

# **Trophy hunting and recreational angling in Namibia: an economic, social and environmental comparison**

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## **Abstract**

Over the late 20th Century, wildlife tourism has experienced a significant growth rooted in an ever-increasing demand for nature-based activities, usually linked to non-consumptive practices such as bird watching, photographic safaris, conservation holidays and voluntary activities in general. A widely accepted argument is that non-consumptive wildlife tourism is more sustainable than other consumptive activities such as trophy hunting and recreational shore angling.

This chapter discusses consumptive wildlife tourism in Namibia, placing emphasis on the economics of the trophy hunting and recreational shore angling niches and on some of their social and environmental short- and long-term implications. The economic value, impacts, contribution to development, and social and environmental characteristics of these two uses are compared. Both trophy hunting and coastal angling have important contributions to make to Namibian tourism, and Namibian development. They occupy niches, which are complementary in tourism, i.e., they do not displace other non-consumptive tourism activities but add to them.

However, hunting tourism is more economically efficient and more socially and environmentally positive than angling tourism. Reasons for this are partially situational, but also relate to differences in property rights and institutional factors. Some planning and policy interventions are identified which could enhance the value and contribution of the angling sector to national development and conservation.

## Introduction

Over the late 20<sup>th</sup> and early 21<sup>st</sup> Centuries, wildlife tourism has experienced significant growth, rooted in an ever-increasing demand for nature-based activities, usually linked to non-consumptive practices such as bird watching, photographic safaris, conservation holidays and rural activities in general. In this context also consumptive practices such as trophy hunting and fishing have become an important activity at some tourism destinations. Historically, these activities find their origin some 10,000 years ago when, prior to the agricultural revolution, hunting and gathering were the major economic activities devised by human (Hummel, 1994). In fact, while hunting animals for food and for sport has existed for thousands of years, the idea of visiting and observing wild animals for recreational purposes, as a tourist attraction, has been a more recent phenomenon (Orams, 2002:282). For instance, recreational safaris, involving wildlife viewing, wildlife hunting and angling, have become popular and fashionable within societies of the developed world. These activities aim at an outdoor experience characterised by the enjoyment of adventure, the thrill of the chase, the challenge of shooting, the uniqueness of wildlife, landscapes and coastlines (Novelli and Humavindu, 2005:172), the contest of skills and generally recreation and entertainment.

Hunting and fishing are discussed in this chapter, and it is important to highlight some of the fundamental differences between these two activities, as perceived by environmentalists and others. As Hummel (1994, p.161) notes: "both hunters and fishers seek to find and capture live animals. Hunters, however, seldom have the option of being successful and allowing the animal to live, while a fisher, however, can maintain the option of conquering his prey and allowing it to live (catch and release), assuming it is not injured". Hummel further points out that sportsmanship in fishing seems to be less controversial than in hunting. This is since in fishing "the fish is thought to have a choice whether or not to bite a bait or lure", while in hunting "sportsmanship requires the quickest and most humane means of dispatching the object of the hunt". Another interesting point is that although "the thrill of fishing is agreed by many to derive from the sensations of struggle which are transmitted to the hunter via the sensitive tackle", few wildlife defenders would agree that fishing might be more painful than hunting for the animal involved. Hummel (1994, p.162) raises further considerations on the uses of the natural environments, as "the habitat approached by the fisher is not the object of intense incompatible competition for use as game lands. Farmers, hikers, nature watchers are threatened by activities of hunters. Fishers, however, utilize waters inhabited by

swimmers, skiers, boaters, who, in fact, are a substantial threat to fisher successö. Some of these issues are discussed in the specific context of Namibia, below.

Sport or trophy hunting has increasingly become part of conservation argument and policy, being seen by some as a low-impact sustainable use approach, adding value to natural resources (Hofer, 2002; Novelli and Humavindu 2005, Novelli et al. 2006). However, it remains controversial, and Hofer (2002:14) makes the point that ö[t]rophy 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 satisfactionö. Opposition to trophy hunting tends to be reinforced by the media, which often reports on illegal or unethical practices, making use of shocking illustrations and association with historical abuses.

While opposition to hunting is often vehement, that for recreational angling is often more muted. Generally angling practices are seen as less detrimental to the environment - especially if they involve catch and release.

Some opposition to trophy hunting is due to doubts about its social equity and economic viability. However, an increasing number of studies indicate that through trophy hunting, 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 (Novelli and Humavindu, 2005; Barnes et al. 2002; Humavindu, 2002; Barnes, 2001; Baker, 1997). There are also indications that, through trophy hunting, government agencies are driven to implement adequate legislation, support protection strategies, conduct research and monitoring activities and to aim at the reallocation of revenues to management, protection and nature conservation (Novelli and Humavindu 2005; Hofer, 2002).

