South Africa's Third National Report to the Convention on Biological Diversity

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environment & tourism

Department:
Environmental Affairs and Tourism
REPUBLIC OF SOUTH AFRICA

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Information on the preparation of the report

Box I.

Please provide information on the preparation of this report, including information on stakeholders involved and material used as a basis for the report.

This Third National Report was prepared during the period July – December 2005, by the South African National Biodiversity Institute (SANBI), in close association with the Department of Environmental Affairs and Tourism (DEAT).

South Africa prepared a National Biodiversity Strategy and Action Plan (NBSAP) during the period May 2003 – May 2005. During this process, various stocktaking assessments were carried out with extensive stakeholder participation, including the National Spatial Biodiversity Assessment (NSBA), which provided a key source of information for the Third National Report. Relevant information contained in the Second National Report was updated and amended as necessary. Additional sources of information include Red Data lists, research reports, strategic plans and annual reports of various government departments and other organs of state. Additional information was supplied by various Directorates of a number of government departments and agencies, particularly the Department of Environmental Affairs and Tourism, Department of Water Affairs and Forestry, Department of Agriculture, Working for Water and Working for Wetlands. Contributions were made by a number of bioregional programmes (e.g. Cape Action for People and the Environment, and the Succulent Karoo Ecosystem Programme) and NGOs, (e.g. Botanical Society of South Africa and Endangered Wildlife Trust). Sources of information can also be found on various institutional websites such as www.deat.gov.za; www.sanbi.org; www.agis.agric and www.dwaf.gov.za.

The second National State of the Environment Report (NSoER) was being compiled by the Department of Environmental Affairs and Tourism at the time of compiling this report, but had not been released at the time of writing. The NSoER will provide useful data for future reports, in particular a national set of indicators.

A stakeholder workshop was convened in August 2005 specifically to discuss targets, indicators and monitoring and to ensure close alignment with targets and indicators identified during the National Biodiversity Strategy and Action Plan process and other agreements and action plans, such as the Johannesburg Plan of Implementation. Completion of this Third National Report therefore provided an opportunity to strengthen targets, identify appropriate indicators, clarify roles and responsibilities for monitoring, and align biodiversity-related targets and indicators with socio-economic targets and indicators.

A range of stakeholders were invited to contribute content on sections of the report relevant to them. The response was varied, and this is reflected to some extent in the level of detail provided in different sections of the report.

Some boxes and questions have not been completed where the question relates specifically to the Programmes of Work as developed by the CBD COPs. This is because South Africa has not centralised the development, implementation and monitoring of such programmes. Rather, in line with the Constitutional principle of co-operative governance, various government departments, with the appropriate mandate, have integrated biodiversity considerations in their policies and programmes. Further, the NBSAP, completed in May 2005, now provides a strong, coherent framework for programmes and activities related to conservation and sustainable use of biodiversity. South Africa's National Environmental Management: Biodiversity Act (10 of 2004) (hereafter referred to as the Biodiversity Act) provides for a National Biodiversity Framework, currently being developed by DEAT. The National Biodiversity Framework will draw directly on the NBSAP, and will provide a statutory framework for co-ordination and reporting on biodiversity-related programmes and activities and their impacts.

ACRONYMS

DEAT	Department of Environmental Affairs and Tourism
DWAF	Department of Water Affairs and Forestry
NBSAP	National Biodiversity Strategy and Action Plan
NEPAD	New Partnership for Africa's Development
NGO	non-governmental organisation
NSBA	National Spatial Biodiversity Assessment
NSoER	National State of Environment Report
SADC	Southern African Development Community
SANBI	South African National Biodiversity Institute

(All other acronyms are given in full in the text in each box in which they occur.)

B. PRIORITY SETTING, TARGETS AND OBSTACLES

Box II.

Please provide an overview of the status and trends of various components of biological diversity in your country based on the information and data available.

The maps and some of the information in this section come from the National Spatial Biodiversity Assessment 2004, reports for which are available at www.sanbi.org .

The Republic of South Africa is the southernmost country on the African continent stretching from latitude 22°S to 35°S, and from longitude 17°E to 33°E and covering an area of 1 219 090 km^2.

Status of biodiversity at the biome / ecosystem level

The major natural systems of the country have been classified in terms of the biome concept, based on dominant plant life forms, correlated with climatic variations. Biomes found in South Africa are desert, fynbos, succulent karoo, Nama karoo, grassland, savanna, Albany thicket, forest and wetland vegetation (see Figure 1).

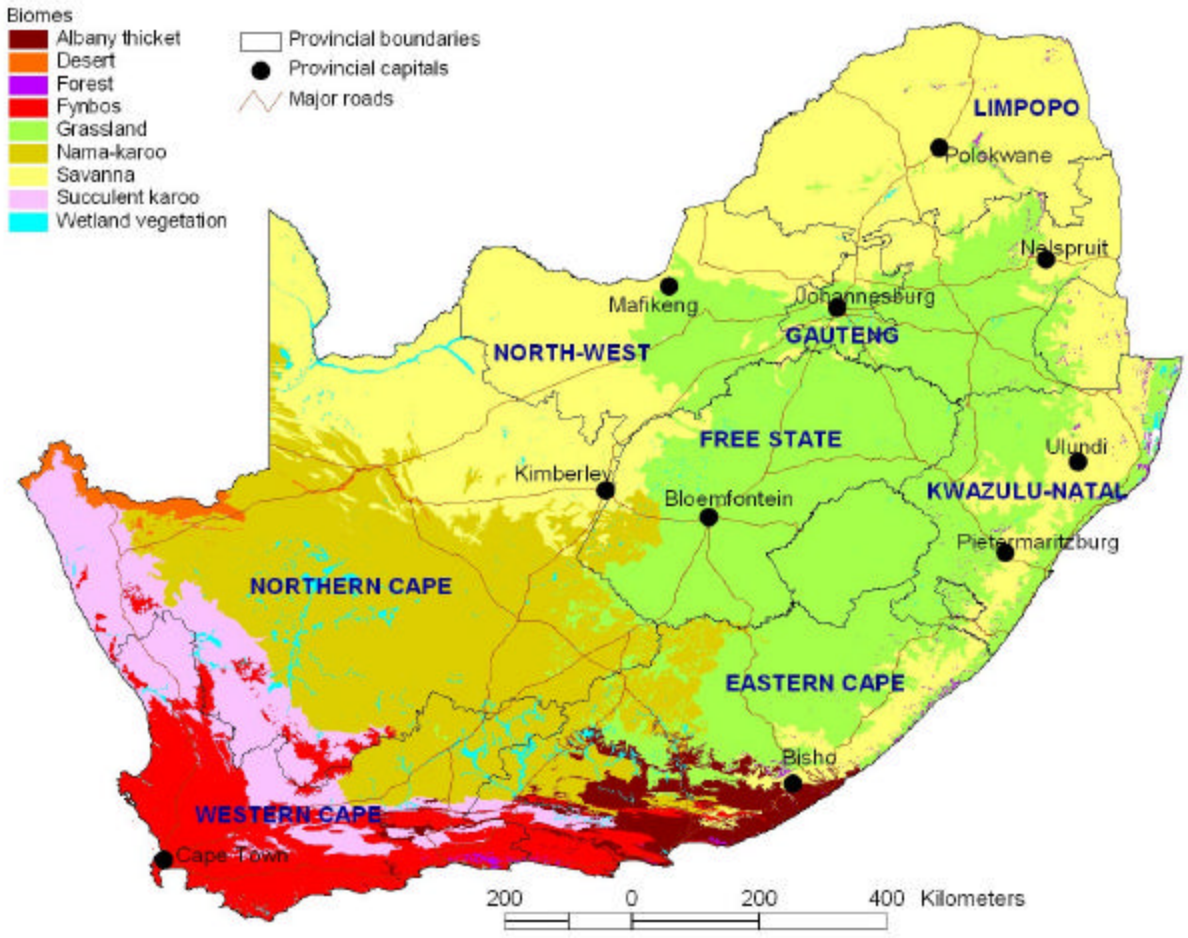

Figure 1. Biomes in South Africa, Lesotho and Swaziland, derived from SANBI's vegetation map of South Africa, Lesotho and Swaziland

Three internationally recognized biodiversity hotspots (areas with especially high concentrations of biodiversity, which are under serious threat) are found in South Africa: the Cape Floral Kingdom (equivalent to the fynbos biome), Succulent Karoo (shared with Namibia) and the Maputaland-

Pondoland-Albany centre of endemism (Maputaland-Pondoland is shared with Mozambique and Swaziland). The succulent karoo biome is one of only two arid biodiversity hotspots in the world, the other being the Horn of Africa.

These biomes are very broad units. The diversity of vegetation types found in South Africa is illustrated in Figure 2, which shows the 441 vegetation types found in South Africa, Lesotho and Swaziland. Of these 440 occur in South Africa. The vegetation map was developed by the South African National Biodiversity Institute (SANBI).

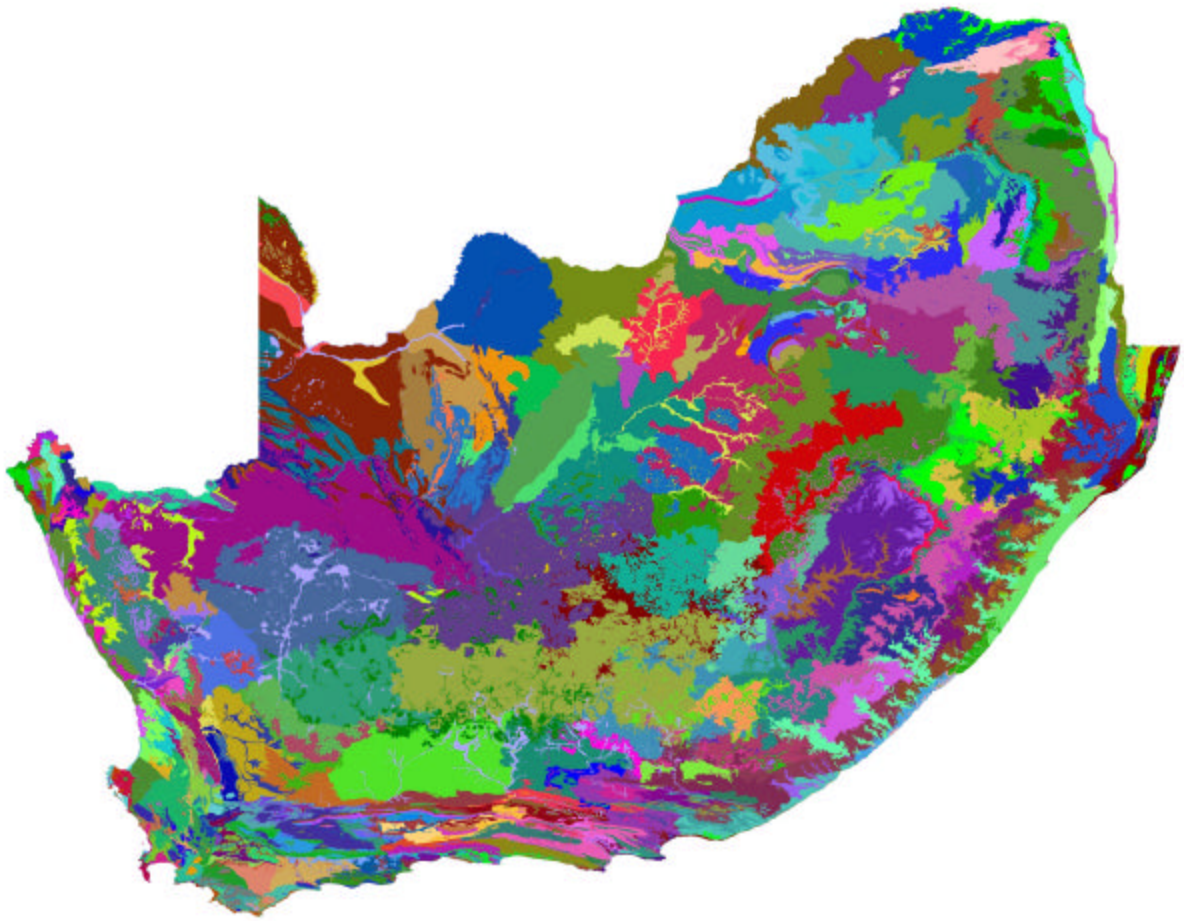

Figure 2. Vegetation map of South Africa, Lesotho and Swaziland, Beta version 4.0.

Assessments of biodiversity in South Africa have mainly focused at the species level in the past. South Africa's first comprehensive national assessment of the status of biodiversity at the ecosystem level was carried out during 2004 in a partnership between DEAT and SANBI, as part of the NBSAP process. The NSBA used systematic biodiversity planning techniques to determine the status of ecosystems and to identify national priority areas for conservation action and more detailed planning. The NSBA integrated terrestrial, inland water, estuarine and marine ecosystems, using available spatial data, conservation planning software and a series of expert and stakeholder workshops. The NSBA assessed the status of ecosystems and the adequacy of the current protected area network, and identified broad priority areas for conservation action. This assessment was carried out at a national (1:250 000) scale, and provides a national context for biodiversity plans at the sub-national and local scale, some of which have already been carried out, while others are under consideration.

The determination of ecosystem status was based on how much of an ecosystem's original area remains intact, relative to a number of thresholds which were determined on the basis of best available scientific data and understanding. For terrestrial ecosystems, the threshold at which an ecosystem is considered Critically Endangered is reached when between 16% to 36% (depending on the ecosystem) of the natural habitat remains. The more species-rich an ecosystem, the higher the threshold. An exception is for indigenous forest ecosystems, for which the threshold ranges from 30% to 100%. Ecosystems

considered to be Endangered are those with a proportion of natural habitat remaining of between the critically endangered threshold and 60% of habitat remaining, while those with between 60% to 80% habitat remaining are considered to be Vulnerable. The threshold at which an ecosystem is considered to be Critically Endangered represents the biodiversity target: i.e. the proportion of each ecosystem that should be included within formal protected areas.

The National Spatial Biodiversity Assessment showed that 34% of South Africa's 440 terrestrial ecosystems are threatened. Of these, 5% are Critically Endangered (mainly in the fynbos and forest biomes), 13% are Endangered (mainly in the grassland and savanna biomes) and 16% are Vulnerable (mainly in the fynbos and grassland biomes) (see Figure 3). It is important to note that these figures are conservative, as reliable, complete and up-to-date data on loss and degradation of natural habitat was not available, and data used dates from 1996.

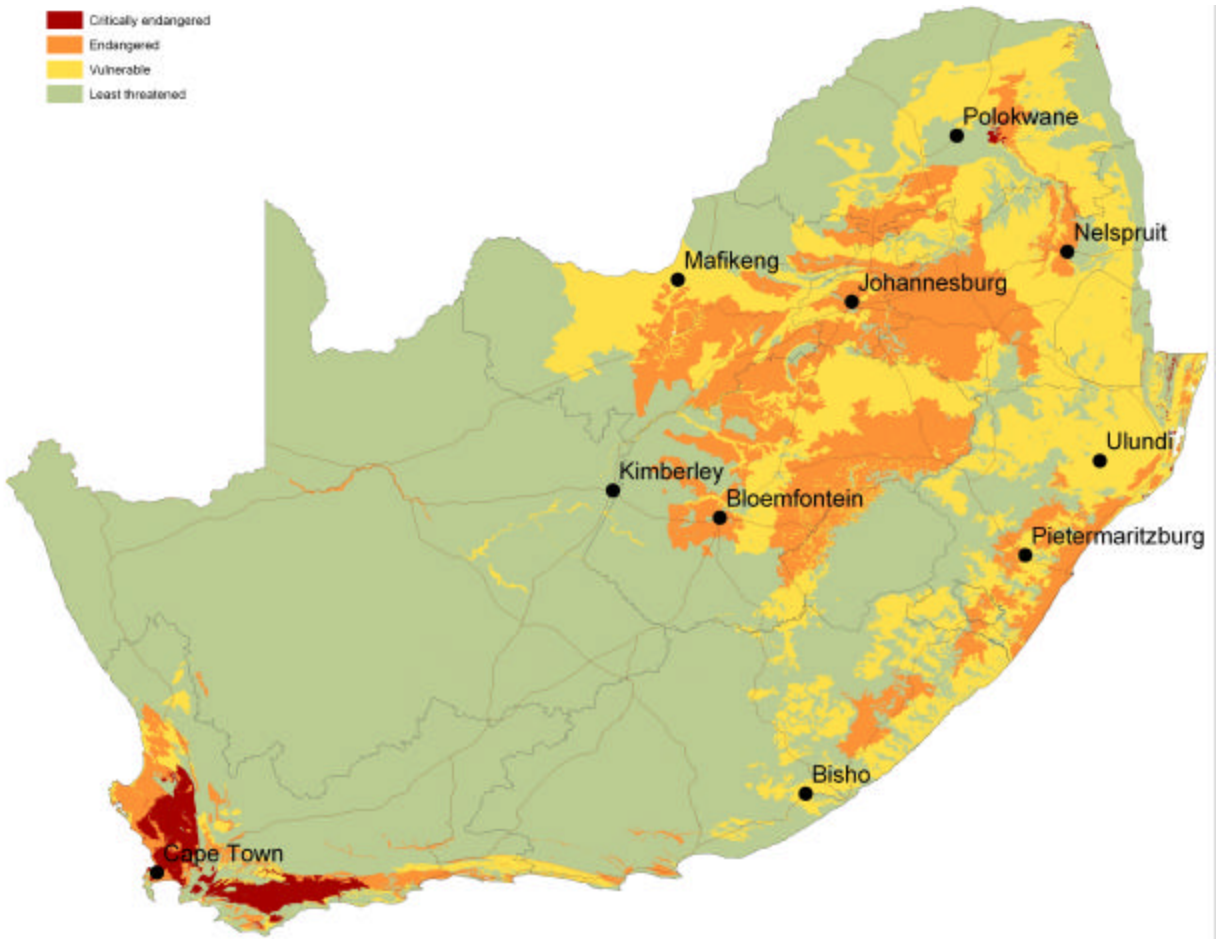

Figure 3. Status of terrestrial ecosystems

The same principle and method for determination of ecosystem status was also used to determine the status of river, estuarine and marine ecosystems, but the thresholds were adapted to those ecosystems.

The status of river ecosystems in South Africa is cause for concern. The NSBA found that 82% of South Africa's 120 river signatures (the river equivalent of vegetation types) are threatened. Almost half, or 44%, are Critically Endangered, while 27% are Endangered, 11% are Vulnerable and 18% are Least Threatened (see Figure 4). River ecosystems in South Africa are poorly protected. South Africa is a water-scarce country and freshwater systems are heavily utilized. The assessment focused on main rivers only. There is a need to extend the assessment to tributaries, and to identify priorities for conservation.

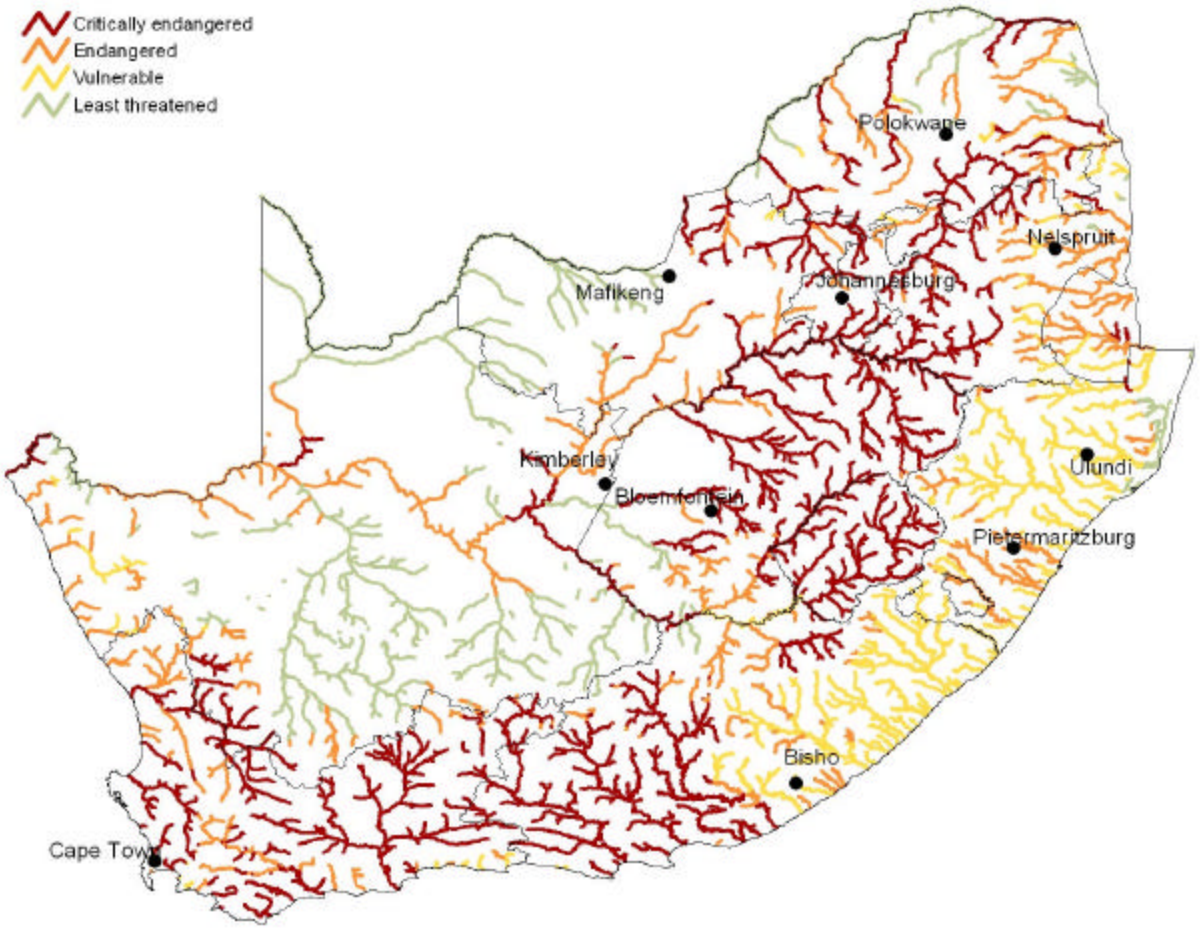

Figure 4. Status of river ecosystems (main rivers only)

South Africa has 259 estuaries, which can be divided into five different types: estuarine bays, permanently open estuaries, river mouths, estuarine lakes and temporarily closed estuaries. These various types are distributed across three zones, namely the cool temperate zone on the west coast, the warm temperate zone on the south coast, and the subtropical zone on the east coast. This classification gives us 13 estuarine zonal-types or groups. Of these groups, three are Critically Endangered and five are Endangered.

The National Spatial Biodiversity Assessment showed that 65% of South Africa's 34 marine biozones are threatened, with 12% being Critically Endangered, 15% Endangered, 38% Vulnerable and 35% Least Threatened (see Figure 5).

The declining status of ecosystems is cause for considerable concern, since international and national research has shown that degradation of ecosystems leads to a reduction in ecosystem services, such as a reduced capacity to generate clean water and a loss of food production due to land degradation. These losses are often felt disproportionately by the urban and rural poor, who are most exposed to the effects of pollution and who rely directly on the natural environment for their livelihoods. This is a concern in all regions of the world and particularly in sub-Saharan Africa, where the condition and management of ecosystem services is a dominant factor influencing prospects for reducing poverty. The degradation of ecosystem services is already considered a significant barrier to achieving the Millennium Development Goals and the harmful consequences of this degradation could grow significantly worse in the next 50 years, according to the Millennium Ecosystem Assessment completed in 2004.

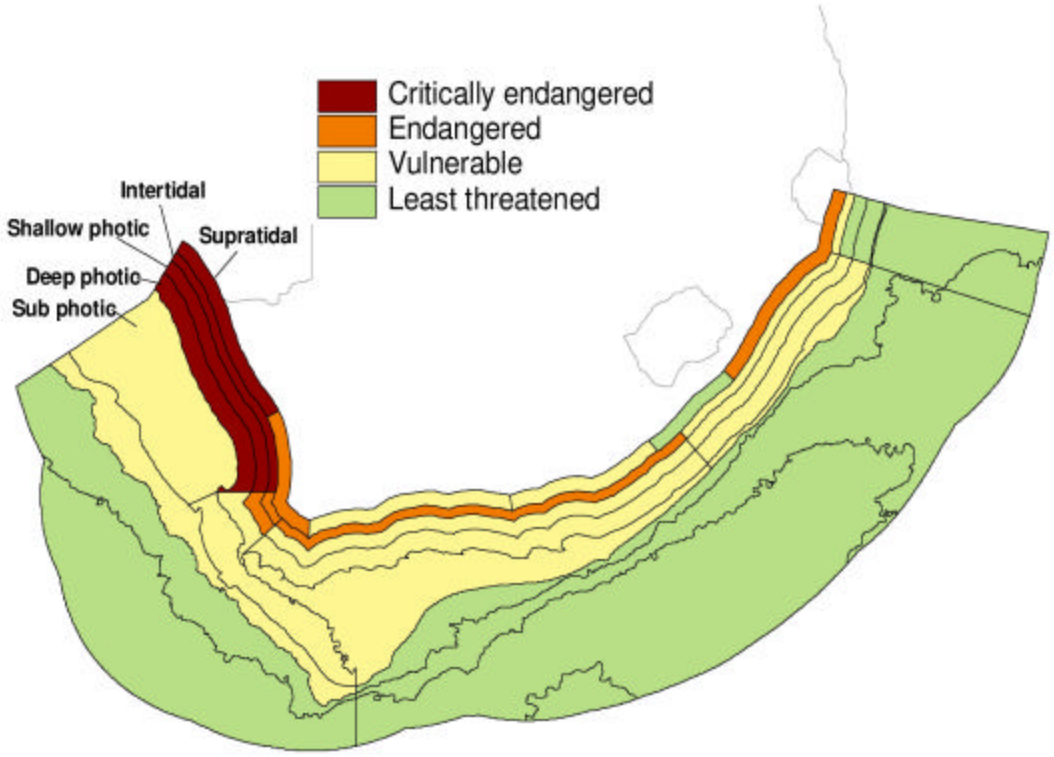

Figure 5. Status of marine biozones

Summary of status of South African ecosystems

	Terrestrial ecosystems	River ecosystems (main rivers only)	Estuary groups	Marine biozones
Critically endangered (CR)	5%	44%	23%	12%
Endangered (EN)	13%	27%	39%	15%
Vulnerable (VU)	16%	11%	15%	38%
Threatened = CR + EN + VU	34%	82%	77%	65%

Species richness

South Africa occupies only 2% of the world's surface area but is home to nearly 10% of the world's plants (approximately 24 000 species), and 7% of the world's reptiles, birds and mammals. Levels of endemism are high, especially for plants.

South Africa is home to an estimated 5.8% of the global total of mammal species (close to 300 species), 8% of bird species (more than 800 species recorded), 4.6% of reptile species (288 species) and 5.5% of the world's known insect species (50 000 species have been recorded in South Africa, but an estimated further 50 000 have not yet been described). In terms of the number of endemic species of mammals, birds, reptiles and amphibians, South Africa ranks as the fifth richest country in Africa and the 24th richest in the world. Marine biological diversity is also high. There are over 11 000 species found in South African waters, which is about 15% of global species, with more than 25% of these marine species (or 3 496 species) being endemic to South Africa.

Species richness of South Africa's animal taxa. Many species are undescribed, especially invertebrates and microorganisms. Estimates of the total number of species vary from 250 000 to 1 000 000.

Taxonomic group	No. of described species in SA	Estimated % of earth's species
Mammals	258	6
Birds	694	7
Amphibians	111	2
Reptiles	363	5
Freshwater fish	±100	?
Marine fish	2 200	15
Invertebrates	77 500	?
Plants	23 420	9

Status of biodiversity at the taxa / species level

The table below provides a snapshot of the endemism and status of various taxonomic groups. These data (except for the plant data) were collated in 2002 by two key NGOs, the Endangered Wildlife Trust and WWF-SA, based on data from various sources. The plant data come from the interim South African Red Data List, currently being produced by SANBI's Threatened Species Programme.

Taxonomic group	% Endemism	Critically endangered species	Endangered species	Vulnerable species	
Mammals	16	4	9	27	
Birds	8	5	11	42	
Amphibians	56	4	5	2	
Reptiles	36	1	6	12	
Freshwater fish	?	7	6	9	
Marine fish	13	5	2	11	
Invertebrates	?	?	?	?	
Plants	60	175	216	814	

Red Data Lists for certain taxonomic group, such as plants, reptiles and amphibians, are in the process of being updated. Others have been fairly recently updated, but indicate that many species are Data Deficient.

Mammals

The most comprehensive assessment of the conservation status of South Africa's mammalian species was made in 2002/03. The Red Data Book of Mammals of South Africa indicates that of the 295 species and sub-species of South African mammals evaluated, 12% are endemic, while 57 species (19.3%) are threatened (Critically Endangered, Endangered or Vulnerable), and a further 38 (12.8%) are Near Threatened. Of the Critically Endangered and Endangered species, 70% and 33% respectively are endemic to South Africa. Almost a fifth of all mammal species could not be assessed, due to data deficiencies. The main threatening processes impacting on mammals are habitat loss, degradation and transformation due to deforestation, agriculture, commercial timber planting and urban and industrial development as well as poisoning, pollution and hunting.

Birds

An assessment of the status of southern African bird species, published in 2000 by BirdLife, an NGO,

indicates that two species are Extinct in the region while 59 species are Threatened and 64 are Near Threatened. The species list of South African birds is in the process of being updated and numbers more than 900 species.

Amphibians

The Atlas and Red Data Book of the Frogs of South Africa, Lesotho and Swaziland, published in 2004, indicates that 20 of the 114 recorded species of frogs (17%) are Threatened (including four Critically Endangered species) and a further five species are Near Threatened. Eight species are data deficient.

Fish

The last formal assessment of the status of South African freshwater fishes was carried out in 1987 and most South African freshwater fish species need to be re-evaluated. South African marine fish species have not been assessed. Given the high diversity of marine species in South African waters and the socio-economic importance of marine fisheries, an assessment of marine fish fauna is needed urgently.

Plants

The 1996 Red Data List of plants indicated that of the 948 taxa assessed, 414 are threatened with extinction, while 108 are data deficient. Fifteen are considered to be Extinct while 19 are Critically Endangered (all are endemic to South Africa). The major threatening processes are noted to be habitat transformation and degradation due to agricultural activities, urban development (especially coastal development), mining, industry and roads, the spread of invasive alien species, subsistence harvesting (especially of medicinal plants) and illegal collection for commercial trade (particularly of groups such as cycads and succulents). Climate change is recognized as having potentially serious consequences for South Africa's vegetation, especially the succulent karoo and fynbos biomes. The Red Data List is currently in the process of being substantially updated. By the end of 2005, 18 057 plant species out of approximately 20 000 species had been assessed. Of those assessed by the end of 2005, 48 are Extinct, 7 are Extinct in the Wild, 175 are Critically Endangered, 216 are Endangered, 814 are Vulnerable, 413 are Near Threatened, and 610 are Data Deficient.

Status of biodiversity at the genetic level

Plant genetic diversity is considered to be unusually high, contributing to the potential for developing new medicines, crops, cosmetics, ornamental plants and other useful products. Genetic diversity is, however, not a focal area of any one particular organization, and there is no centralized data system.

In partnership with the Kew Royal Botanic Gardens, the SANBI manages the Millennium Seedbank Project, which is establishing seed collections of wild species native to South Africa. SANBI has established a DNA Bank in South Africa. It will represent a unique archive of plant genetic diversity in South Africa, holding over 2 200 genomes from all genera. It will also serve as a resource to facilitate the discovery of novel genes and for the identification of areas of high priority for conservation.

The genetic diversity of animal species is poorly documented, apart from a few well-studied species, such as cheetah, which are known to have survived a genetic bottleneck some 10 000 years ago.

Due to the fragmented nature of the policy, legislative and institutional administration of genetic resources, a national stock-take of gene banks and their samples / data is needed. There is also a need for a Breed Survey (indigenous and exotic species).

Levels of protection of biomes

Although 5.4% of South Africa's land surface area is currently formally conserved through the system of national and provincial protected areas, the protected area network is skewed towards certain biomes such as savanna, leaving biomes such as grasslands and succulent karoo under-conserved. Rivers in particular are poorly conserved. Where they are included in a protected area, they often form the protected area boundary and are thus not really protected. Some coastal and marine biozones are poorly protected. Only two out of thirteen estuarine groups are considered well protected. Although 18% of South Africa's coastline currently falls within marine protected areas, these tend to be located close to

the coastline, while offshore biozones are generally poorly protected. Marine biozones on the west coast are least protected and most threatened.

Habitat transformation and protection of biomes in formal protected areas

Biome	Area (km^2)	% of total area of the country	% remaining	% protected
Desert	8 548	0.7	93.4	12.5
Succulent karoo	85 207	6.7	96.5	3.1
Fynbos	84 580	6.7	70.2	11.0
Nama karoo	250 069	19.7	98.4	0.6
Grassland	373 984	29.5	70.8	1.9
Savanna	412 753	32.6	86.1	8.9
Albany thicket	30 256	2.4	91.9	6.3
Forest	4 730	0.4	94.7	39.6
Wetlands	16 790	1.3	92.1	4.6

The protection levels of the forest biome illustrate the concern conservationists in South Africa have regarding a "one size fits all" target of 10% of ecosystems to be protected. The forest biome as a whole appears to be relatively well protected. The National Spatial Biodiversity Assessment showed that of the 21 critically endangered vegetation types in South Africa, five of these are forest types. These are swamp forest (100% protected), mangrove forest (46.9% protected), lowveld riverine forest (100% protected), sand forest (100% protected) and ironwood dry forest (100% protected). Forests in South Africa are highly diverse, and occur mainly in small isolated fragments. The table below illustrates that many forest types are actually under-protected. (The difference in protection levels between the NSBA and the DWAF Forest Conservation Plan relates to the level of protection – the protected areas used in the NSBA include local level protection, which is not considered to be strict protection).

Status of Forests (Data supplied by DWAF)

Of the total of 266 710 hectares of natural forest protected in South Africa, 190 775 hectares is conserved in national protected areas and 68 950 ha in provincial protected areas. However, many forest patches are small, and some forest types are seriously under-conserved as the table below shows.

Forest Type	% Strict PA	% Target	% Shortfall
Transkei Coastal Platform	0.0	66.01	-66.0
Transkei Mistbelt	0.0	64.17	-64.2
Amatole Mistbelt	1.4	62.12	-60.7
Northern KwaZulu-Natal Mistbelt	14.8	71.74	-56.9
Pondoland Scarp	10.5	66.61	-56.1
Western Cape Milkwood	2.0	55.76	-53.8
Mpumalanga Mistbelt	14.6	66.99	-52.4
Eastern Mistbelt	19.7	66.45	-46.8
KwaZulu-Natal Dune	22.7	69.2	-46.5
Eastern Cape Dune	8.3	48.46	-40.1
Southern Cape Afrotemperate	17.1	49.08	-32.0
Licuati Sand	42.1	69.27	-27.1
Eastern Scarp	35.7	61.61	-25.9

Lowveld Riverine	48.9	70	-21.1
Northern Mistbelt	39.4	59.56	-20.1
Drakensberg Montane	47.2	63.5	-16.3
KwaZulu-Natal Coastal	61.2	71.69	-10.5
Western Cape Afrotemperate	50.2	60.08	-9.9
Albany	33.1	35	-1.9
Mangrove	70.6	70	0.6
Swamp	67.1	70	-3
Grand Total	**19.8**		

Indicators used to monitor trends:

- # of species, and % of total numbers of species, of various taxonomic groups in various threat categories
- # of terrestrial ecosystems, and % of total, in various threat categories
- # of main river ecosystems, and % of total, in various threat categories
- # of marine biozones, and % of total, in various threat categories
- # of estuarine ecosystem groups, and % of total, in various threat categories
- # of species (of various taxonomic groups) per unit area
- # of hectares of terrestrial ecosystems, and % of target met, in formal protected areas
- # of main river ecosystems, and % of target met, in formal protected areas
- # of km, % of total coastline, and % of target for coastal biozones met, in marine protected areas
- # of km^2 of offshore marine biozones, % of target met, in marine protected areas

Priority Setting

1. Please indicate, by marking an "**X**" in the appropriate column below, the level of priority your country accords to the implementation of various articles, provisions and relevant programmes of the work of the Convention.

Article / Provision / Programme of Work	Level of Priority		
	High	**Medium**	**Low**
a) Article 5 – Cooperation	X		
b) Article 6 - General measures for conservation and sustainable use	X		
c) Article 7 - Identification and monitoring	X		
d) Article 8 – *In-situ* conservation	X		
e) Article 8(h) - Alien species	X		
f) Article 8(j) - Traditional knowledge and related provisions	X		
g) Article 9 – *Ex-situ* conservation		X	
h) Article 10 – Sustainable use of components of biological diversity	X		

i) Article 11 - Incentive measures		X	
j) Article 12 - Research and training	X		
k) Article 13 - Public education and awareness		X	
l) Article 14 - Impact assessment and minimizing adverse impacts	X		
m) Article 15 - Access to genetic resources		X	
n) Article 16 - Access to and transfer of technology	X		
o) Article 17 - Exchange of information	X		
p) Article 18 – Scientific and technical cooperation	X		
q) Article 19 - Handling of biotechnology and distribution of its benefits		X	
r) Article 20 - Financial resources		X	
s) Article 21 - Financial mechanism		X	
t) Agricultural biodiversity		X	
u) Forest biodiversity	X		
v) Inland water biodiversity	X		
w) Marine and coastal biodiversity	X		
x) Dryland and subhumid land biodiversity	X		
y) Mountain biodiversity	X		

Challenges and Obstacles to Implementation

2. Please use the scale indicated below to reflect the level of challenges faced by your country in implementing the provisions of the Articles of the Convention (5, 6,7, 8, 8h, 8j, 9, 10, 11,12, 13, 14, 15,16, 17, 18, 19 and 20)

3 = High Challenge	1 = Low Challenge
2 = Medium Challenge	0 = Challenge has been successfully overcome
N/A = Not applicable	

Challenges	Articles																	
	5	6	7	8	8h	8j	9	10	11	12	13	14	15	16	17	18	19	20
a) Lack of political will and support	1	2	2	2	1	1	1	3	3	2	2	3	1	1	1	2	1	3
b) Limited public participation and stakeholder involvement	2	0	2	2	2	2	1	2	2	2	2	2	2	2	1	1	2	1
c) Lack of mainstreaming and integration of biodiversity issues into other sectors	NA	3	3	2	2	2	1	3	3	2	3	3	2	1	1	2	1	2
d) Lack of precautionary and proactive measures	NA	3	3	2	3	2	1	3	2	3	3	3	2	2	2	NA	2	NA
e) Inadequate capacity to act, caused by institutional weakness	NA	3	3	2	3	3	1	3	2	3	2	3	2	2	2	2	2	2
f) Lack of transfer of technology and expertise	1	1	3	2	3	3	1	3	3	3	3	3	2	2	2	1	2	3
g) Loss of traditional knowledge	NA	NA	2	2	1	1	2	3	2	3	3	1	3	2	2	2	2	2
h) Lack of adequate scientific research capacities to support all the objectives	NA	2	3	3	3	3	1	3	2	3	2	3	2	2	2	3	3	3
i) Lack of accessible knowledge and information	NA	2	3	2	3	3	1	3	3	3	3	3	2	3	3	3	3	3

j) Lack of public education and awareness at all levels	NA	2	3	3	3	3	1	3	3	2	3	3	2	2	2	2	2	2
k) Existing scientific and traditional knowledge not fully utilized	NA	2	3	3	3	3	2	3	3	3	3	3	2	3	3	3	2	3
l) Loss of biodiversity and the corresponding goods and services it provides not properly understood and documented	2	3	3	1	3	3	NA	3	3	2	3	3	2	2	2	3	1	3
m) Lack of financial, human, technical resources	2	3	3	2	2	3	2	3	2	3	3	3	2	2	2	3	3	3
n) Lack of economic incentive measures	2	3	3	2	3	3	1	3	3	3	3	3	3	1	1	1	2	3
o) Lack of benefit-sharing	2	2	2	3	NA	2	2	3	3	1	3	1	2	2	2	1	3	1
p) Lack of synergies at national and international levels	2	2	1	1	1	1	1	2	2	1	1	1	2	2	2	1	2	2
q) Lack of horizontal cooperation among stakeholders	NA	2	1	2	3	2	1	3	3	3	3	3	3	1	3	3	3	3
r) Lack of effective partnerships	1	2	2	2	3	2	2	3	3	3	3	3	2	2	2	3	2	3
s) Lack of engagement of scientific community	1	1	3	3	2	2	1	3	2	3	2	3	1	2	2	3	2	3
t) Lack of appropriate policies and laws	0	2	1	1	1	1	1	3	2	3	2	3	2	2	2	2	2	2
u) Poverty	NA	3	1	3	1	1	1	3	3	2	3	1	3	2	2	1	3	2
v) Population pressure	NA	3	1	3	1	2	1	3	3	2	3	3	3	2	1	1	2	3
w) Unsustainable consumption and production	2	3	1	3	2	2	1	3	3	2	2	3	2	2	2	2	2	3

patterns																		
x) Lack of capacities for local communities	NA	2	3	3	3	2	1	3	3	3	3	3	3	2	2	2	2	2
y) Lack of knowledge and practice of ecosystem-based approaches to management	1	2	3	3	3	2	1	3	3	3	3	3	2	3	3	3	1	3
z) Weak law enforcement capacity	2	3	3	2	3	1	1	3	2	1	1	3	2	2	2	1	2	2
aa) Natural disasters and environmental change	NA	2		3	3		2		3	1	1		2		1		1	3
bb) Others (please specify)																		

2010 Target

The Conference of the Parties, in decision VII/30, annex II, decided to establish a provisional framework for goals and targets in order to clarify the 2010 global target adopted by decision VI/26, help assess the progress towards the target, and promote coherence among the programmes of work of the Convention. Parties and Governments are invited to develop their own targets with this flexible framework. Please provide relevant information by responding to the questions and requests contained in the following tables.

Box III.

Goal 1	**Promote the conservation of the biological diversity of ecosystems, habitats and biomes.**
Target 1.1	**At least ten percent of each of the world's ecological regions effectively conserved**
I) National target: Has a national target been established corresponding to the global target above?	
a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X
Please provide details below.	
DEAT, in particular the Branch: Biodiversity and Conservation and the Branch: Marine and Coastal Management, have set a target of at least 8% of terrestrial land surface area to be included in the formal protected area system (mainly national and provincial parks) by 2010; and 20% of the coastline in Marine Protected Areas (MPAs) by 2010. This target is not related to the representivity of the protected area system. During 2004, the first comprehensive national spatial assessment of biodiversity was carried out, using scientifically defensible methodologies. This NSBA identified targets for conservation of the biological diversity of terrestrial, riverine, estuarine and marine ecosystems and assessed the extent to which the current protected area system achieves these targets. The current protected area system	

is currently skewed towards certain ecosystems and biomes which are important for tourism, such as savanna. The NSBA reports are available at www.sanbi.org.

The national targets, based on the NSBA, are in the process of being incorporated into the National Biodiversity Framework, which will be published in terms of the Biodiversity Act (10 of 2004) during 2006. They have also been incorporated into the NBSAP (see below).

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water	X		A comprehensive assessment of freshwater ecosystems is underway by the Department of Water Affairs and Forestry, and the Council for Scientific and Industrial Research. As part of this assessment, which fed into the NSBA, targets have been established for main river ecosystems.
c) Marine and coastal	X		Marine, coastal and estuarine ecosystems formed part of the NSBA. As part of this process, targets for these ecosystems were established.
d) Dry and subhumid land	X		A number of bioregional programmes have been developed and are being implemented in South Africa, such as the Succulent Karoo Ecosystem Programme, the Subtropical Thicket Ecosystem Programme and the National Grasslands Biodiversity Programme, which determined conservation targets for ecosystems within these biomes. The targets identified in these assessments are being aligned with national targets determined in the National Spatial Biodiversity Assessment.
e) Forest	X		Targets for natural forests developed by the Department of Water Affairs and Forestry include a base target of a minimum of 15% of all forest types to be protected, adjusted upwards depending on species density and other ecological patterns as well as ecological processes (such as maximising connectivity between forests to accommodate fauna and flora migration). *See details in table in Box II*.
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

b) NBSAP

NBSAP Strategic Objective 5:

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

NBSAP 15-year Targets:

- Comprehensive biodiversity monitoring systems inform planning (SO5)
- The protected area network covers 12% of the terrestrial and 20% of the marine environment

thereby contributing to representation targets in priority areas (SO5)
- There is no further loss of endangered and critically endangered ecosystems and no attrition of ecosystem functioning in priority areas (SO5)
- At least two entire "watershed to coast" protected environments are established and effectively managed (SO5)

NBSAP Outcome 5.2:

- The protected area network is secured, expanded and managed to ensure that a representative sample of biodiversity and key ecological processes are conserved.

NBSAP 5-year Targets

- Protected area network expanded to make progress towards meeting national biodiversity targets in NSBA, to avoid reinforcing existing biases in the protected area network, and to strengthen the functioning of key ecological corridors (5.2)
- Establishment of Marine Protected Areas, including representative networks, by 2012 (5.2)
- National funding strategy for protected areas is developed and prioritised implementation is underway (5.2)
- Every protected area has a management plan (5.2)
- Land reform and programmes to expand the protected area network incorporate tenure, land redistribution and biodiversity considerations in a mutually beneficial way (5.2)

c) Forests

For details on forests, see the section on expanded programme of work on forest biological diversity (questions 175 - 180).

IV) Please provide information on current status and trends in relation to this target.

South Africa has a fairly well-developed system of protected areas, covering about 6.6 million ha or 5.5% of the land area. About 53% of this area falls within a total of 20 national parks, while the rest falls within provincial parks and other categories of protected areas, such as State Forests. By 2004

23% of the coastline (intertidal biozones) fell within marine protected areas. However, as there are no off-shore marine protected areas, if one considers South Africa's entire Exclusive Economic Zone, less than 1% falls within marine protected areas.

