

Module # 2 – Component # 1



Upfront Cost of Game Ranches

Introduction

Game ranching is a capital-intensive business. On average, even the most successful game ranch requires at least R6 in capital outlay for every R1 of revenue generated annually (in the Lowveld, where land is relatively expensive, this fixed capital/current income ratio is more likely to be 20:1). A small game ranch with an economic carrying capacity equivalent to 150 large stock units (LSUs) requires a total capital investment of more than R2,5 million, and the cost of a large ranch with an economic carrying capacity of 1 000 LSUs will exceed the R15 million mark. To give an idea of where these upfront costs are absorbed, the main capital expenses are analysed here in greater detail. In this analysis, the following general assumptions are made:

- All capital expenditure is incurred in the first year of operation. Alternatively, the game ranch, fully equipped and stocked, is bought as a going concern in the first year.
- The game stock consists of the optimum mix of suitable animal species, considering factors such as the ecological region and ruling game prices.
- All land is square in area¹, without any major obstacles such as perennial rivers or inaccessible mountainous areas.
- Profitable game ranches are registered as companies and thus subject to taxation in their own right. These game ranches are therefore independent legal entities, each with its own set of accounts, and are subject to value-added tax.

1. The more circular the shape of a ranch, the shorter the circumference and the lower the fencing costs.

2.1 The Cost of Land

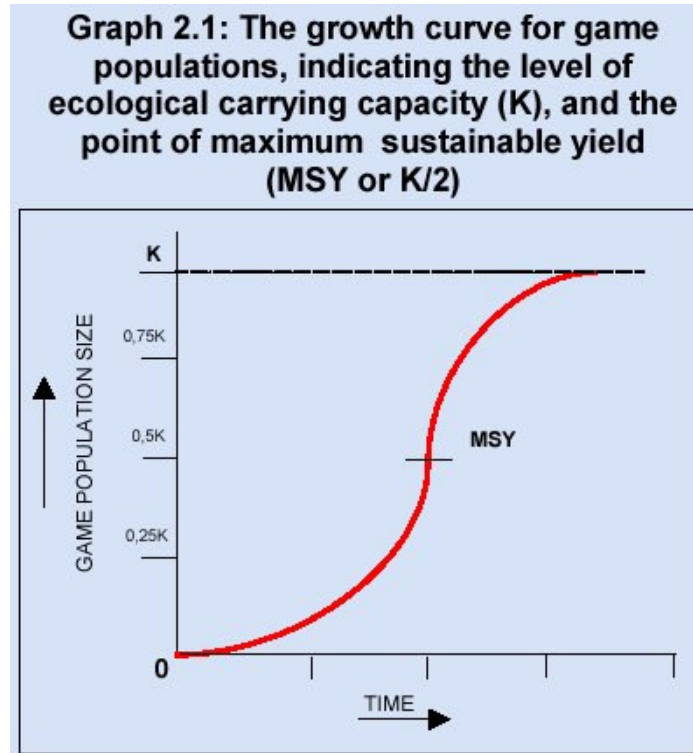
In real terms (i.e. after adjustment for inflation), land prices can fluctuate sharply. For example, since the early 1980s the average price of grazing land has fallen by more than 65 per cent in real terms in South Africa. Often these fluctuations in land prices are a direct result of cyclical changes in the climate, changes in the level of interest rates, political and economic instability, and the decrease in earnings in the agricultural sector in general. As a form of investment, land therefore remains rather risky.

The following terminology should be explained to give an understanding of the next discussion on ecological and economic carrying capacity (see Graph 2.1). The numbers of a game population increase slowly at first, but once a critical number is reached, the growth rate becomes exponential and numbers increase rapidly. Above a certain level, however, the population levels off owing to competition for resources, lower fertility and increased mortality, hence net growth is zero. In practice, the population at this level oscillates around a fluctuating upper level, which is the maximum biomass of game that an area can sustain. This maximum level is the *ecological carrying capacity*. At this upper level, poor quality forage, drought and disease can affect game numbers quite dramatically, with a consequent severe decline in population numbers. Adaptable game, such as impala, will initially increase as the veld condition deteriorates, but ultimately their numbers will also decrease.

If a game population is maintained well below the ecological carrying capacity by harvesting, the net growth of the population is maximised. The *economic carrying capacity* is the critical mass of a game ranch and is somewhere along the exponential part of the growth curve for game (see Graph 2.2). There is no fixed economic carrying capacity, but there is a point (called the “maximum sustainable yield”), where the population can be harvested, equal to about half the intrinsic growth rate.

