

**TOURIST HUNTING AND IT'S ROLE IN DEVELOPMENT OF
WILDLIFE MANAGEMENT AREAS IN TANZANIA**

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ABSTRACT

Tourist hunting in Tanzania has developed over a long period and is a principle source of income for vast areas of the country. The industry has demonstrated an impressive growth in recent years and is an important source of foreign exchange to Tanzania but little information is available on the industry. The Wildlife Division of the Ministry of Natural Resources and Tourism has developed a command system of control that favours a select group of hunting outfitters with reduced income generation and the exclusion of rural communities who are the legitimate holders of the land upon which hunting takes places. Concessions are leased at fixed rates far below the market value,

and many to companies without the necessary marketing capacity. A system of subleasing mostly to foreigners has thus developed. Low rates are achieved and much of the hunting income that is generated never enters Tanzania and cannot be taxed. The Wildlife Policy (1998) describes the development of Wildlife Management Areas (WMAs) that are managed by the local communities. Tourist hunting is the land use option that will provide the major source of funds for WMAs. The development of WMAs is delayed and there is no effective schedule for sharing of benefits from tourist hunting with the rural communities on whose land much of the hunting occurs. Outfitters are vaguely required to contribute towards protection and support local communities, but set in a manner that cannot be effectively evaluated. There is a general hesitation among outfitters to accept the WMA concept and effectively empower local communities. International and local pressures will grow and demand change. The Wildlife Division needs to be proactive through implementing effective reform of the tourist hunting industry, but this is only possible if: (i) Effective market-based competition between outfitters for concessions is introduced; (ii) Control of subleasing is implemented; (iii) Local communities are the principal decision makers for allocation of concessions and quota setting for hunting on their land, and they receive and manage the funds generated on their land.

I. INTRODUCTION

Tanzania has over 130 hunting concessions covering an area in excess of 250,000 km² that are leased to outfitters licensed to conduct tourist hunting. More than 60 species can be hunted on a tourist-hunting license. Tourist hunting plays an important role in the areas where it is conducted. Many areas are either too remote or do not support highly visible wildlife populations, and do not to compete with prime game viewing areas such as the Serengeti National Park. Tourist hunting therefore is the most economically viable form of wildlife utilisation and plays an important role in the economic development of many remote areas. Without the income generated from tourist hunting, many important wildlife areas would cease to be viable.

I.1 DEVELOPMENT OF THE TANZANIAN TOURIST HUNTING INDUSTRY

The regulations for hunting in Tanzania have evolved over the last 115 years. In the 1920s when wildlife was widespread and plentiful, the sport hunter was given a generous quota on his annual license, comprising 268 animals of 39 species (including two rhino), which he/she could shoot in any area except in the game reserves. In the early 1950s, the Tanganyika Game Department started attaching a fee to each animal shot, and declared 90 game controlled areas (GCAs) to preserve important wildlife areas (LAMPREY 1995). In the years following independence in 1961, the Game Department opened up the GCAs to regular hunting to increase earnings from wildlife. In 1965, tourist hunting was permitted in the game reserves, starting with the vast Selous Game

Reserve, which was divided into 47 hunting blocks in a system designed by Brian Nicholson. However, political changes that took place in Tanzania in the early 1970s led to a complete ban on sport hunting in 1973. Underlying reasons for this drastic action was to nationalise the industry and tourist hunting was reopened in 1978 under control of the Tanzania Wildlife Corporation (TAWICO), a government parastatal. In 1988, massive corruption and incompetent management by TAWICO was evident, and the management of hunting was removed from them and placed once again with the Wildlife Division. Since 1988 the industry has shown substantial growth. A number of changes were introduced, notably the increase in private sector safari outfitters and some funds generated from the wildlife sector channelled to the local District Councils. The fee structure was overhauled into its present state.

Subdivision of concessions

Subsequent changes have been made to many of the hunting concessions originally established according to the layout of the old GCAs. Many of the original concessions were vast and far greater than could be utilised as a single concessions (some up to 9,000 km²). During the 1990s many were subdivided, and the original quotas have usually been applied to each of the subdivisions, thus vastly increasing the quota of the original area. However, the original quota were usually set at levels of offtake that can be achieved by an operator from a single hunting camp. Quota are adjusted annually and with time substantial differences from the original quotas develop.

Support to the Wildlife Division related to hunting

In 1988, the Selous Conservation Programme was initiated as a joint programme between the German Technical Cooperation (GTZ) and the Wildlife Division to uplift

the management of the Selous Game Reserve, which is now the greatest hunting area in Tanzania, and possibly the world. The GTZ support has been diversified and extended to promote of community wildlife management initiatives through the development of wildlife management areas (BALDUS, 2003).

The USAID sponsored Planning and Assessment for Wildlife Management Project (PAWM) in 1990 to tackle key planning issues in the hunting industry at a national scale with the aim of promoting sustainable development in the wildlife sector.

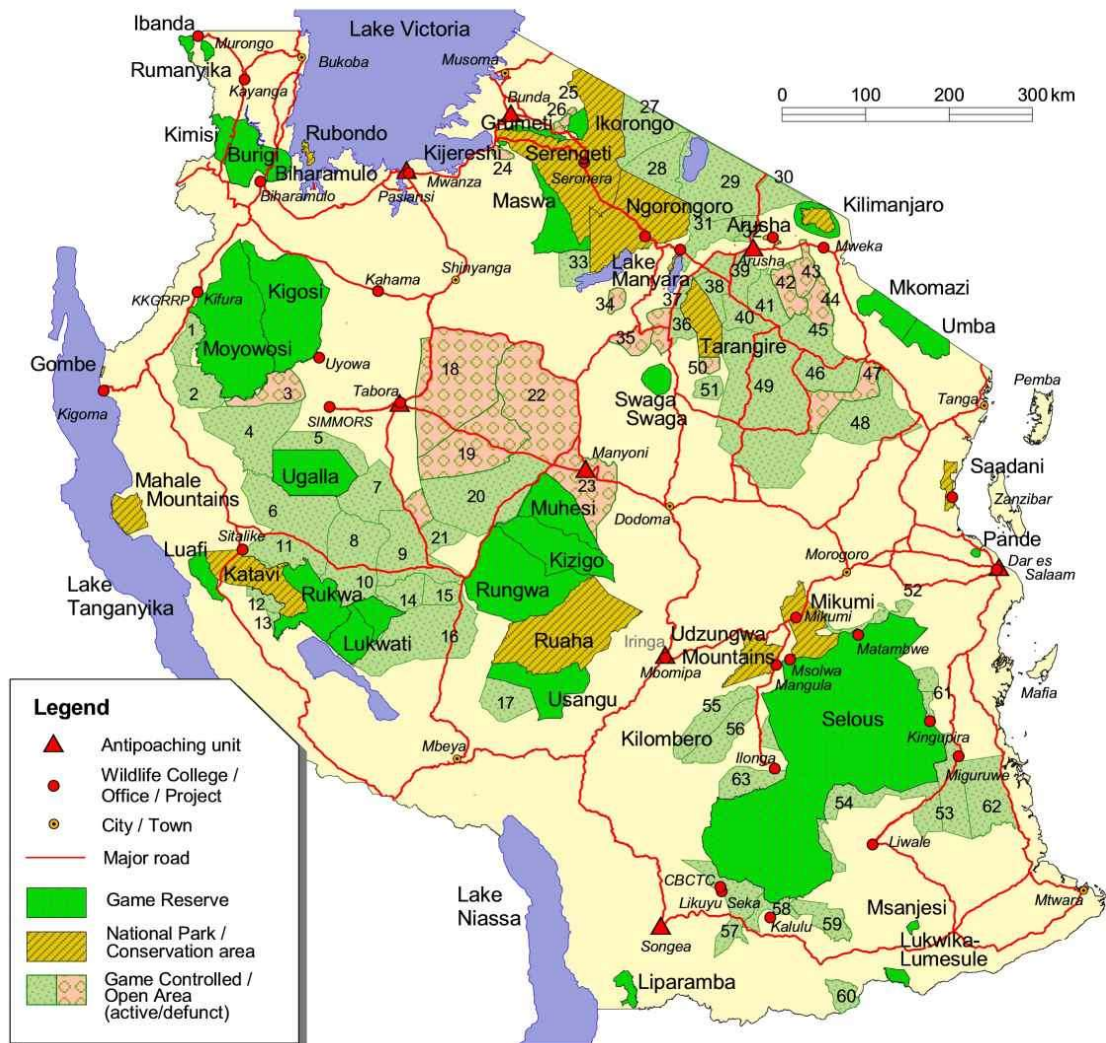
In 1996 Broomhead conducted an audit of the entire hunting system and the Tanzanian Wildlife Protection Fund (BROOMHEAD 1997) at the request of the Wildlife Division with funding from GTZ. This was a comprehensive study in which a computerised system for the entire hunting industry was developed, with an emphasis on the financial management. The system was intended to improve transparency of hunting and prevent the manipulation of quotas, but key issues were never implemented by the Wildlife Division.