Since the change in government in 1994, the protected area estate has been expanded by over 450 000 hectares. Seven new National Parks have been proclaimed and five more sites have been listed on the Ramsar List of Wetlands of International Importance. Six sites of outstanding cultural and natural heritage have been inscribed on UNESCO's World Heritage List and more are being prepared for consideration.

New National Parks: Marakele National Park (1993); Cape Peninsula National Park (1998) (now renamed Table Mountain National Park); Vhembe Dongola National Park (1998) (now renamed Mapungubwe National Park); Agulhas National Park (1999); Namaqua National Park (1999); Karoo National Park (2005); Pondoland National Park (to be proclaimed 2006).

The proposed Namaqualand marine protected area, which will link with the Namaqua National Park, will more than double the sea surface area located in marine protected areas.

New Ramsar sites: Natal Drakensberg Park (1997); Ndumo Game Reserve (1997); Seekoeivlei (1997); Nylsvley Nature Reserve (1998); Verlorenvlei (2003).

New World Heritage sites: Greater St. Lucia Wetland Park (1999); Robben Island (1999); Cradle of Humankind (1999); Ukhahlamba-Drakensberg (2000); Mapungubwe (2003); Cape Floristic Region (2004); Vredefort Dome (2005).

Although financial resources and available land are limited, the expansion of the protected area estate has been achieved through an innovative programme of consolidation and partnerships. Since 1995, more than R240 million has been invested in land purchase to expand protected areas, with approximately 20% of funds coming from DEAT, 25% from donors and 55% from the conservation efforts of South African National Parks. This expansion programme has been linked to poverty-relief and job creation programmes.

See Box II for protection levels of the various biomes.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the relevant NBSAP outcome.

- Coverage of protected areas *[CBD suggested indicator]* (5.2)
- Trends in extent of selected biomes, ecosystems and habitats *[CBD suggested indicator]* (5.2) - see also CBD goal 5 below
- Trends in abundance and distribution of selected species habitats (5.2) *[CBD suggested indicator]* - See also CBD goal 2 below
- Index of management effectiveness in protected areas (5.2) *[index to be developed]*
- Indicator/index that links land reform and biodiversity (5.2) *[index to be developed]*
- Area (ha) of natural forest by forest type
- Area (ha) of natural forest by type within proclaimed and private protected areas by IUCN protected area categories and ownership

It is anticipated that indicators for these targets will be simplified to, for example:

- Proportion of target for each terrestrial biome met in formal protected areas (5.2)
- Percentage of country protected (5.2)
- Proportion of target for each marine biozone met in formal protected areas (5.2)
- Percentage of South Africa's EEZ protected (5.2)

VI) Please provide information on challenges in implementation of this target.

Land is under pressure for development to meet people's needs and contribute to economic growth. Such development includes housing, industry, agriculture, commercial forestry using alien species (some of which are invasive) and mining. Opportunities for expansion of formal protected areas are limited. Implementing conservation through a network of protected areas is complicated by climate change, as predictions indicate that areas likely to provide suitable habitat for species in the future differ from the current protected area network. Effective conservation therefore needs to be expanded to privately and communally owned land.

Various initiatives are underway as part of the country's bioregional programmes (such as Cape Action for People and the Environment, the National Grasslands Biodiversity Programme, and the Succulent Karoo Ecosystem Programme) to develop mechanisms and incentives for involving private and communal landowners in setting aside land to form part of the formal protected area network. An important opportunity in this regard comes from the Protected Areas Act (57 of 2003), which provides for any land, including private or communal land, to be declared a formal protected area, and allows for co-management of such a protected area by the landowner(s) or any suitable person or organisation. This means that formal protected area status, with an associated rates exclusion in

terms of the Municipal Property Rates Act (6 of 2004), is not limited to state-owned land, and that government agencies are not the only organisations that can manage protected areas. Making full use of this legal provision is a challenge that faces conservation agencies and bioregional programmes in South Africa.

VII) Please provide any other relevant information.

Note: this Goal is understood to refer to formal protected areas. The NBSAP target is to go beyond the suggested global average of 10% of ecosystems conserved, as the NSBA has shown, using best available science, that most ecosystems in South Africa will require more than 10% of their area to be protected if biodiversity is to effectively conserved. Even if the protected area network covers 10% of the total land surface area, or 10% of each biome, this will still be inadequate to effectively conserve biodiversity into the future. Effective conservation is therefore needed also outside the protected area network, across the production landscape.

Register of Protected Areas

A Register of Protected Areas is required in terms of the Protected Areas Act (57 of 2003). This Register will include special nature reserves, national parks, provincial and local nature reserves and protected environments (all proclaimed in terms of the Protected Areas Act), as well as marine protected areas (proclaimed in terms of the Marine Living Resources Act (18 of 1998)) and Forest Reserves (proclaimed in terms of the National Forests Act (84 of 1998)). The existing protected areas register is in the process of being updated as it currently only covers national parks and Trans Frontier Conservation Areas, and is out of date. There is a need for a more comprehensive register of protected areas, including spatial data on the location of protected areas, which is updated on an ongoing basis as the protected areas are expanded, or new ones proclaimed. The Protected Areas Act also provides for the management of protected areas in accordance with national norms and standards. Norms, standards and indicators for the management and development of protected areas are under consideration.

Box IV.

Target 1.2	**Areas of particular importance to biodiversity protected**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural		X	
b) Inland water	X		A comprehensive assessment of freshwater ecosystems is underway by the Department of Water Affairs and Forestry, and the Council for Scientific and Industrial Research and is being aligned with the NSBA.
c) Marine and coastal	X		Marine, coastal and estuarine ecosystems formed part of the NSBA and spatial priority areas for conservation actions have been identified.
d) Dry and subhumid land	X		A number of bioregional programmes have been developed and are being implemented in South Africa, such as the Succulent Karoo Ecosystem Programme and the Subtropical Thicket Ecosystem Plan, which determined conservation targets and spatial priority areas for these biomes. The targets identified in these assessments are being aligned with national targets determined in the NSBA.
e) Forest	X		The Chief Directorate: Forestry of the Department of Water Affairs and Forestry (DWAF) recently carried out a comprehensive review of the system of forest protected areas and the identification of high conservation value forests, with the aim of developing a forest protected area system for natural forests that will maximise biodiversity conservation. This DWAF forest conservation plan identifies targets and areas of particular importance for forest types. These will be incorporated into the relevant bioregional plans.
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

b) NBSAP

NBSAP Strategic Objective 5:

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

Relevant NBSAP 15-year Targets:

- There is no further loss of endangered and critically endangered ecosystems and no attrition of ecosystem functioning in priority areas* (SO5)

*(*Note: Biodiversity priority areas include threatened ecosystems, ecological corridors, special biodiversity features and under-protected ecosystems.)*

NBSAP Outcome 5.1:

- Biodiversity priority areas identified in the NSBA are refined in provincial, regional and local systematic biodiversity plans.

Relevant NBSAP 5-year Targets:

- Bioregional plans are developed and published for all priority regions (5.1)
- At least 50% of municipalities in NBSAP priority areas reflect biodiversity priorities in their Spatial Development Frameworks, have at least two projects in their Integrated Development Plans that promote biodiversity, and have staff and budget dedicated to biodiversity management (5.1)

IV) Please provide information on current status and trends in relation to this target.

As at 2005, no bioregional plans have been published in terms of the Biodiversity Act (10 of 2004). However, a number of spatial conservation plans have been developed, providing the basis for publishing bioregional plans in terms of the Biodiversity Act, including for the following areas:

- KwaZulu-Natal province
- Mpumpalanga province
- Gauteng province
- Thicket biome
- Priority areas within the Cape Floristic Region
- Priority areas within the succulent karoo biome

Currently no published plans have been integrated in municipal Spatial Development Frameworks, but some municipalities, including three in the Western Cape, have integrated biodiversity priority areas, as identified in systematic conservation plans, in their Spatial Development Frameworks.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the corresponding NBSAP outcome.

- Number of bioregional plans published (5.1)
- Number of local municipalities covered by published bioregional plans (5.1)
- Number of municipalities that have integrated bioregional plans in their Spatial Development Frameworks (5.1)
- Proportion of target for each terrestrial biome met in formal protected areas (5.2)
- Percentage of country protected (5.2)
- Proportion of target for each marine biozone met in formal protected areas (5.2)

- Percentage of South Africa's EEZ protected (5.2)

Indicators in Box III apply here too.

VI) Please provide information on challenges in implementation of this target.

Severe capacity constraints in the local government sphere hamper integration of environmental concerns generally, and biodiversity concerns in particular, into local development planning.

VII) Please provide any other relevant information.

Note: Areas of particular importance to biodiversity could mean different things at different scales.

The NSBA has set targets for terrestrial ecosystems, estuaries, freshwater ecosystems and marine biozones at a national (1:250 000) scale. South Africa is divided administratively into nine provinces and close to 300 municipalities (municipalities are "wall to wall" and cover the entire area of the country). The priority biodiversity areas identified in the NSBA need to be refined at finer scales. Fine-scale conservation plans have been done for some parts of the country, but not all.

The Biodiversity Act (10 of 2004) provides for the publishing in the government gazette of Bioregional Plans, which will highlight biodiversity priority areas at finer scales. Guidelines are currently being developed regarding the contents of a bioregional plan and mechanisms for publishing them. These guidelines will be included in the National Biodiversity Framework, which will be published in terms of the Biodiversity Act during 2006.

Box V.

Goal 2	**Promote the conservation of species diversity**
Target 2.1	**Restore, maintain, or reduce the decline of populations of species of selected taxonomic groups**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land		X	

e) Forest	X		See details below.
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?	
a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

b) NBSAP

NBSAP Outcome 5.4:

Management plans for species of special concern* ensure their long term survival in the wild.

Relevant NBSAP 5-year Targets:

- Restore, maintain or reduce the decline of populations of species of selected taxonomic groups and improve the status of threatened species (5.4)
- Management plans have been developed, published and implemented for priority species of special concern (5.4)
- Status of threatened species improved (5.4)

(*Note: *Species of special concern* are species prioritized on the basis of social, economic and ecological criteria, as well as indigenous knowledge in order to guide research, monitoring, management and recovery plans. Priority species of special concern are defined here as being those for which management plans are the only conservation option. Management plans are plans referred to in the Biodiversity Act (10 of 2004).

c) Forests

A set of general guidelines for tree protection has been developed and specific guidelines for certain species e. g. Acacia erioloba.

IV) Please provide information on current status and trends in relation to this target.

The baseline for status of species is referred to in Box II, and in Box VI below.

The baseline for biodiversity management plans was zero in 2004, which is when the relevant Act, the Biodiversity Act (10 of 2004), was promulgated. No such plans have yet been published in terms of the Act.

The process to assess and compile species of special concern and priority species of special concern is not yet underway, although during 2004 - 2005, DEAT initiated a process to determine lists of species to be declared threatened and/or in need of protection, to be published in the Government Gazette in terms of the Biodiversity Act (10 of 2004).

A list of protected trees has been published in terms of the National Forests Act (84 of 1998). An objective, scientific and participative process was undertaken during 2004 to develop criteria for selection, and to develop the list. A total of 47 tree species are protected in terms of the Act. These tree species may not be cut, disturbed, damaged or destroyed, and their products may not be possessed, collected, removed, transported, exported, donated, purchased or sold, without the

necessary permit. A number of recovery plans have been developed by DWAF.

The South African National Biodiversity Institute has research and ex situ conservation programmes (e.g. through National Botanical Gardens and the Millennium Seedbank Project) focusing on plants species of special concern such as cycads.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the corresponding NBSAP outcome.

- Number of management plans which are registered in terms of the Biodiversity Act (10 of 2004) (5.4)
- Change in national Red List status of species (5.4)
- Local loss (extinction) of priority species of special concern over time (5.4)
- Changes in the status of listing in any other Lists (CMS, CITES, AEWA, MCM Stocktaking etc) (5.4)
- Number of species on protected trees list for which there are recovery plans (5.4)
- Status of forest dwelling species at risk of not maintaining viable breeding populations (DWAF indicator)
- Change in status of species on provincial level inventories (DWAF indicator)
- The number of species for which recovery plans or similar are being implemented (DWAF indicator)

VI) Please provide information on challenges in implementation of this target.

Appropriate support, capacity, buy-in and political will to implement (budget lines, capacity, over-riding push for housing and estate development, etc.) limits conservation efforts. For example, development in the coastal zone (and resultant loss of coastal forests and coastal fynbos) may drive a number of species closer to extinction.

National Red Lists for species of various taxonomic groups are a key indicator, but tend to be compiled by NGOs and other special interest groups, often with limited budget. They are therefore often limited by lack of funds, and are updated infrequently.

Plant Red Data lists have, however, been regularly updated by the National Botanical Institute, which became the South African National Biodiversity Institute in September 2004.

VII) Please provide any other relevant information.

The National Forests Act (84 of 1998) provides for listing of protected trees. In terms of this Act, the Minister may declare a particular tree or trees belonging to a particular species to be protected. This status carries with it particular powers that go beyond the general protection afforded indigenous trees and forests. For this reason, a tree or species of tree may only be declared protected if, in the Minister's opinion, it is not adequately protected under other legislation. A new set of selection criteria were developed in 2004, to allow the interpretation of the relevant section of the Act and indicate how it could be administered. The selection criteria are Red list Status/ Biodiversity, Keystone Species, Sustainable Use, Cultural/Spiritual Importance and also to what extent the tree species are protected by other legislation. After public comment on the selected list of species, the list was finalised and published in the Government Gazette.

The Biodiversity Act (10 of 2004) provides for the listing of species that are threatened or in need of national protection, such as CITES listed species. Note however, that these lists are not equivalent to Red Data lists, but are rather intended to list species for which regulations regarding certain listed restrictions on activities (such as collection from the wild) will be published. The Act also provides for the publication in the Government Gazette, of biodiversity management plans.

National Zoological Gardens, National Botanical Gardens, South African National Parks, private landowners and NGOs such as the Endangered Wildlife Trust, Botanical Society, De Wildt Cheetah and Wildlife Trust and others have various breeding and/or reintroduction programmes in place for the recovery of threatened species:.

Species specific conservation action plans have been drafted by various NGOs and provincial authorities, and exist for, amongst others: Blue and Wattled Crane, Blue Swallow, Wild Dog, African Penguin and Riverine Rabbit. The 2003 South African Mammal Red Data Book incorporates a very basic mammal conservation plan.

There is a need to do a stocktake of what management plans exist for which species and in which regions. Lists and other sources of data, which will assist with this assessment include National Red Data Lists, 2005 SoER, SABIF/GBIF, MCM Stock Assessments, CITES, CMS, AEWA, etc.

Box VI.

Target 2.2	**Status of threatened species improved**		
I) National target: Has a national target been established corresponding to the global target above?			
a) No			
b) Yes, the same as the global target			
c) Yes, one or more specific national targets have been established			X
Please provide details below.			
II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).			
Programme of work	**Yes**	**No**	**Details**
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest	X		See detail below
f) Mountain		X	
III) Has the global or national target been incorporated into relevant plans, programmes and strategies?			
a) No			
b) Yes, into national biodiversity strategy and action plan			X
c) Yes, into sectoral strategies, plans and programmes			X
Please provide details below.			

b) NBSAP

NBSAP Outcome 5.4:

Management plans for species of special concern ensure their long term survival in the wild.

Relevant NBSAP 5-year Targets:

- Restore, maintain or reduce the decline of populations of species of selected taxonomic groups and improve the status of threatened species (5.4)
- Management plans have been developed, published and implemented for priority species of special concern (5.4)
- Status of threatened species improved (5.4)

c) Forests

- A set of general guidelines for tree protection has been developed and specific guidelines for certain species. Further details on Forests are provided in the section on the extended programme of work on forest biological diversity (see question 175 -).

IV) Please provide information on current status and trends in relation to this target.

See also Box II

Mammals

The 2002/03 Red Data Book of Mammals of South Africa indicates that of the 295 species and sub-species of South African mammals evaluated, 12% are endemic, while 57 species (19.3%) are threatened (Critically Endangered, Endangered or Vulnerable), and a further 38 (12.8%) are Near Threatened. Of the Critically Endangered and Endangered species, 70% and 33% respectively are endemic to South Africa. Almost a fifth of all mammal species could not be assessed, due to data deficiencies.

Birds

An assessment of the status of southern African bird species, published in 2000 by BirdLife, an NGO, indicates that two species are Extinct in the region while 59 species are Threatened and 64 are Near Threatened. The species list of South African birds is in the process of being updated and numbers more than 900 species.

Amphibians

The Atlas and Red Data Book of the Frogs of South Africa, Lesotho and Swaziland, published in 2004, indicates that 20 of the 114 recorded species of frogs (17%) are Threatened (including four Critically Endangered species) and a further five species are Near Threatened. Eight species are data deficient.

Fish

The last formal assessment of the status of South African freshwater fishes was carried out in 1987 and most South African freshwater fish species need to be re-evaluated. South African marine fish species have not been assessed. Given the high diversity of marine species in South African waters and the socio-economic importance of marine fisheries, an assessment of marine fish fauna is needed urgently.

Plants

The Red Data List is currently in the process of being substantially updated. By the end of 2005, 18 057 plant species out of approximately 20 000 species had been assessed. Of those assessed by the end of 2005, 48 are Extinct, 7 are Extinct in the Wild, 175 are Critically Endangered, 216 are Endangered, 814 are Vulnerable, 413 are Near Threatened, and 610 are Data Deficient.

V) Please provide information on indicators used in relation to this target.
• As for previous target
VI) Please provide information on challenges in implementation of this target.
VII) Please provide any other relevant information.

Box VII.

Goal 3	**Promote the conservation of genetic diversity**
Target 3.1	**Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained**

I) National target: Has a national target been established corresponding to the global target above?	
a) No	
b) Yes, the same as the global target	X
c) Yes, one or more specific national targets have been established	
Please provide details below.	

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest		X	
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?	
a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	
Please provide details below.	

b) NBSAP

NBSAP Outcome 4.1:

- An equitable access, rights and responsibilities regime promotes sustainable use of biological resources

Relevant NBSAP 5-year Target:

- Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife, and other valuable species is conserved, and associated indigenous and local knowledge is maintained (4.1)

IV) Please provide information on current status and trends in relation to this target.

In partnership with the Kew Royal Botanic Gardens, the SANBI manages the Millennium Seedbank Project, which will ensure the conservation of South Africa's flora, by establishing verified and well documented seed collections of wild species native to South Africa. Together with the Kew Royal Botanic Gardens, SANBI has established a DNA Bank in South Africa. It will represent a unique archive of plant genetic diversity in South Africa, holding over 2 200 genomes from all genera. It will also serve as a resource to facilitate the discovery of novel genes and for the identification of areas of high priority for conservation.

Less data regarding the status of genetic diversity among animal populations is available.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the corresponding NBSAP outcome.

- Development and implementation of policies, legislation and regulations which govern breeding, genetic contamination, hybridization, import of species, etc. *in situ* (4.1)
- *Ex Situ*: Establishment of gene banks with representative samples of important species(4.1)
- Number and range of taxa stored in genome banks (4.1)
- Number and range of viable seeds stored in seed banks (4.1)
- Percentage of the genetic diversity of priority species conserved (indicator needs further development) (4.1)
- Diversity and number of genetically viable individuals in zoological and botanical garden collections (where this serves conservation purposes) (4.1)
- Number of entries in indigenous livestock/species stud books and demand for this information and progeny (4.1)
- Number of farm animal breeding stations (4.1)
- Range and number of species used for traditional purposes and trends (4.1)

VI) Please provide information on challenges in implementation of this target.

VII) Please provide any other relevant information.

A number of different Acts govern genetic resources and are administered by a number of different departments.

The national Department of Agriculture administers the following Acts of some relevance to genetic resources:

- Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act (36 of 1947)

- Plant Improvement Act (53 of 1976)
- Plant Breeders Rights Act (15 of 1976)
- Agricultural Pests Act (36 of 1983)
- Animal Improvement Act (62 of 1998)
- Genetically Modified Organisms Act (15 of 1997)

DEAT administers the Biodiversity Act (10 of 2004), which included a chapter on bioprospecting, access and benefit sharing.

A database on indigenous knowledge is in the process of being populated by the Department of Arts and Culture (DAC). Discussions with DAC are needed to ensure inclusion of biodiversity information and consultations with traditional healers on access to materials, products, knowledge, etc.

The Department of Science and Technology developed a National Biotechnology Strategy in 2001 and a Research and Development strategy in 2002.

There are considerable gaps in knowledge regarding genetic resources and genetic diversity in South Africa. For example, genetic experts need to specify details regarding the anticipated impacts of loss of genetic diversity for certain species and populations, such as decreased health, increased infertility in populations etc.

Due to the fragmented nature of the policy, legislative and institutional administration of genetic resources, a national stocktake of gene banks and their samples/data is needed. There is also a need for a Breed Survey (indigenous and exotic species).

Box VIII.

Goal 4	**Promote sustainable use and consumption.**
Target 4.1	**Biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest		X	
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

b) NBSAP

NBSAP Strategic Objective 4:

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

15-year Targets:

- Species and genetic resources are optimised and sustainably managed so that they can support and contribute significantly to livelihoods and equity (SO4)
- Priority fish stocks recover to sustainable levels (SO4)
- No species status declines (SO4)

- Equitable and effective indigenous resource use contributes to poverty relief (SO4)
- Indigenous products sector contribution to GDP grows by 50% compared to 2005 baseline (SO4)
- No species status declines (see also target 5.4)

[Note: the wording of some of the above targets has changed and may differ from NBSAP document]

NBSAP Outcome 4.4:

- Use of biological resources is well managed to optimise sustainable benefits.

Relevant NBSAP 5-year Targets:

- Collaborative management plans for recovery of priority resources developed with key stakeholders and resource user groups, and implementation underway (4.4)
- Harvesting quotas and NEMBA lists of threatened and protected species are updated based on research and monitoring outcomes (4.4)
- Recovery plans for key fish species are implemented (4.4)
- Management programmes for medicinal plants developed with key stakeholders and implementation underway; wild populations of medicinal plants show signs of recovery (4.4)
- Community Based Natural Resource Management programmes developed and implemented (4.4)
- Biodiversity-based products are derived from sources that are sustainably managed (4.4)
- Unsustainable consumption of biological resources, or that impacts on biodiversity, reduced (4.4)
- Biological resources that support sustainable livelihoods, local food security and health care, especially for poor people, are maintained (4.4)
- Develop and facilitate the use of diverse approaches and tools, including the ecosystem approach, elimination of harmful fishing practices … and time/area closures for protection of nursery grounds *[note: this could be a response indicator]* (4.4)

IV) Please provide information on current status and trends in relation to this target.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the corresponding NBSAP outcome.

- Quotas and species lists are updated based on a system of feedback from research and monitoring (4.4)
- Total Allowable Catch (4.4)
- Priority commercially harvested or subsistence fish stocks recover to sustainable levels (4.4)
- Stock status reports for key fish species (these indicate stock growth) (4.4)
- Develop and facilitate the use of diverse approaches and tools, including the ecosystem approach, elimination of harmful fishing practices … and time/area closures for protection of nursery grounds (4.4) *[response indicator]* (4.4)
- Marine trophic index (about the productivity of the marine environment) *[CBD suggested indicator]* (4.4)
- Recovery in wild populations of medicinal plants (4.4)
- Management plans reflected in red list data; and possibly organizational annual work plans (4.4)
- Tonnage of top five species traded per year [*NSoER proposed indicator*] (4.4)
- Initial threatened and protected species and products databases (4.4)
- Number of management systems in place (4.4)

- Monitoring and research systems for these regions and/or resources are in place and results feed into management advice (4.4)
- Stable status of indigenous species being consumptively used (4.4)
- Level of multiple resource use and accredited products from forest ecosystems (4.4)
- Number of Community Forest Areas and output of associated forests, and degree to which these support livelihoods (4.4)
- *Targets and indicators for other high value useful species (not only fish and medicinal plants) are still to be developed*

VI) Please provide information on challenges in implementation of this target.

A large number of biological resources are used in South Africa, for both subsistence and commercial purposes by a wide number of user groups. There is generally good information available on formal commercial industries based on biological resources (e.g. hunting, game farming, ecotourism and organized forest timber, wildflower and fern harvesting) because they are regulated, and managed through permit and licensing systems. This trade is largely regulated through the provincial conservation agencies.

However, there is considerable lack of understanding of subsistence use of terrestrial and coastal resources in South Africa except that it is known to be extensive and in many cases is thought to be unsustainable. A wide variety of resources are harvested for food and a subsistence income, from multiple food types, material for craft production, building material, fuel and medicinal plants. Poverty and unemployment levels are extremely high, particularly in communal areas, and natural resource harvesting is often a significant component of livelihood strategies. Permits are required to collect resources such as thatch, reeds, bulbs, etc. from protected areas; these regulations differ from province to province. However, the existence of regulations or holding of permits does not ensure sustainability. Resource use in communal areas and use of resources from protected areas is extensive but difficult to quantify. In many cases, subsistence use is undertaken by very poor people to satisfy daily needs or to collect funds to do so. One of the biggest constraints is a lack of research and monitoring, both to determine sustainable quotas and to ensure compliance. There are very few examples of resource monitoring to assess sustainability of terrestrial resource use.

There is a need for audits of legal and illegal takeoffs against the known stock of marketed or commercially trade products to determine baselines.

VII) Please provide any other relevant information.

Achieving the goals and objectives for sustainable use of biodiversity requires participation and partnerships between a range of stakeholders and user groups. Sources of information and data for this goal and target may include the following:

- South African National Biodiversity Institute
- Department of Water Affairs and Forestry (Branch: Forests; Community Forest Areas)
- Forest Stewardship Council
- Department of Environmental Affairs and Tourism (Marine and Coastal Management Branch)
- Department of Agriculture (Comprehensive Agricultural Support Programme, Land Redistribution for Agricultural Development, LandCare, AgriBEE (Black Economic Empowerment))
- Department of Public Works
- Department of Land Affairs
- Department of Provincial and Local Government
- Provincial agriculture departments
- Provincial departments for conservation and environmental management
- Indigenous Plant Use Forum
- Universities and research institutes

Box IX.

Target 4.2	**Unsustainable consumption, of biological resources, or that impacts upon biodiversity, reduced**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest		X	
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

b) NBSAP

NBSAP Outcome 4.4:

- Unsustainable consumption of biological resources, or that impacts on biodiversity, reduced

Relevant NBSAP 5-year targets:

- Unsustainable consumption of biological resources, or that impacts on biodiversity, reduced (4.4)

IV) Please provide information on current status and trends in relation to this target.

Commercial forest plantations (exotic species) covered some 1 339 282 hectares in 2004. Of this area 1 088 071 ha has received Sustainable Forestry Certification. In recent years the rate of new

afforestation in South Africa has declined considerably due to a number of factors, such as suitable forestry land becoming increasingly scarce and a tightening of the procedures for the granting of the necessary water use licences. A reported 7 418 ha of new planting occurred in 2002/2003 and only 1 995 ha in 2003-2004.

Two species of hake are caught in South African waters: deep water hake and shallow water hake, both of which experienced a downturn in catches. The Total Allowable Catch (TAC) was lowered by 3 000 tons for the second consecutive year in 2004. The combination of trawling and line fishing may be having a negative impact on shallow water hake.

Small pelagic fish (pilchard, anchovy, red-eye round herring and horse-mackerel) have had record stocks in South African waters during the past four years, possibly due to a conservative management strategy. In 2004, the TAC for pilchards was increased by 58% to 450 000 tons, and the anchovy TAC by 65% to 300 000 tons.

The illegal harvest of abalone has more than doubled since 2001 to an estimated 930 tons per year, almost four times the catch of the commercial industry.

Between 2001 and 2004, DEAT issued subsistence fishing rights to 35 identified fishers or villages, by means of exemptions (temporary permits). During the 2004/2005 reporting period, 210 exemptions were issued for brown mussels and red bait. In the Eastern Cape, 558 east coast rock lobster exemptions were issued to eight villages. In the Northern Cape, 45 exemptions were issued to Olifants River fishers.

By the end of 2004, a total of 166 cases had been heard in the Environmental Court in Hermanus. Sentences were handed down in 125 cases. Most of these concerned the fishing or possession of abalone or rock lobster. In a number of cases, vehicles used in committing an offence were forfeited to the State.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the corresponding NBSAP outcome.

- Area of forest, agricultural and aquaculture ecosystems under sustainable management *(CBD suggested indicator)* (4.4)
- Proportion of products derived from sustainable sources (*CBD indicator under development*) (4.4)
- Percentage of biodiversity-based products derived from sources that are sustainably managed (4.4)
- Economic value of trade in species (4.4)
- Market saturation by products mentioned above (4.4)
- Ecological footprint and related concepts *(indicator under development)* (4.4)

VI) Please provide information on challenges in implementation of this target.

Natural Resource Economics analyses and assessments of contributions to livelihoods of indigenous resource usage are needed.

VII) Please provide any other relevant information.

Box X.

Target 4.3	**No species of wild flora or fauna endangered by international trade**

I) National target: Has a national target been established corresponding to the global target above?	
a) No	
b) Yes, the same as the global target	X
c) Yes, one or more specific national targets have been established	

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest		X	
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?	
a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

b) NBSAP

NBSAP Outcome 4.4:

- Use of biological resources is well managed to optimise sustainable benefits.

Relevant NBSAP 5-year targets:

- Trade in threatened species and endemic species is sustainable (4.4)
- No species of wild flora or fauna endangered by international trade (4.4)

c) Forests

The Forest sector cooperates with border police and TRAFFIC in implementing guidelines and licence applications.

IV) Please provide information on current status and trends in relation to this target.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the corresponding NBSAP outcome.

- Population trends of selected species (4.4)
- Estimates of growth rate in trade in selected species per year (4.4)
- Economic value of trade in species (4.4)
- % increase in provincial agency compliance with CITES regulations (4.4)
- CITES Management Authority reports (4.4)
- No species status declines (5.4)

VI) Please provide information on challenges in implementation of this target.

VII) Please provide any other relevant information.

Box XI.

Goal 5	**Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced.**
Target 5.1	**Rate of loss and degradation of natural habitats decreased**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water	X		The Working for Wetlands Programme has set the following target: 300 wetlands, covering an area of 40 000 ha, to be rehabilitated by 2010
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest		X	
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?	
a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

b) NBSAP

NBSAP Outcome 1.4:

- A national biodiversity planning and assessment framework informs all decisions regarding land and resource use and spatial development.

Relevant NBSAP 5-year Targets:

- The NSBA is updated with latest available data (1.4)
- The National Spatial Development Perspective and all Provincial Growth and Development Strategies and Spatial Development Frameworks adequately reflect biodiversity priorities as set out in the NBSAP and NSBA (1.4)
- Guidelines for integrating biodiversity considerations into spatial planning and environmental management and associated support programmes enable provinces and municipalities to fulfil their biodiversity mandates (1.4)
- Guidelines for integrating biodiversity in environmental assessment are developed, adopted by government and implemented by environmental assessment practitioners (1.4)

NBSAP Outcome 3.2:

- Key production sectors and industries integrate biodiversity into their production and service standards.

Relevant NBSAP 5-year Targets:

- Rate of loss and degradation of natural habitats decreased (3.2)
- Dialogue has been initiated and relationships established with at least five key industries, and biodiversity has been incorporated in their production and service standards (3.2)
- The forestry and tourism industries and selected agricultural sectors have integrated biodiversity considerations into their production and service standards (3.2)
- The forestry and mining industries and selected agricultural sectors actively avoid threatened ecosystems in their production planning and implementation, and invest in managing threatened ecosystems under their control (3.2)
- Production lands in identified biodiversity priority areas managed consistent with the conservation of biodiversity (3.2)

NBSAP Outcome 5.3:

- Biodiversity is effectively managed in key ecological corridors and in high priority fragments of natural habitat across the landscape and seascape.

Relevant NBSAP 5-year Targets:

- Cooperative framework to improve off-reserve biodiversity conservation is in place, including the use of tools such as incentives, with financial commitment from government and pilots in priority areas (5.3)
- Biodiversity management plans have been developed, published and implemented for selected threatened ecosystems (5.3)
- Most useful spatial products and guidelines for provincial and local levels are determined, and a national programme to support provinces and municipalities is developed, with pilots

underway in each national priority area (5.3)

- At least five key industries are actively avoiding threatened ecosystems in their production, planning and operations, and invest in managing threatened ecosystems under their control (5.3)

c) Department of Water Affairs and Forestry

Water Conservation and Water Demand Management developed and implemented by 20 Water Management and Service Institutions supported by DWAF per annum over the next three years.

IV) Please provide information on current status and trends in relation to this target.

Loss and degradation of natural habitat is regarded as the single biggest threat to biodiversity in South Africa. The land cover map of South Africa divides land cover into a range of categories, including cultivated areas, grazing areas, forests, conservation, settlements and mining. This map indicates that, by 1989, 25% of the country's land surface area had been transformed by various intensive land uses (Department of Agriculture 2005 Strategic Review). Data from 2000 is currently being verified. This data would enable trends to be determined, but the trends are unknown at present.

The NSBA determined the ecosystem status (critically endangered, endangered, vulnerable, or least threatened) of each of the country's 440 vegetation types, by establishing how much of the original area of the vegetation type has been transformed relative to a series of thresholds for maintaining ecosystem functioning and viability. The NSBA is based on the 1996 National Land Cover data, and the ecosystem status is thus a conservative estimate.

The NSBA included the vulnerability of vegetation types and priority areas to a suite of pressures from land use change that are anticipated in the next ten years. These are based on the potential of areas for grazing, crops, afforestation (using exotic species), mining, and population density increase (as an indicator of urban expansion).

The number of bioregional plans, and biodiversity management plans for threatened ecosystems, published in terms of the Biodiversity Act (10 of 2004) is currently zero - but preparation of guidelines for publishing such plans is underway. These plans will play a key role in informing land-use planning and decision-making, and are an important tool for limiting further loss of natural habitat in threatened ecosystems and other biodiversity priority areas. Comprehensive spatial planning has been completed for several biomes – such as fynbos, succulent karoo, thicket and grasslands. Spatial biodiversity planning has also been completed in certain defined geographical areas, including the Wild Coast region of the Eastern Cape, the Gauteng, KwaZulu-Natal and Mpumalanga provinces, and the Maloti-Drakensberg (which includes parts of Lesotho). Some or all of these spatial biodiversity plans are likely to contribute to the gazetting of bioregional plans during the next few years.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the corresponding NBSAP outcome.

- Trends in remaining extent of selected biomes, ecosystems and habitats *[CBD suggested indicator]*
- Incorporation of biodiversity priorities in National Spatial Development Perspective, Provincial Growth and Development Strategies and Provincial Spatial Development Frameworks (1.4)
- Proportion of development applications approved per province (response indicator) (1.4)
- Compliance monitoring (% Records of Decisions and Authorisations for development applications monitored) (1.4)
- Proportion of expenditure of provincial conservation agencies and conservation sections in provincial departments on extension services (staff and operations) (1.4)

- Number of threatened ecosystems as determined in the NSBA, and percentage of ecosystems that change their status every five years, in terrestrial, river, wetland, estuarine and marine environments (3.2)
- Percentage of natural habitat lost to key land uses (cultivation, forestry, urban development, mining, industry) (3.2)
- Proportion of the area of each province and biome covered by threatened ecosystems (based on the original extent not on what is left after development) (3.2)
- Indicator on development in the coastal zone (such as proportion of the coastal zone developed) (*indicator to be developed*) (3.2)
- Extent of degraded terrestrial ecosystems, or the rate of change in degradation (3.2)
- Biodiversity intactness index (3.2)
- Proportion of quaternary catchments that are transformed (3.2)
- Proportion of main rivers that have had their ecological reserve comprehensively determined, in terms of the National Water Act (36 of 1998) (3.2)
- Proportion of main rivers that have had their ecological reserve implemented (3.2)
- Number of directives issued to farmers by National Department of Agriculture in terms of the Conservation of Agricultural Resources Act (CARA) (43 of 1983), per year (3.2)
- Number of hectares for which subdivision of agricultural land applications approved (this would be an indirect indicator of loss of natural habitat, because subdivisions are usually linked to changes in land use) (Note: this does not capture change of land use that is not linked to subdivision) (3.2)
- Rezoning from agricultural land use to other land use – number of hectares per year (3.2)
- Number of published bioregional plans and area (ha) covered by these (5.3)
- Number of biodiversity management plans for threatened ecosystems published in terms of the Biodiversity Act (10 of 2004) (5.3)

VI) Please provide information on challenges in implementation of this target.

One of the objectives of the Department of Agriculture is to ensure sustainable natural resource management and use. This objective is included in the National Action Programme developed in response to the Convention to Combat Desertification.

The Department of Water Affairs and Forestry has developed a Water Demand Management Strategy.

Several different government and research agencies have a role to play in monitoring, data collection and analysis of data – such as Department of Water Affairs and Forestry, Department of Agriculture, Council for Scientific and Industrial Research (CSIR), Water Research Commission and the South African National Biodiversity Institute. There needs to be a co-ordinated national programme. While considerable data is being collected, there are still many gaps, and problems relating to existing data. For example, available National Land Cover data is old (1996) and the time lags between data collection and data availability are too long. There are also concerns that the 1996 and 2000 National Land Cover data are not directly comparable, due to methodological differences, making it difficult to monitor trends. There is currently no reliable data on wetlands (extent, state, degradation indices, etc), but a National Wetlands Inventory, led by the Working for Wetlands programme, is underway.

The number and extent of threatened ecosystems was determined in the NSBA in 2004. The key criterion for determination of status was the extent of loss of natural habitat in each ecosystem. However, this loss of habitat was based on the 1996 Land Cover Data. The 2000 National Land Cover data has not yet been verified for the entire country and it is not clear when it will be released. There is therefore no reliable and up-to-date national data available on the percentage of habitat lost to key land uses, such as agriculture, plantation (commercial exotic) forests, mines and urban development. The extent and rate of change of terrestrial ecosystems and the rate of change of degradation is therefore not known. The Biodiversity intactness index (3.2) developed by the CSIR may be useful, as it does take degradation into account (through expert assessment).

VII) Please provide any other relevant information.

Ideally, a new national initiative is required to get complete and up-to-date information on land degradation and habitat loss, which needs to involve all key roleplayers with geographical information systems capability, such as the SANBI, Agricultural Research Council, Department of Agriculture, DEAT, Department of Water Affairs and Forestry, the South African Environmental Observation Network and CSIR.

A State of the Coast project has been completed by DEAT (Marine and Coastal Management Branch) and Department of Water Affairs and Forestry but the coastal zone has not yet been mapped.

The River Health Programme of the Department of Water Affairs and Forestry (DWAF) is a long-term comprehensive programme for determining the status of river systems in South Africa. The programme uses a number of indicators to derive a composite index for catchment quality. This has not yet been completed for all catchments.

The present ecological status categories assigned by DWAF to quaternary catchments, based on assessments of instream and riparian habitat integrity of main rivers is as follows:

Present ecological status category	**Description (DWAF)**	**Transformation status**
A	Natural, unmodified	Intact
B	Largely natural	Intact
C	Moderately modified	Rehabilitation potential
D	Largely modified	Transformed
E	Seriously modified	Transformed
F	Critically modified	Transformed

Box XII.

Goal 6	**Control threats from invasive alien species.**
Target 6.1	**Pathways for major potential alien invasive species controlled**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest		X	
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

b) NBSAP

NBSAP Outcome 3.3:

- A multi-agency national programme deals with the full suite of impacts posed by invasive species across the landscape and seascape.

Relevant NBSAP 5-year Targets:

- A co-ordinated national programme has been established for import control of the full suite of potentially invasive species (3.3)
- Institutional capacity and structures are in place to audit, monitor and enforce invasive species legislation (3.3)
- Monitoring, control and eradication plans in place for priority alien species that threaten ecosystems, habitats or species (3.3)
- Pathways for major potential invasive species controlled (3.3)

Note: The NBSAP includes reference to Genetically Modified Organisms, as there is some concern

that not enough is known and understood about the possible impacts on indigenous species.

NBSAP Outcome 3.5:

- Effective management and control measures minimize the potential risks to biodiversity posed by Genetically Modified Organisms.

15-year Target:

- No genetically modified organisms posing a threat to biodiversity are released into the environment (SO3)

5-year Targets:

- Institutional arrangements for monitoring and inspection of GMOs have been rationalised and strengthened (3.5)
- Capacity for monitoring and reporting on GMOS has been created and is fully operational (3.5)
- Capacity for biosafety research is created (3.5)

c) Department of Water Affairs and Forestry / Working for Water

Strategic objective 6.4 (Implement solutions for reconciling water supply and demand) sets the following outputs:

- 2005/06: prioritized invasive alien plant species treated and cleared – 800 000 hectares initial and follow-up clearing
- 2006/07: prioritized invasive alien plant species treated and cleared – 900 000 hectares initial and follow-up clearing
- 2007/08: prioritized invasive alien plant species treated and cleared – 1 000 000 hectares initial and follow-up clearing

IV) Please provide information on current status and trends in relation to this target.

It is estimated that in South Africa 9.6 million ha of DWAF priority licensing catchment areas and 7.5 million ha of conservation priority areas (terrestrial) are infested with invasive alien plants. Invasive alien plants invade at an annual rate of 5% doubling their impact every 15 years.

Alien plants, mainly trees and woody shrubs, have invaded an estimated 10.1 million ha (year 2000 estimate) of South Africa and Lesotho, an area larger than the province of KwaZulu-Natal. The equivalent condensed area is 1.7 million ha which is greater than the area of Gauteng province. The Western Cape is the most heavily invaded province at about a third of the total area, followed by Mpumalanga, KwaZulu-Natal and Limpopo. The catchments of the Berg and Breede Rivers are the most heavily invaded followed by the George-Tsitsikamma region, Port Elizabeth coastal region and the Drakensberg escarpment in Mpumalanga.

There are 117 invasive alien plant (IAP) species identified as major invaders (i.e. those that are well established and already have substantial impact) and 84 species as emerging (i.e. those that currently have less impact but have attributes and a potentially suitable habitat that could increase their future impact) IAP species. Of these major IAPs identified, 29 are considered to be aggressive transformers i.e. those that change the character, condition, form or nature of ecosystems over a substantial area relative to the extent of that ecosystem.

Of the 117 species identified as major invaders 94 have already been afforded legal status through the Conservation of Agricultural Resources Act (43 of 1983).

To date, 95 species of biocontrol agents have been introduced into South Africa to control 48 weed species. 25% of these introductions have resulted in the complete control of the target weed species, 32% in substantial suppression and a further 25% of the introductions still too recent for evaluation.

As an alien plant clearing programme, Working for Water (WfW) has achieved the following:

- An estimated 927 000 to 1 million hectares of invasive alien plants have been cleared over the past seven years
- This clearing yielded an estimated release of 48 –56 million cubic metres of additional water for alternative uses annually
- More than 20 000 beneficiaries, previously unemployed, received gainful employment and training through the programme annually
- Over 15 million person-days of employment have been generated by WfW
- 60% of women have been aggressively targeted, 20% youth and 5% disabled have been targeted
- Implementation of a massive catchment rehabilitation programme comprising 303 clearing sites, aquatic weeds and biocontrol hectares
- Establishment of the Working on Fire programme throughout South Africa.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future). Numbers in brackets refer to the corresponding NBSAP outcome.

- Trends in invasive alien species (3.3)
- National coordinating authority (for monitoring, control and eradication of invasive species) is in place (3.3)
- Environmental courts established in all provinces (3.3)
- Numbers of people involved in invasive alien species related research and number of projects (3.3)
- Level of investment in, and funding allocated to, alien invasive species related research (3.3)
- Alien and invasive species permits database established (3.3)
- Number of jobs created through invasive species control programmes (3.3)
- Economic value of the products coming out the above programmes as well as any products produced from invasive species (3.3)
- Alien and invasive species import and export permits database (3.3)
- Number of approved invasive species monitoring, control and eradication plans in place (3.3)
- Allocation of resources for implementation and monitoring of approved invasive species management plans (3.3)
- Number of listed invasive alien species per ecosystem or biome; percentage of area invaded per ecosystem or biome [*NSoER proposed indicator*] (3.3)
- Area (ha and %) of municipal land invaded by invasive alien species (3.3)
- Listed invasive species throughout SA, including all ecosystems, are controlled and where possible eradicated (3.3)
- Suitable indicators on GMOs *to be developed* (3.5)
- Increased allocation of resources for monitoring and reporting on GMOs (3.5)
- Number of biosafety researchers (3.5)
- Increased allocation of resources for biosafety research (3.5)

VI) Please provide information on challenges in implementation of this target.

Working for Water has achieved recognition and acknowledgement as a global leader in the field and has to date received 35 national and international awards. However, a challenge to the programme is the maintenance of the cleared hectares through either controlled ongoing follow-up and or the systematic handover of management of land to landowners.

A further constraint is that the programme has had a focus on woody plants, and there is a need to expand invasive alien programmes to other taxa, and to establish a coordinating authority.

VII) Please provide any other relevant information.
Two key pieces of legislation control invasive species: the Conservation of Agricultural Resources Act (43 of 1983), which is primarily concerned with agricultural pests and weeds and is administered by the Department of Agriculture, and the Biodiversity Act (10 of 2004) which is currently developing a comprehensive list of invasive species, of all taxa, which will need to be controlled. Chapter 5 of the Biodiversity Act, on species and organisms posing potential threats to biodiversity, also requires that all organs of state in all spheres of government must prepare an invasive species monitoring, control and eradication plan for land under their control. These should be part of environmental management plans required in terms of the National Environmental Management Act (107 of 1998) and part of protected area management plans, required in terms of the Protected Areas Act (57 of 2003). The Biodiversity Act also provides that if an alien species should establish itself in nature as an invasive species because of the actions of a specific person, a competent authority may hold that person liable for any costs incurred in the control and eradication of that species. The Agricultural Research Council also carries out research on biological control of invasive alien species and economical follow up solutions.

Box XIII.

Target 6.2	**Management plans in place for major alien species that threaten ecosystems, habitats or species**

I) National target: Has a national target been established corresponding to the global target above?	
a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest		X	
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?	
a) No	

b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

See Box 6.1

IV) Please provide information on current status and trends in relation to this target.

See Box 6.1

V) Please provide information on indicators used in relation to this target.

See Box 6.1

VI) Please provide information on challenges in implementation of this target.

