

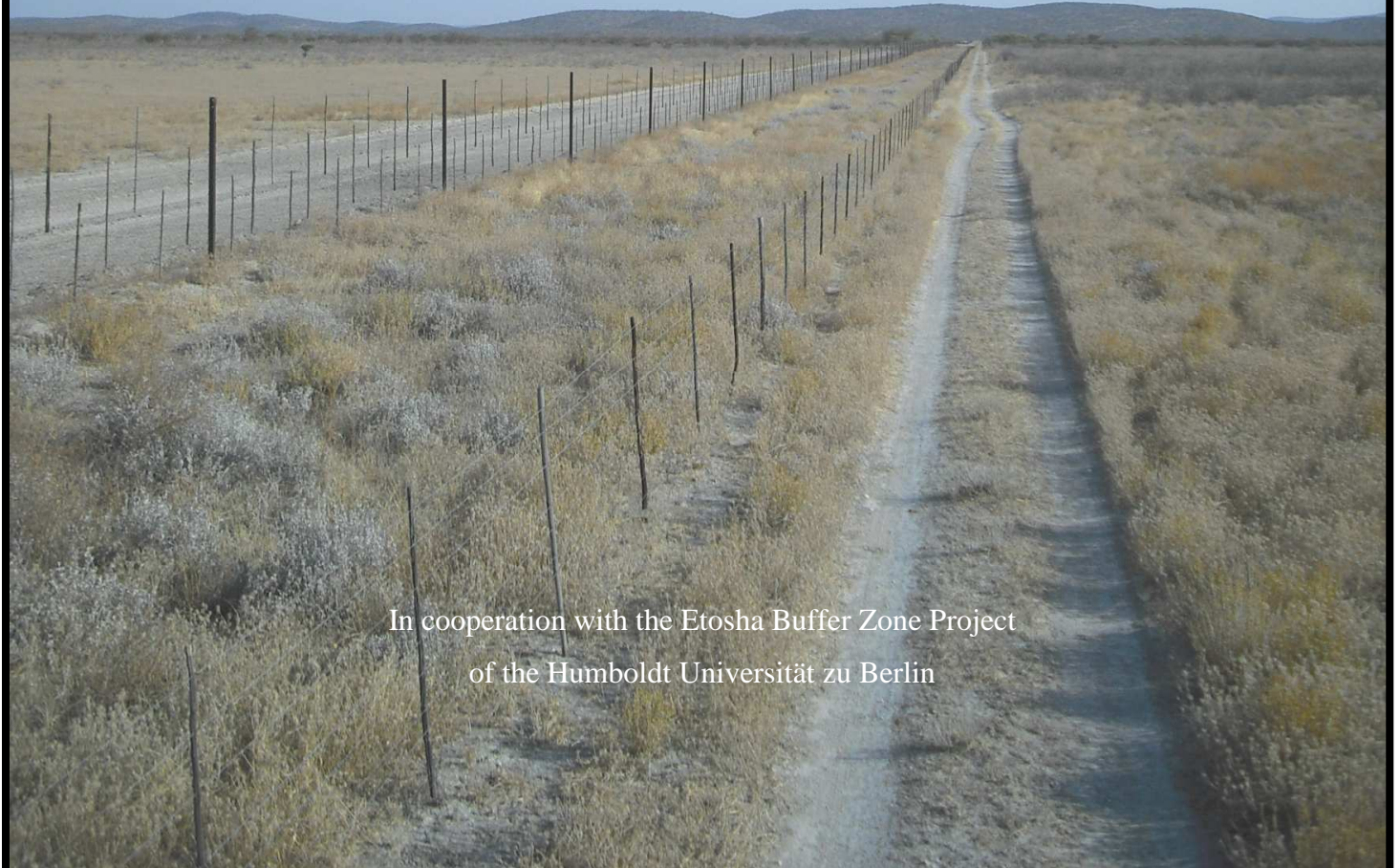
DIPLOMA THESIS  
in Landscape Ecology  
at the Carl von Ossietzky Universität Oldenburg

## **A buffer for Etosha**

**The attitudes towards a buffer zone on private farmland at the  
south-western border of the Etosha National Park (Namibia)  
and chances for its implementation**

Alexander Jokisch

In cooperation with the Etosha Buffer Zone Project  
of the Humboldt Universität zu Berlin



Diplomstudiengang Landschaftsökologie  
der Carl von Ossietzky Universität Oldenburg

DIPLOMARBEIT

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**and chances for its implementation**

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Oldenburg, 07.04.2009

In Zusammenarbeit mit dem Etoscha Pufferzonenprojekt der Humboldt Universität zu Berlin,  
Prof. Dr. Ulrich Zeller

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**„Immer bleibt die Natur. ...wenn ein Löwe im rötlichen Morgenlicht aus dem Gebüsch tritt und drohend brüllt, dann wird auch Menschen in fünfzig Jahren das Herz weit werden. Ganz gleich, ob sie englisch oder russisch, suaheli oder deutsch sprechen. Und sie werden stumm da stehen und ihren Nachbarn an der Hand fassen, wenn sie zum ersten Male zwanzigtausend Zebras über die endlose Steppe ziehen sehen.**

**(Grzimek, 1959)**

**Only nature is eternal. ...but when, fifty years from now, a lion walks into the red dawn and roars resoundingly, it will mean something to people and quicken their hearts whether they speak English, German, Russian or Swahili. They will stand in quiet awe as, for the first time in their lives, they watch twenty thousand zebras wander across the endless plains.**

**(Grzimek, 1959)**

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Alexander Jokisch

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## **Abstract**

This study investigates the attitudes of landowners and landusers on private commercial farmland at the south-western border of the Etosha National Park in Namibia towards a buffer zone according to the UNESCO Biosphere Concept and the socioeconomic potential for its implementation within the landowner and landuser community. The study was done in cooperation with the “Etosha Buffer Zone Project” of the Humboldt Universität zu Berlin.

Research methods were qualitative interviews with landowners and landusers. Furthermore participant observation and expert interviews. Field research was done from September until October 2008 in the study area south-west of the Etosha National Park.

The farmland at the south-western border of the Etosha National Park is used for different purposes, ranging from classical livestock farming to game farming in the form of eco-tourism or trophy hunting.

The results of the study vary from very positive attitudes to very negative attitudes, mainly depending on the land use (livestock farming, combined livestock and game farming, pure game farming). Among other reasons, financial gain due to the close proximity of the Etosha National Park leads to positive attitudes (game farming), while financial loss due to the negative influence (predators) from the park leads to negative attitudes (livestock farming, partly game farming).

Furthermore, research has shown that commercial livestock farming in the study area is not compatible with the Buffer Zone Concept. Therefore consistent landuse strategies in the form of some sort of wildlife farming and management are needed for the implementation of a buffer zone.

Given the negative economic development of livestock farming in Namibia, especially at the border of the Etosha National Park and the increasing development of the tourism sector in the Namibian economy, which is furthermore favoured due to the close proximity of the study area to the Etosha National Park, the realisation of a buffer zone in the study area seems to be possible. Examples for that can be found all over Africa.

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## Zusammenfassung

Die vorliegende Diplomarbeit untersucht, in Zusammenarbeit mit dem „Etoscha Pufferzonenprojekt“ der Humboldt Universität zu Berlin, die Einstellungen der Bewohner des privaten kommerziellen Farmlandes am Südwestrand des Etoscha Nationalparks in Namibia zur Einrichtung einer Pufferzone nach UNESCO Biosphärenreservat-Konzept und versucht daraus das sozioökonomische Potenzial innerhalb der Bevölkerung für die Einrichtung einer Pufferzone abzuleiten.

Zur Datenerhebung wurde auf Methoden der empirischen Sozialforschung zurückgegriffen. In erster Linie wurden qualitative Interviews mit Landbesitzern bzw. Landnutzern durchgeführt. Weitere Methoden waren die teilnehmende Beobachtung sowie Interviews mit verschiedenen ausgewählten Experten. Die Datenerhebung fand im September und Oktober 2008 im Untersuchungsgebiet an der südwestlichen Grenze des Etoscha Nationalparks in Namibia statt.

Das Farmland an der südwestlichen Grenze des Etoscha Nationalparks zeichnet sich durch verschiedene Landnutzungsarten aus, die von der klassischen kommerziellen Rinderhaltung bis hin zur touristischen Nutzung in Form von Fototourismus oder Trophäenjagd reichen.

Je nach Landnutzungsart (Rinderwirtschaft, kombinierte Rinder- und Wildtierbewirtschaftung, reine Wildtierbewirtschaftung) sind die Ergebnisse sehr unterschiedlich. Neben anderen Faktoren zeigte sich, dass positive Einstellungen mit persönlichen Vorteilen, in der Regel finanziellem Gewinn aus der Nähe und der Existenz des Etoscha Nationalparks zusammenhängen. Negative Einstellungen werden durch finanzielle Verluste (vor allem durch Prädatoren) und andere negative Auswirkungen der Existenz des Parks bewirkt. So finden sich unter den Betreibern von Wildtierbewirtschaftungsbetrieben fast durchweg positive Assoziationen in Bezug auf den Etoscha Nationalpark, während unter traditionellen Rinderwirtschaftsbetrieben negative Assoziationen vorherrschen.

Desweiteren zeigte sich, dass kommerzielle Rinderwirtschaft nicht mit einem Pufferzonenkonzept auf dem privaten Farmland an der Grenze des Etoscha

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Nationalparks vereinbar ist und dass für die Einrichtung einer Pufferzone auf privatem Farmland ein einheitlicher Landnutzungs und –bewirtschaftungsplan auf Basis von Wildtierbewirtschaftung benötigt wird.

Angesichts der negativen wirtschaftlichen Entwicklung der Rinderwirtschaft in Namibia und speziell an der Grenze des Etoscha Nationalparks und der sehr positiven wirtschaftlichen Entwicklung des touristischen Wirtschaftssektors in Namibia, im Untersuchungsgebiet noch begünstigt durch die Nähe zum Etoscha Nationalpark, scheint aber die Einrichtung einer Pufferzone nach Vorbild anderer Nationalparks in Afrika als möglich.

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## List of abbreviations

<b>APNR</b>	Associated Private Nature Reserves adjoining the Kruger National Park
<b>CBNRM</b>	Community Based Natural Resource Management
<b>CCF</b>	Cheetah Conservation Fund
<b>€</b>	Euro
<b>EHGS</b>	Etosha Heights Game Safaris
<b>ENP</b>	Etosha National Park
<b>EU</b>	European Union
<b>FMD</b>	Foot and Mouth Disease
<b>GDP</b>	Gross domestic product
<b>ha</b>	Hectare
<b>IUCN</b>	The World Conservation Union
<b>MET</b>	Ministry of Environment and Tourism
<b>MAB</b>	Man and the Biosphere
<b>N\$</b>	Namibian Dollar
<b>SPAN</b>	Strengthening the Protected Area Network
<b>sq km</b>	Square kilometre
<b>UNESCO</b>	The United Nations Educational, Scientific, and Cultural Organization
<b>US\$</b>	United States Dollar
<b>WWF</b>	World Wide Fund for Nature

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## Glossary

<b>Apartheid</b>	Meaning <i>separateness</i> in Afrikaans, was a system of legal racial segregation enforced by the National Party government in South Africa and South-West Africa between 1948 and 1994
<b>Biltong</b>	Kind of cured meat that originated in South Africa, mostly made from wild animals
<b>Bush encroachment</b>	The change in vegetation from open savanna to shrubland. Bush encroachment is a major threat to agricultural productivity in Namibia.
<b>Camp</b>	Separated farm unit for the maintenance of good quality grazing throughout the year, each camp has got a waterpoint
<b>Conservancy</b>	A Conservancy is a legally protected area of a group of bona fide land-occupiers practising co-operative management
<b>Ethical hunting</b>	Hunting in a manner that does not give the hunter an improper or unfair advantage over the hunted animal (it is for example forbidden to shoot from a driving car)
<b>Game</b>	Huntable wildlife species, hunted for either food or sport
<b>Game proof fence</b>	Fence that restricts the movement and the migration of certain wildlife species, 2.6 metre high with 21 strands
<b>Karakul sheep</b>	Breed of domestic sheep which originated in Central Asia, Karakul sheep are a multi-purpose breed, kept for milking, meat, pelts, and wool.
<b>Lick</b>	An artificial place where domestic and wild animals can lick minerals, for example salt lick

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**Livestock fence** Fence that restricts the movement of livestock, but not the movement of most wildlife species, 1.2 metre high with 5 strands

**Red line** Veterinary cordon fence, built to stop the spread of Foot-and-Mouth-Disease (FMD) and other animal diseases from wild animals to livestock

**Currencies**

1 € = 12.85 N\$

1 N\$ = 0.08 €

1 € = 1.33 US\$

1US\$ = 0.75 €

(exchange rate 31.03.2009, [www.finance.yahoo.com](http://www.finance.yahoo.com))

# 1 Introduction

This paper investigates the attitudes within the landowner and landuser community on the private farmland at the south-western border of the Etosha National Park (Namibia) towards a buffer zone and the chances for its implementation. The study area at the south-western border of the Etosha National Park is characterised as semi-arid to arid savannah. It was separated about 50 years ago into private farm units. The traditional land use of these farms was extensive karakul sheep or cattle farming. For several reasons the farmland is nowadays used for different land uses. While some farms are still in use for extensive livestock farming, others are solely operated for consumptive (trophy hunting) or non-consumptive (tourism) willife use.

This study is part of the “Etosha Buffer Zone Project”, a scientific research project of the Humboldt Universität zu Berlin, which aims to support current conservation efforts that aim at connecting the Etosha National Park with the transboundary network of protected areas in Southern Africa by re-opening traditional migration routes. The project proposes the development of an effective buffer zone according to the criteria of the UNESCO Biosphere Concept on land that is adjacent to the park.

As a result of this study it was expected that personal attitudes, derived through the economic situation, expected losses or financial gain, and the perception of the national park and its management are the cornerstones for measuring the potential within the landowner and landuser community for establishing a buffer zone according to the criterias of the UNESCO Biosphere Concept. The research aim was not to quantify the attitudes but to find out where positive or negative attitudes come from. The landowners and landusers were therefore divided into four groups, namely pure livestock farmers, game and livestock farmers, pure game farmers and blocks of farms with multiple land uses.

With a view to answering these questions, the first part of this study gives background information on Namibia, the Etosha National Park, the study area, the Biosphere Reserve Concept of the UNESCO and the Etosha Buffer Zone Project (chapter 2). After that, the research methodology is discribed in chapter 3, which includes a theoretical framework on

“Attitudes to nature conservation”, the purpose of this study, a list of key questions and the research methodology itself.

The landowners in the study area were divided into livestock farmers, game and livestock farmers, game farmers and blocks of farms with multiple land uses. The results (chapter 4) of the landowner and landuser interviews were divided into (1) the economic and socioeconomic situation on the farms, (2) the general attitudes to wildlife (mainly predators), (3) the perception of the Etosha National Park and its management and (4) the attitudes towards nature conservation and a buffer zone.

In chapter 5 two best practice examples from the Kruger National Park in South Africa and the Selous Game Reserve in Tanzania are given to demonstrate what the potential of a buffer zone in the study area can be. In chapter 6 the results will be discussed in regard to the expert interviews and the findings from other studies all over Africa. In chapter 7 a conclusion is given, summarizing the attitudes and giving an overview of the chances for the implementation of a buffer zone at the south-western border of the Etosha National Park.

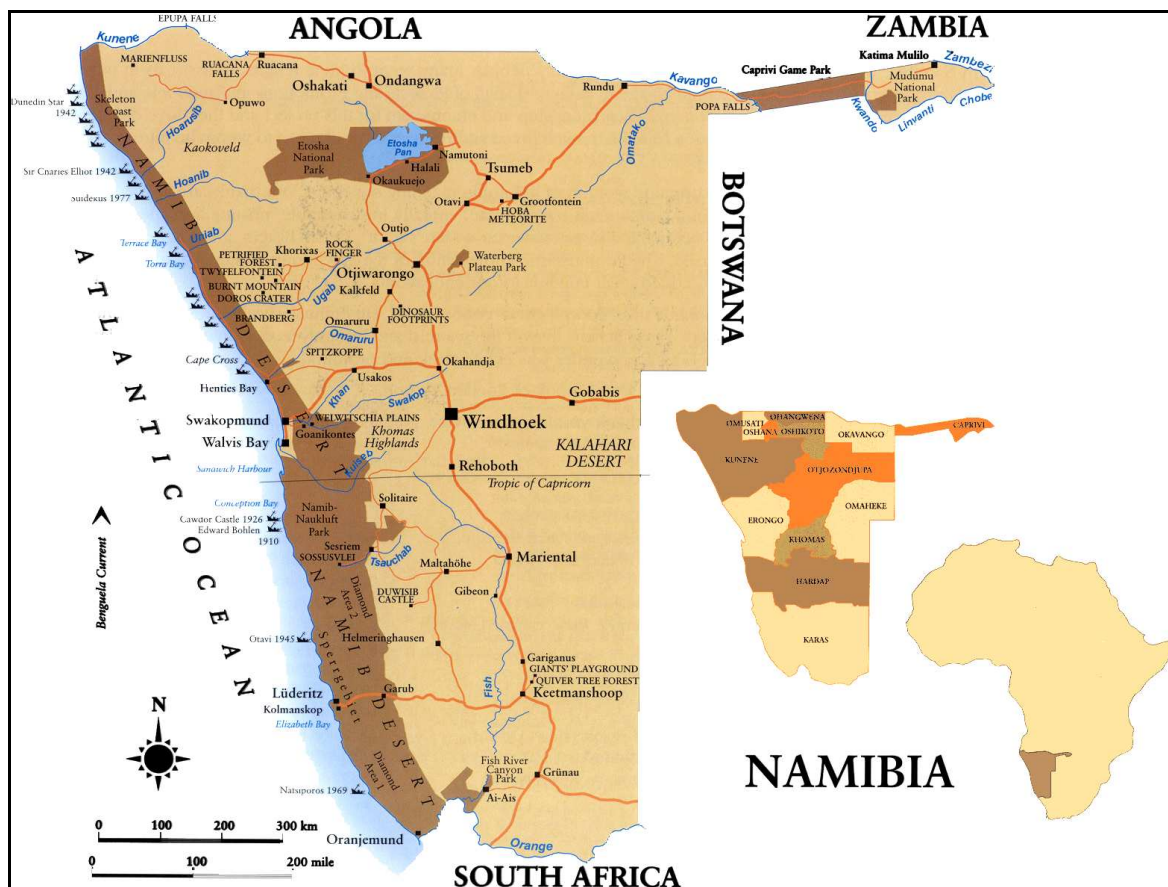


Fig. 1: Namibia (www.fao.org)

## 2 Background

### 2.1 Namibia

Namibia is located on the south-western coast of Africa. It is bordered by Angola to the north, Zambia to the northeast, Botswana to the east, South Africa to the south and the Atlantic Ocean to the west (Fig. 1). The capital is Windhoek. The estimated population of Namibia is roughly 2 million and with 824,116 square kilometre it is more than two times the size of Germany. Namibia is the second least populated country in the world (2.5 inhabitants per square kilometre). After 106 years of German and South African rule it became independent in March 1990 (Schoeman, 1997).

About 85 percent of the population are black, five percent of European ancestry, and ten percent, in South African terminology, coloured. Of the black majority, about two thirds are Ovambo, with the Kavango, the Herero, the Damara, and the Caprivian peoples following in population size. The white minority is mainly of South African (Afrikaaners) and German origin. English is the national language, with Ovambo, Afrikaans and German as recognised regional languages (Schoeman, 1997). Due to decades of apartheid policy; the arable land is still quite unequal distributed, with 30,5 million hectares owned by whites and only 2,2 million hectares owned by blacks in the private sector. Most black people live either on state owned or communal land (Ohnmacht, 2005). The annual rate of population growth in Namibia is approximately three percent. In almost all human welfare indicators the black and white disparity is very high – a legacy, in large part, of the South African occupation regime's practice of apartheid. Even after more than 18 years of independence the unemployment rate in the black population is between 30-40 percent (Schoeman, 1997).

Namibia is divided into three main topographic zones: the coastal Namib desert, the central plateau, and the Kalahari semi-desert in the east. The central plateau, which varies in altitude from 975 metres to 1,980 metres is the core of the agricultural life in Namibia. Largely savanna and scrub, it is somewhat more wooded in parts of the north and is broken throughout by hills, mountains, ravines and salt pans (notably the Etosha pan). Only the border rivers of Namibia are permanent, the only larger inland rivers, the Swakop and the Kunene only reach the coast in good rain years. Namibia's soils range from barren sand and rock to low quality

sand-dominated to relatively fertile soils. But water, not soil fertility, is the primary constraint on agriculture (Schoeman, 1997).

Especially in the commercial farming areas, overuse of land has reduced tree and bush cover, compacted soils, led to serious erosion and lowered the water table by as much as 30 metres in the 20<sup>th</sup> century.

Namibia is located on the southern margin of the tropics and has distinct seasons. The central plateau has wide diurnal temperature ranges, more than 30°C on summer days and less than 10°C in winter. Rainfall on the central plateau is low (between 250mm and 500mm per year), highly variable and multiyear droughts are common. Use of groundwater for agriculture is important. A measurable amount of land in these areas, which is mostly land that receives low rainfall and is marginal for livestock production, has been converted from livestock production to commercial wildlife use in recent years (Barnes and Jones, 2009).

Namibia's economy strongly depends on the export of natural resources, mainly diamonds and uranium, while the farming sector is Namibia's most important employer. The fastest growing industry in Namibia is the tourism sector. The government identified the tourism sector as one that "offers the medium and long-term opportunity to drive economic expansion and boost job creation and to involve local communities to improve their quality of life" (National Planning Commission, 2001). The authors of Namibia's national tourism policy identify tourism to constitute "potentially Namibia's greatest economic driver and the most economically and socially sustainable industry for Namibia's future (Republic of Namibia, 2004). Due to "the arid nature of much of Namibia, land use opportunities are very limited" and tourism " offers the least invasive and most productive land use opportunity" in many parts of the country whereas there seem not to be many other alternatives for economic development (Republic of Namibia, 2004). The tourism industry in Namibia has undergone rapid growth since the late 1980's, with an average increase in international arrivals of 16 percent per year. The most recent estimate (2004) suggests a total turnover of N\$ 1,5 billion and total value added of N\$ 1,2 billion, equivalent to about four percent of GDP. This turnover supports 2,200 tourism-related businesses, of which two-thirds are in the accommodation sector. Some 60 percent of accommodation establishments are hunting farms, guest farms or lodges, these being found away from the urban centers. (Turpie et al., 2004).



Commercial livestock farming (undertaken predominately by white settlers) is concentrated on the production of karkul sheep and cattle for export. The agricultural sector is by far the most important employer in the Namibian economy. And while only eleven percent of the GDP is produced by the agricultural sector, about 35 percent of Namibians depend on it for employment. Besides the commercial farming sector there is a huge proportion of land used for subsistence farming in the so-called communal lands. The gap of living standard between the inhabitants of the commercial farming land (mostly white farmers) and the inhabitants of the communal farming lands (black farmers) is mainly due to more than hundred years of either German colonial rule or South African apartheid policy, which lasted until 1990.

The country has a high level of endemism and is an evolutionary hub for groups of organisms including melons, succulent plants, geckos and tortoises. Namibia's conservation efforts have also made the country a stronghold for populations of large animals such as black rhino (*Diceros bicornis*) and cheetah (*Acinonyx jubatus*). Namibia is home to almost a third of the world's black rhino (*Diceros bicornis*) population and to more than 20 percent of the world's cheetah (*Acinonyx jubatus*) population ([www.undp.org](http://www.undp.org)).

Namibia has established an impressive system of state-managed protected areas as a cornerstone of its conservation programme. The system comprises 20 national protected areas, covering more than 14 percent of the country's terrestrial area. Furthermore one of the fastest growing areas of economic development in Namibia is the growth of wildlife conservancies on communal land and the game farming sector on commercial farmland.

Legislative changes, which bestowed custodial user rights over wildlife to private landholders have been put in place in South Africa, Zimbabwe and Namibia in the 1970's and resulted in investment in wildlife based land use and increases in wildlife stock. Namibia is the only country in the world to specifically address conservation and protection of natural resources in its constitution. Article 95 states: "The state shall actively promote and maintain the welfare of the people by adopting international policies aimed at the following: maintenance of ecosystems, essential ecological processes, and biological diversity of Namibia, and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future." ([www.fao.org](http://www.fao.org)). Due to these changes wildlife was transformed from a burden to an asset for landowners (Lindsey et al., 2009). Since that a lot of farms in Namibia

were game-proof fenced to restrict the movement of valuable game species. In Namibia most wildlife species can be bought on an open market or on so-called “game auctions”.

In the following decades it was recognised that wildlife in arid land tends to have high mobility and some individual landholders have grouped together to share wildlife management activities. In recent years commercial farmers as well as communal farmers are encouraged by the government to organise in so-called conservancies.

A Conservancy is a “legally protected area of a group of bona fide land-occupiers practicing co-operative management based on:

- (1) a sustainable utilization strategy,
- (2) promoting conservation of natural resources and wildlife,
- (3) striving to re-instate the original bio-diversity with the basic goal of sharing resources amongst all members“ . ([www.canam.iway.na](http://www.canam.iway.na) ).

Especially throughout the commercial farming zone, wildlife coexists with cattle and sheep. Populations of wildlife on private and communal land have increased dramatically since new property rights were put in place. Today 88 percent of Namibia’s wildlife live on commercial farms and a further eight percent on communal land. This likely reflects the importance of appropriate property rights in encouraging investment in wildlife stocks (Barnes et al., 2004). About 75 percent of Namibia’s farmers hunt wildlife, 15 to 25 percent commercially, and there are about 400 registered commercial hunting farms in the country. The importance of the wildlife industry in Southern Africa can also be seen in numbers from South Africa. Patterson and Khosa (2005) estimated that 9,000 game farms in South Africa covering approximately 20.5 million hectares (16,8 percent of the total land in South Africa), and another 15,000 landowners are involved in both livestock and game farming. While these numbers are lower in Namibia, this likely reflects the future of the Namibian farming industry.

