

# Al Mabroor Buffalo Project

## Introduction and purpose

The Al Mabroor buffalo project offers interested parties the opportunity to partake in the lucrative buffalo farming and breeding trade. Game farming has grown significantly in South Africa over the past decade and has become an industry with great economic potential. There is a growing demand for disease-free buffalo and the Al Mabroor buffalo project will aim to breed these magnificent animals.

## Al Mabroor vision

Al Mabroor buffalo project has as its vision, to intensively propagate disease free buffalo, to establish a large and viable genetically diverse population, from which relocation and sales can be done within the entire Province and beyond, thus ensuring the future existence of this valuable and endemic species and also to act as an alternative investment tool with capital growth.

## The plan

The proposed project is to breed disease-free Cape buffalo in a controlled environment. The project will be established on a game farm situated in the Eastern Cape, approximately 100 km east of Port Elizabeth. The farm has a Certificate of Adequate Enclosure and is certified to keep buffalo.

Our objectives are to start with 20 cows and 2 bulls. We will follow sound business and agricultural principles in taking care of our nucleus herd. Reproduction is our main aim and we will follow our plan as stipulated in the breeding table. It is of great importance to start with the best animals and genetic material for this will ensure that all progeny can be sold at a premium.

Recently too much emphasis has been placed on horn size alone. The project will strive to breed big horned, big bodied animals with high fertility. The herd will initially be established on a 40 hectare area.

The sex and age ratio of the buffalo to be acquired allow for a breeding herd that will function at its optimum. The Al Mabroor buffalo project will strive for a 100% calving rate with a 12 to 14 months inter-calf period.

## Breeding Table

The following breeding table is based on a successful calf rate of 80% every 15 months and a 50/50 ratio of bulls and cows.

### Buffalo Breeding

TIME	Cows 3yr+	Calf Rate	Cow Rate	1 year old calves	2 year old calves	Cow Total	Breeding Bulls	New born Bulls	Bulls Total	Total
15 Months	20	80%	50%	8	0	28	2	8	10	38
30 Months	20	80%	50%	8	8	36	2	8	18	54
45 Months	28	80%	50%	11	8	47	2	11	29	76
60 Months	36	80%	50%	14	11	62	2	14	43	105
75 Months	47	80%	50%	19	14	80	2	19	62	142

## Investor involvement

Investors will be able to participate in the Al Mabroor buffalo project by means of an ordinary partnership. The partnership will be subject to the terms and conditions of the partnership agreement, attached hereto.

A maximum of 20 investors will form a partnership. The total funds available in the partnership will be utilised as follows:

80% or as close to 80% as possible will be used to purchase buffalo. A minimum of 20% will be set aside to cover the operational costs for the first two to four years. Operational costs will include, but is not limited to, rental paid to the landlord, salaries and wages to farm staff, additional feeds and licks for buffalo, veterinary costs etc.

Al Mabroor will invoice the partnership 5% p.a. on a monthly basis to settle all operational costs. Possible additional and unforeseen expenses will be covered from the initial 20% reserve.

At any time the partnership will have the option of selling off some of the stock to obtain the necessary cash flow to cover the operational costs. Partners will however have an opportunity at the end of each year to vote on future management principles and goals.

## Disinvestment from the partnership

Disinvestment is possible through the sale of the value of the share owned either to remaining members who would have a first right of refusal, failing that to an agreed upon third party. The value of the share is determined by the average sale price of buffalo for that particular year.

## Project leader

Pieter Loubser, director and project manager of the Al Mabroor buffalo project, has 20 years experience in the wildlife industry and believes: "By using some of the best genetic material, cross breeding of various bloodlines and sound stock management principles, the Al Mabroor buffalo project will reach and most likely exceed the goals as set out in this business plan.

Pieter Loubser has been involved in similar buffalo breeding projects and possess all the necessary expertise to ensure that the Al Mabroor buffalo project is a success.