See Box 6.1

VII) Please provide any other relevant information.

See Box 6.1

Box XIV.

Goal 7	**Address challenges to biodiversity from climate change, and pollution.**
Target 7.1	**Maintain and enhance resilience of the components of biodiversity to adapt to climate change**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest		X	

f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

b) NBSAP

NBSAP Outcome 3.4:

- An integrated national programme facilitates adaptation to the predicted impacts of climate change on biodiversity across the landscape and seascape. (3.4)

Relevant NBSAP 5-year Targets:

- The National Climate Change Response Strategy and Action Plan is incorporated into national, provincial and local land and resource use plans, policies, programmes and decision-making processes, and into protected area design (3.4)
- Maintain and enhance resilience of the components of biodiversity to climate change (3.4)

c) National Climate Change Response Strategy

South Africa's National Climate Response Strategy was approved in October 2004. The strategy includes measures for both mitigation and adaptation, but a detailed action plan is still being developed.

IV) Please provide information on current status and trends in relation to this target.

It is difficult to assess how much change in vegetation and species distribution can already be attributed to climate change, although there is evidence that some species have already started to migrate to higher altitudes and to suffer damage and loss due to increased temperatures.

A South African country study on climate change, published in 1999, used bioclimatic modelling techniques to assess vulnerability and adaptation of plant biodiversity. The study predicted that the area hospitable to the country's current biomes is likely to shrink to about 38 – 55 % of their current area. The largest changes are expected to occur in the western, central and northern parts of the country. These changes include the almost complete loss or displacement of the succulent karoo biome along the west coast and interior coastal plain, an extensive eastward shift of the Nama karoo biome across the interior plateau, and contraction of the savanna biome on the northern borders of the country. Higher levels of atmospheric carbon and reduced levels of frost are expected to encourage tree growth and an expansion of the savanna biome into the grassland biome. Although the fynbos biome is not expected to contract much in terms of area, many species are likely to be lost, due to more frequent and more intense fires, and loss of animal species important for pollination and seed dispersal. The mountainous areas may provide refuges for some species, if they are able to migrate to new areas. Species composition is likely to change across all biomes, leading also to major structural vegetation changes, especially in the grassland biome.

South African studies modelling the impacts of anticipated climate changes on 179 South African animal species indicate that some species are likely to be minimally affected, with no change in range size, while others are expected to become extinct. Most species' range sizes are expected to contract. Species-rich areas are likely to contract and become concentrated around the eastern highlands. Species losses are likely to be highest in the west, with the majority of range shifts in an easterly direction, following the anticipated east-west aridity and temperature gradients. A higher proportion of red data species are expected to be impacted on by range shifts.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the corresponding NBSAP outcome.

- Climate change concerns are reflected in related national, provincial and local decision-making and planning processes (3.4)
- Energy-saving and emission reducing programmes are being implemented (3.4)
- Climate change adaptation programmes underway (3.4)
- Degree of connectivity of ecosystems and habitat fragments *[CBD suggested indicator]* (3.4)

VI) Please provide information on challenges in implementation of this target.

The predicted impacts of climate change on the vegetation and fauna of South Africa are serious and will have economic impacts on the tourism sector. For example, many of the faunal species of the Kruger National Park are predicted to undergo range shifts that may lead to local extinctions. South Africa is already a dry country and dryland agriculture is likely to become more restricted, impacting heavily on subsistence communities in the Northern Cape, North West, Free State and Eastern Cape provinces. Fruit and vine growing regions are expected to shift, with potentially devastating impacts on the agricultural economy of the Western Cape.

The impact of climate change is likely to be compounded by loss, fragmentation and degradation of natural habitat, which constrains the movement of species, and may mean that areas that would have been suitable for species to migrate into under changing climatic conditions are unable to support such shifts.

VII) Please provide any other relevant information.

An attempt has been made with the 2004 NSBA, to include climate change considerations in the identification of priority areas for conservation. Data layers included in the analysis include spatial components of national scale ecological processes, such as high carbon sequestration areas and areas of biome resilience to climate change, which are usually areas with greatest topographic heterogeneity.

There is a need for a specific research project regarding the degree of connectivity of ecosystems and habitat fragments.

Research reports include:

South African Country Study on Climate Change. Plant Biodiversity: Vulnerability and Adaptation Assessment. (1999) Climate Change Group, National Botanical Institute and Botany Department, University of Cape Town.

South African Country Study on Climate Change. Vulnerability and Adaptation Assessment of South African Animal Taxa to Climate Change. Department of Zoology and Entomology and Centre for Environmental Studies, University of Pretoria and Institute for Soil, Climate and Water, Agricultural Research Council.

Nature Divided. Land degradation in South Africa. (2001) Hoffman, M.T. and Ashwell, A. University of Cape Town Press.

Box XV.

Target 7.2	**Reduce pollution and its impacts on biodiversity**
I) National target: Has a national target been established corresponding to the global target above?	
a) No	

b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water	X		See below.
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest		X	
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

b) NBSAP

NBSAP Outcome 3.6:

- Effective waste management and pollution control measures limit the impacts of pollution on biodiversity.

Relevant NBSAP 5-year Targets:

- An early warning system and rapid response mechanism is in place to mitigate the impacts of pollution and waste disposal on biodiversity.
- The resource directed water quality management policy informs integrated decision-making to reduce pollution and minimise the impacts of pollution on biodiversity.

c) Department of Water Affairs and Forestry

Strategic objective 7.1: Ensure the protection of inland and estuarine water based ecosystems, and of groundwater resources in the context of impacts on land-based ecosystems

Strategic objective 7.2: Ensure minimization of impacts of waste and land-based activities on water resources

Outputs include:

- National Water Quality Management Framework Policy
- Remediation Strategy, policy and guidelines

- Source Management Strategy
- Strategy for Waste Discharge Charge System
- Best Practice Guidelines for Nutrient Management
- Diffuse Source Policy
- Waste Discharge Standards
- Industrial Water Use Licensing
- Cleaner production in industrial sector
- Comprehensive Framework for Integrated Water Resources Management for mining sector
- Water Pollution Control measures at abandoned mines
- Minimum requirements for waste disposal

IV) Please provide information on current status and trends in relation to this target.

There is little data available directly linking pollution, such as aquatic pollution, on biodiversity. Two of South Africa's Ramsar sites are listed on the Montreux Record, due to pollution. These are Blesbokspruit and Orange River Mouth.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future). Numbers in brackets refer to the corresponding NBSAP outcome.

- Extent of impact on biodiversity due to pollution incidents (3.6)
- % reduction in hazardous pollutants and solid waste reaching sensitive environments (3.6)
- Water quality in aquatic ecosystems *[CBD suggested indicator]* (3.6)
- Application of water resource quality objectives (3.6)

VI) Please provide information on challenges in implementation of this target.

VII) Please provide any other relevant information.

Box XVI.

Goal 8	**Maintain capacity of ecosystems to deliver goods and services and support livelihoods.**
Target 8.1	**Capacity of ecosystems to deliver goods and services maintained**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest		X	
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

b) NBSAP

NBSAP Strategic Objective 3:

- Integrated terrestrial and aquatic management minimizes the impacts of threatening processes on biodiversity, enhances ecosystem services and improves social and economic security.

NBSAP Outcome 3.1:

- National initiatives to manage terrestrial and aquatic ecosystems are coordinated, developed and implemented with full stakeholder participation to contribute to sustainable socio-economic development.

Relevant NBSAP 5-year Targets:

- Capacity of ecosystems to deliver goods and services is maintained (3.1)
- Five Catchment Management Agencies are operational, and have integrated quantitative biodiversity targets into their Catchment Management Strategies, and this is reflected in the Water Resource Strategy (3.1)
- The National LandCare Programme and the Comprehensive Agricultural Support Programme incorporate biodiversity targets, water allocation limitations and recommendations from the National Action Plan to Combat Desertification (3.1)
- The Ecological Reserve has been determined and implemented for priority surface and groundwater resources (3.1) *[Note: change of wording from NBSAP document]*
- Production activities in the coastal zone, especially housing, industry, transport, mining and agriculture, include biodiversity considerations in development plans and implement integrated environmental management (or integrated land, water and waste management) plans (3.1)
- Advance implementation of the Global Plan of Action for the Protection of the Marine Environment from Land-based Activities with particular emphasis on in the period 2002 – 2006 on municipal waste water, physical alteration and destruction of habitats and nutrients (3.1)

Outcome 4.3

- The ecological and social sustainability of extractive use of biological resources is researched, assessed and monitored, and opportunities for improvement are identified and implemented.

5-year Targets:

- A list of priority biological resources, based on social, economic and ecological criteria as well as indigenous knowledge, guides research, monitoring, management and recovery plans (4.3)
- Research, monitoring and evaluation programmes are in place to assess the ecological and social sustainability of extractive use of key indigenous biological resources (4.3)

IV) Please provide information on current status and trends in relation to this target.

The River Health Programme of the Department of Water Affairs and Forestry (DWAF) is a long-term comprehensive programme for determining the status of river systems in South Africa. The programme uses a number of indicators to derive a composite index for catchment quality, which informs management decisions and interventions.

Examples of expenditures on rehabilitation and restoration of degraded ecosystems:

The Expanded Public Works Programme is a nationwide programme seeking to draw significant numbers of unemployed people into the productive sector of the economy, gaining skills while they work and increasing their capacity to earn an income. Several innovative public-works and poverty-relief programmes have been developed which focus on restoration, such as the Working for Water Programme which clears invasive alien trees; Working for Wetlands; CoastCare and LandCare. The budget for these programmes, which amounted to R650 million in 2004/5, is one of the highest in the world, relative to Gross Domestic Product. Examples of budgets include:

- Working for Wetlands: Budget has increased from R 20 million in 2000/1 to R 68 million in 2005/6 (total: R228 million). Criteria for selection of wetlands for rehabilitation focuses on reinstating as far as possible lost or diminished goods and services, especially those upon which surrounding communities may be directly dependent for their livelihoods.
- Working for Water (WfW): An initial amount of R25 million in 1995 was allocated to WfW from the RDP Poverty Relief budget. WfW has managed to increase this start-up budget in 1995 to R414 million in 2003/4 (total: R 1,208 billion)
- DEAT allocated R386 million to DEAT's Social Responsibility Programme for 2004/05, which was allocated to 163 projects in the focus areas of Working for Tourism, People and Parks, Sustainable Land-based Livelihoods, Working for the Coast and Working on Waste.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the corresponding NBSAP outcome.

- Ecosystem status, for terrestrial, river, wetland, estuarine, coastal and marine ecosystems (3.1) (*note this is repeat of the indicator/s under Goal 5*)
- Indicators on degradation *(from Goal 5) also apply here as degradation implies loss of ecosystem function, goods and services*
- Index of fragmentation per biome (3.1)
- Marine trophic index *[CBD suggested indicator]* (3.1)
- Expenditure by organs of state on rehabilitation programmes (including Working for Wetlands, LandCare, Comprehensive Agricultural Support Programme (3.1)
- % of water resources fit for different levels of use (domestic, industrial, recreational, agriculture, ecological), which is determined according to water quality guidelines on these different uses) (3.1) *[Equivalent to CBD suggested indicator: Water quality in aquatic ecosystems]*
- Ecological state of aquatic ecosystems (this combines health, integrity, water quality, biota and other factors) (3.1)
- Number of rivers that have been classified in terms of the National Water Act (36 of 1998) (3.1)

VI) Please provide information on challenges in implementation of this target.

The Department of Agriculture has set the challenging target of redistributing 30% of agricultural land by 2014 to those people and communities disadvantaged by the apartheid policies of the previous government. This presents challenges regarding support for new landowners, in terms of access to information, credit, training, etc. It also presents an opportunity for the introduction of more sustainable agricultural practices, but for this opportunity to be realized will require considerable capacity and resources to be channelled to new landowners, and will require several relevant departments and organs of state, NGOs and the private sector to work together.

VII) Please provide any other relevant information.

Note: In completing this report, the interpretation was made that this Goal is about ensuring ecosystem health (i.e. the capacity to deliver goods and services), while the actual use of those goods and services is in Goal 4. However, this Goal overlaps with Goal 5.

A River Classification System is under development, to be gazetted by 2006. After the classification system has been gazetted, pilot classification will start in priority areas.

Box XVII.

Target 8.2	**Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people maintained**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural			
b) Inland water			
c) Marine and coastal			
d) Dry and subhumid land			
e) Forest			
f) Mountain			

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

b) NBSAP

<u>NBSAP Outcome 1.1</u>

- The value of biodiversity to the economy and to people's lives is quantified and monitored to inform policy, strategy and action

<u>5-year Targets:</u>

- Biodiversity valuation is used as a mechanism to guide national government budget allocations and spending patterns, and a system is in place to monitor its uptake into policy, strategy and action (1.1)
- The social and economic value of biodiversity, as reflected in appropriate macroeconomic indicators, shows that South Africa's stock of natural capital is not declining (1.1)

IV) Please provide information on current status and trends in relation to this target.

Good national data on the trends with regard to the capacity of ecosystems to contribute to livelihoods is not available. Some examples of status and trends, as indicated by off-takes, are noted in Box IX.

V) Please provide information on indicators used in relation to this target.

Note: indicators applied to this target aim to measure whether ecosystems are continuing to provide goods and services, and link strongly to MDG goals and indicators.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the corresponding NBSAP outcome.

- Appropriate indicators on biodiversity and land to be developed (National Resource Accounts on biodiversity and land are currently under development by Statistics South Africa) (1.1)
- Relative volume of "virtual water" that SA "exports", as determined by the National Resource Accounts on Water (1.1)
- Ecological footprint per capita (1.1)
- Well-being index
- Health and well-being of communities who depend directly on local ecosystem goods and
- services *[CBD suggested indicator] (to be determined in future*)
- Human vulnerability to environmental change [*NSoER proposed indicator]*
- Suitable indicators on food and water, and poverty and water to be identified
- Number, or %, of households that use water from rivers (i.e. non-piped water), as determined in household surveys by Statistics South Africa
- Population trends of selected species that are used (e.g. for food, medicine, shelter, fuel (not recreation), including flora and fauna (e.g. mopani worms, fish, game) - *[Equivalent to CBD suggested indicator: Biodiversity used in food and medicine (indicator under development)]*
- Proportion of useful species that are Red Data Listed
- Number of species listed in terms of the Biodiversity Act (10 of 2004) (only species threatened by extractive use are included in this list)

VI) Please provide information on challenges in implementation of this target.

VII) Please provide any other relevant information.

Note: This CBD target has been interpreted to have a focus on maintaining the capacity of ecosystems to provide goods and services. South Africa has not separated out the need to ensure the continued provision of such goods and services only to poor people. Due to high levels of poverty across the country, in both urban and rural areas, this target is applied across the country, and overlaps with all objectives and targets of the NBSAP.

It would be useful to quantify the extent to which people are reliant on local ecosystem goods and services.

Population trends of selected species that are used (e.g. for food, medicine, shelter, fuel (not recreation) – includes flora and fauna (e.g. mopani worms, fish, game) need to be monitored. South Africa needs to develop measurement of this indicator. This cannot be done for all species used, as there are too many, criteria for selection of indicator species (e.g. species that are used on a large scale, and that are used consumptively, either for subsistence or commercially, and are harvested from the wild, not cultivated). Some Red Data Lists are available, others are being developed. A list of useful species needs to be developed.

Various sources of data need to be pulled together in a single database.

Box XVIII.

Goal 9	**Maintain socio-cultural diversity of indigenous and local communities.**
Target 9.1	**Protect traditional knowledge, innovations and practices**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

The Department of Arts and Culture is concerned with traditional knowledge and indigenous knowledge systems.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest		X	
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

b) NBSAP

NBSAP Strategic Objective 4 includes some aspects of benefit sharing and indigenous knowledge systems (IKS). See Goal 10 below.

IV) Please provide information on current status and trends in relation to this target.

The South African population is diverse, consisting of the following groups: the Nguni people (consisting of the Zulu, Xhosa, Ndebele and Swazi); the Sotho-Tswana people (including the Southern, Northern and Western Sotho); the Tsonga; the Venda; Afrikaners; English; so-called coloureds; Indians, and small numbers of Khoi and San people. In addition, people of various cultural backgrounds have immigrated to South Africa, from the rest of Africa, Europe and Asia.

South Africa has eleven official languages: (listed alphabetically) Afrikaans, English, isiNdebele,

isiXhosa, isiZulu, Sepedi, Sesotho, Setswana, siSwati, Tshivenda and Xitsonga. The most spoken mother tongues are isiZulu, isiXhosa, Afrikaans, Sepedi, English and Setswana.

This diversity has contributed to a diverse range of cultures, some linked to traditional knowledge on biodiversity, such as the traditional uses of indigenous plant species for medicinal purposes.

V) Please provide information on indicators used in relation to this target.

VI) Please provide information on challenges in implementation of this target.

VII) Please provide any other relevant information.

The Department of Arts and Culture is preparing an Indigenous Knowledge Systems Bill.
The Department of Health is preparing a Traditional Healers Bill.

Box XIX.

Target 9.2	**Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit sharing**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	
d) Dry and subhumid land		X	
e) Forest		X	
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	

b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

b) NBSAP

NBSAP Strategic Objective 4 includes some aspects of benefit sharing and indigenous knowledge systems (IKS). *See Goal 10 below*.

IV) Please provide information on current status and trends in relation to this target.

V) Please provide information on indicators used in relation to this target.

VI) Please provide information on challenges in implementation of this target.

VII) Please provide any other relevant information.

Box XX.

Goal 10	**Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources.**
Target 10.1	**All transfers of genetic resources are in line with the Convention on Biological Diversity, the International Treaty on Plant Genetic Resources for Food and Agriculture and other applicable agreements**

I) National target: Has a national target been established corresponding to the global target above?

a) No	
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	X

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural		X	
b) Inland water		X	
c) Marine and coastal		X	

d) Dry and subhumid land		X	
e) Forest		X	
f) Mountain		X	

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	X

Please provide details below.

b) NBSAP

NBSAP Outcome 4.1:

- An equitable access, rights and responsibilities regime promotes sustainable use of biological resources.

Relevant NBSAP 5-year Targets:

- Bioprospecting framework and regulations are developed and implemented (4.1)
- Implementation of land reform programmes takes access to biological resources into account (4.1)
- Equitable distribution of usufruct rights to previously disadvantaged groups for living marine resources (4.1)
- Programme to raise awareness about opportunities for access to and benefit sharing from biological resources developed and piloted among rural communities in priority areas (4.1)
- Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife, and other valuable species is conserved, and associated indigenous and local knowledge is maintained (4.1)
- The rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their right to benefit-sharing, are protected (4.1)
- All transfers of genetic resources are in line with the CBD and the International Treaty on Plant Genetic Resources for Food and Agriculture (4.1)
- Benefits arising from the commercial and other utilization of genetic resources are shared with the countries providing such resources (4.1)

c) Bioprospecting Consortium

In the absence of national guidelines and a framework, a bioprospecting consortium was established by means of a Memorandum of Understanding, between a number of institutions directly engaged with bioprospecting activities, such as the Council for Scientific and Industrial Research, SANBI, the Medical Research Council and several universities, which agreed to set up a trust fund with 50% of any royalties received.

IV) Please provide information on current status and trends in relation to this target.

No regulations have been promulgated in terms of the Biodiversity Act (10 of 2004) as at 2005.

There are no Benefit Sharing Agreements and Material Transfer Agreements registered in terms of the Act. (However a number of agreements were concluded prior to promulgation of the Act, such as the Ball Agreement and Free State University agreement and others.) There is no central database for this information.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the corresponding NBSAP outcome.

- # benefit sharing agreements in place that contain comprehensive provisions on benefits for relevant stakeholders (4.1)
- Rand values of benefit sharing agreements (4.1)
- # beneficiaries involved in benefit sharing agreements (4.1)
- Increased value-added for Non Timber Forest Products with associated increase in benefits to communities or other beneficiaries (DWAF) (R values) (4.1)
- *Indicator on* land reform and access to biological resources to *be developed* (4.1 / 5.2)
- Permits, licences, or allocations issued by MCM/EKZNW that give previously disadvantaged individuals access to living marine resources (4.1)
- Percentage increase in allocation of fishing rights and other concessions to previously disadvantaged groups (4.1)
- Rural communities that were targeted have increased awareness on the opportunities associated with ABS (4.1)
- Farm animal projects in these areas record increased awareness of ABS amongst rural communities (4.1)

VI) Please provide information on challenges in implementation of this target.

South Africa has not yet established a focal point for Access and Benefit Sharing. There is thus no central database on permits issued, and no mechanism to deal with cross-boundary issues relating to ABS (for example, many plants species are found across the region, including in neighbouring countries).

There is a need to set up a tracking, monitoring and recording system for bioprospecting and access and benefit sharing, that all permit issuing authorities and research institutions can feed information into.

There is no mechanism to control the movement of genetic material such as sperm of wildlife species.

VII) Please provide any other relevant information.

For South Africa, Goal 10 should be expanded to deal with benefits from all natural and biological resources not just genetic resources, due to national need for redress and redistribution.

A Bioprospecting Fund is to be established in terms of the Biodiversity Act (10 of 2004). Bioprospecting and ABS Regulations will be published in terms of the Biodiversity Act.

There is a need for surveys and special studies on awareness raising with regard to access and benefit sharing, and a centralized point for all data collection.

Box XXI.

Target 10.2	**Benefits arising from the commercial and other utilization of genetic resources shared with the countries providing such resources**
I) National target: Has a national target been established corresponding to the global target above?	
a) No	X

b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	

Please provide details below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural			
b) Inland water			
c) Marine and coastal			
d) Dry and subhumid land			
e) Forest			
f) Mountain			

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

IV) Please provide information on current status and trends in relation to this target.

V) Please provide information on indicators used in relation to this target.

VI) Please provide information on challenges in implementation of this target.

VII) Please provide any other relevant information.

Box XXII.

Goal 11	**Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention.**
Target 11.1	**New and additional financial resources are transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20**

I) National target: Has a national target been established corresponding to the global target above?

a) No	X
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	

Please provide details below.

No equivalent national target has been established, as South Africa is a developing country.

However, equivalent national goal and targets have been established that apply within the country, as institutional capacity is an important component of implementation of the NBSAP. These are detailed below.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	Yes	No	Details
a) Agricultural			
b) Inland water			
c) Marine and coastal			
d) Dry and subhumid land			
e) Forest			
f) Mountain			

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

b) NBSAP

NBSAP Strategic Objective 2:

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

15-year Targets:

- Biodiversity concerns occupy a significant place on the national agenda (SO2)
- All organs of state in all spheres of government, and all stakeholders and role players, cooperate and work effectively and efficiently to achieve biodiversity management objectives (SO2)

NBSAP Outcome 2.1:

- The biodiversity sector is transformed and representative of South African society.

Relevant NBSAP 5-year Targets:

- Public sector transformation has achieved transformation targets (2.1)

NBSAP Outcome 2.2:

- Co-operative governance at all levels results in improved biodiversity management.

Relevant NBSAP 5-year Targets:

- Biodiversity sector coordination arrangements are effective (2.2)
- The national environmental reporting framework is an effective tool for monitoring the integration of biodiversity into all national departments' policies, plans and programmes (2.2)
- A Biodiversity Charter addressing access, ownership and benefit inequity in the biodiversity sector is developed and performance in addressing equity targets in the private sector is tracked using a black economic empowerment scorecard (2.2)

NBSAP Outcome 2.3:

- Institutions with biodiversity-related responsibilities and programmes are effective, efficient and adequately capacitated.

Relevant NBSAP 5-year Targets:

- Agencies with statutory responsibilities for biodiversity management and biodiversity research have adequate capacity to perform mandatory functions (2.3)
- Municipal mandates for biodiversity are clarified, supported, funded and implemented (2.3)
- Stakeholders participate in implementation and monitoring of the National Biodiversity Framework (2.3)
- DEAT makes tender information on biodiversity projects freely available (2.3)
- The Environmental Management Inspectors are ensuring compliance with biodiversity regulations (2.3)
- Dispute resolution mechanisms manage conflicts regarding access, use and management of biodiversity (2.3)

NBSAP Outcome 2.4:

- Financial resources for biodiversity management are adequate, and effectively and efficiently used.

Relevant NBSAP 5-year Targets:

- Mandatory functions of agencies with statutory responsibilities for biodiversity conservation are adequately funded (2.4)

NBSAP Outcome 2.5:

- Information management systems, research priorities, and monitoring and evaluation frameworks are in place and effectively supporting biodiversity management

Relevant NBSAP 5-year Targets:

- Biodiversity monitoring informs biodiversity management plans, identification of threatened species and ecosystems, listing of invasive alien species, and identification of activities requiring environmental authorizations (2.5)
- SANBI's Integrated Biodiversity Information System (SIBIS) established and all relevant departments/institutions participate in the supply, use and sharing of information (2.5)
- National Monitoring and Evaluation Framework developed for threatened species, threatened ecosystems and threatening processes, and implementation phases identified (2.5)
- Conservation assessments for species (i.e. Red Data Lists) are up-to-date for key groups (2.5)
- National biodiversity research strategy developed, and used to guide allocation of research funding (2.5)
- National system for monitoring protected area management effectiveness (with emphasis on biodiversity objectives) has been developed (2.5)

NBSAP Outcome 2.6:

- A comprehensive and proactive national communication, awareness raising and advocacy strategy reaches targeted sectors and facilitates conservation and wise use of biodiversity.

Relevant NBSAP 5-year Targets:

- Biodiversity components are promoted in school environmental education programmes through materials development and teacher education (2.6)
- A focussed strategy is under implementation to create understanding of the value of biodiversity in key sectors, including local government, agriculture, forestry and mining (2.6)

NBSAP Outcome 2.7:

- Proactive engagement and cooperation with the international community enhances conservation and sustainable use of shared resources and globally important biodiversity in South Africa.

Relevant NBSAP 5-year Targets:

- South Africa actively coordinates biodiversity policy positions in multilateral environment agreements and the WTO with groups of like minded nations (2.7)
- South Africa meets obligations for regional cooperation on biodiversity management within the Southern African Development Community (SADC) and the African Union (2.7)
- South Africa meets obligations for biodiversity management in the marine environment and Antarctica (2.7)

Outcome 1.2:

- Biodiversity considerations are integrated into macro-economic, trade, industrial and fiscal policy.

5-year targets:

- The budget allocations and spending patterns of organs of state in all spheres of government reflect the full costs and benefits of ecosystem service provision (1.2)
- Opportunities for economic instruments which encourage activities that enhance biodiversity and discourage activities that impact negatively on biodiversity have been identified and implementation is underway (1.2)

Outcome 1.3:

- Biodiversity considerations are integrated into resource management policy and legislation

5-year targets:

- National government's cross-cutting policy frameworks and implementation plans (including the National Strategy for Sustainable Development) reflect the objectives of the NBSAP (1.3)
- National resource management policies incorporate biodiversity considerations (1.3)
- Legislation governing national, provincial and local resource management is aligned and rationalised where necessary and appropriate regulations have been published (1.3)

Outcome 4.2:

- Partnerships between government, the private sector, organised civil society and communities encourage entrepreneurship, innovation, investment and action at local level

IV) Please provide information on current status and trends in relation to this target.

- Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future. Numbers in brackets refer to the corresponding NBSAP outcome.

- Public sector transformation targets (2.1)
- Extent to which transformation targets in biodiversity-related government institutions are met (2.1)
- Indicator/index for co-operative governance (*to be developed*) (2.2)
- Extent that biodiversity obligations and objectives are captured in business plans of all directorates and departments (on a yes/no basis, not amount of money allocated) (2.2)
- Detailed memoranda of understanding agreed for natural resource permitting and management procedures; including research and information management (2.2)
- Number of bioregional programmes / total funding of bioregional programmes (2.2)
- Biodiversity Charter/BEE scorecard, which includes considerations of benefit-sharing (2.2)
- # and skill levels of staff responsible for biodiversity management and research (2.3)
- Numbers of staff in government who have biodiversity as their primary focus (2.3)
- Percentage of staff positions filled in agencies with statutory responsibilities for biodiversity (2.3)
- Biological scientists per capita (2.3)
- Municipal performance indicators (2.3)
- Extent of stakeholder participation in implementation and monitoring of the National Biodiversity Framework (2.3)
- Number of contributors to and users of the SANBI Integrated Biodiversity Information System (2.5)
- Protected area business plans and annual reviews (2.5)
- *General indicators to measure public interest in biodiversity under development*, such as number of people involved in volunteer programmes, e.g. monitoring programmes, stewardship programmes; schools registered with eco-schools, schools with registered Environmental Education programmes, readership of nature based magazines, etc. (2.6)
- Number of reports to Multilateral Environmental Agreements secretariats (2.7)
- Number of International agreements and MOUs (2.7)
- Number and area of transfrontier conservation areas (2.7)
- Number of biodiversity programmes in SADC and NEPAD (2.7)
- Annual budgets of departments with biodiversity management mandates and total biodiversity management budget (2.4)
- Biodiversity research funding allocations (2.5)
- Indicator for alignment of biodiversity research funding with biodiversity research priorities (*to be developed*) (2.4)
- Economic instruments for biodiversity conservation (e.g. incentives, tax rebates) and their levels of uptake (1.2)
- Number of common indicators between biodiversity-related monitoring and reporting system

(required in terms of the Biodiversity Act (10 of 2004)), State of Environment Reports, DWAF's monitoring and evaluation system (required in terms of the National Water Act (36 of 1998)) (1.3)

V) Please provide information on challenges in implementation of this target.

South Africa's Constitution (Act 108 of 1996) establishes three distinct spheres of government and the principle of cooperative governance. This principle applies to biodiversity conservation. Only national government is mandated to promulgate legislation in terms of marine resources, forests and water, which are considered national legislative competencies. The constitution does not mention biodiversity, although the Bill of Rights (chapter 2) establishes the right to have the environment protected.

While the principle of cooperative governance is clear, actual practice, especially with overlapping mandates, is difficult and full implementation of all new legislation promulgated since 1994 will take some time.

VI) Please provide any other relevant information.

Note: The wording of the CBD Targets is skewed towards developed countries. It is felt that 11.1 and 11.2 are not useful for developing countries, and sub-goals that are relevant to the developing countries need to be developed. Also, these sub-goals assume that developed countries do not have to do anything to improve their own capacity in order to achieve the 2010 Target. We recommend that the term "institutional capacity" be included in this CBD goal.

Box XXIII.

Target 11.2	**Technology is transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with its Article 20, paragraph 4**

I) National target: Has a national target been established corresponding to the global target above?

a) No	X
b) Yes, the same as the global target	
c) Yes, one or more specific national targets have been established	

Please provide details below.

No equivalent national target has been established, as South Africa is a developing country.

However, equivalent national goal and targets have been established that apply within the country, as institutional capacity is an important component of implementation of the NBSAP.

II) National targets for specific programmes of work: If such national target(s) ha(s)(ve) been established, please indicate here, and give further details in the box(es).

Programme of work	**Yes**	**No**	**Details**
a) Agricultural			
b) Inland water			
c) Marine and coastal			
d) Dry and subhumid land			
e) Forest			
f) Mountain			

III) Has the global or national target been incorporated into relevant plans, programmes and strategies?

a) No	
b) Yes, into national biodiversity strategy and action plan	X
c) Yes, into sectoral strategies, plans and programmes	

Please provide details below.

b) NBSAP

NBSAP Outcome 3.7

- Research and monitoring programmes support integrated management of terrestrial and aquatic ecosystems

5-year targets:

- Phase 1 of the National Monitoring and Evaluation Framework for integrated management of terrestrial and aquatic ecosystems has been implemented (3.7)

Outcome 4.3:

- The ecological and social sustainability of extractive use of biological resources is researched, assessed and monitored, and opportunities for improvement are identified and implemented.

5-year targets:

- A list of priority biological resources, based on social, economic and ecological criteria, as well as indigenous knowledge, guides research, monitoring, management and recovery plans (4.3)
- Research, monitoring and evaluation programmes are in place to assess the ecological and social sustainability of extractive use of key indigenous biological resources (4.3)

Outcome 5.5:

- Research and monitoring programmes support the establishment and effective management of the network of conservation areas

5-year Targets:

- National monitoring and evaluation framework for ecosystems and species is being piloted in priority areas, for threatened ecosystems and priority species of special concern (5.5)

IV) Please provide information on current status and trends in relation to this target.

V) Please provide information on indicators used in relation to this target.

The following indicators were identified through the NBSAP process. A comprehensive national monitoring and reporting framework is under development (as part of implementation of the NBSAP) and these may therefore be amended in the near future). Numbers in brackets refer to the corresponding NBSAP outcome.

- Number of contributors to and users of the SANBI Integrated Biodiversity Information System (2.5)
- Biodiversity research funding allocations (2.5)
- Indicator for alignment of biodiversity research funding with biodiversity research priorities (*to be developed*) (2.4)
- *Further indicators under development*

VI) Please provide information on challenges in implementation of this target.

VII) Please provide any other relevant information.

The Conference of the Parties, in decision VI/9, annex, adopted the Global Strategy for Plant Conservation. Parties and Governments are invited to develop their own targets with this flexible framework. The Conference of the Parties considered the Strategy as a pilot approach for the use of outcome oriented targets under the Convention. In decision VII/10, the Conference of the Parties decided to integrate the targets into the reporting framework for the Third National Reports. Please provide relevant information by responding to the questions and requests contained in the following tables.

Box XXIV.

Target 1. A widely accessible working list of known plant species, as a step towards a complete world flora.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
No specific targets have been set for the GSPC however some of the NBSAP targets are relevant to the GSPC.	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
This target is incorporated into the corporate strategic plan and relevant unit business plans of SANBI.	
III) Current status (please indicate current status related to this target) Considerable progress has been made with Target 1 of the GSPC, given that several significant checklists, including for some components, of the richest temperate flora in the world are now available. The history of the compilation of a comprehensive species (and lower taxa) list for southern Africa dates back about 20 years when PRECIS (Pretoria, National Herbarium (PRE) Computerised Information System), was used to generate a list for the so-called Flora of Southern Africa region. This region includes Namibia, Botswana, Swaziland, Lesotho and South Africa. As comprehensive as possible a list of all the taxa was published as a complete record of the flora of the region (Gibbs Russell et al. 1984). This pioneering book was followed by a second edition published in two parts. The first part, published in 1985, provided a list of the monocotyledons, cryptogams and gymnosperms (Gibbs Russell et al. 1985) and the second part, published in 1987, provided a list of the dicotyledons (Gibbs Russell et al. 1987). The production of an update of this list was initiated almost immediately and by 1993, the next generation of the southern African plant inventory was published (Arnold & De Wet 1993). Ten years later, in 2003, the centenary year of the National Herbarium of SANBI, the most recent publication of this inventory was published (Germishuizen & Meyer 2003). The publication of this tome of over 1 200 pages, was necessary as the previous volume (Arnold & De Wet 1993) had long been out of print and was considerably out of date. This also afforded the taxonomists of SANBI a good opportunity to add new distributional and biological information as a way of strengthening and enriching the list of names and thereby making it even more useful to a range of stakeholders.	

Apart from the comprehensive continental, regional and in-country checklists, systematists of SANBI have produced a range of plant inventories as responses to the needs expressed by many of the varied stakeholders of botanical information.

Succulents of southern Africa

A comprehensive checklist of succulents of southern Africa was produced eight years ago (Smith et al. 1997). This project was launched as a joint corporate activity between the then NBI and the Succulent Society of South Africa, and resulted in the publication of the definitive succulent plant checklist for the entire southern Africa. The outcome of this survey was astonishing: the region contains 4 674 succulent plants in 58 families and 350 genera! Following the production of the checklist (Smith et al. 1997), a world Flora for succulents was published by Springer-Verlag, through collaboration of an international consortium of succulent plant taxonomists.

Medicinal plants of southern Africa

The flora of southern Africa has a rich and long history of traditional use. As part of the efforts to document and disseminate non-sensitive information on the uses of the plants of the subcontinent, SANBI published a comprehensive survey of plant use (Arnold et al. 2002). This publication is especially significant since South Africa is a signatory to the Convention on Biological Diversity, which has the "…equitable sharing of benefits…" derived from the use of biodiversity as one of its cornerstones.

Aquatic plants of southern Africa

Wetlands are one of the most threatened habitats in southern Africa. These areas are easily viewed by the uninformed as watery wastelands, while they are in fact productive "sponges" that absorb and release water to maintain ecological services downstream. Many wetlands have been badly managed in the past, resulting in their contamination with aggressive, exotic alien species, among other things. To provide the most basic management tool, SANBI is in the process of upgrading the published list of southern African aquatic plants (Glen et al.1999) to the level of an informative, abbreviated Flora.

The second part of Target 1 of the GSPC [producing checklists] as a step towards a complete world Flora has also received attention in South Africa. SANBI has co-provided the leadership and drive to initiate the Species Plantarum-Flora of the World Programme (SPPFW), including hosting one of its early Steering Committee meetings and chairing the Steering Committee for the past several years. Through active participation, South African taxonomists have contributed several volumes to the series of published SPPFW volumes, even though this emerging young initiative is still devoid of the major funding investment it deserves (Smith 1996, 1997, 1998, 1999a, b, 2000, 2002, 2005).

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

South Africa is an active participant of the Global Taxonomy Initiative as well as the South Africa Biosystematics Initiative.

The South African National Biodiversity Institute, previously the National Botanical Institute, is the lead agency compiling national plant species lists.

Also see info in above box.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

A list of South Africa's plants (indigenous and naturalized) has been published by the South African National Biodiversity Institute (SANBI) and is available on the SANBI web site. South Africa's flora comprises 21,693 plant taxa, with 19,600 of these being indigenous. 2,093 are naturalized taxa.

VI) Constraints to achieving progress towards the target

Capacity to undertake taxonomic research and revisions on particular plant families and groups is limited. As is the case in much of the rest of the world, South Africa faces the challenge of attracting your scientists into taxonomy.

VII)Any other relevant information
Refer to SANBI web site: www.sanbi.org SANBI intends to increasingly make use of the electronic ether to readily disseminate as much as possible of its botanical information, and its catalogues are no exceptions to this rule. Therefore Plants of Southern Africa (POSA) was launched in November 2005. This resource which covers virtually all the information included in Germishuizen & Meyer (2003) will be updated every two weeks to ensure that high-quality information on the country's plants is available on the World Wide Web regularly free of charge. The first-ever exclusively South African plant checklist is in press (Germishuizen et al. 2006) and will cover the basic biology of the 19,581 taxa that occur in the country. This catalogue will also include reference to restricted-range taxa, i.e. those that are endemic to South Africa. At a different scale, SANBI and the Conservatoire et Jardin Botaniques de la Ville de Genève, Switzerland, have collaborated to compile a checklist of the flora of Africa south of the Sahara. This product, known as the APCD (African Plant Checklist and Database) is live and accessible on the internet, and will be published in the SABONET Report series in 2006. Although inventories become outdated quickly as new species are discovered and described, and progress is made with the refinement of existing taxonomies, they remain essential basic research tools for conservation planners and other users of botanical information. Overhauling existing checklists is a time-consuming activity, but will remain a corporate activity undertaken by SANBI with regular intervals.

Box XXV.

Target 2. A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	

This target is reflected in the corporate strategic plan and relevant business plans of SANBI.

In addition, the National Biodiversity Strategy and Action Plan (NBSAP) has set the following outcomes and targets:

NBSAP Outcome 2.5:

- Information management systems, research priorities, and monitoring and evaluation frameworks are in place and effectively supporting biodiversity management.

Relevant NBSAP 5-year Targets:

- National Monitoring and Evaluation Framework developed for threatened species, threatened ecosystems and threatening processes, and implementation phases identified.
- Conservation assessments for species (i.e. Red Data Lists) are up-to-date for key groups.

III) Current status (please indicate current status related to this target)

DEAT, SANBI and NORAD are sponsoring the development of a new national Red List which will comprehensively assess the conservation status of 19600 plant species in South Africa. This project is due for completion in May 2006.

Various previously prepared lists (incomplete) have been published in 1980, 1985, 1996 and 1999 and 2002. An updated, complete list will be produced and regularly updated by SANBI. Sponsorship from NORAD, SANBI and DEAT.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

With donor funding, SANBI is assessing the conservation status of all South Africa's plants using the IUCN 2001 criteria. All South Africa's plants will have been assessed by May 2006. A dedicated project was developed by SANBI to assess the conservation status of all of South Africa's plants.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

New updated Red List of all South African flora will be available May 2006.

VI) Constraints to achieving progress towards the target

Shortage of field data for specific taxa. Large number of South African plants (19,600 indigenous plants).

VII) Any other relevant information

The interim RDL is available on SANBI's web site at www.sanbi.org

Box XXVI.

Target 3. Development of models with protocols for plant conservation and sustainable use, based on research and practical experience.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	

Most plant-related work is being done by SANBI and other herbaria.

The NBSAP sets the following targets:

NBSAP Outcome 2.5:

Information management systems, research priorities, and monitoring and evaluation frameworks are in place and effectively supporting biodiversity management.

Relevant NBSAP 5-year Targets:

- Biodiversity monitoring informs biodiversity management plans, identification of threatened species and ecosystems, listing of invasive alien species, and identification of activities requiring environmental authorisations.

NBSAP Outcome 4.3:

- The ecological and social sustainability of extractive use of biological resources is researched, assessed and monitoring, and opportunities for improvement are identified and implemented.

Relevant NBSAP 5-year Targets:

- A priority list of biological resources, based on social, economic and ecological criteria, as well as indigenous knowledge, guides research, monitoring, management and recovery plans.
- Research, monitoring and evaluation programmes are in place to assess the ecological and social sustainability of extractive use of key indigenous biological resources.

NBSAP Outcome 4.4:

- Use of biological resources is well managed to optimise sustainable benefits.

Relevant NBSAP 5-year Targets:

- Collaborative management plans for recovery of priority resources developed with key stakeholders and resource user groups, and implementation underway.
- Management plans for medicinal plants developed with key stakeholders and implementation underway; wild populations of medicinal plants show signs of recovery.

NBSAP Outcome 5.4:

- Management plans for species of special concern ensure their long-term survival in the wild.

Relevant NBSAP 5-year Targets:

Management plans have been developed, published, and implemented for priority species of special concern.

III) Current status (please indicate current status related to this target)

Protocols for different aspects of plant conservation and sustainable use have been developed by individuals, both amateur and professional, over several decades in South Africa. Much of this information has, however, unfortunately not been coordinated, with the result that the information that could be used, lies scattered amongst both published and unpublished reports and manuscripts and is not readily accessible to conservation practitioners. In addition, results from applied research projects are too often not made available to those individuals responsible for on-the-ground conservation.

Much expertise exists within the southern African botanical community, both amateur and professional, on methods of propagation and cultivation of southern Africa's threatened plants, although very little of this has been documented. Succulent plant enthusiasts have published several articles over the past two decades that relate to the propagation and cultivation of South Africa's succulent plants. The Kirstenbosch Gardening Series, prepared largely by horticulturists within the South African National Biodiversity Institute, has provided a useful example of how this information can be made available to the broader public, including conservation authorities.

Useful information is generated through research conducted by the Millennium Seed Bank Project (MSBP) in its collaboration with SANBI. Threatened Species Dossiers (TSDs) are prepared by researchers at the Millennium Seed Bank that contain information about plant populations in the wild, germination protocols, propagation methods and recommendations for the in situ and ex situ conservation of the species. TSDs are given to local conservation authorities and managers in South Africa.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

The following provisions in the Biodiversity Act are relevant:

- Biodiversity management plans
- Population trends of selected species
- Biodiversity Management Agreements

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

See box III above.

VI) Constraints to achieving progress towards the target

To date, there has been a lack of a target and implementation coordination, but implementation of the NBSAP, and the National Biodiversity Framework is intended to rectify this.

As this is a cross-cutting target within the GSPC, there is a need to capture, in a central database or through a national clearing house mechanism, the various methodologies and protocols that have been developed for plant conservation and sustainable use in South Africa, that are applicable to all the GSPC targets. The models that have been developed need to be widely disseminated and coordinated from a single, preferably web-based, information source. Much of the information that could be used lies either within university libraries, in offices or archives of development agencies or conservation authorities, or remains in the heads of individuals who have, for various reasons, not documented their knowledge and experience. There is a need to capture the inaccessible or remote information and make it available electronically to as broad an audience as possible. Another area that needs to be addressed is the coordination of lessons learnt in the areas of plant conservation and sustainable use. Many conservation biology research and management projects often have mixed successes, and the documentation of lessons learnt could be useful in preventing future generations from 're-inventing the wheel'.

Efforts also need to be made towards documenting propagation methods for the less charismatic southern African threatened plants. There is also a need to document in situ conservation methods and, in the few areas where this has been implemented in southern Africa, the integration of ex situ and in situ conservation methods.

VII) Any other relevant information

The web address www.plantzafrica.com, part of the SANBI web site, provides a useful web-based information source on South Africa's indigenous plants (including uses, habitat, distribution, ecology, cultural aspects and propagation techniques), used extensively by researchers, learners and educators. The web site includes a range of medicinal plant monographs made available to the public through collaboration between SANBI, the South African Medical Research Council and the University of the Western Cape. A recently published number in the SABONET Report Series entitled Growing Rare Plants, is a valuable handbook on propagating the threatened plants of southern Africa, sharing knowledge gained through years of experience of individual plant propagators.

Box XXVII.

Target 4. At least ten percent of each of the world's ecological regions effectively conserved.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
See Box III	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
The National Spatial Biodiversity Assessment, carried out by SANBI in 2004, has set scientifically-based conservation targets for all Ecoregions. These are being incorporated into the National Biodiversity Framework, which is provided for in terms of the National Biodiversity Act, 2004 (Act 10 of 2004). Sub-national conservation plans make us of these targets.	
III) Current status (please indicate current status related to this target)	

Currently, nearly 6% of South Africa is under protection. This includes statutory reserves (national parks, provincial and local authority nature reserves) and non-statutory reserves (such as mountain catchment areas, private nature reserves) with a much less secure conservation agreement. The conservation estate consists of 465 statutory protected areas (representing 77% of the total protected area) and 471 non-statutory protected areas (Fig. 1a). Only few protected areas are greater than 100000 ha, most of them are between 1000 and 10000 ha (Fig. 1a). While concern has been raised that small protected areas might be inadequate for maintaining large-scale processes (such as natural fire regimes), they do play an important role in conserving some of the last remaining fragments of lowland vegetation types.