Given the above setting, this chapter discusses the two main forms of consumptive wildlife tourism in Namibia, trophy hunting and recreational shore angling. The economic value,

impacts, contribution to development, and social and environmental characteristics of these two activities are compared.

### **The African context**

Wildlife-based tourism has become an important foreign exchange earner in several countries (Reynolds and Braithwaite, 2001:32), and this applies in Africa. African wildlife tourism sectors boomed in the mid-1960s, with increased interest in nature and wildlife conservation, travel affordability, and accessibility to unspoiled and remote areas, among Western tourists. Table 1 describes the categories of wildlife tourism. Both non-consumptive and consumptive products and practices are to be found, rooted in different and specific interests and historical backgrounds.

[TABLE 1 near here]

In an ever-increasingly urbanised world, people now travel to reconnect with nature (Orams, 2002). They are today increasingly stimulated by media documentaries and travel programmes, promoting the existence of unique natural environments, wonderful landscapes and wildlife-rich oceans. The range of opportunities for people to interact with wildlife continues to grow, manifested in a growing spectrum of activities available to the public.

In relation to this, attention is often placed on the effects of visitors on the host environment. Baker (1997:274) suggests that, in the case of Africa, while there seems to be agreement on the necessity of preserving the continent's wildlife heritage for future generations, there is no consensus on the strategy. The conservation community and the public are split over the best methods for Africa, and also the best methods for individual communities in Africa.

In southern Africa, commercial utilisation of wildlife has been actively promoted and has taken place on private, communal and public land, involving a wide range of activities, such as: wildlife viewing tourism, safari hunting tourism, community wildlife use, game ranching, and intensive wildlife farming. Consumptive products have consisted of meat, hides, skins, ivory and live sales. The economic characteristics of wildlife use activities are varied, ranging from low-input, small-scale, labour intensive subsistence use of low-density, free-ranging wildlife, to capital-intensive farming enterprises with captive breeding and rearing. The

different activities differ widely in terms of efficiency of land use, capital, labour, management, transport costs, environmental compatibility (with tourism at the compatible extreme and intensive farming at the incompatible extreme). They also differ in terms of private profitability, economic rates of return and contribution to national income per unit of land (Barnes, 1998).

Commercial wildlife use activities in southern Africa provide income for private, modern sector entrepreneurs, but they also contribute to the livelihoods of southern African historically marginalised rural communities. Here, they are often complementary to other household coping strategies, such as livestock keeping and crop production, and have contributed to development in communal areas. (Ashley and LaFranchi, 1997; Ashley and Barnes, 1996; Barnes 2002).

Where land is designated specifically for wildlife and forest conservation, such as in national parks, game and forest reserves, wildlife use has mainly involved non-consumptive tourism. Indeed, non-consumptive wildlife tourism has generally emerged as by far the most economically important wildlife use in southern African countries (Novelli et al. 2006). Of lesser economic importance in southern Africa are the consumptive wildlife tourism uses, trophy hunting and recreational angling. Consumptive and non-consumptive tourism may seem mutually exclusive, necessitating a choice between one or the other. However, in southern Africa they are commonly practised side by side, and occupy settings with different resource arrays. There is growing evidence that they are not entirely mutually exclusive especially at the district and national levels (Barnes 1998, 2001).

### **The Namibian context**

Namibia embraces 824,000 square km on the west coast of southern Africa. It has a population of 1.8 million people. Its environment ranges from the extremely arid Namib desert in the west, along the coast, through arid karroid shrub lands and arid and semi-arid savannas, to semi-arid woodlands (700 mm mean annual rainfall) in the north east. The three main types of land tenure are depicted in Figure 1; state-owned communal (tribally occupied) land; privately owned (commercial farming) land; and state-owned (public) land. Land use is dominated by extensive use of natural rangeland with livestock and wildlife. Species rich, highly valuable wildlife communities occur in parts of the communal land, and local

communities have limited custodial rights to use these. Communities are able to form communal conservancies for this purpose, within the national community-based natural resources management programme (Jones 1995). Private land contains large numbers of wildlife, dominated by plains game species. Here, land holders have limited custodial rights to use wildlife either individually or collectively through commercial conservancies. Use of wildlife in the country is primarily through tourism, with some consumptive use for meat. At least half of all tourism in Namibia is directed at nature-based pursuits, dominated by non-consumptive activities, which take place in protected areas, on communal land and on private land. These involve self-drive or guided camping safaris and luxury lodge experiences, some of which are promoted as ecotourism operations. Trophy hunting tourism, described in detail below, is of lesser economic importance.

[FIGURE 1 near here]

On the coast, the Namib Desert environment is extremely arid, and the waters are part of the Benguela marine system, which is characterised by cold but nutrient-rich up-welling, and abundant fish resources with relatively low species diversity. The marine fish stocks support important industrial fisheries (Molloy and Reinikainen, 2003, p.43), involving demersal species, such as hake, pelagic species, such as sardines, horse mackerel, anchovy and tuna, and crustaceans, such as lobster and crab. There is some commercial harvesting of seals, and an inshore line fishery, involving both commercial boats and recreational angling. The latter is described in detail below.

