Convention on Biological Diversity

South African National Report to the Fourth Conference of the Parties

Department of Environmental Affairs and Tourism
January 1998

Each one of us is intimately attached to the soil of this beautiful country. Each time one of us touches the soil of this land, we feel a sense of personal renewal

President Nelson Mandela - Inaugurating Speech, 12 May 1994

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EXECUTIVE SUMMARY

Biodiversity has for a long time been closely interwoven with all aspects of South African society and is one of the mainstays of important economic sectors in the country, such as tourism, recreation, agriculture, forestry, horticulture and fisheries. The ratification of the Convention on Biological Diversity by South Africa on the 2nd November 1995 was a formal recognition by the Government of South Africa of the new and many opportunities offered by the Convention for integrated planning and development.

This report is the response of the South African Government to the reporting obligation agreed to by the Parties in terms of Decision II/17. At the same time it will serve to keep the South African public informed of the actions undertaken in implementing the Convention. This is considered important, as we will only achieve our conservation objectives with the assistance and co-operation of all of the people of South Africa.

In preparing for the implementation of the Convention the Government of South Africa first embarked on the development of a National Policy on the Conservation and Sustainable Use of South Africa's Biological Diversity. Once the national policy has been accepted by the South African Parliament, a full strategy and action plan for the conservation of biological diversity will be developed to implement the goals and objectives of the national policy.

South Africa has an exceptionally rich and varied array of life forms. This remarkable richness of biodiversity is largely as a result of the mix of tropical and temperate climates and habitats occurring in the country. South Africa ranks as the third most biologically

diverse country in the world, and as such is of major global importance for biodiversity conservation.

The South African Biodiversity Policy recognises existing constitutional and legislative responsibilities for biodiversity in South Africa. It also emphasises the importance of intergovernmental co-operation for the implementation of the policy and in creating the management and research conditions necessary to advance integrated planning and development and the conservation and sustainable use of South Africa's biological resources.

Within this framework, the Department of Environmental Affairs and Tourism, as the lead agent for the environment, is responsible for the development of national environmental policy and for the co-ordination of the functions of government institutions both at central and provincial levels. Regarding the conservation and sustainable use of biological diversity, the main government role players at national level are the Departments of Agriculture, Land Affairs and Water Affairs and Forestry as well as the National Parks Board and National Botanical Institute. At provincial level, the major responsibility lies with the nine provincial environment and nature conservation departments.

The Biodiversity Policy presents a Vision for South Africa as:

> **"*A prosperous, environmentally conscious nation, whose people are in harmonious coexistence with the natural environment, and which derives lasting benefits from the conservation and sustainable use of its rich biological diversity*."**

The Policy document articulates the Mission of the Government as:

> **"*Government will strive to conserve South Africa's biological diversity and to thereby maintain ecological processes and systems whilst providing lasting development benefits to the nation through the ecologically sustainable, socially equitable, and economically efficient use of biological resources*."**

In support of the Vision and Mission, the Policy also presents a series of guiding principles that provide a foundation for implementing, guiding the application, assessment and further development of the biodiversity policy and strategy.

The South African Government has three overriding priorities:

- **the eradication of poverty;**
- **the sustainable development of its economy; and**
- **the social development of its people.**

These priorities, together with the Draft National Policy on Environmental Management, provide the context within which consideration is given to achieving the three objectives of the Convention on Biological Diversity:

- **the conservation of biological diversity;**
- **the sustainable use of biological resources; and**
- **the fair and equitable sharing of benefits arising from the use of genetic resources.**

In addition to fulfilling these objectives the South African Government commits itself to a biodiversity policy and strategy that will promote the reconstruction and development of South Africa through:

- **ensuring that the essential ecosystem services and biological resources required to meet basic human needs are protected and maintained;**
- **not restricting economic development unnecessarily, and ensuring that such development is sustainable;**
- **enhancing the provision of jobs related to the conservation of biodiversity and sustainable use of biological resources;**
- **ensuring that opportunities derived from the conservation of biodiversity and sustainable use of biological resources favour the poor;**
- **enhancing the development of human resources necessary to conserve biodiversity and use biological resources sustainably; and**
- **increasing participation in the institutions of civil society engaged in conserving and using biodiversity.**

In line with the guiding principles and the Governments priorities, six goals were formulated for the Biodiversity policy and strategy. Each goal has a number of policy objectives which list a number of actions required to meet each objective.

The six goals of the policy are:

Goal 1: Conserve the diversity of landscapes, ecosystems, habitats, communities, populations, species, and genes in South Africa.

This goal refers to those aspects of the policy concerning the conservation of biodiversity, both inside and outside of protected areas. It includes measures required to protect, maintain, rehabilitate, restore, and enhance biodiversity.

Goal 2: Use biological resources sustainably and minimise adverse impacts on biological diversity

This goal addresses South Africa's plans for meeting three key requirements of the Convention:

- the integration of biodiversity considerations into national decision-making;
- the sustainable use of biological diversity; and
- avoiding or minimising adverse impacts on biodiversity.

Goal 3: Ensure that benefits derived from the use and development of South Africa's genetic resources serve national interests

South Africa both depends upon genetic material from elsewhere and contains an extraordinary diversity of indigenous genetic material which has the potential to be used in scientific and technological research and in a range of commercial and environmental applications. As is the case for other countries in the world, South Africa is heavily dependent upon material from elsewhere for its agriculture, horticulture, and forestry industries, as well as for the biological control of pest species and thus requires continued access to the broader genepool of genetic resources located elsewhere in the world. This requires continued co-ordination and co-operation with other countries.

Goal 4: Expand the human capacity to conserve biodiversity, to manage its use, and to address factors threatening it

This goal describes South Africa's plans to meet requirements of the Convention concerning the expansion of human capacity to conserve

biodiversity, to manage its use, and to address threats to it. South Africa's approach towards achieving this goal has three main components:

- Increasing public appreciation and awareness of the value and importance of biodiversity, and public involvement in its conservation and sustainable use; ❑Improving the understanding of biodiversity through conducting research, improving biological inventories, establishing and maintaining monitoring systems, sharing information, and incorporating traditional knowledge, and;

- Strengthening existing management capacity through appropriate training.

Goal 5: Create conditions and incentives that support the conservation and sustainable use of biodiversity

The effective implementation of the biodiversity policy requires the creation of conditions and incentives that support the conservation and sustainable use of biodiversity. South Africa's approach towards achieving this goal has two main components:

- promoting and developing economic opportunities that are compatible with and which complement the conservation and sustainable use of biodiversity; and

- creating and implementing incentives that support the conservation and sustainable use of biological diversity.

Goal 6: Promote the conservation and sustainable use of biodiversity at the international level

Government recognises that the conservation of biodiversity is a global issue, requiring global action. Countries depend upon each other's biodiversity, and the loss of biodiversity represents a loss to all people. Moreover, the impacts of ecosystem degradation reach beyond national boundaries, requiring transfrontier co-operation to be a necessary component of this policy.

In ratifying the Convention on Biodiversity, Government recognised that the conservation of global biodiversity is a common concern of all nations and demonstrated a strong commitment to safeguarding the planet's biotic wealth. This commitment is reflected in the active participation of South Africa in the range of international agreements to which the country is a party, and in numerous other scientific and technical collaborations. Nonetheless, years of political isolation from the international community have meant that South Africa must strengthen efforts to co-operate on environmental matters at the international level. In addition to global co-operation, Government will continue to work as a member of the Africa group in international forums, of the Organisation of African Unity, and of the Southern African Development Community, to solve the problems of biodiversity loss on the continent and in the region, and to advance the interests of Africa internationally.

1. INTRODUCTION

South Africa and the Convention on Biological Diversity

On 22 May 1992, the nations of the world adopted a global Convention on Biological Diversity at a meeting held in Nairobi. Some two weeks later, on 5 June 1992, at the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, over 150 States signed the Convention. Approximately 18 months later on 29 December 1993, the Convention entered into force.

The former South African government, lacking participatory status at the United Nations, was not officially represented at either the preparatory meetings for the Convention or the United Nations Conference on Environment and Development. However, many of the actions required under the Convention on Biological Diversity had at the time of the Conference on Environment and Development received attention in South Africa and there was little reason why South Africa would not ratify the Convention on its return to the global community. The ratification of the Convention on Biological Diversity by South Africa on the 2nd November 1995 was a formal recognition by the Government of South Africa of the new and many opportunities offered by the Convention for integrated planning and development.

Biodiversity has for a long time been closely interwoven with all aspects of South African society and is one of the mainstays of important economic sectors in the country, such as tourism, recreation, agriculture, forestry, horticulture and fisheries. Therefore, the South African Government will pursue the conservation and sustainable use of biodiversity within

the framework of the Convention, in recognition of its international responsibilities and in the national interest.

This report is the response of the South African Government to the reporting obligation agreed to by the Parties in terms of Decision II/17. At the same time it will serve to keep the South African public informed of the actions undertaken in implementing the Convention. This is considered important, as we will only achieve our conservation objectives with the assistance and co-operation of all of the people of South Africa.

2. BACKGROUND

2.1 The Natural Environment

The Republic of South Africa occupies the southern extremity of the African continent. Except for a small area in the Northern Province, the country is located south of the Tropic of Capricorn, extending as far as latitude 34^0 51' S. The country has a total area of 1 221 037 km^2. South Africa shares borders with Namibia in the north-west, Botswana in the north and Zimbabwe, Mozambique and Swaziland in the north-east. Lesotho, which is surrounded by South African territory, lies in the eastern part of the subcontinent.

2.1.1 Physiography

South Africa's land surface can be divided into two major physiographic regions, namely the Interior Plateau and the Marginal Zone. The boundary between the Interior Plateau and the Marginal Zone is known as the Great Escarpment.

The Interior Plateau in South Africa is the southward extension and the end of the great African Plateau. Its altitude varies from approximately 900 m above sea level in the Kalahari Regions of the Northern Cape Province to a maximum of 3 482 m at Thabana Ntlenyana in the Lesotho Highlands region at the south eastern edge of the Interior Plateau.

The continuity of the Interior Plateau is broken by a number of broad river valleys. These low-lying areas introduce hot, dry, tropical conditions, similar to those prevailing on the coastal plains in the north-east, deep into the interior of the subcontinent and provide corridors for certain flora and fauna species, while being barriers for others. Another disruptive feature is the ranges of fold mountains which occupy much of the coastal margin in the south and south-west. The interior of the Interior Plateau is also not uniform: the altitude, geological formations and patterns of erosion vary.

The Marginal Zone lies between the Great Escarpment and the eastern and southern coastline. The Zone varies in width from about 60 km in the west to 240 km in the east, while its altitude varies from sea level, to a maximum of 2 326 m.

The Marginal Zone descends seaward in a series of steps. There are two steps along the eastern coast. The interior step is a belt of hilly country, called the eastern Uplands. The exterior step is a low-lying plain, called the eastern Lowveld. On the south, from the interior to the coast, the steps form a plateau called the Great Karoo, a lower plateau called the Little Karoo and a low-lying plain. A mountain range divides the Great and Little Karoo. South Africa also includes a part of the Kalahari Desert in the north-west and a section of the Namib Desert in the west.

2.1.2 Climate

2.1.2.1 Rainfall

South Africa is largely arid to semi arid with most regions having a mean annual rainfall of below 500 mm. Mesic conditions occur only in the east and extreme south of the subcontinent. Only 10 percent of the total area receives an annual precipitation of more than 750 mm.

2.1.2.2 Temperature

Temperatures in the region vary geographically, seasonally and diurnally. The coastal lowland areas are mostly frost-free and are characterised by relatively limited seasonal and diurnal variations in temperature. On the central plateau, both seasonal and day / night temperature changes become dramatic. Frequent frosts are experienced on the high plateau.

Snow may fall occasionally over the higher parts of the plateau and the Cape mountains during winter. Frost occurs on an average for 120 days each year over most of the Interior Plateau, and for shorter periods in the coastal lowlands.

2.1.3 Population

The total population of South Africa, based on the 1996 census was 37 858 000. This implies an average population density of 31 persons per km^2.

Table 1: Distribution of South African Population (1996)

Province	Urban	Rural	Total	Percentage
KwaZulu-Natal	3 342 000	4 331 000	7 673 000	20,27
Gauteng	6 911 000	260 000	7 171 000	18,94
Eastern Cape	2 188 000	3 677 000	5 865 000	15,49
Northern Province	490 000	3 638 000	4 128 000	10,90
Western Cape	3 702 000	415 000	4 117 000	10,87
North West	1 060 000	1 983 000	3 043 000	8,04
Mpumalanga	1 014 000	1 631 000	2 645 000	6,99
Free State	1 718 000	752 000	2 470 000	6,52
Northern Cape	535 000	211 000	746 000	1,97
Total	20 960 000	16 898 000	**37 858 000**	**99,99**

2.1.4 South Africa's Biodiversity

South Africa has an exceptionally rich and varied array of life forms. This remarkable richness of biodiversity is largely as a result of the mix of tropical and temperate climates and habitats occurring in the country. South Africa ranks as the third most biologically diverse country in the world, and as such is of major global importance for biodiversity conservation. This fact is mostly attributable to the extraordinary plant richness contained within the country.

2.1.4.1 Terrestrial and Aquatic Flora

Southern Africa has a remarkably rich flora of vascular plants, with some 23 400 taxa being recorded from the region (Arnold and De Wet, 1993). The region also has one of the highest species densities in the world (Cowling and Hilton Taylor, 1994). Species richness for the subcontinent is higher than eight of the twelve "megadiversity countries" identified by McNeely *et al* (1990), namely Australia, Ecuador, India, Indonesia, Madagascar, Malaysia, Peru and the Democratic Republic of the Congo.

The number of vascular plant species endemic to southern Africa is exceptionally high, being more like what might be expected of an oceanic island than of a part of a continent (Goldblatt, 1978). This endemism is largely attributed to the diverse ecological conditions of southern Africa relative to the rest of the continent. It is also the product of the high speciation within some of the 560 genera endemic to the region (Cowling and Hilton Taylor, 1994).

Southern Africa's plant biodiversity is not uniformly distributed over the region. Some areas are more species rich than others. For example the Cape floristic region, which covers 3,5 percent of the region, contains 41 percent of the species.

The World Conservation Union's Centres of Plant Diversity Project recognises seven centres of plant diversity in southern Africa. The criteria used for the inclusion of sites as centres is that they must be both species rich and have high levels of endemism. Because most of South Africa's centres of plant diversity are under threat from large-

scale habitat modification and transformation (MacDonald 1989), Cowling and Hilton Taylor (1994) refer to them as hot-spots[1].

Cowling and Hilton Taylor (1994) recognise eight hot-spots in South Africa. These hot-spots are distributed in an almost continuous arc below and including large portions of the Great Escarpment (Figure 1). They include the north eastern "Transvaal" Escarpment (Wolkberg), the KwaZulu-Natal Drakensberg and associated uplands (Eastern Mountains), the coastal forelands of Maputaland, Pondoland and Albany, the entire Cape Floristic Region (Cape) and the Succulent Karoo.