In assessing the protection levels of ecological regions, it is important to take into account pattern of endemism and species-turnover between regions. One way to address this issue is to set differential biodiversity targets (i.e. the minimum area that should be conserved) for each ecological region based on species-area curve. Species-rich regions, or regions with high species turnover receive a higher biodiversity target. It would also be ideal to include some measure of management effectiveness within protected areas. However, it is unlikely that we will ever have a national dataset that provides widely endorsed information of this sort. In the absence of information about management effectiveness, legal status and ownership must suffice as a way of distinguishing categories of protected areas.

As biodiversity and protected areas are not uniformly distributed in the landscape, huge gaps appear in the protected area network. In terms of biome representation, the Forest, Fynbos and Desert are the most protected biomes (in terms of % of total area), while the Nama-Karoo and Grassland are the least protected biomes. Ecological regions are hereby defined on the basis of major vegetation types. An assessment of the protection levels of each region reveals that, out of 45 ecological regions, 11 have almost no form of protection at all, with less than 1% of their original extent protected. Only 10 regions have 10% or more of their original extent protected. In relation to biodiversity targets set for each region, 13, with only <5% of their biodiversity target protected, are hardly protected (Fig. 1b). Forty regions have less than half of their biodiversity target conserved in statutory protected areas. Only two Savanna ecological regions, the Kalahari Duneveld and the Mopane regions, have their biodiversity targets met in statutory protected areas. It is important to note that this assessment focus on representation of biodiversity pattern, and that larger areas will be required for conserving critical ecological and evolutionary processes.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

In order to meet the biodiversity targets for all regions, at least an additional 215 000 km2 would need to receive some form of conservation action. This amounts to 22% of the remaining natural habitat in South Africa.

Protection level can and should inform priorities for the establishment and expansion of protected areas. Based on the principle of representation, ecological regions not adequately represented in the current protected area network should receive priority attention. However, we need to note strongly that the establishment of formal protected areas is not the only possible form of conservation action. Especially in regions that are highly fragmented, conservation action may include, for example, working with industry and local government to ensure conservation-friendly land use in priority areas.

The new Biodiversity Act allows the listing of threatened ecosystems that could be a powerful tool for reducing habitat loss and thus reinforcing the conservation of threatened ecosystems. Used in conjunction, measures of ecosystem status and protection level are very useful for identifying priority regions in need of conservation action of some kind. Ecosystem status tells us which ecological regions are most threatened, while protection level tells us which regions are least protected. For example, it is clear that the East Coast and West Coast Renosterveld regions, which are critically endangered and not represented in the current protected areas network, have not received adequate conservation efforts.

South Africa has embarked on an ambitious protected area expansion programme to address the gaps in terms of protection levels of ecological regions. This will also be supported by several bioregional programmes, aiming at conserving South Africa's precious biodiversity through various mechanisms.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

See above two boxes.

VI) Constraints to achieving progress towards the target

There are several constraints. Most notably the following two challenges:

- The need to strengthen links between the planning efforts that identify gaps in the protected area system and the protected area expansion investments.
- The need to strengthen protected area management capacity and the funding required to do this.

VII) Any other relevant information

Targets and implementation strategies are under consideration by DEAT.

Box XXVIII.

Target 5. Protection of fifty percent of the most important areas for plant diversity assured.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	
b) No	X

Please specify
Plants are not specifically incorporated, but are included in South Africa's NBSAP as biodiversity aspects. Various bioregional programmes on fynbos, succulent Karoo, forests and woodlands, Albany thicket and grasslands are setting conservation targets, but these are not incorporated yet into national plans.
III) Current status (please indicate current status related to this target)
Important Plant Areas (IPAs) in South Africa The concept of Important Plant Areas (IPAs) in southern Africa was initiated at a workshop hosted by the Southern African Botanical Diversity Network (SABONET) in South Africa in May 2004. The aim of the workshop was to discuss the initiation of Important Plant Areas in southern Africa and the relevance of the international criteria for selecting Important Plant Areas within a southern African context (Smith 2005). As a result of this initial workshop Namibia and Mozambique each hosted workshops on selecting national Important Plant Areas. In South Africa a desktop study was done to identify Important Plant Area mapping regions using a numerical classification of PRECIS (Pretoria National Herbarium (PRE) Computerised Information System) dataset quarter degree square (QDS) herbarium records (Desmet 2004). The identification of Important Plant Areas in South Africa was further discussed at an annual forum for biodiversity planners and the implementers of biodiversity planning projects held in 2005. It was agreed that these areas were important for raising awareness of plant conservation and could be a useful tool for implementation of biodiversity plans. South Africa is at the cutting edge of systematic conservation (biodiversity) planning and as such a number of successful tools already exist in the country for the identification of priority biodiversity areas. Although not formally identified as Important Plant Areas many of these areas are in fact Important Plant Areas. Regions and centres of plant endemism Regions and centres of plant endemism in southern Africa have been defined and discussed by Van Wyk & Smith (2001). Three regions and 15 centres of plant endemism fall within South Africa and it has been suggested that many of the Important Plant Areas in South Africa fall within these regions and centres of plant endemism. The majority of the regions and centres of plant endemism in South Africa fall within one of the bioregional programmes and have existing or planned conservation initiatives. Bioregional programmes in South Africa South Africa has a number of bioregional programmes, which are multi-sectoral partnership programmes in an ecoregion that aim to link biodiversity conservation with socio-economic development. These programmes involve implementation of biodiversity plans through projects with participating stakeholders. Four of these programmes are currently situated within SANBI namely the Cape Action for People and the Environment (C.A.P.E), the Sub Tropical Thicket Ecosystem Programme (STEP), The Succulent Karoo Ecosystem Programme (SKEP) and the National Grasslands Biodiversity Programme. Other bioregional programmes in the country include the Maloti-Drakensberg Transfrontier Project (MDTP) and the Wild Coast Conservation and Sustainable Development Programme.
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

South Africa's National Biodiversity Institute started a programme called Custodians of Rare and Endangered Wildflowers (CREW) in 2004 to involve community groups situated in Important Plant Areas in the conservation and monitoring of sites where threatened species occur. The programme had its first phase in the Cape Floral Region and has thus far worked in 9 Important Plant Areas. CREW groups are actively involved in the conservation of 20 sites where threatened species are found. In all 9 areas groups spend time building awareness of sites with threatened plants on them by surveying sites and providing information on management requirements to specific landowners. Over 250 such sites have been surveyed and data provided to landowners the decision to formally conserve these sites remains in the hands of the landowners, but a Stewardship Programme that promotes private land conservation in the CFR is currently being implemented. 60 farms are currently under negotiation to be conserved. As of 2006 the CREW programme is expanding to work in all 9 biodiversity priority areas identified in the NBSAP.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

An IPA workshop was held as part of the SABONET Project to assess how the concept could be applied in southern Africa. At a subsequent South African biodiversity planning workshop, it was recommended that IPAs were not a feasible option for South Africa, since the sub-national conservation plans as well as the South Africa's National Spatial Biodiversity Assessment (NSBA) already incorporated these criteria in their priority setting. Also see info in above box.

Systematic biodiversity planning tools that are used in SA provide a more holistic method of identifying priority areas. And that it would thus not be appropriate or useful for SA to identify IPAs as a *planning tool*. However, we may wish to define IPAs more narrowly as a useful *implementation tool* for the management of specific sites. This still needs to be discussed with relevant stakeholders and is being investigated through SANBI's threatened species programme, which includes a new volunteer-based plant monitoring programme.

VI) Constraints to achieving progress towards the target

South Africa faces the following challenges with respect to this target:

- The vast number of endemic and threatened plant species requiring attention (approx 2000 threatened and nearly 12 000 endemics)
- The rapid increase in threats (e.g. alien invasion; too frequent fires) and pressures (e.g. expanding coastal development) on important sites.
- Limited capacity and tools to support private land owners to conserve important sites

VII)Any other relevant information

New legislation including the Biodiversity Act (10 of 2004) and the Protected Areas Act (57 of 2003) provide powerful tools for achieving management and conservation of biodiversity in South Africa. Chapter 4 of the Biodiversity Act allows for the listing of ecosystems and species that are threatened or in need of protection and ensures that the utilisation of biodiversity is managed in an ecologically sustainable way. The Protected Areas Act allows for any land, private or communal, to be declared a formal protected area and allows for the co-management of such a protected area by the landowner(s)or any suitable person or organisation. This means that government agencies are not the only organisations that can manage protected areas.

Three key strategies were identified by the NSBA (Driver et al. 2004) for conserving South Africa's biodiversity. These include:

· Pursuing opportunities for linking biodiversity and socio-economic development in priority areas to mainstream biodiversity in production landscapes and seascapes.

· Focus action on threatened ecosystems to prevent the further loss of ecosystem functioning

· Expanding the formal protected areas network as the existing protected area network does not conserve a representative sample of South Africa's biodiversity.

CREW Project information on SANBI web site

SABONET 2005 Workshop report on IPA's

Box XXIX.

Target 6. At least thirty percent of production lands managed consistent with the conservation of plant diversity.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
No	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
NBSAP Outcome 3.2 Key production sectors and industries integrate biodiversity into their production and service standards.	
III) Current status (please indicate current status related to this target)	
Production landscapes in South Africa comprise those areas used for agriculture (both cropping and grazing), plantation forestry and mining. These landscapes cover approximately 70% of the terrestrial landscape and harbour important areas for biodiversity at the species and ecosystem levels. Given the geographic spread and extraordinary diversity of South Africa's plant diversity, it is widely appreciated that it is simply not possible to conserve the majority species through the traditional protected areas approach. To conserve this rich diversity it is therefore necessary to mainstream biodiversity priorities into the policies, plans and programmes of a range of stakeholders whose core business is not biodiversity, but whose day-to-day activities significantly impact biodiversity. The need to engage with the production sectors is recognised as a key strategy in the country's recently published National Bioregional Strategy and Action Plan as well as several strategies at the bioregional scale. The type of production activities vary in terms of their compatibility with conservation objectives and different strategies are required to address these. For example in large parts of the grasslands, subtropical thicket and succulent karoo biomes, livestock grazing activities are potentially compatible with biodiversity conservation objectives. In production landscapes where natural habitat transformation, through ploughing for example, takes place then avoidance of key biodiversity sites is a key aim.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	

The NBSAP has a developed several objectives and targets aimed at key production sectors and industries to encourage them integrate biodiversity into their production and service standards. This particular NBSAP outcome requires the various sectors that impact on biodiversity to implement effective changes at an operational level. Changes at a macro-economic level, such as elimination of perverse incentives, or payment for ecosystem services, together with increased awareness of biodiversity considerations, effective enforcement of legislation, application of the principle of co-operative governance, etc. are also addressed in the NBSAP, and are needed to mainstream biodiversity into the key sectors. The relevant NBSAP objectives are as follows:

1. Include biodiversity considerations in guidelines and best practice codes of key agricultural industries, to mitigate negative impacts of agricultural production on biodiversity and encourage sustainable agricultural practices

2. Include biodiversity considerations in forestry industry guidelines and best practice codes to mitigate negative impacts of commercial forests and harvesting of natural forests on biodiversity and encourage sustainable forestry practices

3. Include biodiversity considerations in mining regulations and guidelines and best practice codes to mitigate negative impacts on biodiversity and encourage sustainable mining practices.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

Conservation farming project

From 1999 to 2003 the then National Botanical Institute co-ordinated the Conservation Farming Project, which was a targeted research programme supported by the Global Environmental Facility (GEF) and Mazda Wildlife Fund. The aims of the Conservation Farming Project were to:

· Assess the ecological and economic costs and benefits of various agricultural practices, including both conventional and conservation farming methods.
· Promote land use practices that conserve biodiversity and provide sustainable livelihoods for farmers and rural communities.

Some of the project focal areas included:

· Biodiversity: the benefits of increased biodiversity on farms for farmers and everyone else.
· Soils: how conservation farming improves soil structure and improves production.
· Ecosystem services: how healthy ecosystem processes provide services to all.
· Carbon sequestration: how to lower atmospheric carbon dioxide levels and so reduce global warming.
· Economic incentives: why it pays to have a healthy environment.
· Putting conservation farming into practice: getting farmers' views on conservation farming, and improving the flow of information to farmers.

Bioregional Programmes

Since 2000 South Africa has initiated four bioregional programmes in the Succulent Karoo (Succulent Karoo Ecosystem Programme), Cape Floristic Region (Cape Action for People and the Environment: C.A.P.E.), Subtropical Thicket (Subtropical Thicket Ecosystem Programme) and Grasslands biomes. These programmes aim to address biodiversity conservation at the landscape scale taking into consideration socio economic development considerations. All four programmes are currently in the process of piloting approaches under each of the above three NBSAP objectives.

Examples of specific projects that are underway include the following:

Livestock and game grazing in the Grasslands

The grasslands biome covers about 30% of SA's surface (339 237.68km). The wide environmental variation present in the highveld grassland gives rise to the presence of more than 3,370 plant species, including many herbaceous wildflowers and geophytic species (83% of the grassland species). The mean species richness of 82 species per 1000 m2 is second only to the Renosterveld vegetation community. According to the 1996 National Land Cover data, 64.5% of the biome is still natural land cover, with 22.4% cultivated. Some 59% of the country's beef cattle, 58% of the country's sheep, and 75% of the country's diary farming is found within the grasslands.

Many of the priority biodiversity sites fall within these agricultural landscapes. The programme seeks to identify and promote biodiversity compatible landuses. Grazing of cattle, sheep and indigenous game species have been identified as the most compatible agricultural activities in the grasslands biome. Market related and other incentives will be investigated as means for promoting biodiversity –compatible landuses in the biome and these will be piloted during the implementation of this programme which will run for 5 years commencing in 2007.

Facilitating sustainable agriculture in the Slanghoek Valley

The provincial Department of Agriculture in the Western Cape and farmers in the Slanghoek Valley, when faced with difficult decisions regarding development that would affect natural ecosystems, requested maps of biodiversity priorities. C.A.P.E., through the development of a small Critical Ecosystem Partnership Fund (CEPF)-funded project, was able to support the mapping of biodiversity priorities in the valley, to map the existing agricultural lands within the valley, and to generate overlays of proposed development. This clearly indicated where proposed transformation would impact on priority biodiversity, and enabled the authorities to steer development towards less critical areas.

VI) Constraints to achieving progress towards the target
• Collaboration between conservation and agricultural organizations needs to be improved. • Limited capacity to engage with industry bodies. • Agriculture as a sector is fragmented and difficult to engage with on proactive measures. • Limited capacity to engage with individual landowners and influence their management practices.
VII)Any other relevant information
Relevant web sites: www.skep.org www.capeaction.org.za

Box XXX.

Target 7. Sixty percent of the world's threatened species conserved *In-situ*.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
In situ conservation of threatened plant species is one of the core objectives of many of SA's recent conservation planning projects.	
III) Current status (please indicate current status related to this target)	
South Africa's National Spatial Biodiversity Assessment (NSBA) made use of data on threatened and endemic plants and animals as one of the man factors determining the country's priority conservation areas (Driver et al 2005). Priority threatened species sites were defined as those that had either many species of special concern, or at least one species of special concern found nowhere else. The nine broad priority sites that were identified for conservation action will be specifically targeted using three key strategies, namely (1) by pursuing opportunities to link biodiversity and socio-economic development in priority areas; (2) by focusing emergency action on threatened ecosystems to prevent further loss of ecosystem functioning and (3) by expanding the formal protected area network (Driver et al 2005). The planning exercise used by Driver et al (2005) was repeated for threatened and endemic plants alone, and the priority threatened plant conservation areas identified in this way all lie within nine broad priority areas for conservation action identified by the National Spatial Biodiversity Assessment. South Africa's priority threatened plant areas will therefore benefit greatly from the proposed conservation strategies in the NSBA, and the expansion of the protected area network in these areas will further our progress in achieving GSPC Target 7.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	

South Africa's National Environmental Management: Biodiversity Act (2004) legislates the protection of threatened ecosystems and species in its fourth chapter. The specific purpose of this chapter includes "protection of species that are threatened or in need of protection to ensure their survival in the wild", to "give effect to the Republic's obligations under international agreements regulating trade in specimens of endangered species", as well as ensuring that biodiversity is sustainably utilized (Chapter 4: 51 (b)-(d)). The act allows for the regulation, not only of activities directly involving threatened or protected species, but also of the processes that threaten then in specifically listed ecosystems (Chapter 4: 53). While the regulations regarding interpretation and implementation of the Biodiversity Act have not yet been resolved, it is a powerful national tool that should be used to further the *in situ* conservation of all threatened species.

It must be noted, however, that presence in a protected area and in situ management strategies do not necessarily ensure the survival of a species in the wild. Although all South African cycads are the subject of strict international, national and provincial regulation, 6 cycad species have gone extinct over the last 100 years, 2, including *Encephalartos brevifoliatus* and *E. nubimontanus* within the last 3 years, and another 4-5 species are on the verge of extinction due to over harvesting for horticultural trade (ref). This highlights that even the best management plans and conservation strategies will not be successful without integrated *in situ* and *ex situ* conservation plans, stringent law enforcement and ongoing attention.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)
Analysis of Red Data List to be completed in 2006.
VI) Constraints to achieving progress towards the target
Due to the broad scale of the majority of our plant species distribution data (generally only to quarter degree squared resolution), it is not possible to determine the numbers of species represented in each protected area (Driver et al 2005). As a result, we cannot calculate the percentage of our threatened flora conserved *in situ* in protected areas and are unable to give quantifiable progress on GSPC Target 7. To remedy this, the Threatened Species Programme is currently supporting the georeferencing of existing rare and threatened plant specimens in national, provincial and university herbaria, as well as the collection of new species locality information throughout the country through the Custodians of Rare and Endangered Wildflowers' volunteer groups. Gathering this fine-scale data, together with the compilation of comprehensive threatened plant lists in each protected area will allow us to quantify our progress on GSPC Target 7 in the medium term.
VII)Any other relevant information

Box XXXI.

Target 8. Sixty percent of threatened plant species in accessible *Ex-situ* collections, preferably in the country of origin, and 10 percent of them included in recovery and restoration programmes.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	X
b) No	
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	
b) No	X

Please specify
Target has been set by SANBI as part of its corporate strategic plan and business plans.
III) Current status (please indicate current status related to this target)
South Africa currently has a network of eight national botanical gardens (NBGs), spread across five of South Africa's nine provinces that are managed by the South African National Biodiversity Institute (SANBI). Part of the mandate of these botanical gardens is to focus on the conservation of South Africa's indigenous plants, and since 1913 have been working closely with, and been supported by, the Botanical Society of South Africa, a key non-governmental organisation that promotes plant conservation in South Africa. All South Africa's NBGs have committed themselves towards implementing the International Agenda for Botanic Gardens in Conservation, which promotes the fundamental premise of integrated conservation strategies, combining resources of land and habitat management, biological research, database and information management, and ex situ (off-site) propagation and cultivation. The International Agenda has set global targets related to the objectives of the GSPC, and the targets that relate to Target 8 of the GSPC are (a) 50 per cent of threatened plants included in accessible botanical garden ex situ conservation collections, including cultivated and genebank material, preferably in the country of origin, and (b) 75 per cent of critically endangered plant species included in ex situ conservation collections by 2010, preferably in the country of origin. A survey of the ex situ conservation collections in South Africa's NBGs was undertaken in 2002 that produced some useful baseline statistics from which the gardens could set meaningful targets. Results from this survey indicated that some 8 500 indigenous plant taxa are grown in the NBGs, or 39% of South Africa's 21 721 indigenous plants in an area of about 1 350 ha. The number of indigenous plant species per garden ranges from 347 species in the Free State Garden to 5 538 species in Kirstenbosch. Kirstenbosch, one of the world's premier gardens, is thus representative of 25% of South Africa's plant species on its grounds. A total of 813 Red List plant species are represented throughout the NBGs, 384 being regarded as threatened. Almost half of all the Red List species in South Africa's NBGs were identified as 'low priority' (Rare or Lower Risk) species. Clearly, this reflects a need to increase the number of threatened species (Critically Endangered, Endangered and Vulnerable) in South Africa's NBGs. Threatened species from the families Proteaceae, Amaryllidaceae, Aloaceae and Iridaceae are the most well-represented in the NBGs. They are mainly showy, well-known and highly attractive species that appeal to garden visitors. Of concern is that 64% of Red List species in South Africa's NBGs occur in only a single collection. It is generally regarded that a large number of accessions held in one location are at greater risk than an equivalent number spread across several botanic gardens. Various recommendations were made in the 2002 survey, including the re-focussing of efforts on particular plant species and the development of a comprehensive plant conservation strategy for South Africa's NBGs, which includes appropriate targets and indicators that are measurable. Various universities and municipal botanical gardens within South Africa are also involved in conserving South Africa's threatened plant species, including the development of protocols for the cultivation and propagation of threatened indigenous plant species. Extensive collections of South Africa's threatened succulent plants are held by amateur plant collectors, which could contribute significantly to the country's conservation efforts. Botanical gardens in South Africa should focus on endemic South African plants and those Red List plants threatened with extinction, rather than 'low priority' taxa. Collection strategies should focus on areas in close proximity to NBGs and simultaneously on areas with the highest concentration of Red List species. Ex situ conservation priorities should also be given to species of local economic importance, species of special scientific interest or local 'flagship' species that will stimulate conservation awareness and can be incorporated into education and fundraising programmes. Once horticultural protocols have been developed for individual threatened plant taxa, duplicate material needs to be held in different gardens and collections, thereby reducing the risk of the entire ex situ stock being lost. Genetic diversity of ex situ conservation collections is an area not addressed by this target, although attempts should be made to hold as diverse a genetic representation of the

species as possible. Close collaboration with Botanic Gardens Conservation International (BGCI) and other international (mostly European) botanical gardens holding South African threatened plant collections should be encouraged.

The MSBP will be looking at ways of developing the programme further in South Africa, comprising a fully integrated conservation strategy. This strategy will aim to encompass seed collection and long-term storage, propagation, distribution, research, training and where appropriate, reintroduction. It aims to develop partnerships with a wide group of conservation practitioners in South Africa.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

Kirstenbosch ex situ cycad collections support in situ conservation efforts

South African plant scientists have been conducting research on cycads for several decades. One of the more recent projects has been a study on the endangered *Encephalartos latifrons*. The South African cycad E. latifrons is endemic to a very small region of the Eastern Cape, and in addition to being naturally rare, this plant is Endangered as a result of over-collection and trade. Fewer than 60 plants remain in the wild, all of which are highly isolated from each other, a situation which is thought to be preventing natural pollination. No naturally growing seedlings have been recorded in over 100 years. To supplement E. latifrons numbers, wild plants have been cultivated at Kirstenbosch National Botanical Garden for several decades. The garden now houses the world's largest ex situ collection of this species, totalling 37 plants (18 adults, 19 seedlings) but because the geographic origins of the Kirstenbosch collection are unknown, there was a possibility of compromising the genetic integrity of the species by using these plants to supplement wild populations. Additionally, a fool-proof method was needed to assist law enforcement authorities to halt further illegal collection.

Genetic studies were undertaken at the Leslie Hill Molecular Systematics Lab, SANBI, Kirstenbosch, to determine the genetic diversity and population structure of E. latifrons in the wild, as well as to genotype the ex situ collection at Kirstenbosch and assign these individuals to their closest extant wild population. The results showed very high proportions of genetic diversity both in the wild and at Kirstenbosch, but it appeared that all individuals originate from a single population. The results also revealed adequate levels of gene flow between wild individuals at different localities and, at least historically, a sexual mode of reproduction. Additionally, six distinct genotypes were found in the wild and all of these are represented in the Kirstenbosch collection. The ex situ collection of cycads is therefore an excellent source of genetic material for the conservation of the species and translocation and artificial fertilisation projects can now be initiated using plants from the wild and Kirstenbosch.

Millennium Seed Bank Project

Seed banking is regarded as one of the tools used in the conservation of plant species. A strategic 2-phase (2000–2005 and 2005–2010) partnership was developed between SANBI and the Millennium Seed Bank Project (MSBP) of the Royal Botanic Gardens, Kew in 2000. Through this partnership, SANBI aims to have at least 2 500 of South Africa's indigenous seed-bearing plants conserved in ex situ collections at the MSBP and duplicate collections at a national Seed Banking facility in South Africa by 2010. Currently, the MSBP holds seed collections of over 1 500 of South Africa's plant species. More than 80% of these collections are of threatened, endemic or useful species. In collaboration with SANBI's Threatened Species Programme and conservation authorities in South Africa, the project has been working on increasing the number of collections of priority taxa, such as threatened species and species endemic to South Africa. To date, approximately 187 species, occurring in the latest national Red List, are represented in the collection. Of these, 61 were assessed as threatened and three as 'Extinct in the Wild' species. In Phase 2 (2005–2010) of the project, methodologies have been developed to increase the number of collections of threatened plants.

Whilst restoration efforts of threatened plants within South Africa have been limited, SANBI and the MSBP have collaborated with other partners in several reintroduction and restoration programmes in Mpumalanga, Eastern Cape and the Western Cape. Box x describes one of these restoration and reintroduction programmes near Cape Town in the Western Cape.

DNA Bank at Kirstenbosch

The South African Plant DNA Banking Facility has been established as a collaborative project between

SANBI and the Royal Botanic Gardens, Kew, funded by the UK Darwin Initiative. Based in the Leslie Hill Molecular Systematics Laboratory in Kirstenbosch, one of the DNA bank's objectives is to archive in the DNA bank at least one representative from each genus of plants indigenous to South Africa (there are an estimated 2,200 flowering plant genera known in South Africa). Another one of the objectives is to produce a phylogenetic 'tree of life' of South African plant genera and identify areas of endemicity and high priority for conservation.

Cryo-conservation Centre of Excellence for Sub-Saharan Africa

In 2005 the Darwin Initiative awarded a grant to the MSBP to work with researchers at the University of KwaZulu-Natal, Durban, South Africa, to establish a Cryo-Conservation Centre of Excellence for Sub-Saharan Africa (CCESSA). The centre will conserve socio-economically important recalcitrant seed species from the continent using ultra low-temperature storage techniques, and provide education and training. The CCESSA will make available plants used for traditional medicine or 'muthi' plants (thereby reducing pressure on wild populations) through in vitro (micro)-propagation of ex situ cryo-preserved material as well as appropriate macro-propagation methods.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

See above boxes.

VI) Constraints to achieving progress towards the target

There is a lack of capacity of skilled horticulturalists in this field.

There is a need to prioritise which species are most in need of *ex situ* measures.

A comprehensive survey needs to be conducted within the country, once the new Red Data List for South Africa has been completed, to determine the baseline information on holdings of threatened plants in botanical gardens, nurseries, genebanks and, where possible, private collections.

Integration of ex situ and in situ conservation efforts must also be a priority for South Africa's botanical gardens holding conservation collections over the next five years.

Monitoring and evaluation of the conservation role and status of collections in botanical gardens must also become a regular function for each botanical garden in South Africa, together with the development of appropriate strategic partnerships (at local, national and international levels) that support their conservation programmes.

It is important that different institutions holding ex situ conservation collections in South Africa collaborate in conserving the prioritised threatened plant species by 2010.

VII) Any other relevant information

Box XXXII.

Target 9. Seventy percent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	
b) No	X

Please specify
An extensive study, to ascertain the potential agricultural value of mainly herb and shrub legumes of southern Africa, is in progress led by the Agricultural Research Council–Livestock Business Division (ARC–LBD) Forage Genebank.
III) Current status (please indicate current status related to this target)
The conservation and utilization of plant genetic resources for food and agriculture is one of the prime functions of the Directorate Genetic Resources Management of South Africa's National Department of Agriculture. South Africa is presently engaged in the process of ratifying the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). The National Plant Genetic Resources Centre (NPGRC) for plant genetic resources for food and agriculture resorts under this Directorate. The present mandate of the NPGRC is the collection and conservation of: 1. Indigenous crops landraces, namely sorghum (Fig 1), millets, cucurbits and the genus Vigna. 2. Crops that have become locally adapted (landraces)(Fig 2) 3. Wild relatives of crop species 4. Leafy vegetables. The NPGRC works according to mandated species lists that were compiled within the SADC Plant Genetic Resources Network. A total of 436 priority species have been identified.
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)
The Directorate of Genetic Resources Management of South Africa's National Department of Agriculture is developing a policy for the conservation and utilization of genetic resources for food and agriculture. This policy will be further informed by a revision of the priority crops in South Africa in 2006.
V) Progress made towards target (please specify indicators used to monitor progress towards the target)
The Agricultural Research Council–Livestock Business Division (ARC–LBD) Forage Genebank holds a collection of approximately 8 000 accessions. The collection consists of 2 784 grass accessions, 4 268 legume accessions and 320 other plant species which have the potential to be developed as fodder crops. Of these, 80% are indigenous grass species, 5% indigenous legume species and 84% other indigenous species. Although these accessions are mainly species with fodder value, there are also species that can be used for other functions such as rehabilitation and erosion control. However, this refers to only a limited number of plants in the target group.
VI) Constraints to achieving progress towards the target

Due to the diversity of people in South Africa, tribal customs and varying climatic conditions, crops have been subjected to many imposed selection criteria resulting in varied but stable landraces. The challenge is the conservation of these landraces and the re-introduction of these adapted ecovars into agriculture in areas where they are best adapted. Extensive collections of landrace germplasm have been made in South Africa and landraces are very well represented in the collection. All landrace crop accessions are accompanied by detailed passport data including data pertaining to indigenous practices such as plants used, plant parts used, threshing, drying, treatment and storage methods, land preparation, cropping system and traditional beliefs and taboos. Although it is possible to contain genetic diversity in relatively small samples of a particular genotype, the process of natural selection imposed during the development of the landrace will necessitate the conservation of genetic diversity of each of these ecovars separately. Combining the accessions will dilute the influence of human and climatic selection pressures.

Furthermore, plants are not only cultivated for their use as food or agricultural crops but can also play a role as medicines as well as for tribal rituals. Although many of these plants are not directly cultivated but harvested in the wild and this, together with additional pressures, due to large scale urbanisation of the population, has placed additional stresses on the naturally occurring plants which are exacerbated by injudicious harvesting practices and a demand created by numerous 'muthi' shops in the cities.

VII) Any other relevant information

Although extensive landrace crop collections have been made, attention needs to be paid to ecogeographic coverage and diversity studies which will contribute to an extensive gap analysis. Furthermore, there needs to be a shift towards the collection and *ex situ* conservation of crop wild relatives and prioritised wild species used for food and agriculture. *In situ* conservation of crop species (on-farm conservation) will also be a priority focus in the future and plans are already under way for implementing on-farm conservation.

The future of crops in South Africa will largely be determined by education and creating awareness of the role of cultivated plants not only in the farming community but also amongst the general public and consumers of the crops. Conservation of diversity in expanded genebanks and nurseries and the collection and categorisation of the sources of genetic diversity linked to special training of local communities, in cases where diversity is under threat, is also required.

Increasing the indigenous legume holdings in the ARC–LBD Forage Genebank is a high priority. Currently only about 5% of known legume seed is conserved and maintained in the Forage Genebank (Figs 3–6). Of the approximately 1 580 species, 14 are endemic to regions such as the Western and Eastern Cape. An extensive study, to ascertain the potential agricultural value of mainly herb and shrub legumes of southern Africa, is in progress.

Box XXXIII.

Target 10. Management plans in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	

b) No	X
Please specify	
III) Current status (please indicate current status related to this target)	
New Biodiversity Act to address major alien species threats in South Africa. Specific taxa and geographical areas to be worked on have not yet been identified. See also boxes 45-56 of this report.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	
The National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) provides a key opportunity to develop a comprehensive response to the threat of invasive alien species. It provides for the development of invasive species monitoring, control and eradication plans by all municipalities. However, due to capacity and resource constraints, this may take some time to be implemented.	
V) Progress made towards target (please specify indicators used to monitor progress towards the target)	
Various alien invasive control programmes are in place. e.g. Working for Water.	
VI) Constraints to achieving progress towards the target	
Two central steps need to be taken in order to achieve the target 10: a. The development of consensus on at least 100 of the most serious and manageable invasive species affecting plant diversity, and b. Development, promotion, local adaptation and implementation of management plans for these species.	
VII)Any other relevant information	

Box XXXIV.

Target 11. No species of wild flora endangered by international trade.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	

See Box X.

This target has been incorporated into the NBSAP, but is still to be implemented:

NBSAP Outcome 4.4:

Use of biological resources is well managed to optimise sustainable benefits.

Relevant NBSAP 5-year Targets:

No species of wild flora or fauna endangered by international trade.

III) Current status (please indicate current status related to this target)

The emphasis of this target is on ensuring that international trade in plants and plant products does not lead to the endangerment or extinction of plant populations in the wild. International trade in plants is a massive global industry involving the yearly export and import of millions of plants and tons of plant products. Plants of South African origin are well known in the horticultural trade but almost all of this trade is in cultivated varieties and has no negative effect on wild populations. However, trade in wild harvested plants is an important component of the cut flower industry (e.g. fynbos species such as proteas, restios, and ericas), certain medicinal and herbal products (e.g. aloe, rooibos tea, hoodia, devils claw, buchu), the timber trade, and trade in some horticultural species (for seeds or plants). The challenge, in terms of this target, is to ensure that trade does not lead to the ecologically unsustainable exploitation of wild populations.

The extent of the challenge is determined by the precise formulation of Target 11, that no plant species will be endangered through international trade. To put this in context, at least 40 South African plant species on the IUCN Red List are threatened in part by international trade. An estimated 550 species of plants are also traded for medicinal and traditional purposes within South Africa (Marshall 1998) and there is a significant trade with neighbouring countries. The extent and impact of this trade is poorly known but popular species are becoming difficult to obtain in South Africa. In particular groups such as cycads and some succulents, trade is one of the major threats. Two species of cycad in South Africa have recently been classified as Extinct in the Wild due to illegal harvesting, a trade that satisfies both domestic and international demand, and a further 16 species are listed as either CR or EN and are declining due to illegal trade. South Africa can therefore make a significant contribution to target 11 by reducing the risk imposed by international trade to all these species.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

CITES is the main mechanism for regulating international trade in endangered species. South Africa became a Party to CITES in 1975 and some South African plant species were among the first species to be listed on the CITES Appendices. At present, 1005 South African plants are listed on the CITES appendices, 42 on Appendix I and 963 on Appendix II. During the past five years, ongoing assessments of plants in trade resulted in one species (*Aloe thorncroftii*) being downlisted from Appendix I, due to a decline in threat from trade, and the genus Hoodia being listed in Appendix II due a high demand for wild plants to manufacture herbal appetite suppressants.

The regulation of trade in threatened species was further strengthened in 2004 by the promulgation of the National Environmental Management: Biodiversity Act. The Act makes provision for regulations to restrict trade in threatened species and will strengthen the implementation of CITES in South Africa and the control of trade in threatened species. New regulations will be published in 2006.

One of the constraints on enforcing trade regulations has been the inability of law enforcement agencies to identify illegally harvested plants. South African nature conservation agencies have therefore pioneered the use of microchips to identify individual plants of highly threatened species, such as cycads. This technology has been effective for about 10 years but collectors have now found ways to circumvent the chips. As a result, scientists at the SANBI have been working together with nature conservation agencies in Gauteng and Mpumalanga provinces to

evaluate the use of DNA fingerprinting as a way of identifying illegal plants in trade. Pilot studies were initiated in 2004 and will be completed in 2006.

Cultivation can reduce the threat to wild populations by making propagated plants more readily available. This has been particularly successful in South Africa for some aloes and other succulents as well as some medicinal plants such as Siphonochilus aethiopicus, and trials are currently underway for the large scale cultivation of Hoodia species to reduce the threat to wild populations. The network of National Botanical Gardens in South Africa has also focused on the propagation of indigenous plants and this has greatly increased the availability of cultivated material as well as information on propagation. Access to this information has been improved through the publication of gardening books and making information available on websites such as www.plantzafrica.com (see Target 3). In addition, pioneering work in South Africa on the use of smoke as a stimulant for seed germination resulted in far easier propagation of important horticultural species such as proteas and restios.

Cultivation is not the only viable option. If properly managed, harvest from the wild can contribute to livelihoods without endangering wild populations. For example, Devil's Claw (*Harpagophytum spp*) is harvested by poor communities as part of the international trade in herbal arthritis remedies. The SANBI has worked together with TRAFFIC, FFI, Resource Africa, and local conservation authorities and communities to evaluate the sustainability of trade in Devil's Claw (Raimondo et al. 2006). Other agencies have also developed innovative programmes to promote fair and sustainable trade in rooibos tea (*Aspalathus linearis*) and for the sustainable use of a range of fynbos species in the Cape Floristic Region as part of the Cape Action for People and the Environment (CAPE) programme.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

See above boxes.

VI) Constraints to achieving progress towards the target

To meet its obligations for Target 11, South Africa needs to better facilitate trade in cultivated or sustainably harvested plants and, at the same time, more effectively restrict trade from unsustainable sources. Wherever possible, this means working together with user groups to better understand the dynamics of trade and to find solutions to unsustainable trade. The unregulated trade in medicinal plants was identified as a key area for further work by the NBSAP and must be a priority for the next five years. The basis for sustainable harvest of many species, including heavily utilised species, is still poorly known and needs to be assessed and incorporated into adaptive management plans. At the same time, further interventions are required for trade that is already regulated through CITES and national or provincial legislation. Preliminary assessment of some Aloe and Euphorbia species will take place as part of a CITES significant trade review process. Plans are also being developed to undertake population and habitat viability analyses (PHVA) for Critically Endangered cycad taxa, as part of a process to develop more effective plans to boost populations and to limit the impact of illegal trade.

Finally, monitoring species that are potentially threatened by trade needs to be strengthened. The recent revival of cycad monitoring in several provinces has shown how populations have declined over the past 10 years and will be essential to measure the effectiveness of any new interventions. TRAFFIC East/ Southern Africa have also emphasised the need to monitor the timber trade in southern Africa since this trade can have a large impact on wild populations.

VII) Any other relevant information

TRAFFIC office represented in South Africa.

Box XXXV.

Target 12. Thirty percent of plant-based products derived from sources that are sustainably managed.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
See Box VIII	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	
b) No	X
Please specify	
The NBSAP target refers to all indigenous species-based products, not only plants.	
III) Current status (please indicate current status related to this target)	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	
V) Progress made towards target (please specify indicators used to monitor progress towards the target)	
VI) Constraints to achieving progress towards the target	
VII) Any other relevant information	

Box XXXVI.

Target 13. The decline of plant resources, and associated indigenous and local knowledge, innovations and practices that support sustainable livelihoods, local food security and health care, halted.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
See Box XVII	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	
b) No	X
Please specify	
III) Current status (please indicate current status related to this target)	
South Africa as a developing country supports a population of over forty million people, the majority of which retain strong cultural links with plants, regardless of whether they live in rural or in urban areas. In many cases this relationship is one of dependency on plants for fuel, building materials, medicines and food, and to a lesser degree for utilitarian wares. The range of useful plants mirrors the country's enormous botanical diversity, most especially along the eastern seaboard region, where most human settlement has taken place. In considering medicinal plants alone it is estimated that some 28 million people in South Africa consume approximately 19 500 tonnes of medicinal plant material each year during 90 million incidents of use (Mander 1998). An historically declining resource base coupled to a high population growth rate has long been recognised, as has the need to conserve useful plant resources (Gerstner 1946). Some resources are already fully depleted — at least one medicinal species is known to be extinct in the wild (Crouch et al. 2003). Progress has been made in inventorying useful resources and documenting the actual practices. These efforts have stemmed largely from historical efforts to serve the commercial objectives of industry and agriculture viz. the development of new medicines, crops, perfumes, flavourants etc. It is only in more recent years that elements of the traditional knowledge of South African cultural groups have been recognised for their contribution to the sustaining of livelihoods, and considered conservation-worthy. In line with international trends, an increasing westernisation of the South African populace has resulted in a partial discarding and displacement of traditional values and knowledge systems in favour of 'modern' paradigms. The concomitant breakdown in traditional cultural transfer systems continues apace, with increasingly less knowledge handed down from generation to generation. Whereas this aspect may prove challenging to reverse, knowledge erosion has nonetheless been partially checked through documentation of traditional plant use information in literature and other databases. Substantial achievements in this regard are reflected in a number of composite ethnobotanical overviews that include South Africa in their region of geographic cover. Prominent amongst these are classics on plant medicines by Watt & Breyer-Brandwijk (1962) and on traditional foodstuffs by Fox & Norwood Young (1982). The ethnobotanical volume on common names and uses of South African plants by Smith (1966) has also contributed significantly. More recently Arnold et al. (2002) have inventoried the recorded ethnomedicinal subjects of the FSA region, in the process identifying 3 423 such taxa from South Africa. Given the dynamic and evolving character of traditional medicine (Crouch & Hutchings 1999), a complete checklist is inherently ethereal. Progress in the halting of the plant resource itself has progressed in a focused manner, with horticulture playing a key role (Crouch 2001, Nichols 2005). Low technology methods for the propagation and cultivation of medicinal species have been developed for the majority of high profile	

taxa (Crouch et al. 2006; Spring & Diederichs 2006) and even disseminated in the vernacular (Mander et al. 1999).

An annotated checklist of traditional food subjects of southern Africa is currently in preparation at the National Herbarium, and should appear by 2010. That of the ethnomedicinal flora (Arnold et al. 2002) is presently being expanded as a web-based product to include plant uses, distribution maps and photographs, besides a brief description.

Recent progress in compiling and interpreting annotated checklists of the useful flora of South Africa will inform a variety of plant conservation projects such as the Millennium Seed Bank Project (MSBP)(see target 8) which has focused on collecting, inter alia, useful plants. A further function of ethnomedicinal compilations is the facilitation of drug discovery programmes. The Department of Science and Technology, through the agency of the National Research Foundation has provided Innovation Funds to the Novel Drug Development Platform (NDDP)(www.sahealthinfo.org/noveldrug/), a broad-based consortium of South African researchers from clinical and scientific disciplines based in local parastatals, universities and science councils. The object of this research has been to develop new medicines effective against serious and comparatively neglected diseases of the developing world: malaria, tuberculosis and diabetes mellitus. Tonics and imuno-modulatory drugs are further focus areas. Leads for research have often been based on local knowledge of treatments for the diseases considered, and with chapter 6 of the Biodiversity Act soon to be regulated, equitable sharing of benefits and hence CBD compliance should be effected by the time products reach the marketplace. The work of this consortium is progressing, with a number of promising products moving through the drug development pipeline. Expectations are that on the successful completion of the project at the end of 2006, a number of novel drugs and tonics will have been taken to the point of proof of principle, suitable and ready for early clinical studies, patenting, and further development in conjunction with new partners in industry or the World Health Organisation.

The substantial local interest in the medicinal flora of the country has lead to the unsustainable utilisation of highly sought-after species and consequently threats to their survival. Ironically, by virtue of their popularity, these same taxa make good objects of commercialisation and are the subject of R&D at a number of levels: sustainable harvesting, economics, propagation and farming technologies, chemistry, pharmacology, processing, formulating and packing, marketing, and benefit-sharing (Diederichs 2006). Such research will continue.

IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)

The Biodiversity Act provides for the integrated management and conservation of South Africa's biodiversity, including the sustainable use of plants and the fair and equitable sharing of benefits arising from bioprospecting. Chapter 6 on bioprospecting, access and benefit-sharing has taken cognisance of Article 8(j) of the CBD which requires that the commercial development of indigenous practices and innovations proceeds with the approval and involvement of the holders of such knowledge. It further requires that benefits arising from such developments are shared equitably with indigenous knowledge holders. The precipitation of a legal framework is a significant achievement, as for the first time in South Africa's history, indigenous knowledge and the related need for sustainable use of plant resources is jointly recognised in law. Monitoring of the status of useful plants is supported by Chapter 3 of Act 10, which addresses biodiversity planning and monitoring elements. The Biodiversity Act is a key foundation from which to in future address target 13 of the GSPC.

V) Progress made towards target (please specify indicators used to monitor progress towards the target)

See box III above.

VI) Constraints to achieving progress towards the target

VII) Any other relevant information

Various traditional knowledge-related projects in progress. No national target has been set.

Box XXXVII.

Target 14. The importance of plant diversity and the need for its conservation incorporated into communication, educational and public-awareness programmes.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	
b) No	X
Please specify	
III) Current status (please indicate current status related to this target)	
Please see boxes 91-100 for all relevant information to this target.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	
V) Progress made towards target (please specify indicators used to monitor progress towards the target)	
VI) Constraints to achieving progress towards the target	
VII) Any other relevant information	

Box XXXVIII.

Target 15. The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
No national scale targets have been set by DEAT (the GSPC focal point in South Africa).	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	
b) No	X
Please specify	
Not specifically, but is implicit in NBSAP: **NBSAP Outcome 2.3:** Institutions with biodiversity-related responsibilities and programmes are effective, efficient and adequately capacitated. **Relevant NBSAP 5-year Targets:** Agencies with statutory responsibilities for biodiversity management and biodiversity research have adequate capacity to perform mandatory functions.	
III) Current status (please indicate current status related to this target)	
Please refer to boxes 91-100 for relevant information on this target.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	
V) Progress made towards target (please specify indicators used to monitor progress towards the target)	
VI) Constraints to achieving progress towards the target	
VII)Any other relevant information	

Box XXXIX.

Target 16. Networks for plant conservation activities established or strengthened at national, regional and international levels.	
I) Has your country established national target corresponding to the above global target?	
a) Yes	
b) No	X
Please specify	
No national scale targets have been set by DEAT (the GSPC focal point in South Africa).	
II) Has your country incorporated the above global or national target into relevant plans, programmes and strategies?	
a) Yes	X
b) No	
Please specify	
NBSAP Outcome 2.7: Proactive engagement and co-operation with the international community enhances conservation and sustainable use of shared resources and globally important biodiversity in South Africa. **Relevant NBSAP 5-year Targets:** South Africa meets obligations for regional cooperation on biodiversity management within SADC and the African Union. Networks for biodiversity management activities established or strengthened at regional or international levels.	
III) Current status (please indicate current status related to this target)	
Biodiversity Working Group 1 of DEAT represents provincial and national conservation bodies. Also have Mintech, Minmec and CEC Sub-committee.	
IV) Measures taken to achieve target (please indicate activities, legislative measures and other steps taken with a view to achieve the target)	
V) Progress made towards target (please specify indicators used to monitor progress towards the target)	
Many networks/partnerships have been established at different levels of government and programme/project level. The GSPC is not specifically coordinated at the national level. Networks have been established, but not as a specific target related to GSPC. Networks have been established that cover broader biodiversity matters, not specifically relating to plants.	
VI) Constraints to achieving progress towards the target	
VII)Any other relevant information	

Box XL.