In the face of the threats nature is facing especially in the developing world, conservationists now recognise that the preservation of many species depends on establishing their economic value and providing incentives for sustainable use (Baker, 1997). Namibia’s long term goal for conservation is a cohesive and effective network of protected areas, made of national parks, as well as private or communal protected areas, to provide an effective buffer against threats to

biodiversity (www.undp.org). The Etosha National Park in the north is Namibia's major wildlife area and tourist attraction and the core of its protected area system.

## 2.2 The Etosha National Park

The Etosha National Park lies in the northern part of Namibia, approximately 500 kilometres north of the capital Windhoek. With 22,270 square kilometres (2,227,000 hectares, almost the size of the German state of Hesse) it is one of the biggest national parks in Africa (Fig. 3). The core of the Etosha National Park is the Etosha salt pan (Schalkwyk, 2007). The park was drastically reduced in size since its proclamation in 1907. When it was first proclaimed as so-called "Wildschutzgebiet Nr. 2" (Game Reserve No. 2) it covered an area of more than 90,000 square kilometres (9,000,000 hectares) and was at that time by far the biggest game reserve in the world (Fig. 2). As well as protecting large mammals from overhunting, this reserve formed a buffer between the then-exclusively white commercial farmers in the central and southern regions of Namibia and black subsistence farmers in the north (Schoeman, 1996).

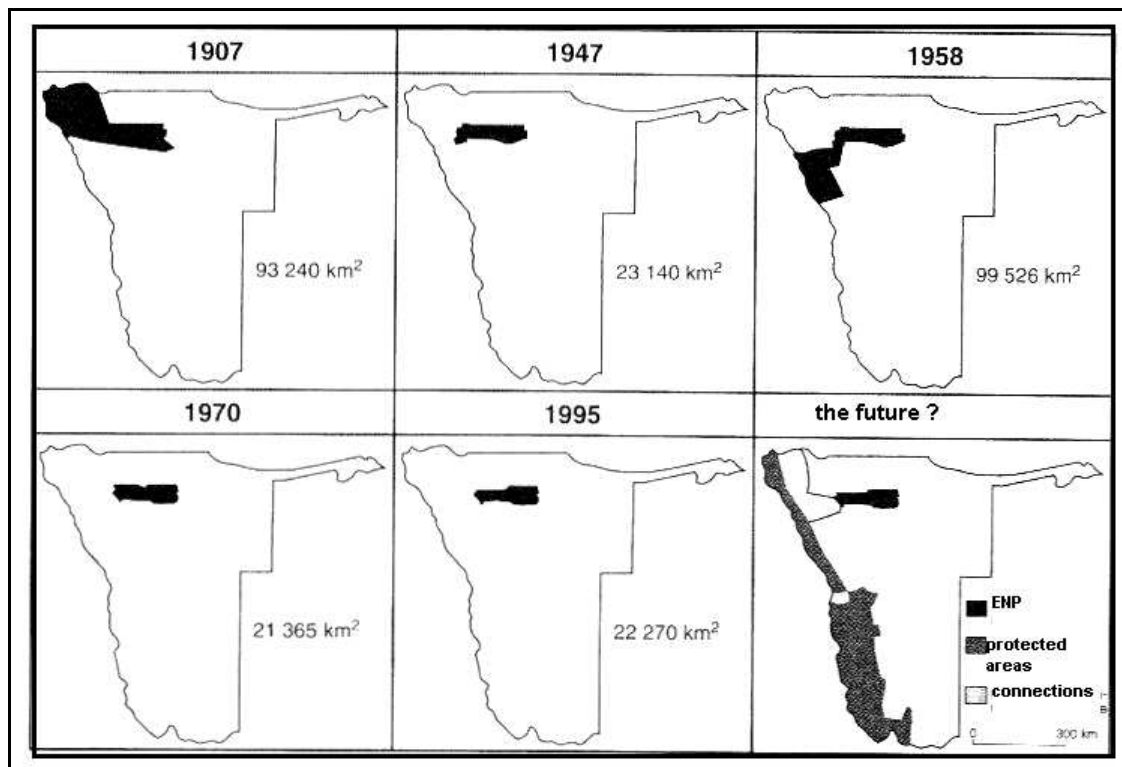


Fig. 2: The development of the Etosha National Park 1907-2009 (modified according to Nulding, 1997)

After several major and minor changes in size, the park is left with a legacy of boundaries that are ecologically unsound and management problems that will persist as long as the park's

present shape is maintained. Initially, the definition of Etosha's boundaries made little impact on the movements of wild animals. Since the radical excision of large endemics-rich parts of Game Reserve No. 2, there has never been a protected area in Namibia (including the Etosha National Park in its current boundaries) which could realistically be called "viable" for all taxa (Barnard et al., 1998).

The first farm fences to be erected by white farmers on the southern boundary of the Etosha National Park during the period 1950 to 1960 were of minor consequence (Berry, 1980). An epidemic of Foot-and-Mouth-Disease (FMD) during 1961 sparked the erection of a game-proof fence as a veterinary measure along the eastern and southern border of Etosha. The park was completely enclosed by 850 kilometres of mostly game-proof fencing in 1973 (Nulding, 1997).

These changes, along with the erection of several boreholes all over the park had serious impacts on the ecology of the park, especially on the populations of large herbivore species that were now limited in their seasonal migrations (Berry, 1980). The populations of Burchell's zebra (*Equus quagga burchellii*) crashed from 22,000 in 1969 to 5,000 today and the population of blue wildebeest (*Connochaetes taurinus*) from 25,000 in 1954 to an estimated 2,600 today. Several other species experienced similar population reductions. Few other species were favoured by the changes, for example giraffe (*Giraffa camelopardalis*) and elephant (*Loxodonta africana*) (Olivier and Olivier 1993).

Nevertheless the park is still very rich in wildlife, it is home to 114 mammal species, 340 bird species, 110 reptile species, 16 amphibian species and one fish species (Nulding, 1997). The world's most important population of the black-faced impala (*Aepyceros melampus petersican*) can be found in the Etosha National Park. The population of black rhino (*Diceros bicornis*) is also one of the most important in the world for the survival of the species. Furthermore the Etosha National Park is world-renowned for its lions (*Panthera leo*), which numbers are fluctuating between 250 and 500 over the years depending on the availability of prey (e4). Which is means that half of all Namibian lion population can be found in the Etosha National Park (Hanssen and Stander, 2004). But as Frank et al. (2006) stated: "even populations as large as 500 animals may become unsustainable in the face of stochastic environmental variation if persecuted by people and completely isolated from more robust sources (> 1,000 animals) as its the case with the Etosha lion population. This isolation is another reason of concern regarding the current situation of the Etosha National Park.

The vegetation of the Etosha National Park can be divided into three broad sub-types – tree savannah in the east, shrub and thornbush savannah in the west and the pan with its dwarf shrub savannah fringe. The most dominant tree species in the Etosha National Park is the Mopane tree (*Colophospermum mopane*), constituting more than 80 percent of the trees in the park (Olivier and Olivier, 1993).

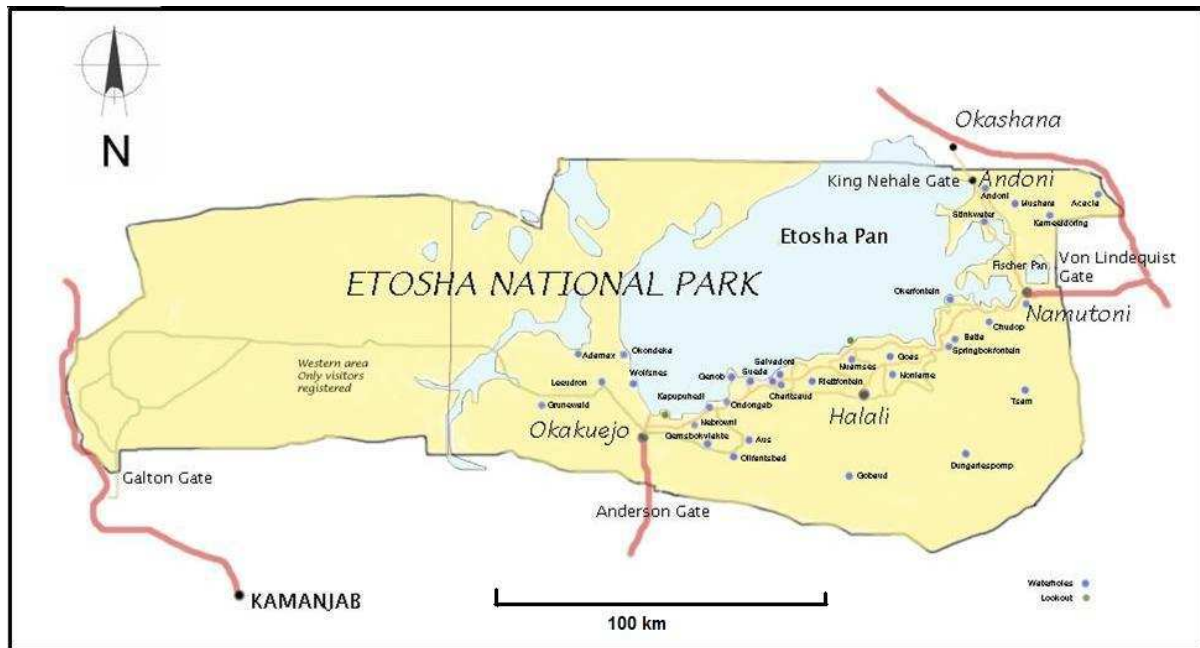


Fig. 3: The Etosha National Park in its current borders ([www.transafrika.org](http://www.transafrika.org))

The Etosha National Park attracts by far the highest number of visitors to Namibia, some 156,000 in 2003 (Turpie et al., 2004). The park is divided into the eastern part around the southern and eastern fringe of the Etosha pan which is open to tourists and easily accessible for self-drive tourists (12-15 percent of the park area) and the western part (37 percent of the park area) which is only open for registered tour operators (only visited by a small fraction of the tourists). The rest is either part of the Etosha pan itself or not accessible due to other reasons. There are three main tourists camps within the park and several private ones outside the park, within the vicinity of the two main gates to the park. Currently the Ministry of Environment and Tourism (MET) is working on a connection of the Etosha National Park and the Skeleton Coast National Park (300 kilometres west of the Etosha National Park) as part of its programme SPAN (Strengthening the Protected Area Network). The Kunene People's Park will link both national parks, it will be co-managed with the involvement of local communities and conservancies in between the two parks. It is the first step to re-establish old

migration routes and distribution ranges of larger ungulates in northern Namibia (www.undp.org).

### 2.3 The study area

The study area lies at the south-western border of the Etosha National Park. It covers an area of approximately 1,820 square kilometres (182,000 hectares, more than twice the size of Berlin), with about 100 kilometre from east to west and about 20 kilometre from north to south. It is about 450 kilometres afar from the capital Windhoek and from the study area it is about 150 kilometres to the closest town Outjo (Fig. 4).

Due to the Namibian history, the arable land in Namibia is divided into commercial farmland (mostly white owned) and communal subsistence farmland (generally black owned). The land south and east of the Etosha National Park was divided into commercial cattle and karakul farms in the early 1950's. An average land unit at that time in the area was between 5,000 hectares to 6,000 hectares in size. Farms were normally owned by white farmers and their families which employed several black labourers and their families.

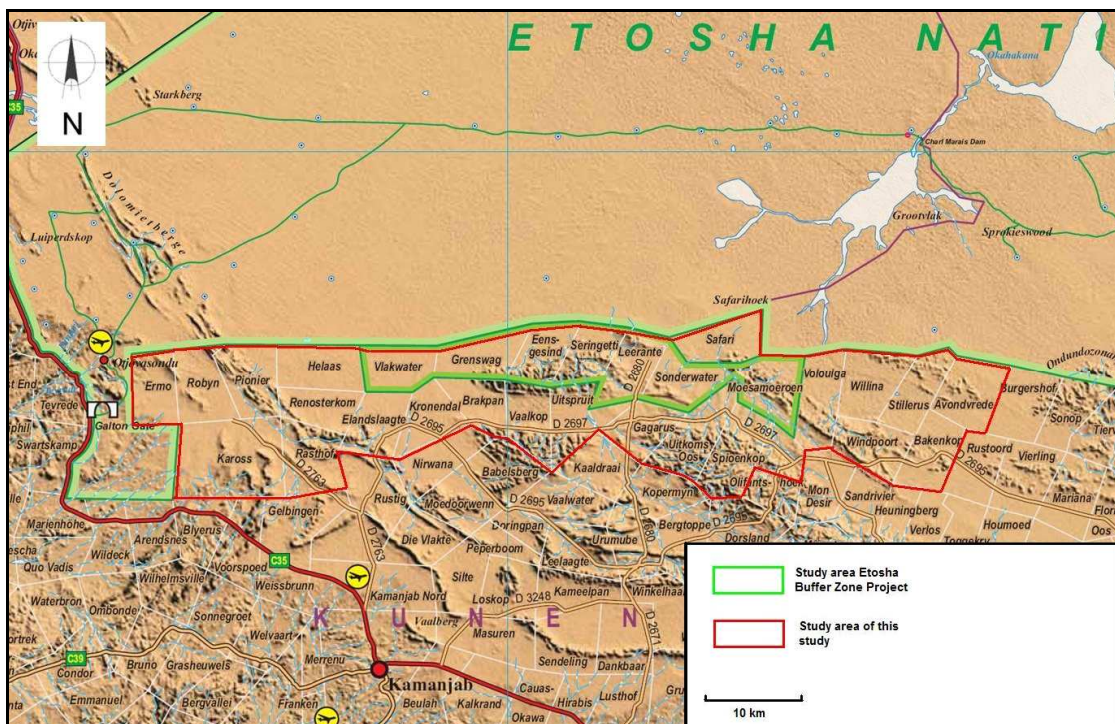


Fig. 4: The study area at the south-western border of the Etosha National Park (modified according to Jaesckke, s.a.)

The area south of the Etosha National Park is very marginal land for livestock farming and due to low rainfall years, unpredictable world market prices for beef and rising costs for petrol, labour and ticks a lot of farmers sold their land to either European investors or black uprising farmers. The latter were favoured by the government due to its land reform policy. Today, the farmland south of the Etosha National Park is intersected into traditional livestock farms, game farms and blocks of several farms which are owned by overseas investors, operating either with game or mixed game and livestock farming. As mentioned before, the wildlife industry is the most important part of the tourism industry. It is one of Namibia's fastest growing industries and is either operated as non-consumptive land use, for example photo tourism or consumptive use as trophy or biltong hunting for overseas clients or hunters from other African states, predominately from South Africa.

Today, the greatest diversity of mammal species on private land in Namibia is found in and around the study area south-west of the Etosha National Park (Barnes and de Jager 1996).

### **2.3.1 The natural environment**

Almost all of the Etosha National Park and its surroundings may be described as arid to semi-arid savannah with 250-500 mm average annual rainfall and a highly variable and erratic rainfall pattern. Most of the rainfall occurs as convectional summer thunderstorms. The wettest period is from January to March when nearly 70 percent of the area's rainfall occurs. In contrast, the period July to September is extremely dry, with almost no rainfall. The main vegetation in the study area is made of shrub and thornbush savannah and partly by open grasslands. The most dominant tree in the area is like all over the Etosha National Park the Mopane tree (*Colophospermum mopane*). Due to the fact that there is absolutely no naturally occurring surface water in the area, historically there were only seasonal migrations of larger herbivores depending on rainfall in the area (Bigalke, 1947).

Since the erection of artificial water points a lot of herbivorous species, namely kudu (*Tragelaphus strepsiceros*), warthog (*Phacochoerus africanus*) and oryx (*Oryx gazella*) are favoured and their numbers on Namibian farmland are higher than before the presence of livestock farming. In the study area they are associated with lesser populations of species such as red hardebeest (*Alcelaphus buselaphus*), eland (*Tragelaphus oryx*), springbock (*Antidorcas marsupialis*), mountain zebra (*Equus zebra hatmannae*) and blue wildebeest (*Connochaetes*

*taurinus*), so that nowadays livestock and wildlife coexist around the vicinity of available water. All over the private Namibian farmland populations of some of the larger predators, for example cheetah (*Acinonyx jubatus*), leopard (*Panthera pardus*) and brown hyena (*Hyaena brunnea*) persists fairly widely, but lion (*Panthera leo*) and spotted hyena (*Crocuta crocuta*) have been largely exterminated by farmers. Private farmland is considered to have the largest cheetah population in Africa (Marker, 2003). In contrast to most of the Namibian farmland, almost all Namibian predators, including lion (*Panthera leo*) and spotted hyena (*Crocuta crocuta*), occur regular or periodically on the farmland at the border of the Etosha National Park. This is a major drawback for the livestock farming industry in the area, but a big advantage for the wildlife industry. Some species not natural to the area have also been introduced, such as common impala (*Aepyceros melampus*), sable antelope (*Hippotragus niger*), waterbuck (*Kobus ellipsiprymnus*), blesbok (*Damaliscus dorcas phillipsi*), black wildebeest (*Connochaetes gnou*), roan antelope (*Hippotragus equinus*) and tsessebe (*Damaliscus lunatus*). These introductions of non-indigenous species onto private lands were aimed at enhancing the tourism income potential of wildlife on game farms.

### **2.3.2 Land distribution and land use**

Historically the arable land in Namibia is very unequally distributed. Most of the arable land in the central part of nowadays Namibia was already separated into farm units in the German colonial era and distributed to white settler families. Namibia's commercial farming area was separated from the communal lands by the "red line", the boundary of the so called "Polizei Zone" (police zone), from the Ovambo and Kavango communal areas in the north. The "red line" nowadays serves as a veterinary boundary for the Foot-and-Mouth-Disease free zone (FMD-free zone) in central and southern Namibia from the Foot-and-Mouth-Disease zone (FMD-zone) in the northern communal lands of Namibia.

The location of the "red line" is still a very emotional issue in Namibian politics, it is been seen as a remainder of apartheid policy because it limits the access of the northern communal farming area to the open market. Parts of the "red line" run along the southern border of the Etosha National Park. In the South African colonial time the government of South-West-Africa implemented the policy of apartheid and restricted most of the black population to so called homelands and townships, where the standard of living was low and economical development very limited.



After almost 19 years of independence from South Africa, most of the commercial farming area is for large parts still in the hands of white farmers of South African or German derivation. The government of Namibia developed two policies to establish more black farmers on commercial farmland. The first is the resettlement programme in which the state is buying farms and distributes the land to up to five landless families. The second programme allows black uprising farmers to buy farms with cheap loans provided by the agricultural bank (Namibia Agricultural Union, 2003). Both types of these “new farmers” can be found in the study area. Some farms in the study area are still in the hands of the descendants of those farmers that were first given the land by the South-West-African government in the 1950’s, these farms are mainly still farming with livestock. Furthermore a lot of farms were bought by overseas investors, mainly from Europe to establish game or livestock businesses on a broader scale.

The traditional land use of the area since the 1950’s is cattle or karakul sheep farming. The economic success of these enterprises is heavily dependent on rainfall. Rainfall patterns in the area are, as mentioned above, highly unpredictable and multiyear droughts are not uncommon, despite the fact that the last ten years were quite good rain years. Besides traditional land use in the form of livestock farming, land can also be used for game farming. Ecotourism in this case is the most obvious use of wildlife resources (non-consumptive wildlife use). But another important development in wildlife use on private land in Namibia was the development of recreational hunting tourism (consumptive wildlife use). Private landholders could register to guide hunts for plains game on their own land or on other properties with the permission of the landholder. Farmers required permits for these activities unless they fenced their properties game-proof and registered as hunting farms (Barnes and Humavindu, 2006). In the study area both types of game businesses can be found (consumptive and non-consumptive wildlife use), sometimes on the same property. One reason for the shifting of the farming business for most of the farmers is, that all wildlife utilization strategies potentially yield significantly higher economic rates of return compared to traditional land uses (Richardson 1998). Besides that, game farming is more sustainable than livestock farming and wildlife species are better adapted to the environment.

The main argument for wildlife businesses for the economic of Namibia is the number of jobs they potentially create. In a study in the Madikwe Game Reserve in South Africa, it has been

found that the area is now providing jobs for 1,200 people, whereas previously the same land had provided jobs for only 80 farm workers. Similarly, in a large, multiple-ownership wildlife area in Zimbabwe (Save Conservancy) there are 1,200 people working in the wildlife/tourism industry, whereas, when farmed for cattle, only 300 people were employed in the same area. It is also estimated that the changed land use here has increased the economic yield per hectare tenfold (Tarboton, 2007).

The average traditional farm unit in the study area is between 5,000 hectares and 6,000 hectares, while most of the economic farming units are now made of more than one farm. The smallest property in the study area is only 3,287 hectares (one half of an original farming unit) while the biggest is about 50,000 hectares (8 farm units joined in one company).

The farmland is divided by either livestock fences on traditional livestock farms, which are 1.2 metre high and do not restrict the movement of game (Fig. 10), or game-proof fences which are 2.6 metre high and serves as a border for the movement of almost all wild ungulates (Fig. 11). The study area is separated from the Etosha National Park by a game-proof fence which was erected in the 1970's to stop the spread of diseases from the north to the commercial livestock farms in the south. This fence, together with a smaller livestock fence two metres apart, serves as the veterinary border ("red line") that allows the commercial livestock farmers of Namibia the access to the European market. The fence was never maintained since its erection, which means that it is no longer serving as a barrier for predators between the park and the adjoining farmland.

## **2.4 Protected Areas and the UNESCO Biosphere Reserve**

### **Concept**

The cornerstones of the Namibian protected area network were already laid during the German colonial era around the turn from the 19<sup>th</sup> to the 20<sup>th</sup> century. Few protected areas are large enough to guarantee long-term survival of wide-ranging herbivores and carnivores, as most areas are widely separated (Frank et al., 2005). Namibia's state protected area network covers more than 14 percent of the country's surface area, but is seriously inadequate as a basis for effective biodiversity conservation. The early parks system was not designed with biological diversity in mind, and reflects instead a history of ideological, economic and veterinary considerations (Barnard et al., 1998), so are the borders of the Etosha National

Park. The protected areas lie to more than 90 percent in very marginal areas, mostly deserts, and the remaining area is highly fragmented and scattered all over Namibia. Habitat fragmentation and edge effect leads to serious consequences for the long time viability of several species, both plants and animals.

Modern nature conservation strategies promote the connectivity of landscapes for the movement of species and gene flow. The urgent need for more connectivity can be seen in the immense crash of large ungulate populations of the Etosha National Park after it was completely fenced and animal movements were cut off. Typical effects of constricted geneflow can be seen all over Namibia in smaller body sizes of large ungulates compared to former times (pers. comm. f8).

To face the threats of habitat fragmentation and on the other side to promote ways of sustainable development for rural communities around protected areas the Biosphere Reserve Concept of the UNESCO was developed. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) has pioneered this approach with its Man and the Biosphere (MAB) program. This program has designated hundreds of Biosphere Reserves worldwide in an

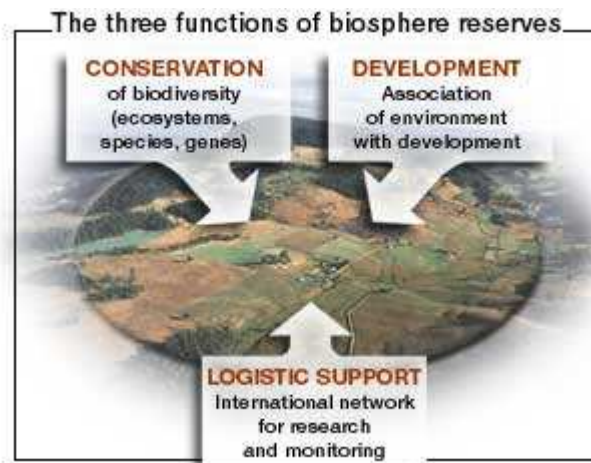


Fig. 5: The three functions of a Biosphere Reserve  
([www.calderaenvironmentcentre.org](http://www.calderaenvironmentcentre.org))

attempt to integrate human activities, research, and protection of the natural environment at a single location (Batisse 1997) (Fig.5). The concept involves a core area in which biological communities and ecosystems are strictly protected, with a surrounding buffer zone in which non-destructive research is carried out and traditional human activities are carefully monitored for their impact on biodiversity. Then there is a transitional zone in which greater human impacts are allowed, including sustainable development (Primack, 1998) (Fig. 6). Buffer zones create a transition between highly protected core conservation and human dominated areas, which may facilitate animal movement. Without a buffer zone, the effective area of the park may be greatly reduced by human activity (Lamprey, 1974). In the most positive scenario of the Biosphere Concept, local people become involved in park management and

planning. They are trained and employed by the park authority, and benefit from the protection of biodiversity and regulation of activity within the park. At the other extreme, if there is a history of bad relations and mistrust between local people and the government, or if the purpose of the park is not explained adequately, the local people may reject the park concept and ignore park regulations (Brandon et al., 1998). In this case, the local people will come into conflict with park personnel, to the detriment of the park. There is now increasing recognition that the involvement of local people is the crucial missing element in many conservation management strategies. “Top-down” strategies, in which governments try to impose conservation plans, need to be integrated with “bottom-up” programs, in which villages and other local groups are able to formulate and reach their own development goals (Clay 1991).