[1] **Myers (1988) first used the term hot-spot to describe areas that are characterised by high species richness, high concentrations of endemic species and which are experiencing high rates of habitat modification or loss.**

Figure 1: Map of Southern Africa showing the hot-spots mentioned in the text (From Cowling and Hilton Taylor 1994).

With the exception of the Cape Floristic Region and the Succulent Karoo, southern African hot-spots are not especially rich in plant species. For its size, the Cape Floristic region is the richest of the Mediterranean climate region hot-spots and has more species than many tropical rainforest areas of similar size. The richness of the Succulent Karoo flora is exceptional for a semi-arid region, both in terms of established hot-spots, but especially in comparison with regions with similar semi-arid environments (Cowling *et al* 1989 and Cowling and Hilton Taylor, 1994). Endemism in southern African hot-spots ranges from 4 percent in the Wolkberg to 68 percent in the Cape Floristic region with an average of 23 percent. This is half the average value recorded for tropical rainforests and about a third of the average value of 58 percent recorded for Mediterranean climate regions. With 6 000 endemic species, the Cape is considered to be the worlds "hottest hot-spot" by Myers (1990). The

Succulent Karoo, with approximately 1 660 endemic plant species, ranks as the only semi-arid region to qualify as a hot-spot of global significance.

There are a total of 8 830 endemic plant species in southern African hot-spots, comprising 52,2 percent of the regions endemic flora in 12,1 percent of its area (Cowling and Hilton Taylor, 1994). These hot-spots include about 3,5 percent of the world's flora on only 0,2 percent of the earth surface.

2.1.4.2 Terrestrial and Aquatic Fauna

In addition to this extraordinarily varied plant life, a wealth of animal life exists in the region, both in numbers and variety. South Africa hosts an estimated 5,8 percent of the world's total of mammal species; 8 percent of bird species; 4,6 percent of the global diversity of reptile species; 16 percent of the total number of marine fish species in the world; and 5,5 percent of the world's described insect species. In terms of the number of mammal, bird, reptile and amphibian species, which occur only in this country ('South African endemic') South Africa is the 24th richest country in the world, and the 5th richest in Africa.

2.1.4.3 Marine Diversity

South Africa's marine life is similarly diverse, partly as a result of the extreme contrast between the water masses on the East and West Coast. Three water masses; the cold Benguela current, the warm Agulhas current, and deep oceanic water; make the region one of the most oceanographically heterogeneous in the world.

Over 10 000 marine plant and animal species - almost 15 percent of the coastal species known world-wide - are found in South African waters, with about 12 percent of these occurring nowhere else.

Table 2: Species Richness of South African Taxa

Taxa	Number of Described Species in South Africa	Percentage of Earth's Total
Mammals	227	5,8
Birds	718	8,0
Amphibians	84	2,1
Reptiles	286	4,6
Freshwater fish	112	1,3
Marine fish	2 150	16,0
Invertebrates	77 500	5,5
Vascular Plants	18 625	7,5

The data in Table 2 exclude many groups such as fungi and different types of micro-organisms, and only reflect the numbers of some described species. Obtaining a more precise estimate is difficult, as no one really knows the exact number of species that exist in South Africa. Nonetheless, we do know that species richness is extremely high. Estimates of total species numbers in the country vary from 250 000 to 1 000 000, a richness, which is reflected in the vast array of ways in which our biological resources are used by rural and urban people, as well as by industrial concerns.

2.1.4.4 Biodiversity Under Threat

Human activity has been changing South African ecosystems for thousands of years, but the pace and extent of change increased rapidly with agricultural and industrial development. Present estimates suggest that largely agriculture, expanding urban areas and developments, afforestation, commercial fishing, development of transportation corridors, mining, and dams have led to the transformation and degradation of a substantial proportion of natural habitat. In addition to habitat loss and degradation, the overexploitation of certain species, the introduction of exotic species, and pollution of the soil, water and atmosphere have had major effects on South Africa's terrestrial, freshwater and marine biodiversity.

It has been estimated that 3 435 (15 percent) of South Africa's plant species, 102 (14 percent) of bird, 72 (24 percent) of reptile, 17 (18 percent) of amphibian, 90 (37 percent) of mammal, and 142 (22 percent) of butterfly species are listed in the South African Red Data Books, which indicate the conservation status of threatened species. In addition, ecosystems have been degraded and ecological processes impaired through fragmentation resulting from many aspects of human activity. Trends indicate that this situation is not improving, and that growing human populations and unsustainable rates of resource consumption will result in increasing negative impacts on biodiversity.

2.1.4.5 The Benefits of Conserving Biodiversity - The Foundation for Sustainable Development

The livelihood of a large percentage of the South African population depends on access to a variety of biological resources for food, fuel, medicine, housing material and economic security. Therefore, the conservation of South Africa's biodiversity is not an abstract or theoretical issue. It is essential for life at the grassroots level. A

decline in biodiversity will have serious consequences for all of the people of South Africa, with the greatest impacts on the rural populations where most people are dependent on biological resources for their basic subsistence.

The lack of an effective plan of action for the conservation and sustainable use of our biological resources, will lead to the continued undermining of the natural resource base upon which people depend. Existing and future economic opportunities of using biodiversity will be foreclosed and the future well being of many people and industries that are directly linked to the sustainable use of biological resources will be jeopardised.

2.2 Institutional and Legal Framework

In terms of the Constitution (Act 108 of 1996) Government is constituted as national, provincial and local spheres of government. Central government comprises the national legislature or Parliament and the national executive (President and Cabinet). The Constitution also provides for the division of the country into nine provinces, each with its own legislative and provincial executive (Premier and Executive Council)(Refer to Figure 2).

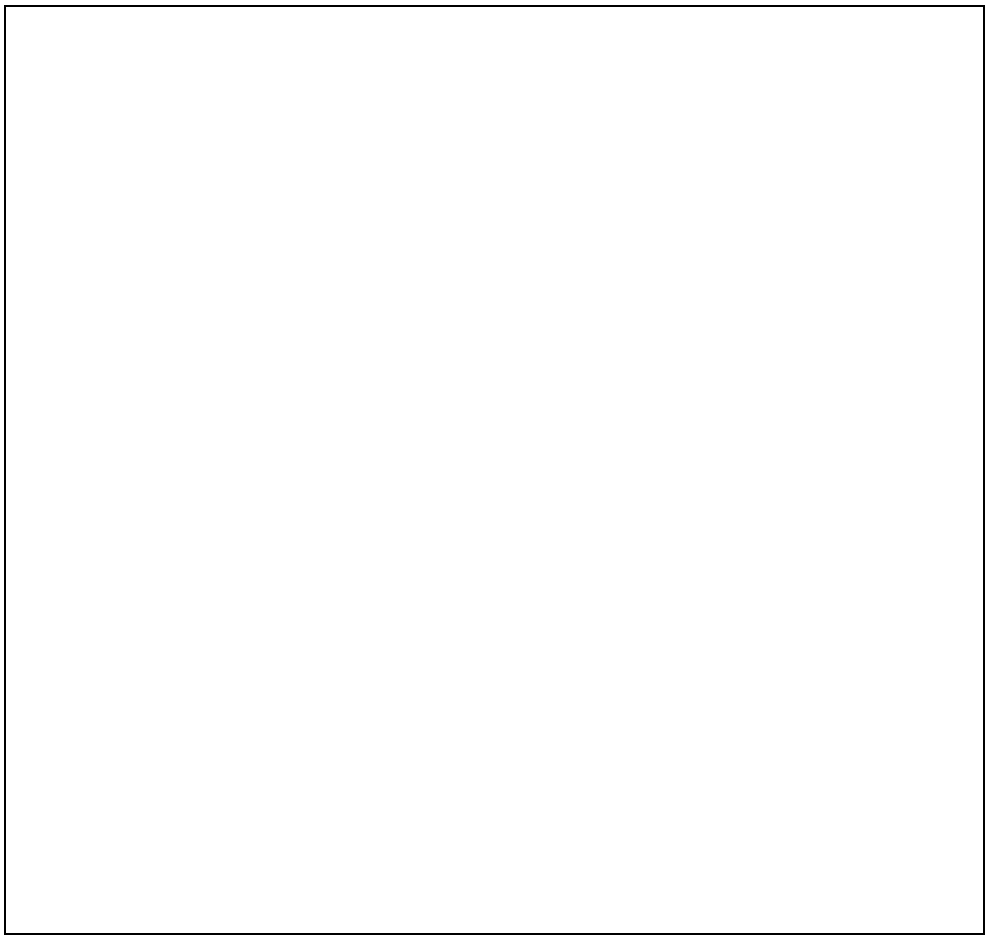

Figure 2: Map of South Africa showing the nine provinces.

The Constitution further outlines the legislative and executive responsibility of the different spheres of government. It states that national and provincial governments have concurrent responsibility for the environment. Although nature conservation as a government function is regarded as an element of the environment, it is separately identified by the Constitution as a concurrent responsibility, with the exception of national parks, national botanical gardens and marine resources, which are the responsibility of the national government.

Concurrent responsibility implies that both national and provincial governments have the power to legislate on functional areas identified as of national and provincial competence. In cases of conflict between national and provincial legislation, the Constitution determines that national legislation prevails over provincial legislation, under certain conditions such as, amongst others, the determining of uniform national norms and standards and national policy and when national legislation is required for the protection of the environment. Furthermore, the national executive has the power to supervise the provinces and to intervene where they do not fulfil their executive obligations. In such circumstances, the national executive may issue directives or may intervene to maintain, amongst others, national or minimum standards.

The Constitution further defines the function of the national government as the implementation of national legislation, the development and implementation of national policy and the co-ordination of the functions of national departments and provincial administrations.

Within this framework, the Department of Environmental Affairs and Tourism, as the lead agent for the environment, is responsible for the development of national environmental policy and for the co-ordination of the functions of government institutions both at central and provincial levels. Regarding the conservation and sustainable use of biological diversity, the main government role players at national level are the Departments of Agriculture, Land Affairs and Water Affairs and Forestry as well as the National Parks Board and National Botanical Institute. At provincial level, the major responsibility lies with the nine provincial environment and nature conservation departments.

The Development of a Policy for South Africa on the Conservation and Sustainable Use of Biological Diversity

Parliamentary approval for the ratification of the Convention on Biological Diversity was granted on the condition that the Department of Environmental Affairs and Tourism develop its policy on the conservation of biological diversity through a process which allows for adequate consultation with and participation by all major stakeholders in the conservation and use of biodiversity in South Africa. This policy development process was initiated during April 1995 and culminated with the publication of a White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity on 28th July 1997.

The policy development process established the following structures to ensure that all stakeholders participated on an equitable basis in the policy process.

2.3.1 Reference Group

This group was established to:

- review the policy development process and advise the Department of Environmental Affairs and Tourism thereon;
- accept responsibility for the consultation process and the eventual content of the White Paper; and to
- accept responsibility for representing and informing major interest groups related to biodiversity;

The nine provincial governments, relevant central government departments and a number of major non-governmental role players were represented in this group.

2.3.2 Steering Committee

This committee was appointed by the Reference Group to:

- manage the policy development process within the guidelines laid down by the Reference Group;
- approve the application of funds for the various steps of the policy development process; and
- obtain experts' input, where necessary, to facilitate the development of specific topics of the policy.

The Reference Group appointed from within its own ranks a small Steering Committee.

2.3.3 Editorial Committee

The product of the policy development process had to be a policy document reflecting the views of the participants in the process. For the purpose of drafting a discussion document and to amend that in view of the comments and input of the participants, the Reference Group also appointed an Editorial Committee.

To ensure a broad participation in the process, a number of stakeholder briefings were held throughout the country. At these briefings people were informed of the process and key issues were raised and discussed. In total, ten such briefing meetings were held in seven provinces. Invitations to participate in the process were distributed to 3000 organisations.

A discussion document listing various policy options was produced and discussed at a national consultative conference held in Pretoria during May 1996. One hundred and sixty representatives of various organisations attended the conference. Inputs from the conference together with comments from a variety of organisations and individuals were used in the drafting of a Green Paper on the Sustainable Use and Conservation of South Africa's Biological Diversity.

The Green Paper was published during October 1996 and was widely distributed for public comment. After considering the comment received, a draft White Paper was compiled and submitted to the Reference Group who recommended its submission to the to the Cabinet. The latter approved the submission of the White Paper to Parliament for consideration.

2.4 The Biodiversity Policy in Context of Other Policy Developments in South Africa

The Biodiversity Policy was formulated at a time in South Africa's history when many other policies of relevance to biodiversity were being developed. In particular, this policy comprises part of the National Policy on Environmental Management, which has been published in draft as the White Paper on Environmental Management Policy for South Africa on 28 July 1997. This is an over-arching environmental policy laying down the fundamental principles for environmental management in South Africa. As a policy of a more sectoral nature, the Policy on Biological Diversity can be regarded as a "supporting pillar" for the Environmental Management Policy. Other similar sectoral policies currently being developed by the Department of Environmental Affairs and Tourism under the umbrella of the Environmental Management Policy, are policies on fisheries, integrated pollution control and waste management, coastal zone management and environmental education. Also of relevance are the policy initiatives taking place in response to international treaties, such as those on climate change and desertification.

Apart from the initiatives mentioned above, a number of policies are being developed or have recently been developed by other central government institutions, such as those on land, energy, trade and industry, science and technology, population, forestry, water and sanitation and minerals and mining. A positive phenomenon is that some of these policies clearly reflect the principles and some of the goals articulated in the Policy on Biological Diversity. This is a clear indication that the participative policy development processes creates the opportunity for cross fertilisation and contributes substantially to cross sectoral acceptance of the importance of the sustainable use and conservation of biological diversity.

All of the efforts provide a strong foundation for the Biodiversity Policy and will add to the strategy and action plan once these have been developed.

Underpinning all of these initiatives is **South Africa's Constitution (Act 108 of 1996)** which provides within its Bill of Rights that everyone has the right:

- **to an environment that is not harmful to their health or well-being, and**
- **to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that:**

  (i) prevent pollution and ecological degradation;

  (ii) promote conservation; and

  (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. (Section 24).

In terms of Section 8 of the Constitution, the Bill of Rights applies to all law, and binds the legislature, executive, judiciary and all organs of state. This means that government must give effect to these rights in the execution of governance.

2.5 The National Biodiversity Action Plan

The National Environmental Management Policy provides for the development of a National Environmental Strategy and Action Plan. The over-arching goal of the National Environmental Strategy and Action Plan is "to move from the previous situation of unrestrained and environmentally insensitive development to sustainable development with the aim of achieving a stable state economy in balance with ecological processes."