Landholders on private land and communities on communal land have been given custodial and use rights over their wildlife, and this has resulted in considerable investment in wildlife stocks in these areas. It has also resulted in the use of these stocks by landholders, for meat, consumptive tourism (trophy hunting), and non-consumptive tourism (wildlife viewing). On private land, owners have developed commercial wildlife use activities, and in several situations have joined together with groups of neighbours to form conservancies, which provide economies of scale in wildlife management (Barnes and de Jager, 1996). On communal land communities have formed management entities termed conservancies, through which they are able to exercise custodial rights.

The introduction of wildlife-based tourism on private land has resulted in some conversion of land use from livestock to wildlife production. This has been partly due to higher financial incentives associated with wildlife, and partly due to the need to diversify income and reduce dependence on livestock, which is no longer subsidised. Among communities on communal land the introduction of wildlife-based tourism has not displaced livestock production significantly, but has tended to make use of new land, mostly unsuited to livestock. Wildlife tourism on Namibian communal land has thus emerged as largely complementary to traditional income earning activities. It has provided significant new cash income for households, enhancing overall incomes, with little opportunity cost (Ashley and LaFranchi, 1997).

### **Namibia trophy hunting context**

In Namibia, policy on wildlife explicitly encourages utilisation through tourism and consumptive harvesting. Wildlife's comparative advantage is mainly associated with its use for tourism. The hunting tourism industry involves guided visits for tourists who hunt trophy-quality game animals and retain the trophies. Trophy hunting clients are upper-income recreational hunters, mostly from Germany, but also from Austria, Spain, the USA, France, Belgium, Switzerland, Italy, Denmark and some 25 other countries. Most trophy hunting is on private land where hunting bags comprise mainly plains game species. Smaller quotas, mostly involving high value species, are offered on communal land.

Trophy hunting is regulated both by government and private agents. The Namibia Professional Hunting Association (NAPHA) was founded in 1974 in order to promote Namibia as a hunting destination internationally and protect the right to hunt locally. The Association has an active working relationship with the Namibian Ministry of Environment and Tourism, and contributes to the realisation of legislation and to the implementation of regulations (Appendix 1).

Namibian land-owners with investments in wildlife stocks can register with the government as hunting farms and then offer hunts. Similarly on communal land, either the state, or community conservancies can offer hunts. Trophy hunting is only permitted in the company of a registered hunting guide. In 2000, 458 hunting guides, belonging to three categories, were registered. There were 157 ordinary hunting guides who may only guide hunts on a



single specific private hunting farm. There were 193 master hunting guides, who may only guide hunts on a maximum of three specific private hunting farms. There were 108 professional hunters who may guide hunts anywhere in the country, where such hunting is permitted, including on public land.

Hunters can choose between predetermined hunting packages, containing varying numbers of animals from each species. Hunting bags on private land consists almost exclusively of plains game, including species such as gemsbok (*Oryx gazella*), springbok (*Antidorcas marsupialis*), kudu (*Tragelaphus strepsiceros*) warthog (*Phacochoerus africanus*), hartebeest (*Alcelaphus buselaphus caama*), mountain zebra (*Equus zebra hartmannae*) eland (*Taurotragus oryx*), and others. Hunting bags on communal land include plains game species but commonly also include high-value wildlife species, such as elephant (*Loxodonta africana*), leopard (*Panthera pardus*), buffalo (*Syncerus caffer*), lion (*Panthera leo*) and sable (*Hippotragus niger*). Hunters must obtain export permits in order to take trophies home.

Barnes (1996a) described the trophy hunting industry in Namibia. This chapter draws on results of work by Humavindu and Barnes (2003), Novelli and Humavindu (2005), Novelli et al (2006), Samuelsson and Stage (2006) and Stage (2006), which describe the economic characteristics of trophy hunting.

### **Namibia recreational angling context**

The marine environment supports a highly esteemed recreational fishery. Anglers mostly fish from the shore, from the beach, in the surf, using bait. Most frequently landed are kob (mostly silver kob, *Argyrosomus inodorus*, but also dusky kob, *A. coronus*), west coast steenbras (*Lithognathus aureti*), galjoen (*Dichistius capensis*) and blacktail (*Diplodus sargus*). To a lesser extent, sharks are targeted, including the copper shark (*Carcharhinus brachyurus*), the spotted gully shark (*Triakis megalopterus*) and the smoothhound (*Mustelus mustelus*). A small part of the recreational fishery involves inshore boat angling for a similar range of species, but also the pelagic snoek (*Thysites atun*). Catch and release is only practised to a limited extent, and mostly in the case of larger shark landings.

