed ▪ Incentives for conservation and biodiversity management included in 2008 tax proposals ▪ Initiatives under way in various industries and sectors to integrate and recognise biodiversity best practice methods 	<ul style="list-style-type: none"> ▪ Biodiversity funding is not a priority for government ▪ Reliance on donor funds for core programmes ▪ Participation in industry sector initiatives is voluntary and not supported by legislation
Opportunities	Threats
<ul style="list-style-type: none"> ▪ Costing exercise for NBF to be used as motivation for increased government allocation to sector ▪ Develop range of market based instruments to encourage co-operation and reward biodiversity best practice ▪ Develop Payment for Ecosystem Services (PES) as a functioning mechanism ▪ Extend number of sectors 	<ul style="list-style-type: none"> ▪ Government reduces funding for sector ▪ Donor funds reducing ▪ Costs of compliance for biodiversity business initiatives exceeds benefits derived by producers ▪ Consumers do not recognise benefits of biodiversity friendly products and are not prepared to pay premium ▪ Resistance by key sectors or key participants in sectors to join



<p>participating in biodiversity business initiatives – green labelling etc</p> <ul style="list-style-type: none"> ▪ Increase number of participants in biodiversity business initiatives ▪ Consumer awareness programmes to support sector initiatives 	<p>biodiversity business initiatives</p> <ul style="list-style-type: none"> ▪ Inability of institutions to effectively spend amounts if additional funding is made available due to limited human capacity
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Table 29. SWOT Individual Capacity

Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ Committed and passionate individuals employed in sector ▪ Good technical skills 	<ul style="list-style-type: none"> ▪ Loss of institutional memory with loss of experienced staff from formal employment in the sector ▪ Limited pool of historically disadvantaged individuals to fill positions in line with transformation agenda ▪ Limited pool of multi-disciplinary individuals that sector requires ▪ Lack of “soft skills” amongst managers
Opportunities	Threats
<ul style="list-style-type: none"> ▪ Human Capital Development Strategy process for sector can set path to holistic development of human capacity in medium to long term ▪ Develop set of Best Practice Guidelines for sector to cover relevant areas such as internships; training; partnerships with NGOs / individuals etc. ▪ Engage retired staff to mentor current staff 	<ul style="list-style-type: none"> ▪ Inability to fill vacancies ▪ High staff turnover ▪ Skilled personnel leaving the country