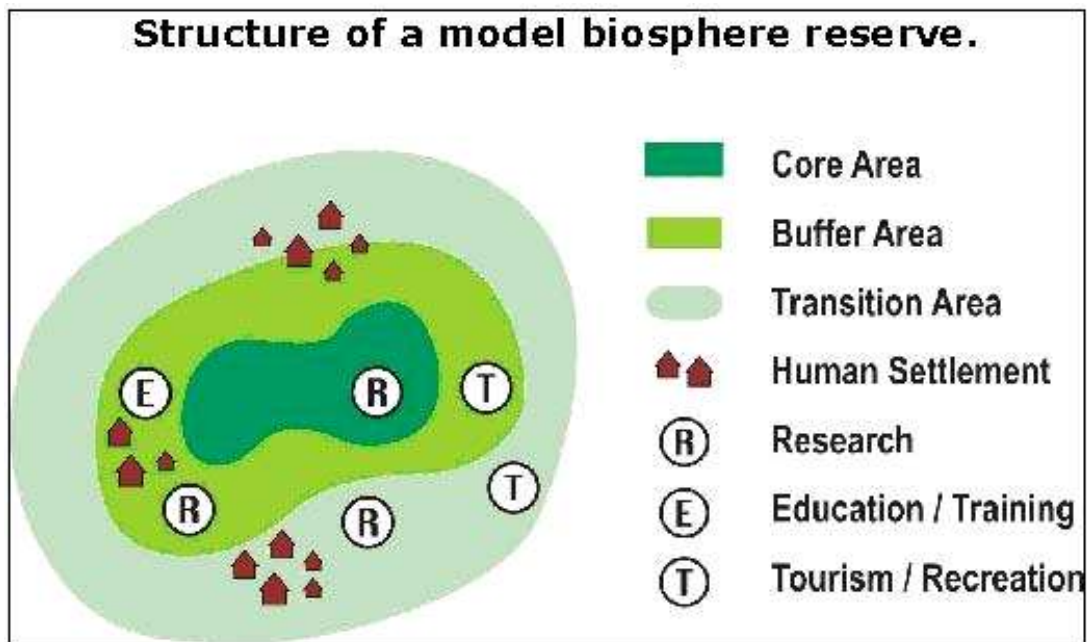


Fig. 6: Biosphere Reserve ([www.unesco.or.id](http://www.unesco.or.id))

## 2.5 The Etosha Buffer Zone Project

In 1996 the UNESCO stated that there is an apparent lack of Biosphere Reserves in some of the most biologically important regions of the world, for example in Southern Africa (Primack, 2000). Despite the fact that in the meantime South Africa established some Biosphere Reserves in biologically so important regions like in the Cape floral province and in the Drakensberg ([www.kruger2canyons.com](http://www.kruger2canyons.com)), there is still no Biosphere Reserve in Namibia. That is astonishing, given the immense potential and its unique environments. The

Etosha Buffer Zone Project of the “Humboldt-Universität zu Berlin” aims to fill this gap and promote the first scientific data for a Biosphere Reserve around Namibia's flagship conservation area, the Etosha National Park. The authors of the Etosha Buffer Zone project stated (2008):

“The Etosha Buffer Zone Project is a scientific research project by the Humboldt Universität zu Berlin. The overall aim of the Etosha buffer zone project is to support current conservation efforts that aim at connecting the Etosha National Park with the transboundary network of protected areas in Southern Africa by re-opening traditional migration routes. The project proposes the development of an effective buffer zone according to the criteria of the UNESCO Biosphere Reserve Concept on land that is adjacent to the park. The project should provide an ecological assessment of potentially suitable land around the park. For that reason an inventory of species, a selection of bioindicators and the development of specific management strategies is needed.”

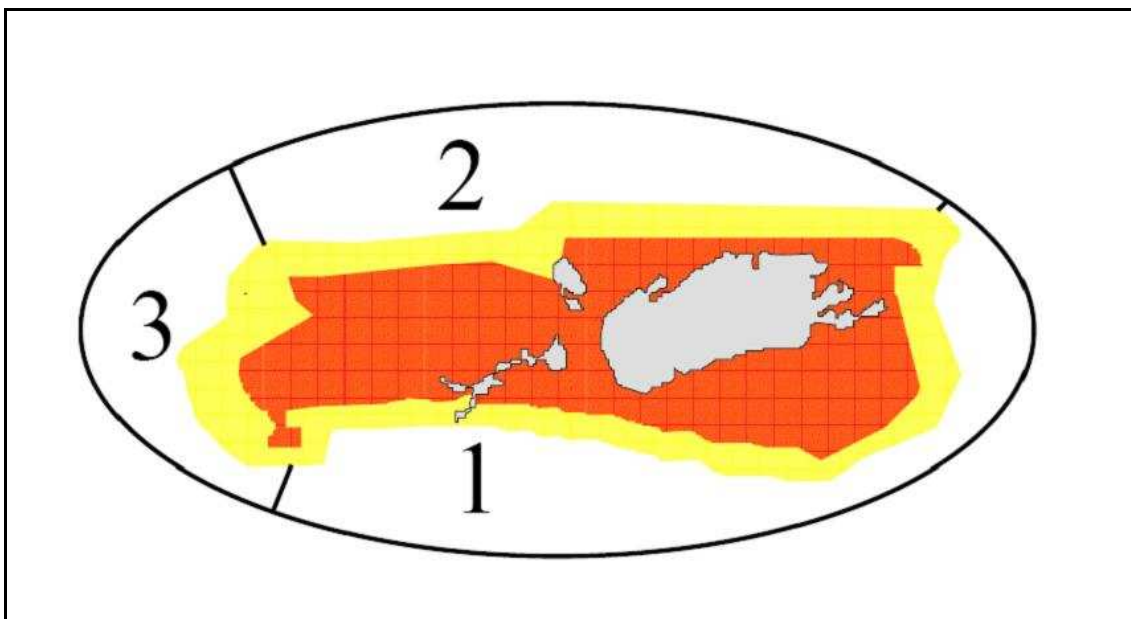


Fig.7: There is an indefinite pressure of the park (red) on the surrounding area (yellow) through the fences, which is in desolate condition for large parts. The aim of the Etosha buffer zone project is to understand these processes and develop management strategies that consider different land use practises (1 = private land, 2 = communal land, 3 = communal conservancies) (Goettert and Zeller, 2008)

The adjoining land of the Etosha National Park is used in multiple ways of land use (Fig.7). While it is enclosed by commercial farming land at its southern and eastern border, in the north it borders to communal livestock farming areas and in the west to so-called communal conservancies (communal managed wildlife habitat) with sustainable livestock farming.

All areas surrounding the Etosha National Park still host substantial numbers of free ranging game (Barnes, 1995).

The core study area of the Etosha Buffer Zone Project, where the research station is located, lies at the south-western border of the Etosha National Park on the Farm Moesomerop, which is part of a bigger farm unit, called Etosha Heights Game Safaris. This block of farms is made out of eight former livestock farms, all directly bordering the Etosha National Park, now used for consumptive and non-consumptive use of its wildlife resources.

While in the past the research of the Etosha Buffer Zone Project was concentrated on mainly biological and ecological questions it was obvious that for an integrative approach research on socioeconomic questions was needed.

This study serves as the first socioeconomic research project within the broader scale of the Etosha Buffer Zone Project and should serve as the first approach to value the potential for buffer zone efforts around the Etosha National Park. With the involvement of a socioeconomic approach the Etosha Buffer Zone Project recognises the fact that the use of parks and their surroundings by local people and outside visitors must be a central part of any management plan (MacKinnon et al., 1992). The lack of participation in african conservation strategies was already seen by Lewis (1990):

“If any lesson can be learned from past failures of conservation in Africa, it is that conservation implemented solely by government for the presumed benefit of its people will probably have limited success, especially in countries with weakened economies. Instead, conservation for the people and by the people with a largely service and supervisory role delegated to the government could foster a more cooperative relationship between the government and the residents living with the resource”.



Fig. 8: The fence of the Etosha National Park is in desolate condition over large parts (A. J.)

### 3 Attitudes towards nature conservation

An attitude is a hypothetical construct that represents an individual's degree of like or dislike for an item. Attitudes are generally positive or negative views of a person, place, thing, or event this is often referred to as the attitude object. People can also be conflicted or ambivalent towards an object, meaning that they simultaneously possess both positive and negative attitudes towards the item in question ([www.wikipedia.org](http://www.wikipedia.org)). In the words of the Encyclopedia of the Social Sciences an attitude can be defined as “a relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner” (Rokeach, 1962).

Various projects have focused on the attitudes towards nature conservation (Zimmermann et al., 2005; Gadd, 2005; Walpole et al., 2001), the general findings are that these attitudes are strongly dependent on the economic gain or loss connected with nature conservation or protected areas. Besides that, emotion, culture and education are playing critical roles in attitudes towards nature conservation.

According to the IUCN (The World Conservation Union), protected areas support the well being of societies, through:

“maintaining those essential ecological processes that depend on natural ecosystems, preserving the diversity of species and the genetic variation within them, safeguarding habitats critical for the sustainable use of species, securing landscapes and wildlife that enrich human experience through their beauty and providing opportunities for community development, scientific research, education, training, recreation, tourism and mitigation of the forces of natural hazards” (Stoll-Kleemann 2001).

The involvement of people is more and more seen as crucial for the long-term survival of protected areas, therefore it has to be carried out what people think and feel about protected areas, especially those who live in their surroundings and are somehow affected by them. In the last years several studies (Newmark et al., 1993; Mkanda and Muthali 1994) all over Africa have focused on the attitudes of local communities adjacent to protected areas. Protected areas are the cornerstones of biological conservation. Although they have usually been set aside from human exploitation, it is now increasingly recognised that protected areas should play a role in sustaining local communities adjacent to them (Walpole and Goodwin

2001). The key argument in securing support for protected areas is development through sustainable use of natural resources. The paradigm of “conservation with development” has attracted increasing support from conservation organizations and international development agencies in recent years (Primack, 1998).

On the other hand there is an ongoing conflict between those who use the land for agriculture and the natural wildlife populations. In this century, only in Africa do substantial numbers of people and livestock live alongside sizeable populations of large carnivores (Frank et al., 2005), which is causing immense conflict. This wildlife-human conflict is a widespread conservation issue of increasing concern to conservationists. Livestock is often killed by predators living close to farmland. Livelihoods can be severely affected by such depredation, generating negative attitudes and persecution of the culprits. The extent to which people tolerate wildlife damage may be influenced by various socioeconomic factors, including relative wealth, levels of education, the extent to which people derive monetary or other benefit from wildlife, and the magnitude of wildlife associated costs (Zimmermann, Walpole and Leaser-Williams 2005). Research undertaken across the tropics suggests that wildlife-associated costs reduce tolerance and support for conservation and vice versa (Newmark et al., 1993).

The reasons for positive or negative attitudes toward wildlife are not always easy to identify. A survey in Botswana found that rural people held negative conservation attitudes despite receiving substantial benefits from the licensed hunting of wildlife. A lack of participation in decision-making for resource management was identified as an important further factor shaping conservation attitudes (Gillingham and Lee 1999). Furthermore for programmes to be successful both in providing benefits to communities and protecting wildlife, not only must the benefit be received and valued by the local people, but the linkage between the benefit and the wildlife resource must be made clear (Gadd, 2005). Ensuring local support for protected areas is also increasingly viewed as an important element of biodiversity conservation. This is often predicated on the provision of benefits from protected areas and a common means of providing such benefits is tourism development (Walpole and Goodwin 2001). But the valuing of nature’s resources can also be dangerous for long term conservation efforts:



- Financial values can alter people's behaviour towards the resource adversely if, for example, it is so desirable that it is unsustainably exploited or if the resource suddenly loses value.
- People may fail or may undervalue benefits.
- Unrealistic expectations may result in hostility towards the park or body that failed to deliver the anticipated goods.
- People may come to expect financial proceeds or services, and resent species that do not provide them with a direct profit.
- The commercialization of wildlife may displace or override existing cultural values (Gadd 2005).

Nature conservation can not only be based on its monetary value, the intrinsic value of nature and its conservation must also be kept in mind. As Gadd (2005) noticed, it should be avoided that motivation for conservation becomes purely financial. If the motivation to conserve wildlife becomes purely financial and aesthetic benefits are lost or forgotten, the effects could be disastrous when financial incentives are interrupted or discontinued (if tourism declines or donors withdraw). Acknowledging and building upon local aesthetic values and traditional beliefs would be advantageous for future conservation efforts. Bearing in mind the volatility of the world's tourism industry and the number of wildlife-based tourism destinations arising throughout Africa, preserving or encouraging non-financial conservation motives among local people is also essential.

### **3.1 Purpose of this study**

Various projects that link conservation and development have been implemented in and around protected areas around the world in an effort to generate benefits for local communities (Walpole and Goodwin 2001) and preserve nature. The Etosha Buffer Zone Project is one of these projects. While most parts of the project are linked to questions regarding the ecology of the region and the biology of certain species, this study should examine what the attitudes of the local population in the study area are.

Hence the implementation of the Etosha National Park and the commercial farming area at its border, there is a conflict between wild animals in and outside the park and cattle and small stock on farmland. Predation of livestock is the most serious problem, but also the spread of diseases. The development of the wildlife sector and with it the implementation of

commercial game farms is a fairly new process, the advantages or disadvantages for this type of business caused by the national park are fairly new for Namibia as well. Protected areas with hard-edges, as it is the case with the fenced border of the Etosha National Park always suffer from conflicts about resources at its boundaries. The edge effect limits the viable protected area of the park enormously. Soft-edge concepts aim to limit these conflicts and supposes to deliver benefits for example through tourism development. Other examples from Africa have shown that through the establishment of buffer zones around protected areas there was substantial benefit for the people and development around the parks (Balduş, 1995). Furthermore the Biosphere Reserve Concept is better adapted to African culture than conservation efforts in the past. National parks and game reserves are often unpopular within Africa, largely because protected areas are an alien concept – based on the Western ideal of national parks - that has been uncritically transplanted to the African context (Harmon, 1987).

This study aims to evaluate the human wildlife conflict at the present hard-edge boundary of the Etosha National Park and the attitudes towards a soft-edge boundary and the involvement of farmland into a broader Etosha buffer zone. The attitudes towards and a general acceptance for nature conservation and free ranging game in the study area are cornerstones in evaluating the potential for further development in the wildlife sector and a buffer zone in the study area. Conflicts between wildlife and people can erode local support for conservation. Wildlife-based benefits are intended to offset costs and encourage tolerance or stewardship. Based on examples from other African countries it is expected that farmers around protected areas can substantially benefit from tourism development and that the park management can benefit from reduced conflicts about natural resources at its borders.

### **3.2 Key Questions**

The main research questions for this study were the attitudes towards a buffer zone within the landowner and landuser community at the south-western border of the Etosha National Park. Currently there are no plans by the government or its Ministry for Environment and Tourism (MET) to establish a buffer zone in the area south of the Etosha National Park. Therefore the whole study must be seen as a first approach to establish guidelines for future policies and as a part of a broader research project.

Based on earlier research projects around protected areas around the world (Newmark et al., 1993; Mkhanda and Munthali, 1994) it was expected that the individual attitudes of

landowners regarding questions about nature conservation is the most important socioeconomic factor to determine the potential for conservation efforts. To get a broader picture of where different attitudes about a buffer zone come from, an intensive inventory of the infrastructural, economic and socioeconomic situation was undertaken. Furthermore through questions about the relation and the problems with wildlife (especially predators) it was expected to find out where positive or negative attitudes towards wildlife in general come from. The third topic was the relation towards the “big neighbour” the Etosha National Park, questions about the relation to the management and about problems according to the national park were asked. The fourth part, and also the most important one, were questions about nature conservation in general and the personal attitudes towards the idea of a buffer zone on the farmland adjoining the Etosha National Park.

A list of the key questions of **landuser and landowners interviews** for this study is given below:

#### **Economic and Socioeconomic situation**

What is the economic and socioeconomic situation of the different landusers in the study area?

What is the impact of emotions, culture, communication and perception on the attitudes?

#### **Attitudes towards wildlife**

What are the general attitudes towards wildlife, especially predators?

#### **Perception about the Etosha National Park**

What do the landowners and landusers think about the neighboring protected area?

What do they think about the management of the Etosha National Park? How would they describe their relation to the park and its management?

#### **Attitudes towards nature conservation and a buffer zone**

Are there more positive attitudes towards nature conservation when there is a personal profit, for example through tourism?

What are the attitudes towards a buffer zone on private farmland?

Is there potential for a buffer zone on private farmland adjoining the Etosha National Park?

The **expert interviews** were intended to complement the farmers interviews and the key question laid on the question where different attitudes arise from, questions about the history of the region, current private buffer zone efforts, solution strategies for the problems between the Etosha National Park and the adjoining farms and the potential for a buffer zone on the private farmland.

### **3.3 Methods**

The study area is located at the south-western border of the Etosha National Park, in the Kunene region of Namibia. The core of the study area of the Etosha Buffer Zone Project is the Farm Moesomerop, where the research station is located. The Farm Moesomerop is part of a block of eight farms which are used for consumptive and non-consumptive wildlife use. All eight farms are immediate on the verge of the Etosha National Park. From this core area the study area was extended to the east, west and to the south. All farms directly bordering the park between the 14,4° and the 15,4° longitude were sampled, as well as some farms in the second row of farms seen from the Etosha National Park (except for those farms where it was not possible to conduct an interview). All sampled farms are belonging to the so called “Gagarus Block” which was cut off the Etosha National Park in 1948 and given to farmers in the early 1950’s. The study area is very sparsely inhabited, even for Namibian circumstances. While, based on a rough estimate, about 200 people are living in the area, there is only a very small number of landowners who stay on in the area. In most other cases the people normally just work in the area and are not involved in any decision making processes, therefore they are of no benefit for this study. Furthermore there is a high fluctuation especially on farm workers.

For this study the case study approach was chosen. The case study approach is useful when investigating a phenomenon within its real-life context, and provides depth and quality of data (Cousins et al., 2008). Semi structured interviews were used to ascertain sentiments. As Fontana and Frey stated (2005): interviewing “is one of the most common and powerful ways in which we try to understand our fellow humans” and enables the researcher to get large amounts of data quickly (Marshall and Rossman 1995). Semi-structured interviews ensure that a consistent range of topics is covered, and allows a flexible approach to questioning and gathering opinions and behaviours in the “informants” own words (Dunn 2005). The overall

question for the survey was not, how many people do have which kind of attitude, the question was, why do have people positive or negative attitudes. And where do these attitudes come from.

The methods for the case study consisted of different techniques, adapted for the situation in the study area.

### **Qualitative interviews with landowners and landusers:**

The main part were qualitative interviews with the farm owners and owners or managers of tourism and hunting companies (see App. 1, 2). The advantage of this method is a better understanding of the feelings, hopes and thoughts of the people, compared to a quantitative approach (Delker 2001). The interviews were mostly done in English or German, if the interviewee was solely speaking Afrikaans, the interview was translated by a family member. Each interview took the form of a conversation, structured around a written questionnaire consisting of general and specific questions. Each questionnaire was existed of 30 to 40 questions. Following a series of socio-economic questions concerning the age of the respondents, the origin, education and some numbers about the size of the farm, the history of the farm, the main land use practice and the number of workers, respondents were asked about their relationship to the Etosha National Park, their feelings about their current situation, problems with predators, their plans for the future and their attitudes towards nature conservation and the implementation of a buffer zone (see App. 2). All questions were open ended and if necessary the questionnaire was adjusted to the particular situation. The interviews lasted between 1,5 and 5 hours. Interview based approaches have been criticized for several reasons, including the researcher leading the respondent, variation in the delivery of the questionnaire, respondent anticipation or desire to please the researcher, (Mitchel and Slim, 1991), or discrepancies between what people report and what they actually feel or do. Nonetheless, research on the attitudes is necessary to compare them across regions, or within the same region over time or in response to changed policy, which can then contribute to planning or improving relations between parks and people (Harcourt et al., 1986). Interviews were the most effective way to obtain detailed individual opinions and explanations from a representative sample of residents.

The interviews were sorted and analysed with the computer programme for qualitative social research MaxQDA 2007 (Verbi Software, 2007).

**Direct observation:**

Through direct observation while taking part in everyday life and activities it was possible to get a better understanding of the situation in the study area and to find out where a positive or a negative attitude toward the actual situation and the situation in the future comes from. These activities included hunting trips with trophy hunting clients, visits at livestock auctions and other activities on livestock farms and tourist camps in the study area.

The interviews as well as the observation of every day life were done during a seven week stay in the study area. A special focus laid on the involvement of the local people in tourism projects.

**Qualitative expert interviews:**

The third part were qualitative interviews with experts from different institutions that are either located in the study area or are involved in the problems the study area is facing (see App. 3). Furthermore a workshop was held on the 4. of October 2008 on the farm Sonderwater within the study area, where the current situation at the fence and the research aim of the Etosha Buffer Zone Project were discussed with farmers, experts and the authors of the project. The interviews were sorted and analysed with the computer programme for qualitative social research MaxQDA 2007 (Verbi Software, 2007).

**Literature research:**

The fourth part of this study was a literature research in Namibian and European publications, libraries and museums. This research was done on topics of land use change in Namibia, commercial wildlife utilization, nature conservation in Africa and buffer zone efforts around protected areas in Africa.

The interviews and the research in the study area were done during a seven week stay in the study area in September and October 2008. The interviews were transcribed and analysed in November 2008 and the paper was written between December 2008 and March 2009.

Results presented rely partly on the researcher's observation, judgement and experiences. Therefore, this paper offers an evaluation of the situation in the study area but does not attempt generalisation of any kind.

## 4 Results

The aim of this study was to identify what the attitudes towards a buffer zone at the southwestern border of the Etosha National Park are and where these attitudes come from. Based on previous studies around protected areas all over the world (Newmark et al., 1993; Mkhanda and Munthali, 1994) it was expected that besides personal background (formal education, upbringing etc.) and experiences with wildlife in the past, these attitudes are strongly dependent on the land use technique and how wildlife affects individual profit or financial loss.

Therefore the interviewees of the study area were separated into different categories for the results chapter, namely:

- pure **livestock farmers**,
- **livestock and game farmers**,
- pure **game farmers** and
- managers or owners of **blocks of farms**.

Each of these categories was further categorized into four subcategories:

- **Economic and socioeconomic situation**
- **Attitudes to wildlife**
- **Perceptions about the Etosha National Park**
- **Attitudes towards nature conservation and a buffer zone**

Each questionnaire consisted of 30 to 40 questions regarding everything that has to do with economics, wildlife, relations to neighbours and the park and a buffer zone around the park. From these questions the four subcategories were made to help to identify attitudes and the reasons for these attitudes.

An important factor for shaping perceptions and attitudes about something is financial loss or gain, so a special focus was therefore laid on the individual economic situation of each farm or other business in the study area (Subcategory 1). Although grouped in this category is the socioeconomic effect of each business (employment numbers, payment of workers etc.).

In the second subcategory questions about predators and other animals which can cause damage to local farm businesses were grouped.

The third subcategory focuses on the relation to the Etosha National Park and its management.

In the fourth subcategory all questions were grouped regarding past experiences with nature conservation, present attitudes to nature conservation and the perceptions and attitudes towards a buffer zone on the commercial farmland.

Most parts of the following text are statements quoted from the interviews. Some of them are slightly edited or condensed. **f1 to f 12 refers to the different interviewees**. For details see App. 1

Section 4.1. gives an overview of the land use options in terms of economics, ethics and sustainability. Especially consumptive wildlife use is a controversial and often misunderstood activity, especially in the Western world. While especially in Africa it is sometimes the most important source of income and considering certain rules and regulations, generally regarded as sustainable.

#### **4.1 Land use options in terms of economics, ethics and sustainability**

There is huge opposition within the conservation organisations towards hunting and the commercial use of wildlife resources, especially in the Western world. This section gives an overview of land use options within the study area in terms of economics, ethics and sustainability and gives a definition for what is regarded as consumptive or non-consumptive wildlife use and whether it is sustainable or not. As all over Namibia, the environment in the study area is highly unpredictable and land use options are limited to extensive farming with livestock or game.

The traditional way of using the farmland is either karakul sheep farming or cattle farming. Products of these industries are either exported to the South African or the European market. While livestock farming can only be done in an extensive way in Namibia, it is nevertheless destructive to the environment. Overgrazing has caused immense bush encroachment all over



the Namibian commercial farmland. The implementation of fences and artificial waterpoints has furthermore modified the landscape. Furthermore predators are generally persecuted on commercial farmland. Other possibilities to generate income are eco-tourism or trophy hunting. These land uses (especially eco-tourism) are generally considered to be more sustainable. In general, the potential of generating income through these industries is higher than in livestock farming, because the value of wildlife is higher and running costs are lower. Unfortunately, the initial investments are much higher (infrastructure, breeding stock etc.) and therefore not an profitable option for local livestock farmers. Besides tradition within the livestock farming industry, that is the reason why most game farms are owned by European investors. The wildlife business is either concentrated on mainly self-drive tourists or „all inclusive“ trophy hunters.

While the number of tourists in Namibia is much higher, there is possibly much more money in the hunting business (low volume and high value). And while the tourism business is seen as ecologically sustainable from most conservation foundations there is huge opposition in conservation foundations against hunting. Nevertheless there are a lot of arguments pro hunting. As Baker (1997) stated: „Preserving wildlife in a pristine state on a large scale is no longer feasible in view of continued human population increases, economic development, habitat fragmentation and degradation, the introduction of non-native species, and commercialisation of wildlife products. The wise use of the planet’s remaining wildlife resources will depend on management practises which recognise that indigenous people are integral parts of ecosystems“. One option for local people to benefit from wildlife resources is through trophy hunting. There are some arguments that favour trophy hunters compared to normal tourists:

- Hunters are not nearly as ecologically destructive as tourists. Hunters require fewer services and accommodations and less infrastructure, thus keeping wildlife habitats more pristine (Butler, 1995)
- The cost of a hunting safari in Africa is easily double or triple the cost of a regular safari of the same length, and more of that money is spent in and remains in the country of hunt (Morill, 1993)
- Areas hosting the most wildlife (in number and variety) are often inaccessible to regular tourists, or practically inaccessible because of poor transportation services and infrastructure (Baldus, 1995)

- Overpopulation of certain species can damage if not destroy the natural habitat, thereby threatening the existence of other species. The selective killing of certain species can solve that problem (Baskin, 1994)

Sport and Trophy hunters have therefore claimed that their activity can be identified as a consumptive form of ecotourism, which in many cases has proved more beneficial (low volume and high value) for the host environment than non-consumptive activities, such as photographic tourism (Novelli and Humavindu, 2005). But there is also a huge fraction in the conservation community, animal movements and NGOs that argues against sport hunting for conservation purposes. Hofer (2002) makes the point that “trophy hunting is a controversial and misunderstood activity for several reasons. Firstly trophy hunting is controversial on ethical, social and cultural levels. The practice of trophy hunting generates contradictory positions towards hunting in general. While some believe that the consumptive use of individual animals for the sake of the population, the species, or the ecosystem, is ethically acceptable, others vehemently oppose the killing of animals for personal satisfaction”.

On the question of sustainability in trophy hunting Morill (1993) stated sustainable consumptive wildlife use is only possible when hunting is limited to male animals, with an emphasis on the quality of the trophy (length of horns etc.). Because the specimens taken are usually older males who contribute little to breeding, and because hunting quotas are usually a fraction of natural population growth rates. When this is the fact controlled trophy hunting has a negligible impact on overall population sizes.

