

Report on the Investigation to Identify Problems for Sustainable Growth and Development in South African Wildlife Ranching

The National Agricultural Marketing Council



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1 Executive summary

South African wildlife ranching is a relatively young economic sector. Growth in the sector has gained momentum during the past three decades because, for the first time, an economic value has been attached to wildlife. Before that, wildlife was seen as an undesirable competitor for limited grazing land. As it became clear that a much wider range of income possibilities could be generated from wildlife, landowners started to realise that wildlife ranching might be an alternative option to, for example, domestic animals or other agricultural activities.

Wildlife ranching provides consumable activities (such as recreational hunting, trophy hunting, biltong and wildlife meat) as well as non-consumable activities (such as accommodation, breeding material, wildlife viewing, adventure and tourism). In general, wildlife ranching also offers better utilisation of natural habitat (browsers and grazers) compared to domestic animals. A number of studies completed over the past few years indicate that wildlife ranching is more profitable than, for example, cattle farming, results in better skilled employees with higher remuneration and creates more job opportunities, especially in the deep rural areas.

The conditions for agricultural production in South Africa are not favourable compared to the rest of the world. Water resources are scarce in most regions, with the result that only 17% of agricultural land is potentially arable (suitable for field crops and horticulture). Natural pastures represent 83% of total agricultural land. Many conservationists regard the conversion of marginal agricultural land into wildlife ranching as a step towards reverting to more natural systems.

South African wildlife ranching is unique in the world with its exempted wildlife ranches, where the wildlife belongs to the owner of the land. In African countries wildlife generally roams free in unfenced areas. South Africa's good infrastructure (airports, roads, lodges, etc) is a further reason why trophy hunters across the world regard South Africa as a top destination where the largest variety of trophies can be hunted. Furthermore, trophy hunters prefer South Africa because it is the only country in the world where the big five can be legally hunted.

It is important to note that wildlife is to be found on government land, on tribal/community land and on private land. Government protected areas cover approximately 7.5 million ha, while the private sector has approximately 20.5 million ha under conservation (South Africa's total land size is approximately 122.2 million ha). The number of animals owned by the private sector is about 3 to 4 times more than the number in government protected areas. Because government institutions (national and provincial parks) also own wildlife, the wildlife ranching sector is experiencing strong competition from government institutions. National

and provincial parks are selling surplus stock on wildlife auctions in competition with the private sector. These animals were bought and/or bred with taxpayers' money. After they are auctioned they are later released on private ranches for breeding, ecotourism or recreational and trophy hunting.

South African wildlife ranching is integrated with other sectors of the economy – the agricultural sector on the one hand and tourism and conservation on the other. The wildlife sector claims that it makes a large contribution towards conservation because it is in its interest to preserve wildlife. In other words, without wildlife there would be no wildlife ranching and there is therefore more wildlife in South Africa at present than at any other time in the past 150 years.

Both the national Departments of Agriculture (DoA) and Environmental Affairs and Tourism (DEAT) are significant role-players in the wildlife and hunting sectors. While the DoA leads agricultural production (including wildlife husbandry), DEAT leads tourism and environmental conservation. The latter plays a most important role with regard to resource utilisation, as demonstrated by the appointment of a panel of experts to advise on appropriate norms and standards for hunting (both professional and recreational). Draft norms and standards have subsequently been compiled by DEAT and are currently being considered by the wildlife fraternity.

The primary role of the National Agricultural Marketing Council (NAMC) is to advise the Minister for Agriculture and Land Affairs. The mandate of the NAMC is contained in the Marketing of Agricultural Products Act, 1996 (the MAP Act). The MAP Act declared wildlife and its products as agricultural products for the purposes of the Act. Since 1995 the DoA has also regarded wildlife ranching as an agricultural activity.

In summary, the Committee proposes that wildlife ranching be regarded as primarily an agricultural activity and to a lesser extent as a function of DEAT; in other words, that wildlife ranching be viewed and treated in a way that is similar to livestock farming and that, where possible, it should be freed from all unnecessary legislation and restrictions enforced by DEAT.

2 Recommendations

The Committee made the following recommendations:

Recommendation 1

That the South African government recognises wildlife ranching as a major force in the South African economy and in the agricultural sector. That government recognises the sector's contribution towards:

- Promoting conservation
- Creating job opportunities
- Increasing tourism to South Africa (wildlife ranching has the potential to expand tourism activities considerably by diversifying the current product range)
- Sustainable development in rural areas (utilisation of marginal land and infrastructure development)

Recommendation 2

That the government recognises that its own contribution to the optimal performance of wildlife ranching needs serious reviewing in order to position the sector as an important contributor to the gross domestic product (GDP). The following areas need attention:

- The inhibiting competition from government protected areas with the private commercial sector
- The ambiguous roles of DEAT and the DoA in the wildlife ranching industry as well as the regulatory differences between provinces that are negatively affecting the industry
- The negative effect of the Firearms Control Act on the wildlife industry
- The lack of a national set of norms and standards and regulations for the wildlife industry
- The lack of proper training and empowerment for previously disadvantaged individuals in the wildlife industry

Recommendation 3

That wildlife ranching assists in its transformation through technical assistance programmes; that government protected areas donate surplus animals from national and provincial parks to emerging wildlife ranchers and that, where feasible, communal land be targeted for future conservation programmes.

Recommendation 4

That wildlife ranching promotes responsible and ethical hunting (recreational and trophy) especially among African people, to stimulate sustainable growth within the industry.

Recommendation 5

That wildlife ranching promotes the consumption of wildlife meat (locally and internationally) to reap the benefits from culling programmes. Currently, the industry's potential to produce wildlife meat to promote food security is seriously under-utilised.

Recommendation 6

That wildlife ranching and government address the issue of translocation policy/demarcated areas (alien species in certain areas) in an attempt to increase available land for wildlife.

1. INTRODUCTION

1.1 Background

The National Agricultural Marketing Council (NAMC) is a statutory body and primarily an advisory body for the Minister of Agriculture and Land Affairs. For the 2005/06 financial year the Council decided to establish a Committee, in terms of section 7 of the Marketing of Agricultural Products Act, 1996, to identify opportunities for and address problems relating to the sustainable development of South African wildlife ranching. The Committee held its first meeting on 6 September 2005.

1.2 Composition of the Wildlife Section 7 Committee

In April 2005 the NAMC invited role-players in the wildlife ranching value chain to nominate representatives to serve on the Committee. The members of the Committee were appointed from the list of nominations received by the NAMC.

The Wildlife Section 7 Committee comprised the following members:

Ms Dora Ndaba	Chairperson (NAMC Council member)
Mr Schalk Burger	Economist (NAMC Secretariat)
Mr Motsepe Matlala	National African Farmers Union
Mr Victor Musetha	National Department of Agriculture
Mr Peter Butland	Professional hunters (overseas market)
Prof PJS Potgieter	Recreational hunters (biltong hunters)
Mr Piet Neethling	Wildlife Meat (fresh meat)
Mr Borrie Erasmus	Wildlife Ranching Association of SA (wildlife ranchers)
Dr Pieter Botha	Department of Environmental Affairs and Tourism
Dr Johann Kotzé	Department of Environmental Affairs and Tourism
Prof HO de Waal	African Large Predator Research Unit
Mr John Blythe-wood	Wildlife ranching capturing/translocation
Mr Dennis Pickard	Taxidermist industry

1.3 Terms of reference

It was decided that the Committee would look specifically into the issues set out below (and this was accepted as the framework for the report).

The purpose of the Wildlife Section 7 Committee is to make recommendations on how the objectives of the Marketing of Agricultural Products Act, 1996, as amended, can be promoted. To achieve this, the Committee will specifically study the following aspects:

- 1) Scope of wildlife ranching
 - a. Who are the local role-players?
 - b. How does South African wildlife ranching link with global wildlife ranching?
- 2) Current status and contribution of the subsectors/role-players
 - a. Constituencies
 - b. Structures
 - c. Contribution to wildlife ranching
 - d. Marketing arrangements
- 3) Inhibiting factors
 - a. Legislation (including Firearms Control Act)
 - b. State as a competitor
 - c. White controlled
 - d. Other
- 4) Impact of wildlife ranching on
 - a. Commercial farming
 - b. Environment
 - c. Food security
 - d. Ecotourism
- 5) Capacity of wildlife ranching to enhance BEE
- 6) How the economic output of wildlife ranching could be improved
- 7) Recommendations of the Wildlife Section 7 Committee

1.4 Marketing of Agricultural Products Act

The NAMC operates in terms of the Marketing of Agricultural Products Act, 1996, as amended. Notice No.R.1189 dated 4 September 1997 declares, in terms of section 1 (2) of the Marketing of Agricultural Products Act, 1996, certain agricultural products as

agricultural products for the purposes of the MAP Act. In the original Notice, “Game and livestock” and “Meat” were among other agricultural products that were declared as agricultural products for the purposes of the Act. In December 2005, Notice No.R.1189 was amended to declare “*Cattle, goats, sheep, pigs and game as well as their products*” as agricultural products. The wildlife fraternity, however, prefers to use the word “wildlife” rather than “game”.

The objectives of the MAP Act are to:

- increase market access for all market participants
- promote the efficiency of the marketing of agricultural products
- optimise export earnings from agricultural products
- enhance the viability of the agricultural sector

1.5 National departments responsible for wildlife

Government structures that support wildlife ranching are at the moment very fragmented and lack a common vision, despite the fact that wildlife ranching has been recognised by the Department of Agriculture as a fully-fledged agricultural industry in 1987. Since then, there has been uncertainty as to where responsibility for wildlife responsibility lies - with the DEAT, with DoA, or both? Some of the activities in the wildlife sector and the responsible national departments are summarised below:

DEAT	DoA
(Eco) tourism	Labour
Conservation	Land and land tax issues
Protected areas development	Wildlife meat
Wildlife	Diseases
Enforcement of legislation/compliance	Wildlife
	Veterinary services
	Enforcement
	Extension services (extending knowledge)

1.6 Definition of wildlife ranching for the purposes of this study

For the purposes of this study, wildlife ranching is defined as the management of game in a system with minimal human intervention in the form of

- the provision of water
- the supplementation of food, except in times of drought
- the control of parasites
- the provision of health care; or
- the supplementation of wild prey populations

2. HISTORICAL OVERVIEW OF SOUTH AFRICAN WILDLIFE

Historically, wildlife has been seen as part of nature. It was believed that wildlife belonged to nobody or belonged to the state, and that anybody could hunt anywhere (with permits required as gazetted). The result was that wildlife numbers decreased drastically.

Towards the middle of the 20th century, wildlife had almost no monetary value and was regarded as an undesirable competitor for limited grazing land. The absence of wildlife was even cited as an advantage when selling land. At that stage only 19 bontebok, less than 2 000 blesbok and under 30 white rhinoceros were alive in South Africa.

With larger human populations and more of the already limited available land being used for modern agricultural systems (domestic animals, field crops and irrigation), the area of available land for wildlife decreased significantly over time. The increase in conflict between humans and wildlife was therefore inevitable. To accommodate this conflict, South Africa chose to fence off most of its large and dangerous wildlife – an expensive option that only a few countries could afford. Wildlife was subsequently restricted to government protected areas or private land. South Africa therefore currently has no free-ranging lion, buffalo, rhino or elephant. The concept of exempted ranches, however, made South Africa a world leader in this regard.

Exempted ranches refer to farms which are fenced to keep wildlife and where the owner may be exempt from some or all the provisions of the Ordinance applicable to the hunting, catching and selling of specified species. The owner of an exempted ranch is able to claim ownership of the animals within the fenced area. Some wildlife are jumpers and if they escape from the specific area (owner's premises), this is a loss for the owner or the owner may be sued for damages incurred upon their escape.

2.1 Government intervention

Since 1894, as a response to declining wildlife numbers and uncontrolled hunting, a number of statutory game reserves have been established in the former Transvaal and Natal provinces. The location of these reserves was, in many instances, determined by the presence of tsetse fly and malaria, or by the fact that their agricultural potential was poor.

