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Game ranch economics



Module # 1 - Introduction to game ranching

Component # 1 - The trend towards game ranching in Southern Africa

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The trend towards Game Ranching in Southern Africa



“SA is uniquely positioned to capitalise on the tremendous opportunity that the game industry presents if the industry is developed appropriately. Sustainable and inclusive wildlife breeding approaches will deliver economic value and preserve our wildlife heritage for generations to come.”

Cyril Ramaphosa

Game industry overview

“Game ranching in South Africa is unique, not only in terms of species diversity but also in terms of our institutional environment, i.e. South Africa is one of only a few countries in the world where ownership of wildlife is vested in private landowners, which presents game ranchers with a comparative advantage second to none – there is no reason why game ranching cannot become or remain one of the leading agricultural land use options in years to come”. Dr Flippie Cloete, ABSA Agricultural Outlook 2017.

Four pillars of wildlife ranching are:

- Breeding
- Hunting
- Wildlife tourism
- Meat production

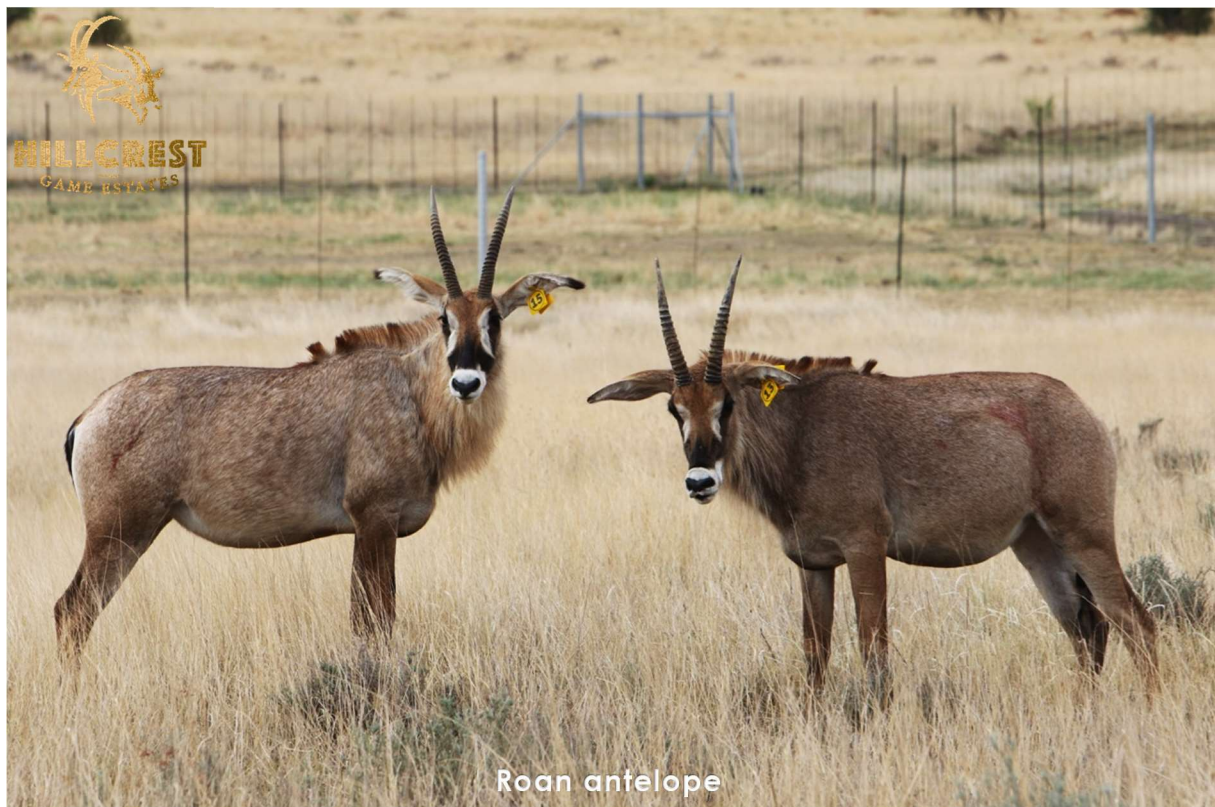
Five methods are used in South Africa for trading with wildlife, namely:

- Private sales negotiated between the buyer and the seller (Professional wildlife catchers play an important role by translocating the animals).
- Public live wildlife auctions.
- Public wildlife catalogue auctions.
- 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.
- Electronic auctions (catalogue and online). Source: African Wildlife Auctions



South Africa's game ranching industry transformed into a **multi-billion-rand enterprise** over the past few decades. Commercial/private wildlife ranches cover 16.8% of the country's landmass, covering approximately 20,5 million hectares. Limpopo has 50% of these ranches, the Northern Cape 20% and the Eastern Cape 12%. **Wildlife ranching employs more than 100,000 people** and generates an income of R 9.1 billion per year (0,27% of GDP) (Source: 2018 Biodiversity Economy (Wildlife) presentation by Mr Shonisani Munzhedzi of the Department of Environmental Affairs DEA).

"In 2015, the economic contribution from the live game breeding and supported industries is estimated to be well in excess of **R 10 billion**, notably more than the contribution from hunting" (Cloete et al., 2015)." The value of game animals sold on formal auctions alone has increased from **R 93 million in 2005** to more than **R 1, 8 billion in 2014** – an estimated average annual increase of 26% over nine years. Current prices and the successive profitability of live breeding, especially in terms of higher value and/or colour and **morphological variants**, are **likely to decline** in future once supply exceeds demand. Although live breeding will remain central in terms of economic contribution and the successive growth of the game ranching industry, it is expected that the growth rate and the successive contribution from the specific segment will be lower in future." (Source: Growth expectations for the South African game ranching industry. Flippie Cloete)



This expected drop was experienced in the wildlife industry in 2017, with the trend following into 2018 and 2019. Several factors influenced this drop. Of these, the market relating to the **rare game breeding industry** as well as the uncertainty regarding **property ownership** in South Africa. Additionally, electronic media, access to information and social media platforms drastically influenced changes in the industry, with **catalogue and online game auctions becoming more popular**. We will go into further detail on this subject later in the course.



A 10-year overview of revenue generated by the Wildlife Industry:

| Year | Amount |
|------|-----------------|
| 2010 | R 232 657 655 |
| 2011 | R 433 337 065 |
| 2012 | R 856 712 460 |
| 2013 | R 857 391 169 |
| 2014 | R 1 489 783 755 |
| 2015 | R 1 961 279 908 |
| 2016 | R 1 854 892 218 |
| 2017 | R 978 997 842 |
| 2018 | R 598 580 160 |
| 2019 | R 472 433 825 |



Game auctions

Just one indication of the booming success the industry experienced in previous years could be seen in wildlife auctions. Auction sales accounted for about a third of total sales, most of which were between game ranchers. The value of game animals sold on formal auctions alone increased from **R 93 million in 2005** to more than **R 1,8 billion in 2014**. In 2015, a Zambian sable antelope bull sold for **R 27 million** at a game auction in Limpopo. Another sold for R 21-million on the same day. "In 2016, a top breeding buffalo bull in South Africa was sold for **R 168 million!**" (BusinessTech)

From 2017, we saw a drop in price for **colour variant species**, as a supply of animals increased and demand for them decreased.

Total revenue generated from game sales:

2017 revenue declined by 47%.

2018 revenue declined by 39%.

2019 revenue declined by 21%.

Total number of animals sold on auction:

2017 quantities increased by 3%.

2018 quantities declined by 20%.

2019 quantities increased by 5%.



Foreign leisure hunters

The fortunes of game populations and the people who cultivate them has changed dramatically over the previous half-century. A census in **1964** revealed that SA had a mere **557,000 head of game**. A census in 2005, by the same team using the same measurement process, found that the **number of game had grown to 18,600,000**. One example of some of the amazing recoveries in game populations from perilously low levels includes **white rhino** numbers which have risen from 28 in 1964 to \pm 18,000 and **black wildebeest** from 34 to 26,000. The main reason for the recovery of wildlife outside of national reserves is due to a quiet **private-sector conservation** revolution that has been **built on hunting**. For conservation to succeed, wildlife must be economically sustainable and able to compete with commercial farming. **Photographic ecotourism alone has been shown to be incapable of ensuring this**. Look at Kenya, traditionally the ecotourism safari-capital of the world where hunting has been banned since 1977. Since then Kenya's game numbers have fallen by 80%.

“Hunting has been the single biggest factor in the success of conservation in SA; when game gained a commercial value, it became protected.”



Kenyan-born palaeo-anthropologist Richard Leakey, once a vehement opponent of hunting, conceded this to The Economist a few years ago: “Market forces are essential for the long-term survival of species.” The banning of hunting in Kenya provided the South African game industry with the demand kick-start it required. From a mere three **game ranches** in 1960, the numbers grew rapidly, reaching 3,300 by 1987 and passing the **9,000** mark less than a decade later. A major factor in the success of the game industry has been **the influx of foreign leisure hunters**, especially from the **USA, Canada, Germany and Spain**. Although few in number, the foreign leisure hunters make up for this by being big spenders. The statistics on foreign leisure hunting published by government were for the 12 months to **March 2007**. They show that SA hosted **16,394** foreign leisure hunters who **spent ± R 2 billion during the 12 months**. The spending was both directly on hunting and indirectly on travel, accommodation and specialist services, including taxidermy and fees for professional hunters. The Wildlife Ranching South Africa estimates **taxidermy** to be worth **R 300 million annually**. According to SA hunting regulations, a professional hunter must accompany foreign leisure hunters.