Therefore consumptive use of wildlife is treated in this study as a sustainable form of land use. Besides the consumptive use of wildlife, there is also the option to use game on a non-consumptive basis, through tourism. Under certain circumstances (highly visible animals, easy access of the area) tourism can be the most profitable land use in marginal areas. For example, the total revenue from Amboseli National Park (Kenya) was estimated by Western and Henry (1979) to be about 40 times the potential income from farming the same area. Each lion in the park was estimated to be worth US\$ 27,000 per year in tourist revenue. Similarly, Brown (1989) estimated that the wildlife viewing value of elephants was worth between US\$ 22 and 30 million to Kenya's economy. The major drawback of tourism is that its not worthy in very remote areas or if highly visible wildlife populations are missing (Baldus, 1995).

In this case the area at the south-western border of the Etosha National Park can not compete with the prime wildlife viewing areas around the Etosha Pan. Tourist hunting is therefore the most economically viable form of wildlife utilisation in the study area.

## 4.2 Categories of farms

The commercial farm area south of the Etosha National Park was separated into farmland in 1948 and distributed to white settlers in the early 1950's. An average farm unit in that times in the study area was between 5,000 hectares and 6,000 hectares. Some of these early settlers came from Angola, others from other parts of Namibia or South Africa. Most of the farms in the study area changed ownership in the last decades. Nevertheless some farms are still owned by the descendants of the first owners.

Different **land use techniques** dominate the region (Fig. 9), which can broadly separated into four types (For details of the sampled farms see App. 1.)

- 1.) **The classical livestock farm**, with predominantly breed of cattle as well as some small stock like karakul sheep and goats. Hunting of wildlife is only done for self consumption. These farms are generally owned by descendants of the first owners or by black farm owners that bought the farms through the Land Reform Programme or were settled on the farm by the government of Namibia through the Resettlement Programme. The livestock farms in the study area are between 3,287 hectares and 9,500 hectares. Most farms in this category are only livestock-proof fenced (Fig. 10).
- 2.) **Mixed land use with livestock farming and game farming.** These farms combine farming with livestock with the tourism and/or hunting business with either domestic or overseas visitors. These farms are generally owned by descendants of the first owners or investors from South Africa or from overseas. These land use is said to be the most productive in terms of generating income in Namibia (Lindsey et al., 2009). These farms are about 7,000 hectares in size. All farms in this category are game-proof fenced (Fig. 11).
- 3.) **Game farms.** These farms are generating income solely through consumptive or non-consumptive use of wildlife. They either operate with hunting camps or tourism lodges or a mix of both. Most of these farms are owned by overseas investors, who discribe themselves as conservationists. These farms are between 5,800 hectares and 10,000 hectares in size. All farms in this category are game-proof fenced (Fig. 11).

- 4.) **Blocks of farms.** The blocks of farms differ from other farms not in terms of land use, but in their sheer size and based on that, potential turnover. There are two of these blocks within the study area, both owned by overseas investors and managed by Namibians. One of these cooperations is used only for the consumptive and non-consumptive use of wildlife (50,000 hectares), the other is combining livestock farming with the consumptive use of wildlife (29,000 hectares). Both blocks are game-proof fenced, the fences are partly electrified (Fig. 11).

Game can either be used consumptive or non-consumptive. Consumptive use in Namibia includes mammal trophy and sport hunting, culling, live game dealing and shooting for own consumption. Non-consumptive use includes ecotourism, photographic safaris and education.

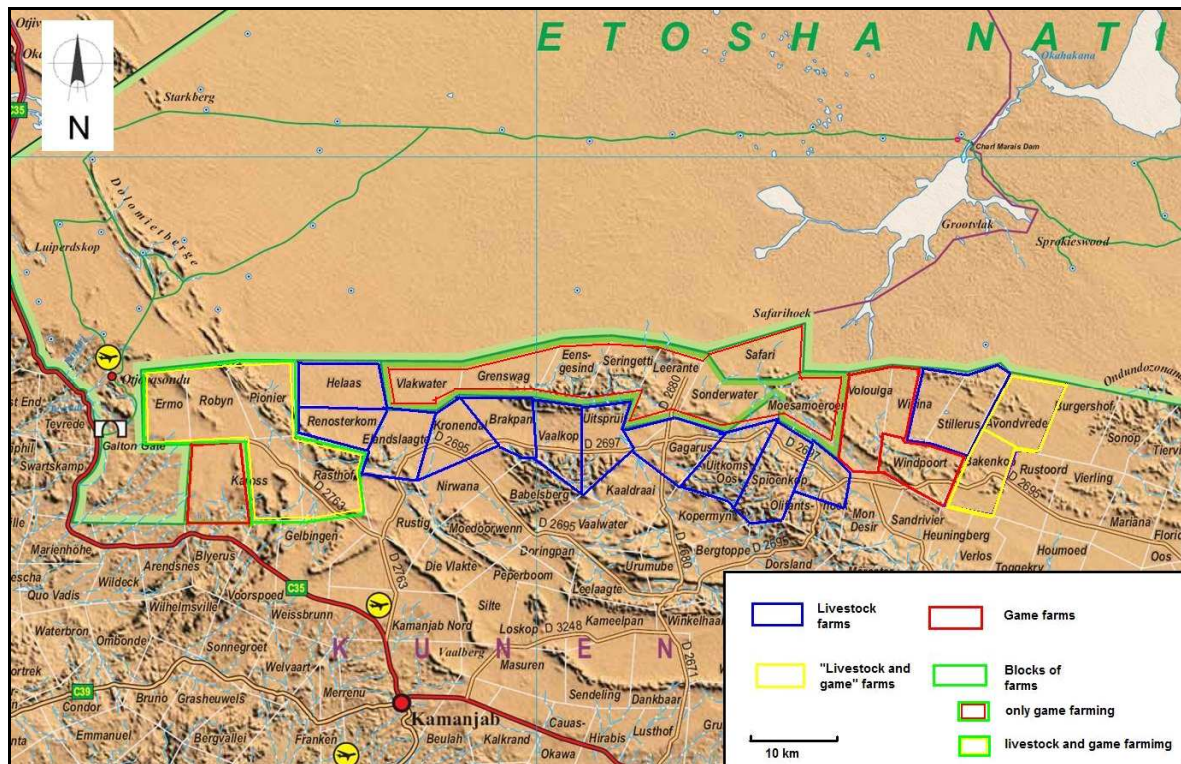


Fig. 9: Land use in the study area (modified according to Jaeschke, s.a.)

The whole study area comprises a surface area of about 182,000 hectares (more than twice the size of Berlin), with about 100 kilometre from east to west and about 20 kilometre from north to south. 30 farms fall into the study area, from which 12 are livestock farms (altogether ca. 65,000 hectares). Two farms are operating with both livestock and game farming (together ca. 13,000 hectares), three are doing only game farming (altogether ca. 26,000 hectares) and 13

farms are part of a farm block (one block with five farms and 29,000 hectares, the other with eight farms and about 50,000 hectares). Five livestock farms were sampled (42 percent), both mixed use farms (100 percent), all three game farms (100 percent) and both cooperations (100 percent). There are some reasons why only 42 percent of all livestock farms in the study area were sampled. The first is the type of the study, doing qualitative research, sampling data is completed when there is no further information anticipated and/or saturation is reached (Marshall and Rossmann, 1995), which was the case in this study. The second reason is that not all farm owners stay on their farms on a regular basis or denied to take part in the survey.



Fig. 10: Livestock farms are divided by livestock fences which are 1.2 metres high (A.J.)



Fig. 11: Game farms are enclosed by game-proof fences which are 2.6 metres high



### 4.2.1 Livestock farms

Five of the twelve livestock farms in the study area are sampled. Three of these farms are in the same shape like when they were established almost 60 years ago, these farms are between 5,000 hectares and 6,000 hectares. One of the livestock farms is bigger (9,500 hectares) and one was splitted and is now 3,287 hectares. All of the sampled livestock



Fig. 12: Livestock farming in the study area (A. J.)

farms are owned by Namibians, four by the descendants of the first white settlers

in the area and one by a black farmer who bought the farm after independence. An average livestock farm in the area is supplying one family plus their employees which number usually between two and four. Normally these employees stay on the farms with their families. All five farms are operating with cattle and small stock, generally cattle as main business and sheep and goats as a second business. The number of cattle on each farm varies between 120 and 500 and the stocking rates for cattle are between 12,5 hectares per cow and 19 hectares per cow. All livestock farmers suffer from unpredictable rainfall, overutilization in previous times, unpredictable world market prices and from predators. Most of the farmers say they just operate from year to year and do not have long term plans for the future.

**f1 to f5 refers to the different livestock farmer interviewees.** For details of the farms see App. 1.

#### 4.2.1.1 Economic and socioeconomic situation of livestock farms

*„Cattle farming is like prostitution, you know it is wrong, but you keep on with it“ (f1)*

*„Cattle farming is like gambling“ (f4)*

*„In the last years you just can live from your income, there is nothing left at the end of the year“ (f2)*

These are just some of the statements of livestock farmers to summarize their overall situation and which illustrate the difficult situation of livestock farming in the study area. Farming in an arid environment like in northern Namibia is not comparable to more ecological favoured environments as in the temperate zones. All farmers state that they do not do it just for the

money, for most of the farmers it is not just a job, it is self-fulfilment and most of them define themselves most or less by farming and by competing with this harsh environment. The climate in Namibia tends to be unpredictable and long time droughts over several years, when farming is even harder, are not uncommon. When the livestock farms in the study area were given to the farmers in the late 1940's, early 1950's an economic unit (a farm that is able to support one family plus their employees) was between 5,000 hectares and 6,000 hectares. Due to lower world market prices for beef products and higher costs for petrol, labour etc. a truly profitable economic unit today is at least 10,000 hectares (pers. comm. of different farm owners and experts). So most of the livestock farmers in the study area are forced to rent further land for grazing on other farms, sometimes far away from their home farm. Another way of generating income, done on one sampled farm, is the cutting of trees and bushes for charcoal production, which is very destructive to the environment and causes bush encroachment. Compared to the subsistence farmers in the communal lands of Namibia, the farmers on the private land in the study area have a quite high standard of living. As mentioned above, relatively higher incomes may help to decouple their overall attitudes towards their losses. As a result, attitudes become shaped principally by individual perceptions, beliefs and values, influenced by education, upbringing, tradition and culture. The main problem that is characterizing the area close to the border to the Etosha National Park is the influence of predators from the park, which is illustrated in the following statements:

*„The negative thing here are the predators that come through the fence“ (f4)*

*„Sometimes they (the conservationists) misunderstood us, they think we just want to kill the lions, but we just protect our business“ (f5)*

For livestock farmers who always work just on the brink, a loss of livestock to predators can be the last step to make livestock farming unprofitable. Because of that no one tolerates predators on their properties. What makes it even more difficult for them is that it is often not clear for them who is responsible for the lions and who they can contact or who they have to contact if there is a lion or a spotted hyena on their property. So the easiest, but also a very cost and time intensive, way for them is to hunt and destroy the predator. The following statement reflects this problem:



*„What happened here is that the lions came out here, killed some cattle, and than Etosha Heights<sup>1</sup> said, “no it’s not our lion, it is Etosha’s lion” that’s frustrating for us, they need some sort of agreement for that in the near future...they want the lions but they don’t want to take responsibility for them“ (f5)*

Most respondents have suffered cattle losses and most of them believe that attacks are becoming more common since the wildlife businesses were established in the region and especially since the biggest of the wildlife businesses tolerate lions on their property.

Aside from the actual loss of cattle killed, farmers complain that the stress causes loss of weight, and hence, profit.

Besides the predators, the biggest problem for livestock farmers is, as already mentioned, the size of their farms, which are in their original size too small to make enough income in bad or even in medium years, which is illustrated in the following statements:

*„The situation in Namibia is just like you have to go bigger and bigger, you can’t say I am just farming with 300 cattle, because the prices are fluctuating, I think 10,000 hectares is an economic unit, so with 500 to 600 cows“(f4)*

*„Before independence there was a future for us in cattle farming, but at the moment we don’t see a future, we are basically farming from year to year and hope for the best. Some or the other day the whole system will collapse...the size of the farm is the most important thing, if it would be possible to get affordable land, there would be no problem, for example the guys with the 29,000 hectares they don’t have problems“ (f5)*

When confronted with the question why they did not already changed to a more profitable wildlife business, the most frequent given answer was that either the costs for the investment in infrastructure and game species were too high. Other arguments are that their properties are too small for viable game populations or that they do not see a long time future for the tourism business in Namibia. Typical statements about the costs for a wildlife business are:

*„It is a good idea, and I’d been thinking about it, because it is much easier to do game farming than cattle farming, but the problem is, if you want to do trophy hunting it will take you at least five years to get into that stage that your animals have got good trophies, and there is no way for me to survive for five years without income“ (f4)*

*„Game farming is more profitable, but in this area 90 percent of the game farmers are from overseas, you need money to start that business....I don’t think that I am gonna*

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<sup>1</sup> Etosha Heights is the biggest block of farms, solely used for game farming

*change completely. I think all types of farming are quite risky, that is why we diversify, we do cattle, small stock and game, and some others do charcoal burning as well“(f1)*

Regarding the question about changing the business to game, some livestock farmers are also concerned that there might be no income for them during certain seasons, *„Hunting is quite seasonal, there is no income in summer, the income of cattle farming is a bit more predictable“(f1)*, and that they do not want to have people around them all the time, as it is the case in the tourism business. An old farmer even predicated that he would definitely change his farm to a wildlife business if he would be younger and says his son should change the business when he took over.

For some of the farmers, the already existing game farms at the border are perceived as a buffer to the Etosha National Park. They see the chance that if the game farmers keep their fences proper this could be a way to stop the influx of predators from the park:

*„Etosha Heights is a really good buffer, if they just look for their fences, it could be a good idea, I think the new fence is very good“(f2).*

This argument shows that the farmers might easier trust the private owners of the wildlife businesses, than the conservationists from the park, which also reflects the livestock farmers perception about the MET and the management of the Etosha National Park.

An often given argument in literature (Barnes et al., 2004) is the positive economic effect of wildlife businesses compared to livestock businesses, which is been given by the sampled experts as well:

*„Say you have 500 cows on 10,000 hectares (as it is the case in the study area), and there are 4 people working for you, if this farmer would switch to wildlife business, he would have kitchen staff, skimmers, slaughteres, professional hunters and drivers, I think there could be more people benefit from the wildlife business, and furthermore on a cattle farm you hire people at minimum wages, while in game farming the jobs are more technical and better paid“(e1)*

At the moment the average turnover per year on the sampled livestock farms is N\$ 447,600, the net income on average N\$ 141,357. Which the farmers state is just enough to sustain the business. On the five sampled livestock farms in the study area an average of three people work on the farms, which means an average of 2,000 hectares per place of employment. The average monthly salary of the farm workers is around N\$ 560 plus things like milk, meat and firewood (which is just over the minimum wages given by the Namibian Farm Workers Union, [www.namibiaplus.com](http://www.namibiaplus.com)). In general the farm workers live on the farms together with

their families in houses close to the main farm building. Even for Namibian circumstances the standard of living of the farm workers is very low and they completely depends on the farm owners. Employment rights are very weak and there is no health or unemployment insurance. Compared to the sampled wildlife businesses in the study area payment and general situation of the farm workers on livestock farms is quite bad. But as e3 argues: „it should not be forgotten that the livestock farming sector is still the biggest employer for the huge number of low skilled people in Namibia”. Most employees on livestock farms are low skilled or do not have any education. Most farm workers were born on the farms or in the area.

#### 4.2.1.2 The attitudes of livestock farmers to wildlife

When confronted with questions regarding problems or attitudes about wildlife it is mostly predators that the livestock farmers talk about. All experts confirm that if a lion leaves the park for the first time and hunt on livestock it will always come back, and the only solution to get rid of it is to shoot it. Despite their classification as protected species in Namibia, killing cheetahs and lions is permitted to protect life or property (Nowell, 1996), and many farmers use this exemption to practice “preventative management” to reduce depredation of livestock or wildlife by eliminating them indiscriminately (Marker et al., 2003), this is also the case in the study area. The livestock farmers at the border of the Etosha National Park were always confronted with these lions, but since more and more farms around them switched to game farming the pressure is even higher. Furthermore the park experienced quite good rain years in the last decade so that the lion population in the park is far beyond the carrying capacity of the park. That means that even more lions are leaving the park in search for new habitats. This process is reflected in the following statements:

*„Sometimes we kill some more lions, but in other years we don't kill any lion. But I think the problem got worse in the last three years because before that there were more cattle farms in the area, now the lions only come to us“ (f4)*

*„The predator problem is becoming bigger and bigger, in 2007 I lost 24 cattle, in eight months of 2008 it were already 26, the pressure is getting higher and the problem with predators are not only the direct losses, there is a weight loss as well, because they are chased around and they don't come to the water than“ (f1)*

For the farms directly bordering the national park the biggest problem are the bigger predators, namely lions (*Panthera leo*) and spotted hyenas (*Crocuta crocuta*), that normally only exist in protected areas in Namibia. The farms further south of the fence are more

affected by the medium-size predators, namely cheetahs (*Acinonyx jubatus*), leopards (*Panthera pardus*) and black-backed jackals (*Canis mesomelas*). Already in the second row of farms behind the fence the problem with lions and spotted hyenas is a lot smaller and the farmers complain about comparable problems like farmers all over Namibia (Marker et al., 2003). Typical statements about smaller predators are the following:

*„There are some cheetah around us as well, and they also killed some of the calves, but thats not so much and so its not a big issue“ (f4)*

*„The cheetah must be totally overpopulated in Namibia, offical numbers are definetely underestimated, the cheetah numbers in the park are very low, so they must come from the farmland“ (f1 )*

The two following statements are from farmers whose farms are located in the second row of farms seen from the park, whose perception about predators differ from those farmers directly bordering the park:

*„In a normal year I lose about 100 sheep and goats to predators, mostly to jackals, cheetahs and hyenas, but the loss is less than a few years ago“ (f2)*

*„Our biggest problems here in the area are the smaller predators like jackals, we are losing a lot of small stock to them, the lion problem is not that big“ (f3)*

Another reason for higher pressure is seen by the livestock farmers in the establishment of the game farms which allows predators on their properties but do not feel responsible for damages caused by these animals on the properties around them:

*„With their 50,000 hectares they have income from the predators, but for me its only losses“(f2)*

*„Predators took the food of many poor people, and there are rich people from overseas that try to raise the numbers of predators here, and the cattle farmers are those who pay the bill for that“(f1)*

*„There are definetely more predators here since Etosha Heights is existing. I am here for 40 years now and last year I shot my first lion“(f5)*

For most of the livestock farmers, who are all born Namibian's its „the overseas people“ that bring the problems, because most of the game farms, especially the bigger ones are owned by people from Europe. For most of the livestock farmers it looks like they do not only fight against „the conservationists“ from the park like they always did, but also against „the conservationists from overseas“ from which they are surrounded and meanwhile outnumbered as well. This perception about their situation might be a reason for their persistence on

livestock farming as well, even that they know that game farming or a mixed business of livestock and game farming would be more profitable.

#### 4.2.1.3 Perceptions of livestock farmers about Etosha National Park

For most of the livestock farmers the relation to the park and its management is quite old and not very good. For decades the staff of the park did not make an effort to talk to the farmers or to build up a good relationship to its neighbours. In the time when the fence was build, which is more than 30 years ago, all farms at the border were pure livestock farms. At that time mostly karakul sheep farms, later on mainly cattle farms. For the park management in the early years, the park and their own responsibility ended at the fenceline. From the beginning a record was kept about lions shot on the farms behind the border, and even the case that these numbers were quite high in some years and easily had the potential to put a risk on the lion population nobody in the park really tried to solve these problems (e2). Over the years hundreds of lions where shot at the border and behind it. Over that long period of time the farmers lost every confidence. After the independence of Namibia from South Africa there was quite a fast change of the employees in the park, which caused further mistrust between the farmers and the employees in the park. Some perceptions about the park management are the following:

*„We worked quite good together before independence, but since that things go worse, because the people that are now working in the park are not interested in their work, they are just interested in getting their salaries, in Okaukejo<sup>2</sup> before independence there were 37 people doing the whole park, now there are 2,000 and nothing is going on... I think everything could work if there would be a better managemant, when there would be people that know what to do“ (f1)*

*„The management of the Etosha is not doing its job, they don't maintain their fences and we have the problems from that, there are hotspots in the fenceline where the lions go through for 40 years now“ (f5)*

*„I don't have any contact to the Etosha National Park, when I killed lions I have never reported that“ (f3)*

Another point why the relation between the park and the livestock farmers is so bad, is that it is not really clear who is responsible for the fence. As mentioned above, the southern fence of the Etosha National Park serves also as the veterinary fence (“red-line”) between the Foot-

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<sup>2</sup> Okaukejo is the main research and management camp within the Etosha National Park

and-Mouth-Disease zone in the north and the Foot-and-Mouth-Disease free zone further south. This means that the Veterinary Department of Namibia is also responsible for the maintenance of the fence. This is one of the reasons why the Ministry for Environment and Tourism (MET), which is responsible for the national parks of Namibia, is not allowing the farmers to maintain the fence themselves. A typical statement to this issue is the following:

*„I was thinking about bringing an electric fence to the Etosha border, but I am not allowed to do that, but unfortunately nobody else will do that“ (f1).*

Previous studies have shown (e4, not published) that most of the farmers at the fence of the Etosha National Park are willing to maintain the fence if they would be allowed and supported by the Ministry for Environment and Tourism (MET). It is not only the mistrust of the farmers to the park management, it is also the mistrust of the park management towards the farmers, which is reflected in the following statement:

*„There’s a solar pump behind my farm, about three kilometres inside the park. Last year during the dry season the pump doesn’t pump enough water for all the animals in the area, the first that suffer from that are the black rhinos, and then they come to my fence because they can smell the water at my waterpoints. I phoned the guys in the park and told them that there is a problem with the pump and that I could repair it, but they didn’t allow me to go there because they didn’t trust me“ (f1)*

#### **4.2.1.4 Attitudes of livestock farmers towards nature conservation and a buffer zone**

For livestock farmers, farming in an arid environment is always a fight against nature and it is quite clear for them who is the combatant. For livestock farmers it is obvious that livestock farming is incompatible with open fences, so with everything that has to do with a buffer zone. But on the other hand most of them realize that if there would be something like a buffer zone there would be no future for livestock farming in the area. This would mean for them that they would have to change their land use. Even that no one of them currently has plans to change the business, most of the livestock farmers are open minded to this idea if there would be financial support for this step. Some others are at least not averse to change partly to game, which is illustrated in the following statement:

*„I would like to change slowly, you cannot sell your cattle overnight, but my farm is already completely game-proof fenced, at the moment our income from game is maybe 5 percent, but I don’t think that we will change completely, we will have a little bit of*

*this and a little bit of that, maybe 15 percent game and 85 percent cattle and small stock. The hunting business also means a lot of work“ (f1)*

The biggest problem for a buffer zone is seen in the mentality of most of the farmers, which they describe as very difficult in finding compromises and agreements. This is probably due to the long history of surviving in this harsh environment.

Possible hunting rights for landowners in a buffer zone are seen as a big advantage:

*„I think the buffer zone idea is a good idea, but there are still a lot of things that have to be sorted out, but the idea is really good, I am quite convinced that it can work in a way like Etosha Heights is working, but it will be much more difficult if you have to deal with a lot of different farm owners, but if we all get hunting rights we can win by it“ (f4)*

The quite often given example of the development at the western border of the Kruger National Park in South Africa, which is seen very positive by most other people in the area, is seen from a different perspective by the livestock farmers. They also state that there has been a positive economic development, but they also argue that a lot of the previous land owners have lost their land and that now most of the land is in the hands of just a handful of overseas investors:

*„In South Africa they have the same thing in Kruger, they took the fence down and build a lot of lodges there, they are making a lot of money there, but a lot of farmers lost their land... it might work here, but it will be very difficult“ (f1)*

Another important thing that was pointed out by the livestock farmers was, and that differs from most of the other people that were sampled, that their decision pro or contra wildlife on their properties is mostly driven by money:

*„If we are allowed to hunt on lions and hyenas than yes, I think there is a lot of money in hunting on predators....I will be honest, I will do it for the money, I think Etosha is for heritage conservation and here it is for money“ (f3)*

Livestock farmers are quite open minded about the introduction of non-indigenous species, this might be due to the proposed profit of these species and to their missing knowledge about nature conservation, compared to most of the game farmers in the study area.

The communal conservancies in Damaraland<sup>3</sup> are seen as an example, especially the support they get from the government and from development organisations from abroad:

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<sup>3</sup> Region west of the Etosha National Park, mostly communal farmland, development of communal based natural resource management (CBNRM) in recent years

*„The conservancies in Damaraland are working very well, when it is working here the same way, I don't have a problem, but it is not enough just to open the fence, they must support us as well“ (f2)*

The livestock farmers attitudes can be summarized as negative in the current situation, because livestock farming is incompatible with open fences, but not negative under different circumstances For example when there would be help for shifting the business, if initial costs would be paid by someone else. The livestock farmer community is quite certain about the huge financial potential of the wildlife business in the area south of the border of the Etosha National Park.



## 4.2.2 Livestock and game farms

Only those farms that are operating for years with both livestock and game fall into this category, not the farms that are in a slow process from shifting the business from livestock to game farming. There are two farms within the study area that do mixed livestock and game farming, one with consumptive wildlife use as biltong and trophy hunting and one with mixed consumptive and non-consumptive wildlife use. Both farms have a wildlife camp and a camp for cattle. The farms are still in the same shape like when they were established almost 60 years ago. There is no small stock on both properties. Both farms are game-fenced and logically the stocking rates are much lower than on the pure livestock farms. The farms support the owners, and their employees (between three and four plus their families). Like on the livestock farms, the farmers suffer from unpredictable rainfall, the fluctuating world market prices and predators, but not as hard as the pure livestock farmers because their business is splitted and they do not only rely on livestock.