Please elaborate below on the implementation of this strategy specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

Ecosystem Approach

The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention. At its second meeting, the Conference of the Parties has affirmed that the ecosystem approach is the primary framework for action under the Convention (decision II/8). The Conference of the Parties, at its fifth meeting, endorsed the description of the ecosystem approach and operational guidance and recommended the application of the principles and other guidance on the ecosystem approach. The seventh meeting of the Conference of the Parties agreed that the priority at this time should be facilitating implementation of the ecosystem approach. Please provide relevant information by responding to the following questions.

3. ? [1] Is your country applying the ecosystem approach, taking into account the principles and guidance contained in the annex to decision V/6? (decision V/6)	
a) No	
b) No, but application is under consideration	
c) Yes, some aspects are being applied	X
d) Yes, substantially implemented	

4. ? Is your country developing practical expressions of the ecosystem approach for national policies and legislation and for implementation activities, with adaptation to local, national, and regional conditions? (decision V/6)	
a) No	
b) No, but development is under consideration	
c) Yes, practical expressions have been developed for applying some principles of the ecosystem approach	
d) Yes, practical expressions have been developed for applying most principles of the ecosystem approach	X

5. Is your country strengthening capacities for the application of the ecosystem approach, and providing technical and financial support for capacity-building to apply the ecosystem approach? (decision V/6)	
a) No	
b) Yes, within the country	X
c) Yes, including providing support to other Parties	

6. ? Has your country promoted regional cooperation in applying the ecosystem approach across national borders? (decision V/6)	
a) No	
b) Yes, informal cooperation (please provide details below)	

[1] Please note that all the questions marked with ? have been previously covered in the second national reports and some thematic reports.

c) Yes, formal cooperation (please provide details below)	X

Further comments on regional cooperation in applying the ecosystem approach across national borders.

Several joint management institutions and plans have been drawn up, for a number of Transfrontier Conservation Areas, which apply the ecosystem approach. (The programme includes removal of fences to open up migratory routes, translocation of large mammals, including elephant, rhinoceros, cheetah and antelope and the establishment of tourism with community involvement.) These are the Kgalagadi Transfrontier Park (South Africa/Botswana – bilateral agreement signed in 1999); the Great Limpopo Transfrontier Park and Resource Area (South Africa/Zimbabwe/Mozambique – joint agreement signed in 2002); the !Ai-!Ais/Richtersveld Transfrontier Conservation Park (South Africa/Namibia – treaty signed in 2003); the Maloti-Drakensberg Transfrontier Park and Development Area (South Africa/Lesotho – bilateral Memorandum of Understanding signed in 2001).

The Cape Action for People and Environment (CAPE) Programme, Subtropical Thicket Ecosystem Programme (STEP), the Succulent Karoo Ecosystem Programme (SKEP) and the National Grasslands Biodiversity Programme (NGBP) are all based on the ecosystem approach. The Succulent Karoo Ecosystem Programme applied the ecosystem approach across the whole biome, including in Namibia. A programme for the Wild Coast area of the Eastern Cape has been developed and funding is being sought for implementation.

7. Is your country facilitating the exchange of experiences, capacity building, technology transfer and awareness raising to assist with the implementation of the ecosystem approach? (decisions VI/12 and VII/11)

a) No	
b) No, some programmes are under development	
c) Yes, some programmes are being implemented (please provide details below)	X
d) Yes, comprehensive programmes are being implemented (please provide details below)	

Further comments on facilitating the exchange of experiences, capacity building, technology transfer and awareness raising to assist with the implementation of the ecosystem approach.

SANBI has established the Bioregional Programmes Forum and a Biodiversity Planning and Implementation Forum to bring together expertise and share learning from all of the existing bioregional programmes and planning initiatives and those being developed.

Public works programmes such as LandCare, Working for Water, Working for Wetlands, etc. all share a similar model for rehabilitating ecosystems while building skills of the poorest of the poor and contributing to job creation.

8. Is your country creating an enabling environment for the implementation of the ecosystem approach, including through development of appropriate institutional frameworks? (decision VII/11)

a) No	
b) No, but relevant policies and programmes are under development	
c) Yes, some policies and programmes are in place (please provide details below)	X
d) Yes, comprehensive policies and programmes are in place (please provide details below)	

Further comments on the creation of an enabling environment for the implementation of the ecosystem approach.
The Biodiversity Act (10 of 2004) provides for the publication in the Government Gazette, at national or provincial level, of bioregions and bioregional plans. Bioregions are defined as geographic regions that may contain whole or several nested ecosystems and which are characterized by its landforms, vegetation cover, human culture and history. Bioregional plans must contain measures for the effective management of biodiversity. The South African National Biodiversity Institute (previously the National Botanical Institute) is established in terms of the same Act and is enabled to carry out research on biodiversity and to provide advice on biodiversity planning, including bioregional plans.

C. ARTICLES OF THE CONVENTION

Article 5 – Cooperation

9. ? Is your country actively cooperating with other Parties in respect of areas beyond national jurisdiction for the conservation and sustainable use of biological diversity?	
a) No	
b) Yes, bilateral cooperation (please give details below)	X
c) Yes, multilateral cooperation (please give details below)	X
d) Yes, regional and/or subregional cooperation (please give details below)	X
e) Yes, other forms of cooperation (please give details below)	X

Further comments on cooperation with other Parties in respect of areas beyond national jurisdiction for the conservation and sustainable use of biodiversity.
Bilateral co-operation: Kgalagadi Transfrontier Park (South Africa/Botswana – bilateral agreement signed in 1999) !Ai-!Ais/Richtersveld Transfrontier Conservation Park (South Africa/Namibia – treaty signed in 2003) Maloti-Drakensberg Transfrontier Park and Development Area (South Africa/Lesotho – bilateral Memorandum of Understanding signed in 2001). The Succulent Karoo Ecosystem Programme, a bioregional programme, is being implemented together with Namibia. **Multilateral co-operation:** South Africa has played an active role in UN Multilateral Agreements, including CITES, Ramsar, CMS, CBD, CCD, UNFCCC and others. South Africa played a significant role in the development of the 2002 Johannesburg Plan of Implementation and the 2003 Durban Accord. **Regional and sub-regional co-operation:** South Africa is a member of the Southern African Development Community (SADC) and has signed Protocols on Wildlife, Water and Forests. South Africa is party to red-billed quelea, locust and blackfly multilateral agreements through SADC structures and ICOSAMP based on early warning systems and control methodologies. South Africa has established a close working relationship with all her neighbouring countries in

southern Africa, namely Namibia, Botswana, Zimbabwe, Mozambique, Lesotho and Swaziland. South African National Parks and the Chief Directorate: Protected Areas and Transfrontier Parks of the Department of Environment Affairs and Tourism have established a number of Transfrontier Conservation Areas (TFCAs) with these countries. Several joint management institutions and plans have been drawn up, while others are in progress. The programme includes removal of fences to open up migratory routes, translocation of large mammals, including elephant, rhinoceros, cheetah and antelope and the establishment of tourism with community involvement. These are the Great Limpopo Transfrontier Park (South Africa/Zimbabwe/Mozambique – joint agreement signed in 2002); others are under negotiation: the Limpopo-Shashe Transfrontier Conservation Area (South Africa / Botswana / Zimbabwe); and the Lubombo Transfrontier Conservation Area (South Africa / Swaziland / Mozambique) for which a protocol is in place.

South Africa is participating in a programme managed by the Southern African Development Community (SADC) office in Gaborone, Botswana, to develop a Regional Biodiversity Strategy.

South Africa assisted with the establishment of the African Union and actively supports the New Partnership for Africa's Development (NEPAD) environmental programme.

Other forms of co-operation:

South Africa actively participates on a large number of research initiatives. South Africa's co-operation with large research programmes includes the International Geosphere/Biosphere Programme; Millennium Ecosystem Assessment; SABONET (Southern African Botanical Diversity Network) and the Global Biodiversity Information Facility (GBIF). South Africa is an active participant in the Global Strategy on Plant Conservation and the Global Taxonomy Initiative.

The Benguela Current Large Marine Ecosystem (BCLME) Programme is a multi-sectoral regional initiative by Angola, Namibia and South Africa whose objective is to facilitate the integrated management, sustainable development and protection of this unique eastern boundary upwelling ecosystem. It is funded by the Global Environmental Facility (GEF) under its International Water portfolio and is implemented by the United Nations Development Programme (UNDP) with the United Nations Office for Project Services (UNOPS) as executing agency. The three member countries provide further financial and in-kind contributions.

South Africa maintains a research base on Antarctica and cooperates with other countries on Antarctica research and biodiversity management issues.

South Africa is involved in the development of several project proposals for the conservation of pollinators. Apart from several small projects, South Africa has a proposal for GEF with Ghana, Kenya, Brazil, Nepal, India and Pakistan (UD$ 6m from GEF alone). South Africa is developing a proposal to develop meliponiculture in Africa with Kenya, Ghana, Botswana, UK, the Netherlands and Italy (E1.2 m from EU), and is involved in developing a global catalogue of bees for submission to GBIF (US$ 800 000).

10. Is your country working with other Parties to develop regional, subregional or bioregional mechanisms and networks to support implementation of the Convention? (decision VI/27 A)	
a) No	
b) No, but consultations are under way	
c) Yes, some mechanisms and networks have been established (please provide details below)	X
d) Yes, existing mechanisms have been strengthened (please provide details below)	

Further comments on development of regional, subregional or bioregional mechanisms and networks to support implementation of the Convention.

See Box 9 above.

SAFRINET, is an official SADC project and the southern African network of BioNET International. Its purpose is to build taxonomic capacity in SADC. SAFRINET works closely with EAFRINET, the East African network of BioNET, and with WAFRINET, the West African network of BioNET. The taxonomic capacity for the projects in Box 9 above is part of the BioNET network.

11. Is your country taking steps to harmonize national policies and programmes, with a view to optimizing policy coherence, synergies and efficiency in the implementation of various multilateral environment agreements (MEAs) and relevant regional initiatives at the national level? (decision VI/20)	
a) No	
b) No, but steps are under consideration	
c) Yes, some steps are being taken (please specify below)	
d) Yes, comprehensive steps are being taken (please specify below)	X

Further comments on the harmonization of policies and programmes at the national level.

The national focal points and/or competent authorities for the CBD, Ramsar Convention, Bonn Convention, CITES, Convention on Climate Change, Convention on Desertification and various conventions and treaties relating to fisheries and the marine environment, are all located within the DEAT. However, in the past, these have been located in different Directorates, and even different Branches, with limited operational integration. In 2005, DEAT created a new Branch, to focus particularly on MEAs, including marine-related MEAs. This will greatly enhance synergies and improve efficiency.

Box XLI.

Please elaborate below on the implementation of this strategy specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

d) South Africa developed a National Biodiversity Strategy and Action Plan during 2003–2005. Although certain actions were already being implemented during that time, in response to existing national policy and legislation, a comprehensive rollout of the NBSAP still needs to take place. It is thus too early to comment on progress made in implementing the NBSAP.

The NBSAP will be institutionalized through the publication of a National Biodiversity Framework, the basis of which is the NBSAP. This Framework is required in terms of the Biodiversity Act (10 of 2004). One of the objectives of the National Biodiversity Framework is to provide for an integrated, co-ordinated and uniform approach to biodiversity management by organs of state in all spheres of government, NGOs, the private sector, local communities, other stakeholders and the public. It must identify priority areas for conservation action, and must reflect regional co-operation on issues affecting biodiversity management in Southern Africa.

e) DEAT, together with Statistics South Africa, is currently collating available data on the MDGs. Indicators to monitor the contribution of biodiversity strategies to poverty alleviation and sustainable development are being developed.

f) One of the biggest constraints encountered is the identification of appropriate indicators to monitor progress and to develop and implement a comprehensive monitoring and evaluation programme, which will enable progress in achieving both the 2010 target and the MDGs to be measured. Baseline data is patchy and often out of date.

Article 6 - General measures for conservation and sustainable use

12. Has your country put in place effective national strategies, plans and programmes to provide a national framework for implementing the three objectives of the Convention? (Goal 3.1 of the Strategic Plan)

a) No	
b) No, but relevant strategies, plans and programmes are under development	
c) Yes, some strategies, plans and programmes are in place (please provide details below)	
d) Yes, comprehensive strategies, plans and programmes are in place (please provide details below)	X

Further comments on the strategies, plans and programmes for implementing the three objectives of the Convention.

The National Biodiversity Strategy and Action Plan was developed, with wide stakeholder consultation, in 2003 – 2005. The NBSAP builds on existing policy and legislation, and many plans and programmes are already being implemented. However, much existing policy and legislation is fairly new, and many aspects must still be implemented. For example, legislation requires the development of a National Biodiversity Framework, and regulations to govern bioprospecting and benefit sharing, both of which will be developed during 2005/2006.

A National Action Programme has been developed to give effect to the Convention to Combat Desertification; and a National Climate Change Response Strategy has been developed.

DEAT is currently leading the development of a National Strategy for Sustainable Development, which will further improve policy coherence and integrated implementation.

A key set of actions still to be comprehensively and effectively implemented, is to integrate conservation and sustainable use of biodiversity into relevant sectoral or cross-sectoral plans, programmes and policies.

13. Has your country set measurable targets within its national strategies and action plans? (decisions II/7 and III/9)

a) No	
b) No, measurable targets are still in early stages of development	
c) No, but measurable targets are in advanced stages of development	X
d) Yes, relevant targets are in place (please provide details below)	
e) Yes, reports on implementation of relevant targets available (please provide details below)	

Further comments on targets set within national biodiversity strategies and action plans.

A scientifically-based systematic biodiversity assessment for the country, the NSBA, was carried out in 2004. This assessment set quantitative targets for conservation of biodiversity in terrestrial, river, estuarine and marine ecosystems. These biodiversity targets, based on best available science, need to inform the setting of realistic and measurable targets for the 5-year action plan developed during the NBSAP process. The process of setting targets and appropriate indicators will continue, as SANBI is tasked with monitoring and reporting regularly to the Minister of Environmental Affairs and Tourism on the status of the country's biodiversity, the conservation status of all listed threatened or protected species and listed ecosystems, and the status of all listed invasive species. SANBI may also be tasked with advising other organs of state, in all spheres of government, on monitoring and manage biodiversity. SANBI is in the process of establishing a national biodiversity monitoring and reporting framework.

14. Has your country identified priority actions in its national biodiversity strategy and action plan? (decision VI/27 A)

a) No	
b) No, but priority actions are being identified	X
c) Yes, priority actions identified (please provide details below)	

Further comments on priority actions identified in the national biodiversity strategy and action plan.

The NBSAP identifies a range of strategies and actions for conservation and sustainable use of South Africa's biodiversity. The challenge is to co-ordinate and drive implementation of the NBSAP, including deciding which actions are most urgent.

The NSBA identified nine priority geographic areas for implementation of strategies and actions for conservation and sustainable use of biodiversity, as well as priorities for freshwater, estuarine and marine ecosystems. Within these areas, priority actions include limiting loss and degradation of natural habitat by integrating biodiversity considerations into municipal spatial plans and extending conservation and biodiversity management onto privately and communally owned land.

15. Has your country integrated the conservation and sustainable use of biodiversity as well as benefit sharing into relevant sectoral or cross-sectoral plans, programmes and policies? (decision VI/27 A)	
a) No	
b) Yes, in some sectors (please provide details below)	X
c) Yes, in major sectors (please provide details below)	
d) Yes, in all sectors (please provide details below)	

Further information on integration of the conservation and sustainable use of biodiversity and benefit-sharing into relevant sectoral or cross-sectoral plans, programmes and policies.

Integration of biodiversity considerations into sectoral plans, such as agriculture, forestry, mining and urban development, is a key action identified in the NBSAP. However, full integration will take some time.

Some progress has been made in parts of the country, where integrated strategies and action plans have been developed, with Global Environment Facility funding, for priority biomes, namely fynbos, succulent karoo and thicket.

The Biodiversity and Wine Initiative is a partnership between the wine industry and the conservation sector in the fynbos areas of the Western Cape, with the following aims:

- No further loss of natural habitat in critical sites
- A positive contribution to biodiversity conservation through setting aside natural habitat in contractual protected areas
- Changes in farming practices to enhance the suitability of vineyards as habitat for biodiversity, and a reduction in farming practices that have negative impacts on biodiversity, both in the vineyards and in surrounding natural habitat
- Benefits to the wine industry by using the introduction of biodiversity guidelines as a marketing tool to differentiate Brand South Africa

A National Grasslands Biodiversity Programme is currently being developed, with a specific focus on mainstreaming biodiversity into production sectors across the landscape, including the forestry, coal mining and agriculture sectors, rather than a focus on formal protected areas.

A national mining and biodiversity dialogue has been established between conservation organisations and the Chamber of Mines, which represents large mining houses. It aims to improve biodiversity practices within the industry and to prevent loss of natural habitat in critical sites.

Considerable efforts have been made to integrate environmental considerations into sectoral or cross-sectoral plans, programmes and policies. In terms of Section 15(1) of the National Environmental Management Act (107 of 1998), all national departments whose activities impact on the environment – specifically DEAT, Land Affairs, Agriculture, Housing, Trade and Industry, Water Affairs and Forestry, Transport and Defence - and all provinces, are required to develop Environmental Implementation Plans, to be updated every four years.

Planning policies and legislation have been fundamentally revised since 1994 and require an integrated and participatory approach to spatial planning and local economic development. Local government is required to develop Integrated Development Plans and Spatial Development Frameworks that include environmental considerations. However, the legislation deals with the environment in the broad sense and does not focus on biodiversity in particular. Due to capacity limitations, the legislation has not yet been fully implemented, particularly in provincial and local spheres of government.

The Biodiversity Act (10 of 2004) is focused specifically on biological diversity. Chapter 3 of the Act calls for the development of a National Biodiversity Framework and a series of bioregional plans. The implementation of this legislation will greatly assist with integration of biodiversity considerations into sectoral plans, programmes and policies, especially development planning and land-use decision-making at provincial and local level.

The Conservation of Agricultural Resources Act (43 of 1983) administered by the Department of Agriculture provides for the protection of soil, water and vegetation against degradation caused by malpractices, weeds, invasive plant species and bush encroachers. The Agricultural Pests Act also regulates the control of migratory pests through importation control and other measures.

16. Are migratory species and their habitats addressed by your country's national biodiversity strategy or action plan (NBSAP)? (decision VI/20)	
a) Yes	
b) No	X
I) If **YES**, please briefly describe the extent to which it addresses	
(a) Conservation, sustainable use and/or restoration of migratory species	
(b) Conservation, sustainable use and/or restoration of migratory species' habitats, including protected areas	
(c) Minimizing or eliminating barriers or obstacles to migration	
(d) Research and monitoring for migratory species	
(e) Transboundary movement	
II) If **NO**, please briefly indicate below	
(a) The extent to which your country addresses migratory species at national level	The NBSAP does not refer specifically to migratory species, but these species are considered together with all other components of biodiversity. South Africa is a signatory to the Convention on Migratory Species and Ramsar.
(b) Cooperation with other Range States since 2000	No formal co-operation agreements are in place with other Range States.

Biodiversity and Climate Change

17. Has your country implemented projects aimed at mitigating and adapting to climate change that incorporate biodiversity conservation and sustainable use? (decision VII/15)	
a) No	
b) No, but some projects or programs are under development	X
c) Yes, some projects have been implemented (please provide details below)	

Further comments on the projects aimed at mitigating and adapting to climate change that incorporate biodiversity conservation and sustainable use.

See also Box XIV.

South Africa's National Climate Response Strategy was approved in October 2004. The Strategy includes measures for both mitigation and adaptation, but a detailed Action Plan is still being developed.

Mitigation

South Africa's National Energy Policy aims to reduce emissions. The target for conversion to renewables is currently set at 5% of total energy requirements. South Africa's energy source is likely to remain coal based for many decades.

Adaptation

Climate change modelling predicts a reduction in the area covered by South Africa's existing biomes by up to 55% over the next 50 years. The largest changes in species composition and losses of both plant and animal species are predicted to occur in the western, central and northern parts of the country. Marine and coastal ecosystems are also likely to be significantly affected. Effective adaptation is essential. The NBSAP, while recognizing the importance of mitigation, focuses attention mainly on adaptation.

NBSAP Outcome 3.4:

- An integrated national programme facilitates adaptation to the predicted impacts of climate change on biodiversity across the landscape and seascape.

NBSAP Activity 3.4.1:

- Implement an integrated programme for climate change adaptation, with an emphasis on vulnerable ecosystems and sustainable livelihoods.

NBSAP Activity 3.4.2:

- Ensure that the protected area network is designed to allow for long-term species and ecosystem responses to climate change.

In determining priority areas for conservation action, the NSBA incorporated adaptation aspects into the assessment and design of corridors, by including areas with high potential for carbon sequestration (high carbon storage capacity), and areas likely to be refuges in the face of climate change, such as areas where biomes are likely to be resilient to climate change.

Climate change considerations have been incorporated into more detailed spatial planning for the fynbos, succulent karoo and thicket biomes, by identifying areas that facilitate adaptation to climate change, such as upland/lowland corridor links.

Healthy terrestrial and aquatic ecosystems, and the existence of intact ecological corridors linking different parts of the landscape, will help to mitigate the impacts of climate change and should be

seen as a crucial element of South Africa's climate change adaptation strategy.

For example, the Cape Action for People and Environment (CAPE) programme, which focuses on the fynbos biome, has established a series of programmes and biodiversity corridors that stretch from coastal lowland areas to mountains, in both east-west and north-south gradients. These include the Greater Cederberg, Baviaanskloof, Gouritz and Garden Route initiatives These areas are included in South Africa's newest World Heritage Site, the Cape Floristic Region. The Subtropical Thicket Ecosystem Programme (STEP) has also identified the establishment of "megaconservancy networks" which run from the coast inland along major river valleys, as a key implementation strategy.

18. Has your country facilitated coordination to ensure that climate change mitigation and adaptation projects are in line with commitments made under the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification? (decision VII/15)

a) No	
b) No, but relevant mechanisms are under development	
c) Yes, relevant mechanisms are in place (please provide details below)	X

Further comments on the coordination to ensure that climate change mitigation and adaptation projects are in line with commitments made under the UNFCCC and the UNCCD.

Although DEAT has been designated as the lead agency for climate change response in South Africa, it is recognised that this is a cross cutting issue that has ramifications for diverse activities in other governments. The National Climate Change Response Strategy for South Africa advocates that many government departments work together in a coordinated manner, to ensure that response measures are properly directed, acceptable to all and carried out with a national focus.

The UNFCCC and the UNCCD focal points are both located in DEAT, and structures, such as the Committee for Environmental Co-ordination (with its subcommittees) are in place to promote the integration and co-ordination of various environmental issues.

Box XLII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

South Africa's NBSAP has a strategic objective (SO3: Integrated terrestrial and aquatic management minimises the impacts of threatening processes on biodiversity, enhances ecosystems and improves social and economic security). One of the outcomes of this objective is: an integrated national programme facilitates adaptation to the predicted impacts of climate change on biodiversity across the landscape and seascape).

Article 7 - Identification and monitoring

19. On Article 7(a), does your country have an ongoing programme to identify components of biological diversity at the genetic, species, ecosystem level?

a) No	
b) Yes, selected/partial programmes at the genetic, species and/or ecosystem level only (please specify and provide details below)	X
c) Yes, complete programmes at ecosystem level and selected/partial inventories at the genetic and/or species level (please specify and provide details below)	

Further comments on ongoing programmes to identify components of biodiversity at the genetic, species and ecosystem level.

South Africa has fairly well developed research programmes underway for identification and monitoring of some of the components of biological diversity, particularly for higher order plants and vertebrates. However, government resources are limited and funding for complete programmes in all ecosystems is not available. A constraint in the past has been the lack of a coherent, coordinated monitoring programme. The establishment of the South African National Biodiversity Institute (SANBI) in September 2004 provides the institutional basis for the establishment of coordinated identification and monitoring programmes. A key function of SANBI, as set out in the Biodiversity Act (10 of 2004) is to monitor and report regularly on the status of South Africa's biodiversity; the conservation status of all listed threatened or protected species and ecosystems; and the status of listed invasive species. SANBI is also required to coordinate and promote the taxonomy of South Africa's biodiversity and to collect and disseminate information on biodiversity.

Although many research and monitoring programmes are conducted by a range of institutions across South Africa, on a range of biodiversity-related issues, these are rarely coordinated and/or on-going. There is an urgent need for coordination, and in particular, for information sharing. Initiatives are underway to establish systematic monitoring programmes, which will monitor changes and inform planning and adaptive management. SANBI is developing a national framework for monitoring and reporting on biodiversity, and will play a key co-ordination role in implementing the framework.

Identification and monitoring programmes at ecosystem level:

Identification and monitoring programmes in South Africa are moving away from the limited approach which dominated conservation research and planning in recent decades, which tended to focus on larger charismatic species. Increasingly, monitoring is being carried out at the level of ecosystems and habitats. It is anticipated that this approach will ensure integration of biodiversity concerns with land-use planning and will deal more effectively with the primary threat to biodiversity, namely loss of habitat through land-use change.

Inventory programmes at ecosystem level include the Vegetation Map of South Africa, Lesotho and Swaziland, which was updated by SANBI in 2003/2004. This map defines and maps, at a scale of 1:250 000, 441 distinct vegetation units – which makes it probably the most detailed ecosystem inventory in the world outside of Western Europe. Assessments have been carried out in priority areas for biomes such as fynbos, succulent karoo, thicket and grasslands during the past five years. An inventory high altitude moist grasslands has been carried out by the Ekangala Grassland Trust, a collaboration between NGOs, scientists and several provincial government departments. A thorough inventory of forest and woodland ecosystems is being carried out by the Department of Water Affairs and Forestry (Forestry Branch).

Identification programmes for freshwater ecosystems include DWAF's River Classification System, while an inventory and assessment of estuarine ecosystems has been carried out by the Marine and Coastal Management Branch of the Department of Environment Affairs and Tourism. Identification programmes for marine biozones were carried out for the first time at a national scale during the National Spatial Biodiversity Assessment carried out in parallel to the NBSAP process in 2004.

Ecosystem monitoring and research programmes underway in South Africa include the BIOTA South programme, the Millennium Ecosystem Assessment, Desert Margins Project, SAFARI 2000, Global Terrestrial Observing System (GTOS). A South African Environmental Observatory Network (SAEON) has been established.

The Benguela Current Large Marine Ecosystem (BCLME) Programme is a multi-sectoral regional initiative by Angola, Namibia and South Africa whose objective is to facilitate the integrated management, sustainable development and protection of this unique eastern boundary upwelling ecosystem. This programme is due to get underway in 2005/06.

Reports on activities with adverse impacts on biodiversity have been completed as part of biodiversity assessments and planning for the fynbos (clearing for agriculture, urban expansion, coastal development, afforestation and invasive alien species), succulent karoo (mining, overgrazing, ostrich farming and over-harvesting by plant collectors) and thicket (clearing for agriculture, urban expansion and overgrazing by goats). These assessments have generated GIS-based maps at a scale of 1:250 000 and at a finer scale (1:50 000 and 1:10 000) for certain priority areas.

Reasonably accurate information has been compiled on the adverse impacts on biodiversity of invasive alien species in general, and invasive alien plants in particular. This has been done on a spatial basis and also from a systems and economic perspective.

Identification and monitoring programmes at species level:

Many nation-wide species identification and monitoring programmes in South Africa are financed by donors, the private sector and/or NGOs. Limiting factors include the uncoordinated nature of the identification and monitoring programmes, the lack of organisation and sharing of the data collected, limited funding to undertake regular, coordinated data collection, monitoring and assessment programmes and an aging cohort of taxonomists and biosystematics experts. There is a pressing need to ensure coordination and cooperation and to train and mentor young emerging scientists. Resources are particularly limiting for identification and monitoring programmes for invertebrates, lower order plants, microbes and fungi. SAFRINET, the SADC-wide southern African subregional network of BioNET-International, the Global Network for Taxonomy, was established in 1996 to help to overcome this lack of capacity. However, SAFRINET has been unable to raise the funds required to implement the necessary capacity building programmes.

Identification programmes are most advanced for plant species. SANBI is a recognised leader in the identification and monitoring of plant species across Southern Africa.

South African National Parks has monitoring programmes in place in national parks, particularly for threatened mammalian species such as wild dog, black rhinoceros, and cheetah. Universities also carry out identification and monitoring programmes, usually as part of postgraduate research and training programmes.

Due to limited resources, monitoring programmes at species level focus mainly on threatened species and are often carried out by NGOs such as the Endangered Wildlife Trust, BirdLife South Africa and the Botanical Society, research institutions such as the South African National Botanical Institute and university-linked research programmes such as the Avian Demography Unit based at the University of Cape Town. Species monitoring is inadequate or absent for several major faunal groups, such as reptiles and amphibians, small mammals and almost all invertebrates. Many plant groups need more attention.

National Red Data Books which have been recently updated include Southern African Plant Red Data Lists and Mammals (2003 – including both terrestrial and marine species), the Southern African Bird Red Data Book (2004) and the Southern African Amphibian Red List (2004).

Many species-specific census projects are also regularly undertaken by NGOs, for example the annual

crane, oribi and blue swallow counts coordinated by the Endangered Wildlife Trust, the annual CAR counts (Coordinated Avifaunal Roadcounts) undertaken by the Avian Demography Unit, which monitors large terrestrial birds such as cranes, storks and bustards on agricultural land, and the annual Cape parrot counts undertaken by the Cape Parrot Working Group of BirdLife South Africa. A national cheetah census project is currently being undertaken by the De Wildt Cheetah and Wildlife Trust, while the South African National Parks and various provincial conservation agencies regularly conduct censuses in their parks. Species such as black and white rhinoceros and wild dogs are carefully monitored and regularly censused.

Provincial conservation authorities are tasked with implementation of CITES and maintain monitoring programmes of species listed on CITES Appendices. To counter poaching problems in certain areas, species such as rhinoceros, cycads and abalone have been tagged with tracing devices.

Systematic monitoring programmes are also in place for a number of economically important invertebrates, such as ants, nematodes and bees.

Identification and monitoring programmes at genetic level:

Several projects based at universities and non-governmental organisations have been carried out for certain species, particularly threatened species. These include among others cheetah, wild dog, Cape mountain zebra, Addo elephants, roan antelope, certain birds (including Cape parrot and blue, wattled and crowned cranes) and some small mammals. A comprehensive bioprospecting programme has been initiated by the Medical Research Council, involving the South African National Botanical Institute, the CSIR (Council for Scientific and Industrial Research), Universities of Cape Town, Western Cape, Pretoria and Natal and the Agricultural Research Council. This does not include genetic inventories, however, the Darwin Project, based at the National Botanical Institute in Kirstenbosch, in association with the Royal Botanic Gardens in Kew, is developing a DNA Bank of more than 2 000 indigenous plants.

The Agricultural Research Council provides genetic analyses for the conservation and game farming industry, including genetic profiling of animals, species and populations. Of particular concern is the avoidance of hybridisation between closely related species, which are being introduced into areas outside their normal ranges. Species involved include blue and black wildebeest, Burchell's and Hartman's zebra, bontebok and blesbok, and red hartebeest and tsessebe.

20. ? On Article 7(b), which components of biological diversity identified in accordance with Annex I of the Convention, have ongoing, systematic monitoring programmes?

a) at ecosystem level (please provide percentage based on area covered)	X
b) at species level (please provide number of species per taxonomic group and percentage of total known number of species in each group)	X
c) at genetic level (please indicate number and focus of monitoring programmes)	X

Further comments on ongoing monitoring programmes at the genetic, species and ecosystem level.

a) ecosystem level

There are few ongoing systematic monitoring programmes in place at ecosystem level, but plans to establish these are beginning to get underway. Large-scale monitoring programmes in place, such as the National Land Cover, tend to use satellite imagery, and require ground-truthing and verification, which leads to long time lags in obtaining useable data. Some long-term monitoring programmes have collected point data, for example, on rainfall, or river flows, but these are often not analysed in a meaningful way.

It is not possible to provide a percentage of land area covered.

The South African Environmental Observation Network (SAEON) is an emerging National Research Facility of the National Research Foundation funded by the Department of Science and Technology. One of the motivations behind the establishment of SAEON is to overcome the problem of fragmented and uncoordinated environmental observation, through the establishment of a network of environmental observation stations and nodes across the country. SAEON has been established in order to reduce vulnerability to long-term environmental change, provide an early warning system, conduct long-term and broad-scale environmental research and provide the facilities to train a new generation of environmental scientists in fields such as climate change, invasive species and biodiversity management.

The proposed network of SAEON is to comprise a set of at least six nodes to be located in the major biomes or habitat types in the country, including two designed to cover the marine and coastal environments. Each node will be responsible for collection and archiving of long-term environmental data pertinent to the area in question and together they will contribute to a synthesis of environmental change across ecological boundaries.

This includes a coastal and marine node, to be developed by the South African Network for Coastal and Oceanic Research (SANCOR), a non-statutory body that promotes the wise and informed use and management of marine and coastal resources and environments in South Africa.

b) species level

Due to limited resources, these focus mainly on threatened species and are carried out by NGOs such as the Endangered Wildlife Trust, BirdLife South Africa and the Botanical Society, research institutions such as the South African National Botanical Institute and university-linked research programmes such as the Avian Demography Unit based at the University of Cape Town. Species monitoring is inadequate or absent for several major faunal groups, such as reptiles and amphibians, small mammals and almost all invertebrates, although programmes are in place for some economically important groups, such as bees, ants and nematodes. Many plant groups need more attention.

c) genetic level

Few ongoing genetic monitoring programmes are in place. Examples include cheetah and cycads.

21. ? On Article 7(c), does your country have ongoing, systematic monitoring programmes on any of the following key threats to biodiversity?	
a) No	
b) Yes, invasive alien species (please provide details below)	X
c) Yes, climate change (please provide details below)	X
d) Yes, pollution/eutrophication (please provide details below)	X
e) Yes, land use change/land degradation (please provide details below)	X
f) Yes, overexploitation or unsustainable use (please provide details below)	X

Further comments on monitoring programmes on key threats to biodiversity.

b) invasive alien species: CSIR; DWAF; Working for Water

c) climate change: South African Environmental Observation Network (SAEON); South African National Biodiversity Institute; CSIR; University of Cape Town

d) pollution / eutrophication: River Health Programme, Department of Water Affairs and Forestry,

Water Research Commission, CSIR

e) land use change / land degradation: Institute for Soil, Climate and Water; Department of Agriculture; South African National Biodiversity Institute

Rapid assessment and remote sensing techniques have been used for some time in South Africa and the technology is well advanced. The data is generally captured in Geographic Information Systems and verified through ground-truthing and sampling. Aerial photographs are also used where available to assess vegetation changes over time. National Vegetation Maps were updated in 2003, while an update of the 1996 National Land Cover Data, which indicates the extent of various activities that impact on natural vegetation, will be completed in 2005.

f) overexploitation or unsustainable use

For commercial marine fisheries: Marine and Coastal Management, Department of Water Affairs and Forestry; South African Network for Coastal and Oceanic Research

For rangelands (grazing): Department of Agriculture

Ongoing monitoring programmes for terrestrial resources are weak and need to be developed.

22. On Article 7 (d), does your country have a mechanism to maintain and organize data derived from inventories and monitoring programmes and coordinate information collection and management at the national level?

a) No	
b) No, but some mechanisms or systems are being considered	
c) Yes, some mechanisms or systems are being established	
d) Yes, some mechanisms or systems are in place (please provide details below)	X
e) Yes, a relatively complete system is in place (please provide details below)	

Further information on the coordination of data and information collection and management.

Coordination of monitoring and information collection is currently inadequate at the national level. Roleplayers include DEAT, (particularly State of the Environment Reporting and Marine and Coastal Management), Department of Science and Technology, Department of Agriculture and SANBI). SANBI is establishing SIBIS (SANBI Integrated Biodiversity Information System). Excellent national systems are in place for plants, but those for other taxa not as good or as well coordinated.

A Global Biodiversity Information Facility (GBIF) node, the South African Biodiversity Information Facility (SABIF) has been established at the National Research Foundation (Department of Science and Technology). Programmes focus on the establishment of an internet compatible biodiversity database, electronic cataloguing of known species, digitisation of data and specimens, outreach, training and ensuring accessibility of data. SABIF is in the process of being transferred from the National Research Foundation to SANBI.

23. Does your country use indicators for national-level monitoring of biodiversity? (decision III/10)

a) No	
b) No, but identification of potential indicators is under way (please describe)	

c) Yes, some indicators identified and in use (please describe and, if available, provide website address, where data are summarized and presented)	X
d) Yes, a relatively complete set of indicators identified and in use (please describe and, if available, provide website address, where data are summarized and presented	

Further comments on the indicators identified and in use.

Well-established indicators include those for conservation (such as % of land surface area located within formal protected areas) and for species status. The NSBA (2004) applied an ecosystem status indicator to terrestrial, river, estuarine and marine ecosystems. Ecosystem status is based on the extent to which natural habitat in an ecosystem has been lost or degraded. There is a need to develop indicators for ecosystem services and sustainable use.

The Directorate: Environmental Monitoring and Reporting of DEAT is developing a comprehensive national set of indicators for State of the Environment Reports, in partnership with the Council for Scientific and Industrial Research. The National Environmental Indicators Programme includes indicators for Inland Waters; Marine, Coastal and Estuarine; Biodiversity and Natural Heritage; Land Use; Human Well-being; Atmosphere and Climate; Waste Management and Integrated and Environmental Management. This national set of indictors should be finalised during 2006.

The Department of Water Affairs and Forestry is at an advanced stage of development of Criteria Indicators and Standards for Sustainable Forest Management, with assistance from the Department for International Development (UK). Pilot testing of criteria, indicators and standards is currently underway. Indicators for River Health are also fairly well developed.

DEAT and Statistics South Africa is developing a set of indicators to enable reporting on the Millennium Development Goals and targets set by the Johannesburg Plan of Implementation, which includes the 2010 biodiversity target.

Box XLIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

c/d) As part of the process of developing a national monitoring and reporting framework for biodiversity, the South African National Biodiversity Institute will investigate appropriate indicators for monitoring and assessing progress in the implementation of the NBSAP.

Decisions on Taxonomy

24.? Has your country developed a plan to implement the suggested actions as annexed to decision IV/1? (decision IV/1)

a) No	
b) No, but a plan is under development	X
c) Yes, a plan is in place (please provide details below)	
d) Yes, reports on implementation available (please provide details	

below)	

Further information on a plan to implement the suggested actions as annexed to decision IV/1.

South African Biosystematics Initiative is underway.

25.? Is your country investing on a long-term basis in the development of appropriate infrastructure for your national taxonomic collections? (decision IV/1)

a) No	
b) Yes (please provide details below)	X

Further information on investment on a long-term basis in the development of appropriate infrastructure for your national taxonomic collections.

The infrastructure for national taxonomic collections includes significant investment in certain sectors. The plant herbaria of the South African National Biodiversity Institute (such as at Kirstenbosch and Pretoria) are well resourced, and initiatives are underway to build a new state of the art facility for the fish collections (wet collections) of the South African Institute of Aquatic Biodiversity in Grahamstown. However, many collections are currently under-resourced, especially those of the various museums and the Agricultural Research Council.

26.? Does your country provide training programmes in taxonomy and work to increase its capacity of taxonomic research? (decision IV/1)

a) No	
b) Yes (please provide details below)	X

Further information on training programmes in taxonomy and efforts to increase the capacity of taxonomic research.

South African plant taxonomists have developed a strong network with Southern African countries and several training programmes have been held. Training programmes in taxonomy have been provided by the Southern African Botanical Diversity Network (SABONET) and BIONET, and several universities offer MSc courses. However, taxonomic training programmes for other taxa are less active.

27.? Has your country taken steps to ensure that institutions responsible for biological diversity inventories and taxonomic activities are financially and administratively stable? (decision IV/1)	
a) No	
b) No, but steps are being considered	
c) Yes, for some institutions	X
d) Yes, for all major institutions	

28.* [2] Is your country collaborating with the existing regional, subregional and global initiatives, partnerships and institutions in carrying out the programme of work, including assessing regional taxonomic needs and identifying regional-level priorities? (decision VI/8)	
a) No	
b) No, but collaborative programmes are under development	
c) Yes, some collaborative programmes are being implemented (please provide details about collaborative programmes, including results of regional needs assessments)	X
d) Yes, comprehensive collaborative programmes are being implemented (please provide details about collaborative programmes, including results of regional needs assessment and priority identification)	

Further information on the collaboration your country is carrying out to implement the programme of work for the GTI, including regional needs assessment and priority identification.

SABONET – the Southern African Botanical Diversity Network – is a good example of such a regional network. However, this has been donor funded (by the Global Environmental Facility) and the project is coming to an end.

The location of the National Global Taxonomy Initiative Focal Point is unclear at the moment (both the South African National Biodiversity Institute and the Department of Science and Technology play important roles). It is possible that the new South African National Biodiversity Institute (SANBI) will be the focal point, but this has yet to be finalised. Funding for and collaboration with international experts has been done mainly for plants, through SABONET, the Millennium Seedbank Project and the DNA Bank.

[2] The questions marked with * in this section on Taxonomy are similar to some questions contained in the format for a report on the implementation of the programme of work on the Global Taxonomy Initiative. Those countries that have submitted such a report do not need to answer these questions unless they have updated information to provide.

29. * Has your country made an assessment of taxonomic needs and capacities at the national level for the implementation of the Convention? (annex to decision VI/8)	
a) No	
b) Yes, basic assessment made (please provide below a list of needs and capacities identified)	X
c) Yes, thorough assessment made (please provide below a list of needs and capacities identified)	

Further comments on national assessment of taxonomic needs and capacities.

A thorough assessment of taxonomic needs to be carried out by the SANBI, given its new role for coordinating biodiversity research and data collection and management. SANBI's previous role as the National Biodiversity Institute means that taxonomic skills for plants are well developed, but there has never been a coordinating institution in South Africa for animal assessment.

The Agricultural Research Council conducts research and maintains collections of agriculturally important invertebrates, including pollinators, beetles, mites and spiders. However, human and financial resources are limited. Microbial and fungal genetic resources are under-researched.

30. * Is your country working on regional or global capacity building to support access to, and generation of, taxonomic information in collaboration with other Parties? (annex to decision VI/8)	
a) No	
b) Yes, relevant programmes are under development	
c) Yes, some activities are being undertaken for this purpose (please provide details below)	X
d) Yes, many activities are being undertaken for this purpose (please provide details below)	

Further comments on regional or global capacity-building to support access to, and generation of, taxonomic information in collaboration with other Parties.

South Africa participates in the Global Biodiversity Information Facility (GBIF), through a South African node, the South African Biodiversity Information Facility (SABIF) located in the National Research Foundation (Department of Science and Technology). SABIF is in the process of being transferred from the National Research Foundation to SANBI.

31. * Has your country developed taxonomic support for the implementation of the programmes of work under the Convention as called upon in decision VI/8? (annex to decision VI/8)	
a) No	X
b) Yes, for forest biodiversity (please provide details below)	
c) Yes, for marine and coastal biodiversity (please provide details below)	
d) Yes, for dry and sub-humid lands (please provide details below)	
e) Yes, for inland waters biodiversity (please provide details below)	
f) Yes, for mountain biodiversity (please provide details below)	

g) Yes, for protected areas (please provide details below)	
h) Yes, for agricultural biodiversity (please provide details below)	
i) Yes, for island biodiversity (please provide details below)	

Further comments on the development of taxonomic support for the implementation of the programmes of work under the Convention.

South Africa does not have well-developed programmes of work, but many of the relevant interventions fall within the mandates of various government agencies and organs of state. Taxonomic support has not been developed specifically for programmes of work, but is available from a number of institutions.

32. * Has your country developed taxonomic support for the implementation of the cross-cutting issues under the Convention as called upon in decision VI/8?

a) No	X
b) Yes, for access and benefit-sharing (please provide details below)	
c) Yes, for Article 8(j) (please provide details below)	
d) Yes, for the ecosystem approach (please provide details below)	
e) Yes, for impact assessment, monitoring and indicators (please provide details below)	
f) Yes, for invasive alien species (please provide details below)	
g) Yes, for others (please provide details below)	

Further comments on the development of taxonomic support for the implementation of the cross-cutting issues under the Convention.

Article 8 - *In-situ* conservation
[excluding paragraphs (a) to (e), (h) and (j)]

33. ? On Article 8(i), has your country endeavored to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and sustainable use of its components?

a) No	
b) No, but potential measures are being identified	
c) Yes, some measures undertaken (please provide details below)	X
d) Yes, comprehensive measures undertaken (please provide details below)	

Further comments on the measures taken to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and sustainable use of its components.

Article 8(f) rehabilitation and restoration programmes include Working for Water, Working for Wetlands, CoastCare, LandCare, etc. Several innovative public-works and poverty-relief programmes have been developed which focus on restoration, such as the Working for Water Programme which clears invasive alien trees; Working for Wetlands; CoastCare and LandCare. The budget for these programmes, R650 million in 2004/5, is one of the highest in the world, relative to Gross Domestic Product.

8g) biosafety

Fairly comprehensive measures in the form of policy, legislation and regulations are in place, but some stakeholders such as the NGOs, Biowatch and the African Biosafety Centre, argue that these are inadequate and/or are not adequately enforced. The Genetically Modified Organisms Act (15 of 1997) and its regulations regulate all activities relating to Living Modified Organisms, while Environmental Impact Assessment regulations require impact assessments for LMO development.

8k) legislation (see box below)

34. ? On Article 8(k), has your country developed or maintained the necessary legislation and/or other regulatory provisions for the protection of threatened species and populations?	
a) No	
b) No, but legislation is being developed	
c) Yes, legislation or other measures are in place (please provide details below)	X

Further information on the legislation and/or regulations for the protection of threatened species and populations.