“On a per-person basis, in **2013**, each foreign leisure hunter spent about **R 140, 000**. This was roughly **14 times more than that spent by the average foreign tourist** arriving in SA by air. Preliminary figures for **2013** indicate that hunting alone contributed R 8 billion to the South African GDP”. (Source: The New Game Rancher - Pamela and Peter Oberem)

The average price charged for a buffalo alone can reach up to **R 170 000.00** (or more). This does not include travel, accommodation, taxidermy services etc. Americans represent the largest number of hunters coming to SA. For many hunters, **buffalo is the big attraction** and the same people come back year after year to hunt them. There is increasing interest in South Africa as a destination among hunters from emerging market countries, particularly hunters from Russia and East Asian countries. **South Africa has a significant competitive advantage** over many other countries in Africa due to ease of travel, professional services, value for money, modern amenities and security. Source: Financial Mail Report 2012

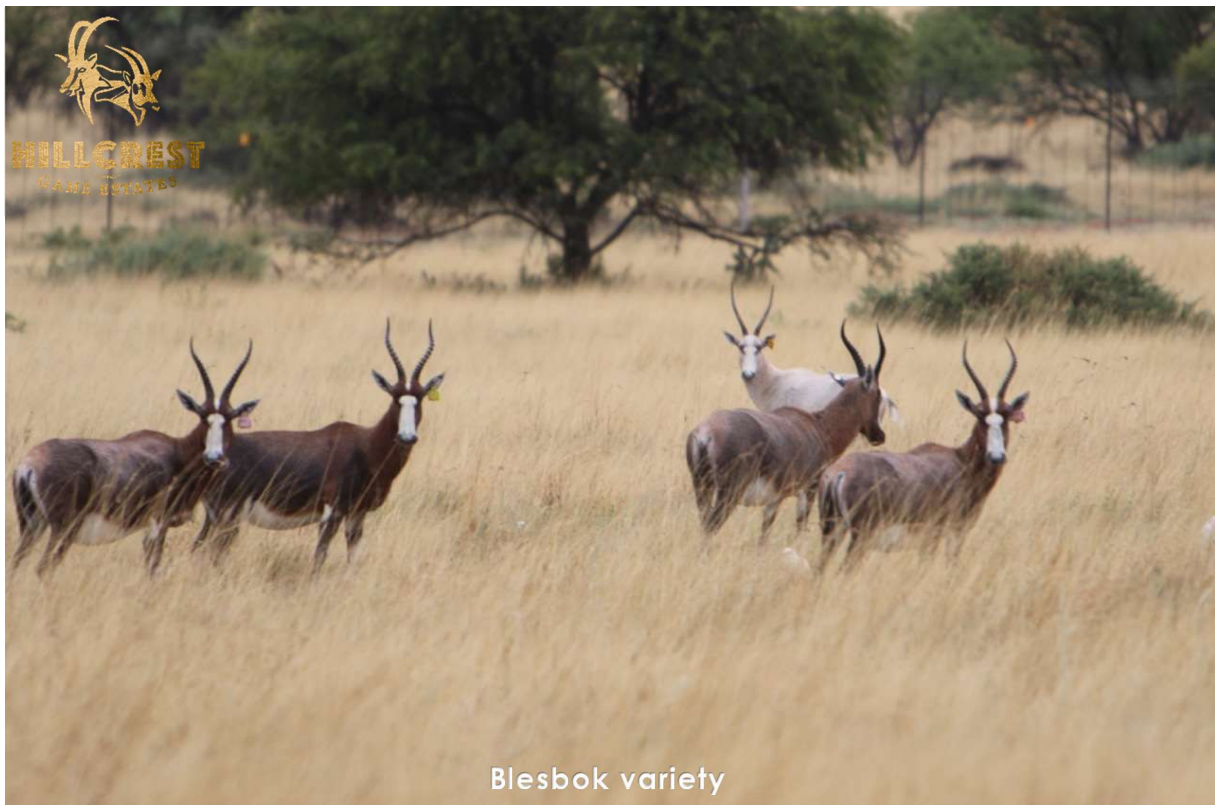


Local hunters

Source: The South African Hunters and Game Conservation Association
www.sahunters.co.za

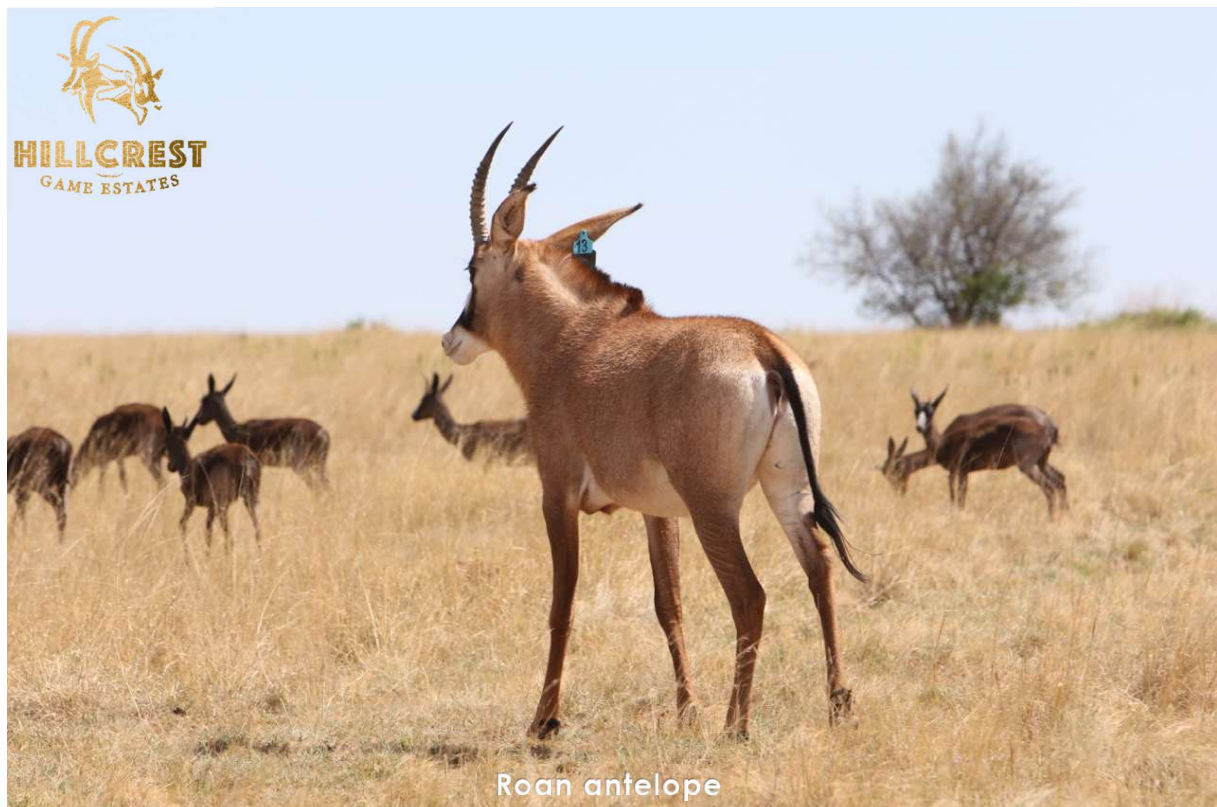
The local game industry also has strong support from **local hunters** who number around **200,000 - 300,000 members**. “Local recreational hunters spent **R 6.3 billion** in **2013**, according to research from Professor Melville Saayman of the North-West University. The calculation is R 800 million higher than the previous estimate of R 5.5 billion, due largely to inflation. On average, an estimated 200 000 hunters spent R 16 565.95 on game and R 16 565.95 on additional expenses for a combined total of R 33 131.90 per hunter for the 2013 hunting season. The most significant extra costs included accommodation (R 3 019.73), transport (R 3 511.20), hunting gear excluding ammunition (R 1 994.60) and food (R 1 568.86).

The North-West University has been tracking the local hunting industry’s contribution to the economy since 2005 in an ongoing report titled the “National Profile and Economic Impact of Biltong Hunters in South Africa”. The research is conducted using a survey posted on two prominent hunting associations’ websites with respondents required to complete the questionnaire by the end of October, a month after the hunting season finishes. Previous surveys were carried out in 2005, 2007, 2009 and 2010.



The results from the questionnaire are then extrapolated to the total number of known local hunters in South Africa which, according to the North-West University, is 200 000. However, Chris Niehaus, chief executive of the South African Hunters and Game Conservation Association (SAHGCA), one of the participating hunting associations in this research, points out that the 200 000 estimate could be conservative, and that the local hunting population may even be as high as 300 000 individuals. "The true figure (if one includes slippage due to the cash nature of most of the industry) could be closer to the 300 000 mark, meaning that the local recreational hunting industry could've contributed as much as R 9.4 billion to the economy in the 2013 hunting season," he says."

Most of the hunters surveyed (29%) hunted twice in 2013, followed by 21% who only hunted once and 18% who hunted three times. A three-day hunting trip proved to be the most popular among respondents (35%), followed by 26% who hunted for four days, 16% who hunted for two days and 12% who hunted for five days. The most popular hunting grounds among respondents were Limpopo (50%), the Northern Cape (48%) and the Eastern Cape (38%). The top five game species that were hunted in 2013 were springbok (28%), impala (16%), blesbok (11%), warthog (10%) and kudu (8%) at an average price of R 536 for springbok, R 897 for impala, R 809 for blesbok, R 532 for warthog and R 3 565 for kudu. The meat was mostly processed into droëwors and biltong, followed by mince, stewing cuts and braai meat.