In contrast to cattle farming, where the full ecological carrying capacity of the land is normally used (often referred to as K and which is usually measured in large stock units, i.e. LSUs per hectare), game ranching uses only between 50 and 70 per cent of K in practice. At half the ecological carrying capacity (or 50% of K), the growth rate of game is at its highest (i.e. the maximum sustainable yield or MSY; see Graph 2.2) and then tapers off to zero as it approaches the ecological carrying capacity. If the economic carrying capacity is exceeded, the surplus game should be harvested by hunting or sold at live game auctions.

Without human interference, the game population would be limited naturally to the upper level of K (see Graph 2.1). The ecological carrying capacity is the level of the game population that is likely to exist in unmanaged large natural areas, such as the national parks. Harvesting for profit does not usually take place in areas that have reached the ecological carrying capacity, so game ranches have to operate at a level of between 50 and 70 per cent of K .

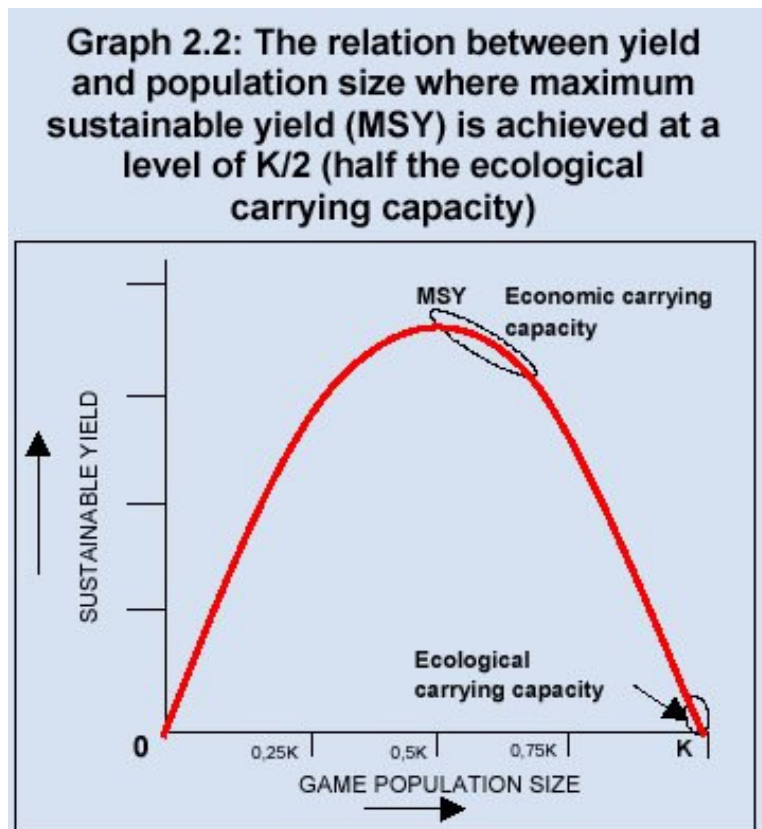


Moreover, a safety buffer is required in the use of land resources, because the full ecological carrying capacity of the land is a long-term concept and subject to dramatic fluctuations in the short run. For example, the ecological carrying capacity could be adversely affected by periods of prolonged and serious drought, accidental fires, episodic insect eruptions, predator-prey relations, or the disease epidemics that are generally prevalent where there are high population densities.

Of course, a sudden and sharp reduction in K is much easier to manage on a cattle farm than on a game ranch, where the harvesting of game has to be harmonised with, for instance, the hunting seasons. As a general rule, when the game ranch is intensively managed, it should be stocked as closely as possible to 50 per cent of K . Accordingly, small and medium-sized game ranches should be stocked at 50–60 per cent of K , whereas large ranches should be stocked up to 70 per cent of K . The national parks are likely to operate at nearly the full ecological carrying capacity.

Purely in terms of economic output – such as meat production – the price of land used for cattle or game farming should (theoretically) be directly related to the economic carrying capacity and the yield on that land.

In Graphs 2.1 and 2.2 the carrying capacity is measured in LSUs per hectare; for convenience, in this analyses the inverse is used, i.e. hectares per LSU.