Government conservation agencies, like the South African National Parks and provincial conservation agencies, were instituted and they established national parks and provincial nature reserves, with the aim of conserving this heritage. The first National Parks Act was promulgated in 1926, together with the establishment of the Kruger National Park. Another three national parks, namely the Addo, the Bontebok and the Kalahari Gemsbok National Parks, were established in 1931.

The establishment of government protected areas was often accompanied by forced removals and resource dispossession of black people. The dominant approach during this period was that protected areas ought to be “pristine”, fenced-off areas. This approach eventually created the widely held perception that protected areas are playgrounds for the privileged elite, and that biodiversity conservation is an exclusive concern and irrelevant to the majority of South Africa’s people.

After 1994, the new South African government continued to show commitment to conservation. In 2001, land occupied by national and provincial parks (government protected areas) amounted to 6.7 million ha, approximately 5.5% of South Africa’s total land area. The international norm is that approximately 10% be set aside as protected areas. In 2004 approximately 88 000 ha were added to government protected areas and in 2005 a further 64 600 ha or thereabouts were added. Government continued its commitment to the expansion and consolidation of protected areas and aimed to enhance the conservation of the most threatened biomes, to ensure that protected areas are ecologically sustainable and to be a catalyst for real economic and social opportunities for the surrounding communities.

Government has promised that by 2010 it will have increased the amount of land under formal protection from the current 6.1% to 8%, and to 10% in the near future. This means eventually adding the equivalent of two Kruger National Parks to the current area under protection or increasing existing government protected areas by 63% to reach the 10% target. Currently, the South African government is involved and enthusiastically participates in initiatives to develop transfrontier parks and conservation areas. This initiative, focusing on six transfrontier parks and conservation areas, promises to not only contribute significantly to increased areas of protected land and extended conservation of biodiversity, but also to the creation of job and recreation opportunities in addition to some development across South Africa’s borders.

Currently, South Africa has 22 national parks and about 100 provincial parks in the nine provinces.

2.2 Private sector

It is reported (Department of Environmental Affairs and Tourism, 1997) that from the 1860s onwards, private landowners saw the need to protect game from irresponsible and unsustainable utilisation, and established preserves on their farms. However, it was only about 40 years ago that wildlife ranchers realised the economic potential of the great variety of indigenous wildlife species in South Africa. Since then, through innovative actions, a prosperous wildlife sector has been developed. South Africa has progressed to become a world leader in the sustainable, extensive utilisation of indigenous wildlife species.

The expansion of the wildlife ranching industry may be regarded as a vehicle to prevent the extinction of species in the wild. The demise during the 19th century of the quagga and bloubok in the wild is largely attributed to over-exploitation through hunting. Although the black rhinoceros has been identified as a critically endangered species, the role of the industry in its survival should not be underestimated. When the numbers of a specific species decrease to a level of possible extinction, market forces may determine a higher price for that species and the wildlife ranching industry will be motivated to increase its numbers. In other words, an increase in the monetary value of wildlife serves as an incentive for conservation. Prices for the black-faced impala, for example, have risen as high as R110 000 per animal during periods of scarcity. As soon as numbers increase above the possible extinction zone, the prices for the relevant species will start to decrease.

It is widely recognised that wildlife ranching has been the fastest growing agricultural activity in South Africa in the past three decades. A three-year stabilising period was experienced during the early 1990s, brought on by extended droughts, financial debt and the collapse of all markets. From 1996 wildlife ranching again experienced exceptional growth because of the favourable exchange rate. South Africa remains a cheap destiny for trophy hunters and ecotourism. Since the beginning of 2003, the wildlife ranching industry has again experienced difficult times because of the strengthening of the Rand against the US\$ and the prevailing drought.

Today, South Africa has more wildlife than at any other time during the past 150 years. One reason for this turnaround is that the recognition of the economic value of wildlife gained momentum. Ecotourism and trophy hunting provided a further stimulus for growth in the wildlife ranching industry. Another reason was the growing awareness that South Africa, with much of its agricultural land being semi-arid and marginal, is better suited for wildlife ranching than for traditional agriculture. Only 17% of South Africa's agricultural land has a high production potential. Against this background, wildlife ranching may be regarded as one of the best development options for the more marginal agricultural areas of South Africa.

To handle the large numbers of wildlife, wildlife auctions, where surplus stock is traded, became an integral part of the wildlife industry. The first live wildlife auction in Africa was held in 1965 near Tshipise in the former Northern Transvaal. A few years later some provincial nature conservation authorities also entered the auction field to dispose of surplus wildlife on their reserves. Wildlife ranchers regard this practice as unfair competition by the state with the private sector. Government, on the other hand, sees public auctions as a legitimate method for state departments to dispose of their surplus stock.

Five methods are used in South Africa for trading with wildlife, namely:

1. Private sales negotiated between the buyer and the seller (Professional wildlife catchers play an important role by translocating the animals.)
2. Public live wildlife auctions
3. Public wildlife catalogue auctions
4. The tender system (This method is used mainly by municipalities that own wildlife and nature reserves. The SANParks calls for tenders to buy animals like elephants and rhinoceros.)
5. Electronic auctions

In summary, one may conclude that the growth in the wildlife ranching industry was triggered by the increase in the economic value of wildlife. Wildlife grew from “zero” to “hero” and the principle was established that *if wildlife pays, it stays*. Because of the economic value attached to wildlife in South Africa, there is an incentive to manage the wildlife and, consequently, to promote conservation objectives. Those species that are critically endangered and cannot be hunted are, in fact, still under serious threat and an incentive structure needs to be developed to support the efforts to avoid extinction and, thus, *if it pays it still stays*.

Currently, South Africa has about 9 000 wildlife ranches. This number includes big farms, small farms, breeding farms, intensive and extensive farms, covering approximately 20.5 million ha (approximately 16.8% of the total land in South Africa).

3. A WORLD PERSPECTIVE ON WILDLIFE

3.1 South Africa

South Africa is regarded as one of the world's so-called megadiverse countries. After Brazil and Indonesia, South Africa is rated as the third most biologically diverse country in the world. With less than 1% of the global land surface, the country harbours some 10% of global plant, bird and freshwater fish diversity, and approximately 6% of mammal and reptile diversity (Endangered Wildlife Trust, 2004).

This explains why South Africa has a wide variety of animals that are sought after by overseas trophy hunters. Currently South Africa has approximately 65 species that are hunted for trophies. This makes South Africa the country with the highest number of wildlife species that can be hunted for trophies.

South Africa is also a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The countries who signed this Convention agreed to various prohibitions and restrictions in international trade on practices that threaten the conservation of listed species in the wild. South Africa has been a signatory for over 30 years and is a significant importer and exporter of CITES-listed species. There has, however, been concern for the past decade that wildlife trade in South Africa is not adequately controlled and that there are a number of deficiencies in South Africa's implementation of the Convention. Probably one of the greatest pressures for change has come directly through a CITES decision which requires South Africa to develop adequate legislation within certain time frames, failing which a trade suspension could be imposed. To address these concerns, among others, provisions to deal with CITES implementation have been included in the National Environment Management: Biodiversity Act. It therefore seems that after many years, South Africa will at least meet its obligations as a CITES member state.

3.2 Africa

3.2.1 Wildlife numbers

Throughout the 1900s Africa's wildlife was perceived as plentiful and prolific. Immigrant settlers impacted on Africa's wildlife as the continent was penetrated and newer agricultural practices introduced. Wild habitats were modified to accommodate agrarian needs, thereby eliminating a myriad of wild plants and animals. Wildlife was regarded as competing with

domesticated livestock, raiders of the cultivated crops and free rations for settlers' labour forces. As a result they wiped out the larger and dangerous mammals on their lands. The number of predators has, accordingly, decreased significantly in these areas.

3.2.2 Scenarios in some african countries

Tanzania is regarded as one of the top African destinations for hunters, mostly from the United States (US) and Europe, who pay large sums for the opportunity to hunt lion, among other large game.

The annual migration of more than 1.5 million wildebeest, zebra and other herbivores from the Masai Mara to Tanzania's fabled Serengeti National Park has been described as "*the most spectacular wildlife spectacle on Earth*" (Ngowi, 2006). The animals migrate to the Serengeti plains to graze the new grass and calve because the grass is more nutritious there and this is crucial for milk production. But the drought during the 2005/06 season caused a critical shortage of pastures and water for the large herds of animals that had begun to calve and foal. The mothers had little milk and were forced to move frequently in search of pastures. In the confusion, many suckling calves and foals were lost and died because they were still too young to survive on anything but milk.

Namibia's status as an international trophy hunting destination is no longer just a dream. The country has grown into one of the leading, more desired hunting destinations in Africa and one of the best in the world – having established a hunter's paradise. The abundance of wildlife in the country and practical hunting administrative systems are currently the country's biggest selling points. Namibia recently (2006) had its best rains in 30 years and the country is greener than ever before. In 2004 about 5 000 trophy hunters visited Namibia, placing it second to South Africa in this regard.

Namibia is being proactive with its wildlife sector; the government has embraced its wildlife economy and assists wherever possible. Currently, Namibia is South Africa's biggest trophy-hunting competitor in Africa. The relative ease with which foreign hunters can bring their firearms into Namibia makes a major contribution to its popularity as a hunting destination.

About 30 years ago, **Kenya** was one of a few countries in Africa that banned hunting and promoted itself as Africa's leading ecotourism destination. Unfortunately, this policy led to a substantial decline in wildlife numbers in Kenya. Non-consumptive ecotourism by itself could not support the principle of "*if it pays it stays*".

In the **Ivory Coast** hunting has been banned since 1974 and, as in Kenya, wildlife resources diminished at an alarming rate. The only people who are benefiting are the poachers and restaurant owners who have established and maintain an illegal economic sector worth a few million US dollars annually.

3.2.3 Protected areas in southern africa (2001)

Table 3.1: A summary of nationally protected areas in Southern Africa

Country	Area ('000 ha)	% of land
Angola	8 181	6.6
Botswana	10 499	18.0
Lesotho	7	0.2
Malawi	1 059	8.9
Mozambique	4 779	6.0
Namibia	10 616	12.9
South Africa	6 619	5.4
Tanzania	13 817	14.6
Zambia	6 366	8.5
Zimbabwe	3 081	7.9

Since 2001, government protected areas in South Africa have increased from about 6.6 million ha to the current (2006) approximately 7.5 million ha.

Viewing the content of Table 3.1, it could be concluded that South Africa is lagging behind other countries in Southern Africa regarding nationally protected areas. However, the picture changes completely when private conservation areas are added to the national protected areas. With 20.2 million ha under private conservation, in total about 23% of land in South Africa is under conservation. This is the highest in Southern Africa.

3.3 The world

3.3.1 The International Union for the Conservation of Nature and Natural Resources

In 1948, the United Nations created the International Union for the Conservation of Nature and Natural Resources (IUCN), now known as the World Conservation Union. Its role and functions include guiding the sustainable use of the world's natural resources.

The IUCN took many years to mature, publishing its mission statement, the World Conservation Strategy (WCS), only in 1980 (revised in 1991). The WCS is one of the world's most important protocols. It is a blueprint for the survival of all living things on planet earth, spelling out how, through the judicious and sustainable use of renewable natural resources, both humans and nature can survive symbiotically.

One of the objectives of the WCS is to ensure the sustainable utilisation of species and ecosystems (fish and wildlife, forests and grazing lands) which support millions of rural communities as well as major industries. In essence, this promotes a common view for the sustainable use of renewable natural resources, including wildlife, for both subsistence and commercial purposes.

During the 1980s, most responsible nations in the world designed their own National Conservation Strategies based upon the WCS principles and incorporated them into their domestic laws. This gave the WCS its legal "teeth".

3.3.2 World Wildlife Fund

After World War II, human populations increased at an unprecedented rate, consequently increasing the use of natural resources. In 1961 the IUCN was instrumental in creating the independent World Wildlife Fund (WWF), now also known as the World Wide Fund for Nature.

Since its formation the (international) WWF has raised hundreds of millions of dollars to finance its operations. In the process it has helped save many plants and animals from extinction and create hundreds of national parks, both large and small, on all five continents.

Over the years, nature lovers in countries around the world have established their own (national) WWF offices to raise funds for their own wildlife projects – buying into what amounts to the WWF franchise by being permitted to use the well-known panda logo. Although the international WWF offers the national offices advice on dealing with wildlife issues, especially the more controversial ones, the national organisations are not obliged to follow that advice. They are truly independent.