SA hunting poised for growth

By Roelof Bezuidenhout August 17, 2019

Source: www.farmersweekly.co.za

Arthur Rudman, veteran game rancher and member of the Professional Hunters' Association of South Africa and Wildlife Ranching South Africa, speaks to Roelof Bezuidenhout about the future of the hunting industry in this country and across the continent.

What is the state of trophy hunting in Africa?

“Now that game ranching has stabilised and auction prices have dropped to acceptable levels, hunting in South Africa is set to gain ground. In contrast, in African countries to the north, where most land is owned by the state, game numbers are declining and hunting concessions and hunting have become expensive. Further, unpredictable government policies have caused havoc in the international world, to such an extent that some concession holders in Tanzania have cancelled contracts.

Even those South African outfitters and their professional hunters who have traditionally purchased hunting concessions in other African countries are now encountering resistance from hunters because of the greater availability and affordability of game in South Africa. So, despite South Africa's red tape and the negative (and false) publicity around so-called canned hunting, we are still a preferred destination. Clearly, the lesson for Africa is that the key to successful game ranching and hunting is privatisation, where minimum poaching and corruption occur and financial returns encourage landowners to build their herds. Namibia is increasingly following South Africa's game ranching model, which now offers up to 50 species and subspecies and attracts, in addition to the serious hunter, first-time hunters, partners and children. The larger the hunting ranches and the wider the selection of animals, the more popular they are.

Of course, many countries offer game and bird hunting and fishing. Hunters have many choices, but the countries must be tourist-friendly. How would you describe American hunters' attitudes towards the industry in Africa? With the international hunting marketing season in full swing, the message from the US is quite positive. Safari Club International's convention in Reno, Nevada, attracted about 8 000 hunters, down on the figure of previous years, partly due to the venue moving from Las Vegas. In contrast, the Dallas Safari Club convention attracted 35 500 people, including the younger crowd, in a booming Texan economy. But due to the government shutdown, the US Fish and Wildlife Service was not present at either convention to explain why the US will not easily allow import permits of certain animals on the Convention on International Trade in Endangered Species [CITES] 1 lists. Legislation requires that every so many years these have to be reviewed.

Over the past 20 years, the US has held more hunting shows to raise funds and promote hunting with the youth. For them, hunting is an adventurist pastime, enjoyed with family and friends, and a safari is a healthy holiday break. Prospective visitors to Africa consider factors such as safety, health issues, politics, the standard of food and accommodation, and a relaxing holiday atmosphere before they book a trip to Africa. Sadly, bookings for the 2019 season are considerably down after the South African government was going to expropriate property without compensation. Hunters are wary that they will lose their deposits if outfitters cannot hunt on their land. Also, the continued protest actions and farm murder news regularly shown on US television channels have made hunters from that country nervous about travelling to South Africa with their families. How do you counter anti-hunting/anti-firearm lobbies? Anti-hunting and animal rights organisations are always present. It has been alleged that animal activist organisations infiltrate CITES by buying delegates' votes and spending a large percentage of funds collected on marketing.

While the Professional Hunters' Association of South Africa (PHASA) does not engage with them, we make sure that our policies are acceptable. Members are requested to adhere to PHASA policies and to hunt with pride. Other than that, all one can do is constantly tell the true story about hunting, which is that it is a conservation tool, as proven by academic research and data. The South African ranching model, driven by hunting, is a clear example of how and why game has increased 'through the barrel of a gun'. Sustainable utilisation of game and habitat is an approved concept accepted by the International Union for Conservation of Nature (IUCN). South African wildlife ranchers have, over the past 40 years, increased game numbers from 500 000 to 22 million. There is more privately owned land under conservation in South Africa now than in the 1950s, mainly because of hunting, which has given wildlife an economic value. Species such as the tsessebe, roan antelope, sable, bontebok and rhino have been saved from extinction, as private wildlife landowners breed them for profit. What is the difference between canned hunting and captive-bred animals? The IUCN does not regard wildlife/game as wild if fenced at all. Not even the huge Kruger National Park is wild enough for them.



The truth is that, due to human population pressure on wildlife habitats, poaching, and a lack of privately owned land, Africa's wild animals are becoming scarcer. The IUCN model for game in Africa is catastrophic for game numbers. In a sense, all fenced game is captive bred, irrespective of the size of the land. But that is not the same as canned hunting, a description that is often used, along with the term 'unethical', to discredit outfitters, and not only by the animal rights brigade. Some factions in the hunting industry use this criticism to attack competitors with a holier-than-thou attitude to boost their own status. Basically, canned hunting is when animals have been captive-bred or tamed to such an extent that they cannot exist unless fed in small enclosures; a canned animal is one that cannot survive naturally in the environment it has been placed in. This is illegal, and PHASA does not accept it. The so-called canned lions (in effect, captive-bred lions) are raised in controlled areas and then released on registered lion-hunting ranches to fend for themselves. They may only be hunted after one month of being released. This practice is used worldwide. In Argentina, only captive-bred puma are allowed to be hunted to protect the few wild ones left. In the US, they use the term 'estate hunting' for this."

What is the trophy industry worth in South Africa?

"An estimated 8 000 international hunters and 3 000 non-hunters and connected tourists visit South Africa annually, spending R 2 billion on hunting 50 000 trophies. South African biltong hunters spend R 12 billion. Approximately half of these international hunters have their trophies mounted in South Africa, and they usually tour the country before or after their hunt. The result is that hunting creates about 50 000 jobs in our rural areas in the form of professional hunters, guides, skinners, trackers, catering staff, housekeepers, maintenance, conservation management, anti-poaching, and taxidermy. Add to this infrastructure development to accommodate international clients and their fellow travellers, and all that goes with it, such as vehicle purchases and hire, staff accommodation, cooling, freezing, slaughtering, meat processing and hide-drying facilities, and one realises the size of the industry.

At the same time, international hunters and outfitters, being aware of their social responsibility to their communities, make donations to the rural schools on the ranches where they hunt. Unfortunately, government red tape, especially with regard to rifle restrictions and parental permit permission, still affects hunts to South Africa, as does lack of promotion. How many Big "5" animals are hunted in South Africa, and at what price? Prior to 2018, about 1 000 captive-bred, ranched lions were hunted per year for five years. Numbers are debatable at present, but these hunts cost between \$5 000 and \$8 000 (about R 72 000 to R 115 000), excluding daily rates. CITES approved the hunting of 150 leopards per year but not more than 10 are hunted at about \$20 000 (R 290 000) each, including daily rates. Fewer than 10 elephants are hunted per year at about \$8 000 (R 115 000) each, but nearly 100 were poached in the Kruger National Park in 2018. Many more buffalo are hunted, with each hunt costing upwards of \$9 000 (R 130 000), including daily rates, depending on the size".

Food security

Source: Financial Mail Report 2012

The role of SA's wildlife heritage and game ranching extends well beyond hunting and ecotourism. It has the potential to play a role in **ensuring the country's food security**. Up to now, the game industry's role has been relatively limited. **"SA exports about 75,000 head of game a year**, primarily to EU countries," says Piet Neethling, MD of Camdeboo Meat Processors, which operates SA's biggest game and ostrich abattoir in Graaff-Reinet. He says **springbok is the primary venison** export and earns SA only around R 60m-R 70m annually. Neethling continues: "Domestically there is a small restaurant and retail market for venison. Hunters also take a lot of meat home. But even including these, I would estimate the **total value of SA's venison market at only R 300m to R 400m** annually."



Ostriches: Male (back) and female with a chick (front)

The value of exported venison is dwarfed by SA's red and white meat imports which, Gert Dry (WRSA deputy president) says, are running at almost R 4bn/year. SA's red meat industry, in particular, is experiencing capacity constraints that have been highlighted by wildlife veterinarian and researcher Kobus du Toit. He estimates that the number of cattle farmed commercially in SA has been stable at around **8 million** since 1971. Du Toit also estimates that the number of sheep farmed commercially in SA has held steady at about **28 million** over the past four decades.

But over the same period, SA's population has grown from about 20m to 50m. Providing similar estimates for commercial cattle stock numbers, Red Meat Research & Development SA (RMRD) reports that cattle meat imports into the country are running at 32000t/year, or about 5% of local consumption. In addition, SA imports 170,000 live cattle from Namibia annually. RMRD reports that mutton imports are about 50000t/year or almost a third of local consumption. Taking a more pessimistic view than Du Toit on stock levels, RMRD estimates that the number of sheep on commercial farms has fallen by 3m over the past decade to about 22m.



One of the reasons for the **stagnation in SA's commercial cattle numbers** and decline in sheep numbers RMRD puts forward is a **lack of suitable grazing**. This is not a problem faced by game ranching. Game animals are better adapted to local arid conditions, and the carrying capacity of land is far greater for game than for cattle and sheep, says Wouter van Hoven (professor of wildlife management at the University of Pretoria). "Cattle and sheep only graze ground vegetation while different species of game utilise different plant material, from grass to trees," he says. Peter Flack (Conservationist, hunter and wildlife author) points out that game such as **springbok, impala and wildebeest** are also prolific breeders. "**Their numbers grow at between 25% and 35% annually**," he says. Jacques Malan (President of WRSA) believes the time has arrived for the game industry to increase its penetration of the red meat market. "The industry now has the stock levels to expand significantly," he says.