**f6 and f7 refers to the “livestock and game farmer” interviewees.** For details of the farms see App. 1.

### 4.2.2.1 Economic and socioeconomic situation of „livestock and game” farms

There are a lot of arguments for doing both game and livestock farming on the same property. Diversify the income is the best way to spread the risk of each source of income. If one business is declining it is easier to switch to the other and after a while to switch back. Nevertheless there are not many farms in the study area that are doing both businesses on the long term, most farmers still rely on just one business. One reason could be that doing both businesses means a lot of work. Both livestock farming and game farming are seasonal, hunting is mostly done in the winter month, while in livestock farming business there are several peaks throughout the year, when there is more work to do. The „livestock and game” farmers are in a difficult situation. On the one hand it is a big advantage for them to be so close to the border of the Etosha National Park, because they can use it for advertisement, which favours the wildlife business. On the other hand they have the same problems like the pure livestock farmers, namely predators that kill their cattle. This discrepancy becomes obvious in the following statements:

*„Yes it is an advantage to have the park so close by, a lot of hunters are going to the park after they were staying here“ (f7)*

*„The ENP is definitely a disadvantage for the cattle farming, but we have to arrange with that“ (f6)*

The main source of income out of the wildlife business on both farms is derived from hunting, either through biltong or through trophy hunting. Both farms are in different stages of a building phase and are not yet at their carrying capacity. Both are willing to change this business more to eco-tourism, because due to their small farm size the number of hunters per year is limited.

Both farmers describe themselves as conservationists by conviction and state that if they would not have to make money out of the farm, they would not shoot anything. They state that there is no fun in killing a lion or a cheetah and that they always try to avoid killing them. “Livestock and game” farmers are quite open minded regarding issues of opening the fences but also state that if they would take down the fence they would have to stop their livestock business, which would make them more vulnerable compared to their present situation.

The development of Namibia post independence is experienced in a positive way by both farmers, especially the case that there is still peace in Namibia and the positive effects the independence has on Namibia’s tourism market.

To face the predator problem from the park, one farmer built kind of his own buffer zone on his farm, as he is using the half of his farm that is closer to the Etosha fence just for wildlife, and the other half that is further away from the fence just for cattle. Based on his arguments this is a very effective way of minimizing the predator problem. The situation doing both livestock and game farming bring these farmers into conflicts with neighbours. One states that both of his neighbours, who are game farmers, talked to him about taking down the fences between the farms. Even the case that this would be a great advantage for viable wildlife populations and for the hunting business, he is not able to do that because of his livestock. The income on the „livestock and game” farms was expected to be on a higher level than those on the pure livestock farms. On both farms that is not the case, for different reasons. While the turnover is in the same range like on the livestock farms the net income is lower because both farms are in still in a building phase, and initial costs are high. On both farms the main income is still coming from the livestock farming. Nevertheless both owners hope that in the near future when the places are running on full capacity more money will be derived from wildlife as from livestock. The number of employees on the farms is almost the same like on the pure livestock farms. On each farm there are three people working and living with their families. That is about 2,200 hectares per place of employment. The monthly salary

of the employees is about N\$ 850 plus things like milk, meat and firewood. The employees on both farms are normally not working in the hunting or tourism business. Both farmers state that it is very difficult to get better skilled people in such a remote area of Namibia, which means that they have to do the tourism and hunting part on their own. The salaries of the employees are better than those on the pure livestock farms but lower than on the pure game farms. The standard of living for the farm employees is a bit higher than on the livestock farms but their overall situation in terms of employment rights is not much better. Most of the employees were born in the area and stay on the farms together with their families.

#### **4.2.2.2 The attitudes of „livestock and game” farms to wildlife**

Compared to livestock farmers, the attitudes of “livestock and game” farmers towards wildlife are quite positive. This is mainly due to the fact that they partly rely on wildlife as a source of income, so there is a reason to keep it and to keep the populations in a healthy condition. But also the fact that their livestock business is affected by predators is received in a different way. They avoid to shoot the predators as long as they are able to. And on the contrary to the statements of the livestock farmers they state that it is easily possible to chase a lion back into the park. While one farmer states that he did not even had lions on his farm: *„My biggest problem are the jackals, the caracals, the cheetahs and hyenas, with lions there are no problems at all, from 1981 till today there were no lions on my farm“* (f7), the other argues that as long as the predators stay in the wildlife camp it is okay, and otherwise he is just chasing them back and only shoot them when there is no other solution:

*„The cats that are on the northern side they can stay, that’s okay...We just chase the lions back, when the wind is good and they can smell us. Only when there is no other solution we have to shoot them, last year we had 16 lions, I shot only two of them“* (f6)

#### **4.2.2.3 Perceptions on „livestock and game” farms about the Etosha National Park**

Regarding the perceptions about the Etosha National Park and its management it is obvious that there are the same problems that the livestock farmers have with the park. The farmers of this category also complain that there is nobody in the park looking for good relations to the neighbours on the bordering farms:

*„There is no relation or contact. In the past there was some, but not now“* (f7)

*„There is no contact to anybody in the park, normally we repair the fence ourselves when there is something wrong...From time to time the animals from the ENP are*

*staying at my fence, looking for water, and the kudus they are going over there on a regular basis“ (f6)*

In contrast to the attitude of the livestock farmers they state that they knew before they bought the farm that the close proximity to the park will cause problems and that they know that they have to live with that and accept it as a neighbour. This is easier for them because they also derive income from the circumstance that a lot of hunters and tourists are coming to the area because the park is so close by.

*„I am living here, I have to accept Etosha as a neighbour, and I knew it before when I bought the farm, and the other farmers around me knew that as well, but some of the older farmers say they will do it exactly as their fathers did it...thats where the conflict comes from“ (f6)*

#### **4.2.2.4 Attitudes of „livestock and game“ farms towards nature conservation and a buffer zone**

The attitudes of „livestock and game“ farmers towards the implementation of a buffer zone on the private farmland south of the Etosha National Park are very positive. Although that means that they would have to change their business towards a pure wildlife business. But both of them are thinking that there is a better future in tourism and hunting as there is in livestock farming. Furthermore, as mentioned above, both describe themselves as conservationists by conviction. The positive attitude is reflected by the following statements:

*„Perhaps a buffer zone is a good idea for us, but I don't think that we will get quotas on elephants or rhinos, but if we will get quotas for all the other species it is maybe a good idea, that will also lift our prices and boost business, it is more or less hunting in Etosha then“ (f7)*

*„Normally it is a good idea to take the fence away, the animals would mix and everybody would get new genetic material for free, Ongava<sup>4</sup> opened the fence and they do good with it“ (f6)*

In terms of questions about indigenous and non-indigenous species the answers are different. While there are already some non-indigenous species on the farms, the farmers state that it would not be a problem for them to get rid of them and that they already felt a little bit guilty about that:

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<sup>4</sup> Ongava is a neighbouring block of farms at the fence of the Etosha National Park, outside the study area

*„There is blesbock, common impala and black wildebeest on my farm, I know it is not right and that there is a buffer of 40 kilometres around the park for common impala<sup>5</sup>, but I wouldn't have both on my farm, if there would happen something like a buffer zone I would get rid of them“ (f7).*

Both farmers do have some plans for expanding their tourism business in the future:

*„My neighbours, with those who I am working together, are building a luxury camp, so from next year on there will be more trophy hunters on my place....We also think about building a guest house here, but first we will see how the hunting is going on“ (f7)*

One of the farmers states that he is a little bit afraid that if a buffer zone will be implemented in the near future this will cause the same problems further south as the farms bordering the Etosha National Park do have now. He argues that some farmers will maintain the fence and others not and that this will cause problems within the farmer community:

*„I don't think it is a good idea to shift the fence now, we will just shift the problem with that, that would mean that our fence is the border. Maybe it is just to early, and if it will happen we need a lot of rules and regulations for it“ (f6)*

Both are also concerned that if there would be a buffer zone they would not be allowed to hunt in there, because the rules and regulations will be done by the Ministry of Environment and Tourism (MET):

*„I think it is good for the tourist business but I am not so sure about the hunting business“ (f6)*

Both farms are already deeply involved in the hunting and tourism business as they are both in a commercial conservancy where they share hunting rights and work together with other hunting farms. Their attitudes can be summarized as quite positive towards a buffer zone, although they know that this would bring an end to the livestock farming in the area. But both of them expect a lot of advantages in free ranging game and some sort of cooperative management of the area. They expect a huge potential for game farming in the study area.

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<sup>5</sup> The MET tries to avoid inbreeding between the indigenous black-faced impala (*Aepyceros melampus petersi*) and the common impala (*Aepyceros melampus melampus*), therefore a zone of 40 kilometres around the Etosha National Park was established where farming with common impala (*Aepyceros melampus melampus*) is forbidden. Despite that prohibition, some farms directly bordering the Etosha National Park are stocked with common impala (*Aepyceros melampus melampus*).

### 4.2.3 Game farms

The farms in this category either operate only with the use of wildlife or are in a process of shifting the business from livestock to game farming and will reach the point when there is no more livestock on the farm within the next two years. One game farm is owned by an overseas investor, one by a South African and one is the base of the Afri Leo Foundation, a non-profit organization which works on the conservation of lions in the study area and all over Namibia. The game farms are between 5,800 hectares and 10,000 hectares. All three farms are game-proof fenced, two farms have only indigenous species and one is stocked with some non-indigenous species as well. The wildlife on the farms is used consumptive or non-consumptive and there is a tourist lodge or a hunting camp on each farm. All three farms have to support its owners and their employees. The numbers of the employees fluctuate widely from two to fifteen, depending on the size of the tourism business. The main problem for these farms is the sensibility of the tourism business on the world economic situation and the political situation in Namibia. All game farmers state that the use of the farms is sustainable, in the case of consumptive wildlife use this is only possible when hunting is limited to male animals, with an emphasis on the quality of the trophy (length of horns etc.). This is because the specimens that are taken are usually older males who contribute little to breeding, and because hunting quotas are usually a fraction of natural population growth rates. While two game farmers state that sustainable consumptive wildlife use is possible on a single farm unit, the third farm denied that.

**f8 to f10 refers to the game farmer interviewees.** For details of the farms see App. 1

#### 4.2.3.1 Economic and socioeconomic situation of game farms

All sampled game farmers do have a scientific or a nature conservation background. Besides that, all of them are either born and grown up abroad or have spend several years outside Namibia. Most of them do have money from somewhere else or have at least enough money to invest in their farms without generating net income in the first years after they established the wildlife business or bought the farm. Because all game farms are in different stages of their business building phases there are no accurate numbers concerning turnover or net income. Based on literature (Tarboton, 2007) it can be expected that it will be far beyond the turnover of the livestock farms in the study area. The number of employees is very different depending on the fact if the wildlife use is done consumptive or non-consumptive. Non-

consumptive wildlife use in the study area is much more labour intensive than consumptive wildlife use. The number of employees varies between two on the smallest game farm (2,800 hectares per working place) and fifteen on the eco-lodge (613 hectares per place of employment). The payment of the employees on the game farms is much better than on the pure livestock or on the “livestock and game” farms. It varies between N\$ 800 and N\$ 1,100 plus tips. The overall standard of living is better as well, which can be seen in the quality of housing and the better access to education. The employees on tourist or hunting farms need to be better skilled than on livestock farms. Most of them were not born in the study area.

Attitudes of the game farmers, especially in terms of making a living out of the farm and losses due to predators must be seen in a different way as the attitudes of livestock farmers, because they are not that much dependent on their stock, in this case wildlife stock.

The reason to establish and to run a wildlife business was for all game farmers the chance to live on a farm or to conserve wildlife. From the beginning or after a while they noticed that living on a farm costs a lot of money and so they decided to earn money with the wildlife on their property. Today the feeling about what is more important, the conservation or the business is different. On the smallest of the sampled game farms, which is run with consumptive and non-consumptive use the focus is more on conservation:

*„We put the wildlife on because we wanted to have it, the tourism came later, because we recognised that all that costs a lot of money, the hunting business came pretty much alongside it“ (f9).*

The focus on the pure hunting farm is more on the business and the conservation is recognised as a tool for that,

*„You have to be more realistic, it is a business, we are not in the first place conservationists, and you can't turn back this area into a natural habitat, the conservation will always be there to support the business“ (f8).*

The third sampled farm is perceived by its owners as a pure nature reserve and the use of the wildlife by the tourist just as a tool to generate income. A reason for that might be as well that the foundation that is based on the farm is sponsored by European donors, who will not accept any sort of hunting on the property. All game farm owners have very positive prospects for the future, they experienced a steady growth of tourist and hunter numbers in the last years and are very hopeful that this process will go on in future. All of them are quite good connected within the farmer community and do already have a lot of plans for the future of

the area, which is corresponding with their plans to stay as long as possible in the area. The following statement is typical for their plans:

*„Our long time goal is to stay here as long as possible, and to have a lot of wildlife, we really enjoy what we are doing, we enjoy having people here and showing them around. For our business we hope things stay like they are, we think that the hunting market is still not limited“ (f9)*

All game farmers have a very critical eye on what is going on in the neighbouring Etosha National Park. They have seen what was going on with the management in the last years and since they are farm owners themselves they experience it as a big drawback for the park and for its neighbours that the park do nothing for the relationship with the neighbouring farms. Despite that the park management knows about all the game farms in the area which could be potential partners in nature conservation there is only contact on a irregular basis.

Contrary to the attitudes of the livestock farmers the game farmers state that the management of the park was not much better before independence:

*„It wasn't much better in former days in the park management, there were people that really enjoyed what they did, but not all of them did...there were really bad examples, and thats what the locals saw when they took over“ (f9)*

The overall situation in Namibia is been seen in a different way, while one game farmer states that things are going better since independence, the other states that life for most Namibians has become tougher since the end of the apartheid, these differences might be derived from different experiences in pre-apartheid Namibia/South West Africa and different experiences from other countries in Africa. Typical statements are:

*„I think things are going better for lots of people, there is a larger middle class now, and keep in mind that things are still working in Namibia“ (f9)*

*„For many black people it has become tougher, but there are much more tourists coming since independence and their numbers are still rising“ (f8)*

The situation of the remaining livestock farms in the area is seen in a bad light, all game farmers state that regarding all the disadvantages livestock farmers in the area are faced with, there is no future for livestock farming close to the fence of the Etosha National Park:

*„There is a diversity of interests and what people want here at the southern border. I don't think that there is a future for livestock farming here, it will be even harder for them in the future“ (f9)*



#### 4.2.3.2 The attitudes on game farms to wildlife

The attitudes towards wildlife are completely different compared to the pure livestock farms or the farms that partly rely on the production of livestock. Game farmers distinguish between wildlife they want to have on their property, normally those species that are bringing money and those species that are either valueless for their business or causing damage. Buying game species in Namibia, especially when you buy huge numbers to build viable populations costs a lot of money. So big losses due to predators are experienced in a comparable way as if a livestock farmer is losing his cattle. While on the farm where there is only non-consumptive use and where the owners have not bought in game species for long, the owners have a very positive attitude about predation. That is different on the two other farms. Both farms are still in a building phase, which means that their wildlife populations are not yet at their upper limits and that the farms are not fully stocked. Both state, while they are not fully stocked they will destroy all bigger predators on their properties, regardless of their conservation status:

*„Our loss due to cheetah is big as well. While we are building up antelope numbers, cheetahs get shot“ (f8)*

*„While rebuilding wildlife numbers you can't have predators in between, our neighbour is building, we are building...“ (f9)*

But on the other hand both farmers say that if they have reached a point where there is enough game on their properties they will let the predators stay on their farms:

*„When there is enough game on the farm, it is maybe no longer necessary to shoot lions and cheetahs, when things settle down lions will control cheetah numbers, maybe we will already reach that point within the next three years“ (f8)*

Both state that it would be much easier for them to let the predators stay on their properties if there would be an economic value in predators, for example if there would be quotas on lions which would compensate the losses they cause in other species numbers:

*„The best would be if you give the lions an economic value, at the moment the only thing I can do is to shoot the lion and then it is gone, I have been trying to talk to conservation people and said to them “give us a quota for lions along the fence, allow the farmers to get trophy hunters to shoot the lions”, it should be a win win situation for all, I think the lion population in Etosha is stable enough for that“ (f8)*

On the other hand both know that managing predator populations is not possible on their single farm units alone and that for things like that an overall management plan is needed. That is also regarded by the third game farmer, who states that:

*„I would always say it is the best if it is controlled by itself, but that is only working in a huge area“ (f10).*

All game farmers agree that they need an overall management plan to solve the predator problem.

#### **4.2.3.3 Perceptions of game farmers about the Etosha National Park**

On the one hand all game farmers state that they have a very good relation to the management of the park. On the other hand and as with all other landowners in the study area the perception about the Etosha National Park and its management is very bad. While all game farmers recognise the considerable importance of the Etosha National Park for Namibia and the rest of Africa, they are worried about the present situation of the management of the ecosystem and the maintenance of the infrastructure, which is reflected in the following statements:

*„Most of the management is bad, here they have done nothing, they have never done anything, I don't know how many people are working in the park, but there are a lot of people just hanging around in the camps. But the park itself is excellent and we like Etosha, but you need people that understand the park better, the employees in the park didn't really understand why they are there“ (f9)*

*„Yes, we like the park, but there are worries that the facilities are not really kept properly, the service and the management were much better before independence, but it is very good for marketing“ (f8)*

All game farmers recognise the huge potential the park could hold for their business, in terms of advertisement and species composition. One farmer states that in the competition with other game farms in Namibia he can offer a completely different atmosphere in which the hunter has the feeling he is hunting within the Etosha National Park and in competition with the predators. This farmer sees a huge potential in the location of his farm. Especially the fact that the farms have due to their close proximity to the park the potential to host the big predators, namely lions and spotted hyenas is seen as a big advantage:

*„The park is a big advantage for game farming, and it will be even more in the future when we will have a resident population of lion and hyena on the farm“ (f8).*

The problem that the livestock farmers have with the establishment of game farms in their surroundings is already recognised by the game farmers:

*„For cattle farming it is definitely a disadvantage and that was the reason to shift the business, it was a practical decision, but now the problems are shifting and other people get our problems“ (f8).*

#### **4.2.3.4 Attitudes of game farmers towards nature conservation and a buffer zone**

While the attitudes of the sampled game farmers towards nature conservation are very positive, the attitudes concerning a buffer zone vary. The reasons for different attitudes are complex but are mainly due to different aims of the businesses and derived from the individual perceptions. The worst attitude towards a buffer zone comes from the farmer who is only operating with consumptive use of wildlife and has got a lot of non-indigenous species on his farm. His main sorrows are that if there is no fence in between him and the Etosha National Park, that he will have to cope with a loss of independence and that he would probably no longer be allowed to do hunting on his property. Another worry is that the game on his farm will start migrating and due to that it will be impossible for him to guarantee the hunter's quotas, his attitude is reflected in the following statements:

*„Conservation is now thinking about lifting the fence, but I think the park will then start dictating us what to do and as long as there is a fence we can't lose our independence. In bad years you may lose all your game to another farmer or the park and in good years there will be thousands of springbock on your farm and eat all your grass“ (f9)*

The attitudes of the two other sampled game farmers are much more positive regarding questions about a buffer zone. They recognised the huge potential of a buffer zone for the tourism business. Both started independent from each other initiatives to implement some sort of a buffer zone, both failed with these initiatives but still have plans for that. Their attitudes towards the idea of opening the fences and of free roaming animals are very positive:

*„Some years ago I was trying to establish a conservancy that is going along the southern boundary, but at that time it was not possible“ (f9)*

*„A buffer zone was the plan when we started the Etosha Kaoko Conservancy<sup>6</sup>, but in 2004 we and our proposed partner as well were not able to buy anymore farms and*

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<sup>6</sup> Etosha Kaoko Conservancy: The conservancy in which the farms in the western part of the study area are organised

*then the government bought the crucial farm in between and then our partner did the step back and then it was over for now“ (f10)*

But at the same time both farmers state that there is no chance of implementing a buffer zone within the near future, especially as long as there are livestock farms in between the game farms. Another drawback they mention is the fact that there is no initiative from the park management to establish a buffer zone on private farmland adjoining the Etosha National Park. The reason therefore is maybe not the will or a lack of interest but missing capacities of the management for conservation initiatives behind the immediate park borders of the Etosha National Park. As with the attitudes about a buffer zone, the attitudes about non-indigenous species are also different, which is important to mention because a positive attitude towards opening the fences within the Etosha National Park Management is strongly dependent on the presence or absence of non-indigenous species on the farms (e2). The different attitudes about non-indigenous species are reflected in the following statements:

*„Exotic species are an individual choice, for the most part we are against it, we have not invested any money in exotic species. When you start taking fences down you need agreements with your neighbours, which animals you want to have and which not, I am not sure if we will ever do it. So far we are fine with our situation“ (f9)*

*„The people that say „no exotic species“, they eat carrots and tomatoes, I think we should be more realistic about that, it is a business, it is not a natural habitat since people settle in the area and furthermore it is fenced, you can't turn it back into a natural habitat...But it have to be species that can cope with the environment, we think about bringing in Red Lechwe<sup>7</sup>, the wider a species habitat, the lower is the risk of extinction“ (f8).*

All game farmers do have some plans for further development of their businesses, they plan to establish more accommodation units for hunters and tourists or campsites.

One game farmer states that his personal dream is that the fence between his farm and the neighbouring game farm comes down in the near future;

*„The long time dream is that the fences between the farms are coming down, but not until everybody has got lots and lots of animals, I wouldn't be surprised when the fence between us and our neighbour is coming down in a bit of time“ (f9)*

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<sup>7</sup> Red Lechwe (*Kobus leche*) is indigenous in the north-east of Namibia, about 500 kilometres afar from the study area

His farm and the farm of his neighbour are both part of a commercial conservancy, where they are already work together in terms of hunting rights, „The Etosha Conservancy<sup>8</sup> is a commercial conservancy, it s mainly for the enhancement of game and the maintenance of cattle farming“ (f9) and he also suggests that these conservancies can be a first step in establishing a buffer zone at the south-western border of the Etosha National Park: „I think a buffer zone is a good idea, hopefully we can work together“ (f9).

But he also argues that the Etosha National Park management dot not have the capacities for the management of the buffer zone, which must than be organised from private side:

*„I would actually separate the management from the park from that for the buffer zone and the farmers should be allowed to do consumptive and non consumptive use, and it will not work without a fence in the south, here in the south will always be a border“ (f9)*

And while other farmers are worried about migrations, and due to that the unpredictability of game numbers, f9 comments that there were no migrations in the past so it is improbably that the game will start migrating to the north once the fence is down, but that the old migrations to the west of the present national park might start again when current plans of lifting the western fence are put in place:

*„They talk about taking down the western fence, I think that’s a good idea, that’s the direction of the migrations, but I think if we will take the fence down here in the south we will not experience big migrations here“ (f9)*

As mentioned above, not all game farmers do have so positive attitudes about a buffer zone, one states:

*„Conservation is thinking about taking away the fence, but that will only solve their problem, not the farmer’s problem, other people will get our problems“ (f8)*

He asserted that he can not really see advantages in being part of a buffer zone, which reflects the following statement:

*„A smaller area is much easier to manage, with a fence you can’t loose your independence, it just gets too complicated and you cannot always trust people“ (f8)*

Despite his statement that smaller areas are easier to manage he also recognises that:

*„When you stop migrations it is bad for the genepool but you can always bring in new material, there is a danger but it is manageable“ (f8)*

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<sup>8</sup> Etosha Conservancy: The conservancy in which most farms in the eastern part of the study area are organised

The other two interviewees state that some or the other time every enclosed area come to a point where these problems are no longer manageable.

All game farmers describe themselves as some sort of conservationists and that their heart is in game farming or at least in living on a farm:

*„We are doing conservation because it is by heart and for the money, it is half and half, we put game on because we wanted to have it, the tourism came later because we recognised that all that will cost a lot of money“ (f9)*

Even the fact of the presence of predators on the farms is seen partly in a positive light:

*„Despite the fact that we kill the lions and the cheetahs, we experience it as a privilege to have them on the farm“ (f8)*

The game farmers recognise it as a very important point for the existence of the livestock farming in the area that the veterinary fence is running along the border of the Etosha National Park and one of them states that if this one would fall, a buffer zone would no longer be unrealistic:

*“The cattle farming in the area totally depends on the veterinary fence, when that one is coming down it is over for cattle farming in the area and that would be the start for a buffer zone like in Kruger“ (f10)*

The wildlife farmers attitudes are difficult to summarize, for two of them a buffer zone would make a dream come true while the attitudes of the third game farmer are mostly negative. As one of them stated, “it all depends on the way you want to do it” and if money or conservation is the central aim. Despite individual doubts all of them recognise the huge potential for consumptive and non-consumptive wildlife use at the border of the Etosha National Park.

#### 4.2.4 Blocks of farms

There are two blocks of farms within the study area. Both are owned by European investors. One is made of out of five, the other one is made out of eight farms. The farms belonging to these blocks were all bought after independence, after the farms have been used for livestock farming for more than 50 years. The smaller block operates with livestock farming as the main business (stocking rate of 24 hectares per cow) and consumptive use of wildlife as a second



Fig. 13: Tourism development can bring substantial benefits to both people and wildlife (T. G.)

business. The bigger one is operating only with consumptive and non-consumptive game farming. Both properties are game-proof fenced, partly with electrical fences. Both investors do have managers on their properties, tourism lodges and hunting camps. The number of employees is higher than on the other farms, with 30 employees on the one block and 29 employees on the other. Both interviews were done with the owners or managers of the companies, furthermore in the case of Etosha Heights Game Safaris (the bigger block of farms) with people that are running smaller businesses on the property. Etosha Heights is the core of the study area of the Etosha Buffer Zone Project.

**f11 and f12 refers to the interviewees on the cooperations.** For details of the farms see App. 1

##### 4.2.4.1 Economic and socioeconomic situation of blocks of farms

Both owners have a financial background which is not comparable to all other landowners in the study area. For both it is not their main business and they are by far not financially dependent on their farms. Nevertheless both plan to have a financial profit out of their properties within the next years. While both businesses are grouped in the same category because of their sheer size, the land use is different. Whereas the bigger block (eight farms) is operating with mainly consumptive but also non-consumptive use of wildlife and stopped livestock farming completely, the smaller block (five farms) is operating with livestock

farming and the consumptive use of its wildlife resources. All issues concerning nature conservation, problems with predators and a buffer zone are therefore received in a different way. As mentioned above, the financial background is not comparable to the other farms in the study area. Both businesses are currently in a building phase and no data was available regarding the financial turnover or the net income of both businesses. The number of employees on both properties is comparably high, the number for the smaller block is 30 on 29,000 hectares (966 hectares per place of employment), while the bigger block is employing altogether 29 people on 50,000 hectares (1,724 hectares per place of employment). The payment depends on the job position and varies from N\$ 838.5 to N\$ 1,400 in general, while the chef of the tourist lodge gets up to N\$ 4,000. The standard of living for the employees is comparable to the game farms but by far better than on livestock farms in the study area. Employees in the tourist or hunting business need to be better skilled than employees on livestock farms. Most of them were born and got their education somewhere else in Namibia. As mentioned above, both places are not running on full capacity, and both owners state that there will be more people hired within the next years.