South Africa has promulgated new national legislation for the protection of threatened species and populations, namely the Protected Areas Act (57 of 2003) and the Biodiversity Act (10 of 2004). The Biodiversity Act provides for the listing of threatened species and/or species in need of protection from a range of regulated activities, such as unsustainable harvesting. The Act also provides for the listing of threatened ecosystems and/or ecosystems in need of protection. The Biodiversity Act provides for the listing of invasive species and calls for the development of invasive species management plans by organs of state, in order to regulate and manage the uncontrolled spread of invasive species. The Biodiversity Act also provides for the gazetting of bioregional plans and biodiversity management plans. It should be noted that the lists of threatened or protected species are not equivalent to Red Data lists and apply mainly to species threatened by harvesting. Stronger measures are required for species threatened by habitat loss – in Environmental Impact Assessment regulations for example.

Although these Acts have been promulgated, the process of developing and implementing associated regulations is still underway and may take a number of years.

35. ? On Article 8(l), does your country regulate or manage processes and categories of activities identified under Article 7 as having significant adverse effects on biological diversity?	
a) No	
b) No, but relevant processes and categories of activities being identified	
c) Yes, to a limited extent (please provide details below)	X
d) Yes, to a significant extent (please provide details below)	

Further comments on the regulation or management of the processes and categories of activities identified by Article 7 as having significant adverse effects on biodiversity.

Adverse impacts on biodiversity, such as habitat loss, are mainly regulated through development authorisation and Environmental Impact Assessment (EIA) procedures. South Africa has extensive requirements for EIAs, but EIAs are not very effective in preventing the loss of biodiversity, especially from habitat loss. There are also loopholes, and much transformation is taking place on a small scale, with cumulative impacts, such as the transformation of agricultural land to other use, such as urban expansion, and the ploughing of virgin land. Although the Subdivision of Agricultural Land Act (70 of 1970) and the Conservation of Agricultural Resources Act (43 of 1983) make provision for controls on subdivision of agricultural land and change of land use so as to prevent the creation of non-viable farm units, which in turn could lead to degradation of biodiversity, and a new Act called the Sustainable Utilization of Agricultural Resources Act is envisaged, much needs to be done to integrate biodiversity considerations with agricultural practice at the farm level.

It is hopes through the NBSAP and the National Biodiversity Framework, to incorporate biodiversity considerations better into more strategic spatial planning and guidelines to provinces and municipalities where much of the adverse impact takes place.

Box XLIV.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation

Programme of Work on Protected Areas (Article 8 (a) to (e))

36. Has your country established suitable time bound and measurable national-level protected areas targets and indicators? (decision VII/28)

a) No (please specify reasons)	
b) No, but relevant work is under way	
c) Yes, some targets and indicators established (please provide details below)	
d) Yes, comprehensive targets and indicators established (please provide details below)	X

Further comments on targets and indicators for protected areas.

DEAT/SANParks target: 8% of land surface area in protected areas by 2010
DEAT/MCM target: 20% of coastline in Marine Protected Areas by 2010

See Box IV for more on this.

37. Has your country taken action to establish or expand protected areas in any large or relatively unfragmented natural area or areas under high threat, including securing threatened species? (decision VII/28)	
a) No	
b) No, but relevant programmes are under development	
c) Yes, limited actions taken (please provide details below)	
d) Yes, significant actions taken (please provide details below)	X

Further comments on actions taken to establish or expand protected areas.

The trend in South Africa is for protected areas to form the nucleus of much larger areas under conservation management. In some areas, the fences between national parks and adjacent private game lodges have been removed, such as along the western boundary of the Kruger National Park. Several Biosphere Reserves have been established in South Africa, namely the 100,000 hectare Kogelberg Biosphere Reserve (1998), 377 000 hectare Cape West Coast Biosphere Reserve (2000), 1 400 000 hectare Waterberg Biosphere Reserve (2001) and 3 300 000 hectare Kruger-to-Canyons Biosphere Reserve (2001). The involvement of private landowners in Biosphere Reserves and Conservancies has been voluntary to date. Despite limited formal incentives, many private landowners manage their land very effectively along conservation principles, as wildlife becomes private property when fenced and the game farming and tourism industry provides sufficient economic incentives. Section 28 of the Protected Areas Act (57 of 2003) makes provision for the establishment of Protected Environments, to establish buffer zones around protected areas. In addition, the Protected Areas Act provides for any land, including private or communal land, to be declared a formal protected area, and allows for co-management of such a protected area by the landowner(s) or any suitable person or organisation. This means that formal protected area status, with an associated rates exclusion in terms of the Municipal Property Rates Act (6 of 2004), is not limited to state-owned land, and that government agencies are not the only organisations that can manage protected areas.

The programme for expansion of protected areas aims to consolidate fragmented areas – e.g. Kruger to Canyons, link terrestrial parks with Marine Protected Areas (e.g. Namaqua National Park and the greater Addo Elephant National Park) and establish Transfrontier Conservation Areas.

Bioregional programmes include multi-stakeholder initiatives to establish landscape-wide conservation corridors that include formal protected areas in a matrix of biodiversity-compatible land uses. Examples include the Greater Cederberg Biodiversity Corridor, and Garden Route Initiative and the Gouritz Initiative, all part of the Cape Action for People and Environment (C.A.P.E.) programme, and the Wild Coast Conservation and Development Project and the Fish River Biodiversity Initiative in the Eastern Cape.

Applies also to Box 39.

38. Has your country taken any action to address the under representation of marine and inland water ecosystems in the existing national or regional systems of protected areas? (decision VII/28)	
a) No	
b) Not applicable	
c) No, but relevant actions are being considered	
d) Yes, limited actions taken (please provide details below)	
e) Yes, significant actions taken (please provide details below)	

Further comments on actions taken to address the under representation of marine and inland water ecosystems in the existing national or regional systems of protected areas.
Marine – yes (d) Planning has been carried out – gaps and priority areas have been identified in the National Spatial Biodiversity Assessment (2004). Inland water – note that where river ecosystems are located in protected areas, the river often forms the boundary of the protected area and is thus not adequately protected. Often only a small portion of a river flows through a protected area and the river is not adequately protected from pressures arising from land use within the catchment (an example is the Sabie/Sand River in Kruger National Park, which is seriously impacted on by activities in the catchment outside the protected area.) Wetland ecosystems are under-protected and much needs to be done to increase their level of protection.

39. Has your country identified and implemented practical steps for improving the integration of protected areas into broader land and seascapes, including policy, planning and other measures? (decision VII/28)	
a) No	
b) No, but some programmes are under development	
c) Yes, some steps identified and implemented (please provide details below)	
d) Yes, many steps identified and implemented (please provide details below)	X
Further comments on practical steps for improving integration of protected areas into broader land and seascapes, including policy, planning and other measures.	
A number of plans and programmes are being implemented in the fynbos, succulent karoo, thicket and grasslands biomes. Called the Cape Action for People and Environment, the Succulent Karoo Ecosystem Programme, the Subtropical Thicket Ecosystem Programme and the National Grasslands Biodiversity Programme respectively, these bioregional programmes all have a core objective of expanding conservation practices across the landscape and seascape. Various measures are being explored, including stewardship programmes to involve private and communal landowners in landscape-wide conservation initiatives. Also see question 37 above.	

40. Is your country applying environmental impact assessment guidelines to projects or plans for evaluating effects on protected areas? (decision VII/28)	
a) No	
b) No, but relevant EIA guidelines are under development	
c) Yes, EIA guidelines are applied to some projects or plans (please provide details below)	
d) Yes, EIA guidelines are applied to all relevant projects or plans (please provide details below)	

Further comments on application of environmental impact assessment guidelines to projects or plans for evaluating effects on protected areas.
South African National Parks has developed a Conservation Development Framework methodology for planning and evaluating projects within protected areas. This decision-support tool involves spatial planning to assess the impact of potential projects on biodiversity in protected areas, and to identify proactively which sites within protected areas are most suited for the development of tourist and other facilities, based on biodiversity features and characteristics as well as market demand factors. Provincial conservation agencies have a range of systems and frameworks for assessing and evaluating projects within protected areas.

41. Has your country identified legislative and institutional gaps and barriers that impede effective establishment and management of protected areas? (decision VII/28)	
a) No	
b) No, but relevant work is under way	
c) Yes, some gaps and barriers identified (please provide details below))	
d) Yes, many gaps and barriers identified (please provide details below)	
Further comments on identification of legislative and institutional gaps and barriers that impede effective establishment and management of protected areas.	
The Protected Areas Act (57 of 2003) addresses previous legislative barriers. Lack of institutional capacity remains a challenge, especially in some of the less well-resourced provincial conservation agencies.	

42. Has your country undertaken national protected-area capacity needs assessments and established capacity building programmes? (decision VII/28)	
a) No	X
b) No, but assessments are under way	
c) Yes, a basic assessment undertaken and some programmes established (please provide details below)	
d) Yes, a thorough assessment undertaken and comprehensive programmes established (please provide details below)	
Further comments on protected-area capacity needs assessment and establishment of capacity building programmes.	

43. Is your country implementing country-level sustainable financing plans that support national systems of protected areas? (decision VII/28)	
a) No	
b) No, but relevant plan is under development	X
c) Yes, relevant plan is in place (please provide details below)	
d) Yes, relevant plan is being implemented (please provide details below)	

Further comments on implementation of country-level sustainable financing plans that support national systems of protected areas.

44. Is your country implementing appropriate methods, standards, criteria and indicators for evaluating the effectiveness of protected areas management and governance? (decision VII/28)	
a) No	
b) No, but relevant methods, standards, criteria and indicators are under development	X
c) Yes, some national methods, standards, criteria and indicators developed and in use (please provide details below)	
d) Yes, some national methods, standards, criteria and indicators developed and in use and some international methods, standards, criteria and indicators in use (please provide details below)	

Further comments on methods, standards, criteria and indicators for evaluating the effectiveness of protected areas management and governance.
Required in terms of the Protected Area Act (57 of 2003).

Box XLV.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

Article 8(h) - Alien species

45. Has your country identified alien species introduced into its territory and established a system for tracking the introduction of alien species?	
a) No	
b) Yes, some alien species identified but a tracking system not yet established	X
c) Yes, some alien species identified and tracking system in place	
d) Yes, alien species of major concern identified and tracking system in place	

46. ? Has your country assessed the risks posed to ecosystems, habitats or species by the introduction of these alien species?	
a) No	
b) Yes, but only for some alien species of concern (please provide details below)	X
c) Yes, for most alien species (please provide details below)	

Further information on the assessment of the risks posed to ecosystems, habitats or species by the introduction of these alien species.

b) The risks posed by invasive alien species are thought to be considerable, but alien species have not been assessed on a species-by-species basis as there are too many and the resources required for such an assessment are not available. However, it is thought, based on assessments that have been undertaken, that invasive alien species are, together with loss of natural habitat, the greatest threat to the indigenous biological diversity of ecosystems, habitats and species in South Africa, and to the continued provision of ecosystem services. Invasive alien species threaten freshwater ecosystems, coastal and marine ecosystems and mountain ecosystems and are a threat to biological diversity of all biomes in South Africa. Invasive alien plants reduce freshwater runoff into dams and rivers, reduce soil rangeland productivity and increase soil erosion.

47. ? Has your country undertaken measures to prevent the introduction of, control or eradicate, those alien species which threaten ecosystems, habitats or species?	
a) No	
b) No, but potential measures are under consideration	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to prevent the introduction of, control or eradicate those alien species that threaten ecosystems, habitats or species.

This threat is recognised by the South African government as indicated by the increased funding made available to the Working for Water Programme over the past several years. The budget for the Working for Water Programme increased steadily from R25 million in 1995/6 to R442 million in 2003/4. Of this, more than R250 million has been invested in national parks and more than 1 million hectares of land has been cleared of invasive alien plants.

The Working for Water Programme focuses on a priority list of 27 woody species. In addition to mechanical removal and chemical control, South Africa is conducting research into biocontrol

methods.

Despite considerable efforts and resource allocations, invasive species are spreading faster than they can be controlled and much more needs to be done. While initial efforts have focussed on invasive alien plants, especially woody trees and shrubs, it is recognised that efforts need to be extended to other taxa, such as invasive grasses and fishes. Part of the problem is the lack of effective cooperation between various departments, leading to ineffective use of controls. The Biodiversity Act (10 of 2004) provides a key opportunity to develop a comprehensive response to the threat of invasive alien species. It provides for the development of invasive species monitoring, control and eradication plans by all municipalities. However, due to capacity and resource constraints, and the complexity of the task, this may take some time to be implemented.

48. In dealing with the issue of invasive species, has your country developed, or involved itself in, mechanisms for international cooperation, including the exchange of best practices? (decision V/8)	
a) No	
b) Yes, bilateral cooperation	
c) Yes, regional and/or subregional cooperation	X
d) Yes, multilateral cooperation	X

49. Is your country using the ecosystem approach and precautionary and bio-geographical approaches as appropriate in its work on alien invasive species? (decision V/8)	
a) No	X
b) Yes (please provide details below)	

Further comments on the use of the ecosystem approach and precautionary and bio-geographical approaches in work on alien invasive species.

For Box 48:

c) South Africa is participating with other countries of the Southern African Development Community (SADC) to develop a regional strategy on invasive species. South Africa is also the focal point for the Invasive Alien Species programme of NEPAD (the New Partnership for Africa's Development). However, South Africa's capacity to identify and/or control all invasive species brought into the country is limited.

d) South Africa is an active partner of the Global Invasive Species Programme (GISP). The secretariat for GISP is located at Kirstenbosch National Botanical Garden, Cape Town.

50. Has your country identified national needs and priorities for the implementation of the Guiding Principles? (decision VI/23)	
a) No	X
b) No, but needs and priorities are being identified	
c) Yes, national needs and priorities have been identified (please provide below a list of needs and priorities identified)	

Further comments on the identification of national needs and priorities for the implementation of the Guiding Principles.

51. Has your country created mechanisms to coordinate national programmes for applying the

Guiding Principles? (decision VI/23)	
a) No	X
b) No, but mechanisms are under development	
c) Yes, mechanisms are in place (please provide details below)	
Further comments on the mechanisms created to coordinate national programmes for implementing the Guiding Principles.	

52. Has your country reviewed relevant policies, legislation and institutions in the light of the Guiding Principles, and adjusted or developed policies, legislation and institutions? (decision VI/23)	
a) No	X
b) No, but review under way	
c) Yes, review completed and adjustment proposed (please provide details below)	
d) Yes, adjustment and development ongoing	
e) Yes, some adjustments and development completed (please provide details below)	
Further information on the review, adjustment or development of policies, legislation and institutions in light of the Guiding Principles.	

53. Is your country enhancing cooperation between various sectors in order to improve prevention, early detection, eradication and/or control of invasive alien species? (decision VI/23)	
a) No	
b) No, but potential coordination mechanisms are under consideration	
c) Yes, mechanisms are in place (please provide details below)	X
Further comments on cooperation between various sectors.	
The Working for Water programme is a collaboration between Department of Water Affairs and Forestry, Department of Environment Affairs and Tourism, the Department of Agriculture and a range of other departments, including Department of Labour and Department of Defence.	

54. Is your country collaborating with trading partners and neighboring countries to address threats of invasive alien species to biodiversity in ecosystems that cross international boundaries? (decision VI/23)	
a) No	
b) Yes, relevant collaborative programmes are under development	X
c) Yes, relevant programmes are in place (please specify below the measures taken for this purpose)	
Further comments on collaboration with trading partners and neighboring countries.	
Invasive alien species is one of the priority focus areas of the SADC Regional Biodiversity Strategy.	

55. Is your country developing capacity to use risk assessment to address threats of invasive alien species to biodiversity and incorporate such methodologies in environmental impact assessment (EIA) and strategic environmental assessment (SEA)? (decision VI/23)	
a) No	
b) No, but programmes for this purpose are under development	X
c) Yes, some activities for developing capacity in this field are being undertaken (please provide details below)	
d) Yes, comprehensive activities are being undertaken (please provide details below)	
Further information on capacity development to address threats of invasive alien species.	

56. Has your country developed financial measures and other policies and tools to promote activities to reduce the threats of invasive species? (decision VI/23)	
a) No	
b) No, but relevant measures and policies are under development	X
c) Yes, some measures, policies and tools are in place (please provide details below)	
d) Yes, comprehensive measures and tools are in place (please provide details below)	
Further comments on the development of financial measures and other policies and tools for the promotion of activities to reduce the threats of invasive species.	
The use of the “polluter pays” principle is being explored. Incentives to private landowners to remove invasives are also under consideration, including support, information, and financial incentives.	

Box XLVI.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:
a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Article 8(j) - Traditional knowledge and related provisions

GURTS

57. Has your country created and developed capacity-building programmes to involve and enable smallholder farmers, indigenous and local communities, and other relevant stakeholders to effectively participate in decision-making processes related to genetic use restriction technologies?	
a) No	X
b) No, but some programmes are under development	
c) Yes, some programmes are in place (please provide details below)	
d) Yes, comprehensive programmes are in place (please provide details below)	
Further comments on capacity-building programmes to involve and enable smallholder farmers, indigenous and local communities and other relevant stakeholders to effectively participate in decision-making processes related to GURTs.	

Status and Trends

58. Has your country supported indigenous and local communities in undertaking field studies to determine the status, trends and threats related to the knowledge, innovations and practices of indigenous and local communities? (decision VII/16)	
a) No	X
b) No, but support to relevant studies is being considered	
c) Yes (please provide information on the studies undertaken)	
Further information on the studies undertaken to determine the status, trends and threats related to the knowledge, innovations and practices of indigenous and local communities, and priority actions identified.	

Akwé:Kon Guidelines

59. Has your country initiated a legal and institutional review of matters related to cultural, environmental and social impact assessment, with a view to incorporating the Akwé:Kon Guidelines into national legislation, policies, and procedures?	
a) No	X
b) No, but review is under way	
c) Yes, a review undertaken (please provide details on the review)	
Further information on the review.	

60. Has your country used the Akwé:Kon Guidelines in any project proposed to take place on sacred sites and/or land and waters traditionally occupied by indigenous and local communities? (decision VII/16)	
a) No	X
b) No, but a review of the Akwé: Kon guidelines is under way	
c) Yes, to some extent (please provide details below)	
d) Yes, to a significant extent (please provide details below)	
Further information on the projects where the Akwé:Kon Guidelines are applied.	

Capacity Building and Participation of Indigenous and Local Communities

61. Has your country undertaken any measures to enhance and strengthen the capacity of indigenous and local communities to be effectively involved in decision-making related to the use of their traditional knowledge, innovations and practices relevant to the conservation and sustainable use of biodiversity? (decision V/16)	
a) No	
b) No, but some programmes being developed	
c) Yes, some measures taken (please provide details below)	X
d) Yes, comprehensive measures taken (please provide details below)	
Further information on the measures to enhance and strengthen the capacity of indigenous and local communities.	
Efforts from national government have mainly focussed on the national policy and legislative framework. For example, an inter-governmental committee on Indigenous Knowledge Systems has been established, including Department of Environment Affairs and Tourism, Department of Science and Technology, Department of Agriculture, Department of Health, and Department of Trade and Industry. The Department of Science and Technology has established a Directorate: Indigenous Knowledge Systems to focus exclusively on traditional knowledge and benefit sharing. An Indigenous Knowledge Systems Bill is under consideration. Traditional healers have considerable influence and status in South Africa and the Department of Health has promulgated the Traditional Healers Act in a bid to place the status of traditional healers on a par with “western” medicine. The Department of Environment Affairs and Tourism developed Community-Based Natural Resources Management Guidelines in 2003. These include principles such as benefit sharing, giving a voice to women and respect for local knowledge and experience. At provincial and local government level, and in communal lands, projects and programmes for conservation and sustainable use have been developed and implemented, many with the assistance of NGOs. However, not many of these are specifically focussed on traditional knowledge and	

practices.

At the Greater St Lucia Wetlands Park, fishing communities are encouraged to continue practicing their traditional fishing practices.

62. Has your country developed appropriate mechanisms, guidelines, legislation or other initiatives to foster and promote the effective participation of indigenous and local communities in decision making, policy planning and development and implementation of the conservation and sustainable use of biodiversity at international, regional, subregional, national and local levels? (decision V/16)	
a) No	
b) No, but relevant mechanisms, guidelines and legislation are under development	
c) Yes, some mechanisms, guidelines and legislation are in place (please provide details below)	X
Further information on the mechanisms, guidelines and legislation developed.	
For all policy development, planning, legislation, etc. extensive processes for community participation are required. These requirements are legislated.	

63. Has your country developed mechanisms for promoting the full and effective participation of indigenous and local communities with specific provisions for the full, active and effective participation of women in all elements of the programme of work? (decision V/16, annex)	
a) No	
b) No, but relevant mechanisms are being developed	
c) Yes, mechanisms are in place (please provide details below)	X
Further comments on the mechanisms for promoting the full and effective participation of women of indigenous and local communities in all elements of the programme of work.	
South Africa has set targets for the participation of previously disadvantaged individuals, including women, the youth, and the disabled in all aspects of governance and the economy.	

Support to implementation

64. Has your country established national, subregional and/or regional indigenous and local community biodiversity advisory committees?	
a) No	X
b) No, but relevant work is under way	
c) Yes	

65. Has your country assisted indigenous and local community organizations to hold regional meetings to discuss the outcomes of the decisions of the Conference of the Parties and to prepare for meetings under the Convention?	
a) No	X
b) Yes (please provide details about the outcome of meetings)	
Further information on the outcome of regional meetings.	
Preparations for the World Parks Congress and WSSD were held, but not specifically for the CBD.	

66. Has your country supported, financially and otherwise, indigenous and local communities in formulating their own community development and biodiversity conservation plans that will enable such communities to adopt a culturally appropriate strategic, integrated and phased approach to their development needs in line with community goals and objectives?	
a) No	
b) Yes, to some extent (please provide details below)	X
c) Yes, to a significant extent (please provide details below)	
Further information on the support provided.	
Several NGOs work with communities to develop such plans, such as ResourceAfrica. The Department of Agriculture has developed an approach to LandCare called Area-Wide Planning, which is highly participatory. However, much more needs to be done in this regard.	

Box XLVII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

Article 9 - *Ex-situ* conservation

67. ? On Article 9(a) and (b), has your country adopted measures for the *ex-situ* conservation of components of biological diversity native to your country and originating outside your country?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	
Further information on the measures adopted for the *ex-situ* conservation of components of biodiversity native to your country and originating outside your country.	

The National Zoological Gardens in Pretoria conserves certain species of fauna native to South Africa. Several Zoological Gardens maintain collections and breeding programmes for exotic fauna, such as lemurs and pandas. A privately funded project has been established in the Free State province in a partnership between a private conservation agency in South Africa and authorities in China to breed endangered Asian tigers.

Eight National Botanical Gardens have been established specifically for the purposes of research, public awareness and *ex situ* conservation of indigenous floral species. These are Kirstenbosch National Botanical Garden, Karoo National Botanical Garden, Harold Porter National Botanical Garden, KwaZulu-Natal National Botanical Garden, Free State National Botanical Garden, Walter Sisulu National Botanical Garden (previously the Witwatersrand National Botanical Garden, Pretoria National Botanical Garden and the Lowveld National Botanical Garden.

In partnership with the Kew Royal Botanic Gardens, the South African National Biodiversity Institute (SANBI) manages the Millennium Seedbank Project, which will ensure the conservation of South Africa's flora, by establishing verified and well documented seed collections of wild species native to South Africa. Together with the Kew Royal Botanic Gardens, SANBI has established a DNA Bank in South Africa. It will represent a unique archive of plant genetic diversity in South Africa, holding over 2 200 genomes from all genera. It will also serve as a resource to facilitate the discovery of novel genes and for the identification of areas of high priority for conservation.

The Agricultural Research Council and the Plant Protection Research Institute maintain *ex situ* facilities for agriculturally important species and their related pests and pathogens.

68. ? On Article 9(c), has your country adopted measures for the reintroduction of threatened species into their natural habitats under appropriate conditions?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures for the reintroduction of threatened species into their natural habitats under appropriate conditions.

Some measures are in place for certain species. Breeding programmes for endangered species, such as those run by the De Wildt Cheetah Breeding Centre and the Endangered Wildlife Trust's Crane Working Group have succeeded in successfully reintroducing such species back into the wild. South African National Parks has run a successful reintroduction programme for many years. This does not focus only on threatened species, but aims to reintroduce species into new conservation areas, especially where they have become locally extinct and where the expansion of protected areas has made this possible. For example, lion and hyaena were reintroduced into the greater Addo Elephant National Park in the Eastern Cape, after being locally extinct in the area for over a century.

South Africa is regarded as a world leader in the translocation and re-introduction of large mammals into their natural habitat, such as elephant, rhinoceros, various antelope species, zebra, giraffe and predators including lion, cheetah and wild dog. Provincial conservation agencies such as Ezemvelo KwaZulu-Natal Wildlife and Eastern Cape Parks Board, hold annual game auctions, enabling private land owners, tourism facilities and game farmers to restock their land with these species.

Certain guidelines have been developed for such re-introductions. However, further work is needed to monitor the growing wildlife industry and discourage private landowners from introducing species to areas outside their traditional ranges. For example, this has raised concerns regarding the cross-breeding between closely related species, such as black and blue wildebeest; blesbok and bontebok;

and tsessebe and red hartebeest. The Department of Environment Affairs and Tourism is currently developing regulations.

69. On Article 9(d), has your country taken measures to regulate and manage the collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystems and *in-situ* populations of species?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to regulate and manage the collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystems and *in-situ* populations of species.

Permits are required for collection and removal of indigenous fauna and flora from protected areas. The new system of lists and regulations required in terms of the Biodiversity Act (10 of 2004) will govern such collections.

Box XLVIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Article 10 - Sustainable use of components of biological diversity

70. On Article 10(a), has your country integrated consideration of the conservation and sustainable use of biological resources into national decision-making?	
a) No	
b) No, but steps are being taken	
c) Yes, in some relevant sectors (please provide details below)	X
d) Yes, in most relevant sectors (please provide details below)	

Further information on integrating consideration of conservation and sustainable use of biological resources into national decision-making.

Integration of biodiversity considerations into national decision-making is well integrated at a policy level, and increasingly in terms of legislation, but implementation does take time and is an ongoing process. At an institutional level, biodiversity is a mandate that is shared between all three spheres of government – national, provincial and local. The Committee for Environmental Coordination is provided for in terms of the National Environmental Management Act (107 of 1998) and aims to

ensure inter-sectoral integration of environmental concerns at national level. However, similar institutional arrangements are lacking at provincial and local level.

Integration of biodiversity considerations into decision-making is even more essential at local level, where decisions regarding land use and development planning are often made. It is anticipated that this will be achieved through integrating the National Spatial Biodiversity Assessment and local-scale spatial biodiversity assessments into planning frameworks at local level, such as Integrated Development Plans and Spatial Development Frameworks, which every municipality is required to develop.

71. On Article 10(b), has your country adopted measures relating to the use of biological resources that avoid or minimize adverse impacts on biological diversity?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures adopted relating to the use of biological resources that avoid or minimize adverse impacts on biological diversity.

One of the principles of the National Environmental Management Act (107 of 1998) is that adverse impacts on biodiversity should be avoided or minimised. The primary mechanism for this is through the application of Environmental Impact Assessments (EIAs), which largely apply to habitat change. EIAs are not as effective a mechanism as one would hope, however, as the assessment is usually made on a project-by-project basis, and the cumulative impacts of development projects are often overlooked.

Measures relating to minimising the impacts of use (i.e. consumptive use such as harvesting, fishing and hunting) are most well-developed for commercial sectors. The marine fishing industry is well regulated by the Marine and Coastal Management Branch of the Department of Environment Affairs and Tourism. Total Allowable Catches are set on the basis of scientific stock assessments, and a quota system ensures that these are not exceeded. Fines for over-fishing and poaching of marine species have been increased.

However, use of biological resources in unregulated industries, and for small-scale or subsistence use is not well regulated, and in some instances may be leading to loss of biodiversity, especially at a local level.

72. On Article 10(c), has your country put in place measures that protect and encourage customary use of biological resources that is compatible with conservation or sustainable use requirements?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures that protect and encourage customary use of biological resources that is compatible with conservation or sustainable use requirements.

South Africa has made considerable progress towards broadening access to natural resources and ensuring that this is done in a sustainable manner.

A key issue is land restitution, redistribution and tenure reform. Under the country's land reform programme, a number of land claims involving land in protected areas have been settled. In several cases involving National Parks, the communities regaining title to their land have opted to enter into partnerships with the parks authorities and to manage the land for conservation and tourism. Examples include the Makuleke area of the Kruger National Park, the Richtersveld Contractual National Park and the Greater St Lucia World Heritage Site.

In the fynbos region, innovative sustainable use projects have been initiated under the Cape Action for People and Environment (C.A.P.E.) programme, including Rooibos Tea cultivation, Flower Harvesting, Mariculture and Ecotourism, which largely benefit local communities.

The White Paper on Sustainable Forest Development (1996) provides for a new approach to forest management, which allows for controlled non-consumptive and consumptive access to forest resources by communities. This approach has been strengthened through the creation of a Directorate: Participatory Forest Management in the Department of Water Affairs and Forestry, to develop a national programme for community-based forest management, which includes the creation of Participatory Forest Management Forums in various forest areas, and to promote the initiation of forest-based projects that will benefit local communities.

73. On Article 10(d), has your country put in place measures that help local populations develop and implement remedial action in degraded areas where biological diversity has been reduced?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures that help local populations develop and implement remedial action in degraded areas where biodiversity has been reduced.

Some programmes are in place, namely Working for Water, Working for Wetlands, Coastcare, LandCare and Working on Fire. However, given the extent of degradation in many areas of the country, particularly in communal areas, substantially more needs to be done.

The Department of Agriculture runs Comprehensive Agricultural Support Programmes which focus on natural resource management for emerging farmers.

74. Has your country identified indicators and incentive measures for sectors relevant to the conservation and sustainable use of biodiversity? (decision V/24)	
a) No	
b) No, but assessment of potential indicators and incentive measures is under way	X
c) Yes, indicators and incentive measures identified (please describe below)	

Further comments on the identification of indicators and incentive measures for sectors relevant to the conservation and sustainable use of biodiversity.

See Section B of this report (2010 Target) for details regarding indicators. Indicators to monitor progress in the implementation of the NBSAP are under development, and will be further refined as part of a national monitoring and reporting framework to be established by the South African National Biodiversity Institute. Where possible these will be aligned with other national initiatives, such as National State of Environment Reporting, and other international reporting obligations, such

as reporting on the Johannesburg Plan of Implementation.

The Directorate: Environmental Monitoring and Reporting of the Department of Environment Affairs and Tourism is developing a comprehensive set of indicators for State of the Environment Reports, in partnership with the Council for Scientific and Industrial Research. The National Environmental Indicators Programme includes indicators for Inland Waters; Marine, Coastal and Estuarine; Biodiversity and Natural Heritage; Land Use; Human Well-being; Atmosphere and Climate; Waste Management and Integrated and Environmental Management. The first National State of the Environment Report was compiled in 1999, and the second in 2005. As part of this process, a national set of indicators is being developed and refined. Indicators for Provincial and Local State of Environment Reports are also being developed and refined.

The Department of Water Affairs and Forestry has developed criteria, indicators and standards for Sustainable Forest Management, with assistance from the Department for International Development (UK). Pilot testing of criteria, indicators and standards is underway.

Incentives:

Incentives can be financial, or non-financial (including support, information, recognition and prestige, etc.) CapeNature (the provincial conservation agency in the Western Cape) has developed a Stewardship Programme in partnership with the Botanical Society of South Africa, in which private landowners are encouraged to set aside threatened ecosystems on their land in formal contract protected areas, in exchange for management assistance from the conservation agency and an exclusion from municipal property rates. A national stewardship forum has been established, and other provincial conservation agencies are in the process of adopting and rolling out the stewardship approach.

National Treasury has embarked on an Environmental Fiscal Reform Programme, which is investigating the options and feasibility for a range of incentive measures. These may include tax rebates.

The Municipal Property Rates Act (6 of 2004) excludes certain land uses from payment of rates, including conservation land.

75. Has your country implemented sustainable use practices, programmes and policies for the sustainable use of biological diversity, especially in pursuit of poverty alleviation? (decision V/24)	
a) No	
b) No, but potential practices, programmes and policies are under review	
c) Yes, some policies and programmes are in place (please provide details below)	X
d) Yes, comprehensive policies and programmes are in place (please provide details below)	

Further information on sustainable use programmes and policies.

South Africa strongly supports sustainable use policies and practices, and links these to poverty alleviation and equity principles. It is recognised that sustainable use of biodiversity is essential for sustaining people's livelihoods. Given South Africa's past history of racially discriminatory policies, it is important to broaden access to natural resources.

However, although these principles are clearly articulated in policy, resources available for implementation are limited. Considerable work needs to be done in terms of research, training and capacity building, monitoring and assessment, and integration and coordination between the various roleplayers and stakeholders. These include all three spheres of government, the private sector, communities, the general public and private landowners.

Rehabilitation and restoration of degraded ecosystems:

Several innovative public-works and poverty-relief programmes have been developed which focus on restoration, such as the Working for Water Programme which clears invasive alien trees; Working for Wetlands; CoastCare and LandCare. The budget for these programmes, R650 million in 2004/5, is one of the highest in the world, relative to Gross Domestic Product.

Many protected areas, which in the past allowed no resource use, have revised these policies to enable neighbouring communities, especially women, to harvest resources such as thatching grass, reeds and medicinal plants. The South African National Parks' Social Ecology Programmes encourage greater access to the parks by neighbouring communities, while Park Management Plans are also being developed in consultation with neighbours.

Marine fisheries policies have been completely overhauled, and the quota system revised to enable poor communities to benefit from fisheries.

76. Has your country developed or explored mechanisms to involve the private sector in initiatives on the sustainable use of biodiversity? (decision V/24)	
a) No	
b) No, but mechanisms are under development	
c) Yes, mechanisms are in place (please describe below)	X

Further comments on the development of mechanisms to involve the private sector in initiatives on the sustainable use of biodiversity.

A number of product certification programmes have been initiated, for products such as forestry products, honey and wine.

77. Has your country initiated a process to apply the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity? (decision VII/12)	
a) No	X
b) No, but the principles and guidelines are under review	
c) Yes, a process is being planned	
d) Yes, a process has been initiated (please provide detailed information)	
Further information on the process to apply the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity.	

78. Has your country taken any initiative or action to develop and transfer technologies and provide financial resources to assist in the application of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity? (decision VII/12)	
a) No	X
b) No, but relevant programmes are under development	
c) Yes, some technologies developed and transferred and limited financial resources provided (please provide details below)	
d) Yes, many technologies developed and transferred and significant financial resources provided (please provide details below)	
Further comments on the development and transfer of technologies and provision of financial resources to assist in the application of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity.	

Biodiversity and Tourism

79. ? Has your country established mechanisms to assess, monitor and measure the impact of tourism on biodiversity?	
a) No	
b) No, but mechanisms are under development	X
c) Yes, mechanisms are in place (please specify below)	
d) Yes, existing mechanisms are under review	
Further comments on the establishment of mechanisms to assess, monitor and measure the impact of tourism on biodiversity.	
Tourism in South Africa is largely based on the country's scenic landscapes, beaches, wildlife and culture. Sustainability through Responsible Tourism is the basis of South Africa's tourism policy. However, the focus of the Tourism Branch of the Department of Environment Affairs and Tourism has a focus on growing the industry. Monitoring programmes to assess the impact on biodiversity are fairly ad hoc and largely carried out on the basis of research interest. An exception is the hunting industry, and a commission was established in 2005 to investigate all aspects of the industry, and to make recommendations to the Minister. The Protected Areas Act (57 of 2003) calls for the development of protected area management plans, which must include zonation of areas for different types of activities. Norms and standards for protected areas are under consideration, and aim to manage tourism impacts on biodiversity.	

80. Has your country provided educational and training programmes to the tourism operators so as to increase their awareness of the impacts of tourism on biodiversity and upgrade the technical capacity at the local level to minimize the impacts? (decision V/25)	
a) No	
b) No, but programmes are under development	
c) Yes, programmes are in place (please describe below)	X
Further comments on educational and training programmes provided to tourism operators.	
Limited programmes are in place, for example, for the training and registration of field guides.	

81. Does your country provide indigenous and local communities with capacity-building and financial resources to support their participation in tourism policy-making, development planning, product development and management? (decision VII/14)	
a) No	
b) No, but relevant programmes are being considered	
c) Yes, some programmes are in place (please provide details below)	X
d) Yes, comprehensive programmes are in place (please provide details below)	
Further comments in the capacity-building and financial resources provided to indigenous and local communities to support their participation in tourism policy-making, development planning, product development and management.	
The Fair Trade in Tourism initiative in South Africa is gaining momentum and several community-based tourism projects have been initiated, such as at Riemvasmaak near Augrabies Falls National Park, and Matatiele near the Maloti-Drakensberg Transfrontier Park. The government has also initiated a drive to encourage local entrepreneurs to participate in the tourism industry, through setting up bed-and-breakfast establishments, guiding, catering and crafts.	

82. Has your country integrated the Guidelines on Biodiversity and Tourism Development in the development or review of national strategies and plans for tourism development, national biodiversity strategies and actions plans, and other related sectoral strategies? (decision VII/14)	
a) No, but the guidelines are under review	X
b) No, but a plan is under consideration to integrate some principles of the guidelines into relevant strategies	
c) Yes, a few principles of the guidelines are integrated into some sectoral plans and NBSAPs (please specify which principle and sector)	
d) Yes, many principles of the guidelines are integrated into some sectoral plans and NBSAPs (please specify which principle and sector)	
Further information on the sectors where the principles of the Guidelines on Biodiversity and Tourism Development are integrated.	

Box XLIX.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:
a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

Article 11 - Incentive measures

83. ? Has your country established programmes to identify and adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity?

a) No	
b) No, but relevant programmes are under development	
c) Yes, some programmes are in place (please provide details below)	X
d) Yes, comprehensive programmes are in place (please provide details below)	

Further comments on the programmes to identify and adopt incentives for the conservation and sustainable use of biodiversity.

Measures in some sectors are quite well advanced e.g. in the water sector. These include tiered pricing systems, and implementation of user pays and polluter pays principles. The Municipal Property Rates Act (6 of 2004) excludes certain land from property rates, including land that has formal protected area status, whether publicly, privately or communally owned. For most part, incentives are still under consideration.

Some preliminary reviews of legislation and economic policies have been carried out. The National Treasury is investigating a system of environmental taxes, in association with the British Department for International Development.

84. ? Has your country developed the mechanisms or approaches to ensure adequate incorporation of both market and non-market values of biological diversity into relevant plans, policies and programmes and other relevant areas? (decisions III/18 and IV/10)	
a) No	
b) No, but relevant mechanisms are under development	X
c) Yes, mechanisms are in place (please provide details below)	
d) Yes, review of impact of mechanisms available (please provide details below)	

Further comments on the mechanism or approaches to incorporate market and non-market values of biodiversity into relevant plans, policies and programmes.

A System of National Accounts is under development by Statistics South Africa. It links environmental values to economic activities and shows how these activities utilise natural resources. National Accounts are being developed for water, forests, minerals, land use, air quality and biodiversity.

Statistics South Africa is also revising the list of questions that are included in the Household Survey, a major nationwide survey and population census that is conducted every five years. New questions include reference to the availability and use of natural resources, and the extent to which households are directly dependent on natural resources for their livelihoods.

The NBSAP has identified the need to conduct valuation studies of biodiversity, at both species and ecosystem levels, in order to properly and regularly assess the value of biological goods and services to people, at a household level, and to the economy as a whole.

It is anticipated that such valuations will enable biodiversity considerations to be more readily incorporated into development decisions and assist with prioritisation of relevant plans and programmes.

85. ? Has your country developed training and capacity-building programmes to implement incentive measures and promote private-sector initiatives? (decision III/18)	
a) No	X
b) No, but relevant programmes are under development	
c) Yes, some programmes are in place	
d) Yes, many programmes are in place	

86. Does your country take into consideration the proposals for the design and implementation of incentive measures as contained in Annex I to decision VI/15 when designing and implementing incentive measures for the conservation and sustainable use of biodiversity? (decision VI/15)	
a) No	X
b) Yes (please provide details below)	

Further information on the proposals considered when designing and implementing the incentive measures for the conservation and sustainable use of biodiversity.

87. Has your country made any progress in removing or mitigating policies or practices that generate perverse incentives for the conservation and sustainable use of biological diversity? (decision VII/18)	
a) No	
b) No, but identification of such policies and practices is under way	
c) Yes, relevant policies and practices identified but not entirely removed or mitigated (please provide details below)	X
d) Yes, relevant policies and practices identified and removed or mitigated (please provide details below)	

Further information on perverse incentives identified and/or removed or mitigated.

Prior to the change of government in 1994, fixed prices for agricultural products led to cultivation on marginal soils. Many farmers have since combined livestock enterprises with game farming with indigenous species or have switched completely to game ranches and ecotourism. However, some perverse incentives remain, such as cheap water for irrigation.

A perverse incentive that was recently introduced was the extension of property rates to all land in the country (bar some exclusions, for example for formal protected areas), through the Municipal Property Rates Act (6 of 2004). Previously property rates were levied only on land in urban areas, not the surrounding hinterland. Property rates are calculated based on the market value of the land, not the income currently derived from the land. Rural landowners with large tracts of natural veld now have to pay substantial property rates, creating an incentive to develop the land so that it produces an income. Given that loss of natural habitat is the biggest pressure on biodiversity in South Africa, this has severe implications for biodiversity conservation.

Box L.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Article 12 - Research and training

88. On Article 12(a), has your country established programmes for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components?

a) No	
b) No, but programmes are under development	
c) Yes, programmes are in place (please provide details below)	X

Further information on the programmes for scientific and technical education and training in the measures for identification, conservation and sustainable use of biodiversity.

South Africa has an excellent system of tertiary education institutions, with several world-renowned universities. However, these were racially segregated in the past, and served only a minority of the population. Training and capacity building are recognised as being critically important to the future growth and development of the country, but the needs are enormous, particularly in the fields of science and mathematics.

The Department of Science and Technology developed a National Research and Development Strategy in 2002. Five key focus areas have been identified for long-term action to promote science and attract new learners into science and technology. These are:

- Astronomy and earth observation
- Indigenous knowledge
- Bioscience and bio-resources
- Paleo-world
- Antarctica, islands and oceans

The National Research and Development Strategy identifies the need to create centres and networks of excellence in science and technology, including the social sciences, as a key component of the human capital and transformation dimensions of government policy. It is envisaged that such centres will stimulate sustained distinction in research while simultaneously generating highly qualified human resource capacity in order to impact meaningfully on key national and global areas of knowledge.

Of the six centres that have been established, two are directly related to biodiversity. These are the Centre for Invasion Biology (based at the University of Stellenbosch), and the Centre of Excellence in Birds as Keys to Biodiversity Conservation (based at the University of Cape Town). They are funded by the Department of Science and Technology via the National Research Foundation.

Scientific and technical education and training programmes are well established in South Africa, and are offered by most universities and universities of technology. Excellent postgraduate programmes in conservation and sustainable use of biodiversity are offered at several universities in South Africa. The Southern African Wildlife College provides training programmes for conservation managers. The Department of Science and Technology and the National Research Foundation identify priority needs and provide finance, including bursaries to students. A Biodiversity Foresight programme in 1998 identified priority areas for biodiversity conservation and sustainable use. Subsequently, in 2001 a National Biotechnology Strategy was developed to highlight priority research and training programmes in biotechnology.

The Department of Labour has established a comprehensive system of Sector Education and Training Authorities, financed through a mandatory Skills Levy. The Tourism and Hospitality Education and Training Authority (THETA) provides skills training in game reserve and game lodge management.

Programmes for the training and capacity building of new emerging scientists in the fields of taxonomy and biosystematics need attention.

89. On Article 12(b), does your country promote and encourage research which contributes to the conservation and sustainable use of biological diversity?	
a) No	
b) Yes (please provide details below)	X

Further information on the research which contributes to the conservation and sustainable use of biodiversity.

South Africa is considered a world leader in many aspects of biodiversity research, such as translocation of large mammals, breeding programmes for threatened species, systematic conservation planning, and biocontrol. The South African contribution to fields such as ornithology, marine ecosystems functioning, wildlife management, climate change and taxonomy are well recognised. South African scientists and academics co-operate widely with their colleagues in countries such as Australia, America, Britain and elsewhere, including in Africa.

90. On Article 12(c), does your country promote and cooperate in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources?	
a) No	
b) Yes (please provide details below)	X

Further information on the use of scientific advances in biodiversity research in developing methods for conservation and sustainable use of biodiversity.

As in Box 89.

Research lessons are frequently shared at international conferences and symposia.

Box LI.

Please elaborate below on the implementation of this article specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Article 13 - Public education and awareness

91. Is your country implementing a communication, education and public awareness strategy and promoting public participation in support of the Convention? (Goal 4.1 of the Strategic Plan)	
a) No	X
b) No, but a CEPA strategy is under development	
c) Yes, a CEPA strategy developed and public participation promoted to a limited extent (please provide details below)	
d) Yes, a CEPA strategy developed and public participation promoted to a significant extent (please provide details below)	

Further comments on the implementation of a CEPA strategy and the promotion of public participation in support of the Convention.

South Africa has not developed a communication, education and public awareness strategy specifically with regard to the CBD. However, raising awareness regarding biodiversity, and environmental education generally, are considered very important for sustainable development.

South Africa has a strong tradition in environmental awareness and outreach, particularly in South African National Parks, South African National Biodiversity Institute, Museums, National Zoological Gardens and Aquaria. Many national departments are involved in communication, education and awareness efforts such as press releases, posters, pamphlets, etc. especially around National Days. Some conservation authorities, NGOs and departments manage environmental education facilities and interpretive trails.

For example, South African National Parks launched a Kids in Parks project in 2004/05, which aims to expose 7 500 learners and 300 educators to outdoor learning in 15 selected national parks over the next three years.