A big step in this direction is being taken with the establishment of an abattoir focused on game meat in the Waterberg District in Limpopo. "We are in the process of having the abattoir certified by health authorities," says Peter Oberem (a local veterinarian who heads the initiative, Waterberg Natural Produce). The abattoir, says Oberem, has the financial backing of a number of game ranchers in the region and will have an initial daily capacity of 140 wildebeest. "There is **more than enough stock to meet our requirements**," says Oberem. The slaughtered weight of wildebeest

varies from about 100kg to 150kg. The initial focus, he says, will be on supplying the domestic market. "You have to build a local base first. We have learnt a lot from the ostrich industry, which built its model on meat exports."

The **ostrich industry is facing serious problems** as a result of an outbreak of avian flu which has led to a complete cessation of exports to the EU, its biggest market. However, exports do form part of Waterberg Natural Produce's longer-term strategy. "There is huge potential for exports to Europe," says Oberem. "New Zealand alone exports around R 2,5bn annually, primarily to Germany." The big attraction of venison is that it is a high-value product. "**Every 1 kg of venison exported pays for 3 kg of red meat imported**," says Oberem. At a time when SA is facing growing **food insecurity**, its wildlife ranching industry could not be in better shape to play a role in **providing part of the solution**. Summing up the situation, Flack says: "Wildlife and wildlife habitat in the country have never been on a sounder footing in at least the past 100 years."

Game lodges

Too few tourists and too many beds is what is hammering the game lodge sector. Too much of a good thing can be bad, a reality a large proportion of SA's more than 700 private game lodge operators catering for ecotourists are learning the hard way. **"The game lodge sector is in dire straits,"** says Colin Bell, an ecotourism industry consultant. "There's blood out there," says Jan van Heteren, owner of Jaci's Lodges, operator of two lodges under concession in North West province's Madikwe game reserve. **"No more than 5% of game lodges are making money."** Thanks to costly marketing and a strong brand built over 16 years, he says, Jaci's Lodges is one of the 5%, but even its **occupancy rate is down from 80% to 60%.** Bell says the **average lodge occupancy rate is about 20%.** "The Americans are still coming," says David Evans, a director of Mala Mala. "The big fall has been in visitors from Europe."

The result, he adds, is that many lodges have been **forced to cut prices and raise commissions to travel agents.** Chick Legh, owner of The Outpost, a concession lodge in the northern part of the Kruger National Park, says **visitors pay R 3,500/day** each but his lodge receives only about R 1,700 after agents' commission. Director of ecotourism services firm, Livingstone's Supply Co, Peter Anderson says the slump has sparked big staff layoffs by lodges. He and Bell lay the blame for the lodge sector's plight on tourism marketing bodies. "The lodge sector is under threat because we don't get enough foreign tourists," says Bell. "Kenya, Botswana and even Zimbabwe are pumping but SA is stagnating." **South Africa gets, at best, 1,2m leisure tourists annually** after adjusting for factors such as people visiting family and friends, says Anderson. "We need to at least double that number."

No doubt, South Africa needs to up foreign visitor numbers. But it appears unfair to lay all the blame for the lodge sector's woes on tourism bodies. Though Van Heteren agrees that tourism marketing is falling short he also believes there has been overdevelopment of lodges. "The rich have hijacked the lodge market," Van Heteren says. "They have thrown money at developing lavish, five-star lodges. The result is that the **market is overtraded** by look-alike boutique hotels in the bush." Evans agrees. He says many people buy a game farm for their own use and then realise that it is extremely costly to run. They then open a game lodge hoping to cover costs, not realising that it is not an overnight path to profit. "It took us 22 years to make our first profit out of a joint venture with the Botswana government," he says. Even a concession in a game park is not a route to quick riches. **"Our concession costs us R 1m/year,"** says Van Heteren. Evans also criticises the lodge sector's look-alike nature. **"Most focus on taking visitors on photographic game drives,"** he says. "That's no different from what we began doing 50 years ago. Innovative thinking is needed. "Increasingly, people want adventure tourism," he says. A few lodges are moving away from stereotyped game drives by offering game viewing using **horses, quad bikes and even elephants.** Van Heteren sees European visitors as the key to the lodge sector's recovery. "It looks like Europe's economy will take another two years to recover." Evans takes a pragmatic view. "Some lodge owners will leave, and buyers will pick up bargains. But the animals aren't going to go away." Source: Financial Mail Report 2012.

Game industry employment

Employing more than 100,000 people in rural areas, SA's private game ranches have emerged as a key stabilising factor in an agricultural industry that has shed more than 300,000 jobs since 1994. Conversion of traditional livestock farms to game has also produced another benefit. In a 2006 study the National Agricultural Marketing Council (NAMC), a statutory body, found that **cattle farms converted to wildlife create 3, 5 times more jobs at wages 5,7 times higher**. **Private game reserves focused on ecotourism** also play a key role in rural job creation. Though fewer in number — about 700 compared with more than 9,000 game ranches — they are more labour intensive. **A game lodge employs three staff members for every bed**, says Jan van Heteren, owner of two lodges in the Madikwe game reserve.

"Lodges also continually train and uplift their staff to better positions," he says. Indicative of broader private game reserve employment, Mala Mala director David Evans says the eight private game reserves making up the Sabi Sands complex on Kruger National Park's western border employ 1,200 people. The reserves cover 65,000ha. SA National Parks' (SANParks) 20 reserves covering 4mha provide 10,300 jobs, excluding private lodge concessions. Direct employment must also be seen against the benefits to the broader community. **"Every job supports about 10 people,"** says Colin Bell, a game industry consultant. But despite the employment opportunities the private game industry brings, it remains dominated by white capital and expertise, a problem the industry readily acknowledges.

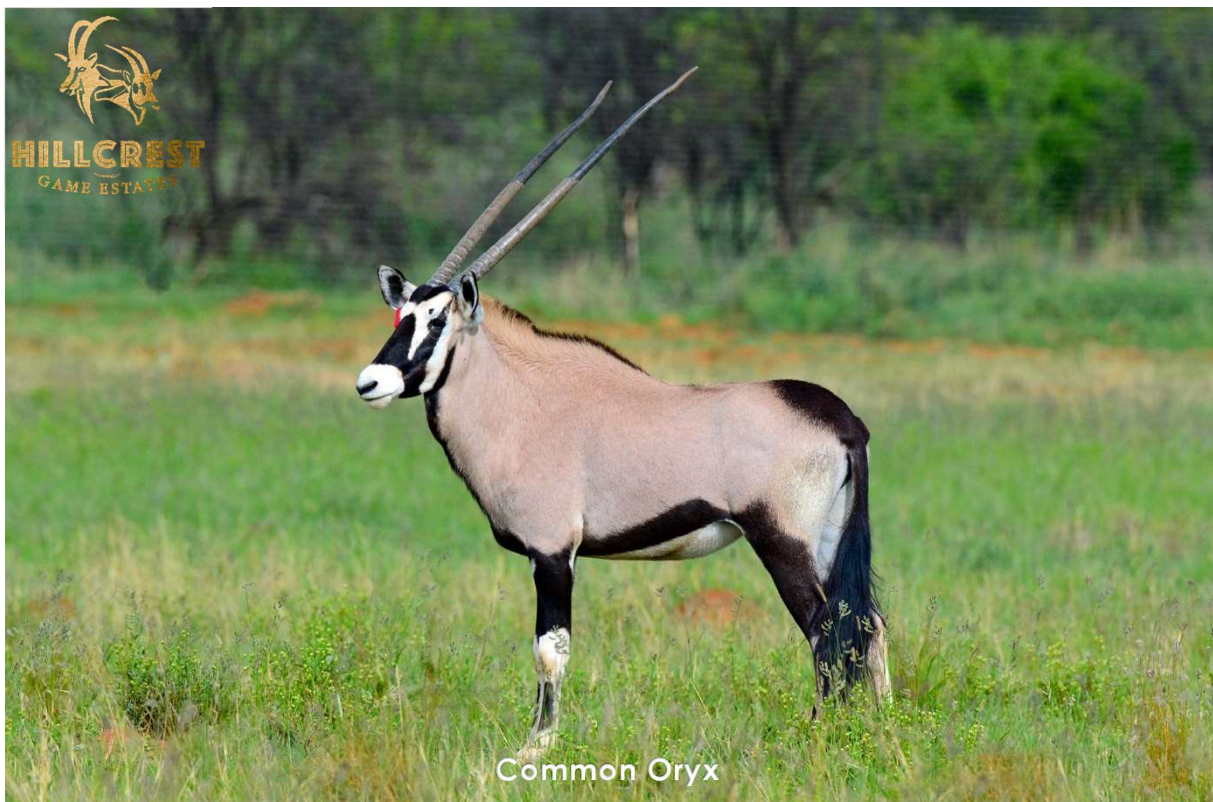


Wildlife Ranching SA deputy president Gert Dry has a potential solution based on the conversion of 12m ha of communal land into multi-purpose game ranches. “We have the skills, experience and desire to help emerging farmers,” says Dry. “With a little help and support, newly settled farmers can become successful game ranchers. “We already have an indication from SANParks that surplus animals from national parks could be made available for emerging farmers or communities who wish to establish game ranches.” Another **challenge is to attract black people into conservation.** “Natural sciences are not a favoured field among local black people,” says Wouter van Hoven, professor of wildlife management at the University of Pretoria. “There is a far greater interest in the social sciences.”



But at ground level progress is being made, says Cleve Cheney, a senior lecturer at the SA Wildlife College, which trains game industry students from the 15 member states of the Southern African Development Community. **“About 95% of the college’s students are black and already involved in conservation,”** says Cheney. Disciplines being followed include wildlife management, field ranging and hospitality. Black students will also be well in the majority in **a two-year professional hunting diploma course** (launched in July 2012.) **“This will be a first in SA and will improve the reputation of professional hunters in SA,”** says Cheney.