## Background

Two main categories of buffalo exist, namely diseased and disease-free buffalo. The Addo herd in the Eastern Cape is usually referred to as disease-free buffalo. They have not been in contact with disease carrying animals (Fike, 1997). Diseased buffalo are carriers of Foot & Mouth Disease (FMD) and / or Corridor Disease (CD) and lately Tuberculosis (TB). In the case of FMD and CD, these are non-pathogenic to buffalo, but have very serious consequences for domestic stock (Fike, 1997). Of the mentioned diseases only TB is fatal to buffalo. Disease-free buffalo can be kept in any suitable area throughout Southern Africa whereas diseased buffalo are only allowed in Kruger-park and immediate surrounds. Kruger Park buffalo have very little monetary value as

strict rules and regulations apply to their movement due to the detrimental effect it will have on any country's domestic livestock table should the two come into contact with one another.

As mentioned earlier the Al Mabroor buffalo project will focus on the breeding of disease-free buffalo.

Cape buffalo is a species well documented and widely known for being one of the Big 5 and plays an integral role on any wildlife reserve. The ecotourism attraction derived from buffalo viewing and hunting adds value to any area, province or country. Since buffalo are endemic to South Africa and the Eastern Cape Province, it is seen as a positive addition to the revenue created in this area. Only disease-free buffalo are allowed in cattle ranch areas. Buffalo are long-lived, hardy animals that are easily reared in an intensive system. Mortalities due to illness are the exception and not the rule.

The new Biodiversity Act (NEMA Biodiversity Act), clearly states as one of its main objectives, to focus on the increase of populations of endemic species in the various provinces or biomes in South Africa. The relocation or transport of any species not endemic to an area is strictly prohibited under this Act. With this in mind, the status of Cape buffalo in the Eastern Cape as an endemic species is rare and uncommon, whereas previously buffalo roamed not only the Eastern Cape but also Southern Africa in large herds.

Addo National Park has the largest population of disease-free buffalo under state control. The breeding of disease-free buffalo therefore lies largely in the hands of the private sector as the Cape buffalo is still a very scarce commodity. The demand for disease-free buffalo has been increasing every year due to new areas that are opening for the relocation of disease-free buffalo. One of the major driving forces of buffalo prices are the future opening of SADEC countries to disease-free buffalo.

## The role of Al Mabroor

Al Mabroor will be responsible for facilitating the whole process of setting up the different partnerships and all the administrative duties related to the running of the partnerships.

Al Mabroor will also be responsible for identifying and buying the buffalo needed to initiate the project. Al Mabroor will be involved in monitoring and overseeing the day to day running of the breeding project. It will also give regular feedback to the various partnerships on the status of the project.

In return for the services rendered and the management of the project, Al Mabroor will be entitled to a fee of 12,5% per annum. This fee will be determined from year to year on all the additional stock born in that year.

## More information on buffalo

Buffalo are found in a wide variety of vegetation types, including the dense lowland forests of the Congo basin, Montane forests in East Africa, moist and dry woodlands in central and southern Africa. The largest populations of buffalo occur in the savannah areas of the Northern Province, Mpumalanga and Kwazulu-Natal (Winterbach 1998). A healthy population of disease-free buffalo occurs in the Eastern Cape. Isolated populations occur on reserves and private game ranches in all the provinces with very few populations in the Northern and Western Cape (Winterbach 1998).

A female buffalo reaches puberty when she ovulates for the first time and this is followed by the first oestrous cycle. Sexual maturity is the age at which a female attains optimal reproductive potential. The age when female buffalo reaches sexual maturity differs from region to region and may depend on external factors such as rainfall and food availability. It seems that body mass rather than the age of a female buffalo triggers puberty (Bertschinger, 1996) Thus, as is the case in production animals, growth rate, which is largely dependent on the availability of quality nutrition, is the main factor determining the age of puberty. Buffalo in the BFC project will be supplementary fed on lucern and game pellets to maintain optimum condition. Buffalo in similar projects have been known to produce a calf every 12 months. The age at puberty for male buffalo seems to be between 2 and 3 years and they reach sexual maturity at the age of between 4 and 6 years (Bertschinger, 1996). It seems that buffalo bulls only start mating with females at the age of five or more years even without the presence of other bulls. However in intensive conditions and with supplementary feeding this has known to decrease to between 22 – 24 months. Buffalo calve throughout the year, but with a definite peak between February and May

Table: The age at first calving and calving interval for buffalo (free ranging) in their natural state in national reserves and captive buffalo in a ranching system where actively managed and supplementary fed.

