Guidelines for improving the administration of sustainable hunting in sub-Saharan Africa

Food and Agriculture Organization of the United Nations

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FAO

Cover image:
Rangers patrolling in a community-based Hunting Area in Mozambique
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"*Hunting is not part of conservation, it is conservation.*"

Dr Jon Hutton, Executive Director of UNEP-WCMC
60th CIC General Assembly, Budapest, 26th April 2013

FOREWORD

The concept of a manual on "Guidelines on administration of hunting in sub-Saharan Africa" was first discussed in 2008 in Khartoum, at the 16th Session of the African Forestry and Wildlife Commission[1] (AFWC) of the Food and Agriculture Organization of the United Nations (FAO), and then developed in 2010 in Brazzaville at the 17th Session of the AFWC. At these meetings, the FAO member countries requested FAO to partner with other specialized organizations in supporting member countries in their efforts to sustainably manage wildlife, notably by deriving benefits from wildlife to support rural livelihoods, and contribute to food security and national/local economies.

This manual addresses this request and provides both technical and operational guidance on approaches and practices adopted by countries where regulated or sport hunting is conducted. This hunting industry brings considerable benefits, when and where well-managed, as documented in recent FAO publications (see FAO/CIC Technical series papers no. 7 & 8). However, like any sector, the hunting sector is in need of improvement in respect to (i) nature conservation, (ii) rural socio-economy and (iii) cultural livelihoods and lifestyles. By raising the level of professionalism in its administration, it is expected that the performances and quality of services of the whole sector will improve. Good administration is obviously crucial for promoting best practices and discouraging the others.

While the administration of national parks and wildlife viewing tourism has already been widely addressed by a broad range of organizations including FAO, the administration and management of regulated hunting and Hunting Areas had not been addressed yet. By filling a gap, these guidelines are completing a number of technical publications, guidelines and toolkits on sustainable wildlife management that have been produced by FAO, mainly addressing the issues of human-wildlife conflicts, wildlife legislation and the contribution of wildlife to national economies.

This manual is designed for anyone who is currently involved in the administration and management of the sustainable regulated hunting sector. Today, about 30 African countries offer one or more types of regulated hunting for mammals (big and/or small game), birds and reptiles. And some other countries are considering new perspectives of hunting. Its purpose is to provide guidance throughout the entire process, i.e. from leasing and managing a Hunting Area, to administration, management and monitoring of its services and performance. Being a useful resource and source of references, this manual will ideally lay on the desk of those in charge of Hunting Areas and the hunting sector. The discussion of each section is supported with examples of the experiences from countries that have been engaged with the regulated hunting sector process, and provides guidance on best practices. The manual is intended to be a 'lean' guide and provides links and references for the reader where needed.

The manual is not intended to be prescriptive but rather provides directions and guidelines for sustainable regulated hunting administration and management that must be adapted according to the specific circumstances and objectives of the country. It also outlines the quality and completeness criteria for the sound management of the industry to be endorsed by the international community.

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[1] The African Forestry and Wildlife Commission (AFWC) is one of the six regional forestry commissions of the Food and Agriculture Organization (FAO). The AFWC provides a policy and technical forum for the countries of the African region to discuss and address forest issues on a regional basis.

PREFACE

As well described by Professor Raul Valdez, the administration of hunting is far from having been invented by modern man. The written history of most ancient civilizations provides evidence of some kind of hunting organization: Assyrians, Babylonians, Egyptians, Greeks, Mongolians, Persians, Romans, Sumerians, etc. Some hunting rules even appear in the Old Testament. But nothing prevents us from assuming that hunting was already administered before these times or in other civilizations without written history. By defending their hunting grounds and game resources against intruders, the first human hunter-gatherers were probably already administering the hunting activity in their near environment. The organisation of hunting certainly evolved over millenia and really developed with the anthropocene. When humans initiated farming and wildlife domestication some 10,000 years ago, they started to modify landscapes and impact wildlife populations, which required a stronger administration of hunting.

In Africa also, the administration of hunting did not start under colonial rule. In traditional societies, especially those dependent on hunting for livelihood, there was, and still is today though to a far lesser degree, a body of unwritten hunting traditions which act as customary rules. Traditional hunting was circumscribed by many spatial, temporal, quantitative, qualitative and sociocultural constraints which, taken together, constitute a veritable regulatory framework. This consists of a set of accepted, applied customs and traditions acquired by elders and handed down to younger generations through apprenticeship.

In modern times, traditional rules governing hunting have been considerably altered and even disappeared at large scale. Societes turned from a subsistence hunting economy to commercial hunting in a market economy. Demographic growth increased the number of consumers of game. Sedentarization eliminated the practice of rotating hunting grounds. More frequent and severe droughts forced populations to fall back on wild resources and to transgress customary hunting rules out of necessity when granaries were empty. A greater exposure to the foreign modern world and to more efficient weapons weakened the fear of dangerous animals and increased the pressure on the most highly prized species. The rapid or insidious demise of traditional hunting customs and practices, including ceremonies, totemism, food taboos etc., contributed to a loss of respect for game. The gradual decline of apprenticeship and initiation of hunters opened hunting up to all and sundry, even the least qualified, who are likely to do the most damage to game populations. The traditional notion of hunting grounds has been undermined: village hunters themselves had to go farther and farther afield, particularly within a context of policies to regroup villages; there is no longer any place in Africa where animals live without being exploited by hunters. Vast networks for hunting and selling game were branching out and extending ever farther around large cities as game became rarer. Changing dietary habits and the adoption of new foods has tended to undermine the prestige of wild foods. The increasing recourse to modern medicine has also devalued traditional medicine, which uses many products derived from wild animals.

Modern hunting regulations are also largely responsible for the disappearance of customary hunting rules. Appropriation of all land by the State runs counter to the notion of community ownership of hunting grounds. The application of the colonial concept of *res nullius* to game disrupted traditional mentalities: by depriving rural communities of the sovereign right to use “their” traditional resources, this legal status rid hunters of responsibility towards something that no longer belonged to them. The subsequent perverse effect was the «tragedy of the

commons» where everyone views wildlife as a free-for-all resource. The introduction of a permit requirement in a number of countries had a negative impact on hunting traditions: once the permit is acquired, the hunter tends to believe he has been granted authorization once and for all, and is henceforth exonerated from all customary obligations and permitted all excesses.

As a result, all forms of hunting appear today more than ever in need of increased proper administration. In the contemporary period, tourism hunting appeared as a new form of hunting in the global context of tourism development. Being fully part of the formal economy, it is the most easily controlled form of hunting. All other forms of hunting, including traditional hunting, fall under the informal economy which is poorly administered. However, hunting tourism is still in a stage of modernization and adaptation to a changing world. Many stakeholders in this field still lack the basics of modern wildlife management.

The manual focuses on the specific topic of sustainable regulated hunting. It does not address the law itself, but the ways and means to apply the law: administration could be understood as the science and technology for implementing the law. The manual's intended public is not only civil servants of African countries but also of countries of the North that import hunting trophies for them to adequately understand the African countries from where trophies originate. Other targerted readers are the private sector involved in operating hunting tourism enterprises, local community leaders and NGOs developing community-based hunting tourism projects. Administration is too often considered the sole matter of Governments. While State administrations have the duty of ensuring that the law is applied, civil society is in charge of management matters. The distinct roles of the State administration and civil society are best performed when their respective rights and duties are fully understood and implemented.

The manual departs from a frequently adopted negative approach inspired by coercive and repressive positions. On the contrary, it aims to present a positive attitude for administering hunting with constructive intentions. The principles and rules presented here should not be understood as obstacles and constraints, but rather as solutions to problems and itineraries to make progress and reach targets.

The manual is not prescriptive. It is not intended to dictate what should be done. It simply aims to provide administrators with options for improving the administration of hunting under various contexts in the best possible spirit for both conserving nature and developing country economies.

Philippe Chardonnet

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ACRONYMS

AFWC	African Forestry and Wildlife Commission (FAO)
BASC	British Association for Shooting & Conservation
BWPA	Botswana Wildlife Producers Association
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources
CBNRM	Community Based Natural Resources Management
CF	Conservation Force
CHASA	The National Confederation of Hunters Associations of South Africa
CIC	International Council for Game and Wildlife Conservation
CITES	Convention on International Trade in Endangered Species of Wild Fauna & Flora
COP	Conference of the Parties
EAPHA	East African Professional Hunters Association
ESA	Endangered Species Act of the United States of America
EU	European Union
FACE	The European Federation of Associations for Hunting & Conservation
FAO	Food and Agriculture Organisation
GMA	Game Management Area
GPS	Global Positioning System
HWC	Human Wildlife Conflict
HRF	Hunt Return Form
HSR	Hunting Season Report
IPHA	International Professional Hunters' Association
IUCN	International Union for Conservation of Nature
LHB	Large Herbivore Biomass
LSU	Livestock Unit
MET	Ministry of Environment and Tourism (Namibia)
MOMS	Management Oriented Monitoring System
MIST	Management Information System
NGO	Non-Governmental Organisation
NPV	Net Present Value
OPHASA	Outfitters and Professional Hunters' Association of Southern Africa
PH	Professional Hunter
PHASA	Professional Hunters' Associations of South Africa
PPP	Public-Private-Partnership
RfP	Request for Proposal
RW	Rowland Ward
SCI	Safari Club International
SMART	Spatial Monitoring and Reporting Tool
SSC	Species Survival Commission
TPHA	Tanzanian Professional Hunters Association
USFWS	U.S. Fish & Wildlife Service
WMA	Wildlife Management Area

GLOSSARY

Adaptive management	A decision process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes advances understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a 'trial and error' process, but rather emphasizes learning while doing. Said differently, it is a system approach for improving resource management through taking purposeful management action, monitoring the results and learning from the outcomes. (Adapted from National Research Council, 2004).
Appropriate authority	The person or entity that has been legally awarded the right to hunt on an area of land. This authority extends to organising hunting by others, as well as to some ancillary responsibilities, such as management of the area.
Big five	The five large charismatic mammal species which are the most sought after by wildlife viewing tourists as well as tourist hunters are collectively known as the 'Big five'. These are black rhinoceros, buffalo, elephant, leopard and lion. Some have replaced the black rhino with the white and added the hippo to make the 'Big six'.
Big game	Large terrestrial mammals, usually but not necessarily always hunted. Big game includes elephant, black rhinoceros, buffalo, lion and leopard (the 'Big five'), as well as hippopotamus. See 'Plains game'.
Biotic potential	The maximum rate at which a population can increase when resources are unlimited and environmental conditions are ideal.
Bushmeat	In Africa, woodland (or forest) is often referred to as 'the bush', thus wildlife and the meat derived from it is referred to as 'bushmeat' (in French: *viande de brousse*). This term applies to all wildlife species used for meat including mammals, birds, reptiles and amphibians.
Carrying capacity	For a given region, carrying capacity is the maximum number of individuals of a given species that an area can sustain indefinitely without significantly depleting or degrading the resources on which the population depends. It is a dynamic, theoretical modelling construct. Populations are healthier and trophies tend to be bigger if populations are kept at a lower, more productive level.

CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora: an international treaty to control the trade of species, including the transfer of listed hunting trophies considered to be threatened by international trade.
Client	A person paying a hunting operator who is responsible for the organisation and conduct of a personal hunting safari.
Communitarian	A system of social organization based on small self-governing communities.
Concession	A grant of a tract of land made by a Government or other controlling authority in return for stipulated services or a promise that the land will be used for a specific purpose. Such areas of land are leased together with a hunting quota to companies authorised to guide foreign hunting clients on a hunting safari, frequently referred to as a block or area.
Concession contract	Concession contract means a legal agreement between the wildlife authority and a concession holder that outlines each party's rights and obligations arising from the granting of the concession. For any concession to operate, there must be a legal agreement between a country's Government authorities, administered through a protected area agency, and a concessionaire. It contains regulatory and contractual provisions to be respected by both parties.
Concessionaire or concession holder	A person or company who has a concession (that is, official permission from a Government or a company to do business in a particular place). Concessionaire or concession holder means any individual, collective of individuals, community, conservancy, community forest or an incorporated or unincorporated entity that has been granted a concession by the wildlife authority.
Conservancy	An organization of private landholders (private conservancy) or communities (communal conservancy) bound together by agreement for joint management of wildlife. In Namibia, for example, communal conservancies have to meet statutory requirements, which in turn entitle that conservancy to some control and use of wildlife within the demarcated areas.
Daily fees and rates	The amount paid by a hunting client to a hunting operator or outfitter for the right to hunt and for services provided.

Empowerment	Empowerment means the economic empowerment of formerly disadvantaged persons including women, workers, youth, people living with disabilities and people living in rural areas through concessions, based on strategies that include, but are not limited to: • increasing the number of formerly disadvantaged people that manage, own and control enterprises and productive assets; • facilitating ownership and management of enterprises and productive assets by communities, workers, cooperatives and other collective enterprises; • human resource and skills development; • preferential procurement; • investment in enterprises owned or managed by formerly disadvantaged people.
Game Controlled Area	An area of land where all forms of hunting are prohibited without a licence or permit. The law, however, makes no restrictions on other forms of land use, and local communities are allowed to reside permanently within a game controlled area.
Game Reserve	An area of land gazetted as Game Reserve and under the full jurisdiction of the Government wildlife authority. With few exceptions no human habitation is permitted within a game reserve. Game reserves are used for various forms of tourism, including regulated hunting.
Government revenue	Used in this document to reflect the income accrued by the wildlife authority from hunting i.e. income from concession fees, licence fees, trophy fees, etc. Does not necessarily reflect revenue raised by the Government through other forms of taxation.
Gross hunting revenue	The total revenue generated from regulated hunting that includes the income accrued by the Wildlife Authority, Government taxation, and revenue to the private sector.
Hunting Area	A Hunting Area is a Protected Area which has been officially designated for the purpose (either single or multi) of regulated hunting. With a few exceptions, Hunting Areas are duly gazetted Protected Areas and fall under either Category IV or Category VI of the IUCN classification of Protected Areas. Such areas devoted to hunting are named differently according to countries and languages.
Hunter-day	The measure of hunting effort achieved by a hunting operator as a result of marketing various hunting packages that are traditionally classified as 21-day, 15-day and 10-day safaris. For example, the sale of 10 x 10-day safaris would generate 100 hunter-days.

Hunting industry or hunting sector	The hunting industry or hunting sector is made of the multitude of businesses that provide services to tourist hunters.
Hunting operator or hunting company or outfitter	A person or company responsible for offering a hunting safari to a hunting client. The hunting operator (also known as hunting company or outfitter) generally (i) leases a Hunting Area, (ii) provides a camp and 4x4 vehicles, (iii) employs a professional hunter, trackers and camp attendants to serve the needs of hunting clients, and (iv) is responsible for general organisation.
Hunting safari	A hunting trip (or hunting party or hunt) taken by a foreign client to hunt a selection of game animals, as trophies for personal use.
Licence vs permit	• A licence is granted as permission to do something or use something. In some cases, licensing is granted after some kind of test, to make sure that the person receiving the licence is capable of doing the activity (e.g. Professional Hunters' Licence). Licences are generally granted by a Government agency. • A permit is a type of licence that has an expiry date. Some examples of permits are a) a work permit, and b) a written order granting special permission to do something: e.g. hunt a particular trophy animal such as a leopard or a nyala.
Net present value	An assessment of the long-term profitability of a project made by adding together all the revenue it can be expected to achieve over its lifespan and deducting all the costs involved, discounting both future revenue and costs at an appropriate rate http://www.collinsdictionary.com/dictionary/english/net-present-value.
Open Area	An area of land without any form of conservation status and no restrictions on human habitation or other forms of land use. The right to hunt in such areas can be leased by the Wildlife Authority as a hunting concession.
Outfitter	Also named hunting operator or hunting company. See 'Hunting operator'.
Plains game	Large mammals on the schedule of game that can be hunted, excluding big game. See 'Big game'.

Poaching	Poaching has traditionally been defined as the illegal hunting, killing or capturing of wild animals. Until the 20th century, mostly impoverished peasants poached for subsistence purposes, thus supplementing a protein-scarce diet. By contrast, stealing domestic animals such as cattle raiding is considered theft (or rustling), not poaching. Since the 1980s, the term "poaching" has also been used for the illegal harvest of wild plant species. http://en.wikipedia.org/wiki/Poaching.
Protected Area	A Protected Area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values. (IUCN Definition 2008)
Public-Private Partnership (PPP)	A PPP is a contract between the public sector and a private party, in which the private party assumes substantial financial, technical and operational risk in the design, financing, building, development and operation of a project, in exchange for a proportion of the profits.
Recreational hunting	Recreational hunting involves harvesting meat – not trophy – in natural areas for personal consumption. Recreational hunters (called 'biltong hunters' in South Africa) usually hunt common non-trophy game species such as greater kudu, impala, springbok, and warthog.
Regulated hunting	• Regulated hunting involves the legal hunting of wild animals in quest of trophies. As 'consumptive wildlife tourism' it is opposed to 'non-consumptive wildlife tourism' where wildlife is not physically harvested. • For the purpose of these guidelines, the term 'regulated hunting' or 'sustainable regulated hunting' is used in place of the synonymous terms 'formal hunting', 'foreign hunting', 'safari hunting', 'sport hunting', 'tourism hunting', and 'trophy hunting'. • 'Sustainable regulated hunting' is defined as undertaking guided hunting activities for one or more authorised mature specimens of a certain species by a foreign or local hunter who is willing to pay a fee for the special experience of hunting and obtaining a trophy in a sustainable and ethical way.
Reproductive lag time	Reproductive lag time is the time required for the birth rate to decline and the death rate to increase in response to resource or capacity limits.

Res nullius	*Res nullius* (lit.: nobody's property) is a Latin term derived from Roman law whereby *res* (an object in the legal sense, anything that can be owned) is not yet the object of rights of any specific subject. Such items are considered ownerless property and are usually free to be owned; in most countries wild animals are usually regarded as *res nullius*, and as not being the subject of private property until reduced into possession by being killed or captured (after Wikipedia). In several countries like South Africa, wild animals may be privately owned when kept behind fences in so-called exempted enclosed private properties. Usually, free-ranging wild animals are managed by the State.
State land	State land means land inside and outside Protected Areas that belongs to the State and includes national parks, game reserves, recreational areas, communal lands, conservancies (in Namibia) and forests.
Trophy	The tangible product of the game animal taken during the hunt for the personal use of the hunter as memorabilia, such as horns, bracelets, skins, skulls, tusks, etc. It is not taken for the purpose of commercial trade.
Trophy fees	Fees paid by the client to the hunting operator for the right to hunt a specific animal that is on quota. Usually, the trophy fee comprises: (i) the Government trophy licence fee (or Government trophy fee) to be paid to the Government, according to the schedule of fees listed in the Government gazette & (ii) a profit for the hunting company.
Venison	Wild meat or game meat or bushmeat. Usually, the term only designates the meat itself and not the offal which is however also consumed.
Wildlife Management Area	An area of village land where the wildlife resources are managed by the local community that has the status of an Authorised Association conferred by the wildlife authority.

1. INTRODUCTION

1.1. SCOPE OF THE MANUAL

The Cambridge Encyclopaedia of Hunter-Gatherers says: "Hunting and gathering was humanity's first and most successful adaptation, occupying at least 90 percent of human history. Until 12,000 years ago, all humans lived this way". Typically, the women and children collected foods such as plants, eggs, shellfish, and insects, while men hunted large game. Traditional hunting and gathering societies continued to practice this way of life into the 20th century. By mid-century, all such peoples had developed extensive contacts with settled agriculture and pastoralist groups, which gradually displaced these hunter-gatherer societies. Today, only a tiny fraction of the world's populations support themselves in this manner, and they survive only in isolated, inhospitable areas, such as deserts, the frozen tundra, and dense rain forests.

Nonetheless, 'hunting' is still practised in a variety of ways by different societies that are not reliant on this activity as their primary form of livelihood. In broad terms, modern day 'hunting' can be described as follows: "Hunting is the practice of pursuing any living organism, usually wildlife or feral animals, by humans for food, recreation, or trade. In present-day use, lawful hunting is distinguished from poaching, which is the killing, trapping or capture of the hunted species contrary to applicable law. The species that are hunted are referred to as game and are usually mammals and migratory or non-migratory game birds" (http://en.wikipedia.org/wiki/Hunting).

This manual focuses on how hunting, as a legal activity, is managed and administered across sub-Saharan Africa. It specifically addresses sustainable regulated (or sport or tourism) hunting. However, it does not consider illegal, recreational and traditional hunting.

1.2. DEFINITION OF HUNTING

The development of agriculture and the domestication of livestock meant that it was no longer absolutely necessary to hunt for survival. But humans evolved as hunters and this practice still remains in our psyche, whether one is hunting for venison, for food or for a trophy. Hunting for a trophy or prize is defined as "hunting without collection of a food or other commercial product" (Saunders Comprehensive Veterinary Dictionary, 3rd ed. © 2007 Elsevier, Inc.) although in most cases the carcass is consumed as food.

There are several distinct hunting practices in Africa. Each of these contributes in different ways to the socio-economy at local and national levels. They place differing types of demand on administrators responsible for regulating the hunting activities. They comprise:

- **Commercial poaching**

Commercial poaching, particularly of high-value products such as ivory and rhino horn, can generate significant income but places huge demands on fiscal and human resources to combat this form of illegal hunting.

- **Hunting for bushmeat**

Hunting bushmeat creates employment and income at the local level, but consumes a large number of animals through its indiscriminate hunting practices and absorbs a lot of efforts for attempting to keep it under control. Some countries allow some forms of bushmeat hunting while others do not.

- **Traditional or subsistence hunting**

Traditional or subsistence hunting by local communities is recognised as legitimate in some countries under certain restrictions of game species, weapons, hunting seasons and practices. Hunter-gatherer communities (e.g. the Pygmy communities in the Congo Basin or the San communities in Botswana and Namibia) are usually granted special dispensation for hunting. Other communities with ancient hunting traditions usually fall under the national legislation on local hunting, which differs from one country to another. In some countries, modern laws do not recognise these practices and either consider traditional hunters as poachers or proscribe some of their hunting methods, even though this form of hunting takes place within long-standing societal structures and livelihoods. Traditional hunting is therefore often a grey area between illegal hunting (commercial bushmeat) and conventional cropping, recreational and tourism hunting. The source of conflicts often results from a divergence of perceptions over access to hunting grounds or the right to use wildlife, or both.

- **Wildlife cropping**

Wildlife cropping is conducted mainly on game ranches in Southern Africa if artisanal or industrial production of venison (wild meat) is being traded on national or international markets. Management hunting (or culling) is closely associated with this form of hunting where wildlife populations are hunted for the purpose of (i) controlling animal numbers (e.g. impala) and problem animals (e.g. crocodile, hippopotamus), (ii) mitigating human and wildlife conflicts (e.g. elephant, lion), (iii) removing invasive species or pest animals (e.g. Himalayan tahr from Table Mountain in South Africa) or (iv) addressing public health issues (e.g. outbreaks of rabies in jackals).

- **Recreational hunting**

Recreational hunting generally involves harvesting meat in natural areas for personal consumption. As a rule, this form of hunting is undertaken by citizens or persons with residential status in a country. Rarely is the objective to hunt a trophy. A typical example of recreational hunters is the so-called ‘biltong hunters’ in South Africa who hunt common, often non-trophy game species (e.g. greater kudu, impala, springbok, warthog).

- **Regulated sustainable hunting**

The pinnacle of these hunting activities is tightly regulated sustainable hunting by hunters in quest of trophies and/or of a hunting experience in wild landscapes. This form of hunting, which is well organised and expensive, allows setting aside very large tracts of natural areas for the protection of (i) natural ecosystems, (ii) the ecosystem services they provide and (iii) the whole associated biodiversity: flora and fauna including game species as well as non-game species. It generates considerable income and jobs in remote areas, and contributes greatly to

the economy through several multiplier effects (airlines, hotels, taxidermy, etc.). Moreover, by adopting best practices, well-regulated hunting consumes far fewer animals relative to all other forms of hunting and provides the greatest support to the core funding mechanism for wildlife management and conservation infrastructure today.

Hunting administrators are able to control legal hunting practices such as game cropping, recreational or tourism hunting when these practices are well regulated and conform to approved policies and legal frameworks. For the purpose of this manual, the term 'regulated hunting' is used in place of the synonymous terms 'formal hunting', 'foreign hunting', 'safari hunting', 'sport hunting', 'tourism hunting' and 'trophy hunting'. It is defined as: "*Undertaking guided hunting activities for one or more authorised mature specimens of a certain species by a foreign or local hunter who is willing to pay a fee for the special experience of hunting and obtaining a trophy in a sustainable and ethical way*".