The strategy will focus and prioritise goals and objectives requiring actions by government and other parties within the next five to ten years. Criteria for prioritisation must include:

- **Actions to ensure healthy working and living environments;**
- **Protecting the environment for present and future generations by achieving environmentally sustainable development;**
- **Deliverables to assist in achieving growth to meet basic needs;**
- **Achieving integrated and holistic environmental management.**

The next logical step after acceptance of the White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity, will be the development of a national biological diversity action plan. Such an action plan will involve the formulation of specific actions aimed at attaining the goals articulated in the

Biodiversity Policy, the identification of appropriate institutions to undertake such actions, and the establishment of an implementation time-frame. In the same way as the biodiversity policy supplements the environmental management policy, the biological diversity action plan will form an integral part of the National Environmental Strategy and Action Plan.

3. VISION, MISSION AND GUIDING PRINCIPLES

3.1 A Vision for South Africa

The Policy on the Conservation and Sustainable Use of South Africa's Biological Diversity sets the following vision:

"A prosperous, environmentally conscious nation, whose people are in harmonious coexistence with the natural environment, and which derives lasting benefits from the conservation and sustainable use of its rich biological diversity."

3.2 The Mission of Government

The Policy further articulates the Mission of the Government as follows:

"Government will strive to conserve South Africa's biological diversity and to thereby maintain ecological processes and systems whilst providing lasting development benefits to the nation through the ecologically sustainable, socially equitable, and economically efficient use of biological resources."

3.3 Guiding Principles

In the context of the Vision and Mission, the following inter-related principles were established to guide the application, assessment and further development of the biodiversity policy and strategy.

3.3.1 Intrinsic Value

All life forms and ecological systems have intrinsic value.

3.3.2 Duty of Care

All people and organisations should act with due care to conserve and avoid negative impacts on biodiversity, and to use biological resources sustainably, equitably and efficiently.

3.3.3 Sustainable Use

The benefits derived from the use of South Africa's biological resources are dependent upon:

- such resources being used at a rate within their capacity for renewal;

- maintaining the ecological integrity of the natural systems which produce such resources;
- minimising or avoiding the risk of irreversible change induced by humans;
- adequate investments being made to ensure the conservation and sustainable use of biodiversity; and
- avoiding or minimising the adverse impacts of the use of non-renewable resources on biodiversity.

3.3.4 The Fair and Equitable Distribution of Benefits

Benefits arising from the use and development of South Africa's biological resources will be fairly and equitably shared. The rights to use biological resources will be equitably allocated, and will recognise:

- that it may be necessary to limit access in order to ensure conservation and sustainable use;
- that within the constraints of sustainable use, the socio-economic upliftment of disadvantaged communities is an important criterion upon which decisions will be based;
- that where peoples' historical rights of access to natural resources have been removed or constrained this should be reviewed and redressed in line with the other guiding principles; and
- the Constitutional rights of owners of biological resources.

3.3.5 Full Cost-Benefit Accounting

Decision-makers and users of biological resources will be guided by economic approaches which assess the full social and environmental costs and benefits of projects, plans and policies that impact upon biodiversity, and which internalise costs borne to the environment and to society. These will reflect both the economic losses that result when biodiversity is degraded or lost, as well as the value gained from conserving the resource. Generators of waste will bear the environmental, social and economic costs to society of resulting pollution, and the responsibility for redressing any consequences.

3.3.6 Informed and Transparent Decision-Making

Decisions relating to the conservation and use of biodiversity in South Africa will be based upon the best applicable knowledge available. In cases where a lack of information is evident, steps will be taken to collect information necessary to assess the conservation and sustainable use of biodiversity. Where appropriate, information necessary to ensure the conservation and sustainable use of biodiversity will be readily available in an accessible form, and will enable people to work with, and obtain the information they need for informed participation in biodiversity management.

3.3.7 The Precautionary Principle

Where there is a threat of significant reduction or loss of biological diversity but inadequate or inconclusive scientific evidence to prove this, action should be considered to avoid or minimise threats.

3.3.8 Accountability and Transparency

Those making and implementing decisions relating to the conservation and use of biodiversity in South Africa will be accountable to the public for their actions through explicit, justifiable processes.

3.3.9 Subsidiarity

Governance responsibilities belong at the level at which they can be most effectively carried out.

3.3.10 Participation

Interested and affected individuals and groups will have an opportunity to participate in decisions about the ways in which biological resources are conserved and used.

3.3.11 Recognition and Protection of Traditional Knowledge, Practices and Cultures

Traditional knowledge, practices and cultures supporting the conservation and sustainable use of biodiversity will, where possible, be recognised, protected, maintained, promoted, and used with the approval and involvement of those who possess this knowledge. Benefits arising from the innovative use of traditional knowledge of biological diversity will be equitably shared with those from whom knowledge has been gleaned.

3.3.12 Co-ordination and Co-operation

Because biodiversity transcends political, institutional and social boundaries, an enabling framework will be provided for the future co-ordination and co-operation of biodiversity-related activities in South Africa, in the southern African sub-region, and globally. Co-ordination will also be ensured between other plans, programmes and policies which have implications for the conservation of biodiversity and use of biological resources.

3.3.13 Integration

The conservation and sustainable use of biodiversity will be integrated strategically at all levels into national, provincial, local and sectoral planning, programmes, and policy efforts (e.g. forestry, agriculture, fisheries, land reform, industry, education, health, mining, etc.) to implement the goals and objectives of the policy effectively.

3.3.14 Global and International Responsibilities

South Africa has a shared responsibility for ensuring the conservation and sustainable use of biodiversity beyond our borders, and for transboundary equity.

3.3.15 Evaluation and Review

The policy will not be an end in itself, but rather part of an iterative process which will be monitored and reviewed regularly. Strategies adopted will be responsive to social, economic and environmental change, as well as to scientific and technological advances, but will have due concern for maintaining continuity.

4 GOALS AND OBJECTIVES OF THE SOUTH AFRICAN BIODIVERSITY POLICY AND STRATEGY

The South African Government has three **overriding priorities:**

- **the eradication of poverty;**
- **the sustainable development of its economy; and**
- **the social development of its people.**

These priorities, together with the Draft National Policy on Environmental Management, provide the context within which consideration is given to achieving the **three objectives** of the Convention on Biological Diversity:

- **the conservation of biological diversity;**
- **the sustainable use of biological resources; and**
- **the fair and equitable sharing of benefits arising from the use of genetic resources.**

In addition to fulfilling these objectives the South African Government commits itself to a **biodiversity policy and strategy** that will promote the reconstruction and development of South Africa through:

- **ensuring that the essential ecosystem services and biological resources required to meet basic human needs are protected and maintained;**
- **not restricting economic development unnecessarily, and ensuring that such development is sustainable;**
- **enhancing the provision of jobs related to the conservation of biodiversity and sustainable use of biological resources;**
- **ensuring that opportunities derived from the conservation of biodiversity and sustainable use of biological resources favour the poor;**
- **enhancing the development of human resources necessary to conserve biodiversity and use biological resources sustainably; and**
- **increasing participation in the institutions of civil society engaged in conserving and using biodiversity.**

In line with the above guiding principles, six goals were formulated for the Biodiversity policy and strategy. Each goal has a number of policy objectives which list a number of actions required to meet each objective.

4.1 GOAL1

CONSERVE THE DIVERSITY OF LANDSCAPES, ECOSYSTEMS, HABITATS, COMMUNITIES, POPULATIONS, SPECIES, AND GENES IN SOUTH AFRICA.

This goal refers to those aspects of the policy concerning the conservation of biodiversity, both inside and outside of protected areas. It includes measures required to protect, maintain, rehabilitate, restore, and enhance biodiversity.

In pursuance of this goal Government recognises:

- that biological diversity is best conserved in the wild (*in-situ*), through the conservation and restoration of ecosystems and natural habitats, and the maintenance and recovery of viable populations of species in their natural surroundings;

- that *ex-situ* measures will be implemented primarily for the purpose of complementing *in-situ* measures; and

- that an integrated approach will be the primary framework for action to address threats to biological diversity, and to establish priorities for its conservation. This means that conservation efforts will focus not only upon relatively "natural" landscapes, but will include areas modified by human activities, and will seek to enhance the contribution which biodiversity makes to human welfare.

4.1.1 Identification

Objective:

Identify important components of biodiversity and threatening processes.

One of the most fundamental steps towards achieving the goals articulated in this policy requires the identification of important components of biodiversity, and threatening processes. There already exists considerable knowledge in South Africa concerning aspects of the country's biodiversity, but this information needs to be gathered, ordered, and strategically used. Information also exists regarding processes or activities that have adverse impacts on biodiversity, but in many instances this is patchy, inconclusive, and not tailored towards facilitating effective management.

To achieve the objective, Government will take a systematic and co-ordinated approach towards the identification of important components of biodiversity and threatening processes, and will, through the undertaking of a survey of existing knowledge, focus upon addressing gaps in knowledge whilst continuing to support activities relevant to achieving the objective.

In particular, Government, in collaboration with relevant interested and affected parties, has undertaken to:

- Identify, using biological, social and economic criteria, components of biodiversity important for its conservation and sustainable use. These components will include:

  Ecosystems and habitats that contain high diversity; large numbers of endemic or threatened species; that are relatively "pristine"; that are important nursery or spawning areas; that are under particular threat; that are important for endangered or migratory species; that adjoin conserved ecosystems and habitats; that are of social, economic, cultural or scientific importance; or that are unique, representative of or associated with key evolutionary, biological or other life-supporting processes;

  Species and communities that are rare or threatened; that are of medicinal, agricultural, or other economic value, that are wild relatives of domesticated or cultivated species; that are directly used for subsistence purposes (e.g. fuelwood, building materials); that have social, scientific or cultural importance; or that are important for research into the conservation and sustainable use of biodiversity, such as indicator species; and

  Described genomes and genes of social, scientific or economic importance.

- Identify processes or activities that have or are likely to have significant adverse impacts on terrestrial, aquatic, and marine and coastal biodiversity;

- Monitor the effects of these processes and activities;

- Undertake the research necessary to improve understanding of the consequences of threatening processes or activities on ecological functions and processes, and other components of terrestrial, aquatic, and marine and coastal biodiversity and

- Develop a mechanism to manage and collate this information, to place it in the public domain, and to ensure those decisions taken are based upon the best applicable knowledge available.

4.1.2 Biodiversity Conservation (Conservation Management)

Objective:

Maintain and strengthen existing arrangements to conserve South Africa's indigenous biodiversity, both inside and outside of protected areas.

South Africa has a substantial body of law to conserve biodiversity, especially within protected areas and for several plant and vertebrate species. However, past approaches to the conservation of biological diversity have not given adequate attention to the conservation of landscapes and ecosystems outside of protected areas, and have neglected to consider lesser known groups such as invertebrates, fungi, and micro-organisms.

Through this policy and the introduction of appropriate measures, Government will adopt a more holistic and co-ordinated approach towards the conservation of biodiversity.

The difficulties encountered in enforcing conservation law in South Africa are a matter of great concern. Government supports the co-ordinated development of a law enforcement strategy, effective deterrents, and the strengthening of required capacity, but will balance this with the provision of incentives to encourage adherence to the law.

To achieve this objective, Government, in collaboration with interested and affected parties, will:

- Conserve the full spectrum of South Africa's biological diversity by applying a variety of mechanisms such as legislation, planning controls, guidelines, and protected area designations. Priority will be given to components of biodiversity requiring urgent protective measures;

- Consolidate, co-ordinate and improve existing legislation and regulations wherever possible and appropriate in order to eliminate duplication, and to avoid conflicting interpretations and implementation.

- Introduce legal measures and incentives to conserve important ecosystems, habitats, and landscapes outside of protected areas, including rangelands and their associated vegetation and indigenous wildlife resources;

- Promote an integrated ecological management approach to planning, whereby land set aside for conservation is recognised as a legitimate and viable form of land use; and

- Facilitate the development of appropriate legislation to achieve uniform legal coverage for the protection of threatened species and the regulation of trade of all CITES-listed species, in addition to threatened species listed nationally and provincially.

- Strengthen existing support for research on the improved understanding of the structure, function and composition of South Africa's terrestrial, aquatic, and marine and coastal ecosystems; and

- Improve knowledge of and take appropriate action to conserve poorly known groups such as invertebrates, fungi and micro-organisms.

- Promote and support measures to manage conflict arising from the conservation and use of biological resources.

4.1.3 Protected Areas

Objective:

Establish and manage efficiently a representative and effective system of protected areas.

Government recognises that South Africa's protected area system is an asset of inestimable value, which in addition to conserving biodiversity has the potential to generate substantial economic benefits through nature based tourism. Of great concern is the fact that neither terrestrial nor marine protected areas in South Africa form part of a planned network. Furthermore, the management of such areas is poorly co-ordinated between the range of responsible authorities, resulting in variable and often conflicting policies being applied. The need to strengthen and rationalise this system, and so establish an effective, efficient, and representative protected area system is considered by Government to be an issue of primary importance.

Initiatives:

Terrestrial Protected Areas

South Africa's system of terrestrial protected areas is well developed, and it is in such areas that biodiversity conservation has been focused. The 422 formally protected areas constitute some 6% of the land surface area, and although the extent to which viable populations are conserved in such areas is not known, about 74% of plant, 92% of amphibian and reptile, 97% of bird, and 93% of mammal species of South Africa are estimated to be represented in the present protected area system. However, this does not imply the conservation of the genetic diversity within these species. Moreover, there are many gaps, and the existing system does not adequately protect the lowland fynbos, succulent karoo, Nama karoo, highveld grassland, and thicket biomes of South Africa. Furthermore, many of the existing protected areas are small, often isolated from one another, and separated by large areas of mostly transformed land. Aggravating this situation is the fact that protected areas have been managed as islands of biodiversity rather than as part of a holistic land-use policy. Of concern is the fact that the existing system has arisen through a largely ad hoc process, rather than being part of a deliberate conservation strategy.

Wetlands

Wetland conservation is extremely poor in South Africa and the majority of wetlands fall outside of protected areas. Exceptions to this include the 15 Ramsar Sites in the country, which are recognised in terms of the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention) and protected through various laws. These total some 488,859 hectares.

Marine Protected Areas

Several marine protected areas are located along South Africa's extensive coastline, representing most marine biogeographic regions, and including two of the largest "no-take" reserves in the world. However, as is the case for terrestrial protected areas, there has been no overall planned development of marine reserves, a large number being either poorly positioned or inadequately policed. Furthermore, existing marine protected areas do not protect the full range of coastal and marine habitats, such as sandy beaches, estuaries, dunes, and different types of rocky shore.