On the smaller block the development of Namibia in the post independence era is generally seen in a positive light, that is an important issue for further investment in an less positive economic atmosphere in the rest of Southern Africa:

*„I would say that the development in Namibia was positive in the last years, there wasn't a big change for us since that, what is definitely worse since that is the education and the medical situation“ (f12).*

No one working on the blocks of farms is worried about the future of the business. Regarding issues of expanding on further farms, the management of the blocks maintains a low profile, but is also saying that there are already farms further south that are owned by them which do have the potential to be part of their business in future.

*„At this stage there is no plan to expand anymore, but if opportunities come up we will have a look at that, then we will consider to expand, we already own the farm Kadraii<sup>9</sup>....I think the opportunity to make other places part of our block will probably come in future, they will also consider that and I can't see a problem to work together“ (f11).*

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<sup>9</sup> Kaldraii: Farm south of the study area



While both blocks are now existing for a few years, their legal status is not yet really clear. In the past it was not possible for them to apply as private conservancies because they lack the minimum size of 100,000 hectares. One of them states that:

*„We tried to apply as a game breeding area, the plan was to take our 50,000 hectares, the 10,000 hectares of our neighbour and the 5,000 hectares of his neighbour, but that's not of high priority for us, but something for the future“ (f11).*

This step can be seen as another impulse in joining farm units at the fence of the Etosha National Park. Nevertheless all interviewees in this category state that there are a lot of concerns regarding a buffer zone, which are for example the unsolved problem of the “red line” and the movement of the game:

*„In the long term future there is a chance for a buffer zone, but in the immediate future it will be difficult, one reason for that is the red line and if you take the fence down you will put the third line of farms in a disadvantage. And the game is moving after rain, so in bad years you may loose all your game and in good years there will be loads of game on your ground“ (f11)*

*„I think that the fence will fall is very impossible at the moment, maybe in 40 or 50 years, but not as long as the EU is importing the meat, it is not only the Etosha fence, it is also the red line, that makes it even more complicated, personally I dont see a chance that the fence will be dropped in the near future“ (f12)*

It is quite unusual in nowadays Namibia to do the “step back” from game farming to livestock farming ( as it was done on the smaller block of farms) because the trend is going the other way and it is said that game farming is much more profitable than classic livestock farming, but all these calculations are based on single farm units and not on a unit of 29,000 hectares. And despite the fact that there are no up to date numbers about the success of the business it looks like the business is doing well, despite its close proximity to the Etosha National Park.

*„Our business model is working very good, on the commercial side it is definitely the best, I think we make the most profit out of a hectare“ (f12)*

Asked about future plans and possible agreements with other game farms in the study area it becomes clear that there might be good relations but also huge problems that are seen by the managers regarding the value of infrastructure and what is more important - game stock.

*„We were actually looking at working together with the neighbours when we started Etosha Heights Game Safaris, but what makes it difficult but not overcomeable, that everybody put money and game in it, and that's difficult to value now“ (f11).*

#### 4.2.4.2 The attitudes on blocks of farms to wildlife

Like with all other landowners, the main issue regarding wildlife are predators, especially lions. While predators are seen as a big disadvantage on the property with mixed livestock and wildlife use, the attitudes on the pure wildlife area are much more positive. Lions and other predators are seen as a very good tool for advertisement and as with their presence in the area creating a different atmosphere especially for hunters, compared with other private wildlife areas in Namibia. Lions and other predators are also seen as a tool for population control:

*„We allow predators here, and normally the hunters take about five percent of the populations and then we hope that the predators will also take between five percent and ten percent, that will also help to control the populations, and in future the predators will also be controlled“ (f11)*

Both blocks of farms do have the financial background to maintain a good working fence and both see the fence as their responsibility, which can be seen in the following statements:

*„We see the fence as our responsibility, now that we leave lions on our property“ (f11)*

*„We try to keep the fence in a good condition, we do have nine kilometres of electric fence“ (f12).*

As mentioned above, lions are seen as a problem for the livestock farming on the mixed use property but not as much as on smaller livestock farms, which means that there is loss but the impact of predators is not endangering the business itself:

*„Our main problem with the park are the lions and hyenas, there are big losses, but I can't give exact numbers, but on the other hand the losses are not that big that we can't make a profit here with cattle. I think there are more lions in the park than the official figures are“ (f12)*

Besides the lion problem, the hyena problem is also seen as minimizing the profit of livestock farming in the area. The manager of one block of farms states that due to their nature it is much more difficult to control hyenas. On the other hand there is no law that protects the hyenas so that it is no problem to get rid of them and to sell the hunting rights on them.

*„We don't have numbers about the hyenas but we lose most of the cattle due to hyenas, I don't know if they are settled here, it could be that they are moving inside and outside the park, the good thing about them is that I can hunt on them as on every other animal“ (f12)*

#### 4.2.4.3 Perceptions of blocks of farms about the Etosha National Park

Both interviewed managers have worked within the Etosha National Park or with the management of the park within the last years, so it is expected that their knowledge about the structure within the management and their relations to the management are very good, which is proved in the following statements:

*„The relation to the Etosha Ecological Institute is very good, we get help from them and they get help from us, we have a very good relation to the rhino coordinator“ (f11)*

*„Our contact to Otjivasondo is very good, we work together with them quite good, the relation to Okaukejo<sup>10</sup> is also good, the relation is now better than it was before independence“ (f12)*

The owners of the bigger block of farms accept the Etosha National Park as their neighbour and also recognise that they have to live with all the advantages and disadvantages that it can bring:

*„Right from the beginning we didn't saw it as a conflict, we saw it as natural, that neighbour is part of our package here and we have to live with it“ (f11).*

Especially the fact that all Namibian animals can be found on their property is seen as a big advantage for advertisement and as a reason for guests to come there:

*„It is a big advantage, it is the opportunity to have all namibian animals on our property, if you go further south from here, the view of the farmers there is that their biggest enemy are the predators, but what we see is that we create a different atmosphere, we have to hunt together with the predator, they are on the same land, for sure we are also loosing money by that... so if you think financially about it, it is probably an enemy of a commercial farm, but we want to see it exactly as a selling point, you come here and you have to hunt with it. We are hoping to do the right thing by bringing the predators in and let them live with us and at the end we will maintain their numbers as well and also financially benefit from that“ (f 11)*

As with the landowners of other businesses, the efforts of the Etosha National Park Management regarding the relations to the neighbours is seen in a bad light by the managers of the blocks of farms, they state that there will be no long-term future for the park if they are

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<sup>10</sup> Otjivasondu and Okaukejo are research and mannagement stations of the MET within the Etosha National Park

not upgrading their public relation management. But in general the attitudes towards the management of the Etosha National Park are quite good:

*„I think the Etosha management was better before independence, but it was isolated from the world, this is maybe not the best for the ecosystem but it is good for Namibia, I think there is only a long time future for the park when they work together with their neighbours“ (f12).*

#### **4.2.4.4 Attitudes of blocks of farms towards nature conservation and a buffer zone**

Naturally the attitudes towards a buffer zone are different on both properties, just because the sort of land use technique is different. Commercial livestock farming is not compatible with being part of a buffer zone, while the owners of the block of farms that is only doing consumptive and non-consumptive wildlife use expect some advantages a buffer zone can bring. They already see themselves as sort of a buffer zone between the national park and the commercial livestock farming area:

*„We feel as sort of a buffer zone, because we allow predators here and other farmers don't, so we realize that there is a conflict“ (f11).*

As can be seen in this statement, they do not really feel comfortable with this situation. But they also state that:

*„Maybe in the long term future we are going to take down the fence, but in the immediately future that will be difficult. In the long term I also see a benefit from that“ (f11)*

As with the game farmers both managers of the blocks see hunting rights on predators as a solution for many problems along the fence and maybe as a step that can “break the ice” between farmers and the authorities in the Etosha National Park:

*„If there would be a market for lions the whole situation here at the fence would change“ (f12).*

Other ideas regarding the chances of a buffer zone are hunting rights within the periphery of the park and an own gate to the park at the south-western border:

*„I think hunting rights within the park will be difficult, but that would help us a lot, and an own gate would be a big benefit for us. The other problem I see is Etosha itself, they must be certain that they got enough income from that as well“ (f11).*

Hunting rights were also part of older buffer zone plans along the fence:

*„When we had the idea for that we thought that it might work with the conservancy, our plan was to build a fence behind us and offer the state that they don't have to maintain it anymore. There was the plan to do hunting and tourism within the buffer zone too, but there must be the possibility to hunt in the park as well, this would be very good for the marketing when the hunters could hunt on the parks animals as well“ (f12)*

Asked where the initiative for a buffer zone in the study area must come from, both state, that this will only work if the initiative will come from private side, because the park management did not have the capacities for that. But both are quite certain that something like a buffer zone will come in future, which is proved by the following statement:

*“The bigger the problems between livestock farmers and the park management are, the more sense does it make to declare a buffer zone, and when it will happen, than maybe like in the Kruger Park where all fences are gone between the park and the private land“ (f11).*

Regarding the question why they are doing conservation or why they are working in the conservation business both state that it is as much for conservation as it is for money, both the necessity of making money to finance their projects and their way of living.

*„I think it is 50/50, I am doing by heart but also because I have to live from it, otherwise there is no future for it, when we had our buffer zone plans we were sure that there is more money in tourism and hunting than there is in cattle farming“ (f12)*

Both managers state that it is much easier, if maybe only possible, to practice a sustainable way of hunting and practice a truly way of ethical hunting on bigger properties. They criticise the owners of smaller properties on which it is not possible to make financial gain and at the same time run the place in a sustainable way. They suggest that running these places is only possible when you buy in additional animals on a regular basis. Both see the future in bigger properties or cooperations:

*„We try to hold it sustainable, if you only have a small place and you have to make a living out of it you probably overutilize that place...and we want to use the wildlife in a scientific way, we are not hunting a lot, we are hunting very limited, and we are doing game counts every second year“ (f12)*

In terms of issues about non-indigenous species the attitude of this category of landowners is quite clear. When creating or conserving a wildlife habitat there is no room for non-indigenous species. Despite this statements, it must be mentioned that there is already

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waterbuck (*Kobus ellipsiprymnus*) and common impala (*Aepyceros melampus melampus*) on one property and there is evidence of inbreeding of common impala (*Aepyceros melampus melampus*) and black-faced impala (*Aepyceros melampus petersi*) on the other property, both state that they are not feeling good with this situation.

As with the land use, the overall attitudes towards a buffer zone are different and difficult to summarize. For the smaller property a buffer zone would bring an end to their core business and therefore attitudes towards a buffer zone are critically. Nevertheless the interviewees in this category state that under ecological prospects a buffer zone would be a good idea and that there is huge economic potential for that in the study area. The interviewee on the bigger property was more positive towards a buffer zone, even in the current situation, but also states that it will be a long way until its establishment. A good impression of the huge economic potential of game farming at the border of the Etosha National Park can be received on this property.

## 5 Best practice examples

When discussing possibilities for a buffer zone on the private farmland at the south-western border of the Etosha National Park it should be asked if there are examples from other protected areas in Africa where comparable situations can be found? Indeed there are, and two of them will be discussed in this chapter.

The most obvious example is the development at the western border of the Kruger National Park (South Africa) where private farms are now part of the Greater Kruger Ecosystem Complex. The western border of the Kruger National Park differs from the southern border of the Etosha National Park in the fact that the surroundings are much more developed and urban centres are easier to reach. Hence the area is much better appropriate for tourism development, compared to the more remote border of the Etosha National Park. Another example from the Selous Game Reserve in Tanzania shows that the development of buffer zones is also possible in very remote areas, 93 percent of the Selous Game Reserve's retention income is derived through trophy hunting (Siege, 2004).

At first this chapter will concentrate on the situation at the Kruger National Park, because previous land use and present land ownership are comparable to the situation at the Etosha National Park. After that, the land use option of buffer zones through trophy hunting will be discussed with an emphasis on the Selous Game Reserve.

The Kruger National Park is the largest protected area in South Africa. It covers an area of 18,989 square kilometres (1,898,900 hectares), which is comparable to the size of the Etosha National Park. But due to higher rainfall and much more natural occurring surface water, the carrying capacity is higher and offers better and easier wildlife viewing opportunities. Therefore the Kruger National Park offers much more tourism facilities and the average revenue is far beyond that the one of the Etosha National Park. While it is bordered in the east and in the north by Mozambique and Zimbabwe, it is enclosed in the west and in the south by either communal or private farmland. The Kruger National Park was already founded at the turn from the 19<sup>th</sup> to the 20<sup>th</sup> century. Afterwards it experienced several minor and major changes in size which left the park with a legacy of borders that are ecologically unsound and caused population crashes in several antelope species. The biggest portion was expropriated and returned to the use of mankind in 1923. This land was simply fenced out of the park,

efforts were made to farm cattle on much of it. In the 1960's a game-proof fence was erected on the western boundary of the Kruger National Park. Not only were the blue wildebeest (*Connochaetes taurinus*) and Burchell's zebra (*Equus quagga burchellii*) migrations disrupted, the fences precipitated a collapse in both species' population numbers by fragmentation of their habitats. The unity of the ecosystem had been severed. Overgrazing by cattle and unnatural fire frequencies caused by man's intervention created successive vegetation changes, rendering habitats now unsuitable for a number of antelope species. The proliferation of artificial waterpoints has further modified the landscape.

Like in Namibia, due to decades of apartheid policy the arable land is distributed very unequally. Most of the private farmland is still in the hands of few white South African's while the black majority shares the rest of the land.

Some of the land excised in 1923 proved unsuitable for cattle farming or agriculture, intensive or extensive. By the 1970's some very large properties had been turned back to nature with the establishment of a new breed of private luxury game reserves. Whilst less destructive to the ecosystem than farming cattle, these areas were nevertheless fenced off from the Kruger ecosystem. In 1993 the western boundary fence of the Kruger National Park was removed from the areas adjoining the private nature reserves. The fence removal helped to restore the ecological integrity of the system. The vegetation and the animals that feed on it have had some opportunity to return to their pre-expropriation numbers and organisation. To the west of the park, further reserve consolidations have helped this trend. Continuing expansion is helping the restoration of biodiversity. The veterinary fence "red line" now effectively delimiting the Greater Kruger has moved seventy kilometres west in places. Thus more than 400,000 hectares of privately owned protected areas have been re-incorporated to form the Greater Kruger National Park ecosystem (Fig. 14).

The question is: "How was this development possible?" In an agreement that was groundbreaking on an international scale, the Kruger National Park and adjacent private reserves undertook to remove the park's western fences and those within the private reserves to yield a single, homogeneously managed area. This foresight has enhanced the region's biodiversity and the opportunities for eco-tourism. Now the area took a further step in re-establishing the integrity of the larger ecosystem in breaking down the fences to the east and



in the north and expand the reserve into Mozambique and Zimbabwe. On the western side the next step towards the establishment of a fully self sustainable ecosystem and the re-opening of old migration corridors is the establishment of the “Kruger to Canyons Biosphere Reserve” which was launched in 2001. The private reserves at the western border of the Kruger National Park, which were livestock farms for decades before will be part of this Biosphere Reserve ([www.kruger2canyons.com](http://www.kruger2canyons.com)).

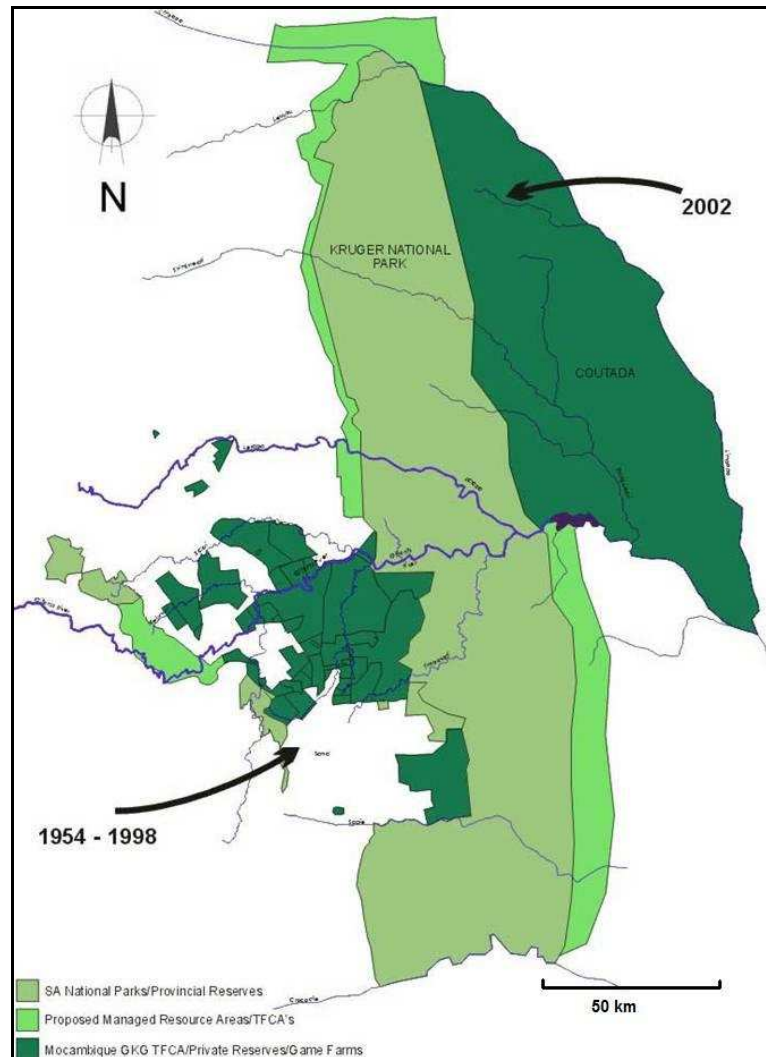


Fig. 14: The Kuger Natonal Park (South Africa) and its surroundings ([www.kruger2canyons.com](http://www.kruger2canyons.com))

The private reserves at Kruger’s western border are organised in different units. One of these, and also one of the oldest are the “Associated private nature reserves adjoining the Kruger National Park” (APNR). The APNR is made out of four private reserves, which are themselves made out of several previously livestock farms. The fences between the farms within each reserve were removed when they were formed and those between the reserves as

the APNR was consolidated. The total size of the APNR is 185,000 hectares. Limited commercial trophy hunting is conducted by all reserves within the APNR, while the main source of income is eco-tourism. Hunting is mainly done in those parts of the APNR which are not suitable for tourism. Prior to the removal of the western boundary fence of the Kruger National Park, “South African National Parks” had no objection to the trophy hunting in the APNR and agreed that it would continue once the fence was removed. The APNR management plan is based upon the Kruger National Park’s master plan. It was further arranged that the ecological management of the reserves remain the responsibility of the owners and/or managers of the reserves. The management of the APNR states that the relationship to the Kruger National Park is excellent. To guarantee the sustainability of consumptive wildlife use adjoining to the Kruger National Park, the APNR implemented yearly game counts. The APNR further states that despite the opening of the fences the ungulate biomass per square kilometre within the APNR is higher than in the Kruger National Park. Same applies to the lion density and that species that are not hunted are declining. Further research has shown that there is no evidence that trophy hunting in the APNR has any effect on the density of species or that it has a negative impact on the genepool. Other research shows that old migration routes did not re-establish itself, this might be due to severe habitat change (bush encroachment) in the livestock farming period. Similar to the situation of the “private game reserves” adjoining the Etosha National Park all game farms at the border of the Kruger National Park were already stocked with game when the fence was dropped ([www.environment.gov.za](http://www.environment.gov.za)) .

While the primary wildlife use in the reserves adjoining the Kruger National Park is non-consumptive wildlife use, which as mentioned before, can’t be the primary development option for the study area at the south-western border of the Etosha National Park, one can find another example in Tanzania. The Selous Game Reserve has always been too remote to compete with Tanzania’s primary wildlife attractions like the Serengeti National Park or the Ngorongoro Conservation Area, which offer much easier wildlife viewing opportunities and are also easier to reach. With an area of 48,000 square kilometre (4,800,000 hectares), representing 6 percent of Tanzania's land surface, the Selous Game Reserve is the largest protected area in Africa (Fig. 15). It encompasses a wide variety of wildlife habitats, including open grasslands, acacia and miombo woodlands and riverine forests. The reserve contains some of the largest and most important populations of elephants (*Loxodonta africana*),

buffalos (*Syncerus caffer*) and african wild dogs (*Lycaon pictus*) in Africa. About 60 percent of Tanzania's elephants (*Loxodonta africana*) are found there. The Selous Game Reserve was faced with severe problems of poaching and overutilization of its resources in the past. During the 1980's the rapid increase in poaching for ivory and rhino horn led to a catastrophic decline in Tanzania's elephant and rhino populations ([www.wildlife-programme.gtz.de](http://www.wildlife-programme.gtz.de)).

To develop the adjoining regions and to protect the wildlife within the park a solution was needed. Due to its unaccessibility for eco-tourists the authorities decided that buffer zones with certain hunting rights were the best option. Contrary to most other reserves hunting is also permitted in concessions within the reserve. In the case of the Selous Game Reserve trophy hunting is the most economically viable form of wildlife utilization. Without the income generated from tourist hunting the Selous Game Reserve would cease to be viable. All species can be hunted, inclusive elephant (*Loxodonta africana*) and lion (*Panthera leo*), the revenue of these species is very high (up to US\$ 2,000 per lion trophy) but the numbers are limited. Only half of the lion (*Panthera leo*) quota was used since 1996 and research suggest that the impact on the overall population size due to hunting is negligible. Hunting quotas are restricted to males older than six years (Baldus and Cauldwell, 2004). Some 93 percent of the revenue of the Selous Game Reserve is derived from trophy hunting, the other from wildlife viewing ([www.wildlife-programme.gtz.de](http://www.wildlife-programme.gtz.de)). Trophy hunting within and outside the reserve created numerous development opportunities and generated income for people that would otherwise be forced to poach or to live in relative poverty through subsistence agriculture in a very remote and not very ecological favoured area of Tanzania. To achieve its management goals the management of the Selous Game Reserve cooperates with non-governmental organisations, such as the Frankfurt Zoological Society, the African Wildlife Foundation, the "Gesellschaft fuer technische Zusammenarbeit" (GTZ) and the World Wide Fund for Nature (WWF). The activity of non-governmental organizations both within the reserve's management and the buffer zone could be an example for the land adjoining the Etosha National Park as well.

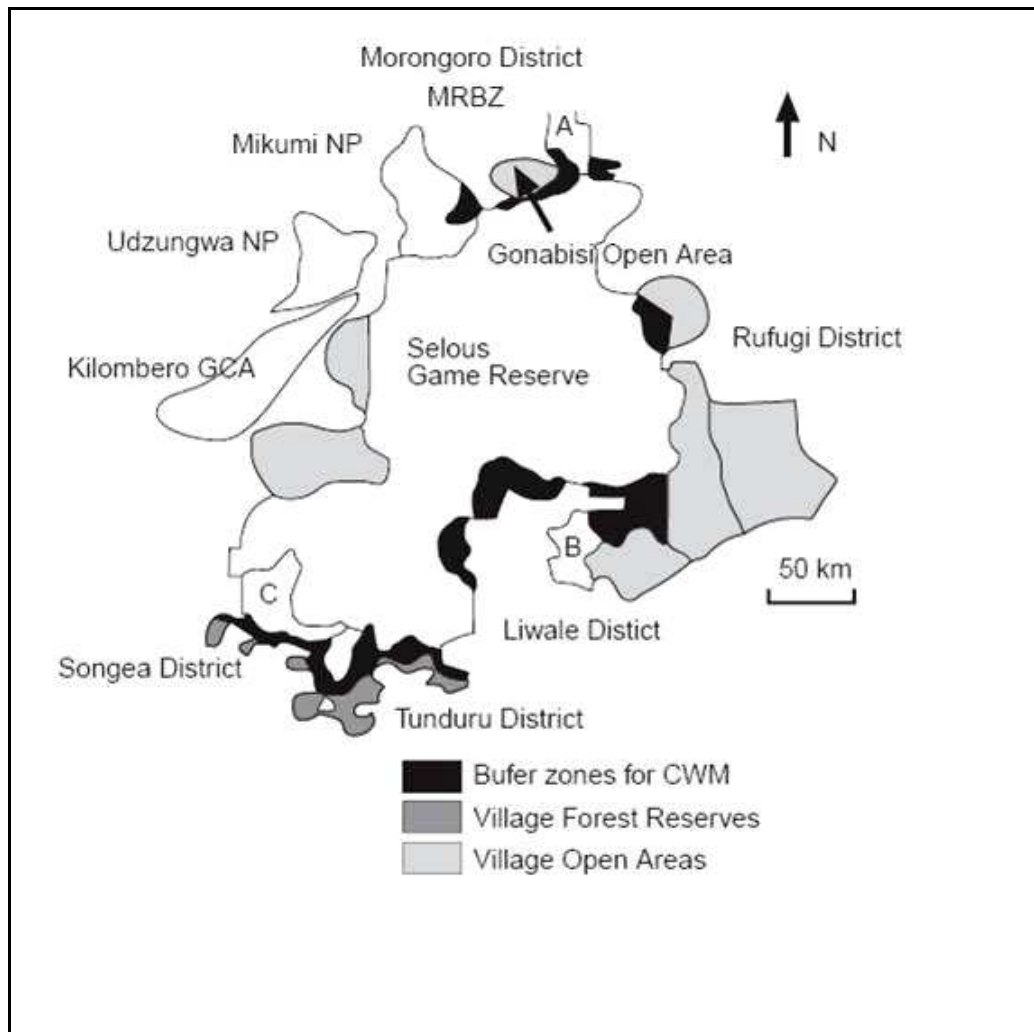


Fig. 15: Map of the Selous Game Reserve in Tanzania with the adjoining buffer zones and game management areas (modified according to Gillingham and Lee, 1999)

Both examples show that cooperations between park's authorities and private landowners or landusers outside protected areas can bring benefit to both the conservation goals of the protected area and to the people living from the natural resources. A similar development like at the western border of the Kruger National Park is not impossible at the south-western border of the Etosha National Park. Sustainable consumptive use of wildlife resources outside the core conservation area can bring benefits to both the park in re-establishing truly viable wildlife populations and to the people in generating income, which must otherwise being generated through not sustainable land use options.