Author	Location	Status	Age at 1st calving	Calving interval
Pienaar (1969)	Kruger Park	Free ranging	3-4 years	15 months
Brown (1991)	Botswana	Free ranging	4-5 years	Not mentioned
Grimsdell (1973)	W Uganda	Free ranging	4-5 years	18 months
Coetzee (1998)	Aberdeen SA	Captive	3 years	12-15 months
Neethling (1996)	Limpopo	Captive	4 years	12-15 months
Fike (1997)	Eastern Cape	Free ranging	5 years	15 months
Sinclair (1974)	Serengeti	Free ranging	4 years	15 months

In normal extensive conditions buffalo cows will produce an average of one calf in every three years. With supplementary feeding to keep the cow and bull in optimum condition (not too fat and not too thin) the productive rate of one calf every year can be attained. For the purpose of this analysis a reproductive rate of 80% per year has been used in order to be conservative. All the buffalo will be supplementary fed. The principle reason for this is to keep their condition at an optimum level for production and to relatively habituate them to humans. This has positive marketing implications.

## The size of the business/project

According to Neethling (1996), the nucleus herd size is not as important as with other wildlife species. He recommends a good practical nucleus herd size to consist of seven animals, comprising two bulls and five cows.

Kruger (1996), recommends the minimum to introduce should be a complete family unit of 2-3 adult females with male and female offspring. In terms of this project the plan is to start with no less than 18 cows and 2 bulls. The population growth estimates are listed in the production analysis, however due to supplementary feeding a reproductive rate of one calf every year and 80% calving rate will be sought for.

The proposed plan is to start the project with a minimum of 18 breeding cows and 2 bulls. The buffalo will be kept in an approximately 40 ha camp which has the most ideal habitat available, namely, thickets and pastures. The fence will be electrified to habituate the animals to fences which in turn will prevent them from escaping and also make them easier to sell as they will be fence trained. This is particularly important for buyers with small properties.

The fenced area will consist of a 40 ha area, which will include 4 'granny' camps of 1/4 hectare each and a boma area consisting of 2 enclosures of 12m x 12m. The granny camps will be used to supplementary feed the buffalo. The boma area will be used for veterinary and for sale purposes.

## Suitability to location

Buffalo habitat requirements may be determined by water supply, inter-specific competition, shelter, predation, and food supply. Of these features, food seems to be the most important factor influencing habitat selection and use amongst large herbivores (Maddock 1979, McNaughton 1987)

Buffalo use a wide variety of habitats; from montane forests to dry and wet bushveld (Kruger 1996). Buffalo have three basic habitat requirements; adequate permanent water, enough of the right food, and shelter from predators and heat (Kruger 1996) Buffalo drink water regularly and usually graze in the vicinity or take shelter in the thick riverine vegetation (Skinner & Smithers 1990) According to Fike (1997) the maximum water interval is 36 hours between drinking. Buffalo wallow in mud, an activity which helps with thermoregulation and parasite control (Skinner & Smithers 1990)

Buffalo are predominantly grazers (grass) but will take browse (leaves and bush). The digestive system is typical of bulk and roughage grazers and is unsuited to diet of browse. Buffalo are bulk grazers taking up to 14 kg of fodder / day / adult. They are prone to be selective of grass species and grass parts and have a tendency to select grasses with a low fibre and high nutrient content. (Sinclair 1974, Hunter 1996, Kruger 96) Buffalo eat a wide variety of grasses but select species with a high leaf – stem ratio (Field 1968, Leuthold 1972)

The area to be fenced in consists of open grass pastures. The predominant grasses are *Themeda triandra*, *Pennisetum clandestinum*, *Cynodon* spp. and *Chloris gayana*. The presence of these species is particularly important in that they are green during the whole year, very palatable thus making it ideal for the nutritional feeding of buffalo.