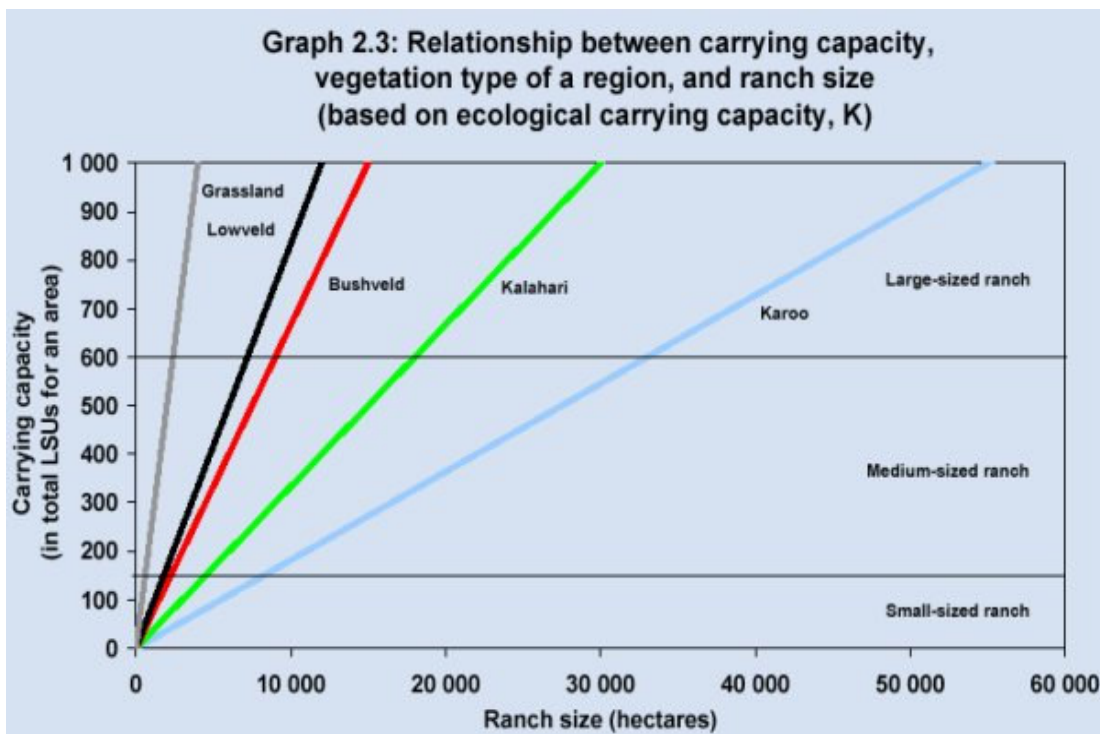


The relationship between the carrying capacity of the various ecological regions and ranch sizes is reflected in Table 2.1 and Graph 2.3. For example, if a game ranch has an economic carrying capacity of about 4 hectares of Grassland 2 for every large stock unit (LSU) and the game manager intends to operate with the equivalent of 1 000 LSUs of game, he needs 5 714 hectares of Grassland (see Table 2.1).

Table 2.1: Ranch size (in hectares) and carrying capacity (in LSUs)

Ecological Region	Ecological Capacity (ha/LSU)	150 LSUs Small ranch (hectares)	600 LSUs Medium ranch (hectares)	1 000 LSUs Large ranch (hectares)
Utilisation	1/K	at 0,5K	at 0,6K	at 0,7K
Grassland	4	1 000	4 000	5 714
Lowveld	12	3 600	12 000	17 143
Bushveld	15	4 500	15 000	21 429
Kalahari	30	9 000	30 000	42 857
Karoo	55	16 500	55 000	78 571

Similarly, a game manager in the Karoo would require 78 571 hectares of land where the economic carrying capacity is about 55 hectares per LSU. This linear relationship between the number of LSUs in terms of game and the required ranch size (in hectares) also fixes the relative price relationship between the various ecological regions. Indeed, given the price of one type of land, for example Grassland, the economic carrying capacity of the ranch, and the number of LSUs required, all other types of land can be priced in relation to that one type of land.



2 The analyses in this course uses an ecological carrying capacity of 4 hectares per LSU or 0,25 LSUs per hectare (K) for the Grassland region. In this example the economic carrying capacity is $1/0,7 K$ or $1/(0,7 \times 0,25) = 5,714$ hectares per LSU, i.e. about 6 hectares per LSU.

For example, if the going market price for natural Grassland is R800 per hectare, and a game rancher aims for the equivalent of 1 000 LSUs of game stock, he would need to purchase about 5 714 hectares of land at R4,57 million. A similar number of game stock (LSUs) in, say, the Lowveld would require 17 143 hectares of land. If a game rancher is solely interested in the LSU equivalent value of game, he should not be willing to pay more than R4,57 million for this Lowveld land, because a higher price would make him less competitive than a game rancher in the Grassland region. The relative (theoretical) price for Lowveld land would therefore be limited to R267 per hectare (R4,57 million/17 143 hectares).