Access to angling on the Namibian coast is restricted to about one quarter of the coastline, some 260 km, and most takes place in north-central stretches, between Walvis Bay and the

Ugab river mouth. Land on the arid coastline is state controlled, and there are no resident communities, or private land holdings associated with the fishery. A set of regulations, under the Fisheries Act (Act 29 of 1992), came into force on 4 January 1993, implementing the 'sustainable conservation measures' indicated in Appendix 2. Angling is thus regulated to a limited extent by the state, which enforces restrictions on daily bag limits, fishing location, bait collection, as detailed in Appendix 2. Recently, a licensing system has been introduced. Anglers are required to purchase annual fishing licences, although there is no restriction on angler numbers. Individual anglers originate from coastal Namibia, inland Namibia, and South Africa. Angling is mostly unguided and practised by individuals alone or in groups.

The marine recreational fishery is described in detail by Kirchner (1998), Holtzhausen (1999), Kirchner and Beyer (1999), Holtzhausen et al. (2001), and Holtzhausen and Kirchner (2001). The fish resource targeted by anglers is also utilised by an inshore commercial line fishery, and evidence suggests that, overall, off-takes have been unsustainable. This chapter draws on results of work done by Kirchner et al. (2000), Zeybrandt and Barnes (2001), Barnes et al. (2002, 2004), Kirchner and Stage (2005) on the economic characteristics of the coastal angling fishery.

### **Economic aspects of trophy hunting and recreational angling**

Table 2 shows comparative data on the trophy hunting and coastal recreational angling sectors. The data for hunters are derived from analyses of hunting licence and trophy export permit records, as well as of results from a postal survey of hunters, by Humavindu and Barnes (2003), Samuelsson and Stage (2006), and Stage (2006). The data for anglers are based on analyses of a roving creel survey, and two surveys of angler expenditures undertaken by Kirchner and Beyer (1999), Kirchner et al. (2000), Zeybrandt and Barnes (2001). Estimates of the price elasticity of demand for coastal angling trips were made by Zeybrandt and Barnes (2001) and Barnes et al. (2002, 2004), but no elasticity estimates are available for hunting.

[TABLE 2 near here]

The number of anglers is more than twice the number of trophy hunters, and the number of angling days per annum is more than three times the number of trophy hunting days. Coastal

angling trips tend to be longer than hunting trips, and anglers take many more fish per trip than hunters take trophies. Coastal angling takes nearly 460,000 fish per annum while the annual harvest of game animals is some 13,000. Of interest is the composition of the hunting and angling populations. Trophy hunters are nearly all foreign, and three quarters are from overseas. On the other hand coastal anglers are nearly all from Africa, and more than half of them are domestic tourists resident in Namibia.

Zeybrandt and Barnes (2001), and Barnes et al. (2002, 2004) estimated the price elasticity of demand for angling trips. They found this demand to be inelastic, which suggests that on average, anglers are willing to pay more than they actually do for a trip. Anglers largely use government-run campsites, for which prices arbitrarily set, and at the time of the study angler numbers were unrestricted and unlicensed (government has since introduced a payment for licences system, which aims to capture some of this willingness to pay). No price elasticity estimates for hunting trips are available, but one might expect the price elasticity to be neutral, given that hunting is hosted by the private sector, prices tend to be market-related. Such an expectation is supported by findings for non-consumptive tourism in Botswana, where the price elasticity of demand for use of government campsites was inelastic, while that for use of private lodges was not (Barnes 1996b).

Table 3 draws on and synthesises data from Humavindu and Barnes (2003), Samuelsson and Stage (2006), and Stage 2006, for hunting and Kirchner et al (2000), Zeybrandt and Barnes (2001), Zeybrandt and Barnes (2001), Barnes et al. (2002, 2004) and Kirchner and Stage (2005) for angling. Samuelsson and Stage (2006) and Kirchner and Stage (2005), made use of a social accounting matrix (SAM) for the Namibian economy (Lange, et al. 2004) to measure the economic impact of direct expenditures for hunting and angling on the broader economy.

[TABLE 3 near here]

Table 3 shows some interesting differences in the financial and economic characteristics of trophy hunting and coastal angling. Hunters pay nearly nine times more for a trip than anglers. The aggregate expenditure (gross output) for the trophy hunting sector is some four times larger than that for the coastal angling sector. But in terms of contribution to the gross national product (GNP), trophy hunting adds some 12 times more than coastal angling. This is in terms of the direct contribution (that of the sector alone) as well as the indirect contribution

(when the effect of the income multiplier in the broader economy is taken into account). Thus, for hunting, each dollar of expenditure generates some \$0.47 in direct GNP, and a further \$0.43 in indirect GNP via the income multiplier. For angling, each dollar of expenditure generates only \$0.15 in direct GNP, and a further \$0.14 indirectly via the multiplier.