1.3. HISTORIC PERSPECTIVE OF HUNTING ORGANIZATION IN AFRICA

1.3.1. Hunting organization before the colonial era

- **Traditional hunting organisation**

It is commonly believed that hunting was widespread in ancient African societies that used any available means to hunt everywhere and everything, without restrictions. While this may have been the case in some areas, it was not the general rule, and specifically not in societies that depended on hunting and which respected customary hunting traditions and rules. These traditions were circumscribed by many spatial, temporal and sociocultural constraints, which, taken together, constituted a veritable regulatory framework that elders handed down to younger generations through apprenticeship.

o **Spatial rules**

Many hunting peoples have a keen sense of the hunting grounds. The bush or forest surrounding the village, and everything the forest contains, constitute property to which the community holds the right of usage. There is widespread feeling among Africans that nature cannot be regarded as *res nullius* and therefore not freely available to all without restrictions (Singleton, 1982). Instead nature is regarded as the property of the spirit world and man is simply a user (Nicolas, 1975, quoted by Singleton, 1982).

The new "integrated programs" or "community-based programs" launched initially in Zimbabwe and then extended elsewhere are essentially founded upon the principle of local communities' appropriation of wildlife and its habitats. This principle allows the establishment of game management units, but above all, it renders the local populations responsible.

o **Temporal rules**

Since most traditional hunters are, above all, farmer-herders, their hunting activity is necessarily governed by the agricultural and pastoral calendar. Hunting pressure is therefore not intense all year round. Under normal conditions, game tends to be hunted

less during the farming season, which corresponds to the breeding season of many mammals. However, under certain circumstances traditional hunters are required to hunt during the breeding season, especially during periods of famine.

Some farmer-herder societies comprise groups of a few dedicated hunters. These are required to respect a number of rites and predictions before and after the hunt and to avoid hunting during certain periods for various, often mystical reasons. These constraints place time limits on their hunting activity, although these professionals tend to have greater freedom of movement than occasional hunters.

o **Quantitative rules**

Traditional hunter-gatherer societies have a respect for game that is apparent in the ritual surrounding the hunt and which in effect limits the offtake. It may be that these constraints are grudgingly accepted rather than embraced and that when they are lifted, the offtake becomes excessive. It is clear that circumstances limit what is hunted (for example a lack of available porters to transport animals), so that the traditional hunter tends to hunt only as much as he can carry. This hypothesis would suggest that there is no real sense of restraint aimed at ensuring sustainability of the game population, which is scarcely plausible for ethnic groups whose survival depends on the success of the hunt. Furthermore, totemism (belief in an animal totem protecting a group or an individual) and various food prohibitions (tied to sex, age, physiological state, mystical beliefs, etc.) constitute taboos which limit hunting. Clearly, all of these customs have a strong impact on wildlife populations.

Accessibility to Hunting Areas is another major constraint, particularly for non-local hunters. In areas without roads, traditional travel on foot without pack animals or other vehicles limits the capacity to transport meat. Neither is the choice of species hunted left to chance; traditionally it depends on several factors. First, there are the mystical constraints mentioned previously. Secondly the costs and benefits associated with hunting a given species are taken into consideration: how far one has to go to find it; how difficult it is to hunt; the weight to carry; the labour required to preserve, eat and/or sell the quarry; the expected profit, etc. Prestige and taste preference also enter into the hunter's calculations. Because of this, certain species are hunted less than others.

Weapon type is well known to be one of the main factors of hunting success. Traditional local weapons largely guarantee a moderate offtake because they make hunting more difficult and reduce its yield. Regarding big game, and dangerous species in particular, the use of traditional weapons limits the numbers of skilled hunters and implies a certain respect for large animals (Robillard, 1989). Finally, the number of dedicated hunters remains limited in traditional societies. They have privileged social status that they pass down through a complex system of apprenticeship, which mainly takes place in certain families of hunting ancestry. In these societies, not just anyone can become a hunter. Furthermore, the availability of game limits their numbers. In Guinea Bissau, Limoges (1989) demonstrated that the density of Professional hunters (number/sq. km) is related to that of the bushbuck, the most hunted quarry, making this a good indicator of the offtake.

- **The disappearance of traditional hunting organisation**

Excessive exploitation and degradation of natural habitats are the primary causes of declining wildlife populations. Overexploitation can be largely attributed to the breakdown of respect for customary rules that framed traditional activities. In the absence of these traditional controls, the wildlife resource is exposed to offtake rates that now exceed its capacity to renew itself.

The disappearance of the customary rules may be the result of:

o **Socio-economic transformations**

Traditional societies have followed a path from a subsistence economy to a market economy that has progressively transformed subsistence hunting into commercial hunting.

One of the driving forces for this transition originates from the huge market for bushmeat created by burgeoning urban development (Colyn *et al*., 1987; Shada *et al*., 1988). And with the rise and spread of cash crops, the drop of cocoa prices in Gabon for example forced many villagers to fall back on wildlife exploitation as an additional source of income, and subsistence hunters to turn to commercial hunting to such a degree that subsistence hunting has practically died out (Lahm, 1991).

The solution to this overexploitation of wildlife is complex but may be found in restoring sustainable hunting practices in rural population.

o **Modernisation**

Since the 1900's there has been a rapid although insidious discarding of traditional hunting customs and practices, including ceremonies, totemism and food taboos. The gradual decline of apprenticeship and initiation of young hunters opened hunting up to all and sundry, even the least qualified who are likely to do the most damage to game populations. De Klemm (1985) attributes this partly to greater exposure to the world, resulting in ethnic mixing and assimilation into national unity, and partly to the arrival of modern firearms, eliminating fear of dangerous animals.

Added to this is the increasingly easy access to the bush. Road networks have expanded, facilitating access to more remote hunting grounds for greater numbers of hunters coming from afar and thus likely to act less responsibly. Such access was eased first by bicycles and more recently by motorbikes, followed by small pickup trucks.

Access to firearms, especially military weapons, has diminished the traditional hunter's fear and respect for big game, and possibly had the most devastating impact on wildlife across most African landscapes.

o **Modern hunting regulations**

The introduction of hunting regulations, modelled in European laws and systems, is largely responsible for the disappearance of customary hunting rules, especially the application of the colonial concept of *res nullius* to game. By depriving rural

communities of the sovereign right to use 'their' traditional resources, this legal status rid hunters of responsibility towards something that no longer belonged to them. The nationalization of land and wildlife resources contradicted the notion of an ancestral right to community use. And those who traditionally enjoyed the prestigious status of hunter within their communities thus became common reprehensible poachers.

The subsequent perverse effect was the 'tragedy of the commons' where everyone views wildlife as a free-for-all resource ("since the State owns it, everybody owns it"), leading to every imaginable excess. A number of African countries are well aware of this and have implemented policies that delegate responsibility for wildlife management to local communities, like Zimbabwe with the CAMPFIRE programme, Namibia with the Communal Conservancies programme and several other countries.

1.3.2. Hunting organisation during and after the colonial era

At the start of the 1800s, wildlife and other natural resources were apparently abundant throughout Africa, and many species of animals were hunted. Local communities involved in activities such as hunting, agriculture and mining also traded ivory and gold with Arab and Portuguese traders.

Traditional African societies generally ascribe the ownership of wildlife to the metaphysical realm, but consider that the right to hunt and benefit from it is firmly in the hands of those who control the land on which it occurs. Wildlife is viewed as food, and hunting is regarded as a right that is fundamental to their livelihood strategies, and generally not undertaken for sport or recreation. Wildlife is also viewed as a social structuring tool, with some castes of the local society granted with both a customary privilege to hunt and a highly respected rank in society.

When the Dutch East India Company founded the first supply station at the Cape in 1652, wildlife was abundant along the shores of Table Bay. These populations were hunted by the early settlers over the next 150 years for both food and commercial gain through the sale of hides and ivory, rather than for sport. Over time, the number of travellers into the interior steadily increased. For these Europeans, wild animals were abundant, landscapes were ungoverned by conservation laws, and suitable weapons with which to hunt 'big game' were being developed and improved. This began a century-long period lasting from the 1830s to the 1930s during which unique conditions existed to hunt commercially for ivory and hides. At that time, only eccentric individuals hunted for sport. It also paralleled the expansion of the British Empire in East and Southern Africa towards the end of the 19th century, and the proclamation of French, Belgian, German and Portuguese colonial States in West, Central and East Africa.

Unfettered by regulations, the new settlers decimated wildlife populations, prompting colonial Governments to introduce regulations to control hunting, particularly the commercial trade in wildlife products (Spinage, 1991). They also set up Protected Areas from which hunting was banned. With this, wildlife conservation management policies became enshrined in the laws of the colonial Governments. Also entrenched in the legislation was the *res nullius* status of wild animals, derived from Roman law, which deprived local societies of their customary rights. As a consequence, the State became the sole manager of all wildlife, though not the owner as such, which made it illegal for rural communities to hunt game for food and other traditional purposes. Unlicensed or forbidden hunting became poaching, and subsistence hunters became poachers as a result of the laws and regulations imposed by colonial Governments.

1.3.3. Genesis of modern administration of hunting

- **Genesis of hunting administration in the world**

Different cultures throughout the world have developed the administration of hunting in different ways and across different periods of history (Valdez, 2013, see **Compendium: Chapter 1_Introduction**).

The administration of hunting is far from having been invented by modern man. In his seminal book *Game Management* (1933), Aldo Leopold, the most influential wildlife biologist of the 20th century, states that the first documented record of a game management program was in Asia during the reign of Kublai Khan (1260-1294 A.D.), then the *khan* of the Mongol empire. Leopold quotes from the writings of Marco Polo in which the explorer, who spent many years with Kublai Khan, described the ruler's edicts that forbade the taking of game birds and mammals, as well as other management practices exercised in reserves to provide for the protection and increase of game birds as sport. According to Leopold, this is "the earliest known instance of food and cover control combined with restriction of hunting".

However, the wildlife management practices developed by Kublai Khan are known to have been set by his grandfather Genghis Khan, and even before over a long historical time period. The latter established wildlife Protected Areas and held an annual communal hunt, an elaborate three-month-long excursion in which mounted Mongols encircled large concentrations of wild animals. He recognized the importance of wildlife to Mongol society and codified hunting by establishing a hunting season in winter. He also initiated intensive habitat management and instituted bag limits. These management practices were maintained by his successors (Yule & Cordier, 1903; Weatherford, 2004; Craughwell, 2010).

Under Genghis Khan, the plentiful wildlife populations were the product of an elaborate program of wildlife management that incorporated law enforcement, hunting seasons, Protected Areas, habitat management and predator control. Maintaining high concentrations of wildlife required the concerted efforts of individuals with wildlife management expertise, especially land managers who knew the habitat requirements and life histories of individual species. An inkling of the personnel involved in managing wildlife was recorded by Father Odoric of Penderone, a Jesuit priest who visited the Mongol court in 1325, after the sojourn of Marco Polo (Yule & Cordier, 1913). He described a forested protected area with specialists designated as keepers of the forest to "take diligent charge thereof". There must have been a large force employed to enforce the Khan's edicts since, as Marco Polo observed, "the game multiplies at such rate that the whole country swarms with it", [and] those who dared to hunt illegally "would rue it bitterly" (ibid.).

That was eight centuries ago already, but nothing prevents us from assuming that hunting was already administered there before the reports of Marco Polo, without talking of other regions of the world on which no written report exists to our knowledge. Even long before the Khans, there was an ancient cultural attachment to the hunt, not only among Mongols but also in other Asian societies that preceded the Mongols by thousands of years. Beginning with the earliest civilizations about 5,500 years ago and originating in the Tigris-Euphrates area of modern Iraq, including empires of the Sumerians (c. 3100-2300 B.C.), Babylonians (C. 1792-1595 B.C.), and Assyrians (C. 870-612 B.C.), organized hunting became one of the favourite sports of the nobility (Hobusch, 1980; Allsen, 2006).

Even before, in the Old Testament, written about 3,000 years ago, there is a statement which can be interpreted as a biblical law explicitly relating to the restriction of hunting (Orr & Spanier, 1992). Readers were cautioned to not kill female birds with young, in effect foreshadowing the establishment of hunting seasons (Deuteronomy 22:6). And when Humans initiated farming and domestication of wild animals in Asia about 9,000 years ago, they started transforming landscapes by degrading and transforming wildlife habitats, even eliminating ecosystems (Headrick, 2009; Redman 1999).

The establishment of Protected Areas to ensure sources of wildlife for subsistence, hunting and aesthetic reasons prompted the development of new wildlife habitat management strategies. Game parks, hunting preserves and royal gardens were established by rulers as symbols of wealth and privilege. They became known as *paradeiros*, hence the origin of paradise, originally referring to a walled enclosure where wildlife was abundant and readily observed and procured (Allsen, 2006). Game parks were widespread during the Achaemenid or Persian Empire (534-330 B.C.) and became the model of later royal Protected Areas (ibid, Cook 1983). Game parks were the precursors of modern wildlife refuges and probably established the conceptual framework of national parks. In addition, private menageries likely provided the impetus for initiating wildlife captive-management techniques (Hoage *et al.*, 1996).

History has taught us that wildlife management knowledge evolved over millennia, with hunting providing the initial impetus. On more recent centuries, the ever-increasing efficiency in harvesting wild animals, the human demography and the large-scale conversion of land for farming greatly depleted wildlife populations. Yet wildlife remained an important food source, and its ancient significance as a source of subsistence and sport made it imperative that conservation practices be developed to ensure a continued supply of plentiful wild animals. Although wildlife management techniques have made great technological advances (Silvy, 2012), they have not replaced Leopold's five basic management tools: refuges, predator control, game laws, restocking, and habitat management (Leopold, 1933). It is gratifying for today's wildlife managers to know that the seminal tools of their profession arose millennia ago in Asia, a legacy destined to serve the wildlife resources of tomorrow.

- **Genesis of modern hunting administration in Africa**

Whether or not the modern administration of hunting was inspired by ancient Asian practices, it was probably the hunting practices and behaviour of the Victorian trophy hunter in the 19th century that led early colonial Governments to develop policies and systems of conservation administration that influence how modern hunting practices are conducted today. For those in the British Empire, the colonial conservation organisation, formed in 1905, was known as the Society for the Preservation of the Wild Fauna of the Empire, whereas in America it was the Boone and Crockett Club, founded in 1888 (Adams, 2009; Leader-Williams, 2009).

  - **Colonial game laws**

    The arrival of early settlers in the many annexed lands of Africa displaced subsistence hunting by indigenous communities. In these environments governed by customary rights, these colonial hunters decimated the populations of game across the continent. This led to the first game regulations to be passed in the Cape in 1886, in German East Africa in 1896 and in British East Africa in 1897. In Central and West Africa, game regulations evolved under the influence of the early colonial authorities, principally the

Belgian, British, French, German and Portuguese administrations. In the latter regions, countries were under the influence of the colonial administrations and much of the early conservation legislation relating to hunting was drawn from their respective colonizing powers. Ethiopia is one of the oldest independent countries in Africa with a rich and diverse history dating from the 10th century BC. Emperor Menelik II passed a law in 1901 banning his subordinates from hunting any wildlife without his permission and he reserved the right to allow foreigners to hunt (Siege, 2010). The Emperor went on to pass the first recognized legislation on wildlife conservation in Ethiopia in October 1908 which decreed that elephant hunting should be regulated (Sodhi *et al*., 2013).

The basis of these regulations and the policies that guided their implementation was that regulated hunting was deemed acceptable but hunting for subsistence and trade was not. Subsistence hunting by local communities, which also included hunting by settlers, often using primitive and non-selective methods, was regarded as the greatest threat to wildlife populations. The regulations were designed to target such practices with the exception, in a number of countries, of some rudimentary hunting tools (usually excluding firearms) and some small game species (usually excluding 'trophy species'), which were allowed.

The establishment of game reserves in African colonies was justified on the basis that sport hunting provided valuable revenue to the territorial exchequers through the sale of hunting licences. It became a user-pay system in which the hunters' payment of fees and charges exceeded the costs, and these in turn funded the conservation infrastructure and operating budgets of wildlife management authorities. This ushered in the notion that wildlife as a resource could be managed to maximise human benefits.

- **The growth in sustainable regulated hunting**

In Africa, especially East Africa, 'sport' hunting, as an industry, grew as the colonies became more accessible, allowing the hunting elites from Europe and America to take advantage of the wild areas and their rich variety of wildlife. Safaris to Africa became part of the global culture associated with the rich and famous who revelled in the romance and danger of hunting the 'big five'.

In the early stages, hunting was undertaken by individuals who often collected and described the large mammals that they encountered. In this way large numbers of animals were hunted and specimens collected for museums. By 1900, this lifestyle was being replaced by a new breed of hunters who sought out local expertise to plan and lead their expeditions to the field. This was also the beginning of professional outfitting to service recreational hunting. Pioneers who took up farming in East Africa supplemented their income by organising and conducting these 'safaris' for reward, which in turn gave birth to the 'professional white hunter'. But it was not until after the First World War that the hunting industry was consolidated. Between 1919 and 1939, the period saw the formation of professional hunting companies or outfitters, and the establishment of the reputation of professional hunters who escorted clients on well-organised and equipped safaris to Kenya, Uganda and Tanzania. This period also brought the question of hunting ethics to the fore, which led to codes of conduct being developed to guide the fledgling hunting industry, and set the standards under which it operated (see Section 5).

After the Second World War, hunting became more regulated and better organised as a business, especially in Kenya. A system of hunting blocks was identified across the country, and laws and regulations governing the conduct of hunting safaris were developed, based on these codes of conduct. Licence fees and hunting permits were introduced, which generated revenue and restricted hunting operations to certain areas named 'hunting blocks'. Professional hunters were registered after undergoing an apprenticeship and being approved in accordance with the strict rules that governed the East African Professional Hunters Association (see Box 1). This association was held in high regard and later became the benchmark for the development of the hunting industry in Southern Africa in the 1960s.

Today, an estimated 50 million international tourists visit Africa annually, with over 8 million domestic and international tourist arrivals in Southern Africa alone. The hunting industry plays only a small part in this, with an estimated 20,000 foreign hunters visiting the continent each year. But these are responsible for maintaining approximately 1.5 million square kilometres under various wildlife-related land uses, which exceeds the area encompassed by National Parks (Lindsey *et al*., 2007). Sustainable and well regulated hunting is regarded as the highest-valued land use for arid and semi-arid savannas in Africa, especially in areas where wildlife diversity and densities are low, where landscape offers no hotspot, and where infrastructures do not allow mass tourism.

BOX 1

Historical note

The East African Professional Hunters Association (EAPHA) operated from 1934 to 1977, ending with the official abolishment of big game hunting in Kenya. The association was founded in Nairobi in 1934 by a group of thirteen hunters in Kenya. In 1959 the EAPHA agreed to open membership to any nationality or person. By 1960 membership included 65 full members and over two hundred probationary and honorary associate members from around the world. The EAPHA was governed by an Executive Committee, whose members were elected annually. The association held annual meetings, an annual dinner, and presented an annual hunter trophy show. The EAPHA was influential in the development of wildlife conservation practice, opposing poaching, aiding the evolution of wildlife tourism, and in the framing of Kenya's game laws.

In the 1960's, after each of the East African countries achieved independence and drifted apart in political ideology, the Tanzanian Wildlife Division called for the formation of the Tanzanian Professional Hunters Association (TPHA). On the 28th of April 1966 the TPHA was established and worked independently of the EAPHA, which continued with its mandate in Kenya and Uganda. TPHA continues to work with the same focus as EAPHA, and is committed to elevating the competence, professionalism and the standard of ethics of all Tanzanian professional hunters.

Over the last 50 years, the hunting industry has grown and currently generates an estimated minimum of US$200 million/year. South Africa and Namibia support the largest number of game ranch hunting clients, whereas Tanzania and Zimbabwe support the largest big-game hunting industries (Booth, 2010). The various Government agencies across these countries have implemented an array of laws and regulations for administering and managing the hunting industry. The private sector in turn has invested heavily in marketing and developing the infrastructure of the industry, which has contributed to job creation, poverty alleviation, and above all the conservation of extensive wild areas, the ecosystem services they provide and the whole associated biodiversity.

1.4. LAND TENURE IN COUNTRIES PRACTISING REGULATED HUNTING

1.4.1. Countries practising regulated hunting

In 2015, regulated hunting takes place in 28 of the 54 African countries (Figure 1). This number is subject to fluctuations with years given that some countries open or close hunting according to their own conjunctures. Each of these countries has specific landscapes and habitats that support a wide variety of African wildlife (a list of the variety of species and subspecies available for hunting in Africa is provided in the **Compendium: Chapter 1_ Introduction/*Acts & Regulations*/*Hunting Seasons and Regs*/*Animals***). Tanzania offers the greatest variety of species that can be hunted on licence (ca.70 species). Other countries do not have the same spectrum of animals but instead offer unique species such as bongo, giant eland, mountain nyala or sitatunga.

In 2015 only two countries, Namibia and South Africa, can offer the 'big five', whereas Mozambique, Tanzania, Zambia and Zimbabwe offer only the 'big four' because neither black nor white rhino are on quota. In contrast, some countries either do not have the spectrum of mammals, and so only offer crocodile and/or bird hunting, or do not permit hunting of mammals because of their internal policies and regulations.

Countries that do not offer regulated hunting have elected to do so either because their conservation politics do not condone 'sport' hunting (e.g. Kenya), or they lack the institutional capacity (e.g. Angola). This does not mean that no hunting takes place: in all these countries some form of either traditional or illegal hunting occurs.

1.4.2. Land tenure and Hunting Areas

The legacy left by early 20th century hunters to conservation was the idea of creating extensive areas of land specifically for hunting, where hunting was strictly controlled. The official preservation of these vast territories of wild landscape launched the modern concept of Hunting Areas. Many of the early hunting preserves or game reserves paved the way to National Parks: there are many instances in Africa, and elsewhere, where current National Parks were established on formerly gazetted Hunting Areas. As a result, many actual Hunting Areas are located in the periphery of National Parks.

With this land tenure, the issues of the ownership of wildlife and the access to the wildlife resource were established. The policies, regulations and laws that designated these areas determined who had the right to enter and enjoy the wildlife and who could hunt. The degree

of control over how wildlife could be used, and hence the structure of the industry, depended on the land tenure systems and the conservation status of these areas. The level of State control ranged from minimal to extensive, with wildlife agencies having the power to define hunting regulations, hunting seasons, and offtake levels etc. (see Box 2).

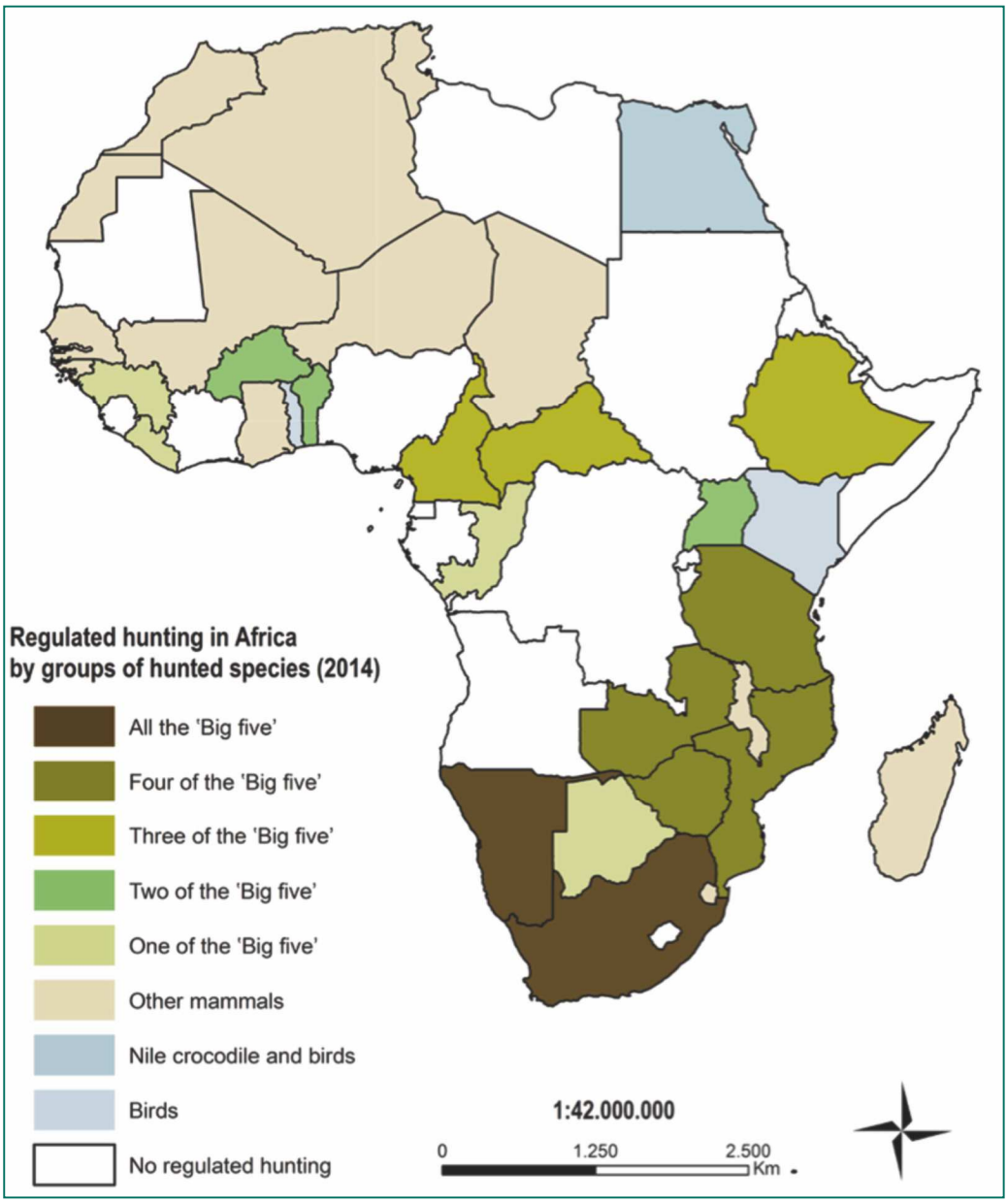


Figure 1: *Map of Africa indicating countries where regulated hunting of one or more of the 'Big five' (black rhinoceros, buffalo, elephant, leopard, lion) takes place in 2014*

BOX 2

Ownership of wildlife (Martin, 2008)

The 'ownership' of wildlife and the status of the land on which it occurs has an important bearing on the administration and management of sport hunting activities. Wildlife generally has the legal status of *res nullius* under Roman-Dutch law, i.e. wildlife is owned by nobody. The law simply recognises the rights of landholders, including the State, to use, manage and benefit from wildlife on their land. The interpretation of this in various countries in sub-Saharan Africa has been to vest the ownership of all wildlife in the Head of State, and then provide a government (or parastatal) wildlife agency with the mandate to protect and conserve the wildlife through the implementation of policies, laws and regulations promulgated for this purpose.