However, in reality, Lowveld land trades at anything between R3 000 and R6 000 per hectare, depending on size and location. If the value of land is R3 500 per hectare, the farmer would have to pay R60 million for a Lowveld ranch with the same number of LSUs as a Grassland ranch. This large price difference between the theoretical price of R267 per hectare and the actual price of, say, R3 500 per hectare for Lowveld land, represents the value the market places on, for instance, potential income from eco-tourism. The owners of Lowveld land can earn significantly more from eco-tourism than their fellow-owners in the Grassland region, Kalahari or Karoo and this economic reality is reflected in the market price of their land.

As is clear from Table 2.2, current land prices in South Africa are generally still far in excess of their theoretical price range. The land prices reflected in Table 2.2 are rough guidelines though, based on the averages of actual market prices. Usually, the smaller the ranch, the higher the price of the land per hectare. In essence, the purchaser of a small property is buying at retail rather than wholesale prices. But the potential for eco-tourism may again be a determining price factor here. Smaller ranches require less capital outlay in real terms and are easier to manage on a part-time basis. Accordingly, the clientele may differ significantly between small and large ranches. Often small-sized game land (including trout farms) is purchased for private recreation by “gentlemen who would like to be safe from proletarian intrusion on their lands and at ease on their acres” (to use the proper Georgian English). For such people, land prices are not a major concern, provided the property is not too large but still private. Such leisure farming contrasts sharply with the eco-tourism industry, which aims at drawing the crowds.

Table 2.2: Actual and theoretical land prices (in rand per hectare)

Ecological region	Ranch size			Theoretical price range ¹
	Small sized	Medium sized	Large sized	
Grassland	1 000	900	800	800 – 500
Lowveld	3 700	3 600	3 500	267 – 167
Bushveld	1 300	1 200	1 100	213 – 133
Kalahari	170	160	150	107 – 67
Karoo	80	75	70	58 - 36

¹ The theoretical price range is based on the assumption that Grassland is correctly priced between R800 and R500 per hectare

With all these variables influencing land prices, it is difficult to determine a uniform market value for land in the various ecological regions. Accordingly, the land prices reflected in Table 2.2 are rough guidelines based on the averages of actual market prices. These prices do not include the game fencing, game stock or outbuildings on a ranch, but are inclusive of 14 per cent value-added tax (VAT). The Receiver of Revenue will refund the game rancher his VAT outlay in full on the date of the purchase of the land, but naturally the rancher would have to pay VAT again when selling the ranch at some future date.

Based on the assumed sizes of game ranches and land prices (Tables 2.1 and 2.2 respectively), the total estimated land value per ranch is shown in Table 2.3.

Table 2.3: Game ranch land value (in rand million)

Ecological region	Ranch size		
	Small sized	Medium sized	Large sized
Grassland	1.2	3.6	4.6
Lowveld	13.3	43.2	60.0
Bushveld	5.9	18.0	23.6
Kalahari	1.5	4.8	6.4
Karoo	1.3	4.1	5.5

2.2 The Cost of Infrastructure Improvements

2.2.1 Game fencing

Nowadays the cost of game fencing material (but excluding labour costs) for the most common game species amounts to about R15 per metre (for 22 plain wires), but these costs may increase to some R20 per metre for electric fencing, which will keep buffalo, elephant, lion and rhino on the property³.

These prices assume reasonably flat land, without major obstructions such as mountains or rivers. For instance, closing off a river may cost anything between R5 000 and R10 000 per water gate, whereas mountainous territory may increase fencing cost by more than 40 per cent.

Fencing costs may range between R200 000 and R2 million, depending on the size of the farm. For tax purposes, expenditure on fencing may be set off in full against (positive) net pre-taxable income.

3 In order to train elephants to respect electric fences, they are usually acquainted with these in a strong boma of at least 1 ha in size, fitted with both electrical fences and elephant-proof traditional fencing (requiring heavy steel cables, usually old mine cables, and costing about R5 per metre) prior to their release in the wild. The cost of such a boma is about R175 000.