A Microsoft Access database was developed in 1999 at the request of the Selous Game Reserve (SGR) management to provide an overview of the hunting there. This was developed by Cauldwell as a low cost initiative with support from the GTZ Selous Conservation Programme. It has however been maintained and has evolved into an effective monitoring tool for the hunting that takes place in the entire Selous ecosystem.

I.2 MANAGEMENT AND ADMINISTRATION OF TOURIST HUNTING

Numerous hunting concessions are distributed throughout the country either in Game Reserves, Game Controlled Areas or Open Areas (Figure 1). The Wildlife Division leases the concessions on a five-year tenure to hunting outfitters that fulfil the requirements defined in a set of hunting regulations, and who have been authorised to guide foreign clients on big game hunting safaris. An Advisory Committee on Block Allocation appointed by the Minister of Natural Resources and Tourism screens applications by hunting outfitters and advises the Minister on the allocation of concessions. Concessions are not allocated according to a transparent market-driven system.

Each concession is allocated a quota of animals that can be hunted during the season (July to December). Outfitters must utilise the wildlife on quota to generate revenue not less than 40% of the value of the total quota allocated. Failing to do so, the outfitter is required to make a top-up payment to the Wildlife Division to meet the 40% minimum. The outfitter is further required to contribute to antipoaching, road construction and community development. These requirements are set according to rather vague criteria. A professional hunter licensed by the Wildlife Division must guide clients on the hunt.



Open areas (OA) and game controlled areas (GCA)

Western Tanzania

- 1 Makere Forest
- 2 Uvinza OA
- 3 Gombe GCA
- 4 Luganzo GCA
- 5 Ugalla OA

- 6 Msima GCA
- 7 Ugunda GCA
- 8 Inyonga West GCA
- 9 Inyonga East GCA
- 10 Rungwa River GCA
- 11 Mlele North GCA

- 12 Mlele South GCA
- 13 Lake Rukwa GCA
- 14 Piti West OA
- 15 Inyonga East
- 16 Chunya OA
- 17 Utengule Swamp OA

- 18 Wembere OA North
- 19 Wembere OA Central
- 20 Wembere OA South
- 21 Itulu Forest East
- 22 Singida OA
- 23 Manyoni OA

Masailand

- 24 Maswa OA
- 25 Nyichoka OA
- 26 Sibora OA
- 27 Loliondo GCA
- 28 Loliondo South GCA
- 29 Lake Natron GCA
- 30 Longido GCA

- 31 Mto wa Mbu GCA
- 32 Monduli Juu
- 33 Maswa Makao
- 34 Yaeda Chini OA
- 35 Lake Balangida
- 36 Babati OA
- 37 Burunge

- 38 Lolkisale
- 39 Simanjiro West
- 40 Simanjiro Kitangare
- 41 Simanjiro Naberra
- 42 Simanjiro East
- 43 Sanya Lelatema
- 44 Ruvu Same

- 45 Ruvu Masai
- 46 Kitwai North
- 47 Kitwai Central
- 48 Kitwai South
- 49 Masai OA
- 50 Mkungunero
- 51 Kondoa OA

Selous / SE Coastal

- 52 Gonabis / Jukumu WMA
- 53 Liwale OA North
- 54 Liwale OA South
- 55 Kilombero GCA North

- 56 Kilombero GCA South
- 57 Namtumbo WMA
- 58 Tunduru WMA
- 59 Sasawara Forest

- 60 Tunduru Forest
- 61 Tapika OA
- 62 Kilwa OA North, Central & South

- 63 Mahenge OA South

Figure ~~1~~ ~~Fee payable for tourist hunting~~ ~~structure, game controlled and open hunting areas~~ of Tanzania

The schedule of fees payable by the tourist hunter and hunting operation are presented in Table I.

CITES restrictions

CITES Appendix I restrictions are applied that limit the numbers of elephant (50), leopard (500) and crocodile (100) hunting trophies that can annually be exported from Tanzania and imported into other countries signatory to the CITES agreement.

Tanzania recently requested the CITES secretariat for a raise in the leopard quota and was granted an increase from 300 to 500 animals per year. Tanzania similarly intends to request an increase in the quota for elephant trophies from 50 to 100 per year.

Resident hunting

Resident hunting is allowed in Tanzania but is restricted to open areas. Resident hunting permits are issued by District Game Officers for their own district. Permits are issued for a variety of common game species such as impala, hartebeest, topi, buffalo and game birds. Two fee structures are applied, for Tanzanian citizens and residents respectively.

The fees are low and the income generated from resident hunting is minimal and provides no economic return to the areas where resident hunting takes place. There is no effective supervision, and it is generally accepted that the system is widely misused.

Table I: Fees payable by tourist hunters and outfitters in Tanzania

| Item | Requirement | Cost |
|---------------------------------------|--|-------------|
| Permit fees | For a hunting safari up to seven days | US\$450 |
| | For a hunting safari more than seven days | US\$600 |
| Conservation fees | Daily fee per tourist hunter | US\$100 |
| Observer fees | Daily fee per person accompanying a tourist hunter | US\$50 |
| Trophy handling fees | For a hunting safari up to seven days | US\$200 |
| | For a hunting safari more than seven days | US\$300 |
| Block fees | Annual fee per concession payable by the outfitter | US\$7,500 |
| Professional hunters license (annual) | Professional hunters resident in Tanzania | US\$1,000 |
| | Professional hunters non-resident in Tanzania | US\$2,000 |

Table II: Overview of the tourist hunting industry in Tanzania

| Year | Revenue accrued by Wildlife Division | Gross income from hunting industry |
|------|---|---------------------------------------|
| 1988 | US\$ 1,200,000 *** | US\$ 4,600,000 * |
| 1992 | US\$ 5,300,000 * | US\$ 13,900,000 * |
| 1996 | US\$ 7,400,000** | US\$ 19,400,000 *** |
| 2001 | US\$ 10,500,000 *** | US\$ 27,600,000 *** |

Sources of data: * PAWM (1995); ** BROOMHEAD (1997); *** Calculations
based on hunting data of the Selous Game Reserve

II. PERFORMANCE OF THE TOURIST HUNTING INDUSTRY

II.1 OVERVIEW OF TOTAL INCOME

Table II provides a realistic overview of the magnitude of the industry as well as its growth over the past years. Figures are confirmed by KIBEBE (1994), KITWARA (1996), TAHOA (1999) and PASANISI (2001).