The reason why the GNP contribution, relative to output, is so much lower for angling than it is for hunting, is because a large portion of anglers are Namibian, while almost no hunters are. If there was no angling, Namibian anglers would be expected to spend similar amounts on other recreational pursuits in the country, i.e. their contributions to GNP would happen anyway and cannot be attributed to the presence of angling opportunities. However, foreign anglers and hunters would likely not come to Namibia if there was no angling or hunting, so that their GNP contributions would be lost and can be attributed to the presence of angling and hunting opportunities. Samuelsson and Stage (2006) and Storey and Allen (1993) explain this principle.

On the other hand both hunters and anglers enjoy what is termed a consumer surplus. This means that some hunters and anglers pay less than they would be willing to pay for their experience. The consumer surplus of foreign hunters and anglers does not benefit Namibia, while that enjoyed by Namibian residents does. In Table 3, consumer surpluses enjoyed by Namibians are added to the GNP values to get the total economic values for hunting and angling. The estimated consumer surplus for Namibian anglers is some N\$29.5 million.

Thus, the total economic value (GNP contributions plus any Namibian consumer surpluses) for trophy hunting is some four times more than that for coastal angling. Because the number of anglers per annum is more than twice that of hunters, the economic value generated per hunter is some nine times higher than that generated per angler.

According to Table 3 the direct GNP contribution of hunting tourism and coastal angling constitute some 6% and 0.5%, respectively, of the total GNP contribution of the tourism sector in Namibia. Nature-based tourism is estimated to make up some two thirds of total tourism sector so this means that trophy hunting and coastal angling contribute some 9% and 0.7% respectively to direct nature-based tourism GNP. Thus, by far the bulk of the nature-based tourism sector constitutes non-consumptive tourism activities. Novelli et al. (2006) showed that while non-consumptive wildlife-based tourism earns most income, hunting

tourism occupies an important and complementary niche in Namibia. The same applies to coastal angling, so that both trophy hunting and angling occupy specific niches and do not displace other tourism activities or potential.

Samuelsson and Stage (2006) used the social accounting matrix to analyse to whom the total income (GNP) generated through trophy hunting accrues. Some 21% is captured by government, and some 40% accrues to low income earners and communal land communities. Hunting thus contributes significantly to poverty reduction and to the treasury. No such analysis exists for coastal angling, but since communal land is not involved here, it might be surmised that the impact of coastal angling on poverty alleviation would be less. Much of the economic value of coastal angling in Namibia takes the form of consumer surplus, enjoyed by middle class anglers.

### **Social and environmental aspects of trophy hunting and recreational angling**

The comparative information given above, suggests that trophy hunting contributes more to rural development than coastal angling. This is partly because of the setting. Some trophy hunting activities take place on communal land, where rural communities are able to benefit at least to some extent through conservancies. Here, rural communities also benefit through the empowerment, institutional development and capacity building that accompanies CBNRM. No rural communities exist on the arid coast and the contribution of angling to low income households is restricted to wage payments within formal sector linkages. Trophy hunting takes place through guiding outfitters, which themselves directly create jobs and build capacity. Angling is a non-guided activity carried out by individuals, and it does not provide such benefits.

The trophy hunting industry is run through the private sector on private and communally controlled land. The landholders involved also benefit from the activities, and tend also to invest in the wildlife resources on their land. Resource production and use are thus linked in mutually reinforcing way. With coastal angling the state facilitates a *de facto* open access fishery and the resource is not actively managed or owned. Trophy hunting off-takes are markedly selective and small, while angling catches (despite some catch restrictions) tend to non-selective and larger, and the practise of catch and release is not prevalent. The numbers of trophy hunters are partially restricted through quota and licensing mechanisms, while the

numbers of anglers is not. Generally trophy hunting is recognised as having had a positive conservation effect (Barnes 1996a; Novelli et al. 2006). In contrast, there is evidence that the line-fish resources which support angling have been over-utilised (Kirchner 1998; Holtzhausen, 1999; Holtzhausen et al. 2001; Holtzhausen and Kirchner 2001). Furthermore, the open access and unguided nature of coastal angling has tended to results in environmental problems due to littering and destructive off-road driving.

As noted above, there is a strong and apparently growing international animal rights lobby, which considers recreational hunting unethical and would like to see it ended (Novelli et al. 2006). The angling sector does not appear to suffer from the same opposition, perhaps because there is less public empathy for the resource it uses.

## **Conclusions**

Comparison between the two main forms of consumptive tourism in Namibia, trophy hunting and coastal angling shows that trophy hunting is more economically efficient than coastal angling. It also appears to be more socially and environmentally acceptable than coastal angling. Hunting tourism involves smaller numbers of tourists than angling tourism, but it generates significantly more income for the country. It also contributes more to poverty reduction and development than angling. Hunting tourism appears to be more environmentally sustainable than angling tourism, with NAPHA claiming that a 38 year period of ethical, reasonably priced trophy hunting of the highest standard in Namibia has revealed that sustainable utilisation of wildlife resources has been a major factor in protecting game populations. Even depleted game species, which were formerly present in areas of Namibia, have been re-introduced through effective game management based on the principle of conservation through selective hunting. NAPHA is therefore convinced that mans' oldest cultural heritage, namely hunting, carried out through sustainable game utilisation, is an effective tool to ensure the survival of wildlife and the well-being of local communities (NAPHA 2005).