2.2.2 Game-handling facilities, water provision, lookouts and roads

Besides fencing, some additional infrastructure, such as an offloading ramp and holding pens for new game arriving on the property, has to be provided. Water has to be provided for the game and includes facilities such as boreholes, dams, pipes and watering points. Large ranches may need two or three lookout points for tourists. There are also the general expenses on roads and various civil engineering structures to avoid soil erosion. It is difficult to generalise in this regard, but these expenses usually fluctuate around R100 000, depending on the size of the game ranch and soil conditions.

For tax purposes, expenditure on improvements such as dams, boreholes and roads, as well as the expense of preventing soil erosion, may be set off in full against (positive) net pre-taxable income.

2.2.3 Outbuildings

Outbuilding expenses typically involve the erection of stores, carports, garages, kitchen facilities, cold rooms, abattoir facilities and, on larger ranches, reception areas. You could consider yourself lucky if the cost of these facilities remains below R100 000 on a small ranch. On larger game ranches, the cost of outbuildings can easily exceed R250 000.

2.2.4 Staff quarters

Besides the expenses on wages (see **Module # 2, Component # 2**), there is the expenditure on staff quarters, as there are usually no facilities for workers to travel to and from work on a daily basis. Working on a small and very basic structure for farm labourers of about 25 m² per person and construction costs of about R2 000 per square metre, the total cost of staff quarters is about R50 000 per person.

Staff quarters can be depreciated by 2 per cent per annum, like any other building used in the generation of income (staff rental).

2.3 Vehicles and Equipment

A game ranch needs at least one 4×4 pickup truck and, if tourists are a major source of income, there is also the need for game-viewing vehicles. Such vehicles should preferably be open single-cab 4×4 pickup trucks rebuilt at the back with benches to seat about 9 tourists per vehicle. On a small game ranch, a temporary (portable) seat facility can be fitted on the bed of a pickup truck when using it for game viewing. These 4×4 vehicles are expensive if bought new: about R200 000 for a single-cab (1 ton loading capacity) and some R240 000 for a game-viewing vehicle. It is assumed here that small-sized ranches can subcontract road maintenance to a third party.

A large game ranch may need three pickup trucks and about six game-viewing vehicles. In addition a tractor will be needed for doing road repairs and the like. A new tractor plus trailer and grader can easily cost R400 000. Depending on ranch size, the total capital outlay on transport equipment and tractors may vary between R500 000 and R2,5 million.

To reduce expenditure on vehicles and other transport equipment, one possibility is to purchase second-hand vehicles. For example, good rebuilt second-hand tractors cost about R100 000. Initially, this may save significantly in capital outlay, but repairs will be more costly and the remaining lifetime of such an asset is shorter. A pickup truck has to be scrapped after possibly 15 years of hard work. What you gain on the swings by buying second-hand equipment, you may well lose on the roundabouts.

Besides transport equipment, a game ranch also needs other equipment: two-way radios, rifles, dart guns, generators to ensure electricity supply, water pumps and tools. Expenses on these items may amount to anything between R50 000 and R250 000, depending on the size of the game ranch and the number of staff.

Provided a pickup truck is a single-cab, all vehicles and equipment can be written off against net pre-taxable income over a period of three years. The depreciation allowance is based on the expected lifespan of the asset. This is usually about three years on a game ranch. The depreciation allowance is 50 per cent in the first year, 30 per cent in the second year and 20 per cent in the remaining year. The requirement by the Receiver of Revenue that farm vehicles should be single cabs is aimed at avoiding the “misuse” of such vehicles for private purposes. However, if you want a double-cab 4×4 pickup truck on your ranch, this is still allowed for tax purposes, but then the depreciation has to be calculated over a period of five years (using the straight-line depreciation method).

2.4 Game

A game ranch may be bought without any game on it or it may be partially or fully stocked. In this analysis, it is assumed that all newly purchased ranches are stocked up to their economic carrying capacity (which is between 50 and 70 per cent of the ecological carrying capacity – see Graph 2.2). From a purely financial point of view, it does not make economic sense to buy a game ranch that is not fully stocked with game (up to its economic carrying capacity). As a production unit, a game ranch aims at maximising income from either hunting or eco-tourism, and this requires a fully stocked ranch. Accordingly, the breeding of game on partially stocked game-ranching land is best left to the part-time rancher, who anyhow has a tendency to dislike the crowds (whether they are hunters or eco-tourists) and who is less sensitive to cost considerations (as he is in it for the pleasure, rather than the money).