The degree to which the policy environment and legal provisions are applied determines the success of the sport hunting and supporting service industry. Instances where all land is regarded as State Land, and all wildlife is owned by the State and under the direct control of the wildlife authority (e.g. Tanzania, Botswana, Mozambique), exemplify stringent application of the law. Under these circumstances, accessing wildlife can be difficult as it usually required securing various licences either from the wildlife authority or from local officials at the district level.

Countries that adopt less stringent policies include Namibia, Zimbabwe and Zambia, where game ranching on freehold land has been developed. Landowners are still required to obtain various licences and permits from the wildlife authority but in general they are able to benefit directly from the use of and trade in wildlife. This has encouraged the private sector to develop wildlife-based enterprises and, with appropriate policies, it has encouraged local communities in Namibia to form Conservancies, in which the community is the primary beneficiary. Similar strategies have been achieved by devolving user-rights to communities on village land by establishing 'appropriate authorities' at the District or village level.

'Ownership' of wildlife and land tenure is therefore fundamental to developing a successful hunting industry. The wildlife industry has been shown to thrive where individuals or discrete entities at a community level have direct access to the land and the wildlife that occurs on it. Attempting to impose controls on how wildlife is managed often tends to remove the incentives to conserve the resource and promote the adoption of alternative economic strategies. Determining the checks and balances to manage and administer the wildlife resource under these circumstances is therefore the key challenge facing wildlife authorities (Martin, 2008).

Generally, areas used for hunting, i.e. Hunting Areas, come under either Category IV or VI of the IUCN classification of Protected Areas (see Box 3). Many times, publications and reports on wildlife conservation fail to consider Hunting Areas as Protected Areas while they are always duly gazetted as such in the national networks of Protected Areas.

BOX 3

IUCN definition of Protected Areas

IUCN defines a protected area as:
"An area of land and/or sea especially dedicated to the protection of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means" (IUCN 1994).

Protected areas can be categorised into six types, according to their management objectives:

Category I: Protected area managed mainly for science or wilderness protection (I (a) Strict Nature Reserves, and I (b) Wilderness Areas)

Category II: Protected area managed mainly for ecosystem protection and recreation (National Park)

Category III: Protected area managed mainly for conservation of specific natural features (Natural Monument)

Category IV: Protected area managed mainly for conservation through management intervention

Category V: Protected area managed mainly for landscape/seascape conservation and recreation (Protected Landscape/Seascape)

Category VI: Protected area managed mainly for the sustainable use of natural ecosystems (Managed Resource Protected Area)

For a fuller explanation, see IUCN (1994) and Dudley (2008).

Today, the generic term of 'Hunting Area' covers a wide range of Protected Areas throughout and within the countries practising regulated hunting. Policy and legislation on land tenure and land use provide the foundation for allocating access rights to wildlife and tourism, and a great variety of land use categories in different countries have been declared for this purpose (Table 1). Linguistic differences add to these complexities: a 'Hunting Area' in English is named *Zone de Chasse* in French or *Domaine de Chasse* in Belgian or *Coutada* in Portuguese. The level of protection and control by the management authorities depend on the status of the land in terms of the relevant conservation legislation and alternative land-use classification, for example:

- **Hunting Areas dedicated to regulated hunting**

  These Hunting Areas, e.g. Safari Areas in Zimbabwe and Game Reserves in Tanzania, are set aside as conservation areas where hunting can take place but where people cannot reside.

- **Hunting Areas with multiple land uses**

  In these Hunting Areas, hunting can occur on village land variously categorized as Controlled Hunting Areas (CHA) in Botswana, Game Controlled Areas (GCA) and Wildlife Management Areas (WMA) in Tanzania, Game Management Areas (GMA) in Zambia, *Zones Cynégétiques Villageoises* (ZCV) in Central African Republic. Most of these areas are set aside to promote wildlife conservation but there are other allowed forms of land use, including agriculture, pastoralism and settlement by communities.

Table 1: *Different land categories defining where regulated hunting takes place. Each of these has varying degrees of protection under conservation laws in the respective countries (see Compendium for more detailed descriptions)*

	Land categories	West Africa									Central Africa					East Africa			Southern Africa					
		Benin	Burkina Faso	Côte d'Ivoire	Ghana	Guinea	Guinea Bissau	Mali	Mauritanie	Senegal	Cameroon	C.A.R.	Chad	Congo	D.R.C.	Ethiopia	Tanzania	Uganda	Botswana	Mozambique	Namibia	South Africa	Zambia	Zimbabwe
State land	*Bloco de caça*																			■				
	Coutada oficial																			■				
	Community Resource Management Area				■																			
	Concession																	■						
	Domaine de chasse												■		■									
	Forest Area																		■					■
	Game Reserve																■				■	■		
	Game Controlled Area															■	■		■					
	Hunting Block																■							
	Open Area															■	■							
	Ranch de gibier		■																					
	Reserva especial																			■				
	Reserva nacional																			■				
	Safari Area																							■
	Secteur de chasse											■		■										
	Zona de caça						■																	
	Zone de chasse	■	■	■		■							■	■										
	Zone d'intérêt cynégétique					■		■	■	■	■	■												
	Zone ouverte									■	■	■												
Community land	*Area de conservação comunitaria*																			■				
	Communal Conservancy																				■			
	Communal Land																				■			■
	Game Management Area																						■	
	Wildlife Management Area																■		■					
	Zone cynégétique villageoise											■												
	Zona de utilização multipla																			■				
	Zone d'intérêt cynégétique communautaire										■													
	Zone villageoise d'intérêt cynégétique		■																					
Private land	*Fazenda do bravio*																			■				
	Private/commercial Conservancy																				■	■		■
	Private Game Ranch/Farm																		■		■	■	■	■

Preserving natural habitat and biodiversity in communal land: the newly created community-based Hunting Area of Mulela next to the Gilé National Reserve, Mozambique

Preserving natural habitat and biodiversity in a Communal Conservancy, Namibia (©Philippe Chardonnet/IGF Foundation)

A given country may have several different categories of Hunting Areas, each with varying degrees of protection in terms of the law, and whether alternative land use practices can take place. For example, in Tanzania, regulated hunting is organised throughout a network of various categories of Hunting Areas, each with a distinct name: (i) Hunting Areas, (ii) Hunting Blocks in Game Reserves, (iii) Wildlife Management Areas, (iv) Game Controlled Areas, and (v) Open Areas. Most of these categories are duly gazetted as Protected Areas, each with a specific legal status with explicit rights and duties applied to stakeholders.

Private land is characterised by freehold tenure and is generally used for commercial purposes in South Africa and Namibia. Leasehold land in Botswana, Mozambique, Zambia and Zimbabwe is used for similar purposes. Highly fertile areas with above-average rainfall are intensively managed for agriculture whereas in drier, less fertile areas the land holdings are considerably larger and are generally used for livestock production. These properties have also been developed as 'game ranches' or grouped together to form 'conservancies' where wildlife production and use is the primary land-use system.

State land held under communal tenure, and typically used for residential, subsistence and small-scale commercial crop production, as well as livestock production, is a feature of much rural land in southern and eastern Africa. Such land is designated by various terms: communal in Zimbabwe and Namibia, customary in Zambia, tribal in Botswana, and village in Tanzania. Tracts of wild land still exist in some of these areas, which form the foundation for Community-Based Natural Resource Management (CBNRM) programmes such as CAMPFIRE in Zimbabwe, and similar programmes in other countries.

In all cases, hunting operators generally enter into some form of agreement with the appropriate authority for the land through a process of negotiated agreements, permits and licences. These legal instruments generally outline the terms and conditions for the right to hunt, and define the benefits and responsibilities of both parties involved. This process is discussed further in the next section.

1.5. THE BUSINESS OF HUNTING

The safari industry earns the bulk of its income from the sale of the hunting package by the safari operator to the hunting client. The price of the hunting package is made of (i) the cost of the daily rate or daily fee, e.g. US$600/day for a 10-day hunting package, plus (ii) the cost of the trophy fee for purchasing the trophy animal(s). In most Southern African countries, the split between the daily rate and trophy fees is in the order of 60:40 or 70:30 (see Section 6.3).

1.5.1. Key players in the industry

The hunting industry comprises three key groups:

- **The wildlife authority**

The wildlife authority, whatever it is named according to countries, is the Government agency in charge of wildlife management and hunting. The wildlife authority governs all hunting matters and establishes the monetary value of the wildlife resources by setting the licence fees for the wild animals under its control. These fees are gazetted periodically, often after

consultation with the safari industry. The wildlife authority has no control over the daily rates charged by hunting operators, however. Market forces within the industry drive the license fees through:

- Trophy scarcity;
- Trophy availability, both locally and regionally;
- Demand for the trophy;
- Trophy quality;
- Comparable prices elsewhere in the country and in the region;
- Any legal implications (CITES permits, veterinary restrictions etc.);
- Magnitude of the concession fee or the right-to-hunt fee.

The appropriate authority for wildlife where it occurs on private or communal land, in most cases, determines the fees charged for the wildlife.

- **The hunting operator or safari outfitter**

Hunting operators (or hunting companies or safari outfitters) who are responsible for running and conducting the hunt operations, purchase animals from the wildlife authority. These animals are then sold to the hunting client as part of a trophy bag, invariably for a profit. In other words, the trophy fee charged to the hunting client is made of (i) the licence fee paid to the wildlife authorities, (ii) plus the profit made by the hunting operator. Clients only pay for the animals that they get during a hunt. The economic value of the trophy fee is therefore determined by the hunting operator and is set after taking the following into account:

- The number of trophies available on quota;
- Trophy quality, selection and desirability;
- Duration of the safari;
- Comparable daily rate and trophy fee prices elsewhere within the industry and the region;
- The number of confirmed bookings;
- Time of season (early and late season bookings are often discounted);
- Mix of trophy bag;
- Previous track record (hunter success, trophy prices);
- Cost of the hunting operation (concession fees, licence fees, operational costs).

As hunts are often booked up to a year in advance, the hunting operator is required to negotiate the overall cost of the safari and fix the trophy fee well in advance of the season.

- **The hunting client**

The hunting operator will enter into a contract with the client for a particular hunting package. With the wide range of options available, the client is ideally positioned to negotiate the most cost-effective arrangement. In most cases clients will thoroughly research the type of hunt that they are seeking, including the list of trophies and prices, before they commit themselves to placing their deposits to secure hunts. Often deposits for hunting safaris are paid well in advance, up to 18 months, which binds the hunting operator to the negotiated prices. The factors affecting a client's decision to book a particular hunt include (among others):

- Eagerness for a particular trophy (e.g. dangerous game, unique trophy);
- Whether it is the person's first safari to Africa;
- The amount that the person is prepared to spend (including airfares and taxidermy costs);
- Reputation of the country as a hunting destination;
- Reputation of the hunting operator and of the professional hunter;
- Reputation of the particular Hunting Area (political stability, safety of destination);
- Whether the person already has a specimen of the particular trophy animal;
- Quality of trophies and their prices;
- Quality of the hunting experience;
- Success rate in hunting a particular species in a particular area;
- Comparision of costs between hunting operators, between countries and destinations;
- The esthetic appeal of the local habitat and culture or people.

Typically, hunters are successful business and civic leaders of their home countries. Most have graduated to safari hunting in Africa from hunting mammals in America, Asia or Europe. Most are the stewards of wildlife in their home countries and their hunting clubs and organizations bring their conservation ethic with them to Africa. The USA have the largest safari hunter market with more than 10.9 million licensed whitetail deer hunters in 2011 (www.nssf.org/research). The modern hunters that journey to Africa for the experience of hunting multiple species of game expect to:

- Travel and transit with their personal, preferred firearms and ammunition (most particularly for dangerous game hunts);
- Be met and facilitated at point of entry;
- Have an authentic experience;
- Have their contracts honoured – no surprises or hidden charges;
- Find all game on license, and a permit to be present and available;
- Experience ethical and lawful practices only;
- Have proper care and treatment of trophies and to receive their trophies back home promptly;
- Have proper trophy export services with no errors in permitting, marking or tagging;
- Have prompt correspondence both before and after the safari – from booking to receipt of trophies.

1.5.2. Hunting packages

- **Categories of hunting packages**

Hunting packages can be grouped into various categories (Booth, 2009):

- Classic big game safari (buffalo, elephant, leopard or lion plus assorted plains game);
- Lion with or without buffalo and plains game safaris;
- Leopard with or without buffalo and plains game;
- Elephant with or without buffalo and plains game;

- Buffalo and plains game;
- Buffalo only;
- Specialised plains game (e.g. bongo, giant eland, mountain nyala, sitatunga etc.);
- Common plains game (gazelle, greater kudu, impala, warthog, waterbuck, wildebeest, zebra etc.).

- **Length of the hunting packages**

Traditionally, safari hunting packages were marketed according to fixed 28-, 21-, 15-, 10-, and 7-day periods. The classic 21-day safari allowed the client to hunt a full bag of the big game (elephant, lion, leopard and buffalo) plus a variety of plains game. This or similar strategies are officially adopted by some countries, notably Tanzania, as a means to market its hunting industry. For example, hunters intending to hunt the more charismatic species (such as elephant, gerenuk or lesser kudu) must undertake and pay for a 21-day safari permit, irrespective of whether or when the trophy species are obtained. In contrast, a minimum of seven days is needed to hunt buffalo (two permitted on licence in Tanzania) and selected plains game, 21 days for a lion or a leopard, and 14 days for a sable and three buffalo (PAWM, 1996).

In other countries, hunting operators apply free-market principles to determine the cost, length of hunt and the animals available in the package, based on:

- The number and availability of dangerous big game species;
- The economic and political climate of the country in which they operate;
- The reputation of the country as a hunting destination;
- Quality of the hunting experience and trophies;
- The length of the hunting season;
- The competition for similar hunting elsewhere in the country, the region and continent.

Generally, there is little variation in the overall composition of a particular hunting package between individual hunting operators in the same country but there can be significant variations between countries.

- **Services included in the basic price of hunting packages**

The hunting packages generally include:

- The services of a licensed professional hunter or guide and the use of a hunting vehicle and fuel;
- Government trophy fees (where applicable);
- Fully serviced luxury en-suite tented accommodation, all meals, soft drinks and laundry services during the contracted period;
- Trackers, skinners and the necessary field and camp staff;
- Field preparation of trophies and transportation thereof to a shipping agent;
- An emergency communication network and well stocked medical kit.

Generally excluded from the basic price of hunting packages are:

- Observer rates, fees for bait and trophy animals;

- Packing, dipping and shipping of trophies, export permits, and gratuities;
- Any visa requirements, various gun and ammunition import licences, hunting permits, community and conservation programme levies etc;
- Accommodation, flights, travel charges and meet-and-greet services before and after the contracted period;
- Air and ground or water transfers to, from and between hunting camps (except where otherwise specified), additional vehicles required by hunting party, side excursions, scenic flights, airport taxes, and landing fees;
- Hire of rifles and shotguns, ammunition and fishing tackle;
- Any purchases on behalf of the client of a personal nature;
- Short-term insurance against trip cancellation, theft, loss and damage of his or her personal property whilst on safari;
- Medical insurance.

1.5.3. The value of a hunt

- **Factors influencing the value of a hunt**

The factors that impact on the overall value of a hunt are:

- Duration of safari;
- Daily rate;
- Government and hunting operator trophy fees;
- Mix, number and quality of trophies;
- Quality of Hunting Area, including accessibility and political stability;
- Reputation of hunting operators;
- Marketing strategies;
- Competition (local industry and externally).

In essence, a hunting client is only prepared to pay up to a certain amount for a hunt, one that varies with the type of hunt and species on offer. Hunting operators' success therefore depends on their skill and reputation in selling hunting packages at above market prices. This will determine the success of their operations and whether optimum returns will be generated from set quotas of animals. The law of supply and demand therefore plays a significant role in setting the pricing structure of the hunting industry. Whereas some countries can influence the trophy fee value of certain species by dominating market share, they cannot shift the basic earning instruments: daily rate and trophy fees (Booth, 2002; 2009). Understanding the trends, and how hunting is marketed, is necessary in determining the value that hunting brings to local, national and regional economies.

To generate a sustainable income from the use of wildlife generally requires the services of a professional hunter or hunting operator to market and sell a quota of animals to hunting clients at a rate determined by the market.

- **Trophy fees**

The Government trophy license fees, also named simply Government trophy fees, for all trophy animals on State-run concessions, are determined by the wildlife authority. Government

trophy fees are set ahead of the hunting season. The hunting operator is expected to pay the Government trophy fees to the wildlife authority on behalf of the client. He then charges the hunting client, usually at a profit, so that the so-called commercial trophy fees are usually higher than the Government trophy fees. The hunting client is generally not charged for animals that are not shot, but wounded game must be paid for. In other words, he only pays for what is killed or wounded, unless it is an all-inclusive package hunt, mainly in Southern African game ranches.

In Southern Africa, the situation on private land is slightly different because the landowner has full access rights to all wildlife on the property and thus is not required to purchase licences for animals that are hunted. The landowner and hunting operator therefore recover 100% of the trophy fee, which is generally aligned with State licence fees.

Keeping abreast of the market prices both locally and regionally is therefore crucial to ensuring that prices are on a par with market prices. To enable marketing, prices are set for (minimum) 3-year periods. The private sector and communal land hunting operators take their cue from these market fluctuations and adjust their prices accordingly.

- **Daily rates**

The daily rate or daily fee charged by hunting operators is the one aspect of the negotiations over which they have total control. Determining the baseline level for the daily rate depends on the minimum number of hunter days that a hunting operator is required to achieve in order to break even. For example, if the operating costs are US$30,000 per annum, it will require 100 hunter-days at US$300/day to generate this amount of money. Generating 100 hunter-days will depend on the size and mix of the trophy quota to be marketed, for example: 10 x 10-day package hunts or 6 x 15-day + 1 x 10-day hunts etc. The composition and consistency of the quota are therefore extremely important as this dictates the marketing strategies of the hunting operator. Ideally the quota should be balanced by offering attractive packages (i.e. the quota should contain a mixture of dangerous and plains game and not be dominated by one particular trophy species).

The hunting operator must market the trophy quota efficiently. Offering too many animals in the hunting package (i.e the bag) will result in the hunting operator not generating sufficient hunter-days because the quota will be used up before the required number of hunter-days is achieved. In contrast, offering too few animals or animals at too high a trophy fee will equally result in insufficient hunter-days being sold. Determining the balance is the key to a successful safari operation as well as to whether the operation will be sustainable. It is generally accepted that plains game safaris will fetch up to US$300/day whereas big game safaris can cost more than US$1,000/day, depending on the area, trophies, and hunting operator's reputation (Booth, 2009).

Hunting operators that attempt to attract clients by offering low daily rates and then loading the trophy fees run the risk of failure simply because there is no guarantee that the hunting client will obtain all or any of the trophy animals on offer.

2. LEASING HUNTING AREAS

2.1. GENERAL PRINCIPLES AND PROCESSES

Areas dedicated to hunting can occur on (i) public land that belongs to the State; (ii) private land that is owned by an individual or a company or an association that holds title deeds; or (iii) communal land where the land is 'possessed' either by a community, or by a collection of villagers that has been awarded the legal right to hunt on the land (also known as appropriate authority). In the latter case (for example CAMPFIRE in Zimbabwe, Communal Conservancies in Namibia or Wildlife Management Areas in Tanzania), the right to hunt is leased in turn by those with authority for the land to an individual, a company or an association which is granted the exclusive capacity to market and conduct regulated hunting on that land for an agreed period of time.

There are very few sub-Saharan African countries, all of them in Southern Africa, where hunting occurs on privately-owned land. It is best developed in South Africa where over 10,000 private game farms and ranches exist. Private Hunting Areas are rarely leased because hunting is generally managed by the owner, but it can happen, especially on cattle ranches where the owner concentrates on cattle ranching and leases the hunting rights to another entity. In such situations, leasing is generally by direct contract. In contrast with private Hunting Areas, public and communitarian Hunting Areas are subject to different leasing arrangements, the subject of this section.

A leased Hunting Area is referred to as a concession and the person leasing this area is called a concessionaire. Under this process, the right to hunt is passed from the land owner to the concessionaire who becomes the appropriate authority for hunting during the period of the lease. In most cases the concessionaire is also responsible for managing the concession in terms of conditions and obligations set down in the lease agreement.

The goals set by the authorities for Hunting Area concessions are governed by policy and legislation. These goals can include financial gain for the authority, local community empowerment, adherence to laws and regulations for Protected Areas, conservation, and ensuring sustainable offtake.

The decision to offer an area as a hunting concession generally stems from the assumption that it will operate more efficiently under professional management; that is, generate more income; create more jobs; and offer high-quality visitor services. Deciding what concession model to use (see Section 2.2), and how to implement, it is therefore essential for engaging with the private sector and communities to maximise the benefits from tourism development. But policy and legal frameworks for tourism concessions in general are continually evolving to meet international environmental and conservation agendas, national social needs and financial commitments, and the concession models need to change to reflect this.

Some key questions to answer when outsourcing hunting operations include:

- Why outsource these operations?
- What are the advantages and disadvantages of working with a concessionaire?
- What are concession contracts, leases, licenses, and permits?

- What is the process for deciding upon a concession lease?
- What is the process for selecting a hunting operator?
- How should concessions be regulated?
- How can concessionaires be monitored?
- What conflicts might arise amongst hunting operators and regulators?
- What happens if a hunting operator goes bankrupt?
- What are the required qualifications from the regulators' perspective?
- What are the required qualifications from the concessionaire's perspective?
- How can the performance of a concession be monitored?

Answers to these questions differ across Africa depending on national aspirations and circumstances. Models for regulated hunting concessions therefore also vary (see **Compendium: Chapter 2_Hunting Leases** and **Country Folders)**.

Hunting concessionaires are generally awarded a contract to use a defined area for a specified period of time (the concession tenure), in return for the payment of fees (concession fees). In addition to being granted the right to exploit the wildlife resources (user rights), the concessionaire might also need to comply with a series of obligations specified by the appropriate authority issuing the contract. These can include infrastructure development, conservation management, and environmental and social requirements. How well the concessionaire meets these contractual obligations can influence the likelihood of the concession being renewed.

Successful concessions can lead to greater financial benefits for the lessor, improved security and profits for the concessionaire, and greater social and economic benefits for communities. There can also be greater benefits for conservation management, through the use of fees paid by the concessionaire to enhance management of the resources and expand the wildlife populations.

The process of securing a concession is supported by policy and legal frameworks that outline the process and provide supporting information to potential investors. In general, when soliciting bids for a concession area, a prospectus is prepared. This prospectus is a Request for Proposal (RfP, see Section 2.4.4.) which comprises all the legal requirements in addition to information on the physical characteristics of the area (location, habitat, communities, local Government, status of wildlife etc.), any statutory prices, and how hunting operators are to be selected. The prospectus should also provide information on the qualifications and expertise required of concessionaires, and their legal, financial, environmental and social responsibilities. A draft contract highlighting the responsibilities of both parties should be presented together with the guidelines for managing that contract.

In most countries, those making official decisions and exercising responsibilities over tourism concessions include ministers in national Governments and their respective ministries, heads of wildlife management authorities, local Government officials, and community leaders. Others with interests in the process include officials responsible for security, law and order; fiscal investment; foreign exchange control; tax, customs and excise; and environment and agriculture.

Equally the prospective concessionaire must have a broad understanding of the policy and law in relation to the role of the different stakeholders, and how it affects contracts and licences under different land-use.