Getting buy-in from rural community youth is also vital. **“To most rural communities a game reserve is just something on the other side of a fence,”** says Evans. A key initiative to address this, he says, is a programme to educate rural children on the importance of conservation that is yielding excellent results. It is known as “Children in the Wilderness”. In three years, more than 4,000 children have been through the programme. Providing the final word on the need for buy-in into the wildlife industry by all South African s, the NAMC noted in its study: **“Much of SA’s agricultural land is semi-arid and marginal and is better suited for wildlife ranching than for traditional agriculture.”** This indicates the **promotion of wildlife ranching, as opposed to traditional farming,** could be a way to alleviate rural unemployment as well as play a part in addressing the issue of bringing more black people into agriculture. Source: Financial Mail Report 2012.



Green economy

Hillcrest Game Estates leads by example

Source: www.hillcrestgame.co.za

Hillcrest Game Estates aims to reduce environmental risks and ecological scarcities by implementing an integrated strategy for an economically sustainable farming unit. This approach is best-proven to preserve the natural environment, whilst also uplifting disadvantaged local communities within the Wolmaransstad region. Hillcrest is completely solar-power dependent, including the main lodge which provides accommodation for 12 people. The solar-generated power is used to 'electrify' the 25km-long outer security fence. Solar also gives power to several submersible water pumps scattered throughout the farm. All of Hillcrest's 52 fully remote-controlled gates are also entirely powered by solar-power panels located at each of the gates.



Geographically, Hillcrest is situated in a water-scarce region of the North West Province (of South Africa). On the farm, water is recycled. All excess water from reservoirs is naturally diverted to dams where bird- and game-viewing outlook-posts have been built. Camps have been planned and laid out in such a way to minimise unnatural disturbances to the local ecology and wildlife eco-systems of the region. Hillcrest is actively involved with initiatives led by Agri Northwest. One such initiative involves the removal of invasive plants. Another involves the destroying of ant heaps. These two ongoing projects remain high on Hillcrest's green economy agenda. Dedicated employees attend to these and several other projects daily.



As part of their integrated sustainable development programme, intensive veld management and independent auditing of grazing conditions is frequently undertaken. General grazing conditions are improved by planting a mixture of grass seeds in conjunction with the regular relocation of feeding facilities. At any given point in time, Hillcrest can call on six firefighting units which remain on immediate standby to help fight bush-fires on the farm. Their employees undergo regular training on firefighting techniques and the maintenance and operating of firefighting equipment. To ensure the absolute fastest of reaction times, various water-refilling points have been established.

Fire-breaks have been made on both sides of the perimeter and internal fences. In the event of a fire, these fire-breaks (i.e. graded roads) ensure rapid deployment of their fire-fighting teams. They also act as a reliable barrier to constrain the spreading of fires to other camps. Being in a water-scarce area, water is recycled and all excess water from reservoirs is naturally diverted to dams where outlook posts are erected for bird and game viewing. Camps have been planned to minimise the disturbance of nature and wildlife. Hillcrest Game Estates forms part of the larger Firth Group farming enterprise. Hillcrest's primary operations are located on the outskirts of Wolmaransstad, situated in the North West Province and the Boland in the Western Cape.



Aerial view of Hillcrest Game Estate

Game ranching and livestock farming in SA

It is estimated that there are around **+10 000 game ranches** ⁽¹⁾ and more than **4 000 mixed game and livestock** farms registered in South Africa, with an **additional 6 000 unregistered farms and reserves**. These cover some $\pm 25\%$ of the country's total land area, compared with 6% for all officially declared conservation areas. The national parks in South Africa cover only 3%. Many of these game ranches operate on meagre profits, and some even at a loss, as their part-time owners subsidise the ranches from other sources of income. Often their **operations are too small** (either in terms of land size and/or the sustainable utilisation of game stock) or not attractive enough to focus on ecotourism.

Even larger game ranches will battle to earn the equivalent of the risk-free rate in the money market today because land prices are generally too high and game selling prices too low. Over time the market may adjust, particularly **because the product offered by game ranches in southern Africa is unique in the world**, including biological, ecological, ecotourism and financial elements. For instance, game needs veterinarian support (which is the case even in the large national parks). The ecological aspects include the hunting of surplus animals (or their capture for live sales at game auctions), whereas ecotourism involves viewing game and managing game lodges. All these facets have **financial implications**.



Successful game ranching requires a **holistic and diverse approach**, encompassing all these facets. This essay deals primarily with the economics and business ethics of game ranching. Consequently, it pays attention to the game management aspects that have financial and ethical implications. For example, much can be written about the population dynamics of specific animal species, but in the context of finance it is particularly important to concentrate on such issues as the **minimum ranch size required for specific game**; the purchase and selling prices of game; the additional expense of fencing to ensure that large and dangerous animals remain inside a dedicated area; or infrastructure issues such as water provision, roads, lodges and/or hunting camps, abattoir facilities, 4x4 vehicles and housing.

All these financial issues have **ethical implications**. The incentive to “buy low and sell high” on every transaction may well improve economic efficiency, but such opportunistic behaviour will be at the cost of social efficiency and ultimately result in a totally amoral attitude to nature at large. Unfortunately, for some ranchers, the philosophy of maximising utility has resulted in an economic orientation in which morality no longer has a place and where their philosophy of life is restricted to the concept of “profits”.



Obviously, it is no easy task to balance profit with honour, and this clearly involves more than the simple saying, “**if it pays, it stays**”. The type and quantity of game that a particular area can sustain depends on ecological factors such as climate, soil types and vegetation. These ecological factors are many and varied. Nearly 70 areas with different vegetation types have been identified in South Africa (2). In any of these areas, there may be “hot spots” **able to sustain a particular game species or even a higher quantity** of game than the area in general. By contrast, some spots may only sustain a lower quantity of game or not be able to sustain a species.



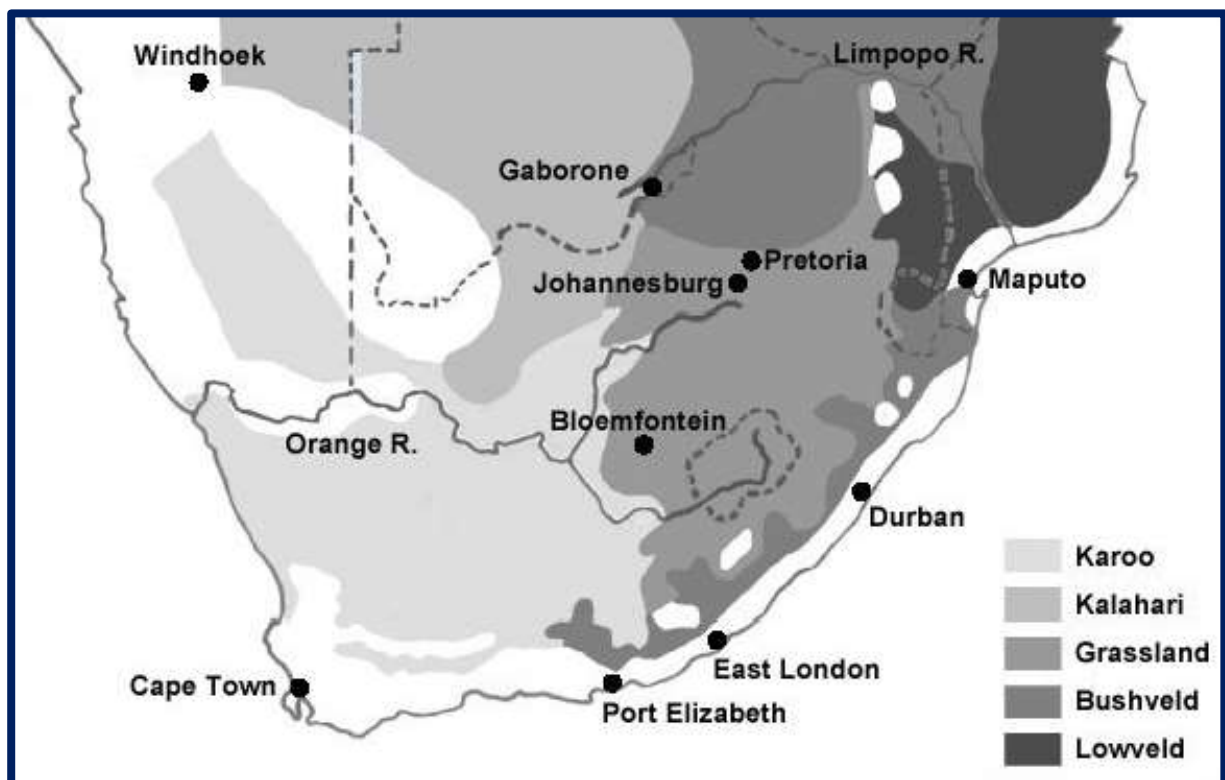
To simplify the overall analysis, **five ecological regions** are demarcated in this course, namely the:

- Grassland
- Lowveld
- Bushveld
- Kalahari
- Karoo

1. Including farms with “exemption”. When land is properly fenced in for game-keeping, the owner may be exempted from all the provisions of the Ordinance applicable to the hunting, catching or selling of game.

2. Low, A.B. and A.G. Rebelo (editors), *Vegetation map of South Africa, Lesotho and Swaziland*. Department of Environmental Affairs and Tourism, Pretoria, 1996.

Map of ecological regions used for analysis. The areas left white on the map represent ecological regions not covered in this course. E.g. Desert, fynbos, coastal bush and evergreen forest.