The reasons for these differences are partly situational, but primarily related to property rights and institutional factors. Coastal angling takes place away from communal lands and makes use of a more or less openly accessible resource, while hunting takes place on private or communal land and makes use of an at least partially-owned resource. Trophy hunting

tourism by law involves only guided hunts, and it targets high income foreign clients. On private and communal land, there is a self reinforcing link between investment in the wildlife resource and its use through hunting tourism. In coastal angling, there is no such link, instead the central government administers the use of a largely unmanaged resource by mostly unguided individuals. Investment and management of the resource is negligible and limited to application of limited catch restrictions and (recently) issuance of angling licences.

Both trophy hunting and coastal angling have important contributions to make to Namibian tourism, and Namibian development. They occupy niches, which are complementary in tourism, i.e., they do not displace other non-consumptive tourism activities but add to them. But the question arises as to whether there are policy interventions, which might make coastal angling contribute more to the economy, poverty reduction and sustainable development. A start has been made since the data described above were collected, in that anglers now have to purchase licenses. This allows capture of at least some of the consumer surplus, which results from non-market pricing in the system. These revenues can be reinvested in management of the system or invested in national development. Policies which promote more guided angling rather than individual use, could significantly enhance the economic contribution of the angling sector, enhance its contribution to poverty reduction, and make it more environmentally sustainable.

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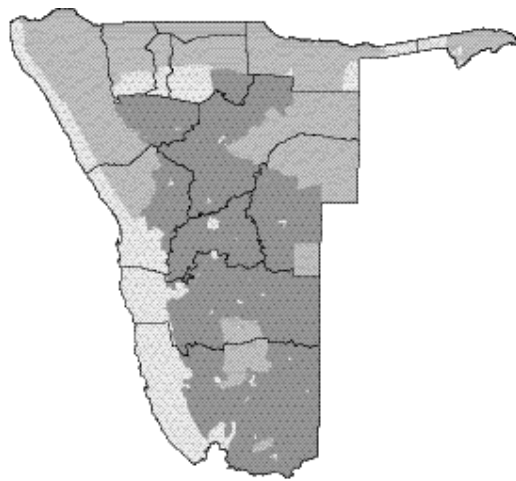
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**Figure 1. Land tenure in Namibia, Dark shading = private land, intermediate shading = communal land, pale shading = state land (Mendelsohn et al., 2002)**



**Table 1: The wildlife tourism product (modified from Reynolds and Braithwaite definition 2001:33-34)**

<b>Categories</b>	<b>Activities</b>
<i>Nature-based tours with wildlife component</i>	Wildlife as a key but incidental part of the product.
<i>Visit to locations with good wildlife presence</i>	Accommodations located in proximity to wildlife-rich habitat (i.e. water holes) and they might attract wildlife through the provision of food or other enticement.
<i>Visit to artificial attractions based on wildlife</i>	Man-made attractions where the species are kept in captivity (i.e. zoos, aquarium), and may even be trained (i.e. elephant and camel trails, dolphin parks)
<i>Animal watching</i>	Observation of certain species based on special interest (i.e. bird-watching, scuba diving)
<i>Habitat specific tours</i>	Based on a habitat rich in wildlife and usually amenable to being accessed by specialised vehicle or vessel.
<i>Thrill-offering tours</i>	Exhibition of a dangerous or large species enticed to engage in spectacular behaviour in the wild by the operator (i.e. shark diving)
<i>Hunting/Fishing tours</i>	Consumptive use of wildlife in natural habitat, semi-captive or farmed condition.
<i>Ecotourism</i>	Education and interpretation of the natural environment together with cultural aspects, often linked to conservation practices

**Table 2: Comparative average characteristics for the trophy hunting and coastal angling sectors in Namibia, 2005**

Measure	Units	Trophy hunting	Coastal angling
Number of hunters/anglers	No./annum	3,640	8,270
- Foreign from overseas	%	75%	<3%?
- Foreign from Africa	%	22%	43%
- Domestic from Namibia	%	<3%?	54%
Number of hunting/fishing days	No./annum	51,000	173,000
Average length of trip	No. days	14	21
Total number trophy animals/fish taken	No./annum	13,300	464,100
Number trophy animals/fish taken per trip	No./trip	4	56
Price elasticity of demand for trip	-	not known	inelastic

**Table 3: Comparative financial and economic characteristics for the trophy hunting and coastal angling sectors in Namibia, 2005**