## 6 Discussion

In this chapter the results of the interviews with the different landowners and landusers will be discussed. They will be compared with results from other studies on the attitudes of landowners to nature conservation and protected areas and the results from the expert interviews (**e1 to e4 refers to the different expert interviewees**, for details see App.2). The discussion will be divided in the same order as the results in chapter 4, starting with the category of livestock farmers and ending with the category of blocks of farms. The results of all key questions will be discussed. Subsequently the results will be interpreted and reviewed critically to come to a final conclusion of this study (chapter 7).

The results of the **livestock farmer** interviews are quite homogeneous. All of them are in a comparable **economic situation**. They all recognise that they farm in a very harsh environment and under quite bad circumstances. Most of them are already farming at the upper limit and higher stocking rates would result in even worse overutilization of the farmland. This is also confirmed by e1, who states that the official stocking rates given by the Agricultural Union are made in the 1970's and are already too high to be sustainable for the environment. Nevertheless most of the livestock farms are still in adequate condition to serve as wildlife habitat in the near future (e1), for others mechanical or chemical clearing of bush encroachment would be necessary (e3). All of the livestock farmers state that costs are rising from year to year while the prices for beef are either stable or increasing on a level lower than the costs. Most of them state that their properties are too small to be economically viable. Livestock farms do have the lowest turnover per hectare of all farming ventures in the study area (e1, e3) and the lowest standard of living and number of employees. At the same time they also pay the lowest loans, slightly above minimum wages ([www.namibiaplus.com](http://www.namibiaplus.com)). Given the long history of livestock farming in the area, compared to other landuses, it is astonishing that their income is still so low and it is questionable if livestock farming, away from buffer zone plans, has got a future in the study area (e1, e2, e3, e4).

The **attitudes towards predators** are quite negative in the livestock farmer community. Despite the fact that for most of them the losses due to predators are normally not that high that it would endanger the business or make it economically not viable, predators are seen as the most important drawback for livestock farming at the fence of the Etosha National Park.

This might be due to the fact that individual perceptions of conflict with wildlife are shaped more by catastrophic events than by regular, small scale events (Naughton-Treves, 1997). But the impact of predators is seen in a different way, dependent of the location of the farm. Livestock farms that directly border the Etosha National Park are more affected by the bigger predators, namely lions (*Panthera leo*) and spotted hyenas (*Crocuta crocuta*). Farms in the second row of farms perceive the middle-size predators, for example cheetah (*Acinonyx jubatus*) and black-backed jackal (*Canis mesomelas*) as their biggest enemies. Most livestock farmers mention that the problems with predators are increasing since the existence of game farms in the study area, a fact that is confirmed by most experts (e1, e4) as well. As Marker (2003) found all over Namibia, farmers practice “preventive management” against predators (predators got shot on sight, regardless if they kill cattle or not), this is also the case in the study area.

Despite the fact that most of the interviewed experts state that wildlife business can also work on smaller properties, most livestock farmers believe that their farms are too small for changing from livestock to game farming. Another reason for continuing livestock farming, despite better perspectives in game farming, are the high initial costs of wildlife businesses. This argument is proved in the expert interviews as well, and as Barnes and Jones wrote (2009): “Reduction in subsidies during the 1990’s substantially reduced the financial profitability of livestock production on levels generally below those for wildlife systems. However, the comparative financial advantage of game over livestock is not always clear, since livestock farms commonly have sunk financial costs, while conversion to wildlife typically involves significant new capital costs”.

Livestock farmers **perceive the Etosha National Park** as something that is threatening their business and feel that most of the problems they have with predators are due to the bad management within the park and missing maintenance of the park’s fence. The “white” park management of the past is seen in a better light, but most experts state that the management was not much better in the past and that the park never made an effort to talk to the livestock farmers at its borders to solve the age-old problems with predators. The livestock farmers mention that they are prepared to maintain the Etosha fence on their own, but up to now that is not the case at a single location. This might also be due to the fact that the farmers are not yet able to speak with “one voice”. Over decades the Etosha National Park Management relied on a more “defence” approach and did not made an effort to prevent livestock losses at

its borders as an approach to build up better relations to its neighbours. As Marks (1984) found at another protected area “ it has become clear that the “defence” approach to park management cannot succeed in the long term, and that the failure to involve local people in the creation and management of a park generates attitudes that eventually destroy it, indeed, a whole protected area system can be destroyed by such attitudes.”

The **attitudes towards a buffer zone** in the current situation are mostly negative, because the livestock farmers recognise that commercial livestock farming is not possible within a buffer zone. The sampled livestock farmers recognise that there might be more money in game farming but argue simultaneously that the initial costs of a wildlife business are too high to stand. Nevertheless they state that if there was assistance or a broader management plan, a buffer zone could be a good idea. As a number of studies from other places in Africa indicate, through trophy hunting and tourism, wildlife becomes economically important for the rural populations and increases their interest, concern and protective attitude towards the preservation of this new or newly recognised source of income (Baker, 1997; Humavindu and Barnes, 2003).

The livestock farmers also state that it should be avoided, that if there was a buffer zone, farmers might be driven to assign their land to investors, as it was the case at the western border of the Kruger National Park in South Africa. The livestock farmers notice that game farming provides benefits, but they feel that the farmers at the Kruger National Park are not the beneficiaries. So they are afraid that the same twist of fate might happen to them.

Based on statements of different farm-owners and experts it is estimated that in the present situation combined **livestock and game farming** is the most **economically** viable farming venture in Namibia. When operating a combined livestock and game farm it is not necessary to segregate the livestock camp from the game camp. Nevertheless both sampled farms use one half of their farm solely for game farming and the use the other half for their livestock business. A combined farming business is less vulnerable in terms of fluctuating cattle prices or the dangers of the tourism-market. But for farmers doing both livestock farming and accommodating tourists or hunters face excessive work to cope with. For this category of farmers it is hard to decide if the Etosha National Park is an advantage or a disadvantage because it favours the tourism business but is a drawback for the livestock business. The positive socioeconomic effect in consequence of the change from livestock farming to game

farming for the employees of these farms is not very high. Their standard of living is comparable to those on the pure livestock farms.

The farmers of this category have fewer problems with predators and state that they do not receive the presence of predators in the area as a big disadvantage. So their **attitudes towards predators** are comparably affirmative. This can be traced back to the fact that for one part of their business the existence of predators on their farms is required, whereas in terms of livestock farming, where it is rather a harm, they developed quite successful techniques to avoid losses. Besides economics they reasoned that they regard themselves as conservationists and therefore tolerate a fair amount of predation.

While the problems with predators are received in a different way, the complains about the **Etosha National Park** Management are almost the same. But what differs is the case that both interviewees declare that they were aware of these kind of problems on account of the park before they took the purchase decision.

Even though they notice that a buffer zone would bring an end to their livestock business and that they then would have to get rid of their non-indigenous species as well, their overall **attitudes towards a buffer zone** on the private farmland are quite positive. Both of them describe themselves as conservationists by conviction. The positive attitudes might also be constituted with reference to their positive experiences in the past with the tourism business, which is also reflected in the fact that both of them state that they have further plans for this business (establishing new guesthouses etc.). In terms of hunting rights in a buffer zone they are concerned about the question if the MET will allow them to hunt. Both think that a lot of rules and regulations will be needed if a buffer zone is implemented.

The wildlife use on the farms sorted in the category "**Game farms**" is manifold, as well as the personal background of the owners and therefore also the **economic** situation and the attitudes towards wildlife, nature conservation and a buffer zone. All game farmers spent some time abroad and are well educated compared to all other farmers in the study area. Two of them are also interviewed as experts for this study. Two game farms are used for consumptive wildlife use, while the third one is perceived by their owners as a pure game reserve with only non-consumptive wildlife use. The kind of wildlife use is an important



factor for shaping attitudes in this category. None of the game farms is running on full capacity at the moment, which means that evidence about their revenue is only derived out of the impressions gathered during visits by the author. For both the owners and the employees the standard of living is higher than on the sampled livestock farms, which is proved in the data sampled in terms of salary for the employees. All owners state that the costs for establishing a wildlife business are quite high. But they also argue that running costs are lower compared to livestock farming because waterpoints can be reduced and the game is utilizing the bush more efficiently, so that population numbers are higher (e1 and e3; Dobson, 1995). The socioeconomic effect is, as mentioned above, quite high and the number of employees is much higher than in other farm businesses. But this also strongly depends on “how you want to do it”, as one interviewee states. In this case non-consumptive is much more labour-intensive than consumptive use in the study area. The salary and the living standard of employees is higher, which is mainly due to the fact that employees in the tourism and hunting business need to be better skilled than employees on livestock farms. The higher salaries in the tourism/hunting sector are also found by Humavindu and Barnes (2003), who found that 24 percent of the income earned in the trophy hunting industry accrues to poor segments of society in the form of wages.

The statements on the question if nature conservation or financial benefits are more important, are different as well. One interviewee states that the main reason for shifting the business from livestock farming to game farming were the circumstances brought by the park and that it was a practical decision (f8). The other two interviewees say that it is mainly for conservation and the guests are supporting the business. The problems that arise due to the commercial nature of game farming (as with f8) were already seen by Cousins et al. (2008) “the limitations are centred on three themes:

- (1) tourist preferences drive the industry
- (2) predators are persecuted to protect valuable game
- (3) inadequate resources are made available for professional conservation management and planning”.

The future for Namibia and the current situation is seen in a quite positive light compared to the attitudes of the livestock farmers in the study area, because the tourism business is the fastest growing industry in Namibia, while the cattle production was always declining in recent years. Therefore the situation for the livestock farmers is seen in a derogatory light by the game farmers.

For game farmers the number and the condition of the wildlife on their property is the most important economic factor. Game farmers that operate with consumptive use distinguish between those species they approve and those that have a negative impact on their business (an attitude which is not easy compatible with a buffer zone with free ranging game). **Predators** that do not have an economic value are therefore seen as endangering the business and are persecuted, at least as long as the wildlife businesses are not running on full capacity. Once this point is reached the attitudes might change. All game farmers state that giving predators a value, in the form of hunting quotas on lions would change the situation completely and maybe solve the problem.

All game farmers do have personal relations to the **Etosha National Park** Management or were once employed within the park. Nevertheless all of them have worries about the current situation within the park and state that the facilities are not kept proper and that maintenance of the park's facilities and the fence is disastrous. On the other hand all game farmers recognise the huge potential of the park itself for the tourism business as well as for advertisement for the game farms adjoining the Etosha National Park.

As with the attitudes towards the park, **the attitudes towards nature conservation** are quite positive, while the **attitudes towards a buffer zone** on the private farmland in the study area are contrary. It was expected that a buffer zone would bring the most benefits to those farmers that are already operating in the wildlife business, because more animals and unhindered geneflow would favour their business. While one farmer is afraid that once the fence is down, the Etosha National Park Management will start dictate what to do, on the other side of the coin for the other two "a dream would come true" (f9, f10). Both of them already started initiatives to establish a buffer zone on the private farmland or at least a conservancy running along the fence. Both failed but they are still dreaming of it. Their attitudes can be summarized as positive. The presence of the livestock farms in between the game farms is seen as the major drawback for these plans and the presence of non-indigenous species is seen as another point that can stop buffer zone efforts, because thats a major sorrow of the park management (e2) in terms of lifting the fences. On the other hand the experts believe that hunting on the farms adjoining the Etosha National Park does not matter to the park's

management in the current situation. It is nevertheless questionable whether this might still be the case if the fence was dropped.

The positive prospects in the game farmer community for the study area can also be seen in the future plans for the businesses, for example the plans for additional campsites and guest houses. The presence of the veterinary fence (“red line”) at the border of the Etosha National Park is seen as some sort of “life assurance” for the livestock farmers. The game farmers state that if that one would fall, this would bring an end to the livestock industry in the area.

The **blocks of farms** can be seen as the “big players” at the fence of the Etosha National Park. While their landuse is different, they are comparable in size and in their **economic** situation, which distinguishes them from all other farms in the study area. For both owners it is not the main business and both are not financially dependent on the business, as it is the case for almost all other landowners in the study area.

The number of employees is comparable high, as well as the monthly salaries of the employees. Both interviewees state that the general political situation in Namibia is quite good and if things stay as they are, there is a bright future for Namibia. That is an important case for future investment and further development of their properties.

Currently there are no official plans on further expansion, but especially the bigger block of farms (which is used for consumptive and non-consumptive wildlife use) state that if opportunities come up they will think about expanding the business on further farms (f11).

The smaller block of farms did a quite unusual “step back” in land use techniques. Most of the farms that are now belonging to this block were only used for game farming in recent years, but as the manager of the property states, on a property of this size livestock farming can be economically viable despite the impact of predators from the park. The positive experiences with livestock farming at the fence on this property could be a drawback for buffer zone plans at the fence, because they show that livestock farming can still be an option in the study area if it is done on huge portions of land.

As it was expected, the **attitudes towards wildlife** especially predators are depending on the land use. On the block of farms which is solely used for wildlife, even the attitudes towards lions (*Panthera leo*) are very positive. In this case lions are evaluated as bringing several advantages:

- (1) it can be used for population control for certain antelope species,

(2) its presence is creating a special atmosphere, the hunter can hunt in competition with the lion,

(3) maybe in future the lion itself can be hunted.

The manager exposed that based on a rough estimate there are already 15 to 25 lions living on the property.

For the livestock business on the other block of farms lions are affecting the main business livestock farming. Therefore lions are persecuted on this property. Nevertheless, they are not affecting the business in a dimension that livestock farming would not be viable.

Both interviewees on the blocks of farms have worked in the **Etosha National Park** or with the management in recent years. Their relation to the management is comparable to the relation of the game farmers to the Etosha National Park Management. They also complain about a lack of interest within the new management in nature conservation issues and maintenance, but also emphasise that this is mainly due to a lack of money within the MET, which is responsible for Namibia's protected area system.

The block of farms which is only used for wildlife is perceived by the owners already as some sort of **buffer zone** and the interviewees have very positive attitudes towards a buffer zone. The perception of farms adjoining the block is the same, they already perceive it as a buffer. Since the management of the block of farms is keeping the fence proper some farmers experience less influx of predators from the Etosha National Park. There are already some ideas regarding the organisation of a buffer zone within the community of people working on the blocks of farms, which include ideas about the regulation of hunting rights within a buffer zone and the implementation of further gates along the fence, which are thought to arise an increase in prosperity concerning that business in the region.

Both state that the institutions in the park are too weak to work on that and that the initiative for the implementation must come from private side, the example of the Kruger National Park in South Africa is also mentioned (see chapter 5) several times. Another possibility to solve that problem would be the partial privatisation of the park's management as it was done in South Africa a few years ago, which is seen as enabling the park management of South Africa to build a buffer zone at the Kruger National Park (e3 and e4).

The interviewees also underline that sustainable hunting is even easier the bigger the property and the higher the turnover is (self sustainable populations, financial background for aerial

game counts etc.) and that hunting in a buffer zone of the Etosha National Park will definitely be sustainable and have a negligible impact on animal numbers in the park. They are worried about the situation on smaller hunting farms. They argue that hunting can not be done sustainably on the long term on small properties. This argument can also be found in literature (Hennig, 1987).

Especially the positive socioeconomic effect of the conversion from livestock farming to game farming is obvious. The salary of employees in the game farming sector is about twice as much as the salary in the livestock farming sector. Despite that the numbers sampled in this study are not representative, they reflect the socioeconomic potential of further economic development in the wildlife sector in the study area. The number of employees per hectare is also higher. While on the livestock farms there is on average one employee on 2000 hectares, it is on average one employee on 1500 hectares in the wildlife sector. Compared to the numbers given by Tarboton (2007) for protected areas in South Africa and Zimbabwe (see chapter 2.3.2) there is evidence that there is still a lot of potential for further development in the employment market in the study area.

All farmers in the study area recognise the enormous potential for game farming at the border of the Etosha National Park. This potential is mainly due to the possibilities for advertisement and interactions across the borders of the park, mainly predators, which are key tourist attractions and are not common on the rest of Namibia's commercial farmland. On the other hand commercial livestock farming in the study area faces a lot of problems which have not been solved in the recent years and it is questionable if they will ever be solved. The reasons for the persistence on livestock farming in the study area are complex and probably not easy to overcome. But on the one hand given the economic situation of livestock farmers and the economic potential of game farming on the other hand it ought to be possible to find a way to solve this problem and a perception which is proved by the sampled experts as well.

The **expert interviews** prove the opinions of most of the farmers that the livestock industry in Namibia, but especially in the study area at the border of the Etosha National Park is declining in the number of farms and the economic importance for the economy. Based on data from Barnes and Jones (2009) the number of cattle in Namibia has declined by some 55 percent since the 1950's. This is mainly due to its lack of competitive basis on the world market and

the unpredictability of Namibia's nature. In contrast, the wildlife sector is increasing in the number of businesses and overall turnover. The socioeconomic effect of the sector shift to game farming is also very positive, which is proved by this study and data from literature (Richardson 1998; Tarboton, 2007). Financial analysis in Namibia generally confirms the relatively low financial profitability of farming on private land in southern Africa (Barnes and de Jaeger, 1996). This low profitability applies to both livestock and game, and is due to the disproportionately large capital investment for these land uses. As Barnes and Jones (2009) wrote this would indicate that profit alone is not the only motivation for Namibian freehold farmers turning to wildlife as a major form of income. Indeed, Asley and Barnes (1996) conclude that part of the value of wildlife to farmers lies in the diversification of risk and aesthetic benefits. These aesthetic values have also been found in this study within the farmer community at the south-western border of the Etosha National Park.

As all experts point out that a buffer zone on the private farmland can only well perform when there is no more livestock in the area, because commercial livestock farming is impossible without a fence. Commercial livestock farming is considered to be possible in the current situation because the veterinary cordon ("red line") is running along the southern fence of the Etosha National Park. This fence enables the farmers to sell their products to South Africa and to the European Union. Without a fence they will not be able to guarantee the FMD-free status of their products. Currently there are plans within the government to shift the "red line" to the northern border of the Etosha National Park or even up to the Angolan border ([www.steps-centre.org](http://www.steps-centre.org)). If one of these plans was put in place it will probably be the initiative for a buffer zone (e4).

All experts agree that a well managed buffer zone with an intensive maintained southern fence can solve the problems of commercial livestock farmers further south, because a private organisation has probably better financial resources than the park's management to maintain a fence. All participants will benefit, the Etosha National Park Management due to fewer losses at its borders and a better relation to its neighbours, landowners within the buffer zone due to economic development in the wildlife sector and livestock farmers further south due to lower pressure of predators. As a study, prepared by Barnes and de Jaeger (1996) found, grouping together in larger management areas can be both financially and economically beneficial: This economic analysis proves that wherever landholders cooperated to form larger management

units or conservancies, all kind of land uses become more efficient both financially and economically. At this scale, the study also adduces evidence that there was a weak financial incentive for investors and a strong economic incentive for the nation for the conversion away from mixed livestock and wildlife production towards conservancies producing wildlife only. More recent detailed empirical work has furthermore highlighted that, when tourism potential on private land is high, investment in wildlife based tourism can result in much higher financial and economic returns than those possible for livestock (Humavindu and Barnes, 2003). In that study, which was done in a study area comparable to the study area at the Etosha National Park, tourism as a land use was determined to be some ten times more valuable than the alternatives, in terms of both financial and economic measures. Barnes et al. (2004) calculated that the number of head of game in Namibia (two million) is only one third of the number of livestock (cattle, sheep and goats combined: six million) but the asset value of this game resource (N\$ 1,2 billion) is doubled compared to that of the livestock (N\$ 600 million). This reflects the very low economic rents being generated by livestock production in Namibia at present.

Most interviewed experts state that a first step in this direction could be the establishment of a cooperative organised fund for the economic use of lions in which all farmers at the border could participate in. This would establish lions at the farms bordering the Etosha National Park and guarantee income for the farmers on the basis of a quota system. A cooperative system for the economic use of lions would bring financial benefits to the people, control lion numbers at the border of the Etosha National Park and due to that lower the pressure on the fence to the commercial livestock farming area. Furthermore money would be available for compensation of losses.



Fig. 16: Male lion (*Panthera leo*) in the Etosha National Park (T. G.)

Eastwards of the study area, on another block of farms lions are already established and up to now no problems are reported (e2). The owners of that block of farms even say that their fence proofed to be 100 percent lion safe in the last years (e1). In the current situation of the study area, with a bad maintained fence it is recognised by the sampled experts that lions will come out and get shot in any case, regardless of age and sex<sup>11</sup>. In a managed lion trophy hunting system the emphasis could be lied on old males that are not in the reproduction cycle and are still good enough for trophy hunting. But it is further expressed that a lot of research has to be done before a cooperative trophy hunting system can be implemented (e4). The re-establishment of the so-called “Etosha southern boundary problem animal meetings”, which where held in previous years (MET, 2000; MET, 2005) could be helpful to discuss current predator problems at the border of the Etosha National Park and to discuss ideas concerning a lion hunting quota system.

Another step in establishing more wildlife related agreements at the border could be the establishment of an own gate to the park for the use of the guests of the wildlife businesses adjacent to the park’s south-western border. A gate would further force the wildlife related businesses in the study area to cooperate (e1).

For many species (for example black rhino (*Diceros bicornis*), elephant (*Loxodonta africana*) and lion (*Panthera leo*)) the Etosha National Park is close to its ecological carrying capacity and without partnerships with the private or communal landowners, no other land could be set aside for their conservation (e2). To guarantee the long term viability of the Etosha National Park all experts state that the opening of at least some of its fences would be a great advantage.

The chances for that might be better and the available land mass much larger at its western border and parts of the northern border on communal conservancies, but the economic potential is by far the highest at its southern border, where the study area is located. The potential area for a buffer zone in the area south-west of the Etosha National Park is maybe smaller than the potential buffer zones in the west and in the north, but the positive impact on Namibia’s tourism industry (which has the potential to be one of the biggest employers in Namibia’s economy) is by far the best on the private farmland. Furthermore, the possibilities

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<sup>11</sup> Between 1982 and 2000 about 150 lions are reported to be destroyed on the farms of the study area alone (Burger, 2000, unpublished)



for controlled trophy hunting and conservation of endangered species is much better in this area. Same applies to the opportunities for research and education, because infrastructure is already available and non-government conservation organizations already work in the area.

The experts also notice the huge potential for further economic development in the wildlife sector in the study area and identify a buffer zone as a factor that has the potential to boost business and create an atmosphere for tourists and hunters that is new in the Namibian tourism market. The example of the Kruger National Park, where everybody was benefiting by the development both inside and outside the park, was also given by the experts several times. But they also state that for the location at the south-western border of the Etosha National Park trophy hunting is probably more economically viable, because most parts of the study area are too remote for ecotourism and the wildlife viewing opportunities cannot compete with the eastern half of the park around the Etosha pan.

One farmer states that *“the investment in lodges and stocking of animals are millions of Namibian Dollars, and that if the fence will be dropped there must be a lot more communication between the park and the private sector, and we need certain hunting rights within the park, even on a limited basis, but there must be benefit for us”* (f11). While hunting rights within the Etosha National Park are probably unrealistic, the lack of communication between the park management and its neighbours is seen by the experts as well. The weak park authority is identified by them as a major drawback in the development of the park. As Peres and Terborgh (1995) wrote: “For park management to be effective there must be sufficient numbers of well-equipped, properly trained and motivated park personnel, who are willing to carry out park policy. In many areas of the world, particularly in developing countries, protected areas are understaffed, and they lack the vehicles and equipment to patrol remote areas of the park.” Some of these drawbacks were also mentioned in the farmer interviews regarding the management of the Etosha National Park. While the sampled experts notice that the individual park management is weak and underfunded, Barnes and Jones (2009) found that “policy in the MET has supported the use of wildlife and the development of conservancies on private land, and this appears to be economically sound, because both in terms of numbers and value of wildlife the commercial land contains nearly 90 percent of values, while the protected area estate has only four percent of game numbers and stock values. Other ministries, such as those responsible for agriculture and land uses have been less

ready to recognise the land use value of tourism alongside traditional agricultural land use values, but this seems to change slowly”. A change in the perceptions about the tourism potential of wildlife within these ministries could probably be beneficial in terms of finding a solution for the “red line” problem and to be more open minded in terms of lifting the fence and the establishment of a buffer zone.

It was furthermore recognised within the study area that the private sector will carry on and maybe the weak constitution of the park’s management is the chance for even more development at its borders: “the worst the management in the park and the tourism facilities, the better the chances at its borders” a farmer states.

## **7 Conclusion**

The conclusion of this study is divided into “The attitudes towards a buffer zone” and “The potential of a buffer zone”. While the attitudes towards a buffer zone on the private farmland at the south-western border of the Etosha National Park is the main research focus it is also asked what is the potential for the implementation of a buffer zone. This is based on the attitudes of landusers and landowners. Furthermore an example of how a buffer zone in the study area could look like is given. Finally some suggestions for further reserach are presented.

### **7.1 The attitudes towards a buffer zone**

This study explores the attitudes of landowners and landusers on the private farmland at the south-western border of the Etosha National Park towards a buffer zone on their own land. Many factors affect conservation attitudes positively or negatively. The factors inspiring positive attitudes are likely to enhance the conservation objectives while those inducing negative attitudes may detrimentally undermine the objectives (Kidegesho et al., 2006). The attitudes found in this study strongly depend on primary land use. Therefore the discussion (chapter 6) is divided into the different forms of land use. The costs of livestock predation is higher where people’s livelihoods depend entirely on livestock. Therefore negative attitudes are more strongly related to livestock farmers because commercial livestock farming is not compatible with a buffer zone on the same land and there are already conflicts between the park and the livestock farmer community in its surroundings. In the game farmer community the attitudes are more positive. While there are undoubtedly good prospects for the wildlife business in some sort of cooperative organised buffer zone, there is still some scepticism about possibilities of agreements between the Etosha National Park Management and its neighbours. The respondents believe that further tourism development through wildlife tourism in the study area can create new income possibilities for livestock farmers and strengthen the business of already existing tourism ventures. Despite general positive attitudes, not all respondents believe that a buffer zone in the current situation is a good idea and that further development and legislative change is needed, before a cooperative managed buffer zone can be implemented. A number of challenges is seen by the farmers and the experts as well, including the persistence of livestock farming in the area, weak park

management and the veterinary fence running along the southern border of the Etosha National Park.