The Government is committed to the establishment of a comprehensive, representative system of protected areas and will build on current initiatives. In collaboration with interested and affected parties, the Government will:

- Establish a national co-operative programme to strengthen efforts to identify terrestrial, aquatic, and marine and coastal areas that support landscapes, ecosystems, habitats, populations, and species which contribute or could contribute to South Africa's system of representative protected areas. It will aim to achieve at least a 10 percent representation of each habitat and ecosystem type within each biome. Where possible and practical, the principle of complementarity, meaning the extent to which components of biodiversity are represented in other areas, will be applied. Government will involve all protected area agencies and all those with the necessary expertise in this initiative.

- Develop a comprehensive plan of action to strengthen South Africa's protected area system through a variety of mechanisms such as the purchasing of new land, contractual agreements, land exchanges, the rationalisation of existing

protected areas and state land, and the streamlining of legislation. In so doing, it will give recognition to the need to accommodate a diversity of categories of protection, ranging from strict preservation through to controlled resource harvesting and extraction. The plan will take into account the need for diverse, but co-ordinated and appropriate levels of control - from national through to provincial and local level. Concomitant with these actions will be the development of management plans for all protected areas, including an evaluation of existing boundaries and management arrangements. Funding will be sought from various sources to ensure that these actions receive priority attention.

Initiatives:

The Department of Environmental Affairs and Tourism is developing a national strategy for nature conservation. This strategy will addresses both formally and informally protected areas. The Department also maintains a register of formally protected areas. This database is an important tool for planners and researchers. The Department is planning to launch a programme leading to a comprehensive review of protected areas as well as a strategy for protected areas in South Africa.

- Ensure the involvement of local communities and other interested and affected parties in decisions concerning the designation of new protected areas, the adjustment of protected area boundaries, and the development and implementation of management plans. Such involvement is crucial to the development of an effective and integrated protected area system.

Initiatives:

A number of Protected Areas management authorities have established programmes which ensure that communities neighbouring on protected areas become more directly involved in their management.

- Encourage private landowners to continue to participate in voluntary conservation schemes such as conservancies, private nature reserves and the South African Natural Heritage Programme, and in co-operative management partnerships such as biosphere reserves and contractual parks.

Initiatives:

Informal protection by private landowners is encouraged through a project launched in 1984, namely the South African Natural Heritage Programme. This is an innovative co-operative venture between government conservation bodies, the business sector and private landowners. The programme is voluntary and participation is at the discretion of the landowner. The patron of the programme is the President of the Republic. At present a total of 290 sites comprising approximately 365 000 hectare have been registered. A sister programme, the Sites of Conservation Significance Programme is administered by the Provincial Governments.

Several of the provincial government conservation agencies run conservancy programmes, which promotes the conservation of biodiversity on land outside the formally protected areas. This programme has been particularly successful in KwaZulu-Natal where in excess of 1 million hectare are conserved under the conservancy programme.

A number of Biosphere Reserves are in the process of being established. In many cases these will incorporate a conservancy and core protected area.

The establishment of Private Nature Reserves is encouraged by all of the provincial conservation agencies. Game ranches and private protected areas are much more numerous and more extensive in area than formally protected areas. Private protected areas provide a variety of important conservation and other services. These include providing safe havens, the breeding of endangered species in the wild for subsequent re-introduction, nature based tourism and sustainable use of wildlife. The private sector makes an invaluable contribution to biodiversity conservation.

4.1.4 Environmentally Sound and Sustainable Development Adjacent to Protected Areas

Objective:

Promote environmentally sound and sustainable development in areas adjacent to or within protected areas, with a view to furthering protection of these areas

Urgent attention is required to ensure that biodiversity is conserved not only within protected areas, but also across the landscape. It is important that sustainable development be promoted throughout South Africa. This is a fundamental component of Goal 2, which articulates the manner in which sustainable development is to be promoted throughout the whole country.

However, a special case can be made for paying attention to areas adjacent to protected areas, given that activities occurring in such areas may be critical to the protected area's viability and success. Furthermore, the ecological landscape is often a continuum between designated protected areas and surrounding regions. The viability of protected areas is thus dependent upon the extent to which such areas are socially, economically, and ecologically integrated into the surrounding region. This fact is also recognised by the Convention, which has a specific provision aimed at promoting sustainable development in areas adjacent to protected areas.

These issues are especially pertinent to protected areas in South Africa, several of which fall within some of the most populous and poverty-stricken parts of the country. As protected areas are often centres of economic activity, social and economic conditions within and outside of these areas contrast starkly. These discrepancies are aggravated by the fact that in the past some protected areas were established at high cost to neighbouring communities. In the creation of protected areas, many communities were forcibly removed without adequate compensation or consultation. Furthermore, a "fences and fines" approach resulted in people being denied access to resources upon which they depended. Aggravating these circumstances is the fact that protected areas have remained inaccessible to the majority of South Africa's people, and are perceived to be playgrounds for a privileged elite, from which few benefits are derived. These imbalances are well recognised, and are in some instances being redressed by conservation and other agencies.

Government will bolster all such initiatives, and in collaboration with interested and affected groups will:

- Develop and introduce appropriate strategies, mechanisms and incentives to integrate protected areas within the broader ecological and social landscape, and encourage conservation in adjacent private and communal areas. This may include the establishment of biosphere reserves; buffer zones; community-based wildlife management schemes; multiple use areas; tourism plans; development projects, and/or the introduction of conservation grants and other economic incentives.

Initiatives:

Many of the provincial conservation agencies are developing dynamic neighbour relations programmes and policies. The primary objective of these programmes is to transform previously neutral or even negative attitudes into healthy mutually beneficial relationships. These policies and programmes are moving beyond the traditional approach of providing neighbours with resources such as wood and thatch grass. The programmes are seeking to develop joint participation in conservation programmes and appropriately shared responsibilities between the community and the conservation agency. In many areas liaison forums are being established and in some areas joint management bodies are being discussed.

- Support and promote activities adjacent to protected areas that are compatible with and which complement the objectives of the protected area.

- Support the development of community-based wildlife management initiatives as part of a broader set of approaches to land-use planning and developing local sustainable development strategies.

- Promote the development of partnerships between conservation agencies, community organisations, NGOs, and private entrepreneurs for purposes of planning and managing the use of resources within and outside of protected areas, and optimising benefits for local people.

- Enhance the capacity of communities residing in or adjacent to protected areas to participate in protected area management through providing appropriate training and education, and through recognising local expertise and traditional institutions.

- Take steps to avoid or minimise damage caused to people and property by wildlife.

- Seek innovative ways of improving benefit flows to people in and around protected areas through:

  promoting local and social development (e.g. using local producers and labour as far as possible, facilitating joint venture schemes, providing community services, providing environmental education and opportunities within protected areas, promoting community management and co-management of protected areas);

  designating areas for sustainable resource use; and

  facilitating where appropriate the development of compensation agreements with those who have lost access to resources or who have suffered damage caused by wildlife.

Initiatives:

A number of the conservation agencies have developed strong social ecology programmes aimed at improving the standard of living among deprived rural communities neighbouring on protected areas. These programmes aim to promote the social and economic development of the communities through addressing basic social needs, encouraging preferential employment and the involvement of local entrepreneurs. In some cases the areas adjacent to the protected areas are being developed as wildlife resource areas. Training and skills development also contribute to capacity building.

- Through the Land Restitution Programme, and in accordance with the Constitution of South Africa and the Restitution of Land Rights Act 22 of 1994, facilitate the settlement of land claims, taking into account the intrinsic biodiversity value of the land, and seeking outcomes which will combine the objectives of restitution with the conservation and sustainable use of biodiversity.

Initiatives:

The Department of Environmental Affairs and Tourism and the Department of Agriculture and Land Affairs are developing guidelines which will ensure that biodiversity values are taken into account in the settlement of land claims.

4.1.5 Rehabilitation

Objective:

Restore and rehabilitate degraded ecosystems, and strengthen and further develop species recovery plans where practical and where this will make a significant contribution to the conservation and sustainable use of biological diversity.

Government recognises that the rehabilitation of degraded ecosystems in South Africa is a major task, requiring the commitment of significant resources from both national coffers and the private sector. For the purposes of this policy, and within the confines of existing rehabilitation directives, Government will require that rehabilitation actions be prioritised on the basis of the contribution that restored areas can make to the conservation and sustainable use of biodiversity.

Within this context, Government, in collaboration with interested and affected parties, will:

◆ Develop a programme to rehabilitate degraded systems of national concern. This will:

identify key sites for restoration, based upon biological and socio-economic criteria. and develop and implement rehabilitation plans for the identified sites;

link remedial action to the provision of jobs, skills and opportunities for the poor and disadvantaged wherever possible and appropriate;

support research to enhance techniques to restore biodiversity in degraded systems;

monitor the effectiveness of rehabilitation measures; and

continue to regulate and minimise adverse impacts of harmful activities on biodiversity.

- Continue to conserve and restore populations of threatened species by:

  developing appropriate legislation, and undertaking additional measures where necessary;

  developing tools to enable their identification;

  developing and implementing recovery plans for species at risk; and

  promoting the use and involvement of off-site (ex-situ) conservation facilities and expertise where necessary.

- Require rehabilitation measures to be undertaken as an integral part of environmental impact assessments, to minimise potential negative impacts and to enhance possible positive impacts on biodiversity.

- Address concerns relating to the genetic contamination and loss of genetic variability amongst populations.

Initiatives:

A large body of research is currently being undertaken on restoration and or reclamation ecology. The Universities of Potchefstroom and Port Elizabeth are leaders in the field. The Department of Mineral and Energy Affairs has a programme which is giving consideration to the rehabilitation of mined and quarried areas and the Department of Agriculture and Land Affairs is providing guidance for the rehabilitation of degraded farm lands.

4.1.6 Alien Organisms

Objective:

Prevent the introduction of potentially harmful alien species and control and eradicate alien species which threaten ecosystems, habitats or species.

Government is acutely aware of the adverse impacts of harmful alien organisms on biodiversity and is committed to controlling and regulating the introduction and spread of such organisms. Several measures are in place which support this commitment, including extensive legislation, as well as numerous management and research programmes.

Despite these measures, Government recognises that many past efforts at control have been unsuccessful, a major problem being primarily that responses have been reactive, with actions taken only after invasive alien species have become a problem. This ad hoc approach has not been cost-effective, and has resulted in drastic impacts on biodiversity. To redress this, Government will adopt a proactive, preventative and precautionary approach to control the introduction and spread of alien organisms. This approach will take into consideration the need to balance the risks associated with introducing and releasing alien organisms with the potential social, economic and environmental benefits derived therefrom.

To achieve this objective, Government, in collaboration with interested and affected parties, will:

- Review, streamline, and if necessary strengthen existing legislation to control the introduction and spread of potentially harmful alien organisms. Actions will be taken to improve the effectiveness of legislation and ensure consistency; and

- Strengthen the enforcement and effectiveness of existing punitive measures to control the introduction and spread of potentially harmful alien organisms.

- Develop a regulatory procedure for the introduction of alien organisms into South Africa, whereby the potential risks of introduction are comprehensively assessed against intended benefits prior to introduction. This assessment will be followed by the adoption of appropriate mitigatory or preventative measures.

- Develop control and eradication programmes, and provide ongoing support to existing programmes, based on a priority-rating system and in relation to costs and resources. This will consider threats posed to biodiversity, as well as social, economic, and environmental costs and benefits derived from using and removing identified organisms. The planning of intensive mechanical clearing

operations will take account of job creation schemes and will provide for regular follow-up.

Initiatives:

The Department of Water Affairs and Forestry has embarked on a programme of alien eradication. Much of this work is undertaken as part of the "Working for Water Programme." The programme illustrates the government's Growth, Employment and Redistribution (GEAR) and Reconstruction and Development Programme. The programme, which aims at equity, efficiency and sustainability in the supply of water, concentrates on the eradication of alien vegetation in key catchment areas. Through the clearing of invading alien plants, the Working for Water Programme contributes to the securing of important water supplies. The programme currently has in excess of 30 projects in eight of the provinces.

- Prevent wherever feasible the unintentional introductions of alien organisms to South Africa.

- Develop a national policy on the inter- and intra-provincial translocation and inter-basin transfer of species, including the updating of lists of prohibited and approved taxa.

- Promote the use of local, indigenous species in rehabilitation and revegetation schemes.

- Provide incentives to landowners to control or eradicate alien organisms identified as threatening biodiversity.

- Strengthen, support and co-ordinate the efforts of existing institutions and programmes to detect the early establishment of invasive alien organisms, and to catalogue and describe such invasions.

Initiatives:

During January 1994, the Plant Protection Research Institute launched an Atlas of alien plant invaders in South Africa, Lesotho and Swaziland. The project aims to collect information on the distribution, abundance and habitat types of alien invaders on a ¼° (15 minute) square basis. The Plant Protection Research Institute has also published a pocket field guide to the identification of 161 important plant invaders.

- Support and strengthen the development of biological and other control methods for alien organisms that threaten biodiversity.

Initiatives:

The Plant Protection Research Institute is undertaking research on biological control of alien invasive species. The budget for 1997/1998 has been set at R2,5 million and research will be aimed at identifying effective biological control agents for important weed species, and at incorporating these into integrated control programmes.

- Improve understanding concerning the impacts of alien organisms on biodiversity.
- Improve public education and awareness concerning the risks posed by the planting or illegal importation of alien species, and identify actions which can be taken to avoid such risks or to control the spread of alien organisms.
- Improve capacity amongst implementing agencies to regulate the introduction, control and eradication of alien organisms that threaten biodiversity.
- Negotiate and liaise with neighbouring countries to maximise commonalties and minimise conflicts between policies, legislation, and practices relating to alien organisms that threaten biodiversity.

Initiatives:

During 1995 the Minister of Water Affairs and Forestry obtained R25 million for community based projects aimed at the removal of alien plants from key catchment areas, stream and river banks and wetlands. This programme has yielded many positive results. Increased flow of water has been noted in many of the cleared areas. During 1995 some 6000 jobs had been created through the programme. Encouraged by the positive effects of the programme an additional R50 million was allocated to the Work for Water Programme during the 1996 / 97 budget year. The number of people employed by the programme is 8 386. Approximately 50 percent of the workers are women. The specific projects are managed by the provincial conservation agencies. The total budget for 1997/1998 has increased to R110 million and was augmented by a further R150 million special allocation from the South African Government.

4.1.7 Genetically Modified Organisms

Objective:

Regulate the transfer, handling, use and release of genetically modified organisms in order to minimise the potential risks to biodiversity and human health.

Government is aware of the urgent need to take measures to regulate the transfer, handling, use and release of genetically modified organisms in order to minimise the potential risks to biodiversity and human health. Government is of the belief that a proactive and precautionary approach should be taken with regard to the transfer, handling, use and release of genetically modified organisms. This approach will take into consideration the need to balance the risks associated with genetically modified organisms with the potential social, economic and environmental benefits derived therefrom.