3.3.3 The Convention On International Trade In Endangered Species Of Wild Fauna And Flora

In 1975, the IUCN, the WWF and UNEP (the United Nations Environment Program) established, in addition, the Convention on International Trade in Endangered Species of Fauna and Flora (CITES).

Today, CITES has over 160 sovereign state members, known as signatories or parties to the Convention. CITES is empowered – through votes cast by the parties – to ban commercial trade in endangered species, and to monitor and regulate trade in other vulnerable species. These species are specified on lists, called appendices, that are reviewed and ratified at the meetings of the Conferences of the Parties that take place approximately every two years.

3.3.4 Convention on biological diversity

The Convention on Biological Diversity (CBD) opened for signature at the United Nations Conference on Environment and Development in Rio de Janeiro in June 1992 and came into force on 29 December 1993. South Africa has been a signatory to the Convention since 1993 and ratified it in November 1995.

The objectives of the CBD are the conservation of biological diversity; the sustainable use of components of biological diversity; and the equitable sharing of benefits arising from the utilisation of biological resources

The Convention operates by means of binding commitments in the text of the Convention dealing with key provisions such as the following:

- Measures for the conservation of biodiversity, both *in situ* and *ex situ*
- Incentives for the conservation and sustainable use of biological diversity
- Research and training
- Public awareness and education
- Assessing the impacts of projects upon biological diversity
- Regulating the access to genetic resources
- Access to and transfer of technology

The IUCN and WWF (International) are independent, non-profit organisations, with headquarters in Switzerland where they work in close cooperation based on their stated joint belief in the principles of the WCS. CITES and CBD are multilateral environmental agreements between countries or governments.

3.3.5 Hunting in the world

For every anti-hunting lobbyist in the world, there is at least one registered hunter (or possibly two). Across the world, hunters hunt approximately 100 million animals per annum. Safari Club International (SCI) is an international organisation composed of hunters and supporters of hunting. SCI represents 45 million members worldwide. South Africa hunts about 1 million animals and has approximately 200 000 hunters.

According to a study done in the US and Sweden (Heberlein & Willebrand, 1998) approximately 5% of the population in each country are hunters (the US has 14 million registered hunters in a population of 295 million people, while Sweden has 320 000 registered hunters in a population of 9 million people). If one includes the casual (non-registered) hunters, the total in each country could be between 7% and 8% of the population. On the other hand, approximately 4% of the population in each country (US 4.4% and Sweden 3.9%) oppose all forms of hunting. The attitude towards hunting of the other 90% of the population varies depending on the type of hunting – people tend to support “native subsistence hunting” much more readily than “hunting for sport and recreation”.

Australia’s population is about 20 million, of which approximately one million people are involved in hunting – in other words approximately 5% of their population engage in hunting.

The deer numbers in New Zealand increased from 104 359 in 1980 to 1.61 million in 2005. Currently, New Zealand is the world’s biggest exporter of venison but it was recently argued that the deer they cull for venison are raised in “feedlots” and the meat can therefore not be regarded as venison. The demand for this venison (deer) from New Zealand could decrease in the near future (because buyers don’t want to buy meat from “feedlot” animals) and this could open an opportunity for South Africa to export wildlife meat.

In summary, it may be estimated that at least 5% of the population in developed countries are registered hunters, compared with only about 0.5% in South Africa. A survey (Northwest University, 2005) indicated that 87% of South African hunters are white, Afrikaans-speaking men. Much could be done to promote hunting among other cultural groups in South Africa. To achieve this it is important to get prominent people, like ministers and businessmen, involved in hunting and to facilitate the acceptance of unit standards by the appropriate Sector Education Training Authorities (SETAs) with a view to supporting skills training of members of previously disadvantaged cultures (PDCs). This would expedite their mainstreaming in the wildlife sector and would boost demand by black hunters.

3.3.6 World protected areas

Every country in the world has defined areas that are managed for the conservation of wildlife, plants and other natural and cultural features. These are called protected areas (protected areas may be classified into six different categories). The World Parks Congress convenes every ten years and thus a calculation of protected areas is done every ten years.

Table 3.2: Protected areas calculated in the years that the World Parks Congress convenes

Year	Number of protected areas	Areas declared protected areas million km ²
1962	9 214	2.4
1972	16 394	4.1
1982	27 794	8.8
1992	48 388	12.3
2003	102 102	18.8

Table 3.2 indicates that conservation is becoming more and more important in the world. The 18.8 million km² declared as protected areas represents 12.6% of the total land area of the world (148.9 million km²). In South Africa government protected areas account for only 6.1% of our total land area.

4 FRAMEWORK OF INVESTIGATION

4.1 Scope of the south african wildlife sector

4.1.1 Land allocation

In the past three decades wildlife ranches have been instrumental in increasing the areas under various levels of conservation management. Presently, about 23% of the total land area in South Africa is under various levels of conservation management. Most of this is privately owned. The private sector has been a major factor in the substantial increase of wildlife in our country. Currently, the total area utilised by private wildlife ranchers is almost three times bigger than government protected areas (national and provincial parks). The area under conservation management is summarised below.

	ha	%
Government protected areas	7 500 000	6.1
Private wildlife ranches	20 500 000	16.8
Total under conservation management	28 000 000	22.9
Total agricultural land	100 600 000	82.2
Total area of South Africa	122 340 100	100.0

In 1993 South Africa had approximately 3 357 exempted wildlife ranches or 7 039 992 ha fenced areas (average 2 097 ha per ranch) which represented about 5.7% of available land. By 2005, exempted wildlife ranches had increased to approximately 6 330 ranches covering approximately 14 789 000 ha (average 2 336 ha per ranch) or 12.0% of available land. This represents a growth rate of approximately 6.4% per year in exempted areas. The 14 789 000 ha do not include unfenced wildlife farms. Because the total area of land remains static (the same over time), the land available for other agricultural purposes (e.g. for cattle, field crops, etc) decreased markedly over the same period.

4.1.2 The private sector

Wildlife ranching is by nature a multi-species production system that utilises a wide range of habitat, grazing/browsing strata and veld conditions. The main aim of the wildlife ranching industry is the sustainable use of this valuable but vulnerable natural resource. The sector also provides a wide range of non-consumptive activities (tourism, wildlife sales, wildlife viewing, accommodation, etc.) and consumptive activities (recreational hunting, trophy hunting, meat production, etc.). Both types of products can be managed in combination

on a ranch. The variety of wildlife species and their possible combination to achieve different forms of utilisation, which complement each other, together with other ecotourism activities associated with wildlife (4x4, hiking, etc), give the wildlife rancher a flexibility which is not possible with domestic livestock.

South African wildlife ranchers are in a unique position in that the country is one of only a few countries in the world (including Namibia and Zimbabwe) where wildlife in exempted areas belongs to the owner of the land. In most other countries wildlife belongs to the state.

There is no doubt that wildlife could contribute to the better utilisation and conservation of our natural habitat. Wildlife is more immune to diseases and less prone to stock theft than domesticated livestock, and if well managed, over-grazing and bush encroachment could be prevented. Wildlife ranchers could also convert degraded land back to nature, thus stopping soil erosion and protecting the biodiversity of our country, provided that the process is well managed.

In conclusion, it must be emphasised that it is not the type of animal that causes the above-mentioned problems, but the management system.

4.1.3 Transfrontier protected areas and conservation areas

The purpose of transfrontier protected areas (TFPAs) and transfrontier conservation areas (TFCAs) is to employ conservation in Africa as a land use option to the benefit of local people. The Peace Parks Foundation was founded by Mr Nelson Mandela, the late Dr Anton Rupert and the late Prince Bernard, a non-profit organisation which aims to facilitate the establishment of TFPAs/TFCAs, also called peace parks. Peace parks straddle the borders of adjacent countries and involve a unique level of international cooperation between participating countries. Some of South Africa's national parks (administered by SANParks) and provincial parks are part of the TFPAs/TFCAs.

It must be clearly understood that while the South African government is creating legislation to make hunting in protected areas very difficult, neighbouring countries are intent on promoting their countries as sustainable hunting destinations.

At the outset, six TFPAs/TFCAs were identified and international agreements regarding the development of these areas have already been signed. A further 16 potential TFPAs/TFCAs have already been identified in the SADC region. Should these TFPAs/TFCAs be constituted, it will bring the total area of TFPAs/TFCAs in the SADC region to about 120 million ha, which is roughly the same size as South Africa.

The international community has also grasped the African concept of peace parks and Mr Mandela has already entered into discussions to create a peace park between North and South Korea. Negotiations are also under way to establish TFPAs/TFCAs elsewhere in the world.

A critical success factor for the sustainability of TFPAs/TFCAs is that participating countries should have the same values, standards and approach towards conservation. If one country conserves while other countries cannot control poaching, the relationship between the participating countries could be jeopardised. The global “triple bottom line” development principle is fundamental to TFCA development.

4.1.4 Deat initiatives

In 2005 DEAT initiated a study of hunting of wildlife in South Africa when the Minister of Environmental Affairs and Tourism appointed a Panel of Experts (PoE) to advise him on a “Regulatory framework on recreational and professional hunting in South Africa”.

The report compiled by the PoE (which was released on 25 October 2005) recommended that hunting in national parks and provincial parks be prohibited in the future. In the past hunting was allowed in provincial parks and provided a good income. Some of the other recommendations of the PoE include the following:

- The prohibition of hunting of any animals that originate from intensive wildlife production systems i.e. systems where human intervention occurs through *inter alia* caring for and feeding of animals (as opposed to extensive wildlife production systems being open systems where animals are allowed to roam freely, care for themselves and where the “survival of the fittest” applies).
- A ban on captive breeding.
- Transformation of the hunting sector.

The wildlife ranching sector rejected the report, claiming that their input had not been considered in its compilation.

To give effect to the implementation of the National Environmental Management: Biodiversity Act, DEAT, in consultation with the provincial conservation authorities, developed regulations relating to threatened or protected species, which have an impact on the utilisation and management of wildlife. At the same time DEAT developed national norms and standards for hunting in South Africa. These norms and standards provided for, among others, the regulation of professional and recreational hunting in South Africa. The regulations and norms and standards were published in the Government Gazette on 5 May 2006 and the public were given a period of six weeks in which to submit comments to DEAT.

4.1.5 Hunting in government protected areas

While hunting was prohibited in national parks it was allowed in some provincial nature reserves. In terms of the IUCN categorisation of national parks, hunting is not be allowed in proclaimed national parks. Furthermore, it was considered that predators would keep wildlife numbers in balance in national parks thereby obviating the need for hunting. The option to cull specific species to control animal numbers is, however, one of the management tools available to the management authority of a national park. One of the by-products of culling is the availability of game products such as meat, hides and horns which can be made available to the public to alleviate the financial burden on the park authority. However, this was merely a drop in the ocean and did not enable some of the parks to become self-sustaining.

Hunting was accepted in some provincial parks in order to generate an income to defray costs. This activity contributes in a limited way to the revenue base of the relevant parks and reserves and also meets the protein needs of local communities and provides them with the raw materials they need for producing curios. Hunting was allowed in, among others, the Pilanesberg National Park, the Madikwe Game Reserve, and the Borakalalo and Botsolano Game Reserves run by Northwest Province; the Songimvelo Game Reserve and Mthetomusha Game Reserve run by Mpumalanga Province; and the Manyaleti Game Reserve and Letaba Ranch run by Limpopo Province. Both Manyaleti and Letaba share unfenced boundaries with the Kruger National Park (KNP), raising fears that wildlife from the KNP could be hunted. Hunting also takes place on a number of private game reserves such as the Timbavati, Umbabat, Klaserie and Balule private nature reserves which share an unfenced boundary with the KNP.

The draft norms and standards published in May 2006 by the DEAT recommended that in future the Minister himself or herself must approve all hunting in areas adjoining national parks where fences have been removed. The document also recommended that provincial MECs must personally approve hunting in provincial reserves. The national Minister of Environmental Affairs and Tourism should, moreover, approve all hunting envisaged for unfenced areas bordering national parks. This indicates that the South African government supports hunting and regards the sustainable utilisation of wildlife as both a morally and financially acceptable practice that contributes towards the economy and helps create jobs, particularly in rural areas.