- The **Grassland region** is defined as the higher inner plateau and mountains with a rainfall ranging between 500 mm and 800 mm per annum, dominated by various types of grass, with very few shrubs and trees.
- **Savanna** is characterised by a grassy ground layer and a distinct layer of trees and is divided into the **Lowveld, Bushveld** and **Kalahari regions**.
- The **Lowveld region** covers the low-lying savanna areas east of the northern Drakensberg escarpment, including the Kruger National Park, with a rainfall of between 400 mm and 600 mm per annum.
- The **Bushveld region** refers to the savanna areas in the northern parts of South Africa, west of the Drakensberg escarpment, including the upper Limpopo valley, where the rainfall varies from 300 mm to 600 mm per annum.
- The **Kalahari region** is an arid savanna area, with a rainfall of 200 to 400 mm per annum.
- The western parts of the **Karoo region** are a semi-desert area with rainfall mostly below 200 mm per annum.



Each of these five regions is analysed in terms of **small, medium** and **large game ranches**. Consequently, a financial sensitivity analysis is done for 15 different types of game ranches. The approach in this essay is taken along the following lines. The first four components concentrate on the cost of starting and running a game ranch.

This involves broad issues such as:

- ⊕ A comparative evaluation of livestock farming versus game ranching.
- ⊕ The typical expenses involved in buying land, erecting fences and stocking up with game.
- ⊕ The normal current expenditure items confronting the owner of a game ranch.
- ⊕ The type of infrastructure required for ecotourism.

These components aim to determine the economic viability of game ranches of various sizes and in different regions.



The problems of traditional livestock farming

Sub-Saharan Africa is **among the poorest agricultural regions** in the world. The total value of agricultural output per hectare is \$69 in sub-Saharan Africa compared with a world average of \$266 per hectare ⁽¹⁾. Apart from poor soil and low rainfall in general, livestock farmers in South Africa have also been confronted with sweeping structural challenges for more than a decade.



A few of the more visible changes:

- The deregulation of the agricultural sector resulting in lower, but also more competitive prices.
- The decline in farmers' political power base in Parliament since the early 1990s.
- Increased land claims.
- The dramatic increase in stock losses owing to theft in recent decades.
- The impact of Aids and the re-emergence of malaria.
- Increased bush encroachment (often as a result of overgrazing which, in turn, reduces the frequency of veld fires).
- The increasing cost of controlling cattle diseases.
- Last, but not least, the impact of global warming.

All these changes are largely structural, implying that **the farming community has had to make fundamental adjustments**. In the case of cyclical changes, farmers may cope by sitting tight for a while, for example, by falling back on their capital reserves, diversifying their risk exposures and by taking a long-term view. By contrast, structural changes may require a total reconsideration of current livestock production methods and the weighing up of alternatives. Game ranching happens to be an economic alternative for livestock farmers, especially in savanna areas.



Before concentrating on game ranching as such, it may be useful to highlight in somewhat greater detail why farmers, particularly those in a marginally profitable business, have had to **review their traditional business**. Source: Financial Mail Report 2012

1. Europe takes the lead, with an output of some \$1 000 per hectare.

The deregulation of the farming sector

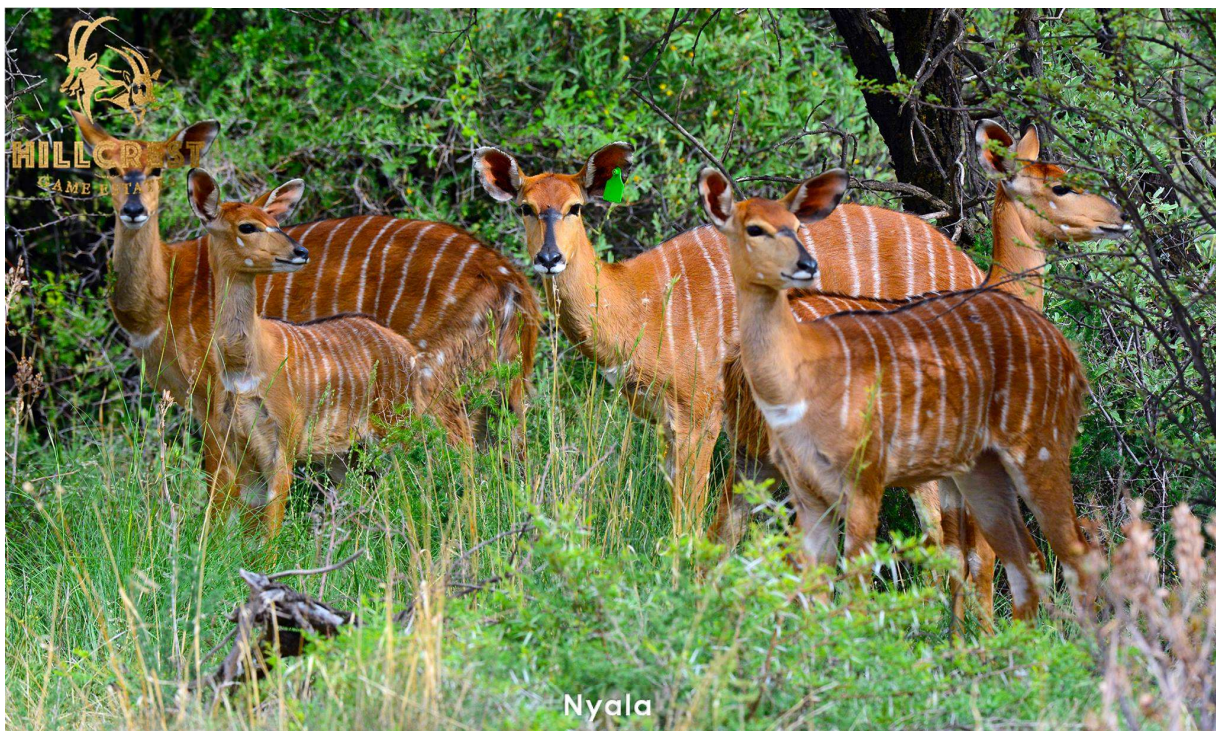
In line with world trends towards liberalising markets, the agricultural sector is increasingly being subjected to free-market forces. The World Trade Organisation (WTO) aims at a drastic reduction in all export subsidies and import levies for agricultural products. Although this aim will take some time to achieve, clearly there is pressure on the agricultural sector worldwide to **improve productivity and to become less dependent on government support** in its various forms. Source: Financial Mail Report 2012

The South African government is following this trend. As a result, the real input and output prices of the agricultural sector are adjusting structurally.



The loss of political leverage

Traditionally, the agricultural sector in South Africa, through its rural vote, wielded considerable power in Parliament. After the transition to full democracy in 1994, this political leverage was wiped out suddenly and completely. The government not only became fully representative, but the constituency-based voting system was replaced by a proportional representation system. Before 1994, the agricultural lobby was backed by nearly a third of the members of Parliament – today the support is well below 10%. The increased number of **successful land claims prosecuted through the courts** is only one reflection of the new political winds of change that are blowing through the Platteland. Source: Financial Mail Report 2012.



The impact of new labour legislation

From the beginning of organised agriculture in South Africa in the 17th century, the socio-economic position of the non-white farm labourer hovered between outright slavery and a sub-economic existence. It was partly this source of cheap farm labour that made sheep and cattle production viable in the past. Traditional labour relations are changing rapidly and fundamentally. For instance, issues such as dismissals, sick leave and maternity leave, paid holidays and retirement provisions are regulated in terms of the **Basic Conditions of Employment Act** (No. 75 of 1997). This Act fundamentally changed the way business was conducted on farms. Many farmers may need a refresher course in labour relations. Source: Financial Mail Report 2012.