Approximately 20,500 hunting days are sold annually to 1,370 clients, generating a gross income for the industry of over US\$ 27 million from daily rates. In addition, many of the leasing companies have up to 40% mark-up on the trophy fees thus generating an additional US\$ 8.5 million. The taxable income in Tanzania is approximately US\$ 28 million, but many companies are subleasing their hunting to a third party which causes a loss in the actual taxable income in Tanzania.

Basic facts on the hunting industry

Some basic facts that demonstrate the performance of the tourist hunting industry in Tanzania are presented below:

- Trophy fees represent 60% of the income generated by the Wildlife Division from hunting (Figure 2)
- Average income to the Wildlife Division per hunting client is approximately US\$7,000
- Income generation in the SGR has grown on average by 13.7% per annum from 1988 to 2001. Income from trophy fees and conservation fees has grown by 14% and 17.5% respectively.

- Income generation per unit area from all hunting areas of Tanzania is approximately US\$ 40 / km². Hunting income per unit area for the SGR is approximately US\$ 70 / km²
- Photographic tourism in the SGR generated approximately US\$ 130 / km² prior to a recent expansion of the area. This represents nearly double the income per unit area than hunting tourism in the same reserve, but at a cost of over fifty times the tourist density per unit area. The impact of photographic tourism through off-road driving, fuel spillages & waste disposal, disturbance of wildlife, need for infrastructure, presence of support staff etc certainly exceeds the impact of a limited offtake of wildlife through hunting.
- The number of hunting clients visiting the SGR has grown by nearly 400% from 1988 to 2001. Income generation has however grown by a lesser 250% over the same period, despite an increased utilisation of concessions. Income generated by the Wildlife Division per hunter day has remained static at approximately US\$520 per hunter day.
- One hundred and forty one concessions are leased to 42 companies, however 32 different groups of companies exist. 51 concessions (36%) are leased to the 3 largest groups.

II.3 BREAKDOWN OF INCOME

The breakdown of total Wildlife Division revenue generated from hunting in the SGR according to the components permit fees, conservation fees, trophy fees and block fees was averaged for the years 1996 to 2001 and is presented as a pie chart in Figure 2.

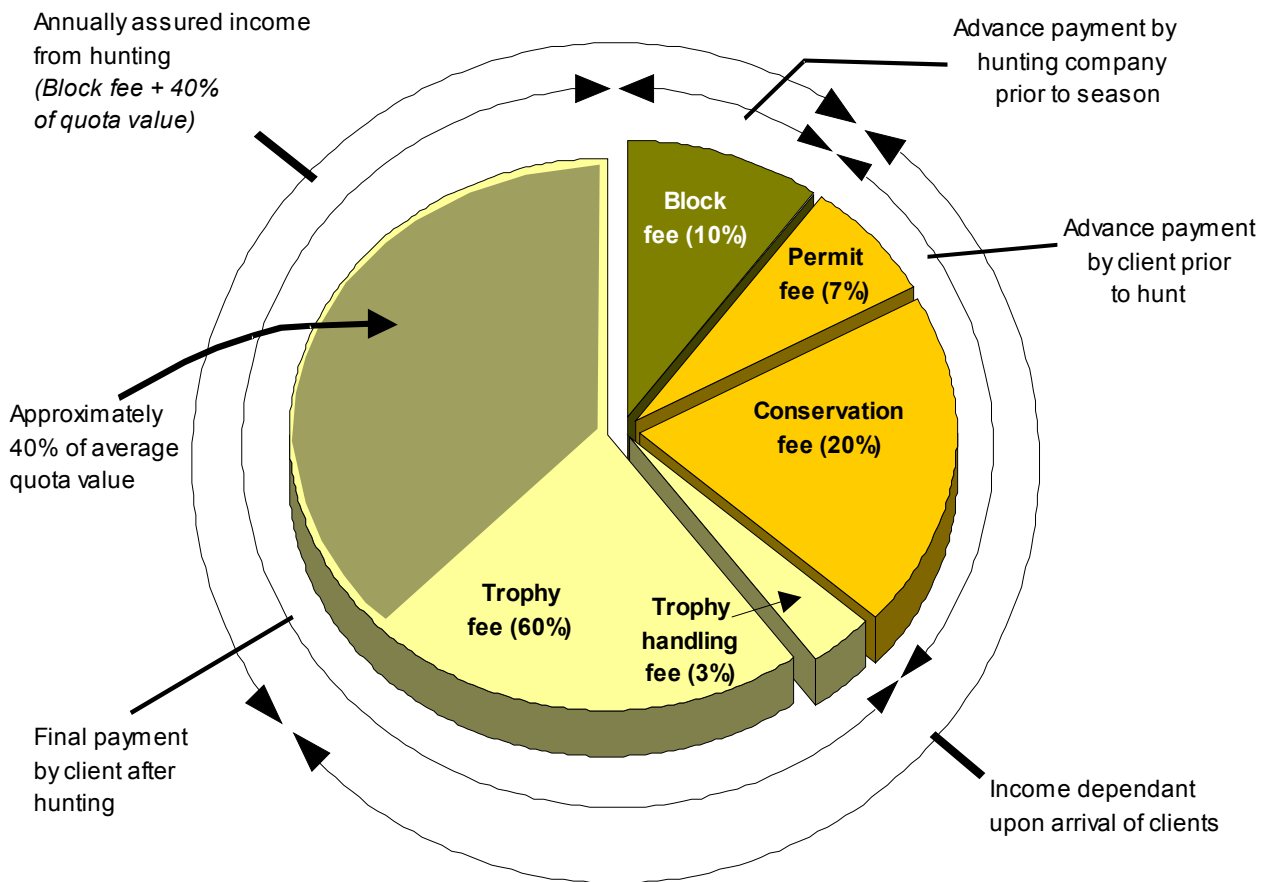


Figure 2: Breakdown of hunting income in the SGR paid to the Wildlife Division

Reliability of income

The companies leasing blocks are required to utilise at least 40% of the value of the quota failing which they must pay the Wildlife Division the shortfall. The Wildlife Division is therefore assured of receiving the block fee (representing 10%, Figure 2) plus 40% of the annual quota, which in reality represents approximately 36% of the total Wildlife Division revenue (averaged from 1996 to 2001 of the Selous hunting data). The guaranteed annual income to the Wildlife Division is therefore 46%. The remainder (54%) is dependant upon the arrival of hunting clients, which is influenced by fluctuations in tourist demand (global stability) and the operational efficiency of the leasing companies. There is a significant annual fluctuation in the number of hunting tourists coming to Tanzania. Local and international terror attacks have caused noticeable drops in the number of tourist hunters.

Dependence on trophy fees

The dependence of the current hunting system on income from trophy fees (60%) is clearly evident from Figure 2. As a result, the hunting system requires an increased offtake of animals to boost income. As a conservation agency, the Wildlife Division should be striving towards increasing the conservation and reducing the offtake of wildlife. This does not necessarily imply non-sustainability within the hunting system, but both sound conservation and economic principles would require that the maximum benefit should be achieved from the minimum offtake.