One of the representative organisations for recreational hunters in South Africa, the Confederation of Hunting Associations of South Africa (CHASA), with its 19 member associations, recently expressed its unanimous support for hunting in national parks (Hunting in national parks, 2006).

4.1.6 Public vs private wildlife conservation

Public efforts at wildlife conservation are often less effective than private efforts for several reasons.

- The government is obliged to satisfy competing interests and often seeks to provide recreational activities on public land, resulting in very little privacy for wildlife.
- It is easier for private property owners to restrict access to their land than for government to limit public land use.
- The private sector is more flexible than the government and can more easily implement immediate policy and administrative changes.

Another problem for public conservation is that wildlife is regarded as common property. Public ownership of wildlife often results in over-exploitation of the land's natural resources (elephant in the Kruger National Park), while private ownership results in sustainable use and conservation. One of the biggest threats to wildlife is loss of habitat.

Private wildlife conservation activities complement and often surpass government efforts. The role and contribution of the private wildlife rancher in the conservation of threatened and endangered species, such as the white rhino, sable, roan, buffalo and bontebok, can never be underestimated or denied. The record of private conservation in the US and in other countries also shows that free enterprise can successfully preserve habitat and benefit wildlife.

4.2 Current status and contribution of the relevant subsectors in the wildlife sector

The various subsectors within the total wildlife value chain are all relatively well organised. Some subsectors are divided in the sense that more than one representative structure provides services to its members.

4.2.1 Wildlife ranching industry

South Africa has about 9 000 wildlife ranches of which about 6 330 are exempted farms. The rest are mixed wildlife and livestock farms.

Legislation restricts the use and ownership of wildlife and allows for the concept of exempted wildlife ranches. Wildlife ranches with suitable fencing may qualify for a three-year exemption period (certificate of adequate closure). Exemption entitles the holder to hunt, capture and sell approved/specified species for 12 months of the year. Wildlife may also be kept in non-exempted area (areas without suitable fencing), but then hunting is only allowed during the period March to September (the hunting season).

There are two types of wildlife ranchers. Firstly, there are the large landowners (conservancies) who compare themselves with, for example, the Kruger National Park where little human interference takes place, predators are allowed and the main income is from ecotourism. Conservancies are sometimes established when smaller units are incorporated (fences are taken down) to form large single units that are managed by a management committee. The advantages of this concept are as follows:

- It promotes the diversity, survival and production of the wildlife ranching population.
- It reduces cost per unit areas.
- It improves the right of occupation by an individual member.
- It is more attractive to tourists.
- It reduces the risk of stock theft.
- It is more attractive to biltong hunters and (especially) trophy hunters.

Secondly, there is the smaller wildlife rancher. These ranches range in size from 50 to 10 000 ha. Their benefits are as follows:

- They are well-managed farms regarding infrastructure, roads, water, veld management and parasite control.
- They offer a variety of job opportunities.
- Breeding and maintaining of a stable gene pool of different species are encouraged.
- They increase the numbers of endangered species (like De Wildt Cheetah farm).
- Previously disadvantaged people can be incorporated with training and little funding compared to large wildlife ranches or parks.
- Wildlife ranching could provide meat throughout the year.
- Identifying and treatment of diseases are much easier.

Problems experienced by the smaller wildlife ranchers are that, on the one hand, their ranches are relatively small (on average about 2 000 ha) and, on the other hand, they need a wide variety of animal species to provide a package that will attract enough customers to ensure the viability of the enterprise.

It is very difficult to access any statistics on the number of wildlife available within South Africa – in government protected areas (nationally and provincially) as well as on private wildlife ranches. Wildlife ranchers emphasises that they own at least three to four times more wildlife than is available in government protected areas, because they have three times more land and their operations are more intensive. If it is assumed that there are, on average, approximately 1 000 of the larger mammals on each ranch, then the private sector owns approximately 9 million animals, with approximately a further 2.5 million in government protected areas.

4.2.2 Wildlife auctions

Wildlife sales through auctions are a very popular mechanism used by the wildlife rancher and government to generate income. Despite its popularity, however, only about a third of the trade in animals takes place through auctions. A large number of animals are traded directly from the seller to the buyer with the assistance of wildlife capturers and translocators.

Nevertheless, auctions remain an important price setting mechanism. Rare species often fetch high prices at such sales. However, the trade in wildlife is closely linked to the prevailing climatic conditions, and droughts have a negative effect on wildlife prices at auctions since more animals are presented for sale.

Wildlife is sold through two different auction systems: the boma auction system and the catalogue auction system.

- **Boma auctions**

Wildlife are captured and transported to a central point where they are kept in bomas and where buyers and sellers meet. After the auction the wildlife are transported to the buyer's premises.

- **Catalogue auctions**

The buyers see the animals via brochures or electronic media. This method is more animal friendly (it is a more humane method of auctioning wildlife) because the wildlife only have to be transported once after they have been sold.

The prices of wildlife sold through the catalogue auction system are about 12% lower compared to the prices achieved at boma auctions, but only about 10% of wildlife are sold through catalogue auctions.

In 1991 the value of live wildlife auction sales was about R9 million. In 2005, 56 auctions (2004 = 47 auctions) were held in seven provinces of South Africa. A total of 17 500 animals (2004 = 21 000 animals) were sold with a value of R93.5 million (2004 = R104.5 million). Almost 70 different species and sub-species were sold on auction in 2005.

In 2005 the Limpopo Province was responsible for the most auctions, with the highest turnover and the most animals sold. Table 4.1 provides more information in this regard.

Table 4.1: Breakdown of sales in seven provinces for 2005

Province	Total no. of animals sold	% of wildlife sold in terms of total sales	Turnover excl. VAT(Rand)	% of total turnover	No. of auctions
Limpopo	5 204	29.62	23 335 242	24.94	21
Northwest	3 805	21.66	11 483 845	12.28	9
Mpumalanga	1 018	5.79	15 724 288	16.81	6
Northern Cape	1 378	7.84	6 113 775	6.54	6
Eastern Cape	1 583	9.01	10 066 225	10.76	6
KwaZulu-Natal	1 193	6.79	8 765 375	9.37	1
Free State	3 388	19.29	18 060 550	19.30	7
Total	17 569	100	93 549 300	100	56

Source: Eloff, 2006.

Despite the recent surge in the number of wildlife ranches, national and provincial parks provided about 24% of the wildlife that was sold on auctions. In monetary terms, the wildlife from state assets was responsible for 40% of the turnover on the auctions, mainly due to the species of animals that were offered (see Table 4.2 for more detail).

Table 4.2: Who sold the most wildlife species in 2005

Type	Total no. of animals sold	% of wildlife sold	Turnover excl. VAT(Rand)	% of turnover
State and Provinces	4 117	23.43	36 980 333	39.53
Wildlife ranches	13 452	76.57	56 568 967	60.47
Total	17 569	100	93 549 300	100

Source: Eloff, 2006

Over the past 15 years, the wildlife ranching industry, measured in terms of the value of animals sold (turnover) at auctions, grew at an average rate of approximately 20.25% per annum. Although the turnover dropped during 2005 compared to 2004, some individual

animals fetched new record prices, for example a lion was sold for R300 000, a black rhinoceros for R602 500 and a sable for R210 000. Table 4.3 gives details of this increase in turnover.

Table 4.3: Annual increase in value of wildlife sold, 1991 – 2005

Year	No. of animals sold	% change over previous year	Turnover excl. VAT(Rand)	% change over previous year
1991	8 292		8 999 871	
1992	9 546	+15	10 859 969	+20.66
1993	11 449	+19.93	11 732 596	+8.04
1994	11 096	-3.08	11 705 605	-0.23
1995	9 171	-17.35	14 335 894	+22.47
1996	11 340	+23.65	26 559 557	+85.26
1997	12 0771	+6.5	28 526 052	+7.4
1998	4 354	+18.85	40 017 946	+40.29
1999	15 455	+7.67	53 705 823	+34.20
2000	17 702	+14.54	62 960 451	+17.23
2001	17 282	-2.37	87 000 473	+38.18
2002	20 022	+15.85	105 192 180	+20.91
2003	19 645	-1.88	102 420 445	-2.63
2004	21 101	+7.41	104 547 756	+2.08
2005	17 569	-16.74	93 549 300	-10.52

Source: Eloff, 2006

In 2005 the more common species sold on auctions (impala, blesbok, springbok, blue wildebeest and eland) were responsible for only 14% of the monetary value although they represented 53% of the animals sold. The more expensive species (disease-free buffalo, sable antelope, white rhinoceros, eland and nyala) were responsible for 61% of the monetary value but represented only 10% of the animals sold.

If one regards the growth in turnover at game auctions over the past 15 years (20.25% per annum) as being representative of the growth in the wildlife ranching industry of South Africa, it outperformed the other agricultural industries by far. Over a period of 15 years,

the field crop sector grew on average by 10.38%, the horticulture sector by 12.13% and the animal production sector by 9.46% per annum. Overall the agricultural sector grew by 9.76% per annum over the 15 year period.

4.2.3 Recreational hunting industry

The recreational hunting industry makes the biggest contribution towards the South African wildlife economy.

In a recent study done (Northwest University, 2005) by the Institute for Tourism and Leisure Studies at Northwest University (Potchefstroom Campus), questionnaires were sent to 18 000 local hunters. It was found that a recreational hunter spends about R11 622 per annum on animals and a further R4 130 on secondary expenditure (accommodation, meat processing, rifles, etc.). The study also indicated that the recreational hunting industry in South Africa harvests about 1 million animals per year and that South Africa has about 200 000 recreational hunters. This means that the turnover in the recreational hunting industry is about R3.1 billion per annum (R2.3 billion for animals and R0.8 billion for secondary expenditure).

According to this study (Northwest University, 2005), at least 35 different species were hunted, the most popular being springbok (29% of all animals hunted), impala (19%), blesbok (13%), kudu (8%) and warthog (8%).

This subsector is not united in the sense that it is served by two organisations, namely the SA Hunters and Conservation Association (SAHA) and the Confederation of Hunting Associations of South Africa (CHASA). SAHA is the oldest and largest hunting association in South Africa, with a membership of approximately 22 000 recreational hunters. CHASA represents approximately 13 hunting associations with a collective membership of approximately 15 000 hunters. Together, the two associations represent at least 37 000 hunters. Adding the casual hunters not belonging to any hunting association, the number of recreational hunters in South Africa is estimated at 200 000. These statistics show that the majority of recreational hunters in South Africa do not belong to or are not registered with a representative organisation.

CHASA strives to be the leading hunters' and conservation organisation in South Africa and their objectives include the following:

- Promoting and enhancing ethical hunting as an essential part of sustainable use and conservation
- Fostering the training of all their current and future members

- Promoting the image of hunting and the hunter
- Promoting knowledge of, and love for, wildlife and encouraging a conservation consciousness in members and branches alike

4.2.4 Trophy hunting industry

The Professional Hunters Association of South Africa (PHASA) is the official mouthpiece of the professional hunting industry in South Africa and is the largest professional hunters association not only in Africa, but also in the world. Currently PHASA has over 1 100 registered members.

PHASA was established in 1978 and its main objectives are the following:

- To foster the conservation of South Africa's wildlife and flora resources
- To support proper wildlife management and utilisation
- To assist and promote ethical hunting in South Africa
- To promote and market hunting in South Africa
- To promote high quality services and ethical standards among PHASA members

PHASA today plays an active role in ensuring that the industry operates at the highest standards of professionalism. It maintains close liaison with government at all levels within South Africa and has strong associations with international hunting and conservation bodies. It is also actively working towards transformation in the professional hunting industry.

PHASA is a voluntary association. Its members pay an annual voluntary membership fee (R1 100 per member per annum) to finance its activities. Members may be "outfitters", who arrange the hunt for the overseas hunter, apply for the permits, arrange accommodation, approach the wildlife rancher for trophy animals, and so on, or professional hunters who accompany the overseas hunter on the hunt (on the game ranch), or both.