Communities living in areas where regulated hunting takes place, and which depend on natural resources there, can have customary access, occupation, use and benefit rights. As such, they should be legally empowered to be involved in the concession-approval process and to share the benefits that can arise through revenues, training, employment etc. Institutionally, communities interact with the other stakeholders through their formal representatives, including community authorities, management committees, local management councils and community legal entities.

2.2. OPTIONS FOR AWARDING HUNTING AREAS

2.2.1. Main elements in the concession process

- **Concessionaire qualifications**

Private sector entities interested in developing tourism concessions should demonstrate their ability to be profitable and their knowledge of the industry. Requirements can include evidence of financial capital, tourism experience, knowledge of local legislation, education and training level, and language abilities.

- **Legal responsibilities**

The authority with the mandate to award and terminate a concession should be clearly defined.

- **Financial responsibilities**

A concessionaire typically pays a user fee, which can be structured in various ways: a set annual fee; a flat fee in conjunction with a percentage of the gross revenue; a fixed fee with a performance-based variable fee. Each option has various advantages and disadvantages for both parties. A fixed or flat rate is the easiest to administer. Tracking and calculating profits require competent accounting skills. The key issue is to negotiate a fee structure that reduces the risk to both parties. This is usually achieved by incorporating a combination fixed and variable fee structure.

- **Environmental responsibilities**

Concessionaire contracts increasingly involve measures to support environmentally-responsible tourism practices and minimize environmental impacts.

- **Empowerment responsibilities**

Communities residing in or around concessions play an important role in the long-term success of wild areas. Contracts therefore need to incorporate social responsibilities that will develop a positive relationship among stakeholders.

2.2.2. Options to award and price hunting rights for concessions

Several options exist for awarding and pricing hunting rights for concessions. Each option has advantages and disadvantages, and each can be modified to suit particular circumstances. These options generally involve one of the following methods:

- **Direct one-on-one negotiation with a prospective investor**

Direct negotiation involves either a hunting operator approaching a landholder with a proposal to utilise the wildlife in an area, or a landholder contacting an established hunting operator. This method incurs the least cost and allows the two parties to negotiate a contract amicably, without pressure from others. Unless landholders have experience of the industry, however, they risk not receiving maximum value from their concessions. They can also become locked into an unfavourable contract that forecloses their options for the duration of the lease. This approach is also prone to corruption (e.g. using double invoicing).

- **Auctions open to all bidders**

Auctions involve the public sale of hunting rights in an area to the highest bidder. A notice of an auction is first advertised publicly, giving background information about the area, the species of game and annual quota on offer, the duration of the contract and the contractual arrangements. Potential investors can then visit the area to see it for themselves and find out more about the terms and conditions of the contract. They then attend a public auction where the highest bidder secures the concession.

Whether or not to use an auction depends on what needs to be achieved. If the objective is to maximise revenues and ensure transparency, then an auction is best. But if there are other considerations, such as ensuring that the concessionaire has a good track record, or that the community requires the concessionaire to undertake a certain management programme or provide social services (sometimes both), then an auction might not be the most appropriate option.

The advantage of an auction is that it establishes the market value for the hunting rights and gives all potential investors equal opportunity to secure a concession irrespective of their experience in the industry. There is also the added advantage that the investor is usually required to pay the full amount on securing the concession, unless special conditions are negotiated.

The major disadvantage of the auction system is that it is open to anyone (though minimum qualifications can be specified), with the risk that experienced hunting operators could be outbid by inexperienced persons wanting to enter the industry. The successful bidder might fail to raise the finances necessary to cover the bid, leaving the land authority without income and having to repeat the exercise, a protracted process possibly involving legal intervention. The winning bidder might also try to re-negotiate the terms and conditions of the contract, thereby further delaying the process.

- **Competitive tender open to all bidders**

The most common method of awarding contracts is through competitive tender. This approach

requires substantial preparation beforehand to ensure its success at least cost. For example, decisions are needed on the following:

- Where and when hunting will take place?
- What species of animals are to be hunted, and what will be the quota for each?
- For how long will the agreement last, and how should it be structured?
- What should be the minimum value of the tender?
- How will the tender be marketed (advertising, contact with the industry etc.)?
- How will the tenders be evaluated?

As with auctions, competitive tenders give all potential investors an opportunity to secure a concession area. They also provide a measure of market value, thereby allowing income from the area to be maximised. But unlike auctions, tenders allow some flexibility because the authority does not necessarily have to accept the highest bidder. Moreover, the concession can be awarded on other than financial criteria, especially if technical and financial proposals are submitted separately.

The disadvantage, however, is that unless there are clear filtering and evaluation mechanisms in place, anybody can tender. This incurs the risk of entering into a contract with a potential investor who knows very little about the industry and who might have overpriced their bid. To avoid this requires clear and robust evaluation criteria together with the appointment of evaluators who have in-depth understanding of the administration, management and business environment of the hunting industry.

The greatest disadvantage is that it is difficult to ensure transparency, thereby exposing the tendering authority to allegations of corruption. Having mechanisms in place to diminish this risk is therefore essential. Furthermore, the selection process can be problematic if the tender offers a wide range of benefits that are difficult to assess. There is also the risk that bidders might under-value the area, especially in circumstances where there are few bidders, or the tendering authority has over-estimated the area's commercial value. This could result in the area not being awarded. Finally, the process can be prone to political interference, especially if the final decision to award the contract rests with the political leadership.

- **Unsolicited proposals**

Rarely will a land authority receive an unsolicited proposal for a hunting opportunity. If it does, the authority is not obliged to consider the proposal but should it warrant consideration then the preferred process is to invite all interested parties to bid for the opportunity through public competitive auction or tender. But if the unsolicited proposal contains intellectual property, in the form of an innovative design or development concept that would be mutually beneficial to both the proponent and land authority, then one of two approaches can be adopted.

First, the opportunity is publicly advertised. If no other interest is received, then the concession is evaluated and a contract negotiated with the proponent. If other proposals are received, however, then the authority can initiate an open competitive tender or an auction but with a special provision that the unsolicited proponent will have the right to match the winning bid (technically and financially) in the event of not winning the bid outright (this provision recognises the use of the intellectual property of the original proponent).

Second, for unique and highly innovative proposals, the land authority might grant exclusive operating rights to the proponent for a limited period, and thereafter make such rights available through public competition.

Each of these options for awarding hunting concessions has different implications for the authority conducting the negotiations (Table 2).

2.3. DURATION OF HUNTING LEASES AND LEASE PAYMENTS

The duration of the contract for a Hunting Area depends largely on the management objectives of the responsible authority (Table 3). In principle, the larger the investment or start-up costs, the longer the lease period should be for the concessionaire to recover the capital invested and make a profit. Circumstances vary: in some countries Government authorities seek partners who will commit to a long-term investment; in others the Government authorities are reluctant to foreclose their options and approach the agreement with caution by only offering short-term contracts. This has ramifications for the potential concessionaire and in the long-term for the overall industry.

Because the hunting industry involves long-term marketing to hunting clients, the private sector seeks stability in its contractual arrangements. Short-term contracts (i.e. 3–5 years) tend to create a sense of insecurity of tenure. As a result, the concessionaire could be reluctant to invest and might want to recoup initial outlays quickly, especially if there are no roll-over clauses in the agreement.

Long-term contracts (i.e. 10–25 years) offer greater security of tenure for the concessionaire but can foreclose options for the land authority. This type of agreement therefore requires the support of robust long-term management plans with clear objectives and goals (see Section 3). But although long-term contracts result in greater stability within the industry, this approach could restrict the entry of new participants, especially if the number of available concessions is limited. Furthermore, there is a risk that the returns obtained from long-term concessions might not reflect increases in the value of hunting.

Lease payments can either be fixed or variable. Fixed payments are generally more suitable for low-key investments or short-term operations (< 5years). Flexible fees are better for longer-term concessions. They allow payments to be adjusted to the productivity of the season, being higher in above-average seasons. They can also reduce the eroding effects of inflation over time, something that burdens fixed payments.

The currency of lease payments requires careful attention because most hunting contracts are specified in a foreign currency such as United States Dollars (US$). Local currency rates can be subject to wide exchange fluctuations that could prejudice both contracting parties.

Table 2: *The advantages and disadvantages of different approaches to award a hunting concession*

Tendering versus Auctions versus Direct negotiations		
Tender	**Auctions**	**Direct selling**
Protracted and complicated process	Briefer than tendering. Easier to administer	Simple and fast
Not always highest financial offer	Competitive	Not always competitive
Best candidate can be selected (not only based on monetary value)	Usually highest offer is accepted. Not able to select most suitable candidate because it only takes into account the financial aspects, and does not consider hunting operator's proposal in terms of how they will engage with communities and how they will manage wildlife etc.	Not always highest offer obtained. Candidate pre-selected
Easier to conduct background checks. Possible to establish relationship with potential concessionaire(s)	Unless bidders are required to pre-qualify, difficult to conduct background checks. Relationship not possible from auction process	Dealing directly with hunting operators facilitates relationship
Possible to negotiate for other benefits	Not possible to negotiate other benefits unless indicated prior to actual auction	Possible to negotiate for other benefits
Negotiations can be flexible	An auction is a formal process. Contract is usually predefined	Informal process
Risk of attracting bidders with little or no experience in industry. Process can be advertised widely	Possible to pre-select potential bidders (qualified auction). Difficult for bidders from outside the country to attend	No audience needed
Tender can deal with several areas at the same time. Not necessary to have large number of bidders	Auction is most effective when there are a large number of potential bidders	One-on-one business environment
Open to manipulation unless precautions put in place	Transparent	Potential to be misused and serve vested interests

Table 3: *Advantages and disadvantages of offering hunting concessions for various tenure periods*

Tenure period	Countries	Advantages	Disadvantages
1 - 12 months	C.A.R. (one year with possible extension to ten years convention) Namibia Zimbabwe	• Options not foreclosed • New outfitters have opportunity to enter industry • No need for detailed contracts. Can operate under a permit system	• No security of tenure for concessionaire • High administrative costs • No short or long-term investments • Outfitters or hunters tend not to respect hunting area • High turnover of outfitters; difficult to build a sound industry • Under investment in wildlife management (e.g. anti-poaching) • Difficult to establish reputable outfitters • Difficult to market hunting in the long-term • Authority assumes all the risk to manage area • Full value of the area not realised
3 - 5 years	Botswana Namibia South Africa Tanzania Zambia Zimbabwe	• Moderate security of tenure, especially with lease roll-over • Moderate investment by outfitters • Marketing easier • Outfitters become established and build reputations • Authority can build relationship with the outfitters	• Can foreclose options • Prone to industry instability • Authority assumes majority of responsibilities to manage the area • Requires long-term administration and monitoring
10 - 25 years	Benin Botswana Mozambique South Africa	• Security of tenure • Attracts high investment in management and infrastructure • Facilitates implementation of management and business plans • Outfitters become established and build reputations • Outfitters assume greater responsibility for care and maintenance of the concession • Steady income for the authorities • Authority can build relationship with the outfitters • Long-term marketing possible • Reputation of the area enhanced • Opportunity to re-establish wildlife in depleted areas	• Forecloses options in the medium term • Requires robust area management plans • Requires robust contract agreements • Requires long-term administration and monitoring • Can block new entrants to the industry • Authority can be prejudiced financially if provisions for periodic review are not in place

2.4. THE TENDERING PROCESS

This section describes the broad principles and guidelines of best practices applied to the tendering process. Specific case studies are presented in the **Compendium: Chapter 2_Hunting Leases** to illustrate how tendering has been implemented in Benin, Botswana, Mozambique and Namibia. Each of these examples illustrates a different approach based on country-specific circumstances.

2.4.1. Policy environment

The policy environment should focus on what types of concessions are being offered (photographic tourism concessions, hunting concessions, concessions for the harvesting of indigenous plants, or any other concessions for the commercial use of State-owned plant or animal resources) and their long-term objectives. The role of traditional authorities should be clearly defined because these institutions must be consulted throughout the process to ensure that such concessions complement regional and local community development objectives. The policy should also adopt the principle of subsidiarity by devolving the decision-making responsibility to the lowest appropriate accountable level.

The legal framework for allocating hunting (and tourism) concessions must be consistent with the provisions of the law. Adopting a standardised tendering process across all areas will ensure an objective, accountable and transparent process of awarding concessions. Where rights over wildlife and tourism resources have been devolved to communities residing on communal land, the community management body becomes responsible for arranging the commercial use of wildlife and for tourism, subject to the policy and regulatory frameworks set by Government. The function of Government agencies is to oversee the legality and equitability of whatever arrangements are agreed, and ensure that community interests are safeguarded.

2.4.2. General principles

The tendering process should be transparent and fair. Those involved must be accountable. As a guide the following principles should be applied:

- Equal opportunity should be given to any interested party applying for a concession when these are offered to the public;

- All relevant authorities should be consulted when deciding to set aside a specific concession, whether for a resident community or for a State-run operation;

- In awarding concessions to communities, the authority will:

    - Award concessions directly to communities with representative, accountable and stable community associations;
    - Give priority to communities that reside inside Protected Areas or are immediate neighbours;
    - Encourage the concessions to mitigate the costs that such communities suffer, and to provide incentives for them to support the objectives of the protected area, and to stimulate local economic growth;

- Act as brokers in the negotiation of beneficial agreements with joint venture partners or investors;
- Provide technical assistance to facilitate business management skills and resources.

Preference should be given to agreements that are demonstrably beneficial to rural communities, either through generating revenue and employment opportunities for that community or through other benefits. As a rule, concession rights should not be transferable without the approval of the responsible authority or as a result of a mandate given to a community authority.

Where mutually beneficial joint ventures are entered into, it is essential to ensure the transfer of skills, full accounting of the contributions from both parties, and sharing in the management, decision-making, ownership and financial benefits from a concession.

2.4.3. General objectives

There are a number of objectives for establishing and awarding concessions, and serving as a benchmark for assessing concession proposals or their environmental and socio-economic impacts. Among these are:

- Enhancing the conservation of biodiversity and the maintenance of the ecological integrity of proclaimed Protected Areas and communal lands;
- Enhancing the ability of the authority to effectively manage the areas and wildlife where applicable;
- Controlling and monitoring the hunting activities, including the provision of services in the concession;
- Enhancing the economic value of the concession and wildlife on the State or communal land where applicable;
- Generating revenue from the sustainable use of wildlife contained in concession;
- Supporting the development of capacity and skills, and facilitating access to capital to meet concession requirements;
- Using concessions as a means of promoting sustainable development, poverty alleviation and employment creation in Protected Areas and on communal land.

2.4.4. Process of establishing, awarding and managing concessions

The different categories of concessions consist of those reserved for communities that reside in or are neighbours to Protected Areas and those that exist on designated wildlife State land or in communal lands that support wilderness areas (see Section 1.4.). The process to award, manage and regulate the concessions should conform to the objectives of a policy approved to oversee the process.

Having identified the opportunity to establish a concession, the authority is responsible for preparing area management plans in which the full details of the potential concession(s) are identified (see Section 3 for further details). Assuming that the proposed concession is viable, a strategy is prepared that provides details on how the concession will operate, the duration of the contract, perhaps what sort of partners would be preferred and any other relevant

considerations. An evaluation must also be made as to whether the concession should be allocated through the tender process, by auction, or by direct allocation.

If the concession opportunity is to be offered on tender or auction, a Request for Proposal (RfP) is prepared and should include the following information:

- Description of the opportunity;
- Description of the tender process;
- Objectives and expected outcome;
- List of relevant information about the concession area;
- Type of contracting arrangement;
- List of environmental and social conditions to be met;
- Details of the concession area (e.g. a map);
- Details of use rights, exclusivity etc;
- Any restrictions (e.g. development);
- Any other conditions and requirements;
- Details of bid guarantee (if required);
- Non-negotiable conditions and indicators of failed compliance;
- Grace period to conclude contract negotiations;
- Number of copies to be submitted;
- Time, date and place of submission.

Some countries (e.g. Namibia) use a 'two-envelope' system, which is specified in the RfP. The 1st envelope comprises the technical proposal and the 2nd one the financial proposal. The RfP describes what the bidders are required to submit and how many signed copies, copies of certificates and other relevant documents, all of which should be duly certified. The RfP also emphasises that there is no binding obligation to accept the highest or any tender.

The technical proposal contains the company profile, business plan and environmental plan, whereas the financial proposal covers the financial offer, bid guarantee (if required) and estimate cost of development. Various supporting documents can be requested and could include the company charter, registration with Receiver of Revenues, compliance with social security and labour laws, and any other documents the bidder might like to include (e.g. copies of hunting brochures, client referrals, letters confirming financial capital etc.).

The technical proposals are usually all opened in the presence of the bidders and checked for compliance with the RfP requirements by the evaluation committee appointed by the authority. Each is then evaluated using a predetermined scoring system that considers:

- Origin of company or bidder;
- Resources to operate the concession (human and financial);
- Community benefits (where applicable);
- Environmental impacts;
- Financial viability;
- Compliance with labour policy and law.

The technical documents are then grouped on a pass or fail basis. At this stage, the evaluation committee can request a particular bidder to provide additional information or clarify the contents of the technical bid. The financial offer of each of the successful bids is then opened for evaluation.

The financial offers can be standardised by calculating their Net Present Value (NPV) using a standardised discount rate. This helps compare the projected cash flows of the different proposals and their comparative economic value. The bidder with the highest NPV, after any adjustments agreed by the evaluation committee, will be recommended to be awarded the concession contract. All technical bids that failed are returned to their respective owners together with the unopened financial bids.

The auction process is similar to that for the tender, although potential bidders might have to pre-qualify in order to attend the auction. The RfP announcing the auction could call for:

- Company profile;
- Empowerment plan;
- Registration with Receiver of Revenues;
- Compliance with Social Security and Labour laws;
- Provision of company charter;
- Any other documents that the potential bidder might wish to include.

The RfP should be released at least three months before the tender or auction and provide information on the applicable rules. It should also state if there is a reserve price. Interested parties must provide documentary evidence beforehand to show that they qualify by meeting the specifications outlined in the RfP.

These documents must be submitted to the evaluation committee not less than two weeks before the announced date of the auction. Approved bidders are then required to register at least two hours before the auction. The highest bid at the auction is awarded the contract.

An example of a Tender Package from Mozambique is provided in the **Compendium: Chapter 2_Hunting Leases.**

2.5. ISSUES TO BE AVOIDED IN TENDERS AND CONTRACTS

Tender guidelines should be clearly categorised to avoid disjointed submissions which make the evaluation process difficult. It also hampers cross-checking and referencing within and between tender documents.

Inviting fee structures based on percentage income or turnover should be avoided as it is often extremely difficult to calculate these amounts once the concession is operational, especially as they are susceptible to manipulation via ‘creative’ accounting. It is preferable to seek a guaranteed fixed fee plus a variable fee based on an easily determined variable, e.g. number of hunter days.

The value of the animals on quota should be avoided as the basis of the fee structure because this can encourage unsustainable quota allocations designed to generate increased revenues. Similarly, concessionaires should not be required to harvest all or part of the quota (e.g. 50% of the quota value), as this encourages over-hunting, especially of the high-value species.

Terms and conditions that can vary from year to year should not be included in contracts. For example, the contract should not indicate a minimum quota because it might not be possible to honour this in future years.

Any reference to day-to-day management activities should also be avoided. To change or amend these in future would require both parties to sign amendments to the contract, something that can become unmanageable with time.

The contract should be in the name of an individual rather than awarded to a company, to avoid the transfer of the contract to a third party if the company is sold, or if there is a change in the shareholders.

Preparing unique contracts for specific concessions should be avoided as managing several different contracts each with different terms and conditions becomes problematic in later years especially when there is a loss of institutional memory. Contracts should all follow the same basic format and contain the same broad terms and conditions.

The advantages and disadvantages of different types of lease agreements are provided in Table 4.

Table 4: *Advantages and disadvantages of different types of lease agreements*

Type of Agreement	Duration	Advantages	Disadvantages
Single Lease Fee *Applicable to both hunting and photographic operations*	Annual with option to renew	• Easy to administer	• Price can be undervalued • Limited investment by outfitter • Difficult to show linkages between Lease Fee and value of resource • Little security of tenure • Results in instability in the industry.
Fee paid for each animal shot *Applicable to hunting operations only*	Up to 3 years with an option to renew	• Easy to administer • Linkages between value of wildlife and conservation can be demonstrated • Fees can be negotiated in US$ for foreign-based companies • Attractive to recreational hunters	• High risk of undervaluing wildlife • Community might not receive maximum potential income if animals are not hunted • Little security of tenure • Little incentive to invest in management • Can encourage over harvesting
Percentage of gross income *Applicable to hunting and photographic operations*	Up to 5 years for hunting operation Up to 10 years for photographic operation Both with option to renew	• Incentive for the community and outfitter to work together is high • Both parties benefit during good years • Encourages development of concession • Suitable for tender system	• Requires a good understanding of the business environment • Community can be prejudiced in poor years unless safeguards are built into the agreement • Can be difficult to administer and monitor
Negotiated Joint Venture *Applicable to hunting and photographic operations*	Up to 10 years for hunting operation Up to 15 years for photographic operation Both with option to renew	• Possible to develop an agreement to suit a specific situation • Responsibilities of both parties clearly defined • Provides security of tenure • Rights of both parties protected • Can be lucrative for both parties • Improved wildlife management • Engenders stability in the industry • Suitable for tender system	• Can take time to negotiate and develop the agreement • It can take time to develop a mutual trust between the partners • Requires a thorough understanding of business environment • Usually requires professional expertise to negotiate the agreement • Potential to foreclose future options is high

3. MANAGING HUNTING AREAS

3.1. GENERAL PRINCIPLES AND PROCESSES

To manage any conservation area requires developing a management plan that sets out the management approach and goals, together with a framework for decision making that will apply to the area for a given period of time. As seen in section 1.4.2. and Box 2, most areas used for regulated hunting come under either Category IV or VI of the IUCN classification of Protected Areas. Since most Hunting Areas are true Protected Areas, it is appropriate and recommended to apply the IUCN management planning guidelines for the design of Protected Areas to Hunting Areas (https://portals.iucn.org/library/efiles/documents/PAG-010.pdf). However, some countries have developed their own specific policies and guidelines in this regard (e.g. SANPARKS, 2006; 2008; 2011; MET, 2011).

In most cases, there are local communities living in the surroundings of the Hunting Areas; while in a number of cases, local communities live inside the Hunting Areas. As a consequence, any concessionaire must involve local communities in the management plan of its Hunting Area. The nature of the contractual relationship between the concessionaire and the local community depends of the legal arrangements set by the Law in a given country.

The implementation of a management plan is invariably subject to either unexpected or hardly expected events or developments. The concessionaire must be prepared to react to such surprises. Adaptive management is precisely the most appropriate method for reducing the uncertainties inherent in management. Adaptive management is the art of addressing complexity and uncertainty.

Once the management plan is approved, its implementation must be monitored for measuring the performance of the Hunting Area. The main purpose of such a monitoring is (i) to help the concessionaire to follow up on the adequate management of the Hunting Area and (ii) to allow the wildlife authority to properly evaluate the hunting operation. The monitoring of a Hunting Area requires monitoring the management of (i) the wildlife and habitats, (ii) the infrastructures and equipment, (iii) the hunting activity, and (iv) the relationship with the communities.

The translocation of wildlife into a Hunting Area is another important issue to be considered in the management of some Hunting Areas. For succeeding translocations and avoiding possible damages resulting from ill-prepared translocations, concessionaires should follow “Guidelines for Reintroductions and Other Conservation Translocations” set by the IUCN/SSC (http://data.iucn.org/dbtw-wpd/edocs/2013-009.pdf, see Box 8).

3.2. MANAGEMENT PLANNING FOR HUNTING AREAS

3.2.1. The planning process

The planning process, management objectives, and standards to apply, will all usually have been established in legislation or otherwise specified for the planners (Thomas & Middleton, 2003). As such, the plan gives effect to the policies and intentions of the responsible ministry or land authority, as the ultimate authority of the specific area, and ensures that any

management actions and decisions about the area are consistent with these. Plans can be more or less prescriptive, depending upon their purpose and legal requirements to be met.

Management plans for Hunting Areas should be succinct, identifying the key features or values of the area, clearly setting out the management objectives to be met, and indicating the actions to be implemented. These include specific or annually prioritized actions needed to give effect to activities specified in the management plan (e.g. fire control, road infrastructure maintenance, monitoring etc.). They need to be flexible enough to cater for unforeseen events that might arise during the period of the plan. Related documents to the management plan can include more detailed policies on zoning, business plans and infrastructure development to guide its implementation. The management plan is the prime document from which all other plans flow, and normally takes precedence if there is doubt or conflict.

All policy and management-level staff involved with the Hunting Area, including concessionaires, should view the management plan as a valuable core document. They must be familiar with its contents, as should new staff, who need to understand the values, objectives, management principles and strategies for the area.