Roan antelope relocation

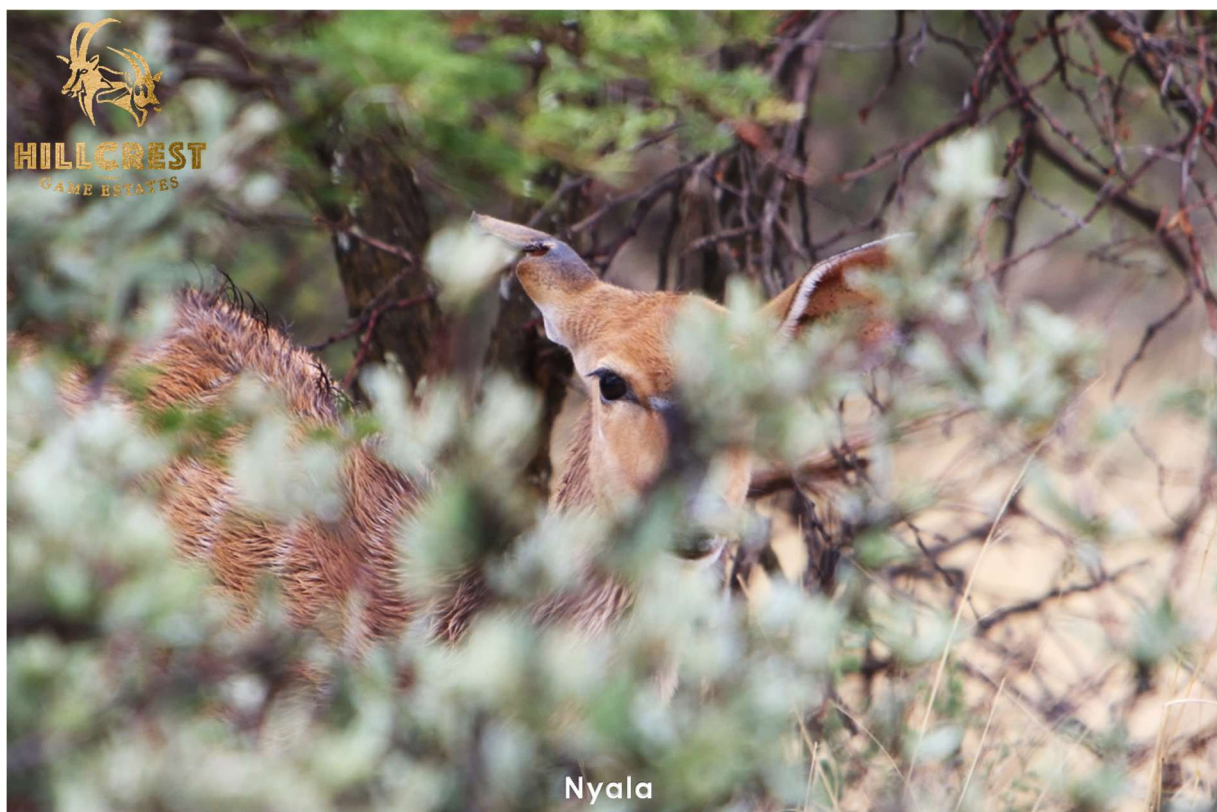
The impact of HIV/Aids and malaria

Like its northern neighbours, the South African agricultural sector is being badly affected by HIV/Aids.

The cost of the pandemic is felt in areas such as:

- the lower productivity of HIV-infected farm labourers.
- the loss of skilled labour.
- increased absenteeism.
- long-term sick leave for Aids patients.
- increased leave for burials; and
- less buying power in rural communities.

Besides **HIV/Aids**, malaria is once again becoming a major natural disease, impacting on much of the Lowveld, Bushveld and the subtropical coastal areas of southern Africa. Malaria not only affects the local population but also discourages foreign tourists from choosing Africa for a carefree and healthy holiday. Source: Financial Mail Report 2012.



Stock theft

The maintenance of law and order in rural areas has not become easier for the South African Police Service in the past few decades. Poverty, unemployment and **large inflows of illegal immigrants** from other African countries have undermined the security of herds of cattle and flocks of sheep in certain areas, and illegal slaughtering has become prevalent. Most farmers are no longer willing to run their animals along the major roads or near the borders of neighbouring states because grazing in these areas endangers the security of their livestock. Some part-time farmers are even selling all their livestock and switching to alternative farming activities. Source: Financial Mail Report 2012.



The costs to livestock farmers accrue on various fronts: firstly, the expense of **replacing stolen livestock**; secondly, the expense and effort involved in **increased policing**; thirdly, the under-utilisation of vast tracts of land because these **territories are considered too risky** from a security perspective; and fourthly, the cost of **changing to alternative farming activities** (often at lower profitability) if all the above fail.

Key statistics on farming in South Africa

Stats SA releases Census of Commercial Agriculture 2017 Report

Number of farms

- Statistics South Africa today released findings from the Census of Commercial Agriculture report, the report shows that a total number of farms/farming units involved in the commercial agriculture industry in 2017 was 40 122. The largest proportion of farms was in livestock farming (13 639 or 33,9% of the total), followed by mixed farming (12 458 or 31,1%) and field crops (8 559 or 21,3%).
- The province with the highest number of farms in 2017 was Free State (7 951 farms or 19,8% of the national total), followed by Western Cape (6 937 or 17,3%), North West (4 920 or 12,3%) and Northern Cape (4 829 or 12,0%). The provinces with the lowest number of farms in 2017 were Gauteng (2 291 or 5,7%), Mpumalanga (2 823 or 7,0%) and Limpopo (3 054 or 7,6%).



Land use

- ➊ On land use (as opposed to farm size), the survey shows that In September 2018, the total land used for commercial agriculture was 46,4 million hectares, which represents 37,9% of the total land area of South Africa (122,5 million hectares). Commercial agricultural land comprised mainly of grazing land (36,5 million hectares) and arable land (7,6 million hectares). Grazing land is used for livestock and game farming, and arable land is used for crop production.
- ➋ The Northern Cape province accounted for the largest share of the country's commercial agricultural land (37,1%), followed by Free State (16,4%), Eastern Cape (12,3%) and North West (11,5%). Gauteng (0,8%) and Limpopo (3,7%) recorded the smallest shares.

Income

- ➊ According to the Census of Commercial Agriculture 2017 report, released by Statistics South Africa, the total income for the commercial agriculture industry in 2017 was R332,8 billion, which was higher than the R85,9 billion recorded for 2007. In 2017, the major contributor to total income was livestock farming (R120,8 billion or 36,2%), followed by mixed farming (R95,0 billion or 28,6%) and horticulture (R65,7 billion or 19,8%).
- ➋ The province contributing the most to total income in 2017 was Western Cape (R64,3 billion or 19,3%), followed by Free State (R46,9 billion or 14,1%), North West (R39,7 billion or 11,9%), Mpumalanga (R38,4 billion or 11,6%) and KwaZulu-Natal (R34,0 billion or 10,2%).



Employment

- Findings from the report show that a total number of persons employed in commercial agriculture as on 30 June 2018 was 757 628, down from 769 594 on 28 February 2007 (-1,6%). In terms of employment, the major commercial agriculture activity in 2017 was horticulture (268 740 employees or 35,5% of the total), followed by mixed farming (185 863 or 24,5%) and farming of animals (162 116 or 21,4%).
- Western Cape was by far the largest provincial employer in 2018 (186 997 employees or 24,7% of the national total), followed by Limpopo (97 478 or 12,9%) and KwaZulu-Natal (96 206 or 12,7%). The provinces with the lowest number of commercial agriculture employees were Gauteng (36 517 or 4,8%) and North West (57 758 or 7,6%).
- In terms of area planted, the major field crops in both 2007 and 2017 were maize, soya beans, sunflower seeds, wheat and sugarcane. Between 2007 and 2017 the area planted increased in three cases, namely maize, soya beans and sunflower seeds. All major field crops were mostly planted under dry land, i.e. their main source of water was rain. In 2017 sunflower seeds had the highest proportion (99,2% of sunflower seeds) planted under dry land, followed by soya beans (93,7%), maize (89,4%), sugarcane (80,2%) and wheat (73,0%).



- ➊ More than half of the total numbers of farmers are engaged in mixed-farming activities to reduce their risk exposure to a volatile market and extreme climatic variations.
- ➋ Environmentalists are increasingly frowning on farmers' chemical-intensive monocultures because they drive out biodiversity and exacerbate soil degradation as well as pollution.



Bush encroachment

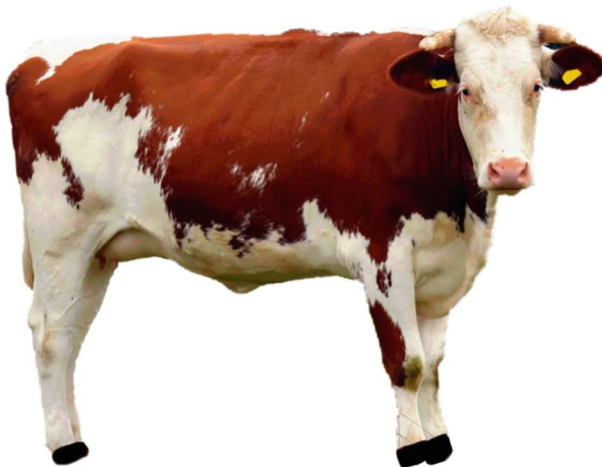
Overgrazing and the resulting degradation of the veld have resulted in denser bush in certain areas. In the past, periods of severe drought have also contributed to this phenomenon (2). Because of bush encroachment, the **economic carrying capacity** of cattle farms, in particular the smaller farms, has declined. Bush encroachment has a more severe impact on cattle farming than on game ranching: cattle are grazers whereas game species include grazers, mixed feeders and browsers. Source: Financial Mail Report 2012.

2. During wet periods the grassland conditions improve, limiting bush encroachment. In some areas, controlled fires are used for limiting bush densification.



Livestock diseases

Livestock, especially cattle, in the Bushveld and Lowveld areas are exposed to many **diseases**, often tick-borne. Disease control, such as for foot and mouth disease, is a costly exercise in many cases. Cattle farming is no longer as profitable as it used to be. Global competition and reduced subsidies have forced livestock farmers to race to the market – with **artificial insemination** at the beginning and overly **protein-rich feedlots** at the end of the production line. In fact, cattle cannot easily digest proteins beyond the tiny amounts consumed by microbes in their first stomach. Yet, for the sake of rapid weight gain, cattle are given **steroids** and fed with overdoses of protein, including, until recently, processed animal offal. Thus, cattle in feedlots are in permanent danger of bloat, chronic diarrhoea and acidosis, which disrupt their immune systems. Without an **ongoing regime of veterinary interventions** and large amounts of antibiotics, cattle in feedlots would soon die of these diseases. Mad cow disease (Bovine Spongiform Encephalopathy or BSE) is only one consequence of feeding animal proteins to herbivores.