PHASA believes that South Africa has become one of the hunting world's greatest destinations, attracting about 7 500 foreign hunters in 2005, mainly from Europe and the US. South Africa offers the greatest variety of animal species that can be hunted in one country, including Africa's "Big Five" - lion, leopard, buffalo, elephant and rhinoceros.

The value of animals harvested by trophy hunters (overseas hunters) is approximately R410 million per annum. Together with secondary expenditure (e.g. accommodation and travel) of approximately R100 million, the value of the trophy hunting industry is estimated at over R500 million per annum. Trophy hunters spend substantially more than the normal overseas tourist, thereby contributing substantially more per capita towards foreign

exchange earnings. Trophy hunting within a natural wildlife ranching population seldom exceeds 5%. In 2005, professional hunters hunted about 40 000 animals in South Africa. Trophy hunters are acknowledged as high value/low impact tourists.

4.2.5 Taxidermy industry

The South African taxidermy industry is serviced by two bodies, namely the Taxidermy Association of Southern Africa (TASA) and Commercial Taxidermists and Game Skin Tanners of South Africa (CTGSTSA). TASA was established in 1980 and currently has 70 members. CTGSTSA was established in 1994 (when it broke away from TASA) and has 20 members. TASA represents the so-called smaller taxidermists while CTGSTSA represents the so-called bigger taxidermists. Each of them has a market share of approximately 50%.

In 2006, the Limpopo Province was in the process of regulating its taxidermy industry. The taxidermists will now have to prove that they comply with certain standards and requirements before a permit is issued to export trophies. The indications are that this regulating process will spread to the other provinces in the near future.

A major problem in the taxidermy industry is the late arrival of raw trophies to be mounted at the taxidermist's. This has a negative effect on the quality of trophies. Concerns expressed by foreign trophy hunters are about poor quality of work and the fact that delivery dates are not met. The favourite trophy is the kudu, due to its regal bearing, followed by the springbok.

The contribution of the taxidermy industry towards the South African wildlife economy is estimated at R200 million. Some of the wildlife hunted elsewhere in Africa are also processed in South Africa, but the extent of this is not known.

4.2.6 Wildlife meat industry

Wildlife ranching in South Africa is ideally suited for the production of wildlife meat provided the correct slaughtering techniques are followed and cooling facilities are available. However, the extensive nature of wildlife ranching makes the harvesting of wildlife much more difficult compared to domestic livestock. More mobile abattoirs, passive-capturing techniques, improved carcass handling, product descriptions and meat processing facilities are needed. Red meat abattoirs are also not allowed to slaughter wildlife at the same facility as domestic livestock. The general opinion within the wildlife ranching industry is that the requirements for local abattoirs are too strict.

South Africa has five wildlife meat export abattoirs, namely Camdeboo in Graaff-Reinet, Swartland in Malmesbury, Mosstrich in Mosselbaai, Krugersdorp and Westville in Port Elizabeth. Approximately 450 tons of wildlife meat are exported per annum, mainly to Europe. The value of these exports is approximately R15 million (R33/kg). About 1 350 tons of wildlife meat (three times the volumes that are exported) are consumed locally. The value of this meat is about R27 million per annum (R20/kg).

Wildlife meat has not been marketed well enough among local consumers and a stable wildlife meat market has therefore not yet been developed in South Africa. An opportunity exists for the wildlife owners and meat suppliers to develop the local market for wildlife meat and to address the negative perceptions regarding wildlife meat. Wildlife meat has positive attributes such as low cholesterol levels and it is free of diseases, growth hormones and antibiotics. These should be promoted to increase the local consumption of wildlife meat.

For the export market, it is important for South Africa to brand its wildlife meat to distinguish it from that produced in other countries. International buyers should not be in a position to purchase wildlife meat from other African countries and force our prices down, as has happened with the New Zealand deer production, where the meat is packaged under the European meat trader's name. This will allow the creation of a uniquely South African niche market for locally produced wildlife meat. The export market for wildlife meat therefore has a huge potential, but critical mass and lack of funds for a marketing campaign remain a problem.

4.2.7 Wildlife capturing/translocation industry

The Wildlife Translocation Association of South Africa (WTA) was established in the early 1990s. It currently has 53 registered members and represents more than two-thirds of the active capturing units. The WTA is a voluntary association of professional wildlife capturers and associated role-players within the industry. Its members are drawn from both the private sector and government service and it is the only organisation in South Africa that represents wildlife capturing operators. The association is recognised at both national and provincial levels by conservation authorities and anyone who wishes to tender for government or big business contracts must be a member of the WTA. All members have to adhere to the WTA's Code of Conduct. Members must also have their equipment regularly inspected.

Wildlife translocation operates locally and internationally. Local role-players include the private sector capture teams, SANParks, provincial capture teams, zoos, private wildlife veterinarians and wildlife ranchers who are all involved in the movement of live wild animals in some way or another. Internationally, South Africa exports wildlife to the rest of the world and imports indigenous and exotic wild animals into the country from other countries.

There are no figures available, but it is estimated that about 70 000 animals are captured and translocated annually. The estimated turnover generated by capture operations varies between R750 million to R900 million. These figures, however, include the value of wildlife captured, because capture operators become the owners of the animals while they are in transit.

The movement of live wildlife is subject to a permit system controlled by the relevant provincial authorities. Unfortunately, legislation in the nine provinces differs from province to province and some provinces are experiencing a lack of capacity to enforce the legislation. The capture operator must apply for and be issued with an import and export permit from the relevant authorities before any transfer of wildlife can take place across provincial boundaries. These legislative burdens are often regarded as impractical and as a result capture teams (both members and non-members of the WTA) move wildlife illegally. It is estimated that up to 50% of the movement of wildlife animals is done illegally.

The cost of doing business is high. Licence and permit application costs have become excessive. A capture team must have a licence to operate in a province at a cost of R1 000 per province per annum. Each permit application to move a batch of captured animals costs R100. It is estimated that a capture team spends R75 000 per annum on these applications. The operator who moves animals illegally without a permit thus gains an unfair advantage.

There is a shortage of qualified state personnel to police capturing and translocation operations. Wild animals that have been captured are prone to physical injuries and mental stress and should be handled and offloaded most sensitively as soon as possible after capture. Factors that inhibit this are as follows:

- Slow processing of permit applications
- The requirement that the permit must be displayed on the vehicle
- Lack of recognised operational standards

The performance of the wildlife ranching industry in the resettlement of wildlife is often regarded as unsatisfactory because too many animals are injured or die during the capturing and translocation process or shortly afterwards.

4.2.8 Contributions in summary

A summary of the contribution of the relevant subsectors in the wildlife industry is estimated to be as follows:

	Rand million	%
Recreational hunting industry	3 100	66
Trophy hunting industry	510	11
Live animal sales	94	2
Meat production	42	1
Translocation	750	16
Taxidermist	200	4
TOTAL	4 696	100

These figures are only a rough estimate of the value of each wildlife subsector, and overall wildlife management still requires a comprehensive information management system to support future decision making.

4.3 Inhibiting factors

4.3.1 Legislation affecting wildlife ranching

Wildlife ranching, like all agricultural activities, has to function within a specific legislative framework. This legislative power is housed within several national departments and also within several specific line functions. It is, however, important that the legislation framework should not impact negatively on a given activity, but should create a conducive environment within which the commodity concerned could prosper. It seems that the present legislation in wildlife ranching, and more specifically the permit system, has not been adapted to the requirements of a fast growing sector.

The promulgated legislation that affects wildlife management includes the following Acts:

- Agricultural Product Standards Act, No. 119 of 1990
- Animal Health Act, No. 7 of 2002
- Animal Improvement Act, No. 62 of 1998
- Animal Identification Act, No. 6 of 2002
- Animals Protection Act, No. 71 of 1962
- Conservation of Agricultural Resources Act, No. 43 of 1983
- Environment Conservation Act, No. 73 of 1989
- Fencing Act, No. 31 of 1963
- Firearms Control Act, No. 60 of 2000
- Marketing of Agricultural Products Act, No. 47 of 1996

Meat Safety Act, No. 40 of 2000
National Environment Management Act, No. 107 of 1998
Perishable Products Export Control Act, No. 9 of 1983
National Environmental Management: Biodiversity Act, No. 10 of 2004
National Environmental Management: Protected Areas Act, No. 57 of 2003
South African Abattoir Corporation Act, No. 120 of 1992
Tourism Act, No. 72 of 1993
Veterinary and Para-veterinary Professions Act, No. 19 of 1982

The National Environmental Management Act: Protected Areas Act, in combination with the National Environmental Management: Biodiversity Act, constitute a set of laws in which the full range of conservation efforts are recognised, regulated and empowered. The wildlife sector is governed primarily by the National Environmental Management: Biodiversity Act. This Act distinguishes between wildlife ranching and farming with domesticated livestock. The objectives of the Biodiversity Act are as follows:

- (a) Within the framework of the National Environmental Management Act, to provide for -
 - (i) the management and conservation of biological diversity within the Republic and of the components of such biodiversity;
 - (ii) the use of indigenous biological resources in a sustainable manner; and
 - (iii) the fair and equitable sharing among stakeholders of benefits arising from bioprospecting involving indigenous resources;
- (b) to give effect to ratified international agreements relating to biodiversity which are binding on the Republic
- (c) to provide for co-operative governance in biodiversity management and conservation; and
- (d) to provide for a South African National Biodiversity Institute to assist in achieving the objectives of this Act

The National Environmental Management: Protected Areas Act provides for, *inter alia*, the protection and conservation of ecologically viable areas representing South Africa's biodiversity, natural landscapes and seascapes; for the establishment of a national register of all national, provincial and local protected areas; for the management of these areas in line with national norms and standards; for intergovernmental cooperation and public consultation in matters concerning protected areas; and for the governance and functioning of SANParks.

The Firearms Control Act introduced licensing requirements and background checks on gun owners. South Africa's 45 million people own an estimated 3.7 million licensed firearms. It is claimed that new restrictions on gun licences, introduced in 2004, had a detrimental effect on wildlife operations since fewer people were applying for licences (too expensive

and too much red tape) and the numbers and the harvesting of wildlife (i.e. the overall demand for wildlife) had decreased. Professional hunters experienced the Firearms Control Act as a bureaucratic nightmare and claimed that about 50% of potential overseas visitors were no longer interested in visiting South Africa, and preferred to go to neighbouring countries. Overseas visitors, after long, 12-hour flights, often wait at airports for 4 to 5 hours and in some cases as much as 9 hours, for their rifles to be released. It is acknowledged, however, that there has been an improvement since 2005.

Members of the wildlife ranching sector claim that the Meat Safety Act was promulgated without any consultation with them. This Act has placed a number of additional burdens on the wildlife rancher and determines that a hunted animal may be handled only by one of three categories of abattoirs: local abattoirs, low throughput abattoirs (meat for commercial purposes) and high throughput abattoirs (export abattoirs). Only a few wildlife ranchers comply with the requirements of the Meat Safety Act and those who want to comply will have to make major capital investments. The Act is experienced as particularly severe by recreational hunters, who will no longer be allowed to take their hunted animals to their local butcher for processing. The animals need to be inspected at the registered abattoir before they can be released for processing. Ultimately, the additional costs are likely to be passed on from the wildlife rancher to the recreational hunter. This will make recreational hunting even more expensive than it is at present.

4.3.2 National vs provincial legislation

Government is an important service provider to the wildlife sector through DEAT, nature conservation authorities within nine provinces, DoA, the departments of agriculture of the nine provinces and the Agricultural Research Council. However, the operational structures of government function in a haphazard way, which hampers the growth of wildlife ranching.

The Constitution of South Africa, Act No. 108 of 1996, establishes three spheres of government: national, provincial and local. Within this arrangement, national parks, national botanical gardens, water, forests and fisheries are deemed national competencies, while nature conservation and environment management are concurrently national and provincial competencies. The Constitution sets up a system of cooperative governance in these and other spheres to facilitate cooperative implementation. In this arrangement lies a huge problem: the application of legislation differs between provinces. Wildlife Ranching SA, representing wildlife ranchers, claims that the “Draft National Norms and Standards for the Regulation of the Hunting Industry in South Africa”, proposed by the DEAT, actually provide for nine different sets of provincial legislation and one national set. Wildlife Ranching SA argues that there should be only one set of legislation (National Norms and Standards) and that it should be supported and implemented by all provincial authorities.