To achieve the objective, Government, in collaboration with interested and affected parties, will:

- Review, streamline, and if necessary strengthen existing and proposed legislation to establish effective management and control measures to regulate the transfer, handling, use and release of genetically modified organisms in order to minimise the potential risks to biodiversity and human health.

Initiatives:

To this end, an Act[2] (Act No 15 of 1997) on Genetically Modified Organisms has been promulgated (Ministry of Agriculture and Land Affairs), and there has been government involvement in international negotiations concerning the development of a Biosafety Protocol for the safe handling, use and transfer of genetically modified organisms.

- Continue to participate in international efforts to develop a Biosafety Protocol for the safe handling, use and transfer of genetically modified organisms.
- Support the adoption of a Code of Conduct for those importing, releasing or undertaking research on genetically modified organisms.
- Support research that furthers an understanding of the potential ecological, social and economic impacts of genetically modified organisms.
- Improve public education and awareness concerning the risks and benefits of biotechnology, including genetically modified organisms.
- Develop and support national training and capacity-building programmes in risk assessment and risk management for the safe transfer, handling, use and release of genetically modified organisms.

[2]**The purpose of the Act is stated as: "To provide for measures to promote the responsible development, production, use and application of genetically modified organisms; to ensure that all activities involving the use of genetically modified organisms (including importation, production, release and distribution) shall be carried out in such a way as to limit possible harmful consequences to the environment; to give attention to the prevention of accidents and the effective management of waste; to establish common measures for the evaluation and reduction of the potential risk arising out of activities involving the use of genetically modified organisms; to lay down the necessary requirements and criteria for risk assessment; to establish a council for genetically modified organisms; to ensure that genetically modified organisms are appropriate and do not present a hazard to the environment; and to establish appropriate procedures for the notification of specific activities involving the use of genetically modified organisms; and to provide for matters connected therewith.**

- Negotiate and liaise with neighbouring countries to maximise commonalties and minimise conflicts between policies, legislation and practices relating to genetically modified organisms; and

- Promote capacity-building in biosafety within the southern African region, through, inter alia, related programmes within the United Nations Environment Programme, and the Regional Biosafety Focal Point in Harare. In this regard special consideration will be given to the risk of unintended movements of genetically modified organisms across national boundaries.

4.1.8 *Ex-Situ* Conservation

Objective:

Support, complement and enhance in-situ conservation through strengthening measures for the ex-situ conservation of components of biological diversity.

In-situ conservation is recognised by Government to be the cornerstone of its strategy to conserve South Africa's biodiversity, but *ex-situ* conservation, and the techniques and facilities used for *ex-situ* conservation, are considered to be essential measures to support, complement and enhance *in-situ* conservation. While some important steps have already been taken in this regard, and well-established *ex-situ* conservation facilities exist in the country, Government acknowledges the need for additional attention, especially with regard to the management and co-ordination of genebanks.

To achieve the described objective, Government, in collaboration with interested and affected parties, will:

- Enhance the participation of *ex-situ* institutions in *in-situ* priority conservation actions.

- Promote the *ex-situ* conservation by relevant government departments of indigenous and domesticated livestock breeds, plant genetic resources and micro-organisms suitable for agricultural, medicinal, industrial, horticultural, or other commercial purposes;

- Enhance the characterisation and evaluation of such collections to stimulate and encourage their use and, through regeneration and multiplication, to increase their availability to potential users; and

- Ensure that *ex-situ* collections are brought in line with internationally agreed genebank standards.

- Co-ordinate the efforts of diverse institutions to enable the development of a comprehensive national strategy to conserve and cost-effectively manage and utilise South Africa's *ex-situ* genetic resource collections.

- Regulate and manage the collection of biological resources from natural habitats for *ex-situ* conservation purposes so as to avoid or minimise threats to ecosystems and *in-situ* populations of species.

Initiatives:

A number of gene banks are operational throughout South Africa. The National Gene Bank of the national Department of Agriculture houses seed accessions of various indigenous plant species, including land races, medicinal plants, edible wild plants and plants with economic or potential economic value. The Agricultural Research Council currently has the largest active seed collection in the country. Seed collections are also held by the National Botanical Institute, nurseries and private organisations.

- Adopt measures by means of *ex-situ* conservation for the recovery and restoration of threatened species, and for their introduction into natural habitats under appropriate conditions.

- Strengthen the educational role of existing facilities.

- Co-ordinate *ex-situ* collaborative programmes within the southern African region to maximise conservation of the region's genetic diversity.

4.2 GOAL2:

USE BIOLOGICAL RESOURCES SUSTAINABLY AND MINIMISE ADVERSE IMPACTS ON BIOLOGICAL DIVERSITY

This section describes South Africa's plans for meeting three key requirements of the Convention:

- the integration of biodiversity considerations into national decision-making;
- the sustainable use of biological diversity; and
- avoiding or minimising adverse impacts on biodiversity.

The section is divided into four parts:

- sectoral and cross-sectoral approaches;
- using biological resources sustainably and avoiding or minimising adverse impacts on biological diversity in terrestrial, aquatic, and marine and coastal areas;
- integrating biodiversity considerations into land-use planning and environmental assessment procedures; and
- adopting sustainable lifestyles.

All South Africans rely on industries or economic activities, which directly use biological resources, or the services provided by ecosystems. Through such activities, jobs and opportunities are created, and significant contributions are made to the country's economy. However, these benefits are not without direct and indirect costs to the environment: Activities which provide socio-economic gains from the use of biological resources and ecosystems often result in the loss of biodiversity, including the impairment of ecosystem functioning. These costs are not considered in conventional accounting measures of national income and consequently indicators such as Gross National Product (GNP) do not reflect the unsustainable depletion of biological resources as a loss to the country's wealth.

To enable South Africans to continue to benefit from the use of biodiversity, we need to ensure that:

- decision-making is based upon the real costs and benefits of conserving biodiversity;
- biological resources are used sustainably; and
- adverse impacts on biodiversity are minimised.

Affected Sectors

South Africa's biodiversity is used by many different sectors in many different ways. At a broad level, these can be divided into economic sectors which:

- directly use biological resources, are dependent upon the renewal of such resources, and which by overuse may impact on biodiversity (e.g. fishing, hunting, grazing, tourism);

- depend upon ecological processes, but which require the direct transformation of natural systems, and actively impact on biodiversity (e.g. cultivation, afforestation); and

- do not directly depend upon ecological processes, nor on the consumptive use of biological resources, but which may inadvertently have impacts on biodiversity (e.g. mining).

Within each of these categories - and reflective of South Africa's dual economy - are modern, highly commercialised industries, as well as more traditional, subsistence activities.

4.2.1 Sectoral and Cross-Sectoral Approaches

Objective:

Integrate the conservation and sustainable use of biological diversity into all sectoral and cross-sectoral plans, programmes and policies at all levels of government and industry.

Government recognises that to achieve the goal of using biological resources sustainably and minimising adverse impacts on biodiversity, considerations about biodiversity must be integrated into all spheres of national, provincial and local decision-making, both within and across different sectors. This is a key objective of the national biodiversity policy, as well as being an integral part of the development of general national policy on environmental management.

To achieve this objective, Government, in collaboration with interested and affected parties, will:

- Ensure that existing South African domestic and foreign policies, plans and programmes support the conservation and sustainable use of biological resources and minimise adverse impacts on biodiversity; and

- Ensure the effective incorporation of biodiversity considerations into all new policies, plans and programmes.

- Require all government departments responsible for activities affecting biodiversity, or for activities concerning the conservation or use of biodiversity, to develop sector-specific plans based upon agreed guidelines; and

- Require sector-specific plans to reflect the integration of biodiversity considerations in relevant sectoral budgets.

- Establish a national mechanism, representative of key sectors, to oversee, co-ordinate, and better integrate government policies, which directly or indirectly affect biodiversity.

- Adopt measures to allow for the full environmental, social and economic costs and benefits of conserving and using biodiversity sustainably to be reflected in economic markets, and in national indices of economic status.

Initiatives:

The national policy on the conservation and sustainable use of biological diversity has influenced a number of policies in South Africa. The national Forestry Action Plan has incorporated many of the goals of the biodiversity policy. The Marine Fisheries Policy and the White Paper on Water Policy also give recognition to the values of biodiversity conservation. Biodiversity conservation has also been incorporated into the resource conservation plans of the Department of Agriculture.

4.2.2 Using Biological Resources Sustainably and Avoiding or Minimising Adverse Impacts on Biological Diversity

Objective:

Conserve and use sustainably biological resources in terrestrial, aquatic and marine and coastal areas and avoid or minimise adverse impacts on the biodiversity of such areas.

Common Approaches

Ensuring the conservation and sustainable use of terrestrial, aquatic, and marine and coastal areas, and minimising adverse impacts on the biodiversity of such areas will require several common approaches to be adopted.

For terrestrial, aquatic, and marine and coastal areas, Government, in collaboration with interested and affected parties, will:

- Strengthen and streamline existing, or introduce new policies, legislation, incentives, and disincentives to avoid or minimise the adverse effects of human activities on the biodiversity of terrestrial, aquatic, and coastal and marine areas;

- Support the Integrated Environmental Management (IEM) principles and appropriate environmental management procedures into all planning controls and legislation; and

- Require the adoption and effective implementation and enforcement of appropriate regulations concerning the control of activities which may have a detrimental effect on the environment.

- Identify and wherever possible remove incentives that encourage the loss of biodiversity and the unsustainable, inefficient, and inequitable use of biological resources, taking into consideration social, economic and environmental costs and benefits; and

Initiatives:

The application of agricultural subsidies has been modified and is now based on best practice. Subsidies will only be granted when identified model farms are showing signs of stress. This new approach encourages sound farm management and the

conservation of biodiversity. The approach to disaster aid has also been modified to encourage better farm management.

- Maintain, adjust, or develop new financial and other incentives that support the conservation and sustainable use of biodiversity, and stimulate local stewardship of terrestrial, aquatic, and marine and coastal areas.

- Continue to develop guidelines and determine sustainable harvesting rates and utilisation levels for species and ecosystems used directly for commercial, recreational, or subsistence purposes, or indirectly for purposes such as livestock production;

- Ensure that harvesting arrangements are based on the long-term viability of the species concerned and on maintaining ecosystem integrity;

- Investigate the use of alternative species or economic activities in cases where the harvesting of species or use of ecosystems is shown to be unsustainable; and

- Undertake research and develop and apply methods and technologies aimed at removing or reducing the adverse impacts of harmful activities on terrestrial, aquatic, and marine and coastal biodiversity, and improving the management of such areas.

- Strengthen management systems for terrestrial, aquatic, and marine and coastal areas by including traditional knowledge, innovations and practices where applicable.

- Restore and rehabilitate degraded ecosystems where practical and where this will make a significant contribution to the conservation and sustainable use of biodiversity.

- Discourage development in areas in which biodiversity and ecological function would be adversely affected.

- Negotiate and liaise with neighbouring countries to maximise commonalties and minimise conflicts between policies, legislation and practices relating to cross-border areas such as mountain ranges, water catchments, marine and coastal regions, as well as areas required for animal migration.

Terrestrial Areas

The loss of biodiversity in terrestrial areas of South Africa is considered by Government to be a matter of grave concern, requiring urgent action by diverse sectors at many different levels. Government recognises the important role played by involved sectors in the economic development of the country, but believes that opportunities exist, through conserving and using biological resources sustainably, to optimise both conservation and development benefits, and to minimise the adverse impacts of various activities on terrestrial biodiversity.

To achieve this objective, Government, in collaboration with interested and affected parties, will:

- Investigate, formulate and implement integrated land-use planning approaches that include multiple natural resource activities which are compatible with and which complement the conservation and sustainable use of biodiversity.

- Promote the conservation of biodiversity in urban areas by encouraging retention of habitat and wherever possible focusing future development on existing built-up areas.

- Encourage the planting of indigenous crops and trees to build the local resource base and to improve living environments.

- Review the impact of agricultural and commercial forestry practices on biodiversity and seek changes where necessary;

- Ensure that biodiversity considerations are incorporated into the review of the afforestation permit system;

Initiatives:

The Department of Water Affairs and Forestry, in consultation with the Department of Environmental Affairs and Tourism and other stakeholders, is revising the afforestation permit system to ensure that the conservation of biodiversity will be an important consideration in the issue of new permits.

- Strongly encourage agricultural producers to incorporate biodiversity considerations in farm management practices and plans;

- Promote the optimal use of on-farm inputs, and the minimal use of external inputs such as chemical fertilisers and pesticides;

- Foster the development and use of safe agricultural pest control products and the use of integrated pest management approaches to minimise adverse impacts on ecosystems and on non-target species;

- Promote sustainable rangeland management practices to maintain maximum species diversity, and discourage agricultural production on poor or marginal land;

- Promote irrigation practices which use water efficiently and which minimise waterlogging, salinisation, and other adverse effects on biodiversity;

- Support the *ex-situ* and on farm conservation and sustainable use of indigenous and domesticated livestock breeds and crop varieties;

- Support co-ordinated research and development into achieving the ecologically sustainable use of biological resources in agriculture and forestry, and minimising adverse impacts on biodiversity; and

- Strengthen delivery of extension and research services related to the management of agricultural, forestry, and pastoral systems to ensure the sustainable use of biological resources and the conservation of biodiversity.

Aquatic Areas and Wetlands

The degradation of South African wetlands, and their vulnerability to human-induced changes in catchments and in the sea, is a concern recognised by Government as requiring urgent action and co-operation between a diversity of sectors and institutions. Wetlands represent some of our most threatened ecosystems, and as such their conservation and sustainable use is a crucial component of this policy. Government acknowledges that insufficient attention has been given in the past to secure the effective management of the country's wetlands, and it undertakes to ensure that the future management of such areas will take place in an integrated manner, in accordance with the objective of conserving and using biological resources sustainably and minimising adverse impacts on aquatic biodiversity. This approach will recognise and accommodate conflicting needs and values.

Several measures already govern the conservation and use of South Africa's wetlands, and many new initiatives are under way, as a result of the revision of the country's water law. Wherever possible and appropriate, Government will bolster such initiatives and, in collaboration with interested and affected parties, will:

- Support the principle that basic domestic needs and environmental needs will enjoy priority use of water, the latter through reserving the quantity, quality and reliability of water required to maintain natural flow regimes and habitat complexity for aquatic and riparian ecosystems.

- Facilitate the development of appropriate legislation to secure the conservation of South Africa's wetlands, and to maintain their ecological and socio-economic function.

- Promote the establishment of a National System of Protected Wetlands as part of the protected area system.

- Prevent inappropriate activities and development around wetlands, and that of linear development in particular.

- Ensure that adequate buffer strips are retained around wetlands, taking due cognisance of the 1:50 year floodline.

- Introduce policy measures to ensure that the price of water reflects the full social, economic and environmental costs and benefits of water provision, taking into consideration the need to maintain life-line tariffs to ensure a basic level of health and quality of life.