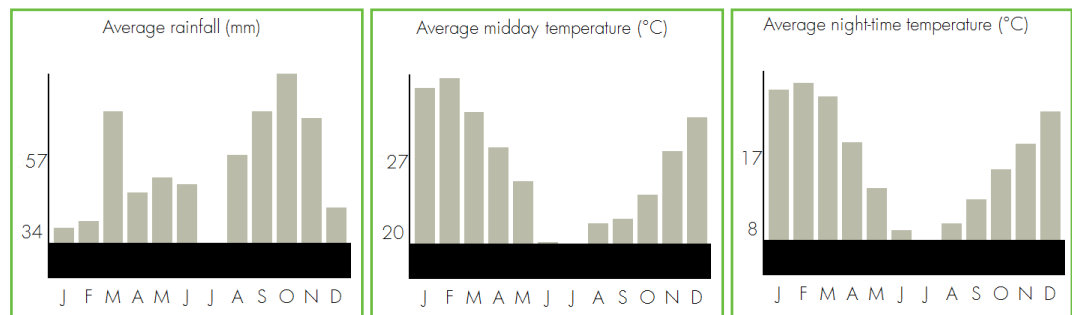
The agricultural carrying capacity (cattle) for the area is 2 hectares per large stock unit (LSU). Buffalo comparison to a large stock unit is 1.07. The area to be fenced is approximately 40 hectares which will support a herd of 20 buffalo without supplementary feeding. However, with supplementary this figure could rise to 60 animals or more.

## Climatic and weather conditions

Climate can also be termed as "average weather". It is easy to describe the climate in the Eastern Cape, for data concerning this region exists for a long time period. Please find below a summary of the weather conditions for this area for the past 20 years.

Alexandria normally receives about 529mm of rain per year, with rainfall occurring throughout the year. The chart below shows the average rainfall values for Alexandria per month. It receives the

lowest rainfall (34mm) in July and the highest (57mm) in October. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Alexandria range from 20°C in July to 26.9°C in February. The region is the coldest during July when the mercury drops to 8°C on average during the night. Consult the chart below for an indication of the monthly variation of average minimum daily temperatures.



Please note that due to our intensive system, we will not be relying on any rainfall or lack thereof. Our model is based on worst case scenarios were a full feed system is implemented. Should rainfall lead to good grazing less feed will be supplied and vice versa.

## More information on the proposed farm

The business will be conducted on the farm Hunters Lodge, district of Alexandria in the Eastern Cape Province. The farm belongs to Hooggenoeg Trust. The farm is 1 400 ha in extent. A boma holding facility which will also act as quarantine area and general feeding area will be erected on Hunters Lodge. The piece of land on which the project is to be farmed will be leased from Hunters Lodge for the duration of the project.

The layout and planning of the camps, boma and associated infrastructure have been thoroughly researched, using existing knowledge from various experts in the field, as well as other current successful buffalo breeders and personal experience.

## Water

The buffalo have access to water points in all the areas. In addition natural mud or clay wallows are provided to assist in thermoregulation and external parasite control. Water points are at least thirty meters apart to allow non-dominant animal's regular access to water and wallowing. Water points consisting of concrete troughs and natural clay or earth dams. In the event of a separated buffalo in a camp, that camp has water access by ways of concrete troughs. All concrete water points are regularly drained and cleaned.