Some provincial nature conservation authorities have other aims and goals which may not be to the benefit of wildlife ranching industry and job creation. This matter should be resolved as a matter of some urgency, as both organisations are important role-players in ensuring a sustainable wildlife ranching industry and that this will be addressed in the draft regulations issued by DEAT on threatened or protected species.

4.3.3 State as competitor

Wildlife ranching is the only agricultural activity in South Africa that is experiencing fierce competition from the state (national and provincial parks and reserves). Some provincial parks were, in the past, given permission to allow hunting, but the result is that they compete (with taxpayers' money) with private wildlife ranchers. According to some members of the Committee, wildlife meat from culled wildlife should rather be used to address food security in the region concerned.

National and provincial parks are also selling their surplus stock on wildlife auctions in competition with the private sector. This stock was bred and marketed with taxpayers' money. After the animals are auctioned they are later stage released on private wildlife ranches for recreational and trophy hunting (see 4.2.2).

4.3.4 Image of the wildlife industry (ethical hunting)

In most African countries hunting takes place in open, unfenced concession areas. In South Africa, Namibia and, to a lesser extent, in Zambia and Zimbabwe, landowners have converted former livestock farms (and other suitable land) to wildlife ranches as these offer better economic prospects than traditional agricultural methods. To protect their investment in wildlife, these ranches are usually fenced in with escape-proof game fences. These fences, depending on the form and size of the properties, could inhibit ethical and fair chase¹ hunting.

A South African anti-trophy hunting campaigner recently suggested that the European Union (EU) should consider banning the importation, possession and sale of all African wildlife trophies. In motivating this recommendation, he described all trophy hunting in South Africa as "canned", because the animals have no chance of escaping from their fenced environment.

Essentially there are no objections to hunting within a fenced area, if the hunting is conducted as a fair chase¹, as would be the case outside the fence. The wildlife which is hunted, and the land where the hunt takes place, however, have to be allowed their essential “wild” character – whether inside or outside a fence!

Unfortunately, in South Africa and Namibia, it has become clear in recent years that economic factors and pure profit orientated thinking have led to “canned shooting” and “put and take shooting”, which have caught the attention of the media and of society. South Africa, is not, however, the only country with this problem. Red deer trophy farms, wild boar ranches and pheasant breeding stations are rife in Europe and the US. The high fenced ranches in the US on which whitetail deer are bred have also encountered opposition. The underlying factor for these activities in Africa, Europe and the US is money. The drive to make profits leads to unnatural methods of breeding. These animals are bred (and killed) under conditions that are dependent on human volition and they cannot, therefore, be classified as wildlife. It is simply a method of producing animals for killing, just as a piggery produces pigs or a cattle rancher produces beef cattle for the abattoir. These practices do not enhance the public reputation of hunting. “Canned shooting” severely damages the image of hunting. Reputation is a function of acceptance. The acceptance of hunting by society at large is of paramount importance for the future of hunting.

Until 2006, the central overarching challenge for hunting in South Africa was the lack of clear national norms and standards for sustainable hunting. The big question was whether it is possible to reconcile sustainable utilisation of wildlife with the ethics of hunting. The purpose of the norms and standards compiled by the DEAT is to promote ethical hunting and to address the image of the South African wildlife sector. They should, however, not unnecessarily limit the potential of entrepreneurial initiatives. To propose norms and standards could help improve the image of the hunting industry, but in essence, ethics and fair chase cannot be prescribed, and the Committee is of the opinion that the DEAT would find it difficult to control and enforce these aspects. Despite the difficulty of describing the concepts of fair chase and hunting ethics, the implications have a deep-seated meaning for hunters.

There are so many viewpoints regarding the hunting of wildlife that it would be impossible to satisfy all concerned. Moreover, acceptable ethical conduct in any sphere changes by the day, whether objectively or subjectively. The pro-hunting groups argue that the hunting of animals is justified because it does not differ from the supply of meat from domesticated livestock. On the other hand the anti-hunting lobbyists are very much against the killing of wildlife.

1 “Fair chase” is defined as pursuit of a free ranging animal or enclosed ranging animal possessed of the natural behavioural inclination to escape from the hunter and fully free to do so. A recreationally hunted animal should exist as a naturally interacting individual of a wild sustainable population, located in an area that meets both the spatial (territory and home range) and temporal (food, breeding and basic needs) requirements of the population of which that individual is a member. Recreational hunted animals should be sustained within an ecologically functional system (Damm, 2006).

Conservationists, however, agree that it is much more natural to shoot wildlife in their natural environment than to load domesticated animals onto trucks and transport them to an abattoir hundreds of kilometres away. The latter is much more stressful and ends in the killing of the livestock anyway.

The only group that can make a strong moral claim to be against hunting is the vegetarians. It is estimated, however, that less than 1% of South Africa's population can be regarded as vegetarians in the true sense of the word. This country is, nevertheless, a democratic country and its citizens may decide for themselves whether or not they want to consume meat.

In conclusion one could say that in most countries in the world there are pro-hunting groups as well as anti-hunting lobbyists. It will, however, require a balancing act for them to reach common ground due to their different viewpoints.

4.3.5 Capital outlay

To develop a wildlife ranch or convert a livestock farm into a wildlife ranch requires major capital investments in fencing, stocking and other infrastructure.

To fence a property for wildlife ranching is very expensive. The height of the fences will be 1.2 m, 1.8 m or 2.4 m depending on the type of wildlife kept, and the cost of new fencing could be as much as R30 000 per km. Once a property is fenced in terms of the minimum standards required by Nature Conservation, an exemption certificate is issued that is valid for a period of three years. This allows the holder or owner to hunt, capture and sell particular species of wild animals all year round on the exempted property. Without an exemption certificate hunting is restricted to the hunting season, from March to September.

The cost of stocking a property with wildlife may also be regarded as an inhibiting factor. The rare species are animals that were almost extinct three decades ago. They have been bred at such a rate that there is currently no fear that they will become extinct. These animals are now available at high prices which are determined by the market. The expectations of sellers are also high, with the result that they prefer to keep the animals rather than sell them at lower prices. The numbers of these animals are therefore steadily increasing. In 1984 the cost of a white rhino was approximately R800, whereas the record price for a white rhino was R450 000 in 2005. In the 1980s, Nature Conservation sold excess wildlife from their reserves for a nominal charge, mostly just to cover the cost of catching and translocation.

If the wildlife rancher wants to expand into accommodation, infrastructure developments to provide this service also require a major capital outlay.

4.3.6 Demarcated areas

The conservation of the local environment as outlined in the Conservation of Agricultural Resources Act guards against the movement of wildlife to unsuitable habitats. One of the main inhibiting factors in South African wildlife management is demarcated areas. This regulation means that wildlife ranchers are prohibited from keeping particular wildlife species in specific areas because these areas are not regarded as natural habitats for those species. In other words, some species are held to be alien species for certain areas.

Wildlife ranchers want to be allowed to farm with whatever indigenous species they choose even though some reports might indicate that a species did not occur in a particular area a hundred years ago. They argue, further, that market forces will dictate the resettlement of wildlife. If wildlife is translocated to unsuitable habitats or with incorrect herd compositions, this will result in low reproduction and eventually the enterprise will become uneconomic. Lastly, they argue that similar restrictions do not apply to other herbivorous animals such as cattle, sheep and goats.

The restrictions on freedom of movement of live animals (based on historical occurrence) are therefore seen as counter-productive and not economically friendly. To increase the existing area for wildlife could assist the wildlife base to secure sustainable growth.

4.4 Impact of wildlife on other economic sectors

It is a reality that approximately 83% of total agricultural land in South Africa only allows for extensive grazing. Therefore the only practical way that veld or rangeland can be used for food production for humankind is through herbivores (animals which eat plants). The type of animal (domesticated or wildlife) the farmer keeps to achieve this objective is irrelevant as long as the natural resources are used and managed in a sustainable manner.

Large parts of South Africa are arid and semi-arid. Agriculture contributes only 3.5% to South Africa's GDP, while it consumes more than 50% of the water used. Water-saving agricultural production systems will therefore need to be introduced for sustainable agricultural production. Against this background, it was recently reported (Kunsmisbedryf ly onder swak landboutoestande, 2006) that in 2005, the sale of fertilisers was the lowest since 1965. Subsequently, in 2005, the income from field crops decreased by 9.8% compared to the previous year, the income from horticulture decreased by 6.5%, while the income from livestock products (including wildlife) increased by 4.4%. It would seem that

there has been a move away from horticulture and field crops to livestock. In the livestock sector itself, there is also a move away from domesticated livestock to wildlife (as can be seen in the growth of the number and the increase in the total size of exempted ranches).

4.4.1 Conversion of cattle farms into wildlife ranches

Many conservationists regard the conversion of cattle farms into wildlife ranches as a step in the right direction, since they see it as reverting to natural systems. Wildlife ranching could ensure a more sustainable use of natural resources and is a good land use option for most parts of our country. Whatever the reason for the conversion, private land will be used for the purpose for which it is best suited. Therefore, notions of placing a moratorium on additional wildlife ranches are ill-advised and could be regarded as a direct interference with economic market forces.

On the other hand, there is a perception in many circles that wildlife ranching is not economically viable. The rationale is that professional income (from doctors, attorneys, business men, etc) is subsidising wildlife ranchers.

The benefits of wildlife ranching compared to cattle farming or farming with domesticated livestock include the following:

- Wildlife promotes nature conservation.
- Wildlife ranching may enhance better utilisation of the available land. Cattle and sheep are grazers (they mainly eat grass) and goats are browsers (they eat grass and bush), while wildlife includes a mixture of grazers and browsers (they eat grass and leaves). Wildlife ranching could therefore greatly reduce bush encroachment.
- Wildlife uses less water than conventional livestock farming. As an extreme example, cattle use about 30 to 50 litres of water a day while a gemsbok uses only 10 litres of water a day.
- Although poaching does occur in the wildlife ranching industry, stock theft is far less prevalent than in the conventional livestock farming industry.
- Wildlife ranching provides more job opportunities. Wildlife provides consumptive (hunting and meat) and non-consumptive products (tourism, wildlife viewing) and therefore provides more job opportunities than domesticated livestock farming.
- In the arid regions, wildlife ranching is regarded as the best option – better than irrigation, sheep, goats and cattle. Wildlife could be combined with tourism and could create much needed job opportunities in the deep rural areas (thereby preventing people from moving to the larger urban areas).

The fear of inbreeding is in most cases unfounded if a wildlife rancher has sufficient land (does not over-stock) and different habitats (different species prefer different habitats). Blue wildebeest and black wildebeest could inbreed, but the former prefer flat open areas while the latter prefer mountain areas. They should, however, also be fenced apart.

It is believed by some that, since diseases were transmitted by wildlife to cattle, wildlife have to be reduced in number and confined.

4.4.2 Environmental impact

The fact that large tracts of agricultural land only allow for animal husbandry implies that the only way that the natural vegetation resource can be used for food production is through herbivores. Therefore a good understanding of the dynamics and interaction between rangeland or natural pastures (veld), climate and livestock is essential for sustainable livestock farming. Livestock production, be it from rangeland in a good condition (healthy) or a poor condition (degraded), has the same common basis: fodder production. The better the condition of the rangeland, the higher the plant production and the more sustainable livestock production is likely to be. It is well documented that the productivity of many rangelands has unfortunately been seriously eroded (40–50% below potential) by, *inter alia*, desertification, overgrazing, bush encroachment and the loss of adapted plant species. Should this deterioration be allowed to continue, sustainable livestock production will be jeopardised.

Although the total seasonal rainfall contributes to the production potential of vegetation in a given area, it is the distribution within and between seasons that really determines the fodder flow. This implies that the wildlife rancher cannot rely on a constant feed supply from year to year. Rangeland condition and the number of herbivores (livestock or wildlife) can, however, play an important role in accommodating this seasonal variation. The better the rangeland condition the smaller the variation, and therefore the more stable and sustainable wildlife ranching will be. When rangeland is in good condition it is also much more efficient in converting rainfall into dry matter production and in preventing soil erosion.