- Through establishing appropriate mechanisms and procedures, recognise the functions and values of wetlands in resource planning, management and decision-making.

- Ensure that considerations relating to the biodiversity of aquatic areas and wetlands are adequately incorporated into the draft national policy on integrated pollution control and waste management.

- Determine the impact of commercial, recreational and subsistence fishery practices on fisheries, fish, and their habitats, and develop guidelines for managing such fisheries on an ecologically sustainable basis.

- Determine the impact of aquaculture species and management practices on biodiversity, and develop appropriate guidelines for aquaculture developments.

- Strongly promote the development of catchment-specific partnerships and joint management plans between the range of institutions, organisations and individuals engaged in managing and using wetlands, catchments and associated marine and coastal areas.

- Provide leadership in international wetland conservation efforts, through the effective and co-ordinated management of transboundary water and biological resources in southern Africa.

Initiatives:

A number of strong wetland related projects have been launched. A national wetland conservation policy is currently being drafted by the Department of Environmental Affairs and Tourism. A Wetlands Bill[3] has been drafted and will be tabled during the 1998 Parliamentary Session. Research programmes linked to various river systems are being undertaken. The Kruger Park Rivers Research Programme is an outstanding example of an integrated approach to river management. The National Aquatic Ecosystem Biomonitoring Programme is a national programme aimed at

[3] **The aim of the Bill is: "To provide for the application in the Republic of the Convention on Wetlands of International Importance especially as Waterfowl Habitat; the prohibition of prospecting or mining in listed wetlands; the prohibition of detrimental activities in wetlands and listed wetlands; and the prohibition of activities detrimental to catchment areas; and to provide for matters connected therewith".**

using biological indicators in conjunction with traditional physical and chemical indicators, to monitor, assess and report on the health, status and trends of South Africa's freshwater ecosystems.

Marine and Coastal Areas

South Africa's marine and coastal areas are considered by Government to be an asset of unsurpassed value, requiring careful and effective management to secure lasting benefits for the nation. Several processes are currently underway which support this commitment, including the development of national policies on coastal zone management, and on marine fisheries. Government believes that if marine biodiversity is to be conserved effectively and used sustainably, it is necessary to adopt a cross-sectoral approach which embraces the need for wide-ranging, comprehensive, transboundary responses to threats; which treats the entire hydrological cycle as an integrated unit; and which governs actions on land as well as in the sea. This approach will be the departure point from which a more detailed strategy is pursued.

In this context, and to achieve the objective, Government, in collaboration with interested and affected parties, will:

- Ensure that considerations relating to the conservation and sustainable use of marine and coastal biodiversity are effectively incorporated into national policies on integrated pollution control and waste management and marine fisheries; and

- Support the rapid development of a national policy on coastal zone management, and the incorporation of biodiversity considerations therein.

- Require that those using marine resources, receiving services from marine and coastal ecosystems, or producing waste must bear all environmental, social,

and economic costs, and the responsibility for any consequential detriment to the environment and to associated biota.

- Prevent inappropriate activities and development along the coast, and that of linear or ribbon development in particular.

- Ensure that adequate buffer strips are retained to protect the coastal zone.

- Amend existing legislation or introduce new legislation to control the exploitation of all marine organisms that are not presently legally protected.

- Investigate the impacts of commercial fishery practices on ecosystems, on target, non-target and by-catch species, on the viability of populations, and on genetic diversity.

- Determine the impact of recreational fishing on fisheries, fish and their habitats, and develop a national strategy and guidelines for managing recreational fishing on an ecologically sustainable basis.

- Undertake research concerning the management and control of subsistence artisanal fisheries, including the development of appropriate monitoring systems.

- Determine the impact of mariculture species and management practices on biodiversity, and develop appropriate guidelines for mariculture developments.

- Develop and promote fishing techniques and procedures that are species and size specific, and that have the least impact on ecosystems and on non-target species.

Initiatives:

The Foundation for Research Development is supporting a large body of research to establish the status of marine ecosystems and species. Areas covered by the programme include hard and soft subtidal substrates, sandy beaches and dunes, rocky shores, marine microbial diversity and estuaries. Taxonomic aspects are also being addressed. Status reports are currently being produced and will form part of the South African Country Study.

4.2.3 Land Use Planning and Environmental Assessment

Objective

Integrate biodiversity considerations into land-use planning procedures and environmental assessments.

Government is well aware of the need to review land-use planning and environmental assessment procedures in South Africa. The Department of Environmental Affairs and Tourism has recently published regulations[4] concerning the control of activities which may have a detrimental effect on the environment, as well as guidelines for

[4]**Government Gazette - Regulations Gazette Volume 387 No. 18261 of 5 September 1997**

producing comprehensive environmental impact reports. The effectiveness of existing planning controls and the Integrated Environmental Management process is also being investigated by the national process to determine a general environmental management policy for South Africa.

These initiatives will continue to be supported by Government which, in collaboration with relevant interested and affected parties will:

- Strongly support the adoption of a bioregional approach to planning for terrestrial, aquatic, and marine and coastal areas, whereby natural boundaries (e.g. catchment areas) are used to facilitate the integration of conservation and development needs, and conservation is proactively incorporated into land-use plans.

- Support the incorporation of Integrated Environmental Management principles and appropriate environmental procedures into all planning controls and legislation.

- Ensure that potential impacts of projects, programmes, plans and policies on biodiversity are assessed and reflected in planning processes (e.g. town planning and zoning schemes) and environmental assessments, and that decision-making seeks to avoid impacts, to minimise risks, and to mitigate adverse impacts wherever possible.

- Investigate, formulate and implement integrated land-use planning approaches that include multiple natural resource activities which are compatible with and which complement the conservation and sustainable use of biodiversity.

- Integrate consideration of the cumulative and secondary impacts on biological diversity of development proposals, and the reversibility of proposed actions

over time, into regional planning processes and environmental impact assessment procedures.

- Ensure that potential impacts of projects, programmes, plans and policies on biodiversity are assessed in an integrated manner and by competent professionals.

Initiatives:

An environmental potential atlas (ENPAT) has been developed. This atlas aimed at the planning and design professions, political decision-makers, and conservation professions provides a comprehensive overview of the natural resources, the population and socio-economic resources.

New regulations under the Environment Conservation Act have been promulgated. These regulations make the undertaking of an environmental impact assessment obligatory for certain listed activities. Clear procedures for the process are contained within the regulations.

4.2.4 Adopting Sustainable Lifestyles

Objective:

Support efforts to stabilise human population and reduce resource consumption to achieve socially and ecologically sustainable development.

Population is an important issue in South Africa, but needs to be considered together with questions about resource use, particularly patterns of production and consumption. Global figures indicate that 77 percent of the world's people earn 15 percent of total income; that 24 percent of the world's population consume 75 percent of energy, mineral and metal resources, and more than half the world's food; and that over 90 percent of waste in the world is generated by the affluent. Similar figures are not available for South Africa but what is clear is that people's use of resources is very uneven, and that consumption is highest amongst the industrial sector and the more affluent. Strategies thus need to address not only the stabilisation of population growth, but also the wasteful over-consumption of natural resources.

In collaboration with interested and affected parties, Government will:

- Ensure that considerations relating to the conservation and sustainable use of biodiversity are adequately incorporated into the national policy on population.
- Develop comprehensive strategies to address population, production and consumption patterns and their impact upon environmental sustainability; and

- Initiate research and establish a dialogue to assess national population and consumption trends, with respect to satisfying basic needs and determining South Africa's capacity to support human settlement.

- Support initiatives to reduce resource consumption by promoting the elimination or reduction of waste at source, and its re-use, recycling, and recovery.

- Through a review of the education system, and the use of such mechanisms as the media:

  increase awareness about the links between human population growth, resource consumption, and biodiversity;

  increase awareness about the lifestyle choices that affect biodiversity, and promote sustainable living based on the opportunities derived from the sustainable use of biological resources.

4.3 GOAL 3:

ENSURE THAT BENEFITS DERIVED FROM THE USE AND DEVELOPMENT OF SOUTH AFRICA'S GENETIC RESOURCES SERVE NATIONAL INTERESTS

Genetic resources include the genes and gene pools of indigenous species, of introduced species, and of animals, plants and microbial varieties produced by breeding and genetic manipulation. South Africa both depends upon genetic material from elsewhere and contains an extraordinary diversity of indigenous genetic material which has the potential to be used in scientific and technological research and in a range of commercial and environmental applications. As is the case for other countries in the world, South Africa is heavily dependent upon material from elsewhere for its agriculture, horticulture, and

forestry industries, as well as for the biological control of pest species and thus requires continued access to the broader genepool of genetic resources located elsewhere in the world. This requires continued co-ordination and co-operation with other countries.

The Convention on Biological Diversity is significant in being the first international agreement to establish the sovereign rights of nations over their genetic resources. One of its main objectives is to ensure the fair and equitable sharing of benefits arising from the use of genetic resources. Genetic resources can no longer be regarded as the common heritage of humankind.

4.3.1 Access to Indigenous Genetic Resources

Objective:

Control access to South Africa's indigenous genetic resources through the introduction of appropriate legislation and establishment of institutional structures.

The Convention on Biological Diversity recognises the sovereign rights of countries over their genetic resources, and their authority to determine access conditions, including the sharing of benefits gained. In terms of the Convention, South Africa is required to facilitate access to genetic resources by other Contracting Parties, and to ensure that any genetic resources acquired are on mutually agreed terms.

The Government recognises that South Africa's genetic resources provide valuable opportunities for the nation to enhance the benefits from its vast biological wealth. The present situation, whereby foreign organisations and individuals have enjoyed almost free access to our genetic resources with little gain to either the country or the people from whom knowledge is gleaned, is a matter of considerable concern.

It is clearly in South Africa's interest to control access to its genetic resources, and to thereby ensure that benefits arising from the use and development of such resources serve the national good. It is, however, also in South Africa's interest to ensure that access is not unnecessarily restrictive, and that conditions are provided which stimulate economic activity and allow for South Africa's continued access to foreign sources of genetic material.

Thus Government will pursue an approach whereby access to South Africa's genetic resources is both controlled and facilitated, in line with certain principles.

To achieve this objective, Government, in collaboration with interested and affected parties, will:

- As a matter or urgency, and through appropriate structures:

  develop detailed guidelines and conditions for biodiversity prospecting, examine the applicability of such guidelines and conditions for domestic and foreign companies

  guide the development of appropriate agreements;

investigate the strengthening of existing controls and legislation, including the establishment of national sovereignty over South Africa's biological resources; and

investigate the establishment of a national clearing house to regulate and administer all exchanges of genetic resources, and to co-ordinate future activities.

- Develop and implement an efficient permitting system whereby authorisation is required for the collection of any biological or genetic resource to be used for research, trade or commercial purposes. This system will include the provision of comprehensive information from users and collectors, including the environmental impact of proposed activities and benefit-sharing arrangements. Where appropriate, the consent of local communities and private landowners will be required prior to the collection of material. Consent will also be required from holders of traditional knowledge prior to the collection of such information.

- Require that benefit-sharing arrangements take into consideration:

  the need to strengthen the conservation of biodiversity in South Africa;

  the need to promote the reconstruction and development of South Africa, and to stimulate economic development in the most disadvantaged parts of the country and sections of the population;

  the rights of local communities, farmers, and others holding traditional knowledge to benefit from co-ownership of research data, patents, and products derived from their knowledge;

  the need to adopt a multi-faceted approach to benefit sharing, whereby a range of short- and long-term financial and non-monetary benefits are gleaned; and

the need to strengthen South Africa's science and technology capacity.

- Establish a system to allow for funds generated from biodiversity prospecting to be received and disbursed equitably, in line with the proposed benefit-sharing arrangements. Ensure that the collection of biological and genetic resources for research and development purposes does not adversely affect the conservation status of the genes, species, population, community, habitat, ecosystem, or landscape.

- Promote co-ordination and co-operation between national research institutions engaged in biodiversity prospecting to enable the South African research community to strategically position the country in this field.

- Encourage the development of institutional policies and professional codes of conduct to guide collection, research and commercial activities.

- Investigate, through appropriate structures, the development of a system to provide legal protection for collective intellectual property rights.

Initiatives:

The National Botanical Institute in partnership with the Department of Environmental Affairs and Tourism is developing a comprehensive National Medicinal Plant Database for South Africa. TRAFFIC (East and Southern Africa) also maintains a database on plant and animal species used for medicinal purposes in South Africa.

4.3.2 Access to Genetic Resources for Food, Agriculture and Forestry

Objective:

Ensure continued access to sources of genetic material for food, agriculture, and forestry.

Government is committed to adopting a uniform set of principles to guide the way in which access to genetic resources is controlled, and recognises the importance of maintaining a consistent approach with regard to the implementation of policy for indigenous genetic resources that are used for different purposes. With regard to plant genetic resources, there are presently relatively few wild relatives of commercially produced crop plants that are indigenous to South Africa, but many indigenous species are considered to hold potential for new crops and forages. Indigenous animal and microbial genetic resources may also hold considerable potential for diverse uses.

While embracing a consistent approach to control access to indigenous genetic resources, Government recognises the mutual interdependence of nations on the global genepool of biodiversity, and the need for equitable benefit sharing - both at the international and national levels. In particular, the development of specific strategies to ensure continued access to genetic resources for food, agriculture, and forestry is considered to be of paramount importance. To this end, Government is actively participating in negotiations to harmonise the International Undertaking on Plant Genetic Resources with the Convention on Biological Diversity, and has also established a Committee on Plant Genetic Resources to consider such matters.

Within this context, Government, in collaboration with interested and affected parties, will:

- Continue to participate in international negotiations to harmonise the International Undertaking on Plant Genetic Resources and other relevant international agreements with the Convention on Biological Diversity; and

- Through appropriate structures and mechanisms, ensure consultation with interested and affected parties in the formulation of national positions on the revision of the International Undertaking on Plant Genetic Resources.

- Initiate a process of national and local consultation, whereby the South African farming community, and small-scale farmers in particular, fully participate in the shaping, definition, and implementation of measures and legislation on Farmers' Rights;

- Investigate, through appropriate structures, the development of a system to provide legal protection for a collective rights regime that protects and controls farmers' knowledge, innovations, materials, and practices relevant to the conservation and sustainable use of genetic resources.

- Review, assess and where appropriate modify relevant national policies and legislation to ensure that they support and do not run counter to Farmers' Rights and to relevant international agreements.

- Adopt research, training, and institutional capacity-building activities to empower small-scale farmers and other farming communities in the acquisition, conservation, development and use of landraces, and of indigenous and traditional livestock breeds and plant varieties.

Initiatives:

The signing of the Convention by South Africa prompted the Directorate of Plant and Quality Control of the Department of Agriculture to establish a national programme incorporating all plant genetic resources. This programme will encourage the co-ordination of the conservation of genetic resources in South Africa. The programme will also reach the Southern African Development Community.