If a livestock farm is converted into a game ranch, and the farmer initially lacks the funds to stock his ranch with the required number of game, he could start with minimum breeding herds. When there are such low numbers of game, no investment in buildings and improvements should be made before game numbers have increased to reach the economic carrying capacity. Indeed, capital outlays should always be made with an eye to potential income in the not too distant future! Usually it takes some 6 to 10 years for a *small* game ranch to reach its economic carrying capacity when starting with minimum breeding herds. The best way is probably to switch gradually from a livestock farm to a game ranch over a 5 to 10 year period.

The annual harvesting of surplus game should keep the game-stocking rate at its economic carrying capacity (Graph 2.2). Harvesting implies the capture of game for resale at game auctions or, alternatively, the hunting of game for trophy or venison purposes. When harvesting, it is important to keep a favourable sex ratio in place for each species (see Table 2.4).

Table 2.4: Mean game auction prices (2001) and game characteristics

Animal species	Animal characteristics				
	Game auction price (rand)	Sex ratio (females to one Male)	Minimum social herd size (number)	Herd population growth (% p.a.)	LSU1 Equivalent (number of animals per LSU)
Blesbok	700	10	12	30	0,22
Buffalo	20 000	15	15	20	1,07
Buffalo (disease-free)	80 000	15	15	20	1,07
Bushbuck	2 700	6	8	20	0,13
Bushpig	650	2	5	25	0,22
Cheetah	20 000	3	5	50	-
Duiker	1 300	1	6	20	0,09
Eland	4 500	15	12	20	1,08
Elephant	15 000	4	12	7	8,00
Gemsbok	3 400	10	12	25	0,56
Giraffe	13 000	3	8	15	1,58
Hartebeest (red)	3 200	10	12	20	0,37
Hippopotamus	25 000	3	5	10	2,24
Hyena (spotted)	12 000	2	5	15	-
Impala	650	10	15	35	0,19
Klipspringer	5 000	1	4	20	0,07
Kudu	2 300	7	12	20	0,54
Leopard	15 000	3	5	15	-
Lion	35 000	3	5	50	-
Nyala	7 000	10	12	20	0,23
Oribi	2 700	1	3	15	0,08
Ostrich	1 000	1	6	50	0,39
Reedbuck	3 800	5	8	20	0,25
Reedbuck (mountain)	1 200	6	8	20	0,13
Rhebok (grey)	2 000	6	8	20	0,10
Rhinoceros (black)	375 000	4	5	6	1,65
Rhinoceros (white)	170 000	4	5	10	2,75
Roan antelope	106 000	10	12	20	0,64
Sable antelope	67 000	12	12	20	0,60
Springbok	500	15	15	40	0,15
Steenbok	1 500	1	5	20	0,07
Tsessebe	10 000	10	12	20	0,38
Warthog	750	10	12	20	0,25
Waterbuck	5 000	10	12	20	0,50
Wildebeest (black)	2 400	10	12	20	0,46
Wildebeest (blue)	2 300	10	12	25	0,50
Zebra (Burchell)	3 000	6	10	25	0,66
Zebra (Cape Mountain)	6 000	6	10	20	0,63

1 LSU - Large Stock Unit (i.e. a steer of 450 kg)

Under natural conditions, most game has a sex ratio of 50:50, with a specific ratio of bachelor herds to breeding herds for each particular animal species. In contrast to vast unfenced natural territories, on game ranches it is necessary to reduce the number of bulls and rams. Fences prevent competitors from leaving the territory of dominant males, which may result in continuous confrontations and a lower reproduction rate. Although some aggression is advantageous to stimulate the sex drive among male animals⁴, exhaustion is not conducive to performance. Selective harvesting is therefore required on a game ranch, unless natural predators such as lion and leopard are able to fulfil this task on very large ranches.

4 Aggression has a number of other advantages in nature. For detail see: Lorenz, K., *On aggression*, London: Routledge, 2002.

There may be significant differences between the prices obtained at auctions and those for venison hunting and trophy hunting. From the seller's perspective, the gross price obtained for game at auctions should be adjusted for the cost of capturing and transporting game, as well as potential transport losses. Similarly, a buyer may incur additional costs for transport and insurance.

Trophy hunters from abroad usually pay good prices for their heart's desire, but the natural supply of trophy quality animals is usually limited, so the overall impact on the cash flow of a ranch from this source is not great, especially for small game ranches. The income from trophy hunting and sales of live game at large game ranches are more or less equal. It is impossible to set a uniform price for each game species, as one or more of the following factors typically influences purchase prices:

- **Age:** A juvenile animal has less value than a prime breeding one.
- **Number:** The price for a breeding group (per individual) is lower than for a single prime ram or bull.
- **Sex:** Depending on the animal species, males and females are differently priced. Large males of species such as lion and buffalo have greater trophy value than (smaller) females.
- **Availability:** Relatively rare or endangered species command a higher price.
- **Location:** Depending on where the animal is caught, its price may vary.
- **Destination:** Game prices are influenced by the area where the animal is to be released and what type of transport is required.
- **Health:** Game from drought-stricken areas or areas heavily infested with ticks or other parasites sells for less than game from healthy areas. Cheap game that is infected when it is purchased may prove expensive to keep.