The underlying cause of the low turnover, inefficiency and vulnerability of sections of the livestock sector is primarily inadequate grazing material impacting on the nutrition of livestock, both quantitatively and qualitatively. The poor production of livestock on veld or rangeland is in many cases a consequence of too high stocking rates – too many animals competing for the limited grazing available.

4.4.3 Impact on conservation

Due to the lack of a conservation consciousness in South Africa a few centuries ago, the blue buck became extinct in 1800 and the quagga by 1883. A number of other wildlife species also almost became extinct. But due to economic forces, wildlife ranchers started to breed these species, with the result that they are not so scarce any more. Currently, South Africa has approximately 3 000 disease-free buffalo, 4 000 African lion, 5 000 sable and 1 000 roan. Roan numbers still remain low because vast areas of their natural habitat do not exist any more.

A good example of the role of conservation and how it could prevent the extinction of specific species is the case of the black rhino. In the past 30 years the numbers have decreased from 100 000 to a mere 3 000. Today black rhino fetch high prices that reflect their scarcity, but they have been saved from extinction.

Africa's lions are also in danger of becoming extinct. New research (Time to take action, 2006) shows that the continent's lions, with a population of about 30 000, will die out in the next ten years if nothing is done to conserve them. These findings were released at the recent Eastern and Southern African Lion Strategy Conference held in Johannesburg in February 2006. The study shows that the continent's lion population, estimated to have been about 200 000 in the mid-1980s, has dwindled as a result of conflict with humans and livestock and a loss of habitat due to economic development. Among the four groups of lions identified as having a good chance of survival is a group in the Kruger National Park. Lions play a crucial role in Africa's economy due to tourism and trophy hunting.

Allowing wildlife ranching to be practised and to prosper in a responsible manner in South Africa will, to a great extent, prevent the extinction of threatened and rare wildlife species.

4.4.4 Impact on food security

Food security and poverty reduction are high priorities in the South African society and should not be ignored. An important objective of the Agricultural Sector Plan is equal access to resources, opportunities and participation in all agricultural economical activities for all South Africans.

It is, therefore, imperative for overall wildlife activity to make a significant contribution towards food security. As the wildlife ranching industry is in direct competition with other commodities for agricultural land and government support, it has to focus more on its sustainable economic competitiveness and its ability to create jobs and produce food. The wildlife ranching industry has the potential to achieve this objective as it is in a position, apart from its capacity to produce meat, to explore ecotourism and the curio market and to supply firewood (as examples of symbiotic interaction between wildlife ranches and local communities).

Members of the wildlife ranching sector are of the opinion that a major challenge to be addressed is the inability of government protected areas to create more job opportunities. The Addo National Park, for example, is about 164 000 ha but employs only 135 permanent staff. This is only a fraction of the number of people that would be employed in a similar area under private management.

On the local market, wildlife meat has tremendous potential to feed many poor, rural citizens. Elephant surpluses in the Kruger National Park could, in particular, play an important role in promoting food security.

4.4.5 Impact on tourism

Tourism contributes about 6% to South Africa's GDP, compared to the world average of 11%. Wildlife could make a much bigger contribution to our GDP by way of partnerships between wildlife ranchers and new entrants, especially as South Africa has the necessary resources such as climate, infrastructure, tremendous variety of wildlife and development capital.

Tourism is one of the fastest growing activities in the world and in South Africa.

In the attempt to promote tourism to South Africa, the government and the private sector should not neglect the wildlife industry because they might end up shooting a goose that could lay a golden egg. Studies show that the vast majority of tourists from developed countries (those who spend the "big bucks") visit South Africa to enjoy its rich variety of wildlife.

The country's wildlife treasure trove could encourage visitor arrivals for ecotourism, trophy hunting and wildlife viewing. Some feel that hunting is bad for the tourism industry, in cases where tourists want to view wildlife rather than hunt. However, our wildlife sector could cater for both groups. The wildlife sector mobilises approximately 30% of the total foreign visitor spend in South Africa.

In 2005, 7.3 million tourists visited South Africa, compared to less than 1 million in 1990. Approximately 75% of all tourists were from African countries. Only 2 million tourists were from developed countries – and of these, approximately 60% came for wildlife/hunting purposes.

The target is for the number of tourists who visit South Africa to reach approximately 10 million by 2010. Tourism has a huge potential to create much needed employment opportunities (one permanent job is created in South Africa for every eight tourists who visit the country) and could make a significant contribution towards sustainable development of the wildlife industry.

4.4.6 Impact on employment opportunities

South Africa has a high unemployment rate of about 36% (depending on how it is calculated).

According to a study done by the Centre for Wildlife Management at the University of Pretoria (University of Pretoria, 2004) each exempted wildlife ranch employed on average 6 people in 1998, 9 people in 2000 and 11 people in 2004. The increase in employment opportunities on exempted wildlife ranches is due to the vast array of services offered to clients who visit the ranches. Services include accommodation, drivers for wildlife viewing and workers for infrastructure development and maintenance.

Another study done for the Eastern Cape (University of Port Elizabeth, 2004) indicated that on the same land, when converted from cattle farming, wildlife ranching created 3.5 times the number of jobs and at 5.7 times the salary, compared to cattle farming.

4.5 Capacity of the wildlife ranching industry to enhance black economic empowerment

The enhancement of black economic empowerment (BEE) by the wildlife sector, and more specifically by wildlife ranching, is one of the big challenges that have to be addressed. Currently the wildlife economy is regarded as a “whites only” preserve and the perception is that transformation is very slow or is not happening at all. In the submissions to the Committee, it was confirmed that there is a lack of BEE and real empowerment within the wildlife sector.

One of the problem areas in the enhancement of BEE is the availability of sufficient land for wildlife ranching. Currently less than 4% of privately owned agricultural land is in the hands of black farmers. The South African government’s land redistribution programme aims to transfer 30% of all white owned agricultural land to previously disadvantaged individuals by 2014. Since large parts of the country are currently used for wildlife and given that wildlife ranching is a good option on marginal land, the wildlife ranching industry will definitely not escape this challenge.

4.5.1 Communal land for wildlife

A communal tenure system is practised in large parts of the country. Communal land was inherited from the ten self-governing states for different black ethnic groups prior to 1994. Four of them (Bophuthatswana, Ciskei, Transkei and Venda) were granted “independence” by the pre-1994 government. The “non-independent homelands” were Gazankulu, KaNgwane, KwaNdebele, Kwazulu, Lebowa and Qwaqwa. These former homelands or “Bantustans” ceased to exist in April 1994. They were reincorporated into South Africa and were all integrated into the nine new provinces.

The following table provides information on land utilisation, with reference to arable and grazing land, in the commercial and communal sectors.

Table 3: Land utilisation in South Africa

	Area million (ha)	%
Commercial sector:		
Arable	14.2	
Grazing	72.0	
TOTAL	86.2	70.5
Communal land:		
Arable	2.5	
Grazing	11.9	
TOTAL	14.4	11.8
TOTAL AGRICULTURAL LAND	100.6	82.3
Other	21.6	17.7
TOTAL LAND OF SOUTH AFRICA	122.2	100.0

Source: Development Bank of Southern Africa, 1991

About 12 million ha of grazing are available in the communal sector where about 50% of South Africa's cattle population is in the hands of black producers. This land is also suitable for wildlife.

In communal farming systems there are few fences, with the result that exempted wildlife ranching is not a practical concept in communal areas. This contributes to the difficulty of promoting BEE in wildlife operations. Communal areas could, however, benefit from wildlife if the whole area could become involved in conservation, tourism and wildlife. Government institutions (protected areas – national and provincial parks) are in an ideal position to help with the transformation of all wildlife activities. Surplus stock in protected areas could be used for this purpose. The stock could, for example, be donated to communal areas and potential black wildlife ranchers in order to assist them to participate in the mainstream of wildlife ranching. However, if the total number of herbivorous animals (cattle, sheep, goats and livestock such as horses and donkeys) is not managed in accordance with the production of the veld, overstocking and failure of the system will inevitably follow.

Commercial wildlife ranching within communal tenure systems is generally not practised, although the Mier Management Committee and the Maluleke community are exceptions. The Mier Management Committee uses 50 000 ha of Kalahari sandveld for hunting purposes. The income generated goes back to the community for infrastructure development (schools, clinics, etc.) as well as for bursaries to attend tertiary institutions. New developments based on the same principles are under way at Platfontein and Schmidtdrif in the Northern Cape, while the training of previously disadvantaged individuals as professional hunters is also taking place there.

The Maluleke community provides a model of integrating indigenous people into conservation programmes. In the dispensation before 1994, the Maluleke community was removed from its land to create South Africa's premier game reserve, the Kruger National Park. Since 1994, 24 000 ha of its previous land has been returned to the Maluleke community.

The Maluleke community's commercial advisers advised it that it could make more money from tourism than from hunting. Communal leaders signed a deal to lease out their ancestral lands as a contract park, which they jointly manage with representatives from SANParks. Lodges, guesthouses and a museum were built in partnership with the private sector, which pays a monthly lease into a community development fund. Local people have been trained as wildlife managers and safari guides. Some have graduated with national diplomas in nature conservation and business management. Thus, the park has been successfully transformed from a source of resentment into a sustainable source of income. The example of the Maluleke community could be extended to other communities with suitable land for conservation, tourism and wildlife ranching.

Changing communal areas from cattle to wildlife production (e.g. Pilanesberg and Madikwe – the latter is advertised as the only malaria-free big five territory) could do much to give the white controlled wildlife ranching operations a major face-lift. Communal farmers could market some of their cattle to make provision for wildlife on their existing land. The monetary value of wildlife is higher than cattle, while an added benefit is that wildlife comprises grazers and browsers while cattle are mainly grazers. Before wildlife is introduced to communal areas, the issue of over-grazing must be addressed as a high priority. Although wildlife could utilise the available land more efficiently, cattle are a major and visible symbol of wealth in most African cultures. Keeping large numbers of cattle with a relatively low commercial value (compared to wildlife) is often the reason for over-grazing in communal areas. Before introducing wildlife the long-term benefits and economic sense of such a shift should be explained in great detail to communal leaders to gain confidence and participation.

4.5.2 Training and skills development

The training of emerging wildlife ranchers and, more specifically, the workers on commercial wildlife ranches was previously identified by the wildlife ranching sector as a problem area. This gave rise to financial support for the establishment of the well-known Ghoenaskraal Training Centre.

The Skills Development Act, 2000, enabled the Minister of Labour to establish 25 Sectoral Education and Training Authorities (SETAs). In terms of the Act, all institutions, including wildlife ranches, with an annual payroll of more than R250 000, have to pay a skills development levy of 1% of payroll. AgriSETA, the SETA for primary agriculture, is currently working closely with the wildlife ranching industry to create numerous wildlife related learnerships and career paths. Training could be structured along three main functional areas, namely hunting, husbandry and lodging.

To address and advance BEE and to actively campaign for the training and development of black people in the wildlife sector, Wildlife Ranching SA adopted BEE as one of its main objectives in its Constitution, which was approved at the first Annual General Meeting held in March 2006.

4.5.3 Partnerships/mentorships

For the successful establishment of emerging wildlife ranchers, it is important for the commercial wildlife rancher to help the emerging rancher in the form of partnerships or mentorships. Established commercial wildlife ranchers, due to their access to formal markets, could also open new opportunities for emerging wildlife ranchers. Effective use of the knowledge and expertise available within the wildlife ranching industry could prevent the kind of failures that have been witnessed with other commodities.

4.5.4 Transforming the demand side of the wildlife ranching industry

The Committee was also of the opinion that BEE initiatives should not focus exclusively on the supply side of the wildlife industry (production, land issues, wildlife ranching, etc.), but should also focus on the demand side (the hunter, touring tourist, etc.). According to a study done by the Institute for Tourism and Leisure Studies at Northwest University, Potchefstroom Campus (Northwest University, 2005), South Africa has about 200 000 recreational hunters, of whom 87% are white Afrikaans-speaking men. White people represent only about 9.6% of the population of South Africa (about 44 million people), while black people represent 79.0%, coloured people 8.9% and Indians 2.5%. If only 1% of these other racial groups started hunting actively, the South African wildlife base would have enormous growth potential.