Developing a management plan can be a more or less complex process, depending on objectives, their associated risks and threats, the number of competing interests, level of stakeholder involvement, and issues arising from outside the area. The plan can be designed to address the area as a whole, for example a wildlife management area or reserve (e.g. Madikwe Game Reserve, Draft Management Plan: NWP&TB, 2013) or be applied to a particular species (e.g. elephant: Martin, 2007), see **Compendium: Chapter 3_Hunting Management/*Management Planning***. Irrespective of whether the plan is simple or complex, sound planning principles should be applied to guide the planning process and ensure the thoroughness and usefulness of the final document.

When a given Hunting Area is to be co-managed, preparing the management plan must be participatory (SANPARKS, 2011), with particular attention being paid to authority and responsibility, costs and benefits, and resource tenure and pricing.

Competent planners are important to the outcome, as is an open and well-conducted process of involving those who will be affected by the plan. Topics to consider include:

- The issue of legitimacy of village management structures and their ability to manage a common property in partnership with private enterprise;
- Establishing the scale at which management decisions might take place within a single management unit incorporating a diversity of user interests;
- How resources, costs and benefits will be distributed within the community.

3.2.2. Planning elements

Preparing the management plan is the first opportunity for the authority to carefully consider its options and longer-term priorities for the Hunting Area, and to engage all interested parties in the process. Regular reviews during the period of the plan allow the management authority and stakeholders to adapt the plan and proposed interventions (and even the objectives, if necessary) in light of growing experience and understanding of the system being managed.

Tourism camp for hunting clients in a Hunting Area, eastern Central African Republic (©Christophe Morio)

Maintenance of infrastructures in a Hunting Area, Mozambique (©Jean-Baptiste Deffontaines/IGF Foundation)

Management planning for Hunting Areas is best kept simple and should include:

- A clear understanding, identification and statement of the objectives of the Hunting Area;
- A declaration of compliance with national policies, legislation and regulations;
- A focus on well-defined issues around the protection and conservation of the important natural and cultural resources of the Hunting Area;
- Specific actions or alternative options in response to these issues;
- Explicit identification of who will be responsible for implementing the actions;
- A clear approach to implementation;
- A statement of the resources required (human, material and financial);
- Clear benefit-sharing and participation provisions where communities are involved.

The plan is not an end in itself, but a framework within which management actions are implemented, outcomes assessed, and further planning takes place. Simplicity in any plan is often difficult to achieve, but a plan's effectiveness will be greatly increased if it remains simple to understand and use.

An example of the contents of a management plan for a hypothetical Hunting Area is provided in the **Compendium: Chapter3_Hunting Management/*Management Planning***.

3.3. RELATIONSHIP WITH COMMUNITIES

Murphree (2005) identifies five principles for structuring relationships with communities involved in participatory wildlife management. These are:

- Effective management of wildlife is best achieved by giving it focussed value for those who live with it;
- Differential inputs must result in differential benefits;
- There must be a positive correlation between quality of management and magnitude of benefit;
- The unit of proprietorship should be the unit of production, management and benefit;
- The unit for collective management should be as small as practicable and functionally efficient within ecological and socio-political constraints.

How such relationships between hunting operators and local communities are developed largely depends on the policy and legislation of each country. Most countries that allow regulated hunting have some legal provisions ensuring that communities benefit in some way, but how these are implemented differs considerably. In Namibia, community institutions that form conservancies are granted legal rights over wildlife, and are allocated a hunting quota by the Government. They can then negotiate a contract directly with a hunting operator to use this quota, receiving income directly from this in exchange (Weaver & Petersen, 2008; Boudreaux, 2010). By contrast, the Government of Zambia enters into contracts with hunting operators, receives the income, and then shares this with community resource boards (Simasiku *et al.*, 2008), while Mozambique awards communities 16% of the revenue generated from hunting (Booth, 2012).

Regardless of the precise contractual relationship, hunting operators should still adhere to certain principles when operating on community land. It is especially important if regulated hunting is being promoted as a conservation tool. Too often there are shortcomings in these relationships both by Government and hunting operators. Common among these are: Governments usurping income from hunting, leaving the communities with little; capture of benefits by elites within the communities; and diluted decision-making mechanisms. To encourage and incentivise communities' administrators must acknowledge the following:

- Even where community land is officially viewed as State land, communities are the land users and view the land as theirs;
- Communities should receive the maximum benefit from hunting, to provide an incentive for them to accept wildlife on their land;
- Communities should have the opportunity to define these benefits;
- Hunting operators and community representatives should meet regularly to exchange information and resolve any problems that might arise;
- Relationships between hunting operators and communities should be governed by legal contracts, where possible (this is not always so if there is no legal entity representing the community).

3.3.1. Steps to follow in a joint venture

Where communities are given legal rights over wildlife, there are a number of key steps that should be followed to enable communities to choose their hunting operator. The following can be used as a guide where a community is tendering for a joint-venture partner.

- **Stage 1: community decides what it wants from the joint-venture partner**

The community needs to determine specific requirements and conditions for the hunting operator, which should be incorporated into the Tender Invitation. Requirements might include such things as minimum numbers of employment opportunities, specific requests for training to management level in hunting operations, training as tourist and hunting guides, etc. There might be a requirement that the hunting operator helps the community to develop and market their campsites or other tourism activities. The community could also impose conditions that define the limits of where hunting may take place in order to accommodate other land uses (e.g. photographic tourism, livestock rearing etc.). Other conditions could include governing access to villages by the hunting operator and respecting community traditional resource use rights, etc. Another important requirement should be the establishment of a Joint Management Committee between the community and hunting operator.

- **Stage 2: community issues tender invitation**

The decisions taken in Stage 1 should be used to structure the contents of an invitation to tender. Because company proposals are based subsequently on this invitation, the requirements should be specific. The invitation should guide the format of the proposals in terms of length, style, language, and content, as well as ensuring that the proposals are in a form that is accessible to and readable by the community's representatives.

- **Stage 3: evaluation of proposals**

Company proposals should be evaluated using standard scoring of the responses to the requirements specified in the tender invitation. The track record and reputation of the companies tendering should also be taken into account.

- **Stage 4: the community chooses the company**

Depending on the circumstances, the community could either draw up a short list of companies from the Stage 3 evaluations or select the outright winner, using whatever approval procedures are contained in its constitution or other rules and regulations.

- **Stage 5: conclude a contract**

In the final stage, the community should conclude a clear and concise contract with the chosen hunting operator, one that specifies the respective roles and obligations of the hunting operator and the community. There should be clear escape clauses that enable the community to cancel the contract if the hunting operator defaults on payment or other important obligations, for example.

Communities often need assistance from NGOs or Government officials in this process. These can act as 'honest brokers' and help the community to understand the value of the resources they are negotiating; their options for deriving benefits; and concepts such as turnover, gross vs. net profit, tax write-offs, etc.

3.3.2. Potential conflicts to avoid in joint ventures

Conflicts between hunting operators and communities often arise where there are no contracts or written agreements, or where these documents are vague and ambiguous. Sometimes a hunting operator promises benefits in order to win a tender, then fails to provide them, resulting in conflict. All promised benefits should be stipulated in the contract or written agreement. Similarly, the other way around, conflicts may come from the non-fulfilment of obligations by communities, e.g. by not taking care of opening roads before the hunting season or not taking action against poaching when these are agreed to fall under communities' responsibility.

Conflict can also arise if the introduction of regulated hunting replaces local subsistence hunting, or subsistence hunting (legal or illegal) targets trophy animals. Contracts with communities need to take these possibilities into account by ensuring at least that meat from hunting is distributed within the community.

Where possible the agreement should take into account any resource use management plans for the area. Often these are not available. Issues such as subsistence hunting can be dealt with as part of the management plan and provide the framework to allow communities to benefit from such hunting without compromising the commercial venture, e.g. agreement that community members will not hunt obvious trophy animals.

Partnership with local communities: problem leopard harvested by a hunting client in a community-based Hunting Area, Central African Republic (©P. Chardonnet/IGF Foundation)

Planning with local communities, Mozambique (©IGF Foundation)

Partnership with local communities in a community-based Hunting Area, Mozambique (©Alessandro Fusari/IGF Foundation)

Planning with local communities, Nyae Nyae Communal Conservancy, Namibia (©Ben Beytell & Philippe Chardonnet)

3.4. ADAPTIVE MANAGEMENT

"Conservation is about handling change, and about the transition from past to future" (Adams, 1996).

All Protected Areas, no matter what use they are put to, are influenced by three principle drivers: economic, socio-political and ecological. Management of Protected Areas, and especially Hunting Areas, therefore requires taking into account working in multiple fields such as ecology, hydrology, natural resource management, sustainable utilisation, politics, business, economics, the social sciences etc., each with a large number of variables.

Adaptive management is an approach to reducing the uncertainties inherent in management by purposely and explicitly devising management procedures in ways designed to improve our understanding of the managed resource and its constituent processes, then using what has been learned to refine future management (see Box 4). It is such a compelling idea that few people disagree with it. It is explicitly structured to include clear statements about management goals, identifying alternative ways to achieve these, conjecturing the presumed causal connections between actions and outcomes, and specifying procedures for collecting and evaluating data that will allow one hypothesis to be distinguished from another, followed by further reiterations of the process. Its benefits seem clear: reduced uncertainty; better prediction of management outcomes; more appropriate goals; and more effective actions.

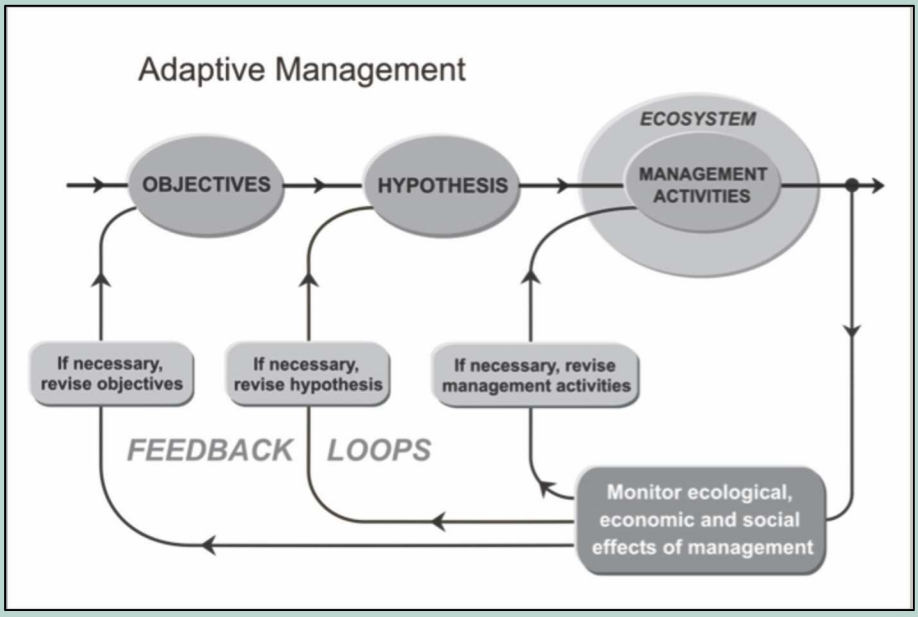
One must be clear about the ways in which management can function adaptively. The most widespread approach to management is to choose actions somewhat arbitrarily, based on prior experience or hunch, and then refine these later based on which actions seem to give the best results. Walters (1986) calls this 'trial and error' or the evolutionary approach. It is not adaptive management because it is not aimed explicitly at reducing uncertainty, especially among the most critical variables that are responding to management, or of fostering learning about the system.

The alternative (i.e. adaptive management) is to approach management systematically, looking to reduce uncertainty and improve management by learning from its outcomes. There are eight key features of the process, listed here in procedural order, starting with participation because it is supposed to occur at each step (Rist *et al.*, 2013):

1. Engaging all those with a stake in the outcome, including those outside the management agency, so as to control conflict and increase the range of management solutions;
2. Defining and bounding the management problem, including setting management objectives;
3. Representing current understanding through system models, which include assumptions and predictions as a basis for further learning;
4. Identifying key uncertainties and proposing alternate hypotheses to account for them;
5. Implementing actions or policies to allow ongoing management while learning from the process (reducing uncertainty);
6. Monitoring and assessing of effect of these interventions;
7. Reflecting on and learning from the results of monitoring by comparing outcomes with what was originally expected, and revising management actions or objectives accordingly;
8. Repeating this cycle so that, over time, uncertainties are reduced, which leads to improved management outcomes.

BOX 4

Adaptive management requirements (Martin, 1999)



- ✓ *A clear Statement of objectives for the system to be managed.*
- ✓ *A hypothesis about the workings of the system.*
- ✓ *A clear plan of management interventions.*
- ✓ *A monitoring programme to collect data on relevant variables, and*
- ✓ *A feedback system which permits the management activities, or the hypothesis, or the objectives to be modified in light of the information from the monitoring.*

In hunting, setting out to ensure sustainable offtake to safeguard both the viability of exploited populations and the quality of the trophies, wildlife managers face four fundamental sources of uncertainty:

- **Environmental variations**

Temporal and spatial variation in the weather, particularly rainfall, affects both forage production for herbivores (and thereby food for predators) and the distribution and amount of dry-season surface water. Together, these directly and indirectly influence the survival and reproductive success of large mammal populations.

- **Demographic uncertainty**

There is often inadequate understanding of population processes, such as whether a population

is regulated by density-dependent mortality or if mortality is density-independent. If mortality is density-dependent, does this result from 'top-down control' exercised by predators, including humans, or is it a result of 'bottom-up' control caused by variations in food supply and quality, linked at least in part to animal density? Finally, is mortality through hunting additive on other sources of mortality, or is it substitutive, with hunting losses being offset by reduced natural mortality?

- **Actual offtake**

Although managers set quotas, the actual number and demographic composition of animals harvested cannot be accurately predicted because of variations in hunting effort and success, themselves dependent on the numbers and distribution of animals, and on uncontrollable factors such as the weather and hunting skill (trackers, Professional hunters and hunters).

- **Limited accuracy in estimating key population attributes**

Accurate estimation of variables such as population size, reproductive output, mortality (or its reciprocal, survival), and even hunting offtake, is constrained by the levels of accuracy and precision achievable with existing monitoring methods. Although more accurate estimation might be possible with more intensive monitoring or by using more detailed methods, these involve additional costs that might not be justified by the marginal gain in accuracy. Some uncertainty will always remain.

Although the idea of adaptive management is compelling and therefore widely advocated, in reality there are few clear instances of successful application (Allen & Curtis, 2005; Allen & Gunderson, 2011; McFadden *et al.*, 2011; Runge, 2011; Rist *et al.*, 2013; Westgate *et al.*, 2013). Rist *et al.* (2013) identified a number of challenges or barriers to successful implementation that fell into five main categories:

  - **Logistical, financial, and staffing constraints**

    Logistical and resource constraints; problems of long-term continuity of staff and funding; high cost of the process.

  - **Need for a supportive institutional environment**

    Conflicts with formal regulations; regulatory and institutional inflexibility; problems of engagement and communication in management and governance processes.

  - **Limited opportunities for learning**

    The passive approach does not lend itself easily to learning.

  - **Experimenting within a management framework**

    Reconciling long- and short-term management priorities; problems with conducting large-scale experiments; perceived risks in experimentation.

- **Problems of spatial and temporal scale**

  Lag times and inherent variability conflict with management timescale; (i) long time frames for change mean that outcomes of management can only be assessed in the long-term; (ii) management implemented at small scales but against a backdrop of other changes occurs at larger spatial and longer temporal scales; (iii) changes in the system occur before learning about population dynamics can take place (difficulty in establishing reliable indicators of the state of the system).

In summary, for management to be considered adaptive, it must include a formalised process of learning, for example by comparing a management outcome with the original expectation so as to revise future management based on what has been learned, ideally combined with deliberate experimentation. Critical to this process is clearly specifying what information is being sought in relation to particular uncertainties, and precisely how such knowledge could be used to change future decisions (Runge, 2011). These features need emphasising in any discussion of adaptive management. This applies particularly to Hunting Areas where managers are always reluctant to test assumptions about offtake quotas, and tend to act cautiously.

Adaptive management is therefore as much about the confidence of planners to make decisions based on the available evidence and, with clearly identified assumptions and risks, monitor the outcomes of management to see if it is working as planned. A fundamental weakness in many management plans is a lack of institutional confidence to challenge assumptions and test a hypothesis in light of experience or to act in the absence of certainty, when 'certainty' might not even be achievable with or without adequate material resources available.

3.5. MONITORING WILDLIFE IN HUNTING AREAS

3.5.1. General principles

- **Why monitoring?**

Considerable time and resources are devoted to ensuring that regulated hunting does not adversely affect wildlife populations, but is instead a powerful conservation tool. However, to convince conservationists, donor agencies, international conservation organizations and the scientific community that the conservation and policy objectives are being met requires reliable records. In this context, robust and repeatable wildlife monitoring programmes should form a core component of any hunting conservation management project.

Well-structured and executed monitoring programmes can play an important role in the decision-making process by providing managers with information on the status of wildlife populations before deciding what appropriate conservation actions to take and monitoring and evaluating these outcomes (Stokes *et al.*, 2010; See **Compendium: Chapter 3_Hunting Management/*Monitoring***).

Wildlife managers should not collect data haphazardly. Instead, they need to implement efficient monitoring that focuses on providing the information required to make more appropriate conservation decisions (see Box 5). Defining clear and explicit monitoring

objectives is essential in this regard (Caughley, 1977; Witmer, 2005).

In many parts of Africa, the technical challenges of designing cost-effective monitoring programmes are often confounded by severely depleted wildlife populations. Designing wildlife monitoring programmes needs to strike a balance between technical rigor on one hand and cost on the other. Low technical capacity and thinly stretched budgets add to the challenge.

This section provides general guidelines to designing and implementing management-oriented wildlife monitoring programmes. It does not provide an exhaustive list of all possible survey methods, but instead highlights some of the common pitfalls and potential sources of error in designing wildlife monitoring and interpreting data.

BOX 5

Targeted monitoring vs. surveillance monitoring (from Yoccoz *et al.*, 2001; Nichols & Williams, 2006)

Targeted monitoring is defined as monitoring that is integrated into conservation practice. The ideal example of this is provided by ***adaptive management*** (Box 4). Adaptive management typically involves 5 components: 1) clear management objectives, 2) potential management actions to meet the objectives, 3) models of system response to different management actions, 4) measures of confidence in the models, and 5) a monitoring programme a) to provide estimates of system State and other relevant variables to make periodic management decisions, and b) to discriminate between competing models about how the system works and adjust our confidence in different models accordingly.

Surveillance monitoring is not guided by *a priori* hypotheses about how the system responds. Surveillance monitoring in conservation typically involves a two-step process. First, population declines are identified from monitoring data by means of a statistical test of a null hypothesis of no decline versus a decline. Following the statistical detection of a decline, either of two actions is recommended as a second step. One is to initiate active conservation immediately, and the other is to initiate studies to understand the 'cause' of the decline, followed by active conservation. Key to both is the detection of a population decline as a trigger for initiating management actions. This approach to monitoring is considered by some as inefficient and frequently ineffective and has been criticized as resulting in a 'too little, too late' scenario.

- **What to monitor and what measures to use?**

Deciding what to monitor depends largely on the management objectives or particular questions being asked. There are two aspects to consider: (i) what variable (or variables) should be monitored, and (ii) what measure to use. Managing and monitoring biological systems encompasses different variables of interest, ranging from species to ecosystems and including various quantitative and qualitative measures of biodiversity and populations. For

Hunting Areas, it is important that data are available to track long-term population trends and the impact that hunting, especially trophy hunting, has on populations. Apart from determining population estimates, it is also important to monitor trophy quality (e.g. horn size, tusk weight) and age.

Both the specific management objective and which species to monitor have direct implications for what to measure. For example, wildlife managers are frequently interested in measures of abundance, specifically density (number of individuals/unit area) or population size (total number of individuals in a defined area). However, density or population size is typically one of the most costly measure to obtain, and for rare or elusive species in particular (e.g. leopard), is often precluded by the effort required to obtain rigorous estimates that are meaningful as a monitoring tool.

In such instances, alternative measures of abundance can be used, including relative abundance (typically an index or proxy measure that has some constant relationship to abundance, see Box 6) or occupancy (proportion of area occupied by a particular species). Whilst the decision of which measure to use is ultimately determined by the management objective, it must also be considered in terms of cost and available budget. The choice of different measures will in turn have implications for the design of monitoring programmes but these should still subscribe to a minimum standard of statistical rigor.

- **How to monitor?**

The potential of monitoring programmes to inform management decisions is wasted if these programmes are poorly designed. Statistical design and analysis of such programmes needs careful consideration before substantial investment is made in implementing them and collecting data. Managers should therefore seek appropriate scientific advice on designing monitoring programmes at the outset. Successful programmes are those designed to be simple with straightforward, unambiguous and replicable measures. Overly ambitious monitoring programmes will be unsustainable both financially and in terms of technical staff capacity.

Often the required sampling effort has to be balanced against the need for collecting sufficient data to make statistically valid inferences while minimizing cost and time expenditures. The actual number of points, transects, sites etc. that should be sampled and the number of times each should be revisited during a particular field season will vary depending on the rarity of the species, variability of habitat and the objectives of the monitoring programme. To obtain reliable data on trophy quality trends for example depends on the size of quotas and the number of trophies harvested in a particular year or season (see Box 7).

Ideally, the monitoring objectives, or the particular question to be answered, should dictate the scale, intensity, accuracy and precision of the monitoring estimates. Once these are identified, the resources required to accomplish the surveys can be estimated. However, because resources are often scarce, methods and specific objectives might have to be adjusted to what is affordable.

BOX 6

Simple abundance index (V.R. Booth, unpublished data)

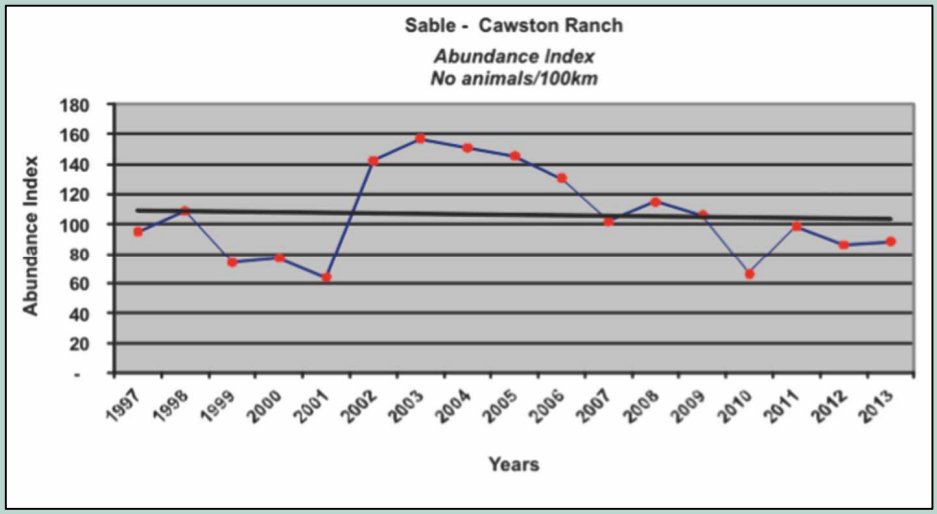
By recording the number of animals seen and the distance travelled (or time spent), the data from line transect surveys can be effectively used to monitor trends in populations over time. The following graph illustrates such a trend in which the abundance index (AI=number of animals/100km travelled) for a sable antelope population on a Zimbabwe game ranch (V.R. Booth, unpublished data).

.

The data are calculated as follows:

$$\frac{\text{Number of animals seen} \times 100}{\text{Distance travelled}}$$

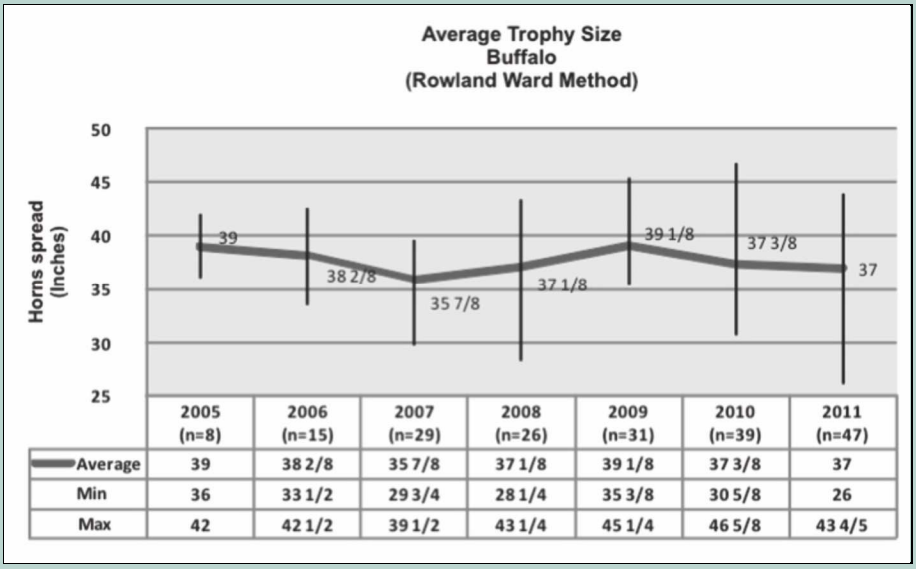
The AI index does not provide an estimate of the population size, but it does show how the population responds to different management activities (e.g. hunting, game capture, poaching, disease etc.) over time.