- **Capturing:** Certain animals such as a klipspringer or giraffe are expensive, because they are difficult to capture and transport without injury.
- **Transport:** The transport of, for instance, elephant and rhinoceros is more complicated than that of blesbok, impala or wildebeest. Such transport problems are reflected in the market price of game.
- **Season:** Game prices may differ between the (hot) summer and winter season. Some game can be transported only during winter.
- **Reputation:** Animal dealers with a good reputation usually command higher prices. The loss of animals during capturing and transport by experienced teams ranges between 0 and 5 per cent.
- **In transit insurance:** Depending on whether or not the animals are insured, their prices will differ.
- **Finance:** The availability of credit and its cost (interest) affect game prices, as they do any other form of investment.

Despite the above-mentioned factors, which clearly frustrate the setting of standard values for game, it is nevertheless assumed, for the sake of simplicity, that each game species is purchased and harvested at a uniform price (as reflected in Table 2.4, which shows the average auction prices during 2001). The average value of game stock – based on these standard purchase prices – can range from about R5 000 to as much as R18 000 per LSU equivalent, depending on the ecological region. Accordingly at current prices, game may easily be more than twice the price of cattle in weight. As the live-sale, venison and venison-hunting prices of animals are usually significantly lower than auction prices (except trophy-hunting prices), game-stocking prices are higher than harvesting prices.

From a tax point of view, the purchase cost of game can be written off only against the profits made in game ranching. However, there is no need to report game numbers to the Receiver of Revenue, since game, in contrast to cattle, is assumed to be uncountable.

5 Animal transport standards in South Africa are well below best international standards. These slack regulatory standards, as well as the lack of an effective enforcement regime, often result in unacceptable transport losses. See also the Code of Practice of the South African Bureau of Standards, *Translocation of certain species of wild herbivore*, SABS 0331, Pretoria, 2000.

2.5 Cost of Game

Growth in Game Auction Volume and Pricing

Year	Amount of game sold # of Animals	% change in relation to previous year in terms of game sold	Turnover in Rand (VAT included)	% change in relation to previous year i.t.o. turnover
1991	8 000		10 260 000	
1992	9 000	+15%	12 540 000	+21%
1993	11 000	+20%	13 680 000	+8%
1994	11 000	-3%	13 680 000	0
1995	9 000	-17%	15 960 000	+22%
1996	11 000	+24%	29 640 000	+85%
1997	12 000	+6%	33 060 000	+7%
1998	14 000	+19%	45 600 000	+40%
1999	15 000	+8%	61 560 000	+34%
2000	18 000	+15%	71 820 000	+17%
2001	17 000	-2%	99 180 000	+38%
2002	20 000	+19%	119 700 000	+21%
2003	20 000	-2%	116 280 000	-3%
2004	21 000	+7%	119 700 000	+2%

Source: S A Wild & Jag February 2005 (Numbers have been rounded off)

Game sold per Province in 2004

Province	Game sold	% of game sold	Turnover	% of turnover
Limpopo	9 000	43%	R35 500 000	34%
North-West	3 500	17	R19 000 000	18%
Free State	2 500	13%	R13 000 000	13%
Kwa-Zulu / Natal	2 000	10,5%	R10 000 000	9%
Eastern Cape	1 500	7%	R8 000 000	7%
Northern Cape	1 200	6%	R4 000 000	4%
Gauteng	385	1,8%	R5 000 000	5%
Mpumalanga	353	1,7%	R10 000 000	9,5%

Source: S A Wild & Jag February 2005 (Numbers have been rounded off)

Game sold on auctions per Species as % of all the game sold

Game species	2004
Impala	27%
Blue wildebeest	9%
Kudu	8%
Blesbok	8%
Springbok	5%
Gemsbok	5%
Eland	4%
Zebra	4%
Red Hartebeest	4%
Nyala	3%

Source: S A Wild & Jag February 2005 (Numbers have been rounded off)

Game Auction Prices per Species

The following list is that of the **record prices paid** for game in Game **Auctions**, both **live sales** and **catalogue**.