4.4 GOAL4:

EXPAND THE HUMAN CAPACITY TO CONSERVE BIODIVERSITY, TO MANAGE ITS USE, AND TO ADDRESS FACTORS THREATENING IT

This section describes South Africa's plans to meet requirements of the Convention concerning the expansion of human capacity to conserve biodiversity, to manage its use, and to address threats to it. South Africa's approach towards achieving this goal has three main components:

- Increasing public appreciation and awareness of the value and importance of biodiversity, and public involvement in its conservation and sustainable use;
- Improving the understanding of biodiversity through conducting research, improving biological inventories, establishing and maintaining monitoring systems, sharing information, and incorporating traditional knowledge, and;
- Strengthening existing management capacity through appropriate training.

4.4.1 Public Education and Awareness

Objective:

Increase public appreciation, education and awareness of the value and importance of biodiversity, and public involvement in its conservation and sustainable use

Without the support and commitment of all South Africans, efforts to conserve this country's biodiversity are unlikely to succeed. Government considers this to be one of the most critical issues to address in the implementation of its policy on biological diversity. Past efforts to improve public awareness and appreciation of the importance of biodiversity have frequently been culturally biased, focusing largely on the value systems of the affluent. Thus a narrow interpretation of biodiversity has predominated, directed at the need to preserve endangered species and maintain protected areas rather than at the broader development context which makes biodiversity relevant to the millions of people in South Africa who are dependent upon the country's biological resources to fulfil their basic needs. This has been aggravated by the inaccessibility of protected areas to the poor, leading to the perception that conservation is elitist and irrelevant to the majority of South Africans.

Government will redress these perceptions so that the conservation and sustainable use of biodiversity becomes an issue of concern and meaning to all South Africans, from decision-makers in Parliament through to communities in rural areas and youth in the townships. There are already many initiatives underway which support this

conviction, both within the formal education sector and informally in the workplace and community.

Government will bolster such efforts and, in collaboration with relevant interested and affected parties, will:

- Develop and implement targeted public awareness programmes for groups of people such as decision-makers and politicians; business executives; consumers; non-governmental organisations; children; and those in rural and urban areas who are reliant upon the use of biological resources. Such programmes will take into account people's understanding of biodiversity and their local environments, foster an appreciation of local knowledge of biodiversity, establish clear links between biodiversity conservation and community health and welfare, and will describe conservation actions that can be taken by specific groups.

- Encourage organisations engaged in researching, managing or conserving biodiversity to popularise their work, to disseminate information about biodiversity, and develop or strengthen biodiversity education and interpretative programmes in such places as protected areas, natural history museums, zoos, aquaria, botanical gardens, public open spaces, and community centres.

- Support the further development of outreach programmes which enable people to have access to nature and the experiences associated with nature.

- Promote and support efforts by the public and private sector to make protected areas more accessible to the people of South Africa.

- Encourage those in the public eye, such as television and radio commentators, news editors, advertisers, entertainers, artists, sportsmen and women, religious

leaders, politicians, and corporate executives, to popularise biodiversity and the actions needed to conserve it.

- Use a variety of delivery mediums (e.g. radio, television, newspapers, electronic networks), to distribute information about biodiversity.

- Integrate issues concerning biodiversity conservation and sustainable use into ongoing efforts to develop a national environmental education system, modifying curricula where necessary.

- Support and encourage improved training and professional development for teachers, extension officers, and others involved in building awareness about biodiversity.

- Promote the involvement of interest groups and communities in research, management and development activities relating to the conservation and sustainable use of biodiversity.

- Strengthen co-ordination between those involved in increasing awareness about biodiversity, including educational institutions, government departments, natural history museums, businesses, conservation groups and other non-governmental organisations.

4.4.2 Improving Understanding About Biodiversity

Objective:

Improve the knowledge and understanding of South Africa's biodiversity necessary for its effective conservation.

Research

Considerable investment has been made in biological research in South Africa, resulting in a well- developed knowledge base and understanding concerning aspects of the country's biodiversity. However, Government realises that existing biological knowledge is patchy, and that substantially more research is required to improve our understanding. In particular, the interactions between biological and social processes are poorly understood, as are the causes underlying the decline in biodiversity. There has also been an under-investment in the application of research results to biodiversity management.

Government recognises the importance of both basic and applied research, as well as the difficulties in distinguishing between the two. An approach will be pursued that strikes a balance between both basic and applied research, but which aims to accelerate the translation of research results into applied action, and so promote the conservation and sustainable use of biodiversity. An important part of this approach requires improved co-ordination and networking within and across disciplines and between different programmes.

To achieve this objective, Government, in collaboration with interested and affected parties, will:

- Through the establishment and co-ordination of appropriate structures, and the undertaking of a review of the status quo of research on biodiversity, develop a multidisciplinary national biodiversity research plan, based upon existing gaps in knowledge and identified conservation and management priorities.

- Encourage researchers to popularise their work and to disseminate information about biodiversity.

- Encourage researchers to place relevant biodiversity information and data in the public domain to facilitate informed, strategic decision-making and to optimise the conservation and sustainable use of biodiversity.

- Develop partnerships with the scientific community to facilitate the effective implementation of the goals and objectives articulated by this policy.

Initiatives:

The National Research and Technology Foresight Project is an initiative of the Department of Arts, Culture, Science and Technology. It aims to systematically identify research and technology areas and market opportunities that are likely to generate socio-economic benefits for South Africa in the long term. Twelve sectors including one on biodiversity have been selected for the current foresight project.

Inventories

Government recognises that biological inventories are basic to understanding biodiversity. Work being undertaken by universities, natural history museums, technikons, and other collection-based institutions is considered essential to furthering understanding of South Africa's biodiversity and achieving the goals and objectives of this policy. Government is aware of the enormity of comprehensively inventorying the country's biodiversity, and of the significant resources required to undertake this task.

Government's approach to inventorying will be to build and strengthen existing initiatives, link inventory work wherever possible to job creation, use innovative means to accelerate inventory work, and focus inventory efforts on components of biodiversity important for its conservation and sustainable use.

In collaboration with interested and affected parties, Government will:

- Enhance inventory efforts, giving priority to gaps in knowledge, those components of biodiversity identified as threatened, as well as those components identified to be important for the conservation and sustainable use of biodiversity.

- Maintain or enhance the capacity of museums and other institutions, which undertake biodiversity surveys, and which classify, describe and store, collected specimens.

- Optimise institutional arrangements to ensure that biodiversity inventory work is given the necessary support and commitment by Government.

- Enhance co-ordination among government agencies, museums, universities, collection-based institutions and other organisations and individuals involved with biological inventories.

- Facilitate the integration of all biosystematic disciplines to ensure that an adequate knowledge base is available for known species.

- Require foreign and local researchers to lodge voucher specimens or duplicate voucher specimens of all organisms collected or recorded in South Africa with appropriate national collections.

- Augment local capacity to conduct inventories by:

  increasing the number and skill of professional taxonomists; and

  encouraging the development and training of community workers ("parataxonomists") to collect and identify specimens, linking such action to the provision of jobs, skills and opportunities for the poor and disadvantaged.

- Promote the integration of traditional knowledge wherever possible into existing and proposed inventories.

  Support inventory work as an important benefit to be derived from biodiversity prospecting agreements.

- Develop rapid, cost-effective and reliable biological inventory methods and technologies

Initiatives:

A number of inventories have been undertaken. These include an inventory of important wetlands in South Africa. The Department of Environmental Affairs and Tourism also maintains a database on protected areas in South Africa.

Monitoring and Evaluation

Monitoring and evaluation are considered by Government to be essential components of this policy. Numerous programmes are already under way which support this commitment, but there is a need to strengthen these initiatives in line with the objectives of this policy. In particular, Government recognises the need to develop and implement approaches to monitor those components of biodiversity which are considered to require urgent conservation measures as well as those which offer the greatest potential for sustainable use.

To achieve the objective, Government, in collaboration with interested and affected parties, will:

- Promote and co-ordinate the development of international, national, regional and local monitoring programmes and strategies to assess biological trends, the impacts of human activities on biodiversity, and the successes or failures of conservation and sustainable use programmes. Monitoring programmes will, where appropriate:

  develop and link up to the development of a national biodiversity information network;

  develop and implement cost-effective approaches such as the use of biodiversity indicator groups and other early warning stress indicators;

  update and review Red Data books, in line with appropriate international standards; and

  track changes in management responses to the conservation and sustainable use of biodiversity.

- Report on biodiversity trends, as part of "State of Environment" reporting.

- Maintain and strengthen the capacities of institutions engaged in monitoring components of biodiversity, and improve co-ordination among such bodies.

- Support efforts to build the capacity and draw on the knowledge of local communities and volunteers with respect to undertaking monitoring exercises.

- Establish assessment panels or monitoring committees, comprising representatives of non-governmental organisations, community groups, industry, the scientific community, and government.

- Support the independent monitoring and evaluation of biodiversity conservation and sustainable use policies, programmes and projects.

Data and Information

A substantial amount of data and information that is necessary for the conservation of biodiversity and the sustainable use of biological resources already exists in South Africa. This is held by many governmental and non- governmental agencies in herbaria or museum collections, on electronic databases and in libraries or other resource centres. However, much of this information is in a form, which cannot be easily used by managers, researchers, decision-makers or the general public. The situation is aggravated by the fact that many of the initiatives to collect data and information on biodiversity are uncoordinated. Government will take measures to redress this situation and to improve the accessibility of data and information for those who need it.

To achieve the objective, Government, in collaboration with interested and affected parties, will:

- Investigate and implement the development of a national biodiversity information network to enhance the collection, sharing, analysis and distribution of data and information required for the conservation and sustainable use of biodiversity.

- Establish a national focal point within the Department of Environmental Affairs and Tourism to act as a clearinghouse for technical and scientific information relating to the conservation and sustainable use of biodiversity.

- Ensure that data and information generated by publicly funded studies is made available to potential users through appropriate arrangements. Such

arrangements will take into account the need for differential access to information, and will distinguish between information required for research purposes and that, which could be used for commercial gain.

- Maintain, improve and wherever possible standardise and digitise existing biodiversity databases.

- Support the establishment or strengthening of local resource centres to make information on biodiversity more accessible, usable, and locally relevant.

Traditional Knowledge

Government recognises the irreplaceable and unique value of the traditional knowledge, practices and cultures of South Africa's people, and is acutely concerned about the rapid loss of such systems. The need to formally recognise and protect traditional knowledge is considered to be an issue that needs urgent attention. The adoption of measures to enable equitable benefit sharing is a crucial part of the approach to conserving biological diversity.

To respond to these concerns, Government, in collaboration with interested and affected parties, will:

- Review and where appropriate modify national policies and legislation to ensure that they support the rights of holders of traditional knowledge;

- Investigate, through appropriate structures, the development of a system to provide legal protection for collective intellectual property rights; and

- Explore further mechanisms to protect traditional knowledge, practices and cultures concerning the conservation and sustainable use of biodiversity.

- Promote the development of a code of ethics for researchers engaged in work concerning traditional knowledge, practices and cultures;

- Ensure that information concerning traditional knowledge, practices and cultures is used for research only with the consent, co-operation and control of holders of that knowledge. Wherever possible, the use and collection of such knowledge must result in social, economic or environmental benefits to the traditional owners through formal prior informed consent procedures and mutually agreed terms;

- Encourage, with the consent and involvement of those from whom knowledge is gleaned, the recording of traditional knowledge, practices and cultures concerning the conservation and sustainable use of biodiversity; and

- Ensure that this recorded knowledge is made accessible to those people from whom it is gleaned.

- Ensure that curricula promote an understanding and appreciation of the importance of knowledge, practices and cultures that promote the conservation and sustainable use of biodiversity.

- Promote the integration of traditional knowledge and in particular previously ignored and/or undermined cultural knowledge and practices concerning the conservation and sustainable use of biodiversity into scientific research programmes and formal sector innovations.

4.4.3 Developing Management Capacity

Objective:

Enhance the capacity necessary to conserve and use South Africa's biological diversity sustainably

Government is committed to human resource development and to providing training and developing skills required for biodiversity management. Training will be done in partnership with educational institutions, the private sector and non-governmental organisations, and will be provided in formal institutions, at the workplace through in-service training programmes, and at a local level. Training is recognised as important not only for those charged with managing the use of natural resources, but for senior decision- makers, industrialists, and local communities.

To achieve this, Government, in collaboration with interested and affected parties, will:

- Encourage a review and reorientation of the curricula of existing training programmes concerning biodiversity conservation and human interactions with the natural environment, with particular emphasis on multidisciplinary approaches.

- Support the development of short-term training courses in biodiversity management tailored to the needs of particular groups such as business, communities, teachers, resource managers, non-governmental organisations, and senior decision-makers.

- Prevent the loss of skilled expertise from the field of biodiversity management, maintain existing skills and expertise, and improve the capacity of public

servants, non-governmental organisations, and communities to conserve and sustainably use biodiversity.

- Develop strategies to improve training and professional development in careers compatible with the conservation and sustainable use of biodiversity.

- Provide incentives to attract qualified individuals to careers in biodiversity management by ensuring that biodiversity management offers a coherent career path, with specific emphasis on the training of people from disadvantaged communities.

- Support existing institutions that provide training for biodiversity management, with specific emphasis on those institutions that have historically been denied opportunities.

Initiatives:

The SABONET Project has as its primary objective the development of a strong core of professional botanists, taxonomists, horticulturists and plant diversity specialists within the ten countries of southern Africa. This team will be competent to inventory, monitor, evaluate and conserve the botanical diversity of the region in the face of specific development challenges and to respond to the technical and scientific needs of the convention on Biological Diversity.

4.5 GOAL 5:

CREATE CONDITIONS AND INCENTIVES THAT SUPPORT THE CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY

The effective implementation of the biodiversity policy requires the creation of conditions and incentives that support the conservation and sustainable use of biodiversity. South Africa's approach towards achieving this goal has two main components:

- ***promoting and developing*** economic opportunities that are compatible with and which complement the conservation and sustainable use of biodiversity; and
- ***creating and implementing*** incentives that support the conservation and sustainable use of biological diversity.

4.5.1 Beneficiating Biodiversity

Objective:

Promote and develop economic opportunities that are compatible with and which complement the conservation and sustainable use of biodiversity.

Government recognises that South Africa's biodiversity presently provides substantial economic benefits for its people, and holds remarkable future economic potential if

adequate investments are made in its further development and conservation. There can be few countries in the world which have the combined benefits of democracy, a comprehensive scientific capacity and knowledge base, a well- developed private sector, a well-established system of protected areas, and most importantly, some of the most biologically diverse resources to be found on Earth. Government policy will require that these resources be used to best effect in the alleviation of poverty and conservation of the country's biodiversity, and will enlist the support of the private sector in doing so wherever this is appropriate.