Besides BSE, other illnesses may also strike cattle, such as **foot-and-mouth** disease, **swine fever** and **bovine tuberculosis**. Domestic animals have been shaped by human selection, in which health has not been a primary concern. When cattle are sick, the choice is therefore often between even more drugs or immediate slaughter. This contrasts sharply with wildlife, which has a far higher resistance to disease owing to natural selection. Instead of breeding health back into the equation, today's government policy for foot-and-mouth disease still comes

down to culling, whether or not the animal succumbs to the virus. The consumer's reaction to all this has been a **major cutback in meat consumption**. It is still an open question to what extent it is possible to depend on factory farming techniques without becoming a factory consumer. Food cannot be cheap, local, green, safe and varied, all at the same time. The current switch to higher fish consumption will only be temporary, as the oceans are already heavily over-fished. More organic farming techniques worldwide (with lower yields at higher costs) and the transformation of more cattle farms into game ranches in southern Africa could be partial solutions to these problems. Source: Financial Mail Report 2012.

Global warming

South Africa is a dry country. Internationally, areas that receive less than 500 mm of rain per annum are considered semi-arid or arid. **More than 60 % of South Africa's total land area receives less than 500 mm of rain**, with about 20 % receiving even less than 200 mm per annum. The effect of global warming will probably increase the unpredictability of localised wet and dry periods. The aridity of the country is clear when compared with other countries. On average, farmers can harvest **2,3 tons of maize per hectare** in the favourable parts of the Free State, compared with 7,9 tons in the United States of America.



Alternatively, in the best natural cattle-grazing areas of South Africa, **one large stock unit** (abbreviated as LSU, which is the equivalent of a steer of 450 kg) **needs 4 hectares of grazing land per year** on a sustainable basis. This compares with 1,5 LSUs per hectare (or 0,67 ha/LSU) in, for example, New Zealand. In short, the dry and unpredictable climate, large areas with sandy infertile soils (sourveld) and tick-borne diseases, make it difficult for South African livestock farmers, without subsidies and import protection, to compete with farmers abroad. According to the latest findings of an UN-sponsored International Panel on Climate Change (IPCC), the planet could

heat up by between 1,5°C and 6°C during this century, with severe consequences for farmers. **As the average temperature of the globe is about 15°C today, a mean rise of 3,5°C is indeed significant.** Already the ice at the north and south poles is melting rapidly, causing not only rising sea levels but also the warming of the oceans. In September 2010, a **huge chunk of ice broke off Greenland's Petermann Glacier**. It is not an iceberg, it's an ice island, 4 ½ times larger than Manhattan. The global climate is likely to become even less predictable than in the past. Southern Africa has felt the painful effects of **El Niño during** the past decade: severe droughts followed by major flooding. **Higher temperatures impact particularly on insect life**, hence the higher incidence of diseases such as malaria, which may now affect agricultural areas that were not affected in the past. Moreover, the warming of the Indian Ocean in the past decade has already destroyed most of the coral reefs around Indian Ocean islands and southern African shores. **Clean river water** is also becoming a scarce resource. Today, roughly 40 % of the world's food comes from 5 % of **agricultural land that is irrigated**. Source: Financial Mail Report 2012.

The rising importance of ecotourism in game ranching

One possible answer to the above-mentioned problems may be **to convert from livestock farming** (in marginally profitable and low rainfall areas) **to game ranching**. Although South Africa is a dry country, it **teemed with wildlife in previous centuries**. The over-exploitation of these animals and the introduction of commercial livestock farming caused their numbers to dwindle. However, the monetary value placed on wildlife during the past decades has led to a dramatic increase in their numbers. **Wildlife is better adapted than cattle** to the African environment, and in years to come, ecotourism is likely to be one of the better economic performers as well as a **potentially large earner of foreign exchange**. Game ranching is also far **less dependent on unskilled labour** than livestock farming, and in addition, game is more difficult to steal than cattle and sheep. Wildlife promotion is politically attractive in that it supports the international goal of achieving a “sustainable living planet”. Last, but not least, ecotourism creates more job opportunities for skilled and semi-skilled labour.

(3)

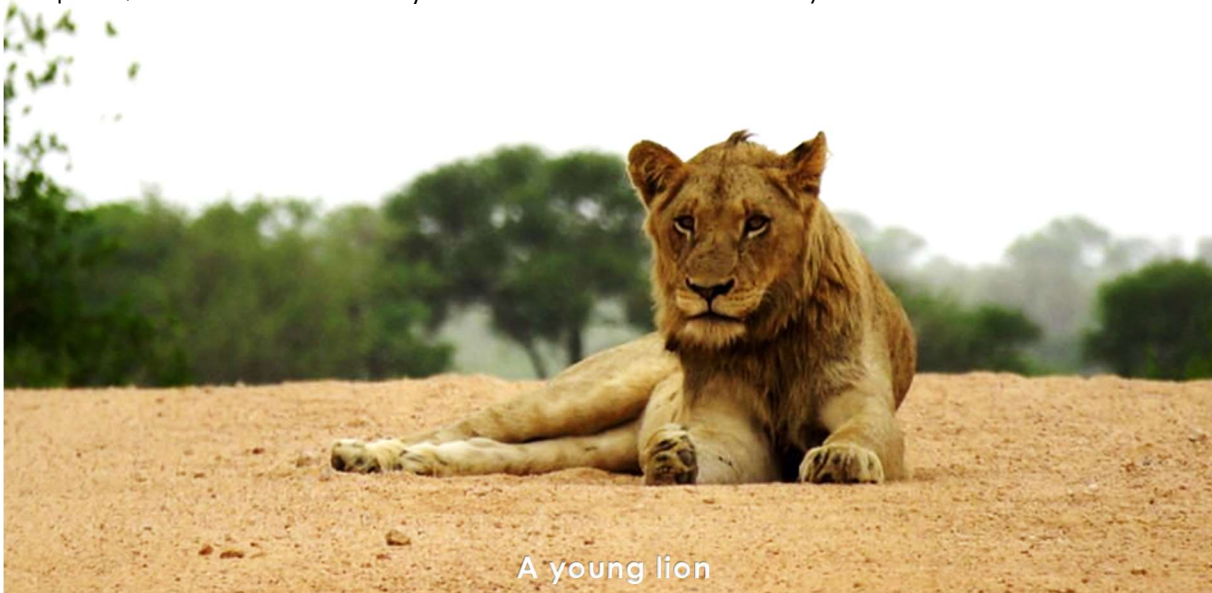


Not surprisingly, many farmers are currently **actively restoring their cultivated land to planted pastures (grass) or leaving it to return naturally to a habitat for game** through the process of plant succession. Some estimates place the area of land that has been transferred back to nature at about 20 million hectares. This will contribute to the game industry because the underlying demand for both hunting and game viewing is so large. To ensure game ranches of sufficient size, increasing numbers of farmers are considering the creation of conservancies ⁽⁴⁾. The **main aim of a conservancy is to remove the internal fencing** between adjoining ranches and farms. ⁽⁵⁾ Conservancies usually have an umbrella legal agreement, which pulls together different agreements covering management items such as usage of game, land ownership and tourism.

3. Based on a 1999 UNCTAD survey of 44 African investment promotion agencies, tourism tops the list of the industry's most likely to attract foreign direct investment in future.

4. A conservancy can be defined as a group of adjoining private commercial farms operating under a co-operative management agreement based on a shared common goal, such as to conserve and enhance the biodiversity of the ecosystem and to realise its full economic potential on a sustainable basis.

5. South Africa currently has some 90 000 km of game fencing on private property, which impacts adversely on the game's welfare and its natural migration. Land ownership laws are a major determinant in this context. For example, in contrast to the communal land ownership traditionally found in Africa, individual land ownership rights imply the dividing of land into blocks. Conservancies try to overcome these inherent limitations of individual land ownership to the benefit of game conservation. In the Lowveld and Bushveld, but not as easily elsewhere in South Africa, **profitability can be increased if game ranches move from hunting to ecotourism**. Natural predators, such as lion and leopard, are not only good and relatively cheap "game wardens" but are also particularly attractive to eco-tourists. Hunting is advised – in fact, it is inevitable – on all game ranches where the "Big "5" (buffalo, elephant, leopard, lion and rhinoceros) cannot move around freely.



A young lion

In terms of economics, the value of game ranching can be summarised as follows:

- Game ranching works essentially on four levels. The first level is the **sale of hunting trips and venison** (a low cholesterol, low-fat protein alternative for which the market, both locally and internationally, has hardly been tapped); the second level is the **sale of live game** at auctions and the translocation of these animals; the third level is the **processing of animal products**; and the fourth level is the **providing of game lodges**, conference facilities and related services. Job opportunities open on all four levels.
- The ecotourism industry accounts for at least **R 2.5 billion**. Its indirect multiplier effect (in industries such as airlines, taxidermy, 4x4 trails, outdoor equipment and hotels) is of a roughly similar size, which implies that the total turnover in this market segment is about R 5 billion. There is a **huge potential for future growth in ecotourism on game ranches**, mainly because its market share of the total tourism industry is relatively small in South Africa. ⁽⁶⁾ Not surprisingly, the game-ranching industry has been expanding at a rate of about 5 % per annum in real terms during the past decade.
- The percentage of income derived from auctions, hunting and ecotourism (game viewing or leisure tourists) **differs widely between the different regions** and depends on the distance from the big cities and the availability of the Big "5". In the distant Bushveld, for example, about 60 to 65 % of the total income from game ranching comes from hunting (trophy and venison hunting), 5 to 10 % from game viewing and the balance from the sale of live game at auctions.

6. The total value of tourism (including business travel) in South Africa was about R 45 billion in 1998, or 6 % of nominal gross domestic product (GDP), which compares with a world average of about 11 % of GDP. The local tourism industry directly employs about 600 000 people, and its multiplier effect in related industries (e.g. food and beverage suppliers, fuel and electricity suppliers, and wholesalers) adds another 500 000 jobs.