Payment schedule

Under the current system, the outfitters are only required to pay the Block fee in advance (only 10% of their payments to the Wildlife Division). The remainder of the

funds are paid only after their clients arrive or at the end once hunting season is completed and accounting work has been finalised, the deadline for this payment being 30 April. On the other hand, the outfitters typically demand a 50% advance payment of the daily fees by their clients on booking a safari six to eight months prior to the hunt. The remainder of the daily fees must be paid in full at least two months prior to the hunt. Interest accrued by the industry on this amount probably exceeds US\$1 million per annum.

Effects on the hunting system

The net result of the current hunting administration strategies adopted by the Wildlife Division is that it has been structured to favour a select group of hunting companies for the following reasons:

- The Wildlife Division assumes the greater proportion of risk on behalf of the outfitters, shielding them from fluctuations in tourist demand;
- Their selection criteria, fixed concession fees and exclusion of non-hunting activities protect their selected companies from competition on the open market;
- There is little pressure brought to bear on the outfitters to bring clients to Tanzania because the fees due to the Wildlife Division from the outfitters are so low;
- The fee structure allows companies to accrue significant amounts of interest.

A better system is outlined in a Management Plan for Tourist Hunting (PAWM 1995), where the emphasis of income generation (greater than 60%) is on the lease of concessions, which includes daily fees. Such payments would be payable to the Wildlife Division at an earlier stage thus shifting the financial risk to the outfitters. Such a system

would reduce the emphasis on offtake of animals and encourage other forms of income generation. At the same time, financially marginal companies would be discouraged.

II.4 INCOME GENERATION PER CONCESSION

Large differences in income generation are noticeable between the various concessions in the SGR. The highest earning concession yields US\$108,000 per annum for the Wildlife Division compared to the lowest earning concession with US\$29,000 per annum. These differences are partly attributed to a number of factors such as accessibility and/or wildlife densities. However, there is an effect of concession size, with larger concessions in the southern sectors of the reserve generating lower incomes than smaller concessions in the north. Based on income generation per concession, areas in the SGR could be grouped as heavily utilised, optimally utilised and under-utilised. The real reasons that bring about these differences are brought about by the marketing strategies of the leasing companies.

Outfitter marketing strategies

The outfitters that lease the larger more productive concessions use their marketing strategies to take advantage of the rigid government pricing structure. Such outfitters deliberately under-utilise their quota, which reduces their payments due to the Wildlife Division as well as their running costs, while at the same time their reduced offtake allows them to offer an exclusive product at high prices. These companies generate their profits by maximising the income generated per client. The system further works in their favour as their reduced offtake provides them with lower subsequent quota allocations

and consequently less pressure to perform. These outfitters are often influential with senior government.

The opposite of this scenario are those leasing companies offering cheaper safaris and thus utilise their concessions heavily to generate the necessary turnover. Their high levels of utilisation lead to higher quota allocations, which further encourage over-utilisation. These companies tend not to hold concessions for as long a period as the more exclusive outfitters. In addition, these companies are not competent in marketing their hunts directly and thus do not develop a sufficient client base of their own and therefore tend to sublease their hunting to wandering professional hunters and/or other operators. Those persons finally involved in the actual hunting activities have little or no commitment to the area or for their own reputation and are most often the persons that bring the industry into disrepute.

The above text describes a simple model for opposing strategies of companies that lease hunting concessions. In reality there is a full spectrum of strategies that complete the range between these opposing sides, but the situation can be best described as comprising 3 discrete groups, those exclusive outfitters, a moderate group that strive for a balance between their own profits and offering an ethical hunting product, and the fly-by-night types that attempt to maximise profits from minimal investment.

II.5 SUBLEASING, VALUE AND ALLOCATION OF CONCESSIONS

Subleasing of hunting concessions occurs widely in Tanzania. The Wildlife Division has implemented an affirmative action policy aimed at increasing the ownership of companies leasing concessions by Tanzanian nationals. A concession is leased by the Wildlife Division at a fixed minimal rate of US\$ 7,500 per year. Many of the local leasing companies do not have the capacity to market their hunts internationally and are not able to secure clients. They therefore sell their quota to professional hunters or companies with clients, referred to here as wandering professional hunters (usually of foreign origin). The leasing company is usually responsible for providing a camp in the concession. These facilities and the right to a hunt is normally sold to the wandering professional hunters at US\$ 600 to US\$ 700 per day depending on whether a hunting vehicle is provided. The wandering professional hunters however bill their clients between US\$ 1,500 and US\$ 1,800 per hunting day.

Taxation

The leasing company is responsible for paying all Government fees and is liable for taxation by the Tanzanian Revenue Authority (TRA). Virtually all of these wandering professional hunters are foreigners, some do not register with the Wildlife Division and enter Tanzania on tourist visas together with their clients. These hunters bill their clients in foreign currency overseas and the bulk of the income paid by their clients never enters Tanzania (estimated to represent up to 30% of the gross value of the tourist hunting industry). Some of these wandering professional hunters do not even pay professional hunter fees. Evidence of this is in pamphlets offered by outfitters advertising hunting in Tanzania, but their companies and professional hunters do not appear in the statistics. There is strong reason to believe that the major part of these funds are never taxed, which could only be possible if the TRA are not given access to

the quota allocations of the Wildlife Division that stipulate the minimum income requirements expected from concessions. It is clearly difficult for TRA to regulate the income lost through subleasing as it is not open and transparent. The only option to clarify this issue is for the Wildlife Division to implement effective control of the subleasing, and to collaborate and share data with the TRA.

Vague basis for allocation of concessions

There is no true market-based competition as concessions are leased at a fixed rate to selected companies, there is however an intense struggle between the current select outfitters for recognition by the Wildlife Division for the allocation of concessions. Allocation of concessions is according to a command system, but it is not always clear what criteria are used as a basis for the allocation. A Consensus of Agreement on the allocation of concessions between the Minister, the Permanent Secretary and the Tanzanian Hunter's Association includes some vague requirements where the outfitter is expected to contribute towards protection and community development. The Consensus of Agreement stipulates that the renewal of concessions will be automatic where an outfitter fulfils the vague set of conditions. There have been cases where this agreement has been taken to court and decisions of the Director of Wildlife on the allocation of concessions, backed up by the Minister have been overruled.

In 2003 the Wildlife Division allocated 141 concessions to 42 outfitters in Tanzania (WILDLIFE DIVISION 2003). One group of companies under common ownership held 20 concessions, while two other groups held 15 and 16 concessions respectively.

Duration of lease

Outfitters regularly raise the issue that short lease periods (5 years) currently issued are a major obstacle to their investment and care of hunting concessions. Ensuring a secure lease for a sufficient period of time is a key issue towards improving the standard of hunting. Insecure leases have been a problem in the past, analysis of the SGR hunting data reveals that during the period 1993 to 1995 there was a great deal of uncertainty regarding lease of concessions, however from 1996 there has been a much improved continuity in the lease, and the level of continuity has continuously increased up to 2003. Also a number of outfitters have retained their concessions for longer than 25 years.

Establishing the true market value of hunting and particularly the lease of concessions is a solution to many problems inherent in the hunting industry. Concessions are currently leased for a five-year period, which in economic terms this is a long time. Extending beyond that could have detrimental effect on establishing the market values for concessions.

Value of concessions and hunting companies

The analysis of the SGR hunting data reveals a wide range in the income generated from concessions, with the highest earning concessions generating four times the income of the lowest earning concessions. The willingness of outfitters to lease lower potential concessions at the current rates strongly suggests that a considerably higher lease is possible from the concessions with higher potential.