## Nutrition

In the granny/boma area the buffalo will be fed a well-known wildlife product i.e. "Boskos" pellets, that has been used in intensive programs for the past 12 years. The "free range" area will also provide sufficient grazing to any animals avoiding the herd. Supplement feeding with either licks, hay or pellets depending on the mineral deficiencies of the particular area will be provided by experts in the field. Much of South Africa is Selenium deficient and pellets or licks should include the ideal combination of vitamins and minerals for optimum buffalo nutrition.

## Shelter and vegetation

Buffalo naturally retreat into thick cover when threatened, in the heat of the day and often during inclement weather. Moreover they use natural vegetation as rubbing and scratching posts and often retreat into cover when calving, so mother and calf can bond without the confusion of being in the herd. Buffalo kept on open pasture without thicket areas in which to retreat seem to exhibit more aggression not only towards each other but also to any intruders and vehicles that enter the area. The inclusion of thickets in the “open range” area of a closed system does a lot to alleviate the unnatural holding system and allow for more normal social behaviour.

## Identification of stock

For optimal management all buffalo will be tagged in both ears with cattle ear tags. These numbered tags will be used for easier identification purposes. All buffalo acquired will also be micro chipped and each buffalo will have a unique identification number. Photographic records will also be kept of each animal.

## Herd Management programme

A unique computer management program for buffalo is currently being written specifically suited towards our needs. This program is an offshoot of the well known “Herd master” currently used with great success by cattle farmers throughout the country.

This program will be used to track and identify the status of individual buffalo on any given time e.g. Name, age, mother, sire, weight, expected calving date etc. This computer program will be used by the manager as an added tool in the successful management of the buffalo.

## Critical success factors

There are a number of critical factors:

1. The availability of funds. The sooner we can buy buffalo the sooner we can show a profit
2. The costs of buying pregnant cows. The “buy low sell high” approach is critical.
3. Availability of a quality breeding bull and pregnant females are always a problem.
4. As indicated the prices of buffalo increase every year. With the Western Cape, Namibia, Botswana opening up for the breeding of buffalo a huge shortage of stock is envisaged for the next ten years.

## Risk to the project

The most important risk factors to the success or failure of this project are disease and mortality, price variance and government regulations.

### Disease mortality

The most important diseases relating to buffalo are Foot & Mouth Disease (FMD), Corridor Disease (CD) and Bovine Tuberculosis



(TB). FMD is endemic to Southern Africa and is contained within the red line area of the eastern parts of South Africa. It does not occur in the Eastern Cape unless imported through a carrier animal, i.e. cattle. The buffalo for this project will be purchased from a registered breeder in the area free of FMD. The animals will not come into any contact with domestic animals as the area they are to be kept in the centre of the game ranch, and not near to any perimeter fence.

CD is limited to the area where the vector tick, the brown ear tick is endemic. The Eastern Cape is a vector free area and thus this disease poses no threat.

TB is the disease with the greatest threat. However before purchase all animals are tested and will only be taken delivery of with a TB free certificate. TB is transmitted through aerosol inhalation within close proximity of infected animals. The buffalo in this project are to be kept in a secure area within the game ranch with no risk of contamination from imported host animals.

## Price variance

The greatest risk as to the viability of the project is a drop in the price of live animals due to market forces. However the current price increase has steadily grown over the past ten years and the outlook in the medium term is very positive.

## Government regulations

Current government regulations do not prevent the project from being implemented.

## Conclusion

Buffalo are easy to keep and as one of the 'Big 5', they are an asset on any game farm. Unlike other wildlife species they have more stable prices, do not face the same movement restrictions and have a far wider natural distribution.

Intensive systems require strict management and buffalo kept in closed systems need to be monitored regularly. In this regard the management is very similar to the management of conventional bovines. Buffalo are far more robust than any dairy or beef cattle and do not present any of the complications prevalent in conventional farming.

The Eastern Cape is ideal buffalo habitat and the demand for disease-free buffalo is still on the increase. The area gears itself to game farming and the affluence found in the community is a factor in reckoning. Establishing this herd and a sensible and practical protocol would serve in the interests of buffalo, farmers, holistic nature conservation and the department of agriculture.