Several successful education programmes are focused on schools, and provide an effective means of also raising awareness amongst their families and the broader community. An example is Eduplant/Junior Land Care, a partnership between government (particularly the Department of Education) and an NGO, Food and Trees for Africa, which encourages tree planting and clean up campaigns, while planting food gardens in school grounds. NGOs such as Wilderness Leadership Foundation and the Wildlife and Environment Society of South Africa focus on taking young leaders into wilderness areas to experience nature and promote a strong conservation ethic in future leaders.

South Africa's bioregional programmes (e.g. Cape Action for People and the Environment, Succulent Karoo Ecosystem Programme) include substantial education and awareness components.

Many of awareness raising and environmental education campaigns and programmes are aimed at learners and the youth and much more needs to be done to raise awareness amongst the general public, developers and even parliamentarians. In particular, a focused campaign to highlight the relevance of the CBD (and other related Conventions) for all organs of state (and not just the Department of Environment Affairs and Tourism) may be necessary, to encourage synergy.

92. Is your country undertaking any activities to facilitate the implementation of the programme of work on Communication, Education and Public Awareness as contained in the annex to decision VI/19? (decision VI/19)	
a) No	X
b) No, but some programmes are under development	
c) Yes, some activities are being undertaken (please provide details below)	
d) Yes, many activities are being undertaken (please provide details below)	
Further comments on the activities to facilitate the implementation of the programme of work on CEPA.	

93. Is your country strongly and effectively promoting biodiversity-related issues through the press, the various media and public relations and communications networks at national level? (decision VI/19)	
a) No	
b) No, but some programmes are under development	
c) Yes, to a limited extent (please provide details below)	X
d) Yes, to a significant extent (please provide details below)	

Further comments on the promotion of biodiversity-related issues through the press, the various media and public relations and communications networks at national level.

Many government agencies and NGOs have environmental education, communication, and awareness raising programmes underway. Environmental education is now a formal part of the school curriculum. The Department of Environment Affairs and Tourism organizes special campaigns on days such as the International Day for Biodiversity, World Wetlands Day, World Environment Week, and National Marine Day. The Department of Water Affairs and Forestry similarly runs awareness campaigns during National Water Week.

Several national and local newspapers employ dedicated environmental journalists, and a number of magazines are focused exclusively on biodiversity and environment matters.

Several of the larger-circulation newspapers and television channels run regular articles or programmes on biodiversity-related issues. This is particularly the case before or during National Days, such as National Wetlands Day, National Marine Week, National Biodiversity Day, Arbor Week, etc. or during periods such as the World Summit on Sustainable Development or the World Parks Congress. The national broadcaster produces a weekly TV programme with a strong focus on biodiversity, called 50/50.

The Government Communication and Information Service also plays an important role. Government departments are increasingly using the internet to distribute information.

However, given the fact that large numbers of the population do not have access to the media, or are functionally illiterate, much more needs to be done to raise awareness – such as through the use of picture and comic books or theatre.

94. Does your country promote the communication, education and public awareness of biodiversity at the local level? (decision VI/19)	
a) No	
b) Yes (please provide details below)	X
Further information on the efforts to promote the communication, education and public awareness of biodiversity at the local level.	
Some programmes are run by NGOs, but not enough is done, especially from government's side. The Cape Action for People and Environment has initiated a highly successful campaign, called Fynbos Fynmense (literally translated as Fynbos Fine-People, or the fine people of the fynbos) to raise awareness and promote local community action in the fynbos biome.	

95. Is your country supporting national, regional and international activities prioritized by the Global Initiative on Education and Public Awareness? (decision VI/19)	
a) No	X
b) No, but some programmes are under development	
c) Yes, some activities supported (please provide details below)	
d) Yes, many activities supported (please provide details below)	
Further comments on the support of national, regional and international activities prioritized by the Global Initiative on Education and Public Awareness.	

96. Has your country developed adequate capacity to deliver initiatives on communication, education and public awareness?	
a) No	
b) No, but some programmes are under development	X
c) Yes, some programmes are being implemented (please provide details below)	
d) Yes, comprehensive programmes are being implemented (please provide details below)	
Further comments on the development of adequate capacity to deliver initiatives on communication, education and public awareness.	
Improvements have been made, but the right vehicles for communication have not necessarily been developed. There is a need to engage with disciplines such as conservation psychology and social marketing to develop and deliver appropriate programmes.	

97. Does your country promote cooperation and exchange programmes for biodiversity education and awareness at the national, regional and international levels? (decisions IV /10 and VI/19)	
a) No	
b) Yes (please provide details below)	
Further comments on the promotion of cooperation and exchange programmes for biodiversity education and awareness, at the national, regional and international levels.	

The South African Wildlife College hosts and trains conservation students (diploma level) from all over Africa, often funded through donor funds raised by WWF-SA and the Peace Parks Foundation. There may be many such programmes organized by a range of institutions, such as universities, but the information has not been collated in a central database.

98. Is your country undertaking some CEPA activities for implementation of cross-cutting issues and thematic programmes of work adopted under the Convention?	
a) No (please specify reasons below)	X
b) Yes, some activities undertaken for some issues and thematic areas (please provide details below)	
c) Yes, many activities undertaken for most issues and thematic areas (please provide details below)	
d) Yes, comprehensive activities undertaken for all issues and thematic areas (please provide details below)	
Further comments on the CEPA activities for implementation of cross-cutting issues and thematic programmes of work adopted under the Convention.	

99. ? Does your country support initiatives by major groups, key actors and stakeholders that integrate biological diversity conservation matters in their practice and education programmes as well as into their relevant sectoral and cross-sectoral plans, programmes and policies? (decision IV/10 and Goal 4.4 of the Strategic Plan)	
a) No	
b) Yes (please provide details below)	
Further comments on the initiatives by major groups, key actors and stakeholders that integrate biodiversity conservation in their practice and education programmes as well as their relevant sectoral and cross-sectoral plans, programmes and policies.	
Many NGOs play a critical role in raising awareness. Although supported in principle by government, this work is largely funded by donors and the business sector. Agencies such as South African National Biodiversity Institute run environmental education programmes, but mainly for school-level learners.	

100. Is your country communicating the various elements of the 2010 biodiversity target and establishing appropriate linkages to the Decade on Education for Sustainable Development in the implementation of your national CEPA programmes and activities? (decision VII/24)	
a) No	X
b) No, but some programmes are under development	
c) Yes, some programmes developed and activities undertaken for this purpose (please provide details below)	
d) Yes, comprehensive programmes developed and many activities undertaken for this purpose (please provide details below)	
Further comments on the communication of the various elements of the 2010 biodiversity target and the establishment of linkages to the Decade on Education for Sustainable Development.	

Box LII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:
a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

Article 14 - Impact assessment and minimizing adverse impacts

101. ? On Article 14.1(a), has your country developed legislation requiring an environmental impact assessment of proposed projects likely to have adverse effects on biological diversity?

a) No	
b) No, legislation is still in early stages of development	
c) No, but legislation is in advanced stages of development	
d) Yes, legislation is in place (please provide details below)	X
e) Yes, review of implementation available (please provide details below)	

Further information on the legislation requiring EIA of proposed projects likely to have adverse effects on biodiversity.

Environmental Impact Assessments (EIAs) are mandatory in South Africa for specific listed activities. However, there are capacity constraints, for example, insufficient staff tasked with reviewing and making decisions based on EIA reports. In addition, such EIAs are not specifically required to focus on biodiversity, and must take into account a range of objectives, including social and economic imperatives. In the Western Cape province, the Department of Environment Affairs and Development Planning has developed guidelines for biodiversity specialist studies conducted as part of EIAs.

EIAs are required in terms of Sections 21, 22 and 26 of the Environmental Conservation Act (73 of 1989). Updated draft regulations in terms of the National Environmental Management Act (107 of 1998) have been published for comment. EIAs are also required in terms of the Conservation of Agricultural Resources Act (43 of 1983).

In addition, section 52 of the Biodiversity Act (10 of 2004) makes provision for the listing of threatening processes or activities in threatened or protected ecosystems, which may not be undertaken without the appropriate authorisation.

Considerable efforts have been made to integrate environmental considerations into sectoral or cross-sectoral plans, programmes and policies. In terms of Section 15(1) of the National Environmental Management Act (107 of 1998), all national departments whose activities impact on the environment – specifically the Departments of Environmental Affairs and Tourism, Land Affairs, Agriculture, Housing, Trade and Industry, Water Affairs and Forestry, Transport and Defence - and all provinces, are required to develop Environmental Implementation Plans, to be updated every four years.

Planning policies and legislation have been fundamentally revised since 1994 and require an integrated and participatory approach to spatial planning and local economic development. Municipalities are required to develop Integrated Development Plans and Spatial Development

Frameworks that include environmental considerations. However, capacity and resources in many local and district municipalities is severely limiting and biodiversity concerns have not been adequately addressed. Several of the larger metropolitan municipalities have completed State of the Environment Reports, and have developed strategies for biodiversity conservation, notably the City of Cape Town.

The legislation noted above deals with the environment in the broad sense and does not focus on biodiversity in particular. Due to capacity limitations, the legislation has not yet been fully implemented, particularly at provincial and local spheres of government.

The Biodiversity Act (10 of 2004) is focused more specifically on biological diversity. Chapter 3 of the Act calls for the development of a National Biodiversity Framework and provides for bioregional plans to be published. The implementation of this legislation will greatly assist with integration of biodiversity considerations into sectoral plans, programmes and policies, especially development planning at provincial and local level.

The Department of Agriculture is developing new legislation, the Sustainable Use of Agricultural Resources Bill (SUAR), which aims to: provide for the establishment of incentive programmes, prescribing of standards, control measures and law enforcement to ensure sustainable development, utilization, management and protection of the natural agricultural resources in support of biodiversity and the combating of desertification.

102. ? On Article 14.1(b), has your country developed mechanisms to ensure that due consideration is given to the environmental consequences of national programmes and policies that are likely to have significant adverse impacts on biological diversity?

a) No	
b) No, mechanisms are still in early stages of development	
c) No, but mechanisms are in advanced stages of development	
d) Yes, mechanisms are in place (please provide details below)	X

Further comments on the mechanisms developed to ensure that due consideration is given to the environmental consequences of national programmes and policies that are likely to have significant adverse impacts on biodiversity.

This is currently only done through the EIA process as outlined in Box 102 above.

103. ? On Article 14.1(c), is your country implementing bilateral, regional and/or multilateral agreements on activities likely to significantly affect biological diversity outside your country's jurisdiction?

a) No	
b) No, but assessment of options is in progress	
c) Yes, some completed, others in progress (please provide details below)	
d) Yes (please provide details below)	

Further information on the bilateral, regional and/or multilateral agreements on activities likely to significantly affect biodiversity outside your country's jurisdiction.

Not sure how to interpret this question.

104. ? On Article 14.1(d), has your country put mechanisms in place to prevent or minimize danger or damage originating in your territory to biological diversity in the territory of other Parties or in areas beyond the limits of national jurisdiction?

a) No	
b) No, mechanisms are still in early stages of development	
c) No, but mechanisms are in advanced stages of development	
d) Yes, mechanisms are in place based on current scientific knowledge	X

105. ? On Article 14.1(e), has your country established national mechanisms for emergency response to activities or events which present a grave and imminent danger to biological diversity?	
a) No	
b) No, mechanisms are still in early stages of development	
c) No, but mechanisms are in advanced stages of development	X
d) Yes, mechanisms are in place (please provide details below)	
Further information on national mechanisms for emergency response to the activities or events which present a grave and imminent danger to biodiversity.	
South Africa is in the process of developing a National Disaster and Risk Management Strategy.	

106. Is your country applying the Guidelines for Incorporating Biodiversity-related Issues into Environment-Impact-Assessment Legislation or Processes and in Strategic Impact Assessment as contained in the annex to decision VI/7 in the context of the implementation of paragraph 1 of Article 14? (decision VI/7)	
a) No	X
b) No, but application of the guidelines under consideration	
c) Yes, some aspects being applied (please specify below)	
d) Yes, major aspects being applied (please specify below)	
Further comments on application of the guidelines.	

107. On Article 14 (2), has your country put in place national legislative, administrative or policy measures regarding liability and redress for damage to biological diversity? (decision VI/11)	
a) No	X
b) Yes (please specify the measures)	
Further comments on national legislative, administrative or policy measures regarding liability and redress for damage to biological diversity.	

108. Has your country put in place any measures to prevent damage to biological diversity?	
a) No	
b) No, but some measures are being developed	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures in place to prevent damage to biological diversity.
This is an extremely broad question. Measures discussed in many of the sections of this report contribute to preventing damage to biological diversity.

109. Is your country cooperating with other Parties to strengthen capacities at the national level for the prevention of damage to biodiversity, establishment and implementation of national legislative regimes, policy and administrative measures on liability and redress? (decision VI/11)	
a) No	
b) No, but cooperation is under consideration	
c) No, but cooperative programmes are under development	
d) Yes, some cooperative activities being undertaken (please provide details below)	X
e) Yes, comprehensive cooperative activities being undertaken (please provide details below)	

Further comments on cooperation with other Parties to strengthen capacities for the prevention of damage to biodiversity.
Much co-operation happening on all aspects of biodiversity management, conservation, reducing impacts etc. *This question has been repeated several times in various ways.* Liability and redress is another matter and is not being adequately addressed – it should be addressed with regard to, for example, marine pollution (e.g. oil pollution, shipping disasters), and perhaps invasive alien species (if culpability could be traced and proven).

Box LIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

Article 15 - Access to genetic resources

110. ? Has your country endeavored to facilitate access to genetic resources for environmentally sound uses by other Parties, on the basis of prior informed consent and mutually agreed terms, in accordance with paragraphs 2, 4 and 5 of Article 15?	
a) No	
b) Yes (please provide details below)	X

Further information on the efforts taken by your country to facilitate access to genetic resources for environmentally sound uses by other Parties, on the basis of prior informed consent and mutually agreed terms.

Several agreements have been signed to enable access to South Africa's genetic resources by other Contracting Parties. It should be noted, however, that there is concern within South Africa, particularly among NGOs and community-based organisations, that such agreements may not adequately protect the rights of indigenous peoples and communities. Since South Africa has not yet established a National Focal Point, it is difficult to state the extent of agreements that have been entered into by various stakeholders. Such agreements have been signed by institutions (such as research institutions). The partners of the Bioprospecting Consortium, working on medicinal plants (Medical Research Council, South African National Biodiversity Institute, Council for Scientific and Industrial Research, Agricultural Research Council and several universities) have established a Trust, to ensure that there is fair and equitable sharing of financial benefits with indigenous peoples and communities and other stakeholders.

The Biodiversity Act (10 of 2004), provides for the development of clear procedures, norms and standards. Material Transfer Agreements and Benefit Sharing Agreements will be regulated when the Act is implemented. A Bioprospecting Framework will be developed. The Act also allows for the establishment of a Bioprospecting Fund, for the collection and distribution of financial benefits arising from bioprospecting.

111. ? Has your country taken measures to ensure that any scientific research based on genetic resources provided by other Parties is developed and carried out with the full participation of such Parties, in accordance with Article 15(6)?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to ensure that any scientific research based on genetic resources provided by other Contracting Parties is developed and carried out with the full participation of such Contracting Parties.

112. ? Has your country taken measures to ensure the fair and equitable sharing of the results of research and development and of the benefits arising from the commercial and other use of genetic resources with any Contracting Party providing such resources, in accordance with Article 15(7)?

a) No	
b) No, but potential measures are under review	X
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive legislation is in place (please provide details below)	
e) Yes, comprehensive statutory policy or subsidiary legislation are in place (please provide details below)	
f) Yes, comprehensive policy and administrative measures are in place (please provide details below)	

Further information on the type of measures taken.

113. In developing national measures to address access to genetic resources and benefit-sharing, has your country taken into account the multilateral system of access and benefit-sharing set out in the International Treaty on Plant Genetic Resources for Food and Agriculture?	
a) No	X
b) Yes (please provide details below)	

Further information on national measures taken which consider the multilateral system of access and benefit-sharing as set out in the International Treaty on Plant Genetic Resources for Food and Agriculture.
The National Department of Agriculture is the focal point for the International Treaty on Plant Genetic Resources for Food and Agriculture, and is likely to become the focal point for access and benefit sharing. However, the plant genetic resources for food and agriculture, as covered in the treaty, was not specifically included in South Africa's legislation on bioprospecting, which was developed by the Department of Environment Affairs and Tourism.

114. Is your country using the Bonn Guidelines when developing and drafting legislative, administrative or policy measures on access and benefit-sharing and/or when negotiating contracts and other arrangements under mutually agreed terms for access and benefit-sharing? (decision VII/19A)	
a) No	
b) No, but steps being taken to do so (please provide details below)	X
c) Yes (please provide details below)	

Please provide details and specify successes and constraints in the implementation of the Bonn Guidelines.
The provisions in the Biodiversity Act (10 of 2004) are to be implemented in the 2005/06 period, and it is anticipated that the Bonn Guidelines will be taken into consideration.

115. Has your country adopted national policies or measures, including legislation, which address the role of intellectual property rights in access and benefit-sharing arrangements (i.e. the issue of disclosure of origin/source/legal provenance of genetic resources in applications for intellectual property rights where the subject matter of the application concerns, or makes use of, genetic resources in its development)?	
a) No	
b) No, but potential policies or measures have been identified (please specify below)	
c) No, but relevant policies or measures are under development (please specify below)	
d) Yes, some policies or measures are in place (please specify below)	X
e) Yes, comprehensive policies or measures adopted (please specify below)	

Further information on policies or measures that address the role of IPR in access and benefit-sharing arrangements.
The Patent Act administered by the Department of Trade and Industry is under review.

116. Has your country been involved in capacity-building activities related to access and benefit-sharing?	
a) Yes (please provide details below)	X
b) No	

Please provide further information on capacity-building activities (your involvement as donor or recipient, key actors involved, target audience, time period, goals and objectives of the capacity-building activities, main capacity-building areas covered, nature of activities). Please also specify whether these activities took into account the Action Plan on capacity-building for access and benefit-sharing adopted at COP VII and available in annex to decision VII/19F.

The Southern African Biodiversity Support Programme has a focus on Access and Benefit Sharing, but is coming to an end. The need for awareness raising and capacity building is recognised in the NBSAP but is still to be implemented.

Box LIV.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Article 16 - Access to and transfer of technology

117. ? On Article 16(1), has your country taken measures to provide or facilitate access for and transfer to other 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?	
a) No	X
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to provide or facilitate access for and transfer to other Parties of technologies that are relevant to the conservation and sustainable use of biodiversity or make use of genetic resources and do not cause significant damage to the environment.

Such transfers of technology usually occur through the usual mechanism of publication in scientific journals and at conferences, symposia and workshops.

118. On Article 16(3), has your country taken measures so that Parties which provide genetic resources are provided access to and transfer of technology which make use of those resources, on mutually agreed terms?	
a) No	
b) No, but potential measures are under review	X
c) Yes, some measures are in place	
d) Yes, comprehensive legislation is in place	
e) Yes, comprehensive statutory policy or subsidiary legislation are in place	
f) Yes, comprehensive policy and administrative arrangements are in place	
g) Not applicable	

119. On Article 16(4), has your country taken measures so that the private sector facilitates access to joint development and transfer of relevant technology for the benefit of Government institutions and the private sector of developing countries?	
a) No	
b) No, but potential measures are under review	
c) Yes, some policies and measures are in place (please provide details below)	X
d) Yes, comprehensive policies and measures are in place (please provide details below)	
e) Not applicable	

Further information on the measures taken.

The Department of Science and Technology and Department of Trade and Industry focus on such programs and partnerships.

Box LV.

Please elaborate below on the implementation of this article specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Programme of Work on transfer of technology and technology cooperation

120. Has your country provided financial and technical support and training to assist in the implementation of the programme of work on transfer of technology and technology cooperation? (decision VII/29)	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some programmes being implemented (please provide details below)	X
d) Yes, comprehensive programmes being implemented (please provide details below)	

Further comments on the provision of financial and technical support and training to assist in the implementation of the programme of work on transfer of technology and technology cooperation.
Technology transfer in the collection, curation and databasing of botanical diversity material and information has been led by South Africa through the SABONET (Southern African Botanical Diversity Network) Regional Capacity Building Project, supported by donor funding.

121. Is your country taking any measures to remove unnecessary impediments to funding of multi-country initiatives for technology transfer and for scientific and technical cooperation? (decision VII/29)	
a) No	
b) No, but some measures being considered	X
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures to remove unnecessary impediments to funding of multi-country initiatives for technology transfer and for scientific and technical cooperation.

122. Has your country made any technology assessments addressing technology needs, opportunities and barriers in relevant sectors as well as related needs in capacity building? (annex to decision VII/29)	
a) No	
b) No, but assessments are under way	X
c) Yes, basic assessments undertaken (please provide details below)	
d) Yes, thorough assessments undertaken (please provide details below)	

Further comments on technology assessments addressing technology needs, opportunities and barriers in relevant sectors as well as related needs in capacity building.
Preliminary assessments have highlighted gaps in biotechnology.

123. Has your country made any assessments and risk analysis of the potential benefits, risks and associated costs with the introduction of new technologies? (annex to decision VII/29)	
a) No	
b) No, but assessments are under way	X
c) Yes, some assessments undertaken (please provide details below)	
d) Yes, comprehensive assessments undertaken (please provide details below)	
Further comments on the assessments and risk analysis of the potential benefits, risks and associated costs with the introduction of new technologies.	

124. Has your country identified and implemented any measures to develop or strengthen appropriate information systems for technology transfer and cooperation, including assessing capacity building needs? (annex to decision VII/29)	
a) No	X
b) No, but some programmes are under development	
c) Yes, some programmes are in place and being implemented (please provide details below)	
d) Yes, comprehensive programmes are being implemented (please provide details below)	
Further comments on measures to develop or strengthen appropriate information systems for technology transfer and cooperation.	

125. Has your country taken any of the measures specified under Target 3.2 of the programme of work as a preparatory phase to the development and implementation of national institutional, administrative, legislative and policy frameworks to facilitate cooperation as well as access to and adaptation of technologies of relevance to the Convention? (annex to decision VII/29)	
a) No	X
b) No, but a few measures being considered	
c) Yes, some measures taken (please specify below)	
d) Yes, many measures taken (please specify below)	
Further comments on the measures taken as a preparatory phase to the development and implementation of national institutional, administrative, legislative and policy frameworks to facilitate cooperation as well as access to and adaptation of technologies of relevance to the Convention.	

Box LVI.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:
a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

Article 17 - Exchange of information

126. ? On Article 17(1), has your country taken measures to facilitate the exchange of information from publicly available sources with a view to assist with the implementation of the Convention and promote technical and scientific cooperation?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place	
d) Yes, comprehensive measures are in place	X

The following question (127) is for DEVELOPED COUNTRIES

127. ? On Article 17(1), do these measures take into account the special needs of developing countries and include the categories of information listed in Article 17(2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on?	
a) No	
b) Yes, but they do not include the categories of information listed in Article 17(2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on	
c) Yes, and they include categories of information listed in Article 17 (2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on	

Box LVII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:
a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

Article 18 - Technical and scientific cooperation

128. ? On Article 18(1), has your country taken measures to promote international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	X

Further information on the measures to promote international technical and scientific cooperation.

The wide range and number of research institutions in South Africa publish and distribute a vast literature on the biodiversity of southern Africa, much of this supported by websites as their means of access. National, regional and international symposia, workshops and training seminars support networking and information exchange. Newsletters and journals are distributed to thousands of biodiversity professionals throughout the region and globally.

South Africa, through the Branch: Marine and Coastal Management of the Department of Environment Affairs and Tourism, has adopted the Benguela Fisheries Interaction Training (BENEFIT) Programme and the Benguela Current Large Marine Ecosystem (BCLME) Programme, as integral parts of the New Partnership for Africa's Development. Involving South Africa, Namibia and Angola, and funded by Norwegian and Canadian governments, BENEFIT aims to train staff and conduct fisheries and other marine scientific investigations.

South Africa established an internet-based Clearing House Mechanism (CHM) several years ago, and designated an official in the Department of Environment Affairs and Tourism as the National Focal Point. But in 2001 the CHM experienced serious technical problems. The CHM is currently non existent and needs to be re-established. Several other internet-based data clearing houses either exist or are in the process of being established. For example, a Global Biodiversity Information Facility (GBIF) node, the South African Biodiversity Information Facility (SABIF), has been established in the Department of Science and Technology (National Research Foundation). Together with the Council for Scientific and Industrial Research, an audit is underway to assess the nature and extent of biodiversity data in South Africa. There is a need to develop a metadatabase, standardise database formats and establish links between these sites. SABIF is in the process of being transferred from the National Research Foundation to the South African National Biodiversity Institute.

South Africa is supporting the Global Invasive Species Programme (GISP) secretariat, which has an international CHM function.

129. ? On Article 18(4), has your country encouraged and developed methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of this Convention?	
a) No	
b) No, but relevant methods are under development	X
c) Yes, methods are in place	

130. ? On Article 18(5), has your country promoted the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention?	
a) No	
b) Yes (please provide some examples below)	X
Examples for the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention.	
The Southern African Botanical Diversity Network (SABONET) led the development of the Southern African Red Data Book for Plants, which includes all the countries of southern Africa. South African scientists are also collaborating with other Contracting Parties on projects such as BIOTA South (a German-South African-Namibian collaborative research programme) and the Millennium Ecosystem Assessment.	

131. Has your country established links to non-governmental organizations, private sector and other institutions holding important databases or undertaking significant work on biological diversity through the CHM? (decision V/14)	
a) No	X
b) No, but coordination with relevant NGOs, private sector and other institutions under way	
c) Yes, links established with relevant NGOs, private sector and institutions	

The following question (132) is for DEVELOPED COUNTRIES

132. Has your country further developed the CHM to assist developing countries and countries with economies in transition to gain access to information in the field of scientific and technical cooperation? (decision V/14)	
a) No	
b) Yes, by using funding opportunities	
c) Yes, by means of access to, and transfer of technology	
d) Yes, by using research cooperation facilities	
e) Yes, by using repatriation of information	
f) Yes, by using training opportunities	
g) Yes, by using promotion of contacts with relevant institutions, organizations and the private sector	
h) Yes, by using other means (please specify below)	

Further comments on CHM developments to assist developing countries and countries with economies in transition to gain access to information in the field of scientific and technical cooperation.

133. Has your country used CHM to make information available more useful for researchers and decision-makers? (decision V/14)	
a) No	
b) No, but relevant initiatives under consideration	X
c) Yes (please provide details below)	

Further comments on development of relevant initiatives.
South Africa established an internet-based CHM several years ago, and designated an official in the Department of Environment Affairs and Tourism as the National Focal Point. But in 2001 the CHM experienced serious technical problems. The CHM is currently not functioning and needs to be re-established. Several other internet-based data clearing houses either exist or are in the process of being established. For example, a Global Biodiversity Information Facility (GBIF) node, the South African Biodiversity Information Facility (SABIF) has been established in the Department of Science and Technology (National Research Foundation). Together with the Council for Scientific and Industrial Research, an audit is underway to assess the nature and extent of biodiversity data in South Africa. There is a need to develop a metadatabase, standardise database formats and establish links between these sites. SABIF is in the process of being transferred from the National Research Foundation to the South African National Biodiversity Institute.

134. Has your country developed, provided and shared services and tools to enhance and facilitate the implementation of the CHM and further improve synergies among biodiversity-related Conventions? (decision V/14)	
a) No	X
b) Yes (please specify services and tools below)	

Further comments on services and tools to enhance and facilitate the implementation of CHM and further improve synergies among biodiversity-related Conventions.

Box LVIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

Article 19 - Handling of biotechnology and distribution of its benefits

135. ? On Article 19(1), has your country taken measures to provide for the effective participation in biotechnological research activities by those Contracting Parties which provide the genetic resources for such research?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place	X
d) Yes, comprehensive legislation are in place	
e) Yes, comprehensive statutory policy and subsidiary legislation are in place	
f) Yes, comprehensive policy and administrative measures are in place	

136. ? On Article 19(2), has your country taken all practicable measures to promote and advance priority access by Parties, on a fair and equitable basis, to the results and benefits arising from biotechnologies based upon genetic resources provided by those Parties?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place	X
d) Yes, comprehensive measures are in place	

Box LIX.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

a) It is too early to elaborate on outcomes and impacts of actions taken, as South Africa is still developing policies, legislation and regulations. The Department of Environment Affairs and Tourism has promulgated the Biodiversity Act (10 of 2004) with a chapter on bioprospecting, access and benefit sharing. Regulations and a comprehensive Biodiversity Framework are under development. The Department of Agriculture administers the Genetically Modified Organisms Act (15 of 1997) and is developing a GMO auditor's manual and a biotechnology manual for advisory services.

Article 20 – Financial resources

Box LX.

Please describe for each of the following items the quantity of financial resources, both internal and external, that have been utilized, received or provided, as applicable, to implement the Convention on Biological Diversity, on an annual basis, since your country became a Party to the Convention.	
a) Budgetary allocations by national and local Governments as well as different sectoral ministries	Figures not available
b) Extra-budgetary resources (identified by donor agencies)	Figures not available
c) Bilateral channels (identified by donor agencies)	Figures not available
d) Regional channels (identified by donor agencies)	Figures not available
e) Multilateral channels (identified by donor agencies)	Figures not available
f) Private sources (identified by donor agencies)	Figures not available
g) Resources generated through financial instruments, such as charges for use of biodiversity	Figures not available

Box LXI.

Please describe in detail below any major financing programmes, such as biodiversity trust funds or specific programmes that have been established in your country.
Since political transformation, South Africa has received substantial financial support for *in situ* conservation, from a number of sources, including the Global Environment Facility, DANCED, GTZ, NORAD, USAID, WWF, IUCN, Fauna and Flora International, Conservation International, International Fund for Animal Welfare, as well as many private and corporate donors within South Africa.

137. ? On Article 20(1), has your country provided financial support and incentives to those national activities that are intended to achieve the objectives of the Convention?	
a) No	
b) Yes, incentives only (please provide a list of such incentives below)	
c) Yes, financial support only	X
d) Yes, financial support and incentives (please provide details below)	
Further comments on financial support and incentives provided.	
Figures not available, but the budget of the national branch dealing with the achievement of the objectives of the Convention is R17 957 000 (approximately USD3 000 000).	

The next question (138) is for DEVELOPED COUNTRIES

138. ? On Article 20(2), has your country provided new and additional financial resources to enable developing country Parties to meet the agreed incremental costs to them of implementing measures which fulfill the obligations of the Convention?	
a) No	
b) Yes (please indicate the amount, on an annual basis, of new and additional financial resources your country has provided)	
Further comments on new and additional financial resources provided.	

The next question (139) is for DEVELOPING COUNTRIES OR COUNTRIES WITH ECONOMIES IN TRANSITION

139. ? On Article 20(2), has your country received new and additional financial resources to enable it to meet the agreed full incremental costs of implementing measures which fulfill the obligations of the Convention?	
a) No	
b) Yes	X

140. ? Has your country established a process to monitor financial support to biodiversity, including support provided by the private sector? (decision V/11)	
a) No	
b) No, but procedures being established	X
c) Yes (please provide details below)	
Further comments on processes to monitor financial support to biodiversity, including support provided by the private sector.	

141. ? Has your country considered any measures like tax exemptions in national taxation systems to encourage financial support to biodiversity? (decision V/11)	
a) No	
b) No, but exemptions are under development (please provide details below)	X
c) Yes, exemptions are in place (please provide details below)	
Further comments on tax exemptions for biodiversity-related donations.	
National Treasury has embarked on an Environmental Fiscal Reform Programme, which is investigating the options and feasibility for a range of fiscal incentive measures.	

142. Has your country reviewed national budgets and monetary policies, including the effectiveness of official development assistance allocated to biodiversity, with particular attention paid to positive incentives and their performance as well as perverse incentives and ways and means for their removal or mitigation? (decision VI/16)	
a) No	X
b) No, but review is under way	
c) Yes (please provide results of review below)	
Further comments on review of national budgets and monetary policies, including the effectiveness of official development assistance.	

143. Is your country taking concrete actions to review and further integrate biodiversity considerations in the development and implementation of major international development initiatives, as well as in national sustainable development plans and relevant sectoral policies and plans? (decisions VI/16 and VII/21)	
a) No	
b) No, but review is under way	
c) Yes, in some initiatives and plans (please provide details below)	X
d) Yes, in major initiatives and plans (please provide details below)	
Further comments on review and integration of biodiversity considerations in relevant initiatives, policies and plans.	
The National Strategy for Sustainable Development is currently being developed, led by the Department of Environment Affairs and Tourism, and will be aligned with existing policies and strategies, including the NBSAP.	

144. Is your country enhancing the integration of biological diversity into the sectoral development and assistance programmes? (decision VII/21)	
a) No	X
b) No, but relevant programmes are under development	
c) Yes, into some sectoral development and assistance programmes (please provide details below)	
d) Yes, into major sectoral development and assistance programmes (please provide details below)	
Further comments on the integration of biodiversity into sectoral development and assistance programmes	

The next question (145) is for DEVELOPED COUNTRIES

145. Please indicate with an "**X**" in the table below in which area your country has provided financial support to developing countries and/or countries with economies in transition. Please elaborate in the space below if necessary.

Areas	Support provided
a) Undertaking national or regional assessments within the framework of MEA (decision VI/8)	
b) *In-situ* conservation (decision V/16)	
c) Enhance national capacity to establish and maintain the mechanisms to protect traditional knowledge (decision VI/10)	
d) *Ex-situ* conservation (decision V/26)	
e) Implementation of the Global Strategy for Plant Conservation (decision VI/9)	
f) Implementation of the Bonn Guidelines (decision VI/24)	
g) Implementation of programme of work on agricultural biodiversity (decision V/5)	
h) Preparation of first report on the State of World's Animal Genetic Resources (decision VI/17)	
i) Support to work of existing regional coordination mechanisms and development of regional and sub regional networks or processes (decision VI/27)	
j) Development of partnerships and other means to provide the necessary support for the implementation of the programme of work on dry and subhumid lands biological diversity (decision VII/2)	
k) Financial support for the operations of the Coordination Mechanism of the Global Taxonomy Initiative (decision VII/9)	
l) Support to the implementation of the Action Plan on Capacity Building as contained in the annex to decision VII/19 (decision VII/19)	
m) Support to the implementation of the programme of work on mountain biological diversity (decision VII/27)	
n) Support to the implementation of the programme of work on protected areas (decision VII/28)	
o) Support to the development of national indicators (decision VII/30)	
p) Others (please specify)	

Further information on financial support provided to developing countries and countries with economies in transition.

The next question (146) is for DEVELOPING COUNTRIES OR COUNTRIES WITH ECONOMIES IN TRANSITION

146. Please indicate with an "**X**" in the table below in which areas your country has applied for funds from the Global Environment Facility (GEF), from developed countries and/or from other sources. The same area may have more than one source of financial support. Please elaborate in the space below if necessary.

Areas	Applied for funds from		
	GEF	**Bilateral**	**Other**
a) Preparation of national biodiversity strategies or action plans			
b) National capacity self-assessment for implementation of Convention (decision VI/27)			
c) Priority actions to implement the Global Taxonomy Initiative (decision V/9)			
d) *In-situ* conservation (decision V/16)			
e) Development of national strategies or action plans to deal with alien species (decision VI/23)			
f) *Ex-situ* conservation, establishment and maintenance of *Ex-situ* conservation facilities (decision V/26)			
g) Projects that promote measures for implementing Article 13 (Education and Public Awareness) (decision VI/19)			
h) Preparation of national reports (decisions III/9, V/19 and VI/25)			
i) Projects for conservation and sustainable use of inland water biological diversity (decision IV/4)			
j) Activities for conservation and sustainable use of agricultural biological diversity (decision V/5)			
k) Implementation of the Cartagena Protocol on Biosafety (decision VI/26)			
l) Implementation of the Global Taxonomy Initiative			
m) Implementation of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity			
n) Others (please specify)			

Further information on application for financial support.

Box LXII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

D. THEMATIC AREAS

147. Please use the scale indicated below to reflect the level of challenges faced by your country in implementing the thematic programmes of work of the Convention (marine and coastal biodiversity, agricultural biodiversity, forest biodiversity, inland waters biodiversity, dry and sub-humid lands and mountain biodiversity).	
3 = High Challenge	1 = Low Challenge
2 = Medium Challenge	0 = Challenge has been successfully overcome
N/A = Not applicable	

As explained in Box 1, South Africa has not centralised the development, implementation and monitoring of the Programmes of Work as developed by the CBD.

Challenges	**Programme of Work**					
	Agricultural	**Forest**	**Marine and coastal**	**Inland water ecosystem**	**Dry and subhumid lands**	**Mountain**
(a) Lack of political will and support	2	1	2	2	1	1
(b) Limited public participation and stakeholder involvement	3	1	2	2	2	2
(c) Lack of main-streaming and integration of biodiversity issues into other sectors	2	2	2	2	2	2
(d) Lack of precautionary and proactive measures	3	2	3	3	3	2
(e) Inadequate capacity to act, caused by institutional weakness	3	2	3	3	3	3
(f) Lack of transfer of technology and expertise	2	2	2	2	2	2
(g) Loss of traditional knowledge	2	1	2	3	3	3

(h) Lack of adequate scientific research capacities to support all the objectives	3	2	3	2	3	2
(i) Lack of accessible knowledge and information	3	2	3	2	3	2
(j) Lack of public education and awareness at all levels	3	2	2	2	2	2
(k) Existing scientific and traditional knowledge not fully utilized	3	2	2	3	2	2
(l) Loss of biodiversity and the corresponding goods and services it provides not properly understood and documented	3	2	3	3	2	1
(m) Lack of financial, human, technical resources	3	2	2	2	2	2
(n) Lack of economic incentive measures	3	3	3	3	3	3
(o) Lack of benefit-sharing	2	2	2	2	2	1
(p) Lack of synergies at national and international levels	3	2	2	2	2	1
(q) Lack of horizontal cooperation among stakeholders	2	1	1	1	2	1
(r) Lack of effective partnerships	2	2	3	3	2	2
(s) Lack of engagement of scientific community	2	2	2	2	2	2
(t) Lack of appropriate policies and laws	1	1	1	2	2	1
(u) Poverty	3	3	3	3	3	3
(v) Population pressure	2	3	3	3	2	2
(w) Unsustainable consumption and production patterns	3	2	3	3	3	2
(x) Lack of capacities for local communities	3	3	3	3	3	3
(y) Lack of knowledge and practice of ecosystem-based approaches to management	3	2	3	3	2	2

(z) Weak law enforcement capacity	3	2	3	3	3	2
(aa) Natural disasters and environmental change	2	1	1	1	2	2
(bb) Others (please specify)						

Inland water ecosystems

148. Has your country incorporated the objectives and relevant activities of the programme of work into the following and implemented them? (decision VII/4)

Strategies, policies, plans and activities	No	Yes, partially, integrated but not implemented	Yes, fully integrated and implemented	N/A
a) Your biodiversity strategies and action plans		X		
b) Wetland policies and strategies		X		
c) Integrated water resources management and water efficiency plans being developed in line with paragraph 25 of the Plan of Implementation of the World Summit on Sustainable Development		X		
d) Enhanced coordination and cooperation between national actors responsible for inland water ecosystems and biological diversity		X		

Further comments on incorporation of the objectives and activities of the programme of work

a) The NBSAP was developed in 2004/05 and undertook a national assessment of biodiversity at the ecosystem level, integrating terrestrial, riverine, estuarine and marine ecosystems to identify national level priorities for conservation action.

b) Working for Wetlands Programme

c) Inland water ecosystems are the responsibility of the Department of Water Affairs and Forestry. Freshwater systems are intensively managed in South Africa. The National Water Act (36 of 1998) requires Catchment Management Agencies to develop Catchment Management Strategies. The Act also establishes the Reserve, including the Ecological Reserve to meet the ecological requirements of freshwater ecosystems. Considerable resources are made available to research and monitoring programmes, such as the River Health Programme and the National Freshwater Biodiversity Initiative. A number of poverty relief and public works programmes have been established to rehabilitate inland water systems, such as Working for Water and Working for Wetlands. These job creation and capacity building programmes focus on the poorest sectors of society.

d) In the past, inland water biodiversity “fell through the cracks”, as the mandate is shared between the Department of Environment Affairs and Tourism, Department of Water Affairs and Forestry (DWAF), Department of Agriculture and the provinces. National legislation, the National Water Act (36 of 1998) does provide the mandate for conservation of aquatic biodiversity. A DWAF Directorate for Resource Directed Measures is tasked with determining the ecological needs of rivers and

estuaries, the Ecological Reserve. A National Freshwater Biodiversity Initiative was initiated in 2003 by the Department of Water Affairs and Forestry, together with the Water Research Commission and the Council for Scientific and Industrial Research. At around the same time, the South African branch of the World Wildlife Fund initiated a process with the aim of identifying, through extensive stakeholder participation, priorities for conservation of freshwater biodiversity. These initiatives are working together and include a range of stakeholders, including DEAT, Department of Agriculture, all nine provincial administrations and the research community.

149. Has your country identified priorities for each activity in the programme of work, including timescales, in relation to outcome oriented targets? (decision VII/4)	
a) No	X
b) Outcome oriented targets developed but priority activities not developed	
c) Priority activities developed but not outcome oriented targets	
d) Yes, comprehensive outcome oriented targets and priority activities developed	
Further comments on the adoption of outcome oriented targets and priorities for activities, including providing a list of targets (if developed).	

150. Is your country promoting synergies between this programme of work and related activities under the Ramsar Convention as well as the implementation of the Joint Work Plan (CBD-Ramsar) at the national level? (decision VII/4)	
a) Not applicable (not Party to Ramsar Convention)	
b) No	X
c) No, but potential measures were identified for synergy and joint implementation	
d) Yes, some measures taken for joint implementation (please specify below)	
e) Yes, comprehensive measures taken for joint implementation (please specify below)	
Further comments on the promotion of synergies between the programme of work and related activities under the Ramsar Convention as well as the implementation of the Joint Work Plan (CBD-Ramsar) at the national level.	

151. Has your country taken steps to improve national data on: (decision VII/4)

Issues	Yes	No	No, but development is under way
a) Goods and services provided by inland water ecosystems?	X		
b) The uses and related socioeconomic variables of such goods and services?			X

c) Basic hydrological aspects of water supply as they relate to maintaining ecosystem function?	X		
d) Species and all taxonomic levels?			X
e) On threats to which inland water ecosystems are subjected?	X		

Further comments on the development of data sets, in particular a list of data sets developed in case you have replied "**YES**" above.

a) The Council for Scientific and Industrial Research (CSIR) has carried out a research programme on valuation of ecosystem goods and services, with a particular focus on inland water ecosystems. This valuation has been instrumental in gaining political support for the Working for Water programme, which removes invasive alien trees in order to improve water runoff in catchments. This approach is being extended to the Working for Wetlands programme. Moves are underway to adopt a more systematic and strategic approach to the future identification of rehabilitation interventions, which will optimise the ecological, hydrological and social benefits of rehabilitation projects by clustering them in priority catchments. The shift to a catchment based approach to wetland rehabilitation is in keeping with international best practice, which suggests that the minimum acceptable scale for wetland rehabilitation planning should be at the catchment level. This strategy is also strongly aligned with the move towards managing water resources on a catchment scale in South Africa, through the establishment of statutory catchment management agencies.

c) and e) The Department of Water Affairs and Forestry, CSIR, Water Research Commission and other research agencies are collaborating on a number of long-term research programmes, such as the River Health Programme and the National Freshwater Biodiversity Initiative.

152. Has your country promoted the application of the guidelines on the rapid assessment of the biological diversity of inland water ecosystems? (decision VII/4)

a) No, the guidelines have not been reviewed	X
b) No, the guidelines have been reviewed and found inappropriate	
c) Yes, the guidelines have been reviewed and application/promotion is pending	
d) Yes, the guidelines promoted and applied	

Further comments on the promotion and application of the guidelines on the rapid assessment of the biological diversity of inland water ecosystems.

Box LXIII.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Marine and coastal biological diversity

General

153. Do your country's strategies and action plans include the following? Please use an "**X**" to indicate your response. (decisions II/10 and IV/15)	
a) Developing new marine and coastal protected areas	X
b) Improving the management of existing marine and coastal protected areas	X
c) Building capacity within the country for management of marine and coastal resources, including through educational programmes and targeted research initiatives (if yes, please elaborate on types of initiatives in the box below)	X
d) Instituting improved integrated marine and coastal area management (including catchments management) in order to reduce sediment and nutrient loads into the marine environment	
e) Protection of areas important for reproduction, such as spawning and nursery areas	
f) Improving sewage and other waste treatment	
g) Controlling excessive fishing and destructive fishing practices	X
h) Developing a comprehensive oceans policy (if yes, please indicate current stage of development in the box below)	
i) Incorporation of local and traditional knowledge into management of marine and coastal resources (if yes, please elaborate on types of management arrangements in the box below)	X
j) Others (please specify below)	
k) Not applicable	

Please elaborate on the above activities and list any other priority actions relating to conservation and sustainable use of marine and coastal biodiversity.

a) Section 43 of the Marine Living Resources Act (108 of 1998) allows for the proclamation of Marine Protected Areas and associated regulations. The mandated authority, the Department of Environment Affairs and Tourism: Marine and Coastal Management Branch, has established a management unit to improve the management of the existing 19 Marine Protected Areas and develop an action plan in terms of improved strategies and business plans. A programme is underway to expand the number and extent of Marine Protected Areas, with a target of 20% of the coastline by 2010. Currently, South Africa is researching the rationale for at least three more Marine Protected Areas within the next two years and a further two after that.

b) A budget has been allocated for the improved management of Marine Protected Areas and individual management plans are currently being compiled with associated deliverables, operational plans and service level agreements between Marine and Coastal Management as the mandated authority and appropriate service providers to assist with the management of the parks on a local level.

c) A number of training programmes have been and are being developed to increase capacity. These include initiatives such as Marine Protected Areas Managers Course (aimed at potential managers of Marine Protected Areas and enforcement officers), an Adult Based Education Training Programme for Coastal Management (aimed at increasing capacity of communities and other stakeholders), Sustainable Livelihoods Approach training (for the different spheres of government) and a number of initiatives are being implemented within our Research section as well.

g) The Branch: Marine and Coastal Management of the Department of Environment Affairs and Tourism has introduced a revised quota system for fisheries, which sets catch limits according to scientific assessment of the resource, while ensuring more equitable access by historically disadvantaged communities. A number of fisheries-related policies have been developed, such as on abalone, octopus and recreational fishing. However, despite these gains, human and financial resources are limited and poaching is a problem, in terms of both deepwater fisheries and coastal species such as crayfish (rock lobster) and abalone. A policy to limit the impact of long-line fishing on birds such as albatross is under development.

i) A number of co-management options are being investigated.