In some instances entire concessions are subleased and there is reliable evidence that these are leased at values up to 20 times (in excess of US\$ 130,000 per annum) the rate at which they are leased from the Wildlife Division.

Outfitters are able to sell their companies at high prices. Evaluation of a company sold recently indicates that the market value of a concession lease (after deduction of fixed and movable assets) was conservatively estimated at US\$ 50,000 per annum. The demand for concessions is high and they are certainly valued commercially at not less than US\$ 150,000 to US\$ 200,000 per five-year lease.

The value of a hunting company is therefore determined essentially by the allocation of concessions which is done through political decision, and common sense implies that each outfitter is wise to make every effort to influence the process. A market-based allocation would dramatically alter the situation to one where companies are valued on sound economic principles rather than the subjective discretion of a few individuals.

II.6 ROLE OF WILDLIFE IN INCOME GENERATION

Buffalo, leopard and lion are the key species to the tourist hunting industry. These species are responsible for generating 42% of the trophy fees for the Wildlife Division. Buffalo are by far the most important species contributing 22.1% (representing 13.3% of the total Wildlife Division income). This species is being heavily hunted with approximately 1.5 animals shot per client that visits the SGR. Clearly the viability of the hunting areas in Tanzania depends on maintaining a healthy buffalo population.

Hunting of elephant

Performance of elephant hunting towards income generation has been low with one in 11 clients visiting the SGR taking an elephant trophy, and elephant contribute 7.6% of trophy fees there. In 2001, only one in 15 clients hunted an elephant and the past years have seen a rapid increase in the numbers of elephants hunted. Elephant hunting is concentrated in the greater Selous Ecosystem and few elephants are hunted elsewhere. Low elephant offtakes are due to the restrictions imposed by CITES. Tanzania suffered heavy elephant poaching in the eighties, which caused a serious decline in elephant populations. Old bulls carrying large ivory were targeted in this poaching and very few remained. To encourage recovery of elephant populations, CITES listed elephants on Appendix 1 and restricts the number of trophies for export from Tanzania to 50 animals. To limit the offtake and keep within the CITES requirements, the Wildlife Division does not list elephants in the quota for hunting concessions. Instead special elephant permits are issued and minimum size trophy requirements are imposed, whereby the largest tusk must have a minimum of 1.7 m length or weight of 20 kg. This regulation has served well and elephant populations have recovered in many wildlife areas of Tanzania. The carrying capacity for elephants has been reached in some areas, such as the Selous Ecosystem and crop raiding in the village areas around the SGR has become a serious problem. These areas are regaining a reputation for prime elephant hunting, and in another 10 years there will be a multitude of elephants in the 70-pound trophy category. There is however inadequate monitoring of populations making the situation difficult to demonstrate.

Outfitters stress that there is a strong demand from tourist hunters for elephant trophies. The importance of elephant hunting in Tanzania is certainly going to increase and changes to the current system are needed. The CITES quota should be increased in accordance with the population increase and it is felt that the minimum trophy standards should be adjusted. Elephants should be placed on the hunting quota for the areas where good trophies are available.

II.7 QUOTA SETTING

Developing an ecological basis for setting quota is not easy. It is extremely costly to conduct regular aerial surveys countrywide. Furthermore, aerial surveys are unable to provide data for key species such as lion and leopard and do not provide consistently reliable trends of buffalo populations. Aerial census data provide only trends and the method alone therefore does not provide sufficient information for setting quota for any species. It is doubtful that a truly scientific basis for setting quota will ever be developed in the complex multi-species ecosystems in Africa. Instead the cumulative experience of setting quotas over many years that relies on several verifiable indicators (population estimates, trophy quality, age, abundance, offtake levels etc.) that can demonstrate little or no significant detrimental impacts on the wildlife populations provides the benchmark that allows for the confidence of setting future hunting quota through an adaptive management approach.

The approach used by the Wildlife Division to allocate quotas is to rely on the knowledge of Project Managers and District Game Officers who suggest quotas for the

Game Reserves and Game Controlled and Open Areas respectively. Aerial survey data are taken into account (where available) together with past hunting records and recommendations of professional hunters and outfitters. There is however no effective computerised analysis of past hunting records and the Wildlife Division has minimal capacity to implement an adaptive management approach.

There is a tendency for outfitters to be allocated their required hunting quotas, particularly those exclusive and influential outfitters who tend to demand lower quotas. The less scrupulous outfitters tend to request higher quotas, which are readily granted as these bring, increased income to the Wildlife Division.

Lion quota and hunting

There is concern that lion quotas are too high. On average only 52% of the SGR lion quotas have been used since 1996. Lion trophy fees are high at US\$2,000 per animal therefore increasing the number of lion on quota greatly increases the quota value and is the easiest means of applying pressure on the hunting operators to increase revenue.

WHITMAN et al. (2004) have used field data from Tanzania and careful modelling to demonstrate that harvesting only lions of six years and older (which can be determined from nose colour) is not harmful to a normal lion population. A relatively high offtake is possible provided no young lions are removed and the quality of trophies would be much improved. Their results imply that strict adherence to offtake of only old animals would make quotas for lions obsolete. They speculate that applying similar principles to other species would contribute towards the sustainability of hunting. Based on their results and external pressures to uplist lion at CITES, the Wildlife Division is

considering to a system of discouraging the export of lion trophies from animals less than six years old. The method of ageing trophies prior to issue of export documents is not yet clear, but this is a step towards better management of the lion population in the country.

A few professional hunters have tried this technique but found that it is difficult to assess the nose colour of live lions while hunting them. Frequently light is poor and the lions are usually too far from the hunters to clearly assess their age from nose colour. Also hunters believe there is too much variation between lions, with some old lions having pale noses, and the reverse might also be true. Experienced professional hunters find skull structure, in particular skull width, to be a good indicator of age on a live adult male lion. Unfortunately few professional hunters have this level of experience.

The Wildlife Division imposes a minimum requirement for leopard trophies whereby the body length (excluding the tail) must equal or exceed 1.3 meters. Minimum trophy sizes are also applicable to elephants, and this age criterion for lions is thus not an entirely new concept to the hunting industry. The minimum requirement for leopards is easily met, with the average body length of animals hunted in 2001 being two meters (GAMES and SEVERRE, 2002). A minimum six-year age requirement for lion trophies will present a far greater challenge to the hunting industry.

Many hunting outfitters also admit that it is becoming increasingly difficult to hunt good lion trophies. Many outfitters are now restricting the numbers of lion hunted in their concessions to encourage an increase in the available lion trophies despite high quota allocations. Some operators are imposing their own tight standards on the age and

quality of lion trophies taken, but others are over-shooting their quotas and taking young animals.

Impacts of hunting

A few species, such as lion are being affected by trophy hunting, however the vast majority of species are unaffected. Wildlife populations have declined in many areas of Tanzania, but this is attributed to increased settlement and illegal offtake of bushmeat. There is no evidence that the regulated tourist hunting industry has contributed to the general decline of wildlife populations, but there is plenty of evidence that the presence of a regulated hunting industry contributes significantly to reducing the illegal activities of poachers and provides an economic incentive to protect vast areas.

II.8 PRICING OF WILDLIFE

The fees charged and the number of days required for hunting various animals is based on the gazetted schedule of fees. This is effectively the marketing system used by the Wildlife Division. The disadvantage of this gazetted schedule is that it is rigid and adjustments to the trophy fees need to be made with Ministerial approval and are thus difficult to achieve. To increase income, the easiest option to the Wildlife Division has therefore been to increase the quota settings for some concessions thereby forcing the shooting of more animals.