4.6 How the economic output of wildlife ranching could be improved

The tremendous growth of the South African wildlife ranching industry over the past three decades and the increase in the area of the land utilised by wildlife show that the industry could be near the top-end of its current growth cycle. Something therefore needs to be done to secure sustainable growth in the industry and to take it to the next level.

4.6.1 Current marketing methods

The most profitable way of marketing wildlife is for it to be sold as trophies to trophy hunters (the overseas market). The biggest market, but less profitable, is to sell animals for recreational hunting (local market). Another method of marketing is to sell animals on auctions for stocking purposes or for breeding. Surplus animals that cannot be absorbed through these three marketing methods are earmarked for the meat market (domestically or internationally). Both meat markets are currently underdeveloped. The international meat market (which pays a higher price than the local market) has huge potential, but critical supply throughout the year is a problem. Another problem is that wildlife meat is not effectively promoted.

Trophy hunting is responsible for the off-take of about 2% of wildlife, while recreational hunting's off-take rate is a further 10%. Wildlife population growth is between 20% and 30%. A surplus situation is looming in the near future and the wildlife industry should identify ways and means to address this.

Possible ways to expand the wildlife industry are to increase wildlife meat consumption, recreational hunting and professional hunting (to promote tourism to South Africa) and to increase the territory for wildlife ranching. The latter would require that the uncertainty regarding demarcated areas be addressed.

4.6.2 Representative structures

The SWOT analysis done by this Committee highlighted that the wildlife ranching fraternity is currently very fragmented. There is no overarching representative structure to render important functions such as

- Information
- Coordination of research
- Transformation
- Promotion
- Lobbying of government

To render these generic functions, funds are obviously required. It is a reality that without funds, wildlife ranching will not be able to fulfil its role in promoting the growth of the industry. As in all other agricultural sectors, representative structures must investigate ways and means of increasing their funding contributions.

The Marketing of Agricultural Products Act, 1996, and its statutory measures could assist wildlife ranching by rendering some of the above-mentioned functions and facilitating the collection of the necessary funds on a broader basis. Statutory (compulsory) levies with sufficient support at grassroots level (the levy payers) could eventually reduce the financial burden on each and every individual.

4.6.3 Information

Wildlife ranching lacks reliable detailed information.

Currently, there are unacceptable differences between the vital statistics available from private and public resources that could provide up-to-date information and effect better planning. One of the roles of an overarching representative structure could be to create the capacity (human resources, skills, budget and equipment) to develop and maintain accurate information and statistics. Effective liaison and linkages between the institutions that collect information and statistics, such as Statistics SA, Agricultural Statistics, Customs and Excise and other organisations within the industry, should also be established.

Wildlife ranching should consider other methods to collect more reliable and accurate information. One method which could be considered is to apply for statutory measures (the compulsory registration of certain role-players and the compulsory furnishing of records and returns) provided for in the Marketing of Agricultural Products Act. With this method the sector itself could decide who should register and what type of generic information should be supplied. It is also important to satisfy or assure role-players that confidential information would not be requested.

Nobody has any idea how many buffalo, roan and sable are in private hands or in protected areas. It is possible that these so-called rare species are not so rare any more. If so, one can only imagine what could happen if the market found out what the real situation was. If more accurate figures are available, role-players are in a better position to manage the process. The purpose of the current permit system for translocation is to get information about the extent of the wildlife industry, but for various reasons discussed earlier, a large majority of wildlife are transported illegally, without permits.

In an attempt to get an idea of the extent of wildlife numbers in South Africa, we could assume that each ranch has, on average, approximately 1 000 animals. On this assumption, with 9 000 wildlife ranches, the wildlife in private hands could be estimated at

9 million animals. A third of this number could be in protected areas. A rough calculation indicates that South Africa has about 12 million head of wildlife of which about 1.0 to 1.5 million are harvested for recreational hunting, trophy hunting and wildlife meat purposes. The off-take rate is therefore approximately 8% to 13% compared to the off-take rate of approximately 30% in the case of commercial cattle farmers, who slaughter about 2.0 million cattle annually in registered abattoirs. Although the large variation in body sizes should also be considered, this rough estimate gives an idea of the extent of the wildlife ranching industry in South Africa.

4.6.4 Coordination of research

The health of animals is important for optimal production and ultimately for human consumption of animal products. Special attention should be given to the transmission of diseases from wildlife to domestic stock as well as from domestic stock to wildlife and the impact thereof.

Catarrhal fever is a disease that could be transmitted from wildebeest to cattle. In the recent past there have been several court cases that have damaged the relationship between wildlife ranchers and cattle farmers. Currently there is no vaccine available to combat catarrhal fever. Since 1 May 2006, Wildlife Ranching SA (the national representative organisation for wildlife ranchers) has introduced a database and permit system to monitor the movement of wildebeest and wildebeest products. Information on distribution, movement and utilisation will be collected through this permit system. An amount of R25 per wildebeest or wildebeest product will be collected for the issuing of each permit (for translocation) and the funds will be deposited in a research fund to develop a vaccine to combat catarrhal fever.

4.6.5 Promotion

Promote wildlife meat

The harvesting of wildlife needs to be increased, because while the mere keeping of animals has its place, this in itself is only one subsector of the industry. The production of wildlife meat is a legitimate form of wildlife utilisation, which could be linked to proper habitat management by removing excess numbers of common wildlife (usually occurring in large herds) after the plant growth season to ensure better animal production and to prevent habitat over-utilisation.

For sustainable growth in the wildlife industry, the industry needs to promote the consumption of wildlife meat (fresh and frozen) locally and internationally. Positive aspects, such as the low cholesterol level of wildlife meat, need to be promoted. It is general

knowledge that the local consumption of wildlife meat is still underdeveloped. The perception that the meat of any type of goat or buck gives off an unpleasant smell when it is prepared might contribute to this situation. Wildlife meat is also being exported, and this subsector of the wildlife industry has the potential to become the largest source of income for the wildlife ranching industry. In developed countries, wildlife meat is regarded as a popular health food (low cholesterol) and as an African experience.

To promote wildlife meat locally and internationally, strict quality control and aggressive marketing are needed for expansion and success. For the export market, the industry could focus on the US, the EU and (especially) the Asian countries, which have animal protein deficiencies.

In its constitution, Wildlife Ranching SA states that one of its objectives is to facilitate the development of a South African brand name for the production and marketing of wildlife meat locally and internationally, in order to promote sustainable growth in the wildlife ranching industry.

Promote responsible hunting

Although many citizens today regard consumptive utilisation of wildlife as the immoral pleasure of the landed few, the culling of surplus wildlife remains a necessity in the absence of larger predators and is of cardinal importance in ensuring the future of wildlife ranches. Over the years most of the free ranging large predators have been decimated, for a number of reasons, such as human safety, urbanisation and commercial livestock farming. The hunter therefore has to fulfil the role of culling that was once performed by the larger predators.

It is important to understand that wildlife ranchers and hunters have an interest in protecting wildlife if they want to ensure the long-term viability of the wildlife on ranches and other land. There would indeed be very few opportunities for private hunting if there were no private wildlife ranchers because staff members undertake all the culling operations in the national parks of South Africa.

The wildlife fraternity and anybody with an objective interest in the future of wildlife will have to promote responsible, ethical hunting for the sector's sustainable development. They will have to ensure that the opportunity to hunt African wildlife in its natural setting is accompanied by greater responsibility and that this point is emphasised when marketing and selling the South African hunting experience.

4.6.6 Lobbying of government

The support services to be provided by the DoA, DEAT, DoH, DTI and the corresponding provincial departments are of cardinal importance to the economic welfare of all role-players and stakeholders with any interest in our country's extraordinary wildlife diversity.

The DTI has as its prime responsibility the enhancement of international trade, while the DoA is the custodian of agricultural activities. Wildlife behind fences is being managed and must be regarded as an agricultural activity. The DEAT, through provincial conservation authorities, is responsible for issuing a variety of permits and for setting norms and standards. In addition, it has to create a climate for the strengthening of South Africa as a globally desired hunting destination by facilitating, *inter alia*, responsible and ethical hunting operations.

The wildlife sector could benefit substantially if it could take the lead by reviewing existing legislation (often too extensive) and making proposals on how it could be improved with a view to extending its potential to significantly contribute to both biodiversity expansion and socio-economic development. This could happen if there is a willingness on the part of all the relevant parties (but at least the private and public sectors) to cooperate towards strengthening wildlife and hunting activities and capacitating the relevant structures in South Africa.

5 ABBREVIATIONS

Black Economic Empowerment	BEE
Confederation of Hunting Association of South Africa	CHASA
Convention on Biological Diversity	CBD
Convention on International Trade in Endangered Species of Wild Fauna and Flora	CITES
Commercial Taxidermists and Game Skin Tanners of South Africa	CTGSTSA
Department of Environmental Affairs and Tourism	DEAT
Department of Health	DoH
Department of Trade and Industry	DTI
European Union	EU
Gross domestic product	GDP
International Union for the Conservation of Nature and Natural Resources	IUCN
Kruger National Park	KNP
Marketing of Agricultural Products Act	MAP Act
Member of Executive Committee	MEC
National Department of Agriculture	DoA
National Agricultural Marketing Council	NAMC
Professional Hunters Association of South Africa	PHASA
Panel of Experts	PoE
Safari Club International	SCI
South African Hunters and Conservation Association	SAHA
South African National Parks	SANParks
Sectoral Education and Training Authorities	SETA
Strengths, weaknesses, opportunities and threats	SWOT
Taxidermy Association of Southern Africa	TASA
Transfrontier Conservation Areas	TFCA
Transfrontier Protected Areas	TFPA
United Kingdom	UK

United States of America	US
Wildlife Translocation Associations of South Africa	WTA
World Conservation Strategy	WCS
World Wildlife Fund	WWF

6. REFERENCES

- ABSA. 2003. Game ranch profitability in South Africa.
- Damm, G.R. 2006. The hunter and the fence. Available at www.africanindaba.co.za
- Department of Environmental Affairs and Tourism. 1997. White Paper on the conservation and sustainable use of South Africa's Biological Diversity. Pretoria: DEAT.
- Department of Environmental Affairs and Tourism. 1999. A welcome start to South Africa's tourism campaign. Pretoria: DEAT.
- Development Bank of Southern Africa. 1991. Land utilisation in South Africa. Pretoria: Development Bank of Southern Africa.
- Endangered Wildlife Trust. 2004. Vision – business, ecotourism and the environment. Twelfth Annual version.
- Heberlein, T.A. & Willebrand, T. 1998. Attitudes toward hunting in the USA and Sweden. Available at [www.drs.wisc.edu/heberlein/Attitudes toward hunting.p.d.f](http://www.drs.wisc.edu/heberlein/Attitudes_toward_hunting.p.d.f)
- Hunting in national parks. 2006. *African Indaba e-newsletter*, 4(2). Available at www.africanindaba.co.za
- Kunsmisbedryf ly onder swak landbutoestande. 2006. *Sake Rapport*, 30 April.
- Ngowi, R. 2006. Drought threatens East Africa's wildlife. Available at www.mg.co.za
- Northwest University. 2005. National profile and economic impact of biltong hunters in South Africa. Institute for Tourism and Leisure Studies (Potchefstroom Campus).
- Padayachee, N. 2004. Hunting in South Africa makes a killing. Available at www.sanwild.org/noticeboard/news2005/HUNTINGINSOUTHAFRICAMAKESA.HTM
- Thomson, R. 2006. The pieces of the African wildlife puzzle. Available at www.africanhuntinginfo.com (accessed February 2006).
- Time to take action to save Africa's lion population. 2006. *Sunday Times*, 26 February.
- University of Port Elizabeth. 2004. A questionnaire-based assessment of the socio-economic significance of ecotourism-based private game reserves in the Eastern Cape. Terrestrial Ecology Research Unit.
- University of Pretoria. 2004. Ecotourism and game ranching – why it works. Centre for Wildlife Management.
- Wildlife ranching prices drop in 2005. Prof Theuns Eloff, Northwest University (Potchefstroom Campus) (Centre for Wildlife Economics), *Farmers Weekly*, 13 January 2006.