Implementation of Integrated Marine and Coastal Area Management

154. Has your country established and/or strengthened institutional, administrative and legislative arrangements for the development of integrated management of marine and coastal ecosystems?	
a) No	
b) Early stages of development	
c) Advanced stages of development	X
d) Arrangements in place (please provide details below)	
e) Not applicable	

Further comments on the current status of implementation of integrated marine and coastal area management.

South Africa has a number of institutional, administrative and legislative arrangements in place, including:

A Directorate: Integrated Coastal Management and Development is in place at the national level, and is in the process of investigating elevating this Directorate to a Chief Directorate level. Each of the coastal provinces now has a coastal management unit, housed under either the provincial environment affairs department, and focus is now being given to institutional capacity at a local level.

Legislative arrangements: The Coastal Management Bill; the Sea Shore Act, the Protected Areas Act (57 of 2003), the Biodiversity Act (10 of 2004), the Marine Living Resources Act (18 of 1998), the National Environmental Management Act (107 of 1998) all apply to the above. Provinces have also developed policies around integrated coastal management and are currently developing their own legislation in accordance with national acts.

155. Has your country implemented ecosystem-based management of marine and coastal resources, for example through integration of coastal management and watershed management, or through integrated multidisciplinary coastal and ocean management?	
a) No	
b) Early stages of development	X
c) Advanced stages of development	
d) Arrangements in place (please provide details below)	
e) Not applicable	

Further comments on the current status of application of the ecosystem to management of marine and coastal resources.

Through the Protected Areas Act (57 of 2003), Biodiversity Act (10 of 2004) and Coastal Management Bill.

Efforts are underway to establish Marine Protected Areas linked to terrestrial protected areas, such as the Namaqua Marine Protected Area and National Park on the west coast and the Greater Addo Elephant National Park on the south-east coast.

Marine and Coastal Living Resources

156. Has your country identified components of your marine and coastal ecosystems, which are critical for their functioning, as well as key threats to those ecosystems?	
a) No	
b) Plans for a comprehensive assessment of marine and coastal ecosystems are in place (please provide details below)	X
c) A comprehensive assessment is currently in progress	
d) Critical ecosystem components have been identified, and management plans for them are being developed (please provide details below)	
e) Management plans for important components of marine and coastal ecosystems are in place (please provide details below)	
f) Not applicable	

Further comments on the current status of assessment, monitoring and research relating to marine and coastal ecosystems, as well as key threats to them

A preliminary assessment, the first such national assessment, was carried out as part of the 2004 National Spatial Biodiversity Assessment.

157. Is your country undertaking the following activities to implement the Convention's work plan on coral reefs? Please use an "**X**" to indicate your response.

Activities	Not implemented nor a priority	Not implemented but a priority	Currently implemented	Not applicable
a) Ecological assessment and monitoring of reefs			X	
b) Socio-economic assessment and monitoring of communities and stakeholders			X	
c) Management, particularly through application of integrated coastal management and marine and coastal protected areas in coral reef environments			X	
d) Identification and implementation of additional and alternative measures for securing livelihoods of people who directly depend on coral reef services			X	
e) Stakeholder partnerships, community participation programmes and public education campaigns			X	

f) Provision of training and career opportunities for marine taxonomists and ecologists			X	
g) Development of early warning systems of coral bleaching				X
h) Development of a rapid response capability to document coral bleaching and mortality				X
i) Restoration and rehabilitation of degraded coral reef habitats			X	
j) Others (please specify below)				

Please elaborate on ongoing activities.

South Africa's coral reefs are located off the north-eastern coastline of KwaZulu-Natal, near the border with Mozambique.

Marine and Coastal Protected Areas

158. Which of the following statements can best describe the current status of marine and coastal protected areas in your country? Please use an "**X**" to indicate your response.

a) Marine and coastal protected areas have been declared and gazetted (please indicate below how many)	X
b) Management plans for these marine and coastal protected areas have been developed with involvement of all stakeholders	X
c) Effective management with enforcement and monitoring has been put in place	X
d) A national system or network of marine and coastal protected areas is under development	X
e) A national system or network of marine and coastal protected areas has been put in place	X
f) The national system of marine and coastal protected areas includes areas managed for purpose of sustainable use, which may allow extractive activities	X
g) The national system of marine and coastal protected areas includes areas which exclude extractive uses	X
h) The national system of marine and coastal protected areas is surrounded by sustainable management practices over the wider marine and coastal environment.	X
i) Other (please describe below)	
j) Not applicable	

Further comments on the current status of marine and coastal protected areas.

a) 19

b) For 4 of the 19. Other plans are currently being compiled.

c) A pilot study has been implemented in one of the parks, which is currently being replicated in other areas.

e) South Africa has met inshore targets to date and a full network of Marine Protected Areas (MPAs)

has been compiled, which informs future proclamation of MPAs, with specific emphasis on offshore MPAs.

f and g) The MPAs are zoned, with some zones allowing a measure of extraction, whilst others are no-take zones.

h) Sustainable management practices of both the coastal and marine environment are in place, including limiting the extraction of resources, sustainable use of non-consumptive resources etc.

Mariculture

159. Is your country applying the following techniques aimed at minimizing adverse impacts of mariculture on marine and coastal biodiversity? Please check all that apply.	
a) Application of environmental impact assessments for mariculture developments	X
b) Development and application of effective site selection methods in the framework of integrated marine and coastal area management	X
c) Development of effective methods for effluent and waste control	X
d) Development of appropriate genetic resource management plans at the hatchery level	
e) Development of controlled hatchery and genetically sound reproduction methods in order to avoid seed collection from nature.	
f) If seed collection from nature cannot be avoided, development of environmentally sound practices for spat collecting operations, including use of selective fishing gear to avoid by-catch	
g) Use of native species and subspecies in mariculture	X
h) Implementation of effective measures to prevent the inadvertent release of mariculture species and fertile polypoids.	X
i) Use of proper methods of breeding and proper places of releasing in order to protect genetic diversity	X
j) Minimizing the use of antibiotics through better husbandry techniques	
k) Use of selective methods in commercial fishing to avoid or minimize by-catch	
l) Considering traditional knowledge, where applicable, as a source to develop sustainable mariculture techniques	X
m) Not applicable	

Further comments on techniques that aim at minimizing adverse impacts of mariculture on marine and coastal biodiversity.

South Africa could be viewed as being in its infancy in development of this sector. However, large amounts of resources have been allocated to research of specific issues marked above. A Mariculture Sector Development Plan is currently being endorsed by the mandated authority, which will inform site selection, amongst other things.

Alien Species and Genotypes

160. Has your country put in place mechanisms to control pathways of introduction of alien species in the marine and coastal environment? Please check all that apply and elaborate on types of measures in the space below.

a) No	
b) Mechanisms to control potential invasions from ballast water have been put in place (please provide details below)	X
c) Mechanisms to control potential invasions from hull fouling have been put in place (please provide details below)	
d) Mechanisms to control potential invasions from aquaculture have been put in place (please provide details below)	
e) Mechanisms to control potential invasions from accidental releases, such as aquarium releases, have been put in place (please provide details below)	
f) Not applicable	

Further comments on the current status of activities relating to prevention of introductions of alien species in the marine and coastal environment, as well as any eradication activities.

South Africa participated as a pilot country in the IMO/UNEP/UNDP GloBallast Programme, which assisted the National Ports Authority (NPA) in conducting baseline marine fauna and flora surveys for the Ports of Saldanha, Ngqura and Richard's Bay. The NPA also initiated a process of collecting ballast water reporting forms from ships calling at South African ports. A National Task Group has been established in April 2005 to coordinate a work programme covering the development of appropriate legislation, risk assessments, the establishment of an inspectorate, training and regional cooperation. The Department of Environment Affairs and Tourism has developed a draft national ballast water management policy under the GloBallast Programme, which is now being reviewed in collaboration with the Department of Transport and the South African Maritime Safety Authority to take into account the provisions of the International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004. South Africa is in the process of ratifying this Convention.

Box LXIV.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Efforts to prevent and control the introduction of marine alien species through ships' ballast water are in their infancy in SA. However, the National Task Group established is gaining momentum in implementing its work programme and the represented Departments are actively developing a suitable national policy. This commitment is expected to be further strengthened by the upcoming GloBallast Partnerships project currently being considered for funding by the GEF. Legislation to be developed in support of the above-mentioned convention and Port-specific Ballast Water Management Plans that are currently being developed by the National Ports Authority will strongly focus on the prevention of marine invasive alien species introductions, thus reducing the risk of biodiversity loss.

Agricultural biological diversity

161. Has your country developed national strategies, programmes and plans that ensure the development and successful implementation of policies and actions that lead to the conservation and sustainable use of agrobiodiversity components? (decisions III/11 and IV/6)	
a) No	
b) No, but strategies, programmes and plans are under development	X
c) Yes, some strategies, programmes and plans are in place (please provide details below)	
d) Yes, comprehensive strategies, programmes and plans are in place (please provide details below)	
Further comments on agrobiodiversity components in national strategies, programmes and plans.	

162. Has your country identified ways and means to address the potential impacts of genetic use restriction technologies on the *In-situ* and *Ex-situ* conservation and sustainable use, including food security, of agricultural biological diversity? (decision V/5)	
a) No	X
b) No, but potential measures are under review	
c) Yes, some measures identified (please provide details below)	
d) Yes, comprehensive measures identified (please provide details below)	
Further information on ways and means to address the potential impacts of genetic use restriction technologies on the *In-situ* and *Ex-situ* conservation and sustainable use of agricultural biodiversity.	

Annex to decision V/5 - Programme of work on agricultural biodiversity

Programme element 1 – Assessment	
163. Has your country undertaken specific assessments of components of agricultural biodiversity such as on plant genetic resources, animal genetic resources, pollinators, pest management and nutrient cycling?	
a) No	
b) Yes, assessments are in progress (please specify components below)	X
c) Yes, assessments completed (please specify components and results of assessments below)	
Further comments on specific assessments of components of agricultural biodiversity.	
A Pollinator Initiative has been started by the South African National Biodiversity Institute. There needs to be a thorough assessment of breeds, indigenous and exotic (animal genetic resources). Plant genetic resources and pest management assessments are underway. Considerable work is needed on microbial resources.	

164. Is your country undertaking assessments of the interactions between agricultural practices and the conservation and sustainable use of the components of biodiversity referred to in Annex I of the Convention (e.g. ecosystems and habitats; species and communities; genomes and genes of social, scientific or economic importance)?

a) No	
b) Yes, assessments are under way	
c) Yes, some assessments completed (please provide details below)	X
d) Yes, comprehensive assessments completed (please provide details below)	

Further comments on assessment of biodiversity components (e.g. ecosystems and habitats; species and communities; genomes and genes of social, scientific or economic importance).

Conservation farming project

From 1999 to 2003 the then National Botanical Institute (now SANBI) co-ordinated the Conservation Farming Project, which was a targeted research programme supported by the Global Environmental Facility (GEF) and Mazda Wildlife Fund. The aims of the Conservation Farming Project were to:

- Assess the ecological and economic costs and benefits of various agricultural practices, including both conventional and conservation farming methods.
- Promote land use practices that conserve biodiversity and provide sustainable livelihoods for farmers and rural communities.

Some of the project focal areas included:

- Biodiversity: the benefits of increased biodiversity on farms for farmers and everyone else.
- Soils: how conservation farming improves soil structure and improves production.
- Ecosystem services: how healthy ecosystem processes provide services to all.
- Carbon sequestration: how to lower atmospheric carbon dioxide levels and so reduce global warming.
- Economic incentives: why it pays to have a healthy environment.
- Putting conservation farming into practice: getting farmers' views on conservation farming, and improving the flow of information to farmers.

165. Has your country carried out an assessment of the knowledge, innovations and practices of farmers and indigenous and local communities in sustaining agricultural biodiversity and agro-ecosystem services for food production and food security?

a) No	X
b) Yes, assessment is under way	
c) Yes, assessment completed (please specify where information can be retrieved below)	

Further comments on assessment of the knowledge, innovations and practices of farmers and indigenous and local communities.

Some research is carried as on an ad hoc basis by universities and other research agencies, but no coordinated national assessment is underway, although Department of Agriculture is considering an assessment.

166. Has your country been monitoring an overall degradation, status quo or restoration/rehabilitation of agricultural biodiversity since 1993 when the Convention entered into force?	
a) No	X
b) Yes, no change found (status quo)	
c) Yes, overall degradation found (please provide details below)	
d) Yes, overall restoration or rehabilitation observed (please provide details below)	
Further comments on observations.	
Some assessments have been carried out, but no overall assessment.	

Programme element 2 - Adaptive management	
167. Has your country identified management practices, technologies and policies that promote the positive, and mitigate the negative, impacts of agriculture on biodiversity, and enhance productivity and the capacity to sustain livelihoods?	
a) No	
b) No, but potential practices, technologies and policies being identified	X
c) Yes, some practices, technologies and policies identified (please provide details below)	
d) Yes, comprehensive practices, technologies and policies identified (please provide details below)	
Further comments on identified management practices, technologies and policies.	
This is in early stages of development.	

Programme element 3 - Capacity-building	
168. Has your country increased the capacities of farmers, indigenous and local communities, and their organizations and other stakeholders, to manage sustainable agricultural biodiversity and to develop strategies and methodologies for *In-situ* conservation, sustainable use and management of agricultural biological diversity?	
a) No	
b) Yes (please specify area/component and target groups with increased capacity)	X
Further comments on increased capacities of farmers, indigenous and local communities, and their organizations and other stakeholders.	
The focus of the Department of Agriculture has shifted away from focusing just on commercial agriculture towards assisting emerging farmers. For example, in the Eastern Cape, several food security programmes are underway which include integrated rangeland management, soil management and ram and bull schemes to improve livestock.	

169. Has your country put in place operational mechanisms for participation by a wide range of stakeholder groups to develop genuine partnerships contributing to the implementation of the programme of work on agricultural biodiversity?	
a) No	
b) No, but potential mechanisms being identified	X
c) No, but mechanisms are under development	
d) Yes, mechanisms are in place	

170. Has your country improved the policy environment, including benefit-sharing arrangements and incentive measures, to support local-level management of agricultural biodiversity?	
a) No	
b) No, but some measures and arrangements being identified	X
c) No, but measures and arrangements are under development	
d) Yes, measures and arrangements are being implemented (please specify below)	
Further comments on the measures taken to improve the policy environment.	

Programme element 4 – Mainstreaming	
171. Is your country mainstreaming or integrating national plans or strategies for the conservation and sustainable use of agricultural biodiversity in sectoral and cross-sectoral plans and programmes?	
a) No	
b) No, but review is under way	
c) No, but potential frameworks and mechanisms are being identified	X
d) Yes, some national plans or strategies mainstreamed and integrated into some sectoral plans and programmes (please provide details below)	
e) Yes, some national plans or strategies mainstreamed into major sectoral plans and programmes (please provide details below)	
Further comments on mainstreaming and integrating national plans or strategies for the conservation and sustainable use of agricultural biodiversity in sectoral and cross-sectoral plans and programmes.	
The NBSAP highlights the need to work with production sectors, including the agricultural sector which is a major land user in South Africa, to integrate biodiversity considerations in their production and service standards (outcome 3.2).	

172. Is your country supporting the institutional framework and policy and planning mechanisms for the mainstreaming of agricultural biodiversity in agricultural strategies and action plans, and its integration into wider strategies and action plans for biodiversity?	
a) No	X
b) Yes, by supporting institutions in undertaking relevant assessments	
c) Yes, by developing policy and planning guidelines	
d) Yes, by developing training material	
e) Yes, by supporting capacity-building at policy, technical and local levels	
f) Yes, by promoting synergy in the implementation of agreed plans of action and between ongoing assessment and intergovernmental processes.	
Further comments on support for institutional framework and policy and planning mechanisms.	

173. In the case of centers of origin in your country, is your country promoting activities for the conservation, on farm, *In-situ*, and *Ex-situ*, of the variability of genetic resources for food and agriculture, including their wild relatives?	
a) No	X
b) Yes (please provide details below)	
Further comments on of the conservation of the variability of genetic resources for food and agriculture in their center of origin.	

Box LXV.

Please provide information concerning the actions taken by your country to implement the Plan of Action for the International Initiative for the Conservation and Sustainable Use of Pollinators.
A Pollinator Initiative has been started by the South African National Biodiversity Institute.

Box LXVI.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

Forest Biological Diversity

General

174. Has your country incorporated relevant parts of the work programme into your national biodiversity strategies and action plans and national forest programmes?	
a) No	X
b) Yes, please describe the process used	
c) Yes, please describe constraints/obstacles encountered in the process	
d) Yes, please describe lessons learned	
e) Yes, please describe targets for priority actions in the programme of work	

Further comments on the incorporation of relevant parts of the work programme into your NBSAP and forest programmes

As described in several other sections of this report, South Africa has a range of initiatives and measures in place to protect indigenous forest biodiversity, with the Department of Water Affairs and Forestry playing a key role. More detail is given in Box LXVII below.

Box LXVII.

Please indicate what recently applied tools (policy, planning, management, assessment and measurement) and measures, if any, your country is using to implement and assess the programme of work. Please indicate what tools and measures would assist the implementation.

In 2002 a set of criteria, indicators and standards were prepared that comply with the principles for sustainable forest management as outlined in the National Forests Act (NFA) (84 of 1998), administered by the Department of Water Affairs and Forestry (DWAF). The NFA recommends the development of a set of criteria, indicators and standards (CI&S) for sustainable forest management (SFM), which the Government will use to monitor and report on progress towards sustainable forest management. The Act requires the criteria, indicators and standards to apply nationally, regionally, to specific forest management units, or to all or specific forest types, and to take into account specific regional, economic, social and environmental conditions.

Following the completion of the national forest type classification, a systematic protected area planning framework was applied to the forest biome. Such a decision-support tool has assisted DWAF in selecting and designing a protected area network that is representative of forest biodiversity (including the protection of representative samples of the national forest types). This will enable DWAF and the relevant conservation agencies (national and provincial) to follow a more objective and systematic approach to forest protected area planning. The main objectives of this process were to determine the relative conservation values (irreplaceability values) of forest patches; to assess the relative socio-economic values of forest patches and threats to these forests; to identify priority forests for protection and to propose appropriate IUCN protection categories for the various forest patches.

Consultants developed the decision-support system with the aid of GIS-based and expert data analysis computerised systems, with funding support from DFID. This process used similar systematic conservation planning techniques to those used for other biomes such as the Cape Floral Kingdom and the Succulent Karoo. Biodiversity data on the forest biome was gathered as a first step, and the forest patches of the National Forest Inventory (NFI) were used as the units of analysis. The NFI has mapped all forest fragments larger than 5 hectares. This was supplemented with other data to fill in some gaps in the NFI.

At a public workshop conservation targets were determined for the forest biome with stakeholder inputs. These targets reflect ecological patterns (such as a base target of a minimum of 15% of all

forest types to be protected, adjusted upwards depending on species density etc.) and ecological processes (such as maximising connectivity between forests to accommodate fauna and flora migration). An irreplaceability analysis was done for about 21 000 forest patches, based on the conservation targets and the available biodiversity data. GIS maps and supporting spreadsheet databases were generated, indicating a range of conservation values for forests from high irreplaceability (few options available for meeting conservation targets) to low irreplaceability (many options available for meeting conservation targets).

Socio-economic spatial data was incorporated into the GIS analysis of forest patches, using national census data for communities within a 5km radius of forest patches, and extrapolating from that the socio-economic use value and opportunity costs of these forests. A threat prediction model was also done using drivers (e.g. population density) and triggers (e.g. poverty level or availability of electricity) and modifiers (e.g. the standard of forest management) to predict the threat level to forest patches. Finally the suitability of the IUCN protected area categories was evaluated for the priority forest patches (those with a high conservation or irreplaceability value). While the irreplaceability value assists decision-making on which forests to prioritise for protection, the suitability analysis assists in determining which protected area categories should be considered for each of these forests.

At a second public workshop the draft results of the process (conservation targets, irreplaceability analysis etc.) were reviewed by key stakeholders, and the way forward was discussed. The project was concluded with an expert workshop held in Knysna in September 2004, where after the final report was delivered to DWAF, together with the GIS maps and databases indicating priority forests for protection and suitable IUCN protected area categories.

At this workshop it was concluded that while the product is a useful tool for national strategic planning, it should be fine tuned for the regional level of forest protected area planning. The next phase will be to refine this national protected area planning framework or support system for forests for implementation at the regional level, by gathering information on the forest subtype level and re-running the analysis process on these sub-types. Consultation with relevant conservation agencies will continue in the development of this decision-support tool, and in its application to protected area planning.

Natural forests in South Africa are generally considered adequately protected. Although an estimated 30% of forests (mainly coastal forests) were lost by the end of the 20th century due to clearing for agriculture and human settlements, as well as timber extraction (mostly during the 19th century), about 60% of forest ecosystems are currently protected. However, forests are highly fragmented and isolated and several endangered species such as the Samango Monkey and Cape Parrot require close monitoring. Some forest types (especially scarp, coastal and mangrove forests) are still under pressure from resource use and development. The Department of Water Affairs and Forestry has drawn up a new list of trees to be protected under the National Forests Act (84 of 1998) and initiated an assessment of national policy and legislation on woodland management. A comprehensive programme for participatory forest management, encompassing both natural forest and plantations, has been initiated.

One way of assessing change in natural forests (improvement in condition or degeneration) is to assess the change in conservation status of forest-dependent plant or animal species. Forest-dependent species are used because they do not occur in habitats other than forests. The IUCN conservation categories have changed frequently in the last few decades making all Red Lists prior to 1994 obsolete. Consequently only taxa that were assessed subsequent to 1994 were included in this analysis. Only frogs have been assessed frequently enough since the new criteria were introduced to evaluate the change in conservation status. Of the five forest-dependent frog species that presently have a threat status, two have had their status elevated (Near Threatened to Endangered, Near Threatened to Vulnerable) and two remain the same. The fifth species has recently been placed into the Data Deficient category. Baseline data for plants (KwaZulu-Natal only), mammals, birds, snails, butterflies, diplopods and onychophorans are presented n the Table below.

Due to the high costs involved, national surveys of the extent of forest and woodlands cover occur only every five to ten years.

	Extinct	Critically Endangered	Endangered	Vulnerable

Plants	1	0	10	26
Mammals	0	1	3	4
Birds	0	0	2	4
Snails	0	2	1	2
Butterflies	1	1		1
Diplopods	0	1	5	6
Onychophora	0	1	0	1

Box LXVIII.

Please indicate to what extent and how your country has involved indigenous and local communities, and respected their rights and interests, in implementing the programme of work.

The key elements of the National Forest Programme (NFP) framework have been laid down in the National Forests Act (84 of 1998). The NFP defines the following priorities for natural (indigenous) forests:

- Developing the non-timber forest product industry in South Africa
- Developing a policy and strategy on sustainable access to biomass energy sources in South Africa (fuel wood)
- Developing a policy and strategy for the sustainable use of woodlands in rural livelihood improvement (poverty alleviation)
- Supporting increased community participation in forestry management (with an emphasis on plantation (exotic) forests

Box LXIX.

Please indicate what efforts your country has made towards capacity building in human and capital resources for the implementation of the programme of work.

Sustainable Forest Management training and Community Forestry support programmes are being implemented.

Box LXX.

Please indicate how your country has collaborated and cooperated (e.g., south-south, north-south, south-north, north-north) with other governments, regional or international organizations in implementing the programme of work. Please also indicate what are the constraints and/or needs identified.

Expanded programme of work on forest biological diversity

Programme element 1 – Conservation, sustainable use and benefit-sharing	
175. Is your country applying the ecosystem approach to the management of all types of forests?	
a) No (please provide reasons below)	
b) No, but potential measures being identified (please provide details below)	
c) Yes (please provide details below)	X
Comments on application of the ecosystem approach to management of forests (including effectiveness of actions taken, lessons learned, impact on forest management, constraints, needs, tools, and targets).	
See boxes above, especially Box LXVII.	

176. Has your country undertaken measures to reduce the threats to, and mitigate its impacts on forest biodiversity?

Options	X	Details
a) Yes	X	Please specify below the major threats identified in relation to each objective of goal 2 and the measures undertaken to address priority actions
b) No		Please provide reasons below
Further comments on measures to reduce threats to, and mitigate the impacts of threatening processes on forest biodiversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).		
See boxes above and below.		

177. Is your country undertaking any measures to protect, recover and restore forest biological diversity?

Options	X	Details
a) Yes	X	Please identify priority actions in relation to each objective of goal 3 and describe measures undertaken to address these priorities
b) No		Please provide reasons below
Further comments on measures to protect, recover and restore forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).		

One of the smallest biomes in South Africa is forest. Natural forests cover less than 1% of the land surface of South Africa, or 534 000 hectares. Exotic tree plantations (mainly pine, eucalyptus and wattle species) supply much of South Africa's timber, pulp and tannin requirements.

These species and plantations impact on the natural vegetation and ecosystems, such as grasslands, freshwater, mountains and natural forest. The forestry industry and the Department of Water Affairs and Forestry aim to minimize these impacts.

The following indicators aim to measure improvements:

N/P: Indicator 3.4: Extent and connectivity of natural ecosystems.
Measure 3.4.1: Average distance between natural forest patches (km)
Measure 3.4.2: Mean area and number of natural habitats by habitat type between plantations.
Measure 3.4.3: Untransformed and transformed land expressed as a percentage of the total estate (area).
Indicator 3.6: Nutrient Cycling
Measure 3.6.1: Ratio of litter depth (or mass/m2) sampled in an area impacted by intensive resource use to an adjacent non-impacted area of similar habitat type.
Measure 3.6.2: Organic carbon levels (total organic carbon content) in the topsoil (not the humus layer) measured in sample sites as a trend, once every 10 years.

N/P: Indicator 4.1: Impacts of pests and diseases.
Measure 4.1.1: Area of natural forest negatively affected by insect pests and diseases.
N/P: Indicator 4.2: Negative impacts of fire.
Measure 4.2.1: Number and area of sites negatively affected by fire.
Measure 4.2.2: Change in annual fire protection expenditure (expressed as a %)
N/P: Indicator 4.3: Infestation by alien invader plants.
Measure 4.3.1: Percentage and severity of infestation of FMU by alien invader vegetation.

N/P: Indicator 6.2: Water quality.
Measure 6.2.1: Diversity of aquatic organisms measured using SASS 5 techniques at strategic points within the catchment.

Measure 6.2.2: Turbidity levels measured in association with relevant forest management or utilisation activities.

178. Is your country undertaking any measures to promote the sustainable use of forest biological diversity?

Options	X	Details
a) Yes	X	Please specify priority actions in relation to each objective of goal 4 and describe measures undertaken to address these priorities
b) No		Please provide reasons below

Further comments on the promotion of the sustainable use of forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

Indicators used:

N/P: Indicator 5.1: Standing stock assessment.
N/P: Measure 5.1.1: Regularly updated inventories of the available consumptive resources (plants/ha, volume/ha, tons/ha, or related measure).
N/P: Indicator 5.3: Level of multiple resource use from forest ecosystems.
Measure 5.3.1: List of multiple resource utilisation activities taking place on the FMU.
N/P: Indicator 5.4: Identification and development of new alternative forest resources.
Measure 5.4.1: Number and type of initiatives to develop new alternatives.
Measure 5.4.2: Number and area of initiatives implemented to produce alternative resources.

Indicators used to assess unsustainable use:

N/P: Indicator 21.5: Compliance with forest management legislation and customary law.
Measure 21.5.1: DWAF compliance with its EI&MP.
Measure 21.5.2: Number of apprehensions, arrests, prosecutions and convictions imposed for committing forest management offences.

Measure 21.5.3: Number and type of incentives provided to encourage compliance with forest management laws.

179. Is your country undertaking any measures to promote access and benefit-sharing of forest genetic resources?

Options	X	Details
a) Yes		Please specify priority actions in relation to each objective of goal 5 and describe measures undertaken
b) No		Please provide reasons below
	X	Forest genetic resources are not dealt with separately from other genetic resources, but are considered together with the country's programmes in relation to genetic resources in general (see relevant boxes). Indigenous forests cover less than 1% of South Africa's land surface.

Further comments on the promotion of access and benefit-sharing of forest genetic resources. (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets)

Programme element 2 – Institutional and socio-economic enabling environment

180. Is your country undertaking any measures to enhance the institutional enabling environment for the conservation and sustainable use of forest biological diversity, including access and benefit-sharing?

Options	X	Details
a) Yes	X	Please identify priority actions in relation to each objective of Goal 1 and describe measures undertaken to address these priorities
b) No		Please provide reasons below

Further comments on the enhancement of the institutional enabling environment for the conservation and sustainable use of forest biological diversity, including access and benefit-sharing (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

State forests, both indigenous and exotic, have in the past been managed by the Department of Water Affairs and Forestry. A process is underway to transfer management of indigenous forests to conservation agencies, whose primary mandate is biodiversity management and conservation. For

example, during 2004/2005, 97 000 ha of State Forest land in the Southern Cape and Tstitsikamma areas has been delegated to South African National Parks. Such delegations are also taking to place with provincial authorities in provinces such as Mpumalanga, Limpopo and Eastern Cape.

181. Is your country undertaking any measures to address socio-economic failures and distortions that lead to decisions that result in loss of forest biological diversity?

Options	X	Details
a) Yes		Please identify priority actions in relation to each objective of Goal 2 and describe measures undertaken to address these priorities
b) No		Please provide reasons below
	X	Measures to address socio-economic failures and distortions that result in loss of biodiversity in general, especially through loss of natural habitat, are a focus of the South Africa's bioregional programmes, but do not focus on the forest biome specifically. Indigenous forests cover less than 1% of South Africa's land surface.

Further comments on review of socio-economic failures and distortions that lead to decisions that result in loss of forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

182. Is your country undertaking any measures to increase public education, participation and awareness in relation to forest biological diversity?

Options	X	Details
a) Yes		Please identify priority actions in relation to each objective of goal 3 and describe measures undertaken to address these priorities
b) No		Please provide reasons below
	X	

Further comments on measures to increase public education, participation and awareness in relation to forest biological diversity (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

Programme element 3 – Knowledge, assessment and monitoring

183. Is your country undertaking any measures to characterize forest ecosystems at various scales in order to improve the assessment of the status and trends of forest biological diversity?

Options	X	Details
a) Yes	X	Please identify priority actions in relation to each objective of Goal 1 and describe measures undertaken to address these priorities

b) No		Please provide reasons below

Further comments on characterization of forest ecosystems at various scales (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

See Box LXVII above for a detailed description of these measures.

184. Is your country undertaking any measures to improve knowledge on, and methods for, the assessment of the status and trends of forest biological diversity?

Options	X	Details
a) Yes	X	Please identify priority actions in relation to each objective of goal 2 and describe measures undertaken to address these priorities
b) No		Please provide reasons below

Further comments on improvement of knowledge on and methods for the assessment of the status and trends (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

As part of its regulatory role, the Department of Water Affairs and Forestry is required under the National Forests Act (84 of 1998) to provide an overview of the state of the forestry sector in South Africa. The State of the Forests report, which is required under the National Forests Act, will, from 2006, be generated against the criteria and indicators for sustainable forest management. This will provide understandable and useful information for monitoring, assessment, and management, and furthermore provide a standardised framework, against which year on year comparisons can be made more clearly.

Also see Box LXVII above.

185. Is your country undertaking any measures to improve the understanding of the role of forest biodiversity and ecosystem functioning?

Options	X	Details
a) Yes	X	Please identify priority actions in relation to each objective of goal 3 and describe measures undertaken to address these priorities
b) No		Please provide reasons below

Further comments on the improvement of the understanding of the role of forest biodiversity and ecosystem functioning (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).

See Box LXVII above.

186. Is your country undertaking any measures at national level to improve the infrastructure for data and information management for accurate assessment and monitoring of global forest biodiversity?		
Options	**X**	**Details**
a) Yes		Please identify priority actions in relation to each objective of goal 4 and describe measures undertaken to address these priorities
b) No	X	Please provide reasons below
Further comments on the improvement of the infrastructure for data and information management (including effectiveness of actions taken, lessons learned, impacts on forest biodiversity, constraints, needs, tools and targets).		

Box LXXI.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

Biological diversity of dry and sub-humid lands

A large proportion of South Africa consists of dry and sub-humid lands. Together with mountains, these make up most of the country. There is no specific programme of work on dry and sub-humid lands, but most of the programmes and activities discussed throughout this report apply to dry and sub-humid lands. South Africa's bioregional programmes, including Cape Action for People and the Environment, the Succulent Karoo Ecosystem Programme, the Subtropical Thicket Ecosystem Programme and the National Grasslands Biodiversity Initiative, focus largely on dry and sub-humid lands.

187. Is your country supporting scientifically, technically and financially, at the national and regional levels, the activities identified in the programme of work? (decisions V/23 and VII/2)	
a) No	
b) Yes (please provide details below)	
Further comments on scientific, technical and financial support, at the national and regional levels, to the activities identified in the programme of work.	

188. Has your country integrated actions under the programme of work of dry and sub-humid lands into its national biodiversity strategies and action plans or the National Action Programme (NAP) of the UNCCD? (decisions V/23, VI/4 and VII/2)	
a) No	
b) Yes (please provide details below)	
Further comments on actions under the programme of work of dry and sub-humid lands integrated into national biodiversity strategies and action plans or the National Action Programme (NAP) of the UNCCD.	
South Africa's average annual rainfall is 498 mm and over 60% of the country receives less than 500mm per annum, while 21% of the country receives less than 200mm per annum. Most of South Africa falls within semi-arid and sub-humid zones, with extensive shrubland, grassland and savanna ecosystems. Approximately 83% of the land surface area of the country is zoned for agriculture. Land degradation, defined as the loss of the productive capacity of the land to sustain life, is considered by the Department of Agriculture, to be the most serious threat to agricultural productivity and biodiversity in the country. Land degradation, including loss of soil to water and wind erosion, as well as encroachment by invasive alien species is a particularly serious concern in the overcrowded communal areas, as this loss of productivity impacts directly on people's livelihoods. Although savanna is considered adequately represented in the protected area network and supports a significant wildlife-based tourism industry, the South Africa grasslands biome is considered to be highly threatened and is under-protected. Habitat conversion and invasive alien species are the greatest threats to biodiversity in South Africa. Considerable resources have been made available in recent years to remove invasive alien plants and one million hectares have been cleared. However, at the current rate it will take many decades to clear invasive alien plants and more resources are needed for follow up clearing and rehabilitation. South Africa signed the Convention to Combat Desertification in 1995, ratified it in 1997 and developed a National Action Programme in 2003. This was passed by Cabinet during 2004/05. The Department of Agriculture contributed to a revision of the agriculture chapter in the national action plan of the CCD. One of the Department of Agriculture's Branches, Agricultural Production and Resources Management includes the Programme: Sustainable Resources Management and Use, which includes the following Directorates:	

- Water Use and Irrigation Development
- Land Use and Soil Management: focuses on the conservation of natural resources through the administration of legislation such as the Conservation of Agricultural Resources Act (CARA) (43 of 1983) and the Subdivision of Agricultural Land Act (70 of 1970). The major activities are pest control, reclamation of land resources and land care. CARA defines malpractices such as erosion on veld and cultivated land; cultivation of virgin land; overgrazing; changing the direction of flow of rivers; cultivation of wetlands; proliferation of weeds and invasive plants; and incorrect or unpermitted burning of natural veld.

189. Has your country undertaken measures to ensure synergistic/collaborative implementation of the programme of work between the national UNCCD process and other processes under related environmental conventions? (decisions V/23, VI/4 and VII/2)	
a) No	
b) Yes, some linkages established (please provide details below)	
c) Yes, extensive linkages established (please provide details below)	

Further comments on the measures to ensure the synergistic/collaborative implementation of the programme of work between the national UNCCD processes and other processes under related environmental conventions.

Programme Part A: Assessment	
190. Has your country assessed and analyzed information on the state of dryland biological diversity and the pressures on it, disseminated existing knowledge and best practices, and filled knowledge gaps in order to determine adequate activities? (Decision V/23, Part A: Assessment, Operational objective, activities 1 to 6)	
a) No	
b) No, but assessment is ongoing	
c) Yes, some assessments undertaken (please provide details below)	X
d) Yes, comprehensive assessment undertaken (please provide details below)	

Further comments on the relevant information on assessments of the status and trends and dissemination of existing knowledge and best practices.

The Department of Agriculture maintains the following information systems:

- LandCare information system
- Agricultural Geographical Information System
- Virtual herbarium (web-based information on agriculturally important plants)
- Land capability information system (soil types, prime and unique agricultural land at 1:50 000 scale)
- Veld management information system
- World overview on conservation approaches and technologies (WOCAT) system
- National Land Cover
- Inspectorate information system
- Agricultural Risk Management Framework

Programme Part B: Targeted Actions	
191. Has your country taken measures to promote the conservation and sustainable use of the biological diversity of dry and sub-humid lands and the fair and equitable sharing of the benefits arising out of the utilization of its genetic resources, and to combat the loss of biological diversity in dry and sub-humid lands and its socio-economic consequences? (part B of annex I of decision V/23, activities 7 to 9)	
a) No	
b) Yes, some measures taken (please provide details below)	
c) Yes, many measures taken (please provide details below)	
Further comments on the measures taken to promote the conservation and sustainable use of the biological diversity of dry and sub-humid lands and the fair and equitable sharing of the benefits arising out of the utilization of its genetic resources, and to combat the loss of biological diversity in dry and sub-humid lands and its socio-economic consequences.	

192. Has your country taken measures to strengthen national capacities, including local capacities, to enhance the implementation of the programme of work?	
a) No	
b) Yes, some measures taken (please provide details below)	
c) Yes, comprehensive measures taken (please provide details below)	
d) Yes, all identified capacity needs met (please provide details below)	
Further comments on measures taken to strengthen national capacities, including local capacities, to enhance the implementation of the programme of work.	

Box LXXII.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on:
a) outcomes and impacts of actions taken;
b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
c) contribution to progress towards the 2010 target;
d) progress in implementing national biodiversity strategies and action plans;
e) contribution to the achievement of the Millennium Development Goals;
f) constraints encountered in implementation.

Mountain Biodiversity

South Africa has no specific programme of work on mountain biodiversity. However, mountains form part of the focus of South Africa's bioregional programmes. On the whole, the protected area system is biased towards mountain ecosystems, which tend to be better protected and under less pressure from habitat conversion than lowland ecosystems.

Programme Element 1. Direct actions for conservation, sustainable use ad benefit sharing	
193. Has your country taken any measures to prevent and mitigate the negative impacts of key threats to mountain biodiversity?	
a) No	
b) No, but relevant measures are being considered	
c) Yes, some measures taken (please provide details below)	
d) Yes, many measures taken (please provide details below)	
Further comments on the measures taken to prevent and mitigate the negative impacts of key threats to mountain biodiversity	

194. Has your country taken any measures to protect, recover and restore mountain biodiversity?	
a) No	
b) No, but some measures are being considered	
c) Yes, some measures taken (please provide details below)	
d) Yes, many measures taken (please provide details below)	
Further comments on the measures taken to protect, recover and restore mountain biodiversity	

195. Has your country taken any measures to promote the sustainable use of mountain biological resources and to maintain genetic diversity in mountain ecosystems?	
a) No	
b) No, but some measures are being considered	
c) Yes, some measures taken (please provide details below)	
d) Yes, many measures taken (please provide details below)	
Further comments on the measures to promote the sustainable use of mountain biological resources and to maintain genetic diversity in mountain ecosystems	

196. Has your country taken any measures for sharing the benefits arising from the utilization of mountain genetic resources, including preservation and maintenance of traditional knowledge?	
a) No	
b) No, but some measures are being considered	
c) Yes, some measures taken (please provide details below)	

d) Yes, many measures taken (please provide details below)	

Further comments on the measures for sharing the benefits arising from the utilization of mountain genetic resources

Programme Element 2. Means of implementation for conservation, sustainable use and benefit sharing	
197. Has your country developed any legal, policy and institutional framework for conservation and sustainable use of mountain biodiversity and for implementing this programme of work?	
a) No	
b) No, but relevant frameworks are being developed	
c) Yes, some frameworks are in place (please provide details below)	
d) Yes, comprehensive frameworks are in place (please provide details below)	

Further comments on the legal, policy and institutional frameworks for conservation and sustainable use of mountain biodiversity and for implementing the programme of work on mountain biodiversity.

198. Has your country been involved in regional and/or transboundary cooperative agreements on mountain ecosystems for conservation and sustainable use of mountain biodiversity?	
a) No	
b) No, but some cooperation frameworks are being considered	
c) Yes (please provide details below)	

Further information on the regional and/or transboundary cooperative agreements on mountain ecosystems for conservation and sustainable use of mountain biodiversity

Programme Element 3. Supporting actions for conservation, sustainable use and benefit sharing	
199. Has your country taken any measures for identification, monitoring and assessment of mountain biological diversity?	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	

Further comments on the measures for identification, monitoring and assessment of mountain biodiversity

200. Has your country taken any measures for improving research, technical and scientific cooperation and capacity building for conservation and sustainable use of mountain biodiversity?	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	
Further comments on the measures for improving research, technical and scientific cooperation and capacity building for conservation and sustainable use of mountain biodiversity	

201. Has your country taken any measures to develop, promote, validate and transfer appropriate technologies for the conservation of mountain ecosystems?	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive measures are in place (please provide details below)	
Further comments on the measures to develop, promote, validate and transfer appropriate technologies for the conservation of mountain ecosystems	

Box LXXIII.

Please elaborate below on the implementation of this programme of work and associated decisions specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

E. OPERATIONS OF THE CONVENTION

202. Has your country actively participated in subregional and regional activities in order to prepare for Convention meetings and enhance implementation of the Convention? (decision V/20)	
a) No	
b) Yes (please provide details below)	X

Further comments on the regional and subregional activities in which your country has been involved.

South Africa was instrumental in the idea of a SADC workshop and participated in the SADC preparatory workshop for CBD COP8 held in Swaziland from 16-17 January 2006.

South Africa convened and funded an African Expert workshop to elaborate on Article 27-Liability and Redress of the Cartagena Protocol Workshop held from 1-2 November 2005 in Pretoria

In collaboration with Norway, South Africa hosted an international meeting of Experts on Access and Benefit-sharing to elaborate on the elements of the International Regime on ABS. This workshop was held in Cape Town from 20-23 September 2005

203. Is your country strengthening regional and subregional cooperation, enhancing integration and promoting synergies with relevant regional and subregional processes? (decision VI/27 B)	
a) No	
b) Yes (please provide details below)	X

Further comments on regional and subregional cooperation and processes.

The aim of the ABS workshop held in Cape Town was, among other objectives, to build capacity and to share information particularly within SADC and Africa. African experts attended the workshop .

South Africa is participating in the implementation of regional projects like the Desert Margins Programme with the aim of strengthening institutions, capacity and promoting synergies among the Rio Conventions.

The following question (204) is for DEVELOPED COUNTRIES

204. Is your country supporting the work of existing regional coordination mechanisms and the development of regional and subregional networks or processes? (decision VI/27 B)	
a) No	
b) No, but programmes are under development	
c) Yes, included in existing cooperation frameworks (please provide details below)	
d) Yes, some cooperative activities ongoing (please provide details below)	

Further comments on support for the work of existing regional coordination mechanisms and the development of regional and subregional networks or processes.

205. Is your country working with other Parties to strengthen the existing regional and subregional mechanisms and initiatives for capacity-building? (decision VI/27 B)	
a) No	
b) Yes	

206. Has your country contributed to the assessment of the regional and subregional mechanisms for implementation of the Convention? (decision VI/27 B)	
a) No	
b) Yes (please provide details below)	
Further comments on contribution to the assessment of the regional and subregional mechanisms.	

Box LXXIV.

Please elaborate below on the implementation of the above decisions specifically focusing on: a) outcomes and impacts of actions taken; b) contribution to the achievement of the goals of the Strategic Plan of the Convention; c) contribution to progress towards the 2010 target; d) progress in implementing national biodiversity strategies and action plans; e) contribution to the achievement of the Millennium Development Goals; f) constraints encountered in implementation.

F. COMMENTS ON THE FORMAT

Box LXXV.

Please provide below recommendations on how to improve this reporting format.
On the positive side: If Contracting Parties are well organized and have well established institutional arrangements for reporting and sharing information, the reporting format is useful to enable Contracting Parties to assess their own progress. The report is comprehensive and on the whole deals well with the many cross-cutting issues related to biodiversity management generally and the CBD in particular. On the negative side: The format is long and tedious. There is a great deal of duplication in the questions, which could be reduced. The format of tables, while clear, takes substantial computer operating memory. In developing countries with bandwidth limitations, large documents create problems. Many organisations' email systems do not allow documents of greater than 1MB to be transmitted, and it is therefore difficult to share the document, distribute drafts and get feedback and comment. This is a major drawback. It is difficult in some sections (e.g. the 2010 Target) to closely align the CBD goals and our own NBSAP. This is because of our particular context in South Africa, where we believe that meeting the 2010 target will require overcoming the challenges of the past. We therefore see "access" and "benefit sharing" being necessary in a much broader context, not only with regard to bioprospecting, but also access to land, rights to use natural resources, etc. A problem is that there is no place to put indicators related to the biodiversity economy e.g. number of jobs created, total value of ecosystem goods and services. Some of the questions have a developed country bias – especially on finances and institutional capacity. For example, Goal 11 of the CBD implies almost that developing countries have nothing to offer developed countries in terms of knowledge sharing. This is clearly not the case. Recommendations: • The questions should be better streamlined, and the amount of duplication reduced. • The formatting should not result in a document larger than 1MB, to enable it to be easily shared electronically in the process of completing the report. • The Table of Contents would be more useful if the relevant box numbers were also included, enabling queries to be more readily referred to when requesting input from stakeholders.

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