The rigid marketing system creates difficulties for the outfitters. The numbers of many species that can be hunted is controlled by the quota allocations, and offtake is actually

forced by the 40% utilisation requirement. Many species require a 21-day permit to be hunted (e.g. hippo, sable, roan, klipspringer), however the numbers of hunts that an outfitter can sell effectively depends on the number of lion, leopard and buffalo trophies available in his concession and on the quota. Outfitters are not able to bring clients at the costs of hunting in Tanzania to take a 21-day license to shoot an antelope, and thus these trophies become difficult to market. In most cases the other species are sufficiently abundant to be unaffected by the levels of tourist hunting offtake.

Trophy fees for tourist hunting were gazetted in 1991 and have not been amended since. As a result, the trophy fees charged for some key species are significantly lower than that applicable elsewhere in the region.

Fees and restrictions on elephant hunting

Tanzania has been required through CITES restrictions to limit trophy hunting of elephant to not more than 50 animals per year. The Wildlife Division has achieved this by imposing a high minimum trophy size limit. Problems have arisen with under-sized elephants being shot due to various reasons which include: (i) the low trophy fee whereby professional hunters and their clients are willing to face a possible penalty for the sake of getting their elephant trophy; (ii) a high demand for elephant trophies which is currently not being met; and (iii) inexperienced professional hunters misjudging the ivory on live elephants. Raising the trophy fee considerably would facilitate enforcement of the regulations and adherence to CITES limits.

Outfitters have proposed an increase in elephant fees through imposing an additional ivory tax of US\$ 50 per kg that is above the minimum limit (ROHWER, 1998). The

SELOUS CONSERVATION PROGRAMME (1999) presented a more comprehensive proposal in which the minimum requirement for elephant trophies should be relaxed and the fees should be raised, but that the fees should be based on trophy size according to the following criteria:

1. Only bulls must be hunted
2. Minimum trophy size should be thirty pounds (all weights given refer to the largest tusk and are given in English pounds as this is the traditional measure for elephants)
3. If a bull under thirty pounds is shot, the price should be US\$ 10,000.
4. An elephant between thirty and fifty pounds costs US\$ 8,000.
5. An elephant between fifty and seventy five pounds should cost an additional US\$ 100 for every pound over fifty pounds.
6. An elephant over seventy five pounds should cost US\$ 10,500 plus an additional US\$ 200 for every pound over seventy five pounds.

An even higher fee structure than the SELOUS CONSERVATION PROGRAMME (1999) proposal could be possible. Systems must be simple, practical and enforceable. Experiences from a similar approach to elephant hunting in Zimbabwe were that such systems are cumbersome to administer, and they eventually set a single limit at a fixed price. General experience in Tanzania shows that complicated systems do not work.

While some increases to trophy fees are justified, large crosscutting increases are not recommended. The Tanzanian hunting industry is already heavily dependent on trophy fees, and emphasis needs to be shifted towards daily fees and concession lease fees.

Raising trophy fees is therefore not the recommended solution.

II.9 PROBLEM ANIMAL CONTROL

The Selous Conservation Programme (1999) proposal on elephant hunting discussed above further recommends that systems should be developed to include the control of crop-raiding elephants (including female animals) into the tourist hunting industry. This seems a logical solution to a chronic situation that becomes an ever-greater problem as wildlife populations increase in response to better protection. The involvement of tourist and professional hunters has also been proposed by the hunting fraternity on many occasions. The problem relates not only to elephants, but also to a range of animals that are considered dangerous game such as lion, crocodile, and to a lesser extent buffalo, hippo and leopard and even lesser crop raiding animals such as baboons, monkeys and bushpigs. The problem relates not only to crop raiding, damage to property and loss of livestock, but more severely to injury and loss of human life. In Tanzania approximately 200 people are killed by wildlife every year. Man-eating lions are a serious problem in Tanzania particularly in the south east, with approximately 30% of cases of wildlife-related loss of life attributed to active predation by lions (BALDUS, 2004). Killing sprees even occur where troublesome individuals or prides of lions develop a particular taste for human flesh.

The authors are conscious that incorporation of problem animals into tourist hunting can lead to problems. The system opens opportunity for abuse to shoot animals under the guise of problem animal control, and erodes the importance of quota setting.

Experiences show that the elimination of man-eating lions is extremely difficult, sometimes taking up to two years of diligent effort to locate and despatch these animals in the village areas. Incidence of man-eating correlates with rainfall, with most cases

occurring during the rainy season when wildlife is dispersed and the widespread tall grass seems to give the lions greater confidence. Use of tourist and commercial professional hunters in these areas for a variety of reasons is simply not an option.

Compensation is a difficult and politically sensitive topic, and is not considered within the scope of this document, save to say that some consideration should be given towards establishing a fund from dangerous animals hunted that is used as a means of compensation for seriously injured persons and instances where there has been some loss of life. Loss of life cannot be compensated, but a compensation fund generated from hunted dangerous game could be used as a means of reducing the occurrence of problems, for example strengthening of people's houses in affected areas and providing safe access to water. Table IV presents levies proposed to develop a compensation fund (BALDUS 2004).

Table III: Proposed levies for tourist hunters to establish a compensation fund (BALDUS, 2004).

| Dangerous game | Compensation fee (US\$) | Approximate number hunted |
|----------------|----------------------------|------------------------------|
| Lion | 1,000 | 250 |
| Elephant | 1,000 | 50 |
| Leopard | 500 | 300 |
| Buffalo | 100 | 2,000 |
| Hippo | 100 | 160 |
| Crocodile | 100 | 170 |

III. TOURIST HUNTING AND WILDLIFE MANAGEMENT AREAS

The concept of Wildlife Management Areas (WMA) in Tanzania has evolved from experience in the field. The development of the concept in Tanzanian legislation has been slow with the first drafts appearing in the National Wildlife Policy in 1996. The objectives of the Policy clearly demonstrate that it is the government's intention to support wildlife development in rural areas outside the protected areas.

Previous achievements

Much has already been achieved in the field of community wildlife management in Tanzania. Most notably are the successful community conservation schemes around the SGR developed with support from GTZ. These schemes give much of the responsibility of day-to-day management duties to the communities, such as basic monitoring and protection. In return the village natural resource committees are allocated a quota of common wildlife species that can be harvested and the meat is sold at nominal rates within the village. Wildlife populations in these areas have grown over the duration of these initiatives and some of the best elephant hunting in Tanzania takes place in these areas.

WMA regulations

With a liberal Wildlife Policy, the Wildlife Division has been required to develop and implement the concept of WMAs. But it was only after much deliberation that the regulations detailing the procedures for establishment and management of WMAs were released at the end of 2002 (WILDLIFE DIVISION, 2003). These regulations list 16 pilot areas in Tanzania where the concept of WMAs will be tested over a three-year

period (2003 – 2005). A number of applications for establishment of WMAs within these pilot areas have been submitted to the Wildlife Division, but actual step of formally establishing the first WMA has yet to be taken.

The above WMA regulations do not place any real control of the WMAs in the hands of the communities as was first envisaged when the Wildlife Policy was compiled. It is widely accepted that hunting will be the major source of income for the WMAs, but scrutiny of the current regulations reveals that the Wildlife Division will retain full control over the appointment of outfitters to hunt the WMAs, and what they are allowed to hunt by controlling the quotas.