In general, the cost of collecting data increases as the scale broadens, the focus narrows, and the demand for accuracy and precision increases. The cost of implementing surveys, as well as the need for skilled and highly trained staff, will also typically increase from measures of occupancy and relative abundance being the least expensive, to estimates of absolute abundance or density being the most expensive. In reality there are often trade-offs to be made between all these factors.

BOX 7

Example of buffalo trophy quality trend recorded over time (V.R. Booth, unpublished data)



	2005 (n=8)	2006 (n=15)	2007 (n=29)	2008 (n=26)	2009 (n=31)	2010 (n=39)	2011 (n=47)
Average	39	38 2/8	35 7/8	37 1/8	39 1/8	37 3/8	37
Min	36	33 1/2	29 3/4	28 1/4	35 3/8	30 5/8	26
Max	42	42 1/2	39 1/2	43 1/4	45 1/4	46 5/8	43 4/5

Note the fluctuation of the number of trophies (n) measured each year

The technique used to determine sample size will vary according to the particular method used, for example line transects (Buckland *et al.*, 2001) or mark-recapture (White *et al.*, 1982) or occupancy surveys (Mackenzie & Royle, 2005). Furthermore, even for a particular method, the estimation of sample size will depend on the underlying assumptions of the distribution of abundance, for example whether a species is typically randomly distributed or in a clumped distribution, which in turn is likely to vary between species and between habitats. In summary, determining the optimum sample size needed should be an initial step of every wildlife population survey or monitoring programme, regardless of the state variable (e.g. occupancy, abundance, etc.) that is being measured.

3.5.2. Data handling and reporting

- **Data management and documentation**

All aspects of monitoring should be carefully documented and stored in a clearly marked and accessible location (for example as electronic files on a central computer or server within the protected area, rather than on a personal laptop). This applies to the monitoring programme goals and objectives, the monitoring design and associated assumptions, the data collection protocols and methods and the analytical techniques used. Monitoring programmes can be adaptable and can change as new techniques evolve and more information becomes available.

To adapt and refine the monitoring methods, it is important to have a clear record of the development and assumptions that underlie the original monitoring design, to ensure institutional knowledge is retained as new staff is taken on into the programme.

A system of storing and managing field data is also required to ensure both integrity and quality of data are maintained. If field data are recorded in notebooks or on hard-copy forms, then a system should be made available that transcribes these data into an electronic format that can be stored on a central computer. This will greatly facilitate and speed up data analysis as well as ensuring that data are not lost following general deterioration or wear and tear of paper forms. The electronic format can take the form of a simple Excel-based database with standardized column headings and pre-defined data entry codes, or, depending on the needs and capacity of the site, it can be in the form of a more sophisticated Access-type database or purpose-built management information system (e.g. Management Information System, or MIST, for ranger-based law enforcement data). Regardless, the database should be regularly backed up and the backup copy stored on a separate computer or location, to ensure that data are protected against any computer breakdown or virus.

- **Communicating and disseminating results**

Data analysis and communication of the results are the final and important stages in the management cycle. It is critical that the time and effort put into designing and implementing rigorous monitoring programmes are not wasted by failing to get the results to key decision-makers in time for them to take appropriate action. Involving all stakeholders at the outset and ensuring that monitoring is integrated as a core component of management planning and decision-making will greatly facilitate this process. The presentation of monitoring results needs to assess the findings in the light of the monitoring goals and objectives. Furthermore, accepted and peer-reviewed analytical techniques should be employed wherever possible. It is recommended that the analysis of monitoring data be reviewed by an independent and scientific technical advisor or group to ensure its reliability and utility for management.

Management decision-makers might not always be familiar with the technical details of the monitoring methods used. Depending on to whom the results are being presented, it might be necessary to modify the format. For example, if presenting to an external or non-technical audience, it will be important to ensure that the key results are presented as clearly as possible, using maps and charts wherever possible to facilitate communication of key findings.

Finally, be prepared to assess and review the monitoring design in the light of the results and to adapt and improve the design where appropriate. Monitoring programmes are intended to be dynamic in nature and should be able to respond to changes in threats or management action.

3.5.3. Wildlife monitoring tools

There is a suite of monitoring tools available to monitor wildlife in Hunting Areas. Depending on the resources available these can range from extensive (and expensive) aerial surveys to using simple forms to capture data that can later be transferred and analysed electronically. There is extensive information available in the scientific literature. Some of the more common methods are discussed here.

- **Aerial surveys**

Large wilderness areas in steppe and savanna landscape are often surveyed from the air by conducting a stratified sample count of the study area. The aerial survey is designed so that a series of samples, which are representative of the study area, are taken (Norton-Griffiths, 1978). The study area, or the census zone, is the whole area for which the population count is to be carried out, e.g. national park, district, etc., whereas the sample zone is that part of the census zone in which the target animals (e.g. elephant) are actually searched for and counted. The total number of animals in the census zone is then extrapolated from the number counted in the sample zone. Aerial surveys must be carefully planned: the census zone is divided into sample units which are chosen at random, meaning that every one unit has an equal chance of being selected for sampling from the possible total units in the census zone (Norton-Griffiths, 1978). The sample zone is, therefore, randomly distributed in the census zone, thus, theoretically, representing the variations in numbers and distribution. Norton-Griffiths (1978) provides a detailed description of the various survey designs, including precautions that must be taken to avoid biases and sampling error. Gasaway *et al.* (1986) provides a step-by-step description of the methodology to calculate the population estimates (see **Compendium: Chapter 3_Hunting Management/*Monitoring*** and http://www.fao.org/wairdocs/ilri/x5543b/x5543b0g.htm).

- **Line transect counts**

In line-transect sampling, the observer progresses through the area following a straight line of known length and direction (i.e. the transect line), recording each animal, its distance from the observer (using a rangefinder) and bearing (using a compass) when first seen. These are then converted to a sighting angle relative to the transect line, from which the observer can calculate the perpendicular distance of each animal from the transect line. The length of the perpendicular distance is not fixed and changes constantly according to the visibility or the density of vegetation along that particular segment of the transect line. The perpendicular distance also differs for each species of animal when multispecies counts are conducted. These perpendicular distances are then analysed through several competing statistical models with the DISTANCE software (http://distance.software.informer.com/6.0/) to estimate the density of the animals observed for the area. The basic idea underlying this model is that the probability of detecting an animal decreases as its distance from the transect line increases (Buckland *et al.*, 1993; Thomas, 2012, http://www.coloState.edu/depts/coopunit/download.html).

- **Management orientated monitoring system (MOMS)**

To implement community-based natural resource management programmes effectively requires that an easy-to-use community-based monitoring system is put in place that engages the community in collecting and analysing data (Stuart-Hill *et al.*, 2005; Cassidy, 2007). The Management Oriented Monitoring System (MOMS) provides such a system which gathers and provides critical information to the person(s) responsible for local-level adaptive practices and management. Essentially, MOMS is a tool that provides the field manager with the necessary data to measure efforts and trends as a basis for decision-making at the local field level (e.g. where to concentrate effort, trends in the desired activities being monitored, impacts of the activities, etc.).

Surveillance and monitoring by villagers, Ethiopia (©Philippe Chardonnet/IGF Foundation)

Training of village game scouts in the Burunge Wildlife Management Area, Tanzania (©Alessandro Fusari/IGF Foundation)

Surveillance and monitoring by village game scouts, Mozambique

Hunting team discovering an elephant killed by poachers (©Christophe Lepetit)

- **CyberTracker**

The CyberTracker software was originally designed for trackers who cannot read or write (http://cybertracker.org/). This software has since evolved to allow scientists and conservationists to load the software on to a Smartphone or handheld computer to record any type of observation. CyberTracker requires no programming skills and can be customised to suit the particular data collection needs (Figure 2). CyberTracker is an efficient way to gather large quantities of geo-referenced data for field observations that can be entered with a simple Radio List or a Check List (http://cybertracker.org/software/introduction).

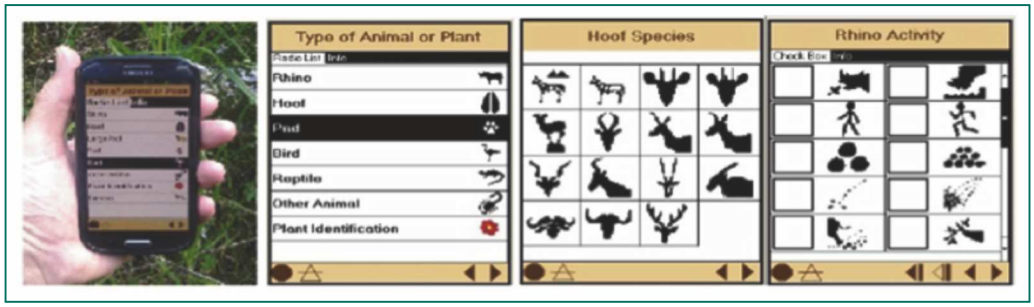


Figure 2: *Examples of the CyberTracker displays that appear on a smartphone*

- **Management information system (MIST)**

MIST is a unified database management system designed as a full suite of tools and services for conservation and protected area management needs. MIST is a comprehensive, yet easy-to-learn, easy-to-use system, which enhances data collection and facilitates the sharing of standardised data within the wildlife organisation. The data collected can provide information on key biodiversity indicators such as trends and distribution of wildlife species and carcasses, data on human-wildlife conflict and illegal activity. The choice of MIST as a tool for routine ranger collection of wildlife data is based on its ease of implementation as it requires minimal training and little additional equipment. Data collection is also inexpensive. Its disadvantages centre on the time that it takes to gather the information in the field, failure of equipment (such as GPS's) and the capture of data. MIST is available as free and open-source software and can be downloaded from http://www.ecostats.com/web/MIST.

- **Spatial monitoring and reporting tool (SMART)**

SMART is an improved version of MIST and CyberTracker that is used for measuring, evaluating and improving the effectiveness of wildlife law enforcement patrols and site-based conservation activities. SMART recognises the needs of wildlife managers to access quick and reliable information, e.g. when facing an onslaught of illegal activities. As a data collection tool, SMART draws on the best practices developed by people from across the globe who use them to plan, evaluate and implement their activities more effectively. Its software is geared towards wildlife authorities and community groups and provides the ability to empower staff, boost motivation, increase efficiency and promote credible and transparent monitoring of the

effectiveness of anti-poaching efforts. Although the initial focus on SMART is on law enforcement, it is envisaged that it will be expanded to include a suite of software tools that can be used to capture, manage and analyse various kinds of spatial data critical to the effective management and monitoring of conservation areas (http://www.smartconservationsoftware.org/).

3.5.4. Trophy monitoring

The success of a hunting safari is largely based on the sizes of the trophies harvested in the Hunting Area. Trophies are measured by their length in the case of horns, weight in the case of ivory, age and body length in the case of lions and leopards. If harvest rates are too high, this may cause a decline in trophy quality.

In some cases, trophies are selected for their age rather than horn length alone, in which case old animals with worn horns are harvested. With elephant, ivory tusks grow throughout their life, only decreasing in weight if they are broken.

It is very important that managers should record and keep the measurements of all the trophies harvested in their Hunting Area. By maintaining a database of all trophy measurements, it is possible to monitor whether the mean trophy size is increasing, decreasing or remaining static. It is also important to match the trophy size with age. For instance, a combination of decreasing trophy size and age can indicate that the trophy population is being overhunted.

There are primarily two well-known and recognized organizations that each has its own methods of measuring trophies (see example for buffalo in Figure 3). Both the Safari Club International (SCI: http://member.scifirstforhunters.org/static/RB/Methods/) and Rowland Ward (RW: http://www.rowlandward.com/content/default.aspx?pid=21&MainPage=2&SubPage=2) catalogue and register trophy entries into their own record books. Any trophy to be entered in these record books must comply with their individual requirements and standards.

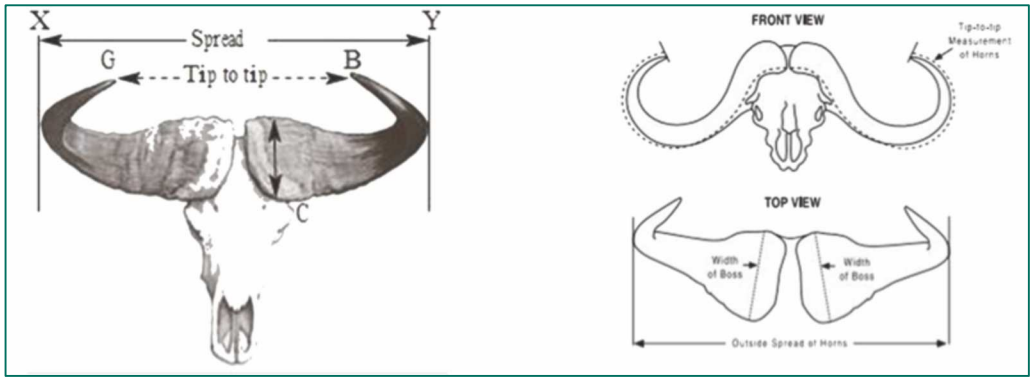


Figure 3: *Diagrammatical representation of the current measuring methods used by Rowland Ward (left) and Safari Club International (right)*

Aerial survey: a herd of more than one hundred giant elands (Lord Derby elands) recorded in a Hunting Area, Cameroon (©Jean-Paul Arabeyre)

Line transect count: giant eland, lelwel hartebeests and warthogs recorded in a community-based Hunting Area, Central African Republic (©Victor Giboin/IGF Foundation)

Counting lions and other large carnivores in a Hunting Area, Tanzania (©Pietro Sandini/IGF Foundation)

Ecological monitoring by game scouts, Gilé National Reserve and adjacent community-based Hunting Area, Mozambique (©Pietro Sandini/IGF Foundation)

3.6. MONITORING HUNTING ACTIVITIES IN HUNTING AREAS

As basic principle, the hunting activity must be monitored by the concessionaire of the Hunting Area for the double purpose of (i) properly managing the hunting operation and (ii) reporting accurately to the wildlife authority. In some countries, hunting parties on Government land, must be accompanied by a game scout who is a civil servant of the wildlife authority. In this case, the game scout is in charge of either monitoring the hunting activity or controlling the monitoring by the concessionaire. In other countries, the concessionaire is responsible for the monitoring of the hunting activity.

The monitoring of the activity in Hunting Areas is essentially conducted with the two following instruments:

- **The Hunt Return Form (HRF)** records the detailed information on every single hunting party with a given hunting client in a given Hunting Area;
- **The Hunting Season Report (HSR)** records the exhaustive information on the whole activity in a given Hunting Area throughout the entire past hunting season.

3.6.1. The Hunt Return Form

The HRF captures baseline information on every hunting party by any hunting client in any Hunting Area. Table 5 gives an example of HRF (See **Compendium: Chapter 4_Hunting Administration/*Hunting Administration*** for Excel example).

The HRF is designed for recording the following information:

- Number and date of issue of the hunting permit;
- Names of the Hunting Area, the hunting operator and the PH;
- Name, address and nationality of the hunter and eventual accompanying persons;
- Dates and duration of the hunting party;
- Species and gender of each animal taken;
- The precise location of the kills;
- Whether the animals were killed or wounded;
- Size of the trophies according to the Rowland Ward system (because of its simplicity) or to the SCI system (see Section 3.5.4);
- Possibly, any other relevant observation.

The HRF, issued in triplicate, is completed by either the PH or the game scout according to countries. It must be signed by the PH and the client at the end of the safari, then delivered to the wildlife authority. In some countries, it must accompany the trophies when they are transported within the country.

The data of the HRF are easily captured electronically for analysis. The HRF is essential for monitoring the performance of tourism hunting and trends in trophy quality. It is also an essential document for establishing the ‘Hunting Season Report’.

Table 5: An example of a Hunt Return Form used to capture baseline information for hunting safaris conducted in the Niassa National Reserve, Mozambique.

Sociedade para a Gestão e Desenvolvimento da Reserva do Niassa

REGISTO DE SAFARIS DE CAÇA (*Safari Hunt Register*)

Nº série:.....

Bloco de Caça (*Hunting Block*) _____ Operador de Safaris (*Safari Operator*) _____ Caçador-profissional (*Professional-hunter*) _____

Nome do Cliente (*Client Name*) _____ Nacionalidade (*Nationality*) _____ Licença de Caça Nº (*Hunter License Nº*) _____

Licença de caça Nº (*Hunting license Nº*) _____ Nº Dias-Caça (*Nº Hunter-Days*) _____ Nº de Observadores (*Nº of Observers*) _____

Hunt Period (*Period of Hunt*) _____

Espécies (*Species*)	Nº da etiqueta da mandíbula (*Jaw tag Nº*)	Senha SRN Nº (*SRN Abate ticket Nº*)	Data (*Date*)	Tamanho (*Size*)[1]	Sexo (*Sex*) (M)/(F)	Morto / Ferido (*Killed / Wounded*)	Localização (*Location*)[2]		Observações (*Notes*)
							Este (*East*)	Sul (*South*)	

[1] *Medição a ser feita de acordo com o sistema de medição Roland Ward (Measurements according to Roland Ward)*

[2] *Localização em graus decimais (Location in decimal degrees)*

ASSINATURA DO CLIENTE: _____ ASSINATURA DO CAÇADOR PROF: _____

(*CLIENT SIGNATURE*) (*P.H. SIGNATURE*)

Cópia Branca (Operador)

Cópia Amarela (SRN/Maputo)

Cópia Verde (SRN/Mueumba)

3.6.2. The Hunting Season Report

The HSR captures the comprehensive information of the entire activity in any Hunting Area over the whole period of the past hunting season (an example of a HSR template is provided in the **Compendium: Chapter 3_Hunting Management/*Monitoring***). The HSR compiles (i) the hunting activity data collated in all the HRFs completed during the course of the hunting season and (ii) the main information on the other activities conducted and the events occurring in the Hunting Area during the hunting season.

- **Structure of the Hunting Season Report**

The HSR can be structured in various ways. Some countries provide standard templates to be completed by hunting operators. The HSR should be logically organised to present all the key information related to the Hunting Area, the development of the concession and the hunting activity. The data collected should be streamlined and consistent so that they can be compared with past hunting seasons. As a guide, the HSR should have the following outline:

- **Hunting Area background**
  - Location and size;
  - Human settlements in or nearby; accessibility;
  - Tourism facilities with particular emphasis on new developments and investments: main camp name and coordinates, lodging capacity, staff accommodation, road and track network, airstrip, etc.;
  - Attractions: natural features, outstanding spots, etc.

- **Wildlife resources**
  - Wildlife presence: species encountered/observed;
  - Wildlife abundance and trends: estimations of species populations' sizes and trends.

- **Human resources**
  - Number and origin of managers;
  - Professional hunters: names, nationalities and years of experience;
  - Number of scouts and camp staff;
  - Other permanent and seasonal staff.

- **Means of transport, equipment and communications**
  - Number and type of vehicles, trucks, boats, airplanes, helicopters, bikes;
  - Number and type of generators, solar system, water pumps, etc.;
  - Number and type of radios and satellite telephones: numbers and frequencies, etc.

- **Hunting season results**
  - Quota: approved quota, purchased quota, purchased quota as a proportion of the approved quota;
  - Offtake, i.e. use of the quota: offtake as a proportion of the approved quota and of the purchased quota;
  - Clients and accompanying persons: numbers and nationalities;
  - Number and type of safaris conducted: e.g. buffalo, elephant, leopard,

lion, plains game etc.;
- Number of hunting parties, of hunting days and duration of the hunts;
- Average daily rates and trophy fees;
- Trophy sex, size, quality and age.

o **Wildlife management and monitoring**
- Proposal of quotas for the next season;
- Extent of fires and fire management regimes, e.g. early burning;
- Weather parameters, e.g. annual rainfall.

o **Anti-poaching activities**
- Organization and structure of the anti-poaching unit;
- Results of the anti-poaching activity: level of effort (e.g. patrol days, patrols per square kilometre), number of poaching incidents recorded, areas with more poaching incidence, type of poaching, targeted species, number of poachers apprehended and convicted, penalties awarded, number and type of poaching equipment seized, quantity and type of game meat seized, etc.;
- Legal and illegal movements of people through the Hunting Area.

o **Human and wildlife conflict**
- Type of human and wildlife conflicts (HWC);
- Species involved, areas affected by HWC, magnitude of HWC;
- Impacts, strategy and methods used to deal with problem animals.

o **Community and social aspects**
- Communities living inside or near the Hunting Area: location, names, population size;
- Main economic activities and livelihoods;
- Social infrastructure: schools, rural health clinic, waterholes, etc.;
- Income generation activities;
- Community structures and organizations;
- Participation in the hunting operations.

o **Other relevant information and possible comments**
- Interaction with local and provincial authorities;
- Relationship with community leadership;
- Contributions to community programmes.

- **Purpose of the Hunting Season Report**

The HSR serves several purposes. By collecting key information on activities in the Hunting Area, the HSR keeps track and control of the business. The HSR is the key instrument to report to business partners and to national authorities.

The information provided by the HSR facilitates the assessment of the hunting operation by the wildlife authority, especially regarding its compliance with the terms and conditions of the hunting lease contract.

The data collated by the HSR's should be streamlined and consistent so that they can be compared with past hunting seasons. Thus, the HSR helps the manager of the Hunting Area to measure progress against business-plan milestones, to compare successive hunting seasons.

With the information recorded by the HSR, the hunting operator is in a position to assess the performance of his hunting activity. He can analyse his data by using a number of common indices, such as:

- **Hunting effort**

The hunting effort is the amount of time spent for getting a particular trophy (e.g. number of days to get the animal for each hunt). Although, it is difficult to measure because many species are hunted at the same time, the overall amount of time (in hours or days) used compared to the animals harvested provides an 'effort/harvest' ratio. An increase in effort to harvest a particular species of the same quality may indicate that the population is declining.

Hunting effort (e.g. days to get the animal for each hunt) is often quoted as being a useful indicator. However, a great deal of variation is introduced with this statistic because it is the professional hunter and the client who choose how, what and when to harvest a trophy. It could be that the professional hunter and the client examine several animals over a period of days or decide to hunt the first trophy animal that is encountered. These variables are extremely difficult to monitor making this an unreliable indicator.

- **Encounter rate**

The number of times a hunting group comes into contact with an animal of the species (or with a trophy class animal) being hunted gives us an 'encounter rate'. This information can often be supplied by scouts and hunters from their diaries. Managers should try to collect this information annually.

- **Hunting success rate**

This is the percentage of the allocated quota taken over successive seasons:

  - If the whole quota for a species is harvested, then it may be assumed that there are plenty of trophy class animals; however, it needs to be clearly established that the harvested animals were in fact trophy class, e.g. more than 75% trophies;

  - If only a part of the quota is harvested, then it may indicate a shortage of trophy animals; however, low hunting success rates may be due to other factors such as low hunting skill or the safari operator's failure to market all of the quota. We need therefore to check this information against the hunting effort indicated.

- **The reporting process and procedure**

  - **Reporting process**

Once all the HSRs have been received, they are examined and analysed by the wildlife authority.

The reports should be reviewed initially to ensure that they follow the approved format and provide all the required information. Where information is questionable or missing, the authorities can ask the hunting operator to clarify or add information.

By extracting all the relevant information for each Hunting Area, activities in a given Hunting Area can be compared between years. For each Hunting Area, trends can be drawn using the different variables to demonstrate, for example, the offtake per species, quota consumption, the number of clients and the targeted hunting markets, the development of investments and infrastructures, the tendency of poaching and anti-poaching, possible changes in human and wildlife conflicts, etc. At country level, this allows the wildlife authority to measure progress, to draw conclusions on trends and to support decisions in order to protect, conserve and use the wildlife resources in the best possible manner for optimizing the hunting industry, land-use practices, income generation, wildlife conservation and community development.

The second step of the data analysis consists in collating and compiling the complete set of data from all the Hunting Areas in order to generate an overview of the performance of the hunting season at a national level. These data will show, for example, the level of the hunting quota utilisation per species for the entire country, the total number of hunters and their nationalities, the total number of hunting days and safaris conducted during the season, the revenues collected (Professional Hunters and hunting licences, trophy fees, concession fees, CITES permits, etc.). This also allows the wildlife authority to monitor the performance of all the hunting operators in order to assess their ability in managing their area and annual quota.

A number of countries produce a 'National Annual Report of the Hunting Season' which presents a global picture of the hunting industry every year at a national scale. The report collates and analyses all the annual statistics of the hunting industry at country level. It also exposes the authorities to the threats and challenges that wildlife and Hunting Areas are facing in order to gain political support for the national hunting industry.

  - **Reporting procedure**

HSRs should ideally be delivered to the authorities within two months of the end of the hunting season. They should be delivered both electronically and in hard copies to the central authorities with copies to the relevant provincial and local authorities. Once received, and for record purposes, the reports should be registered (date of reception, name of the safari company, etc.) and kept in one place.