GAME SPECIES	RECORD AUCTION PRICES			
	1995	2004	2005	2005
	Rands	Rands	Rands	± US Dollars
Porcupine	236	325	325	54
Dassie	150	450	425	70
African Wild Cat	450	450	450	75
Impala	825	2,600	610	101
Springbok	510	625	625	104
Blesbok	700	800	650	108
Warthog	775	750	700	115
Mnt. Reedbuck	900	1,000	1,000	167
Bushpig	640	1,250	1,250	208
Blue Wildebeest	2,200	3,200	1,550	258
Grysbok	1,500	2,000	2,000	333
Duiker (blue)	1,700	2,200	2,200	367
Leopard	2,250	2,250	2,250	375
Duiker (red)	2,600	2,600	2,600	433
Fallow deer	1,216	3,200	3,200	533
Kudu	3,500	7,500	3,300	550
Ostrich	2,200	3,600	3,600	600
Steenbok	1,488	3,750	3,750	625
Common Eland	5,200	4,100	4,100	683
Red rhebok	1,250	4,200	4,200	700
Grey rhebok	2,035	4,200	4,200	700
Black Wildebeest	2,800	4,400	4,400	733
Bontebok	3,080	4,500	4,500	750
Duiker (grey)	1,384	4,750	4,750	792
Gemsbok	3,800	4,900	4,900	817
Red Hartebeest	3,000	4,500	5,500	915
Burchell's zebra	3,000	5,800	5,700	950
Bushbuck	2,500	6,500	6,500	1,083
Cnm. Reedbuck	2,400	7,300	7,300	1,217
Waterbuck	4,600	6,900	7,400	1,235
Klipspringer	2,900	7,400	7,400	1,233
Oribi	3,800	7,500	7,500	1,250
Lechwe	7,376	7,600	7,600	1,267
Tsessebe	700	9,500	9,500	1,583
<i>This table is continued overleaf</i>				

GAME SPECIES	RECORD AUCTION PRICES			
	1995	2004	2005	2005
	Rands	Rands	Rands	± US Dollars
Buffalo (diseased)	32,000	10,000	10,000	1,667
Giraffe	12,250	19,000	13,375	2,230
Livingston’s Eland	13,000	15,000	15,000	2,500
Elephant (average)	18,000	15,000	15,000	2,500
Zebra (Hartmann)	7,500	15,000	15,000	2,500
Wild dog	7,325	15,500	15,500	2,583
Nyala	8,600	13,500	15,500	2,585
Mountain zebra	6,033	21,000	21,000	3,500
Lichtenstein Hart.	14,500	30,000	30,000	5,000
Hippo	25,000	35,000	40,000	6,666
Sable Antelope	66,000	75,000	75,000	12,500
White Rhino	145,000	145,000	130,000	21,667
Black-faced impala	101,333	160,000	160,000	26,667
Buffalo (dis. free)	130,000	165,000	165,000	27,500
Roan Antelope	44,000	180,000	180,000	30,000
Lion (black-maned)	24,000	225,000	225,000	37,500
Elephant (Tusker)	240,000	250,000	250,000	41,667
Black Rhino	540,000	250,000	250,000	41,667

2.6 Conclusion

It is difficult to generalise when it comes to the financial aspects of game ranching, as the values of land and game are simply too diverse to do so. For example, the price of Lowveld land is four times more expensive than that of Grassland. Similarly, the Big Five are expensive, although these game species are limited mainly to the Lowveld and Bushveld. The average cost per animal in the Lowveld is about R18 000 per LSU, compared with about R5 000 in the Kalahari.

Depending on the ecological region, the price of a similar-sized game ranch may vary by a factor of six. For example, a large-sized game ranch in the Lowveld on which the Big Five roam, costs about R85 million, but a similar-sized ranch (of 1 000 LSUs equivalent) in the Kalahari or Karoo costs around R15 million (see **Module # 2, Component # 4**).

Although expenditure on buildings, infrastructure and vehicles can be large in absolute terms, this seldom exceeds 15 per cent of the total capital outlay. This relatively low percentage is due not only to relatively high investments in game and land, but also to the depreciation of improvements such as fencing, buildings and vehicles over time. Ultimately the capital profits of a ranch have to come from real increases in the prices of land and game. At present, land is generally too expensive, and game is too cheap in southern Africa, resulting in a relatively low profitability. A more detailed cost analysis of game ranching and livestock farming is given in **Module # 2, Component # 4**.