Communities and tourist hunting

There is an intense struggle for recognition by the Wildlife Division between hunting outfitters, and there is the good, bad and dishonourable among them. Also the revenue generated from tourist hunting is considerable, actually enormous in comparison to most rural village economies, most of which are absolutely destitute. Thrusting such people into situations where they must negotiate big business deals together would be disastrous at this stage. There is already evidence of corruption between village leaders and hunting outfitters in some of the areas identified as pilot WMAs. This explains why the Wildlife Division has retained full control over the outfitters and their quota allocations over this pilot-testing phase.

Yet the fundamental issue remains, the WMA land belongs to the communities and they must be involved in the process of appointing outfitters and must receive an equitable benefit from the proceeds generated from their land. Communities can learn the

necessary skills and a staged development of community empowerment is required. A Management Plan for Tourist Hunting was developed by the Wildlife Division which presents a generous formula for sharing of benefits between the communities, district councils and the Wildlife Division. In the long term there will be a win-win situation for all sides and provide scope for growth of the industry if this basic ideal can be achieved.

Hesitation of hunting outfitters

Many of the outfitters leasing concessions are opposed to the concept of WMAs being introduced into Tanzania. The outfitters who have secured leases for concessions are afraid of change. They fear they might lose what they have and that costs will rise. The Wildlife Division currently prevents alternative forms of income generation within the hunting areas and outfitters are therefore protected from competing against other forms of wildlife tourism. They are also protected from financial risks, if there is a drop in tourists visiting the country, the Wildlife Division will shoulder the greatest loss. The Wildlife Division has further fixed the costs at which the outfitters lease concessions, thereby shielding them from their own natural market forces. The introduction of the WMA concept will incorporate the communities into the decision-making role regarding wildlife utilisation and the outfitters will need to start negotiating with many new players in the industry. Many more competitive outfitters will be able to enter the market and they will need to compete on the open market against other wildlife related tour operators. It is therefore not surprising that so many of the current select group of outfitters are opposed to the threat posed by the introduction of WMAs.

A few of the forward-looking outfitters are entering into dialogue with the communities and engage in small-scale social upliftment projects. However, most companies do mere

‘window dressing’ and are not taken to task, as the requirements set by the Wildlife Division are particularly vague in this regard. Hunting outfitters, and indeed many tourist providers want it to be their privilege to decide when and how to engage with communities without having the need imposed upon them. They prefer a paternalistic approach rather than a true empowerment of the communities to manage the wildlife. This approach will have to change as the communities become more experienced in dealing with outfitters.

IV. TOWARDS BETTER MANAGEMENT OF THE HUNTING INDUSTRY

While credit goes to the Wildlife Division for the growth of the hunting industry and improved management since take over from TAWICO in the late 1980s, there remain many problems that must be addressed. A draft management plan for tourist hunting was compiled by the Wildlife Division in 1995, which would bring about significant improvement, but it was never implemented. The Director of Wildlife accepted the document and the easiest fast track reform of the industry would be to begin implementing it, irrespective of some modifications and correction of mistakes that are necessary.

IV.1 GENERAL CONSIDERATIONS FOR MANAGEMENT OF HUNTING

The following principles should be considered when planning reform of the hunting industry:

- Competition between operations should be fostered so that realistic market prices are achieved. To achieve this, the wildlife authority should plan to offer fewer concessions than there are operators willing to take them up. In addition, the availability of concessions should be staggered so that a few come up for auction/tender each year or each alternate year.
- Where possible, systems should be transparent, and avoid any command allocation decisions. This requires that the wildlife authority should declare the terms and conditions of the award system well in advance, and that the award is done in public.
- Medium to long-term concession leases are required. Investment in, and development of, the industry with clear management objectives should be encouraged. Reasonable duration of lease is one of the cornerstones to improving quality in the hunting industry.
- Systems must be simple, practical and enforceable. Experience in Tanzania shows that complicated systems do not work.
- The systems for regulating the industry must be appropriate, and conducive to further development of the industry.
- It is easiest to regulate an industry by minimising the rules and maximising the penalties for contravention.

IV.2 THE REVISED DRAFT MANAGEMENT PLAN FOR TOURIST HUNTING

The Planning and Assessment for Wildlife Management project was funded by USAID from 1990 to 1995 to undertake an analysis of the tourist hunting industry and provide

guidance to the Wildlife Division. A key output of this project was the Revised Draft Management Plan for Tourist Hunting (PAWM, 1995) that was accepted by the Wildlife Division but never implemented. The management plan is simple but well formulated and outlines a detailed reform of the tourist hunting industry. Implementing these reforms would most certainly solve many of the problems inherent in the industry.

The management plan emphasises the allocation of hunting blocks through public tender for a five-year lease. A system is outlined that would realize the market value of hunting blocks while also encouraging the continuity of lease by companies that occupy concessions. There is much emphasis on the devolution of control of tourist hunting outside of protected areas to rural communities, while the Wildlife Division remains responsible for hunting in the game reserves.

IV.3 IMPROVED MONITORING AND QUOTA SETTING CAPACITY

Computerisation of hunting data

It is essential that the issuing of hunting permits and the returns be computerised, simply to cope with the huge volume of hunting data. This process should be linked to a database, which facilitates analysis of hunting data from all areas of the country. Custom software needs to be developed as the hunting industry has many peculiarities that would not be accommodated in regular off-the-shelf computer packages.

Aerial census

It is accepted that monitoring of wildlife populations is costly given the extent of the hunting areas, but it does however represent a first stage of population monitoring and yields a lot of useful information on population trends. The current system should continue on a more regular basis, but more effective monitoring is required on which to develop a sound basis for setting quota.

Trophy quality and age

A requirement to accurately record the trophy quality and age of every hunted animal should be imposed by the Wildlife Division upon the outfitters. The necessary procedures for trophy quality have been developed and tested in the SGR and should be implemented across the country.

The Wildlife Division needs to give consideration towards development of procedures for the simple analysis of trophy data to show trends in trophy quality for various key species. Such data has potential to be a good indicator of sustainable hunting practices.

IV.4 IMPROVED PERFORMANCE CRITERIA FOR OUTFITTERS

The current system assesses the performance of outfitters by their ability to utilise the allocated quota (i.e. the 40% rule). In some cases this strategy has led to over-hunting which could be detrimental to the Tanzania tourist industry as a whole in the long term.

This strategy should be altered to one in which the outfitter is judged by the total income generated from a concession including its lease. Emphasis should be on the maximum

income generation from the least number of animals hunted and encourage other forms of income generation.

Increased responsibility should be placed on the outfitters to contribute towards protection of the wildlife resources, development of their concessions and community involvement. Effective and unbiased indicators are required upon which to assess the contributions made to these requirements. While some outfitters make substantial contributions, others pay lip service to these requirements and do window dressing with paid journalists. Some of the responsibility for monitoring of wildlife populations should be placed upon the outfitters. Indeed some of the most effective monitoring is based on trends in trophy quality and requires involvement of the outfitters. A stringent and independent certification would be the best criteria for outfitters as discussed below.

IV.5 CERTIFICATION OF THE HUNTING INDUSTRY

Numerous problems are inherent in the tourist hunting industry. Finding solutions to many of the problems is not always easy, particularly when there is a lack of effective control on the industry. A new idea being considered in the international hunting industry is the concept of certification. Ideas are still in an infant stage, but this concept does offer a constructive approach towards setting standards and improving the industry. The concept is based on the systems applied for control of Forestry.