There is evidence that conservation attitudes within the study area are mainly derived by expected financial benefits out of the conservation of wildlife and its use for ecotourism or trophy hunting. This is also found by Frank et al. (2005) “However, as in most of the world, the majority of people must be financially motivated if they are to preserve wildlife... some combination of tourism and soundly managed sport hunting are probably the only solutions to preserving wildlife on an ecologically meaningful scale”. The chances for conservation of large portions of land on a private basis is comparably high in Namibia. Due to the Namibian legacy private landholders are encouraged to preserve wildlife on their properties and were given certain rights of ownership over wildlife. As Jones and Weaver wrote (2009): “Within Namibia, the success of private conservation on freehold farms demonstrated how a combination of economic incentives and proprietorship could create appropriate conditions for the sustainable use of wildlife”.



Fig. 17: Steenbock (*Raphicerus campestris*) at the fence of the Etosha National Park (T. G.)

Livestock farming at the border of the Etosha National Park was in a steady decline in recent years, meanwhile a lot of the previous livestock farms are changed to game farms with sustainable use of the wildlife resources, for consumptive or non-consumptive use. These game farms offer the potential for the park management to enlarge the effectively protected area while integrate the people around the park in a larger ecosystem management unit, for example a Biosphere Reserve. As Butler stated (1995): “Conservation of the planet’s remaining wildlife resources will depend on management practices which recognise that indigenous people are integral parts of ecosystems”. If the management of the Etosha National Park recognises the local people at its borders as part of the whole system, some of the problems the park faces can be solved. Furthermore through developing the tourism sector in the study area jobs can be created to help Namibia’s economy as a whole. All over Namibia

it seems almost certain that hunting and ecotourism will have to co-exist in order to generate adequate returns to guarantee the long-term economic viability of all wildlife resources. In the comparable remote location of the study area and due to the low visibility of some key attraction species the development potential in the trophy hunting business seems to be higher.

The findings of this study can be useful in guiding the policy interventions and as a base for the work of the Etosha Buffer Zone Project in finding management strategies for a buffer zone. The study shows that attitudes of landowners and landusers at the south-western border of the Etosha National Park are mainly derived by the kind of primary land use. Another important factor for shaping attitudes towards nature conservation and a buffer zone are expected or derived financial benefits out of the wildlife business. Less important, but not to ignore, aesthetic benefits or just the feeling to do the right thing.

If a buffer zone will be implemented, the financial prospects for landowners and landusers will have to be made clear. Furthermore there must be financial help for livestock farmers to change the business. All interviewees agree that this change is not possible without support from outside, for example private donors or investors or even the government.

## **7.2 The potential for a buffer zone**

Local perceptions of the neighbouring protected area, attitudes towards wildlife and nature conservation and expected or derived financial benefits are the main drivers for development in the wildlife sector and the chances for a buffer zone in the study area. Positive attitudes therefore are a cornerstone for determining the potential for a buffer zone.

All interviewees emphasise that the idea of a buffer zone and its implementation would be the most consequential step for further economic development in the study area. But Gadd (2005) noticed that “it should be avoided that motivation for conservation becomes purely financial. If the motivation to conserve wildlife becomes purely financial and aesthetic benefits are lost or forgotten, the effects could be disastrous when financial incentives are interrupted or discontinued (if tourism declines or donors withdraw). Acknowledging and building upon local aesthetic values and traditional beliefs would be advantageous for future conservation efforts. Bearing in mind the volatility of the world’s tourism industry and the

number of similar wildlife-based tourism destinations arising throughout Africa, preserving or encouraging non-financial conservation motives among local people is essential.”

Some interviewees state that conservation of nature on their properties is also an aesthetic benefit and that they feel responsible to utilize their resources sustainably. Besides providing financial incentives for game farming, this motivation must be encouraged. A much more efficient park management is therefore needed to build up strong relations with potential buffer zone farms at the park's border, to guarantee the long time sustainability of the Etosha National Park itself. This was seen by McNeely (1995) as well, he indicates that the most important general problems protected areas face are “weak national constituency, conflicts with local people, conflicts with other government agencies, insufficient management, and insecure and insufficient funding”.

Based on the farmers and experts' suggestions certain criteria must be fulfilled for the establishment of a buffer zone:

- **Stop of (commercial) livestock farming within the buffer zone**
- **General management plan between the Etosha National Park Management and the buffer zone management**
- **Well maintained fence between the buffer zone and the commercial livestock farming area further south**
- **Solution of the “red line” problem**

For the achievement of these criteria money must be made available. Due to underfunding of the state's wildlife authorities it is unlikely that the initiative for the establishment and for the management will be provided by the state. Therefore the initiative and the money must come from the private side. This could be either private investors or donors from abroad. As Richardson wrote (1998), “if the international community wishes to preserve biological diversity in Namibia, it must pay for it”. It is further recognised that the privatization of the state's wildlife department would be helpful in generating money for the development of its protected area system, like it was the case in South Africa. Furthermore new rules and regulations in terms of hunting rights adjacent to protected areas will be needed.

The most urgent problem that has to be solved to build up better relations between the park management and its neighbours is the predator-problem. One step in this direction would be to create better attitudes towards predators in general, which has proved to be manageable by the work of the CCF in Namibia. Marker et al. (2003) found that in the last years cheetahs (*Acinonyx jubatus*) are still perceived as a problem but farmers tolerance towards cheetahs has increased. This was mainly due to information campaigns of the CCF. The value people place on wild animals will often depend heavily on their knowledge about them, and so education is a major tool for conservation (Sutherland, 2000). Improving knowledge about predators in the study area could be the task for the Afri Leo foundation, which is already working on the “predator problem” in the area.

Giving predators a value, in the form of hunting quotas and establish lions (*Panthera leo*) on land outside the park could be another step, an example for that can be found in South Africa. The re-introduction of lion onto private farmland in South Africa seems to be highly successful (Cousins et al., 2008). Some farmers mention that they are worried that in a buffer zone without fences between the farms it would be impossible to guarantee quotas. Most farm owners also mentioned that ethical hunting is an important issue for them and that through the close proximity to the park a different atmosphere of hunting can be created. In this context a very interesting idea is given by Damm (2004): “Instead of selling a “guaranteed lion hunt” hunters should find back to their roots and buy hunting “opportunities” (which may be successful or not). This idea of “back to the roots” hunting may also be transferred to all other hunted species in the study area. By that it is probably possible to open a complete new market of hunting where “the stock is as important as the hunt” (f8).



Fig. 18: Free ranging game between the Etosha National Park and a buffer zone? – The future for the study area? (T. G.)

Further challenges will be the aggregation of farms into larger management units. Most respondents suggest that the removal of fences and the aggregation of fences will lessen the

impact of farming on wildlife and reduce the need for intensive management. Lindsey et al. (2009) suggest that “most problems single game farms are faced with could be overcome by the formation of larger management units. Larger areas permit the reintroduction of the full range of indigenous mammals, tending to result in a land use shift from high-offtake, low value offtake utilization towards higher value form of hunting and ecotourism. Under these land use conditions, farmers tend to be more tolerant of predators and often actively reintroduce them.”

But the removal of fences poses challenges in itself when economics are involved. Agreements about ownership of free ranging animals must be found and hunting rights must be clarified. Establishing a commercial conservancy along the Etosha National Park’s southern fence could be a first step.

Lessons from South Africa have shown that a buffer zone in the private commercial farmland can only work with a fence behind it, which means between the buffer zone and the commercial livestock farming land. Open concepts like in East Africa only work in communal, not commercial lands where farmers generally tolerate higher losses due to wildlife (Gadd, 2005). The commercial livestock farming industry depends on the access to the European market and therefore needs to guarantee the FMD-free status of its products. The privately maintained fence behind the buffer zone could



Fig 19: A well maintained, privately operated, electrified fence. The future for the study area ?

furthermore serve as the veterinary fence between the buffer zone and the commercial farming area of Namibia (Fig. 19). Due to hunting on lions within the buffer zone, lion numbers at the fence would be lower which reduces pressure on the fence. Furthermore, a fence, run by a private company would be better maintained and reduce conflicts between predators and livestock farmers.

A buffer zone on commercial farming land completely without a fence will not work, both in terms of controlling wildlife numbers within the buffer zone and the economic success of livestock farmers outside the buffer zone. The southern African model, responsible for the



most successful conservation story of all times, is based on the principle that wildlife is owned by an individual landowner (or a cooperative organised, but privately working conservancy). Seventy percent of all wildlife animals in South Africa are owned by farmers and this success story is based on the necessity of fencing, enabling the individual to own and manage the animals (African Indaba, 2007).

Given the negative economic development of livestock farming in Namibia, especially at the border of the Etosha National Park and the very positive development of the tourism sector in the Namibian economy, furthermore favoured to the close proximity of the study area to the Etosha National Park, there is financial motivation and the implementation of a buffer zone in the study area seems to be possible.

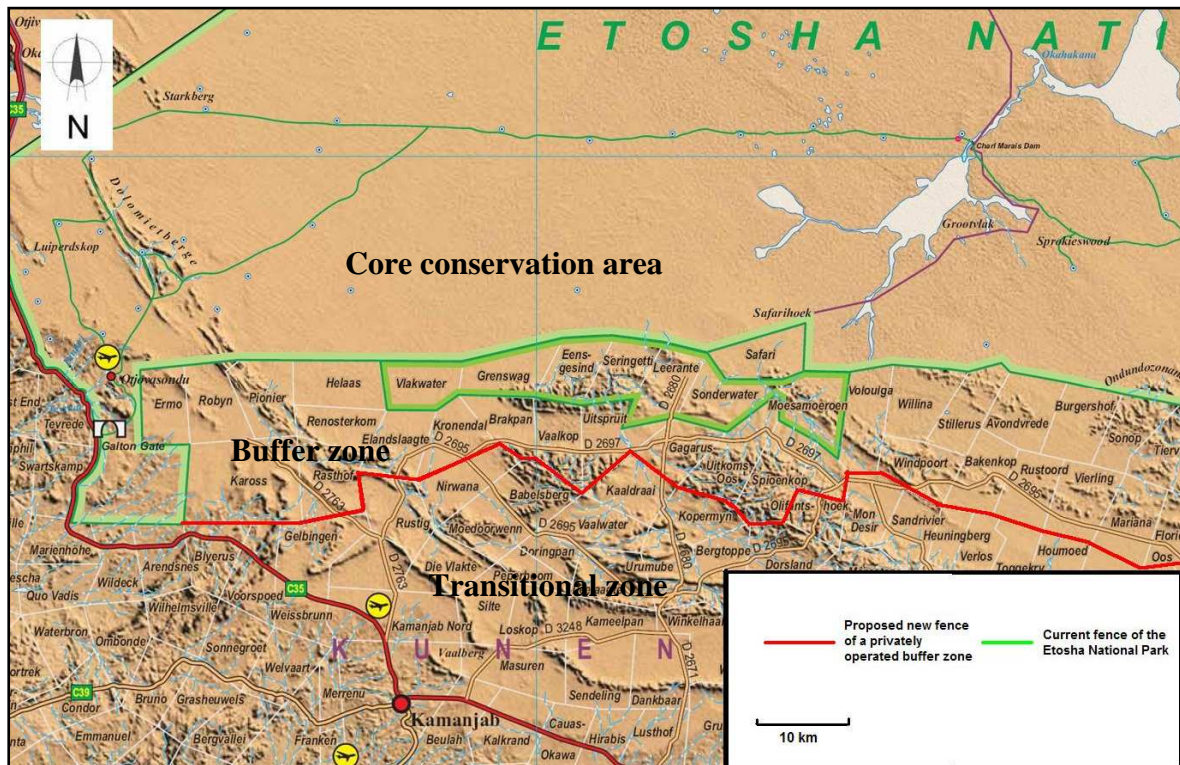


Fig. 20: Example of a possible buffer zone in the study area (modified according to Jaeschke, s.a.)

**An example of how a buffer zone in the study area could look like is shown in Fig. 20.** While the current Etosha National Park serves as a core conservation area inside a “Etosha Biosphere Reserve”, the farms at its southern border serve as a buffer zone with sustainable wildlife use in the form of consumptive and non-consumptive use. Income for the inhabitants of the buffer zone is mainly derived by hunters and tourists. The farms further south in the

transitional zone are used for sustainable extensive livestock farming with lower stocking rates than those currently given by the government. Even there, tourism development in the form of lodges and guest houses is possible.

### **Suggestions for further research**

Comparable conflicts along the fence of the Etosha National Park can be found at its whole southern and eastern border. Studies on the attitudes towards a buffer zone in these areas seem to be useful in guiding future policies along the fence. Especially at places where farms already formed cooperations and/or running pure game reserves. Furthermore studies on lion populations, demography and migrations along the fence would be reasonable as a basis for a controlled lion trophy hunting system along the southern border of the Etosha National Park. An economic assessment of the potential for further tourism development along the southern border of the Etosha National Park would be useful to demonstrate the land use perspectives for landowners.

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# **Appendix**

## Appendix 1

### Statistics of the sampled farms

#### Livestock farms (f1-f5)

##### Farm Stillerus

**Farm size and structure:** 9,500 hectares, 42 camps, 18 waterpoints working on solar and wind, whole farm game-proof fenced

**Farm history:** present owner bought the farm from his father in 1982, in the early years more karakul farming, today mainly cattle farming

**Stocking rate and land use:** 500 cattle (19 hectares per cow) and 700 sheep, hunting mainly for self consumption, plans for some trophy hunting

**Employees:** four (Bushman, Damara and Herero) plus families

**Conservancy:** Etosha Conservancy

##### Farm Olifantshoek

**Farm size and structure:** 3,287 hectares, seven camps, four waterpoints, all working on diesel, only livestock fence

**Farm history:** present owner bought the farm from his father in 1978, farm was splitted a few years ago

**Stocking rate and land use:** 124 herd of cattle (26 hectares per cow), 378 karakul sheep, charcoal burning in huge extent

**Employees:** one worker for general farm work and eight people for charcoal burning (self-employed)

**Conservancy:** not member of a conserancy

##### Farm Gagarus

**Farm size and structure:** 6,286 hectares, all waterpoints are working on diesel

**Farm history:** present owner bought the farm in 1999, was always use for livestock farming

**Stocking rate and land use:** 500 cattle (12,5 hectares per cow), 500 small stock, in former years charcoal burning

**Employees:** four workers with their families

**Conservancy:** not member of a conservancy

**Farm Uitspruit**

**Farm size and structure:** 5,100 hectares, four waterpoints

**Farm history:** father of the present owner bought the farm in 1988, was always livestock farm

**Stocking rate and land use:** 350 cattle (15 hectares per cow), some small stock, hunting only for self consumption

**Employees:** three workers, no family

**Conservancy:** not member of a conservancy

**Farm Kronendaal**

**Farm size and structure:** 5,360 hectares, four waterpoints

**Farm history:** present owner bought the farm in 1968, was always karakul and cattle farm

**Stocking rate and land use:** 2500 karakul sheep and herd of 130 cattle

**Employees:** five workers, two of them as herders for the sheep, plus families

**Conservancy:** not member of a conservancy

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## **Livestock and game farms (f6-f7)**

### **Farm Avronvrede**

**Farm size and structure:** 7,000 hectares, 3,000 hectares for cattle farming and 4,000 hectares for game farming, seven waterpoints, complete farm game-proof fenced

**Farm history:** present owner bought the farm in 2006, before that different owners, probably always livestock farming

**Land use:** one part of the farm only for game, the other mixed livestock and game, 200 cattle (15 hectares per cow), no non-indigenous species, consumptive and non-consumptive use of wildlife

**Employees:** three workers plus their families

**Conservancy:** Etosha Conservancy

### **Farm Bakenkoop**

**Farm size and structure:** 6,140 hectares, 3,000 hectares for cattle and 3,140 hectares for game, only the game camp is game proof fenced, nine waterpoints

**Farm history:** present owner bought the farm in 1981, before that heavily overgrazed by cattle and sheep, since that slowly shifting the business to its present state

**Land use:** 100 cattle on one half of the farm (30 hectares per cow), the other half is only stocked with game, some non-indigenous species, only consumptive use of wildlife

**Employees:** three workers plus their families

**Conservancy:** Etosha Conservancy



## **Game farms (f8-f10)**

### **Farm Volouiga**

**Farm size and structure:** 10,000 hectares, completely game-proof fenced

**Farm history:** present owner bought the farm in 2000, before that different owners, most of them were karakul farming, the eastern part was formally part of another farm, heavily overgrazed

**Land use:** still a herd of 150 cattle, 500 sheep and 150 goats on the farm, but this business will be stopped within the next two years, some non-indigenous species, only consumptive use of wildlife

**Employees:** three workers plus their families

**Conservancy:** Etosha Conservancy

### **Farm Windpoort**

**Farm size and structure:** 5,800 hectares, five waterpoints, completely game-proof fenced

**Farm history:** present owner bought the farm in 1999, the farm was owned by the state before, very good veld condition because there was never very much stock on the farm and no charcoal burning took place in the past

**Land use:** only wildlife, no non-indigenous species, consumptive and non consumptive use of wildlife

**Employees:** two workers plus family

**Conservancy:** Etosha Conservancy

### **Farm Karoos**

**Farm size and structure:** 9,100 hectares, 13 waterpoints, completely game-proof fenced

**Farm history:** father of the present owner bought the farm before independence

**Land use:** only wildlife use, one non-indigenous species, only non-consumptive use of wildlife

**Employees:** 15 workers plus their families

**Conservancy:** Etosha Kaoko Conservancy

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## **Blocks of farms (f11-f12)**

### **Etosha Heights Game Safaris (Farms: Sonderwater, Safaari, Moesamoeroep, Leeurante, Serengetti, Grenswag, Ensgesind, Vlakwater)**

**Farm size and structure:** eight farms with altogether 50,000 hectares, 50 waterpoints, completely game-proof fenced, partly electrified fence

**Farm history:** all farms were bought by the present owners between 1999 and 2008, before that time all farms were cattle or karakul farms

**Land use:** only wildlife use, some non-indigenous species, consumptive and non consumptive use of wildlife

**Employees:** including both hunting camps and the tourist lodge 30 people

**Conservancy:** not member of a conservancy

### **Ermo Farming (Farms: Ermo, Robyn, Pioneer, Rasthof, Ekongo)**

**Farm size and structure:** five farms with altogether 29,000 hectares, completely game-proof fenced, small parts electrified

**Farm history:** present owner bought the farms between 2004 and 2008, before that some were pure game farms and others livestock and game farms

**Land use:** Primary livestock farming with a herd of 1,200 cattle (24 hectares per cow), as a second business consumptive use of wildlife, no exotic species

**Employees:** 30 workers plus their families

**Conservancy:** Etosha Kaoko Conservancy

## **Appendix 2**

### **Semi-structured questionnaire for the farmer interviews**

Below a list of questions used for the farmer interviews. Each interview was adapted to the certain situation and the individual interviewee. Some questions were therefore adapted to the certain interview situation, slightly edited or condensed. Logically the selection of questions depends also on the certain land use technique.

#### **Economic and socioeconomic situation**

- Land use
- Farm size, farm structure, land tenure, waterpoints, stocking rates
- Farm history
- Education, origin
- Number of employees, payment etc.
- What is your average turnover/net income per year?
- Are you member of a conservancy?
- What has changed since independence? What about your personal situation in the last 20 years?
- What do you think about the government?
- What are your families hopes and fears for the future?

#### **Attitudes to wildlife**

- Did you had any problems with wildlife in the last years (especially predators)?
- How much stock do you lose to predators per year?
- What do you do with predators on your property?
- Are there more predators on your property since the game farms in the area where established?
- Do you think there is more money in game farming as there is in livestock farming?

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### **Perception about the Etosha National Park**

- How would you describe your relationship to the Etosha National Park and its management?
- Do you think there are more advantages or disadvantages to have the Etosha National Park so close by?
- Do you feel proud about the Etosha National Park?
- What do you think about the MET?

### **Attitudes towards nature conservation and a buffer zone**

- If you protect wildlife, is it more by conviction or for money?
- Can you imagine to switch your business to game farming?
- What is your opinion about non-indigenous species?
- What do you think about the idea and the chances of a buffer zone?
- Can you imagine to be a part of a buffer zone?
- Can you imagine to drop the fences in the near future?
- What must the park offer for that?
- What do you think will be the future of the area?

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## Appendix 3

### Expert interviews

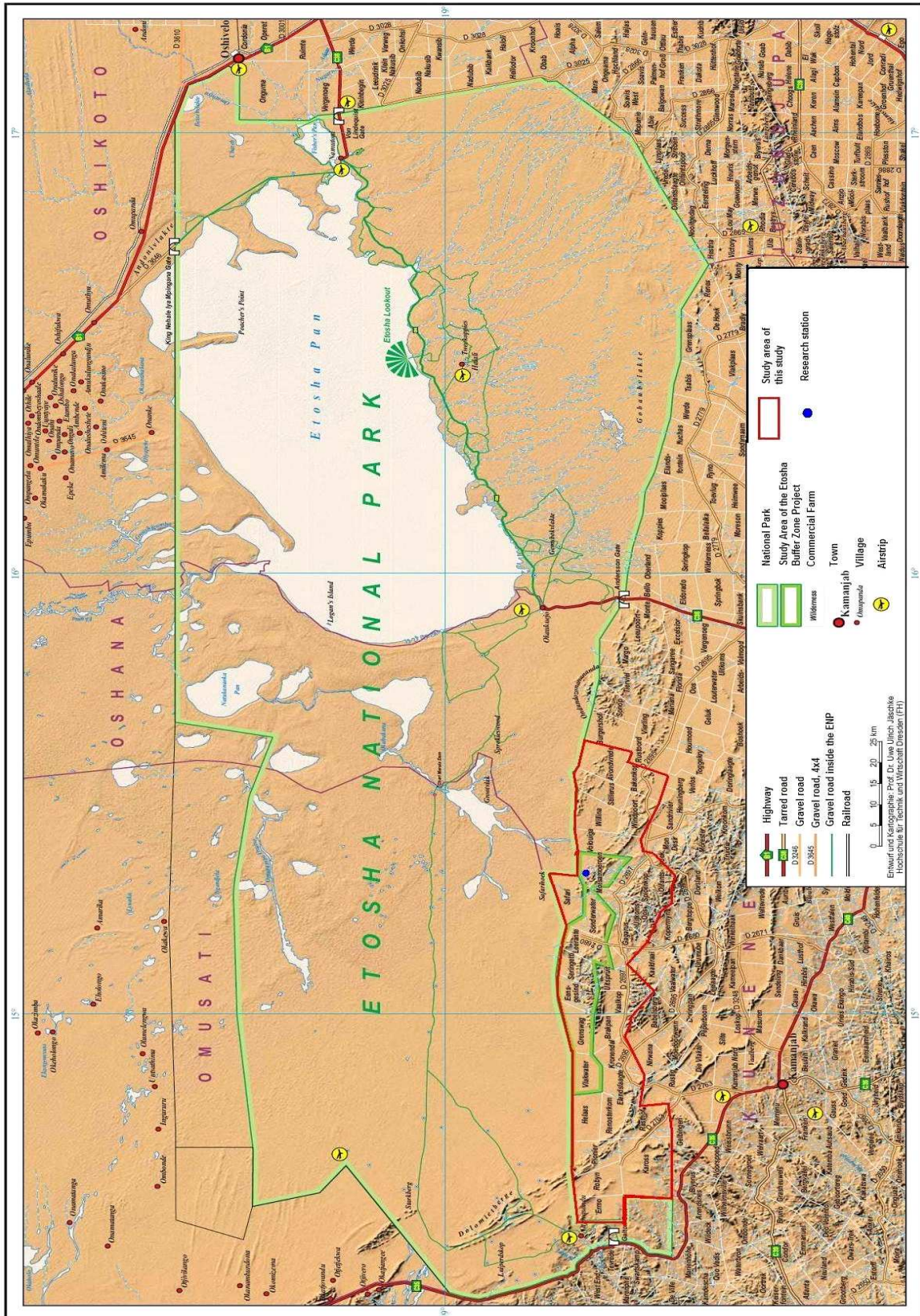
Four semi structured interviews were conducted during the field research. The people that were chosen as experts either know the area or the people very well and/or are involved in questions of nature conservation or possibilities for a buffer zone.

- **Tim Osbourne (e1):** Farm owner in the study area, wildlife biologist, was working in the Etosha National Park and some other reserves in Africa and North America
- **Birgit Kotting (e2):** Wildlife Research Warden of the western part of the Etosha National Park, responsible for problem-lions outside Etosha and for the Rhino Custodianship Programme
- **Andre Burger (e3):** Manager of Etosha Heights Game Safaris; before that manager of the western part of the Etosha National Park and several other reserves in Namibia
- **Tammy Hoth (e4):** Farm owner in the study area, wildlife biologist, responsible for the work of the Afri Leo Foundation, that is working on problem-lions in the study area and all over Namibia.

The expert interviews were intended to complement the farmers interviews and the key question laid on the question where different attitudes arise from, questions about the history of the region, current private buffer zone efforts, solution strategies for the problems between the Etosha National Park and the adjoining farms and the potential for a buffer zone on the private farmland.

**Appendix 4 :**

Map of the Etosha National Park and the adjoining farmland  
(modified according to Jaeschke, s.a.)



## **Erklärung**

Hiermit versichere ich, dass ich diese Arbeit selbstständig verfasst und keine anderen als die angegebenen Quellen und Hilfsmittel benutzt habe. Außerdem versichere ich, dass ich die allgemeinen Prinzipien wissenschaftlicher Arbeit und Veröffentlichung, wie sie in den Leitlinien guter wissenschaftlicher Praxis der Carl von Ossietzky Universität Oldenburg festgelegt sind, befolgt habe.

Unterschrift