Measure	Units	Trophy hunting	Coastal angling
Hunter/angler expenditure per trip	N\$/trip	54,120	6,270
Aggregate hunting/angling expenditure	N\$/annum	202,349,200	51,648,300
Aggregate direct value added to GNP	N\$/annum	95,104,100	7,833,900
- As % of wildlife-based tourism GNP	%	9%	0.7%
- As % of total tourism sector GNP	%	6%	0.5%
Aggregate indirect value added to GNP	N\$/annum	86,179,900	7,050,500
- Income to communal land communities	%	14%	None
- Income to low income employees	%	26%	Not known
- Income to high income employees	%	5%	Not known
- Income to commercial agriculture	%	5%	None
- Income to other sectors	%	29%	Not known
- Income to government	%	21%	Not known
Total impact of hunting/angling on GNP	N\$/annum	181,284,000	14,884,400
Aggregate Namibian consumer surplus	N\$/annum	negligible	29,539,400
Total economic value of hunting/angling	N\$/annum	181,284,000	44,423,700
Economic value per hunter/angler	N\$	49,750	4,240



## Appendix 1: Current hunting regulation in Namibia

<b>Hunting season</b>	The trophy hunting season stretches from 1st February to 30th November. During December and January the hunting season is closed to trophy hunting. February may still fall within the rainy season and November may still be too hot.
<b>Hunting Guides</b>	Hunting shall be conducted exclusively in company of a registered hunting guide , master hunting guide or professional hunter. <b>Hunting guides</b> (HG) may only conduct hunts on their own farm(s), duly registered as a hunting farm(s). <b>Master hunting guides</b> (MHG) may only conduct hunts on their own farm(s) duly registered, plus two additional duly registered hunting farms. <b>Professional hunters</b> (PH) may conduct hunts on all farms, provided they have written permission from the owner of the property independent of whether the farm is registered or not. <b>PH with big-game licence.</b> Only these PH's may conduct hunts with guests for elephant, rhinoceros, buffalo and lion. <b>Bow hunting.</b> Only hunting guides/ master hunting guides/ professional hunters in possession of a valid bow hunting licence may conduct bow hunting and guide bow hunters.
<b>Hunting permits</b>	A hunt shall only commence if the HG / MHG / PH has obtained a valid hunting permit (trophy hunting permit) from Nature Conservation prior to the start of the hunt. For cheetah and leopard an additional hunting permit has to be obtained prior to the start of the hunt.
<b>Wing shooting</b>	A hunter may take no more than two members of the permitted bird species during the hunt, which will be listed in the trophy permit. During the official "wing shooting season" more of each species is allowed.
<b>Hunting clients</b>	A hunting guide, master hunting guide or professional hunter shall accompany only two hunters to hunt simultaneously.
<b>Firearms</b>	Smallest calibre 7 mm. Minimum energy (Eo - muzzle velocity): 1350 Joule for springbuck, duiker etc. 2700 Joule for hartebeest, wildebeest, kudu, gemsbuck, eland etc. 5400 Joule for buffalo, elephant, rhino etc. No solid point cartridge is allowed to be used on antelope or any other species. <i>Handguns and automatic weapons are prohibited</i>
<b>Bow hunting</b>	A Hunting Guide, Master Hunting Guide or Professional Hunter with additional qualifications for bow hunting must guide trophy hunters. Bow-hunting for trophies may only take place on game farms and areas which are registered for this purpose with the Ministry of Environment and Tourism. Hunting permits for various game species must be organized by the outfitter. <i>Bow energy is specified as follows:</i> <i>Small Game -25 ft/lb</i> <i>Medium Game -40 ft/lb</i> <i>Large Game -65 ft/lb.</i>
<b>Trophies</b>	A hunting guest may only take two animals of a kind each year, irrespective if the trophies are exported or not. All Trophies must attain the minimum points of trophy quality. (Exceptions are allowed only with old, setback or very abnormal trophies.)
<b>Export of trophies</b>	All trophies which are exported to the EU must be cleaned according to EU regulations. Hides need 14 days to dry