The final step in the procedure is to provide feedback to the relevant stakeholders that are directly or indirectly involved in the hunting industry. These include a variety of

Government institutions, the hunting operators, relevant environmental NGOs, local communities and other interested parties. A suitable forum for presenting the results is the annual meeting of the hunting industry which is commonly called and held by the Government authorities in many countries. A simple presentation using images (graphs, figures, tables, pictures, etc.) is recommended. The data can also be made available upon request to the wider international audience, especially the CITES Animals Committee and national wildlife regulatory authorities responsible for trophy importation.

The reporting process and procedures are particularly important as they provide transparency and an audit trail of hunting activities at local and national levels. The HSR is thus the pivotal point for the proper administration of hunting in Africa. Without this information, it is extremely difficult to correctly manage the hunting industry in a country and to make informed decisions about the status of the wildlife and how it is being utilised.

The submission of the HSR should therefore be mandatory, not optional. Wherever possible, this obligation should be clearly written into the concession contract with appropriate penalties for those who do not comply with this requirement. It is the responsibility of the management authorities to sensitize hunting operators as to the importance and value of the HSR. Their effort to produce the HSR should be recognized, which implies that they have access to the national data through their national associations.

Note that the HSR is not a substitute for field visits to the Hunting Areas. Field visits by the authorities are essential for monitoring the Hunting Areas and for better understanding at first-hand the hunting enterprise and the possible difficulties faced by the hunting operators.

3.7. WILDLIFE TRANSLOCATIONS

3.7.1. Translocations into Hunting Areas

The quality of Hunting Areas can vary depending on the status of the wilderness, abundance of wildlife and levels of development. If a Hunting Area is depleted or there is a need either to boost a small existing population or to reintroduce a species that once occurred there, a translocation of the species concerned into the area could be warranted.

The conditions for such reintroductions have to be conducive to justify the investment given they comply with the socio-environmental constraints. For a concessionaire this would include having or being able to secure a long-term contract on the concession. Such reintroductions must also follow established protocols such as those outlined by the IUCN/SSC in its "Guidelines for Reintroductions and Other Conservation Translocations" (http://data.iucn.org/dbtw-wpd/edocs/2013-009.pdf, see Box 8).

While the translocation of wildlife into Hunting Areas is common in many countries around the world, within Africa it is mainly practised in Southern Africa, with a few exceptions elsewhere such as in Burkina Faso where the Buffon's kob was successfully reintroduced to the Nazinga Game Ranch (although not yet on quota there). Wildlife translocations are not

BOX 8

Definitions of terms with respect to wildlife translocation (IUCN/SSC, 2013)

1. **Population restoration** is any conservation translocation to within indigenous range, and comprises two activities:

   a. **Reinforcement** is the intentional movement and release of an organism into an existing population of con-specifics. Reinforcement aims to enhance population viability, for instance by increasing population size, by increasing genetic diversity, or by increasing the representation of specific demographic groups or stages.
   [Synonyms: Augmentation; Supplementation; Re-stocking; Enhancement (plants only)]

   b. **Reintroduction** is the intentional movement and release of an organism inside its indigenous range from which it has disappeared. Reintroduction aims to re-establish a viable population of the focal species within its indigenous range.

2. **Conservation introduction** is the intentional movement and release of an organism outside its indigenous range. Two types of conservation introduction are recognised:

   a. **Assisted colonisation** is the intentional movement and release of an organism outside its indigenous range to avoid extinction of populations of the focal species. This is carried out primarily where protection from current or likely future threats in current range is deemed less feasible than at alternative sites. The term includes a wide spectrum of operations, from those involving the movement of organisms into areas that are both far from current range and separated by non-habitat areas, to those involving small range extensions into contiguous areas.
   [Synonyms: Benign Introduction; Assisted Migration; Managed Relocation]

   b. **Ecological replacement** is the intentional movement and release of an organism outside its indigenous range to perform a specific ecological function. This is used to re-establish an ecological function lost through extinction, and will often involve the most suitable existing sub-species, or a close relative of the extinct species within the same genus.
   [Synonyms: Taxon Substitution; Ecological Substitutes/Proxies/Surrogates; Subspecific Substitution, Analogue Species]

necessarily benign, however. There can be negative consequences, including: (i) depletion or disturbance of the source populations; (ii) disruption of ecological processes; (iii) disease transmission; (iv) introduction of potentially invasive species; (v) genetic contamination; (vi) adverse socio-economic consequences; and (vii) financial failure. Proper evaluation and risk assessment beforehand is essential (i.e. feasibility study), as is close monitoring and adaptive management of the outcomes. Wildlife translocations also need close control to ensure that

regulations are adhered to (See **Compendium: Chapter 3_Hunting Management/*Wildlife Translocations*** for lion translocation guidelines).

3.7.2. Translocation objectives

Translocation can meet a number of conservation objectives and enhance the efficiency of hunting operations. There are however pitfalls that should be avoided, notably those associated with 'put and take' and 'canned hunting'. The rationale for translocations requires clear objectives:

- **Reintroduction**

The purpose of reintroductions is to establish a taxon (species, subspecies or variety) in a Hunting Area which was once part of its historical range, but from which it has been extirpated or become extinct ("re-establishment" is a synonym, but implies that the reintroduction has been successful). The justification for such actions however needs to be clear to avoid possible counterproductive results. Situations occur in some Hunting Areas where the reintroduction of a given species is not justified for good reasons. For example, with local communities having encroached into a Hunting Area, leading to human/wildlife conflicts or ecological constraints such as where habitats have been modified or reduced in size after the species became locally extinct.

- **Reinforcement or supplementation**

The purpose of this is to move more individuals to an existing population of the same taxon, the same species (conspecific), the same subspecies or the same strain. Population reinforcement for recreational or commercial offtake is subject to controversy, especially if the intention is to carry out 'put-and-take' or 'canned' hunting. Apart from the ethical arguments, there are high risks that little precaution is taken to carefully select the reintroduced animals with the identical taxonomic status as the native population. A number of Southern African private operators are looking for profit by crossbreeding different subspecies to enhance trophy quality, for example crossbreeding: (i) Livingstone eland with Cape eland, or western sable with southern sable, in order to obtain longer horns, (ii) captive-bred modified lions bred with local lions to produce darker and bigger manes, and heavier bodies. However, the net result of such practices is genetic pollution, loss of the genuine local biodiversity and erosion of global biodiversity by homogenization of the taxon.

- **Introduction**

The purpose is to establish a new species (exotic or non-native, i.e. extralimital) outside its recorded distribution but within an appropriate habitat and eco-geographical area. This is only feasible for the purpose of conservation, i.e. when there is no remaining area left within a species' historic range. However, this practice is to be avoided if the purpose of an introduction is not conservation but "enrichment" of the Hunting Area for increasing the list of marketable game species. Examples of such practice include encouraging mutant colour variants of an already present species in order to increase the value of the hunting package or when the introduction of a given species is conducted outside the original range of the species (e.g. fallow deer). Such practices must be definitely proscribed, even if they are not forbidden in a country.

Reintroduction of buffaloes (captured in various Mozambican Protected Areas) into Gilé National Reserve and its adjacent community-based Hunting Area, Mozambique

Capture of buffaloes in Marromeu National Reserve for their reintroduction into Gilé National Reserve and its adjacent community-based Hunting Area, Mozambique

4. ADMINISTERING HUNTING AREAS

4.1. GENERAL PRINCIPLES AND PROCESSES

4.1.1. The need for regulations

Legal issues related to regulated hunting activities, such as those on regulation of hunting, on licences and on ownership of wildlife are addressed in earlier sections. This section deals with the day-to-day administration of Hunting Areas. It focuses on the instruments that facilitate the interface between the administration, the hunting operator, the professional hunter and the hunting client. All countries that engage in sustainable hunting have regulations which set out prohibitions applicable to hunting. These prohibitions are of different types but can be broadly identified as:

- **Limitations on the quantity of animals which may be hunted**

Limitations on the quantity of animals that may be hunted, for example under a single licence, or within a certain period, or within a certain area, are generally defined by the terms and conditions of a licence or permit that is issued to either or both the hunting operator and the hunting client.

- **Limitations on the season or time that wildlife may be hunted**

Limitations on the season or time that wildlife may be hunted are common. Most laws prohibit hunting between sunset and sunrise. Setting open and closed seasons is also common, based on the broad belief that wildlife should not be hunted during the breeding season. Hunting seasons were often established before the biology of many African game species was well understood. In other circumstances, like in West and Central Africa, the time of hunting season has been dictated by the physical conditions that prevail, such as heavy or prolonged rains.

- **Limitations on hunting places**

As to limitations on hunting places, the issue is addressed in Section 1 where examples are given of different Protected Areas that have specific wildlife management purposes and ownership of wildlife, as some countries endow landowners with exclusive hunting rights, whereas others have also devolved the authority to qualified communities (e.g. in Namibia).

- **Limitations on hunting methods and instruments**

Regarding hunting methods and instruments, there are many prohibitions that are common to most legislation (for example, regarding the minimum calibre of weapon or bow draw strength permitted on dangerous game). Regulations typically ban the use of drugs, poisons, explosives and fire, as well as hunting from moving vehicles or near waterholes. However, methods of hunting are a typical part of local traditions, thus prohibitions vary greatly from one country to another. For instance, blinds, baiting and calling for hunting carnivores are prohibited in some countries while they are allowed, and even encouraged, in others.

4.1.2. Licences versus permits

Licences and permits are typical administrative instruments used to authorise the management and utilisation of wild animals for hunting.

- **Licences**

Licences are generally issued to a hunting operator or concessionaire for allowing those persons to conduct its operations. They can contribute to management when they are effectively used to limit the number of animals which may be taken under a single licence, based on a periodical assessment of the hunting operations, the licence can be renewed or extended. By withholding licences, authorities are able to prevent certain wildlife management activities, such as hunting, from taking place. Although this is rare, such actions are usually left to the discretion of the administration and can be a temporary suspension while surveys or management plans are concluded.

Licensing systems are also used to contribute to adequate management of Hunting Areas because very often the terms and conditions of the licence require the holders of licences to supply data gathered for monitoring and statistical purposes. The issue of a licence can be subject to a test of the applicants' knowledge and abilities. It is not uncommon for principal legislation to envisage the requirement of an examination, specifying subjects and other details, as is the case with licensing Professional Hunters (see Section 5).

- **Permits**

Permits are used in a similar manner to licences; however, the difference being that this legal instrument is generally issued to a particular person for a specific period of time. Often the permit will include similar terms and conditions to those applying for licences. The purpose of a permit is to supervise different categories of hunters. For example, a foreign or local hunter might be permitted to purchase a licence to hunt birds unaccompanied in a designated area, but will not be allowed to hunt big game unless accompanied by a licensed professional hunter.

Generally, the laws of most countries offering regulated hunting require that the tourist hunter (or hunting client) obtain a permit to hunt one or more species, including temporary permits for firearms that he intends to import into the country. Each country has unique systems and approaches in the way that licence and permits are issued. An example from Mozambique is provided below to illustrate this in the **Compendium: Country Folders/*Mozambique*.**

4.2. PRACTICES AND PROCEDURES

To ensure the smooth operation of a Hunting Area, clear administrative procedures should be established that deal routinely with the various licences and permits that hunting clients and hunting operators have to obtain from different Government departments. Consistency in practice and procedure is important, especially where there is high turnover among administrative staff. Procedures to be followed by hunting operators when applying for licences or quotas must be clear. For example, applications should be made under the company letterhead; these can be sent by email or fax, or delivered by hand; and hunting operators can include more than one licence application (i.e. Hunter Licence and Temporary Import Permit

for Firearms and Ammunition) in one letter. Such requests should be dealt with expeditiously (at least within 5 working days) to avoid delays. Clear options for payment should be specified. No cash payments should be accepted, but rather should be paid directly into an official bank account or by credit card.

Examples of the documents that are routinely dealt with include:

- **Professional hunter licence**

This document is issued by the national authority and serves as an official identification document permitting the holder to conduct hunting operations, guide hunting clients, and use and travel with firearms. Such licences are generally valid for up to five years.

- **Client hunting licence**

This document serves to identify the holder as a valid hunter in designated area(s). The licence is generally valid for a short period, usually not more than 6 months, and is issued under a specific hunting operator. In some cases, the licence is designed in such a way to allow the official game scout (an accompanying civil servant) or the hunting operator himself to register (i) the species hunted, (ii) the number of animals collected, (iii) the place and (iv) the date when the licence holder collected (or wounded) the animals. Where applicable, the client hunting licence should be accompanied by the corresponding game licences (or trophy licenses). This information is then verified by the management authority while inspecting all trophies and documentation during the hunting season, or before the trophies are exported.

- **Temporary firearms and ammunition import licence**

These are issued by the Ministry responsible for internal security in the country (e.g. Ministry of Interior). The applicant is generally required to provide supporting documentation including (i) copies of the passport; (ii) copies of firearm holder licence from the country of origin; (iii) hunting operator's request letter that provides the dates, port of entry and departure and make, model, calibre and serial number of the weapons being temporary imported.

- **Trophy licences**

This trophy licence, also named game license, entitles the hunting operator or client to hunt a specific animal that is on quota. The licence is non-refundable and non-transferable, and is filled when the animal is harvested. These licences are surrendered together with the client hunting licence and hunt return form upon inspection of the trophies. The official game scout or the hunting operator is required to insert the date when the trophy is collected. The license must be signed by the PH and the client.

- **Removal of trophies from the Hunting Area**

Although this process can be time-consuming and incur expenses, it is recommended that all licences and trophies be inspected prior to any trophies being removed from the Hunting Area. This can facilitate control over who is hunting and what animals have been hunted. It also provides the opportunity for the administration to ensure that all data are collected, and that the hunting operator and the PH have complied with the hunting regulations. Other procedures can

include obtaining:

- **Trophy veterinary certificates**: these documents permit the movement of the trophies from a Province to elsewhere inside the country, and are essential for the issuance of the export certificates and international sanitary certificates;
- **Ownership certificates**: this document identifies the legal owner of the trophy(s);
- **National veterinary certificates**: issued at the national level, usually by the Veterinary authorities for international use, this document is essential when applying for the CITES Export permits, and is required by the importing authorities.

- **Application for a CITES Export Permit**

The final step in the process is to apply for the export permit in order to ship the trophies to the client. National export permits are required for all wildlife exports. It is generally necessary to provide the CITES authority in the host country with all the documentation related to the trophies to be exported. In the case of CITES Appendix I species (e.g. leopard or crocodile), the client is first required to obtain an import permit from the CITES authorities in the importing country. Both CITES import and export certificates are valid for a limited period during which the physical trophy export should take place, including reaching the country of import. If export does not occur, new CITES export certificates must be requested. It must arrive at the point of import before the export permit expires. The CITES export permit must also be 'endorsed' or 'validated' by the export country before export, which is a separate, second seal and signature and listing of items on the bottom of the permit (see Section 6 for further discussion on CITES).

- **Hunt Return Form**

The Hunt Return Form (HRF), issued in triplicate, captures baseline information of each hunting safari. It must be signed by the PH, the hunting client and, in some countries, by the official game scout in charge of controlling the hunting activity in the Hunting Area. Section 3.6 provides detailed information on the HRF.

- **Hunting Season Report**

The Hunting Season Report (HSR) records all the main information on the whole activity in a given Hunting Area throughout the entire past hunting season. It must be delivered by the hunting operator to the wildlife authority after the end of the hunting season. Section 3.5.2 provides detailed information on the HSR.

4.3. METHODS FOR SETTING AND ALLOCATING HUNTING QUOTAS

4.3.1. Definitions and principles

The hunting quota is the number of game animals that is allowed by the wildlife authority to be

hunted by the hunting operator in a Hunting Area during a hunting season. The approach used to set hunting quotas depends of the status of the land. The scientific methods to set hunting quotas are well-documented, however they require complex and expensive protocols that can hardly be implemented every year in every single Hunting Area in countries with limited resources. Countries practising regulated hunting make use of these methods by developing simpler and cheaper mechanisms and involving all stakeholders including the local communities and the private sector.

But no matter what method is used, the subject of quotas and how they are set often attract a great deal of debate as to whether these are sustainable. The very purpose of quotas is precisely to ensure that wildlife is not overexploited. The size and composition of quotas depends on the estimated number of animals present in the hunting area, adjusted upwards and downwards for the various species on offer, depending on their population trends and impact of hunting on trophy quality.

The following paragraphs in this section are largely inspired by WWF *et al.* (1997).

- **What are quotas and why do we need to set them?**

In wildlife management, a quota should represent the number of animals that can be sustainably removed/harvested from a population each year without biologically damaging that population.

Setting quotas ensures that wildlife populations maintain themselves and continue to survive into the future. Only through continued survival of these populations can financial and economic benefits be ensured. To do this it is necessary to have an idea of how many animals there are and how many can be harvested sustainably. A combination of local knowledge and scientific methods will greatly help the process of estimating animal numbers and setting quotas.

- **Where to apply quotas?**

Setting quotas for hunting and cropping depends on the status of the land and the management objectives of the Hunting Area:

  - In most African countries (e.g. Safari Areas in Zimbabwe, *Coutadas* in Mozambique, Hunting Areas in Tanzania and Zambia, *Zones de Chasse* in West and Central Africa, etc.), quotas are fixed and are strictly enforced;

  - On privately owned game ranches, such as those in South Africa where user rights are devolved to the land owner, there might be no quota, as: (i) when the landowner breeds his own game, he sets his own quota according to his management objectives for each species; (ii) the landowner may simply rely on purchasing animals from other ranchers or live game auctions to replace the stock taken during the former hunting season or to boost the breeding population.

- **How can managers use their quota?**

Table 6 shows six different ways in which the quota can be used. Each use has different

advantages and disadvantages. It is important therefore that the quota is managed to achieve the overall objective of the stakeholders to ensure that they continue enjoying the benefits of wildlife now and in the future.

Table 6: *Different uses of the quota (adapted from WWF et al., 1997)*

Use	Reason	Benefit
Trophy hunting	To provide a number of animals that may be harvested by trophy hunters so that there is no decrease in the number of trophy animals over time	Money & support to manage the area
PAC (Problem Animal Control)	To allow a certain number of problem animals to be killed	Reduce human/wildlife conflict
Cropping	To provide a regular and continuous supply of meat to people living with wildlife	Meat/food
Translocation/live sales	To establish wildlife elsewhere	Money & expand conservation and utilisation benefits
Culling	To reduce the number of a certain species to reduce population's pressure in the habitat	Money, food & conservation
Local hunting	To enable local people to hunt wildlife in their home areas	Recreation, social bonds & meat

- **What area is covered by a quota?**

Quotas can cover almost any area that supports wildlife. The size of the area covered by a quota may vary according to the purpose of the quota. For example, the area covered by a regulated hunting quota should be sufficiently large to contain enough animals each year to support a commercial hunting operation. For a traditional hunting quota, the area could be smaller as fewer and different animals may be hunted. A cropping quota might cover a large or small area.

- **When should quotas be set?**

Quotas follow either the calendar year or the hunting season depending on the country. The proposed quotas and information about them should be submitted to the wildlife authority each year soon after the end of the former hunting season. This is important as:

  - Most hunting operators attend "hunting fairs" in the USA or Europe in January and February each year. Here they meet their buyers and sell their hunts. To do this they need to know what species and how many animals are in the quota for their areas;

  - It will give wildlife authorities sufficient time to approve or adjust the quota and to complete the necessary administrative procedures;

  - It will give local communities some idea of the income they can expect to generate in the coming year for their projects.

- **How are quotas currently set?**

Previously, the wildlife authorities used to set all the quotas per Hunting Area for the next hunting season based on their own sources of information with little consultation of stakeholders. Today, most wildlife authorities tend to set quotas only after discussions with stakeholders, although they tend to retain the final approval of the agreed quota.

Ideally, wildlife authorities should delegate more authority and responsibility to local communities and private operators in order to encourage better participation in the quota-setting process by people living with and using the wildlife.

- **Why should local people be involved in quota setting?**

Governments realize that if people who live with the wildlife do not feel ownership towards it and a desire to care for or husband it, this resource will not last. Participation in information-gathering and decision-making are important ways for rural people to undertake the 'co-management' responsibilities for wildlife management in Hunting Areas.

- **What about the debate on quotas?**

The subject of hunting quotas attracts a great deal of debate as to whether these are sustainable.

Game species in a Hunting Area are managed to produce the optimal economic benefit, so that they must be managed to be conserved on a long-term basis. However, it is often claimed by outsiders that wildlife as a whole is being overexploited in Hunting Areas. The purpose of quotas is precisely to ensure that this does not happen, and that the resource is conserved and not destroyed through inappropriate offtake.

A number of facts must be recalled here:

- **First, only a small number of wildlife species are hunted:**
  - Only 10 to 20 large mammal species are allowed for hunting;
  - All other mammal species and all non-mammal wildlife species are fully protected, including plants, insects, amphibians, reptiles and birds.

- **Second, only a small proportion of the game population is subject to hunting:**
  - Only 1 to 3% of the game population is hunted;
  - Only mature males with acceptable trophies are hunted.

- **Third, the size and composition of quotas depend on the estimated number** of animals present in the Hunting Area.

- **Fourth, quotas are regularly adjusted upwards or downwards** for the various species on offer, depending on trends of population size and composition, and on trends of trophy quality.

4.3.2. Baseline method for setting quotas

- **Basics of population dynamic**

As a rule, quotas are set according to the best available biological information although often this information is incomplete and subject to error. In their simplest form, wild populations increase by births and immigration and decrease through death and emigration. Populations also vary in their capacity to grow. The maximum rate at which a population can increase when resources are unlimited and environmental conditions are ideal is termed the population's biotic potential. Each species has a different biotic potential for a variety of reasons:

- Fecundity: the species' ability to reproduce and at what age (or how long an individual is capable of reproducing);
- Frequency of reproduction: how often an individual can reproduce;
- Litter size: the number of offspring that are born each time;
- Survival rate: percentage of individuals that survive during a particular period, e.g. the percentage of offspring that survive to reproductive age;
- Sex ratio: the number of mature males to mature females that exist in the population;
- Density: the number of animals that occupy a defined area.

From an estimate of these parameters, a set of statistics can be calculated that can define the characteristics of the population. These are:

- Birth rate;
- Death rate;
- Rate of increase.

But there are always limits to population growth in nature. Populations cannot grow exponentially indefinitely. Exploding populations always reach a size limit imposed by the shortage of one or more factors such as water, space, and nutrients or by adverse conditions such as disease, over-exploitation, drought and temperature extremes. The factors which act jointly to limit a population's growth are termed the environmental resistance. It is the interplay among the biotic potential, density-dependent and density-independent factors that drives a population’s dynamics. In short, the carrying capacity (see below) is the potential of the environment to support a population and the stocking rate is the population size supported by the environment.

- **What is carrying capacity?**

Two models, exponential and logistic, may be used to represent simply the changes in population size (Figure 4). In the exponential model, a population grows at an accelerating rate, theoretically with no limit. In practice however, there is a limit because environmental resources are limited. The growth rate of a population decreases as the number of individuals in that population reaches this limit, i.e. the carrying capacity. This is what describes the logistic model. The logistic growth model produces a sigmoid curve graphically. Growth rate is highest at intermediate populations (i.e. the size of the population is small), with a substantial number of breeders and a significant amount of available space and resources. A dramatic decrease in growth occurs as the population approaches carrying capacity (Caughley, 1977). At

equilibrium, the size of the population may fluctuate above or below the carrying capacity.

For any given location, carrying capacity is the theoretical maximum number of individuals of a given species that an area's resources can sustain indefinitely without significantly depleting or degrading those resources. Large mammal populations mostly grow according to the logistic model.

Reproductive lag time can cause the population to overshoot the carrying capacity temporarily. Reproductive lag time is the time required for the birth rate to decline and the death rate to increase in response to changes in the resource limits. In this scenario, the population can suffer a crash or dieback to a lower level than the carrying capacity unless a large number of individuals can migrate to an area with more favourable conditions. An area's carrying capacity is therefore not static. The carrying capacity can be lowered by resource degradation or destruction during an overshoot period, or extended through technological and social changes, or affected either way by prolonged climate changes. Different species respond differently to these changes: (i) some could find these changes favourable and their populations will increase (for example impala can exploit degraded habitats); (ii) others can decrease (e.g. sable) as a result of the stress brought about by poor nutrition (Capon, 2011; Bothma & du Toit, 2010).