Forest Certification

Forest certification is a tool that has been developed since the early 1990s to improve forest management (DOWN TO EARTH 2001). The aim of certification is to make timber production more ecologically and socially responsible, and economically viable by grading sources so that consumers can choose on these grounds. The certification sets comprehensive standards against which the timber industry's performance can be measured. The Forest Stewardship Council (FSC) is the largest forest certification body, and is funded by charitable foundations, government donors, membership subscriptions and accreditation fees. It is not funded directly by the forestry industry, but companies do pay an annual fee for certification. The fee depends on the size of the company and the volume of timber produced. The FSC is a voluntary scheme. Applicants (timber companies) must request certification and submit full documentation for inspection, including annual work plans and reports prior to a field inspection. Local communities can contribute towards the assessment process.

Hunting certification

The concept of certification is considered here in the form of a high profile independent board that would evaluate and provide certificates of approval on both hunting areas and hunting outfitters. Evaluation of outfitters is on their own invitation. The Certification Board needs the influence to lobby for competitive advantages for certified outfitters with the international hunting associations and access to Western economies.

Maintaining a high standard of hunting requires: (i) proper management of the hunting area; (ii) professional conduct by the outfitter; and (iii) appropriate training for professional hunters. Certification requirements could be split according to three components based on the following criteria:

1. Certificate of approval on hunting areas (concessions) to be based on:

- Game populations are naturally sustained within the area or ecosystem of which the area is a part;
- Management is in accordance with an approved management plan;
- Key wildlife populations are stable and effectively monitored;
- Hunting quota are sustainable;
- A fair proportion of the funds generated by hunting are reinvested into the management of the area.

2. Certificate of approval for outfitters to be based on:

- Hunting shall be conducted only in approved areas;
- Outfitter abides by national legislation;
- Outfitter agrees to a code of hunting ethics, which are prominently displayed in every hunting camp and advertising media (brochures, websites etc);
- Outfitter initiates projects bringing tangible contributions towards the areas of operation;
- Outfitter engages in appropriate community empowerment schemes;
- Hunting is within quota;
- Trophy quality meets minimum standards acceptable for the area;
- Baiting for predators according to acceptable methods;
- Minimised environmental impact of hunting activities;
- Effective company administration;
- Audit reports are presented.

3. Certificate of competence for professional hunters

A school of professional hunting needs to be established where concepts and field experience appropriate to African conditions are taught to the highest standards of excellence. This school should be independent but needs recognition from many wildlife authorities and international hunting associations. A strong cooperation with the Certification Board is essential. Various options are possible for the establishment of such a school, some of these options being:

- The school is established and managed by the Tanzania Hunters Association;
- The school falls under the umbrella of MWEKA, the African Wildlife College;
- The school is managed as a private venture.

V. CONCLUSION

The ideals outlined in the Wildlife Policy of Tanzania (1998) place much emphasis on maintaining and developing a wildlife protected area network and involving all stakeholders in the conservation of the resource, and that it must contribute to the well-being of local communities and national poverty reduction.

Income accrued by the Wildlife Division could be substantially improved. Achieving a market value for the hunting concessions would significantly raise income. Some adjustments to trophy fees and improved flexibility in marketing strategies will provide additional income.

Tanzania has an extensive protected area network, but surrounding these are many hungry communities. They are affected by the proximity of the protected areas and the presence of dangerous animals, and thus should receive greater benefits. But more importantly, much hunting takes place on their land, which is generating considerable revenue which they are being denied. These communities must be incorporated into decision-making and receive significant financial reward for the hunting on their land. The way to achieve this is clear, through implementing both the management plan for tourist hunting and the regulations for the development of WMAs.

The current command style of management that the Wildlife Division imposes on the wildlife industry of Tanzania is not sustainable. Many internal forces and external are going to bring about many more changes to the system. Internal forces will come in the form of growing demands from communities and the politicians representing them. Outside influences will come in the form of additional CITES regulations, the revised US Endangered Species Act and the negative influences of anti-hunting lobbies. It is the latter forces that are destructive and dangerous to the Tanzanian economy. Pending reform, the Wildlife Division is extremely vulnerable to these negative forces. Cooperating with an independent system of certification would greatly assist the Wildlife Division.

REFERENCES

- BALDUS, R.D. ed. (2004). - Lion Conservation in Tanzania Leads to Serious Human–Lion Conflicts With a Case Study of a Man-eating Lion Killing 35 people. Tanzania Wildlife Discussion Paper No. 41. GTZ Community Wildlife Management, Dar es Salaam.
- BALDUS, R.D., KIBONDE, B. and SIEGE, L. (2003). - Seeking Conservation Partnerships in the Selous Game Reserve, Tanzania. PARKS Vol. 13 No 1. Conservation Partnerships in Africa. Pp 50-61.
- BROOMHEAD, N.G. (1997). - Financial Management of the Tourist Hunting Sector in Tanzania. Report No 3. Confidential report from GTZ to the Wildlife Division, Ministry of Natural Resources and Tourism, Dar es Salaam.
- DOWN TO EARTH (2001). - Certification in Indonesia: A Briefing. Document obtained from Internet: <http://dte.gn.apc.org/Ccert.htm>.
- GAMES, I. and SEVERRE, E.L.M. (2002). - Leopards in Tanzania, A Review. A paper submitted to the CITES Secretariat supporting the Tanzania proposal for an increased leopard hunting quota. Wildlife Division, Dar es Salaam.
- GTZ SELOUS CONSERVATION PROGRAMME. (1999). - Proposal for Modification of Elephant Hunting Regulations. GTZ Selous Conservation Programme. Unpublished report, Dar es Salaam.
- KIBEBE, J.D. (1994). - Tourist and Local Hunting in Tanzania. A Paper Presented at the Wildlife Department's Workshop in Arusha 26-28 October 1994. Ministry of Natural Resources and Tourism, Wildlife Division, Dar es Salaam.
- KITWARA, O. (1996). Paper Presented at the Wildlife Conservation Workshop, Arusha 11-15 March 1996. Ministry of Natural Resources and Tourism, Wildlife Division, Dar es Salaam.

- LAMPREY, R. (1995). The management of sport hunting in Tanzania. SWARA East African Wildlife Society Volume 18 No 2.
- PASANISI, G. (2001). - Problems Facing the Hunting Industry on Taxation. Letter from the Tanzanian Hunting Operators Association to the Minister of Finance.
- PAWM (1995). - Revised Policy and Management Plan for Tourist Hunting. Ministry of Natural Resources and Tourism, Wildlife Division, Dar es Salaam.
- ROHWER, R. (1998). - Letter to the Chief Warden of the Selous Game Reserve. 31 October 1998. Rolf Rohwer Safaris LTD. P.O. Box 13487 Dar es Salaam.
- TAHOA (1999). - Minutes of Address to the Ministry of natural Resources & Tourism's Annual Hunting Meeting 2 June 1999.
- WHITMAN K., STARFIELD, M., QUADLING, S. and PACKER C. (2004). - Sustainable trophy hunting of African lions. Nature. 428: 175-178.
- WILDLIFE DIVISION (1998). - The Wildlife Policy of Tanzania. Ministry of Natural Resources and Tourism, Wildlife Division, Dar es Salaam.
- WILDLIFE DIVISION (2003). - Reference manual for implementing guidelines for the designation and management of wildlife management (WMAs) in Tanzania. Ministry of Natural Resources and Tourism, Dar es Salaam.
- World Wide Fund for Nature (2000). - Analysis of Wildlife Markets (Sport Hunting and Tourism). WWF Programme Office, Harare, Zimbabwe. (In press).