**Appendix 2: Regulation under the Fisheries Act 29 of 1992 (Ministry of Fisheries and marine Resources, 2005)**

<b>Prohibited species:</b>	No person shall pursue, wilfully disturb, catch, shoot, kill or be in possession of any great white shark, whale, dolphin, marine turtle or polychaete (bristle) worm. This means that angling with worms as bait, is now prohibited.
<b>Trading, exportation and importation:</b>	No person without a license or permit to catch fish on a commercial basis, or with the written authority of the Minister, shall sell any fish or marine organisms, including plants, provided that any such organisms imported into Namibia, may be sold. No written authority shall be granted in respect of red bait, coelenterates, limpets, periwinkles, chisones, bivalves, slugs, hermit crabs, echinoderms and galjoen. The written authority of the Minister is needed to import or export any live marine organisms.
<b>Prohibited areas for catching of fish</b>	<p>1. Subject to subregulation (2), no person shall catch or disturb any fish or damage the seabed in such a way that it may be detrimental to the marine life ecosystem in general, within two nautical miles from the high water-line in any of the following areas</p> <ol style="list-style-type: none"> <li>from the middle of the Cunene River to the southern bank of the Ugab River excluding the areas described for fishing;</li> <li>from concrete beacons marked SV1 (southern border of Sandwich Harbour) to RL3 (just north of Luderitz);</li> <li>from concrete beacons marked P1 (just south of Luderitz) to P2 (just north of Pamona Island);</li> <li>from the southern limits of the quay in the harbour of Walvis Bay, along the coastline to Pelican Point;</li> <li>The shore of any of the islands along the Namibian coast.</li> </ol> <p>2. Angling areas for catching of fish notwithstanding the provisions of subregulation (1) Any person may catch or collect red bait in the following mark areas;</p> <ol style="list-style-type: none"> <li>Terrace Bay between concrete beacons marked TB1 situated approximately 5 km north of Terrace Bay and TB2 situated approximately 25 south of Terrace Bay;</li> <li>Torra Bay between concrete beacons marked TB3 situated approximately 10km north of Torra Bay and TB4 situated approximately 10km south of Torra Bay;</li> <li>From the Ugab River to Walvis Bay;</li> <li>From Pelican Point to Sandwich Harbour ( Sandwich Harbour marked with concrete beacons, in the south SV1 and in the north SV2);</li> <li>From the Agate beach to Grosse Bucht in the Luderitz area;</li> <li>From Pamona Island to the Orange River on the southern border of Namibia.</li> </ol> <p>3. From any fishing vessel in respect of which a license or permit has been issued and which authorizes the catching of small pelagic fish with purse-seiner nets or rock lobster with traps or ring-nets or the use of handlines from such a vessel, catch fish within two nautical miles at any place within any area described in subregulation(1) but excluding the catching of rock lobster which areas are described in regulation 19(1)(a).</p> <p>4. With written permission of the Minister</p> <ol style="list-style-type: none"> <li>harvest or collect aquatic plants washed up on the shore at any place within area south of Hottentots Bay</li> <li>remove aquatic plants washed up on the seashore within the areas jurisdiction of local authorities of Henties Bay, Swakopmund, Walvis Bay, Luderitz and Oranjemund.</li> </ol>
<b>General</b>	<p>1. Subject to the provisions of subregulations (2) and (3), no person shall, except on the authority of the Minister in the form set out in Annexure K, on any one day catch or convey or be in possession of any of the following species of fish in excess of the number or mass stipulated: Barnacles 5, Black mussels 50, Coelenterates 5, Echinoderms 5, Hermit crab 5, Limpets 15, Mollusks (other black mussel, limpet, periwinkles or white mussel) 5, Prawns 5, Periwinkles 25, Red bait 2kg without shell, White mussel 25</p> <p>2. Subregulation (1) shall not</p> <ol style="list-style-type: none"> <li>be construed as prohibiting then conveyance or possession of any species of fish referred to in that subregulation in excess of prescribed maximum quantity, if such fish emanated from any catch by any person whoever under a license or permit or any other authorization issued or granted under the Act or these regulations;</li> <li>apply where prawns, octopods, squid or whelks are caught from a fishing vessel in respect of which a license or permit has been issued.</li> </ol>

	<p>3. No permit as contemplated in subregulation (1) shall be issued to catch within a distance of two nautical miles from the high water-line more than the quantity prescribed by that subregulation in respect of limpets, octopods, periwinkles, prawns or white mussel.</p>
<p><b>Quantity limitations: Angling of specific species</b></p>	<p>1. No Person shall on any one day catch from the shore or an angling boat or if for own use, and retain more than 30 fish in total of one of the following species: Kabeljou, Steenbras, Dassie, or Galjoen. Only eight of these may be Galjoen.</p> <p>2. In respect of the transporting of the fish, restrictions as above are the same. If all or any fish are not whole up to a maximum of 30kg may be carried of which only 8kg may be Galjoen.</p> <p>3. An angler may transport fish on behalf of another angler as long as that person accompanies him in the vehicle. In such a case 60 whole fish or 60kg if not whole may be carried. If all or any of the fish are on whole the weight may not exceed 60kg. Of the 60 fish carried there may not be more than 16 whole Galjoen or 16kg if not whole.</p> <p>4. Subregulation (2) and (3) shall not be construed as prohibiting the transport of a quantity of any of the species of fish referred to in subregulations (1), but excluding galjoen, in excess of any quantity prescribed by those subregulation, is such fish emanated from any catch made by any person whoever under any license or permit or other authorization issued or granted under the Act or these regulation.</p> <p>5. For the purposes of this regulation any fish of which any one or more of the following parts have been cut off or removed shall be deemed still to be in a whole state, namely, the head, tail, scales or intestines.</p>