To achieve the objective, Government, in collaboration with interested and affected parties, will:

- Continue to support programmes that utilise indigenous and traditional wildlife sustainably for subsistence purposes and commercial gain;

- Encourage the development of indigenous and traditional livestock and crop utilisation programmes, natural product industries, and agricultural programmes which show economic potential and which create economic and other incentives for the retention, rehabilitation, maintenance and management of natural habitats; and

- Support research, which identifies new areas of economic potential for South Africa's indigenous and traditional biological and genetic resources.

- Ensure the rapid establishment of institutional structures and legal arrangements to control access to genetic resources, and to thereby create the conditions for equitable benefit-sharing arrangements to be developed.

- Through effective implementation of its tourism policy:

  develop tourism as a sustainable and responsible economic activity;

support the integration of tourism into broader land-use plans, and the development of tourism as a competitive form of land use;

promote the linking of tourism benefits to the environmental products it depends upon, and the cross- subsidisation of conservation by tourism;

require tourism projects to be subject to Integrated Environmental Management procedures; and

encourage the development of partnership tourism ventures between local communities, the private sector and conservation agencies.

Initiatives:

South Africa participated actively in the Berlin Declaration on Biodiversity and Tourism. The agreed principles are being incorporated into tourism development projects such as the Spatial Development Initiatives.

- Recognise and quantify the local economic value derived from the use of biological resources (e.g. traditional medicines, building materials, wild food) by the informal sector in development and land-use planning efforts. This will include consideration of the social economic and environmental costs and benefits of having to use alternative resources if natural biological resources are lost or degraded.

- Recognise and quantify the direct and indirect economic costs and benefits derived from conserving and using biodiversity sustainably, including the conservation of protected areas.

- Introduce measures to encourage local communities to add economic value to products harvested from the wild, or cultivated off site, whilst ensuring the sustainable use of such resources;

- Promote the local beneficiation of genetic resources developed for commercial gain; and

- Promote the development of value-added indigenous products, and investigate the formation of marketing and information networks to broaden access to local, regional and international markets.

- Support efforts of the Medicines Control Council to develop a regulatory framework for the approval of traditional herbal medicines.

- Balance the need to encourage private sector investment in South Africa's genetic resources through conferring intellectual property rights for novel inventions with that of ensuring equitable benefit sharing and the transfer of appropriate technology.

4.5.2 Incentives

Objective:

Create and implement incentives that support the conservation and sustainable use of biological diversity.

Government is aware of the need to pursue innovative approaches to prevent the further loss of biodiversity in South Africa, and is of the opinion that regulatory approaches are a necessary, but insufficient mechanism to ensure biodiversity conservation. In conjunction with legislation, the use of economic instruments as well as non-fiscal incentives such as education and tenure reform, are considered important mechanisms to be used for the conservation and sustainable use of biodiversity, and the promotion of new uses of biological resources. In introducing new incentives, Government will give consideration to:

- the need to remove existing incentives that discourage biodiversity conservation (so-called "perverse incentives"); and
- the need to use an array of different instruments, based upon bioregional and social characteristics as well as the nature of the threat to biodiversity, to encourage biodiversity conservation in different areas.

Government recognises that there are several initiatives underway in other policy processes which are considering the introduction of incentives and disincentives (e.g. taxes, levies) related to the conservation and use of natural resources. Such proposals will be co-ordinated and streamlined to ensure that Government adopts a uniform and rational approach to the introduction of incentives and disincentives.

Government acknowledges that insufficient financial resources are presently invested in conserving biodiversity and ensuring its sustainable use. As the custodian of a national asset, and party to the Convention on Biological Diversity, the State recognises its responsibility to increase, through a number of external and internal financing mechanisms, the financial resources necessary to achieve the goals of this policy.

To achieve the objective, Government, in collaboration with interested and affected parties, will:

- Optimise the use of existing funds allocated for conservation-related activities, based upon identified priorities for biodiversity conservation.

- Identify and progressively remove incentives that encourage the loss of biodiversity and the unsustainable, inefficient, and inequitable use of biological resources, taking into consideration social, economic and environmental costs and benefits.

- Maintain, adjust or develop new financial and other incentives that support the conservation and sustainable use of biodiversity, and stimulate local stewardship of terrestrial, aquatic and marine and coastal areas.

- Investigate and institute innovative mechanisms to raise new finances for biodiversity conservation, including:

    the use of taxes, levies, and charges linked to activities directly using and/or affecting biodiversity, to generate revenue for biodiversity conservation;

    the establishment of a Biodiversity Trust Fund;

royalties generated through biodiversity prospecting activities; and

the introduction of conditions and incentives (e.g. tax relief) to strengthen the involvement of the private sector in the conservation and sustainable use of biodiversity.

- Develop measures that would enhance the capacity of existing conservation agencies in both the public and private sector to receive, generate, invest and employ funds to promote their objectives, and to enter into contractual arrangements with private landowners.

- Support efforts of the Land Reform Programme to encourage investment in land resources through extending security of tenure to all South Africans.

- Support the development of methods to determine the social, economic, and environmental values of biodiversity, and the application of such methods to support the conservation and sustainable use of biodiversity.

4.6 GOAL6:

PROMOTE THE CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY AT THE INTERNATIONAL LEVEL

Government recognises that the conservation of biodiversity is a global issue, requiring global action. Countries depend upon each other's biodiversity, and the loss of biodiversity represents a loss to all people. Moreover, the impacts of ecosystem degradation reach beyond national boundaries, requiring transfrontier co-operation to be a necessary component of this policy.

In ratifying the Convention on Biodiversity, Government recognised that the conservation of global biodiversity is a common concern of all nations and demonstrated a strong commitment to safeguarding the planet's biotic wealth. This commitment is reflected in the active participation of South Africa in the range of international agreements to which the country is a party, and in numerous other scientific and technical collaborations. Nonetheless, years of political isolation from the international community have meant that South Africa must strengthen efforts to co-operate on environmental matters at the international level. In addition to global co-operation, Government will continue to work as a member of the Africa group in international forums, of the Organisation of African Unity, and of the Southern African Development Community, to solve the problems of biodiversity loss on the continent and in the region, and to advance the interests of Africa internationally.

To achieve the objective, Government, in collaboration with interested and affected parties, will:

- Review the status of South Africa's participation in all bilateral and multilateral agreements relevant to the conservation and sustainable use of biodiversity, and ensure that activities undertaken are mutually supportive and harmonised.

- Promote the effective implementation of existing international agreements of relevance to the conservation and sustainable use of biodiversity, and in particular the Convention on International Trade in Endangered Species of Wild Flora and Flora (CITES), the Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (the "Ramsar Convention"), and the Convention on the Conservation of Migratory Species of Wild Animals.

- Actively participate in new agreements and arrangements that are relevant to the conservation and sustainable use of biodiversity, and that are in keeping with the needs and priorities of South Africa's people;

- Promote the speedy ratification of agreements relevant to the conservation and

sustainable use of biodiversity to which South Africa is a signatory (e.g. The World Heritage Convention, the Convention to Combat Desertification, the Framework Convention on Climate Change); and

- Support the participation of civil society in negotiations and discussions concerning the development and ratification of new international agreements.

- Support efforts to establish a Southern African regional forum to consider biodiversity issues of relevance to the region, including international funding, transfrontier conservation initiatives, regional approaches to regulate access to genetic resources, joint management strategies, regional tourism linkages, and bioregional approaches to environmental management.

- Maintain and strengthen South Africa's participation in multilateral efforts concerned with the conservation and sustainable use of biodiversity, through international organisations such as the United Nations Commission on Sustainable Development, the United Nations Environment Programme, UNESCO, the Food and Agriculture Organisation, the International Maritime Organisation, the Global Environment Facility, the World Conservation Union, as well as through various international programmes.

- Encourage collaboration among the private sector, research institutions, government and non-governmental organisations, and communities to promote the transfer of environmentally sound technologies; and

- Identify and implement steps to remove impediments to technology transfer.

- Compile a national inventory of all governmental and non-governmental areas of international co-operation concerning the conservation and sustainable use of biodiversity, with a view to identifying gaps in co-operation and strengthening existing efforts.

- Enhance international collaboration in scientific and technical research related to biodiversity.

- Pursue external financing sources through bilateral and multilateral agencies, the Global Environment Facility, and the private sector, to secure funding for programmes and projects identified as priorities by the South African community.

In accordance with the Constitution, Government will encourage the participation of non-governmental organisations in international fora convened to report on and discuss existing agreements relating to the conservation and sustainable use of biodiversity, and in international efforts to implement the Convention.

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Appendix 1

South Africa's unique biological diversity - the variety of genes, species, ecosystems and ecological processes occurring in the country - is an asset of inestimable value at the local , national and international level. Our natural systems, rivers and wetlands, mountains and plains, estuaries and oceans, and magnificent coastline and landscapes contain an exceptionally rich and varied array of life forms which are integral to the existence of all South Africans, and upon which the national economy is fundamentally dependent.

Biomes of South Africa

Low and Rebelo (1996) recognise **seven biomes** as occurring in South Africa.

1. Forest Biome

Forests are restricted to frost free areas with a mean annual rainfall of more than 525 mm in the winter rainfall region and more than 725 mm rainfall in the summer rainfall region. They occur from sea level to over 2100 m above sea level. According to Low and Rebelo (1996) forests tend to occur in patches, few of which cover areas greater than 1km^2, with areas greater than this occurring only in the Knysna and Lowveld Escarpment areas. Forests cover less than 0,25 percent of the surface area of southern Africa[5], making it the smallest biome on the subcontinent.

Some 649 woody and 636 herbaceous plant species have been recorded from forests.

[5] **Southern Africa is defined as the area south of the Kunene, Okavongo and Limpopo Rivers, but excludes Angola, Mozambique and Zimbabwe.**

2. Thicket Biome

Low and Rebelo (1996) indicate that there is no formal Thicket Biome recognised in the scientific literature. They argue that the thicket vegetation types do not fit with the forest vegetation types. It also differs from Savanna and cannot be classified as such.

Subtropical thicket is a closed shrubland to low forest dominated by evergreen, sclerophyllous or succulent trees, shrubs and vines. It is often almost impenetrable and is not divided into strata and has little herbaceous cover. The vegetation types within the "Thicket Biome" share floristic components with many other phytochoria and lie within all of the formal biomes.

3. Savanna Biome

The Savanna Biome is the largest Biome in southern Africa and occupies at least 46 percent of its area and over 33 percent of the area of South Africa. It is well developed over the Lowveld and Kalahari regions of the country and extends into Botswana, Namibia and Zimbabwe.

Savanna is characterised by a grassy ground layer and a distinct upper layer of woody plants. Where the woody plants are low growing the vegetation may be described as shrubland and where it is dense as woodland. In its intermediate stages it is known locally as Bushveld.

The environmental factors delimiting the Biome are complex and include fire, grazing and rainfall. While the Savanna Biome is well conserved, individual vegetation types within the biome are poorly conserved.

4. Grassland Biome

The Grassland Biome is found mainly on the high central plateau of South Africa and the inland areas of KwaZulu-Natal and the Eastern Cape (Low and Rebelo 1996). Grasslands are dominated by a single layer of grass with the amount of cover depending on the rainfall and the level of grazing. While trees are mainly absent, geophytes are abundant. The grass dominance is maintained by fire, frost and grazing.

The Grassland Biome is the centre of the maize production area of South Africa and many grassland types have been converted to croplands. Urbanisation is a major additional influence on the loss of natural grassland. The highly industrialised Witwatersrand region of the country is centred in this biome.

The grassland biome is considered to have an extremely high biodiversity, second only to the Fynbos Biome.

5. Nama Karoo Biome

The Nama Karoo Biome occurs on the central plateau of the western half of South Africa at altitudes between 500 m and 2 000 m above sea level, Most of the Biome falls between 1 000 m and 1 400 m above sea level. The Nama Karoo biome is the second largest biome in South Africa.

The geology underlying the Biome is varied and the distribution of the Biome is determined primarily by rainfall. Rain falls during the summer and ranges from 100 mm and 520 mm per year.

The dominant vegetation is a grassy, dwarf shrubland with grasses being more common in depressions and on sandy soils. Grasses are less abundant on clayey soils. The amount and nature of the vegetation (fuel load) is insufficient to carry fires and fires are rare in the vegetation types of the biome.

Less than 1 percent of the biome is conserved in officially protected areas.

6. Succulent Karoo Biome

The Succulent Karoo Biome is not a subtype of a Karoo Biome and is of equal status to the other Biomes (Low and Rebelo 1996). Most of the Biome covers a flat to gently undulating plain and is mostly situated to the west and south of the escarpment and north of the Cape Fold Belt. The altitude is mostly below 800 m above sea level, but in the east it may reach 1500 m above sea level.

The Succulent Karoo Biome is determined by the presence of low winter rainfall and extreme summer aridity. Rainfall varies between 20 mm and 290 mm per year. During summer temperatures in excess of 40^0 C are common.

The vegetation is dominated by dwarf succulent shrubs of which the vygies (Mesembryanthemaceae) and Stonecrops (Crassulaceae) are dominant.

Less than 0,5 percent of the Biome enjoys formal protection. Considering the high number of rare and endangered species occurring in this Biome, it is an area, which deserves urgent conservation attention.

7. Fynbos Biome

The Fynbos Biome includes two key vegetation types, Fynbos and Renosterveld. The Cape Floral Kingdom is predominantly Fynbos, although it includes vegetation types from the Forest, Nama Karoo, Succulent Karoo and Thicket biomes. The Cape Floral Kingdom is the smallest of the six Floral Kingdoms in the world, and it is the only one which is contained in its entirety within a single country. This Floral Kingdom is characterised by its species richness with some 8 700 species having been recorded and its high endemicity with over 68 percent of the plants being confined to the Kingdom.

In South Africa, over one third of all plant species occur in the Cape Floral Kingdom, even though the Kingdom occupies less than six percent of the area of the country.

Low and Rebelo (1996) state that over 7 000 plant species occur in the Fynbos vegetation types. Endemicity is high with over 80 percent of plant species being confined to the Cape Floral Kingdom and Fynbos Biome.

The authors point out that some three-quarters of all plants in the South African Red Data books occur in the Cape Floral Kingdom: 1700 plant species are threatened to some extent with extinction

Table 3: Conservation Status of South African Biomes

Biome	Number of Vegetation Types	Proportion of South Africa	Proportion Conserved
Forest	3	0.59	17.90
Thicket	5	3.44	4.50
Savanna	25	34.24	10.15
Grassland	15	24.26	2.52
Nama Karoo	6	24.41	0.57
Succulent Karoo	4	6.77	2.82
Fynbos	0	0	0
Renosterveld	5	2.90	1.67
Fynbos	5	3.39	20.52
TOTAL	**68 vegetation types,** **7 biomes**	**100**	**5.2 % conserved**