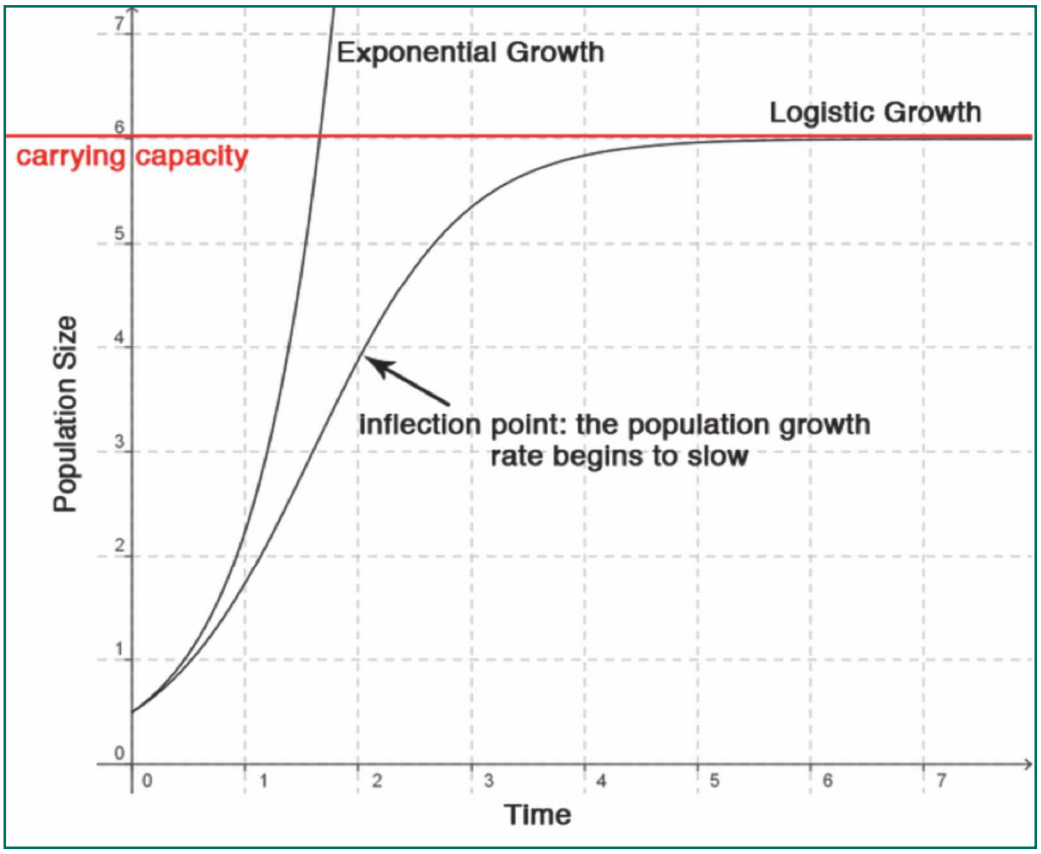


Figure 4: *Two models of simplified growth pattern of an animal population*

In a logistic growth model, the rate of increase approaches zero as the population size nears carrying capacity. The number of individuals that can be added and sustained is therefore determined by the resources available that are still able to support population growth. Adjustment to the change in population size as it increases over time is known as the rate of increase. When the population is small compared to carrying capacity, the rate of increase can approach the maximum rate of increase. When the population is large compared to carrying capacity, the rate of increase decreases until a point is reached where the population size and carrying capacity are equal. In this situation the population growth stops. Therefore, hunting can in theory contribute to "boost" the growth rate of a population that is close to its carrying capacity or over. Indeed, by harvesting animals, hunting may move the population back to levels below its carrying capacity, i.e. where growth rates are higher.

A more detailed discussion of this topic is provided in the **Compendium: Chapter 4_Hunting Administration/*Quota Setting*.**

- **Assessing carrying capacity**

The term "carrying capacity" has many definitions as a result of the heterogeneous nature of the environment and its constantly changing physical features. Essentially, "carrying capacity" means the theoretical number of km² or hectares (km² = 100 ha) it will take to sustain one animal over a period of one full year (all seasons). In agricultural terms, 'one animal' is defined as a Livestock Unit (LSU), which is equivalent to an adult steer with the gross live weight of 450kg that gains 0.5kg per day on the range with a digestible energy of 55% (Meissner *et al.*, 1983). Thus, a stocking rate (also referred to as kg of live weight per ha) is expressed as 5 to 1, meaning that 5 ha are needed to sustain life of one animal (LSU) over a period of one year.

In African savannas, the factors that define carrying capacity are essentially the amount of rainfall and the productivity of the soils to support different habitats. For example, in a desert environment such as Namibia the mean carrying capacity can be 20 to 1, i.e. 1,000 ha will only accommodate 1,000 ÷ 20 = 50 animals, whereas in Zambia with a higher rainfall and more productive soils the mean carrying capacity can be 5 to 1, i.e. 1,000 ha will be able to sustain 200 animals.

However, because different wildlife species differ in body size, feeding habits (i.e. grazers, browsers etc.) and density dependency, they have different metabolic rates, i.e. smaller animals consume more energy per unit mass than larger animals and therefore eat more per kilogram of body weight. It is necessary therefore to calculate the metabolic mass of different species using the formula:

$$\text{Unit Mass}^{0.75} = \text{Metabolic Mass}$$

This is used to correct for the increase in metabolic rate per kilogram (kg) with decreasing body mass (Coe *et al.*, 1976; Caughley, 1979; Peel *et al.*, 1998; Bell, 1982; East, 1984). This means that, for example, a Burchell's zebra is 0.75 of 1 LSU and a red lechwe is 0.28 of 1 LSU etc.

Various methods are used to calculate the theoretical carrying capacity. Coe *et al.* (1976) related the biomass of animals carried on game areas to long-term annual rainfall on 12 natural

ecosystems. They derived the formula for Large Herbivore Biomass (LHB, kg/km^2) as follows:

$$\text{Log}_{10}(\text{LHB kg/km}^2) = (1.552 \times \text{Log}_{10}(\text{Annual Precipitation}) - 0.62)$$

This model proved satisfactory for areas receiving a mean annual rainfall of up to 700 mm on granite-derived soils but there are two main shortcomings associated with this approach. First, the broad relation between biomass and rainfall does not take into account local temporal and spatial variations in savanna ecosystems. For example, the relationship between herbivore biomass and rainfall is modified by geology, which influences soil nutrient availability and ultimately the carrying capacity of different African savannas (Bell, 1982; East, 1984). Second, the Coe *et al.* (1976) model was based on numbers obtained from a wide variety of count methods. Bell (1982) and Fritz & Duncan (1996) contend that the count methods provided gross undercounts for many of the areas included, and conclude that the actual biomass levels can be twice as high as those indicated by the model of Coe *et al.* (1976). Fritz & Duncan (1996) modified this formula, taking into account these concerns, as follow:

$$\text{Log}_{10}(\text{LHB kg/km}^2) = (1.58 \times \text{Log}_{10}(\text{Annual Precipitation}) - 1.32)$$

When put into practice, it is possible to estimate the carrying capacity of an area from the formula modified from Coe *et al.* (1976; Cumming pers. comm.):

$$\text{Carrying capacity (Metabolic Biomass/km}^2) = 0.02 \times \text{Mean Annual Rainfall (mm)}^{1.69}$$

Furthermore, if the population estimates for the various wildlife species are known or estimated, it is possible to determine the stocking rate and thus whether the area is over or under-stocked. An example is provided in Table 7 suggesting that an area with a 575 mm rainfall has a carrying capacity of 10.6 ha/LSU but is stocked at a rate of 6.6 ha/LSU indicating that the area is overstocked by approximately 61%.

In these circumstances some of the selective grazers (sable, waterbuck) are under stress whereas coarse grazers (wildebeest, zebra) are able to exploit the conditions. This scenario offers the land user a diversity of management options. For example, where suitable habitat exists, a breeding programme can be implemented for valuable species for hunting (e.g. sable) where the numbers and proportions of sable are maximised whereas the numbers and proportions of competing species (wildebeest, zebra) are limited. Under these circumstances adaptive management can be used to exploit the conditions, which is achieved by setting dynamic and flexible quotas that can 'overexploit' the coarse grazers in order to decrease their numbers but set conservative quotas for the valuable species.

- **Determining the rate of population increase**

To be in a position of setting quotas, it is important to understand the rate of increase of the various populations. For example, a population that is increasing at 5% per annum will double in 20 years. In the logistic model, *r* declines as the number of individuals in the population approaches the carrying capacity, and the rate of change is greatest when $r = r(max)/2$. This is the point where the sustained yield is greatest, so quota setting often requires quotas to be calculated on the basis of $r(max)/2$. To estimate the value of $r(max)$, Caughley & Krebs (1983) used the following relationship:

$$r(max) = 1.5W^{-0.36}$$

Where W is the average male and female adult mass in kilograms. This is based on a regression of known rates of increase on a function of body mass for a range of species. However, this relationship gives high r(max) values for some smaller species and thus can cause over-optimistic quotas to be set. The relationship can be improved by using known population parameters with the Lotka-Volterra equation, also known as the predator–prey equation, which are frequently used to describe the dynamics of biological systems in which two species interact, one as a predator and the other as prey. The value of r(max) for a variety of common species using both methods is summarised in Table 8 (http://en.wikipedia.org/wiki/Lotka%E2%80%93Volterra_equation http://home.comcast.net/~sharov/PopEcol/lec10/lotka.html)

- **How to use 'r' in quota setting**

If a wildlife population is to be used for providing venison, then 'cropping quotas' should be set at r(max)/2 (or 0.5*r(max)) to maximise the sustained yield in terms of numbers. However, to allow a small safety factor, the cropping rate can be set at 0.4*r(max). But to apply this approach requires knowledge of growth rates and size distribution within the population to be harvested. This information is generally not readily available as there are many variables that influence this under different management, habitat and climatic conditions.

For this reason, the observable rates of increase are generally below any theoretical r(max) and as such might be sustainable. However, for most species of wildlife the value of '*r*' should in some way be related to r(max). From practical experience, empirical rates of '*r*' have been found to be 0.10 for buffalo, 0.20 for impala, 0.15 for sable, and 0.04 for elephant. Further information can be found in the manual on Game Ranch Management (Bothma & du Toit, 2010).

- **Quota-setting methods for trophy hunting**

Hunting for trophies is dependent on the growth patterns of the horns over time. The important biological factors that affect horn growth are nutrition, age and genetics. Other factors that can affect overall trophy production are sex ratios and age composition. The effects of nutrition on African hoofed animals are not as marked as that on deer species that shed their antlers each year and then grow out a new set for each rutting season; this process places a high nutritional demand on the animal and when food is scarce, the antlers do not grow to their full potential. African ungulates only grow one set of horns during their life span and the horn growth is spread out over a number of years. This process places less nutritional demand on the animal. Consequently, age and genotype are generally far more important than nutrition in determining horn length and circumference in African ungulates. The generalised relationship between age and growth pattern of horns of African antelope is illustrated in Figure 5.

Table 7: *A case-study: the potential stocking rate vs. carrying capacity on Cawston Game Ranch (Zimbabwe) based on specified assumptions (V.R. Booth, unpublished data)*

Case-study: potential stocking rate and carrying capacity for Cawston Ranch, Zimbabwe

Assumptions:

1. Carrying Capacity (Metabolic Biomass/km^2) = 0.02 x (Mean Annual Rainfall^1.69).
2. LSU = Large Stock Unit or Animal Unit (AU =Mass$^{0.75}$/97.7) which is equivalent to 450kg
3. Metabolic Mass (Animal Mass to the power of .75) is used to compensate for the relatively higher metabolic rate of smaller animals.
4. Unit Mass is the average weight of animals in Cawston population adjusted downwards to compensate for females and young
5. Average rainfall for Cawston (N=15) is 575mm

Numbers in RED can be adjusted to explore alternative options

Area (km2) 128.00 km^2 **Rainfall** 575 **mm**

Species	Unit Mass kg	Metabolic Mass	No. of animals	Density per km^2	Met. Biom. kg/km^2	% of Met Biomass	Biomass/ km^2
Elephant	1,725	267.7	0	0.00	0.0	0.0	0.00
Giraffe	800	150.4	250	1.95	293.8	20.5	1,562.50
Buffalo	450	97.7	0	0.00	0.0	0.0	0.00
Eland	350	80.9	120	0.94	75.9	5.3	328.13
Cattle	240	61.0	0	0.00	0.0	0.0	0.00
Zebra	250	62.9	300	2.34	147.4	10.3	585.94
Sable	160	45.0	570	4.45	200.3	14.0	712.50
Wildebeest	150	42.9	350	2.73	117.2	8.2	410.16
Waterbuck	145	41.8	80	0.63	26.1	1.8	90.63
Hartebeest	125	37.4	40	0.31	11.7	0.8	39.06
Kudu	120	36.3	570	4.45	161.5	11.2	534.38
Tsessebe	110	34.0	200	1.56	53.1	3.7	171.88
Reedbuck	40	15.9	0	0.00	0.0	0.0	0.00
Bushpig	35	14.4	200	1.56	22.5	1.6	54.69
Warthog	30	12.8	1,200	9.38	120.2	8.4	281.25
Impala	30	12.8	1,800	14.06	180.3	12.6	421.88
Ostriches	30	12.8	500	3.91	50.1	3.4	117.19
Bushbuck	20	9.5	300	2.34	22.2	1.5	46.88
Duiker etc.	10	5.6	75	0.59	3.3	0.2	5.86
			6,555.0	**Total**	**1,485.3**	**100.0**	**5,362.9**

Carrying capacity @ average 575mm rainfall per annum = 922.3kg/km^2 or 10.6ha/LSU
Current stocking rate = 15.0 LSU/km^2 or 6.6ha/LSU

Stocking rate as a percentage of carrying capacity = 922.8/1,485.3kg/km^2 = 0.61 (61% overstocked)

Table 8: *Assumed parameter values used to calculate r(max) and the approximate age at which an animal reaches trophy size*

Species	No of female offspring per adult female per year m(x)	Age at Maturity t(mat)	Approximate age at which an animal reaches trophy size (T)	r(max)	
				Caughley & Krebs (1983)	Lotka-Volterra equation
Elephant	0.17	11.0	35	0.076	0.071
Hippo	0.40	4.0	8	0.188	0.110
Giraffe	0.25	6.0	-	0.125	0.124
Buffalo	0.50	5.0	10	0.202	0.151
Zebra	0.40	3.0	-	0.227	0.191
Warthog	1.75	2.0	4	0.655	0.328
Sable, Gemsbok, Tsessebe, Kudu, Eland, Waterbuck	0.50	3.0	7 - 9	0.261	0.219
Wildebeest, Hartebeest	0.50	3.0	6	0.223	0.217
Bushbuck, Impala, Lechwe, Reedbuck	0.50	2.0	5 - 6	0.313	0.373
Duiker	1.00	1.5	4	0.4072	0.513
Springbok	1.00	1.0	4	0.5671	0.631

Horn length increases rapidly in the first few years, with the maximum horn length attained between becoming an adult and middle age. Thereafter there is a slow but steady decline in horn length through to old age, which depends upon the species: elephant tusks get longer and heavier; crocodile gets longer; buffalo horns get greater bosses and become shorter (worn); giant eland horns wear early in age because they are much used for browsing shrubs and trees. This decline in horn length results from the rate of horn tip wear exceeding that of horn growth. Often the horn growth manifests itself as a secondary thickening at the base of the horns, typically seen in sable antelope (Figure 6).

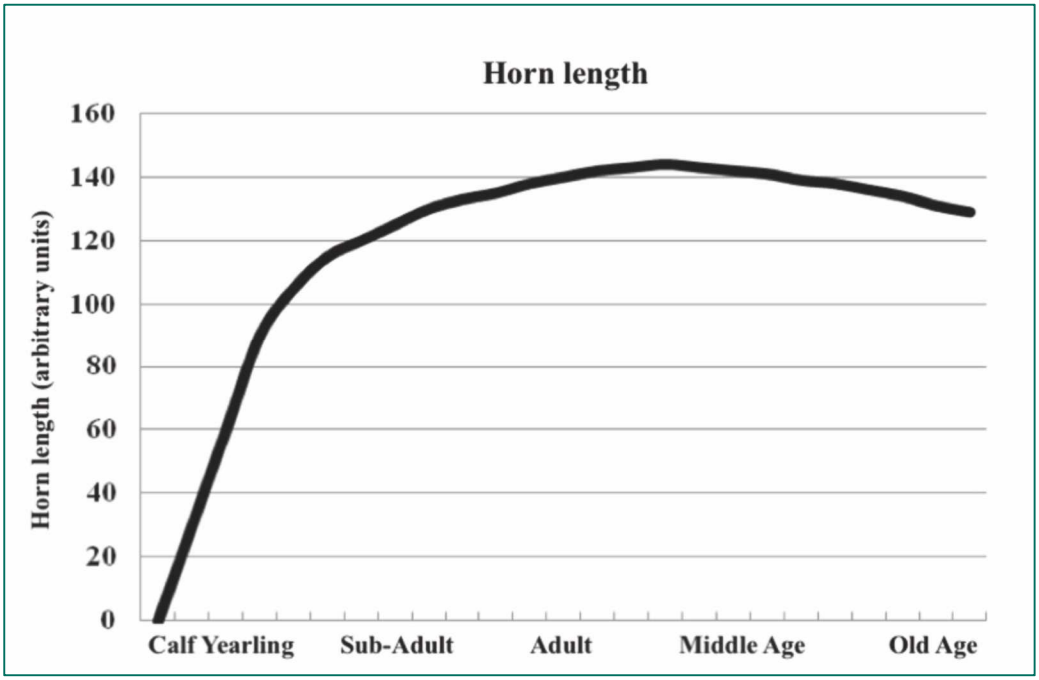


Figure 5: *Generalised pattern of horn growth with age for African ungulates (V.R. Booth, unpublished data)*

Figure 6: *Two examples of sable antelope trophies: the left set of horns illustrates worn down tips and secondary thickening at the base of an estimated 12-year old trophy while the right set with no thickening is from a prime bull estimated to be 4 – 5 years old (V.R. Booth)*

From the hunter's perspective, selection of trophies should be based on the principle that the best-quality trophies are obtained from animals at or just above middle age. This generalisation is somewhat complicated, however, by the fact that such trophies can also coincide with the age at which males are at their reproductive peak. Setting quotas that ensure that this delicate balance is not upset is the basis upon which sustainable trophy hunting is founded. For this reason, male calves, yearlings and sub-adults are not harvested from populations subject to trophy hunting. Ideally few animals should reach old age, and if these are present, then hunters should be encouraged to harvest these rather than prime bulls.

A second factor that impacts on trophy production is genetics. Selection pressure can impact on characters in a population, such as horn length: positive selection will increase the frequency of that character, whereas negative pressure will decrease the frequency of that character. Removing animals with superior horns can possibly result in a decrease in such specimens in the population, and increase specimens with inferior horns (Crosmary *et al.*, 2013).

For most species, trophies only represent a small fraction of the older adult males in the population and therefore a very small proportion of the total population (male and female). Removing this segment of the population might not be relevant to the survival of the population because no females are hunted and only a small proportion of the males are harvested as trophies.

However, these trophy males have to be replaced by maturing younger males in order to have trophies available in the next seasons. Trophy hunting will be unsustainable if quotas are set incorrectly and inappropriate hunting practices take place that remove these younger males. It is for this reason that trends in trophy quality and age should be carefully monitored (Crosmary *et al.*, 2013). Thus trophy hunting should aim to remove the same percentage of the trophy class as are being removed from the whole population. Males generally represent half of the population, and approximately 20% of these can be regarded as trophies i.e. adult middle-aged animals.

Trophy hunting operates under different principles to cropping where it is assumed that the majority of the quota will be harvested during the season. This is not necessarily the case with trophy hunting where the decision to harvest a trophy or not is guided by different criteria, e.g. whether the hunting client is satisfied with the quality of the trophy on offer. The guiding principles for trophy hunting quotas include:

- Quotas need to be 'balanced' to maximise marketing, i.e. big game can be paired with plains game;
- Quotas need to be stable over a period of time to build trust and security;
- Quotas for key species (buffalo, elephant, leopard and lion) or specialised species (bongo for example) are most important in the hunting industry, other species being not as critical;
- Quotas for "big game" must be linked to quality of the hunting experience;
- Quotas must be used efficiently to generate the optimal economic return.

Setting quotas for trophy hunting (or for bait animals, see Box 9) does not require that reliable biological information be available, unlike for cropping quotas, because the level of offtake is far lower. For example, the fact that a Hunting Area can support 2000 buffaloes does not require that the maximum quota (i.e. 40, assuming a 2% offtake, Table 9) be offered. It is feasible to offer 50% of this quota and still remain financially viable provided the hunting

operator adopts an aggressive marketing strategy. Moreover, not setting quotas at the maximum rate introduces some flexibility for the management authority to:

- Offer long-term sustainable quotas;
- Provide leverage when negotiating concession fees;
- Keep open options to use the balance of the quota for other purposes.

The trophy quota should be linked to the financial viability of a hunting operation, however. As discussed in Section 1.5 above, trophy hunting is marketed in 'packages' and marketing principles determine the cost, length of hunt and the number of animals to be hunted. The trophy hunting quota can therefore be regarded as one tenth of the sustainable cropping quota in terms of the total population. This will vary from species to species depending on the age and size distribution. From experience and active adaptive management, the following trophy percentage quotas have been applied broadly to different hunting regimes in Zimbabwe (Table 9).

BOX 9

Setting quotas for bait animals

The techniques used to hunt predators generally involve attracting the animal to bait. Rarely are these animals tracked, given their nocturnal habits. Hunting at night using a spot light is also forbidden in many countries. Providing bait offsets this to a degree. The norm is to use the carcasses of animals shot during a safari, although there are occasions when this is not possible.

As part of overall management, offering a limited number of female animals from selected ungulate species on quota to be used as bait can alleviate this. Maximum trophy production is not achieved from strategies where hunting pressure is confined to males only, leaving the females in the population to increase unchecked. The reason for this is that the females can approach, equal or exceed carrying capacity and thus depress overall production. In addition, fecundity will be reduced as the age of breeding female increases, resulting in sudden population crashes as these senile animals die from natural causes.

Providing a quota of female animals can offset this. For example, impala and warthog can be used to bait leopard while buffalo and wildebeest can be used for lion.

Table 9: *Percentages applied to populations of different trophy species in Zimbabwe (V.R. Booth, unpublished data)*

Species	Game Ranch: no predation, low poaching	Safari area: predation, low poaching	Communal area: minimum predation, moderate poaching
Elephant	0.3–0.5%	0.4–0.5%	0.3–0.4%
Buffalo	1.0–1.5%	1.5–2.0%	0.6–1.0%
Lion	-	3.0%	1.5–2.0%
Leopard	-	4.0%	2.0–2.5%
Hippo	2.0%	1.5–2.5%	1.0–1.5%
Eland	3.0%	2.5–3.0%	2.0–2.5%
Sable	5.0%	3.0–4.5%	2.5–3.0%
Kudu	6.0%	4.5–5.0%	3.5–4.5%
Waterbuck	5.0%	3.0–4.5%	2.5–3.0%
Wildebeest	5.0%	3.0–4.5%	2.5–3.0%
Tsessebe	3.0%	1.5–2.0%	1.0–1.5%
Impala	15.0%[1]	10.0%	10.0%
Zebra	2.5%	1.5–2.0%	1.0–1.5%
Bushbuck	5.0%	4.0%	3.0–4.0%
Warthog	6.0–8.0%	5.0%	4.0%

[1:] Impala can be cropped at rates up to 30% of the population estimate

A simple matrix can be constructed from this data using population estimates to determine quotas. For example, a population estimate of 1000 buffalo can provide a quota of 10 – 15 buffalo for trophy, in game ranch.

- **Prospects for improving the baseline method**

The baseline quota-setting method takes the population density or size as the minimal key source of information. However, wildlife management methods relying on wildlife censuses experience some limitations (Morellet *et al.* 2007, http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2007.01307.x/full), notably:

  - Estimating density of large herbivores with high precision and accuracy is difficult, especially over large areas, and requires considerable investment of time, people and money;

  - Quota-setting decisions are made on an annual basis, informed by population changes over the previous year; however, estimating year-to-year changes in density by censuses is not a realistic goal for largest herbivores.

Other approaches, employing indicators of ecological change, have been developed, especially in Europe and North America:

  - For improving the management of large herbivores, we should consider not only the population density or size, but also the changes in population; managers require information on trends in the animal population;

- A set of indicators of animal performance and population abundance provides relevant information on the population; monitoring temporal changes in these indicators provides a new basis for setting hunting quotas to achieve specific management objectives.

The quota-setting methodology would be improved by investing fewer resources in trying to estimate the absolute abundance of ungulates, and more resources in collecting additional data to inform understanding of the population trend. Using such a set of indicators for monitoring the population trend as a basis for adaptive management allows attaining the management goals.

In addition, when game animal density is reaching the carrying capacity of the habitat, monitor the trends in habitat quality would improve the quality of the quota-setting method. When feasible, an additional set of indicators of habitat quality and/or herbivore habitat impact would allow interpreting changes in the interaction between wildlife and habitats and provides relevant information on the population-habitat system.

This type of adaptive management is now widely employed in Europe for managing some large mammals, while classical censuses are nearly abandoned.

4.3.3. Quota-setting by the triangulation method

A number of methods are used to set quotas. In all cases, there is a need to understand the status and trends of the populations. To fully implement the complete protocol of the above-described baseline method requires quite complex and lengthy surveys with skilled expertise and adequate funding (Section 3.5). There are instances in developing countries, especially in community Hunting Areas, where the financial, human and capacity resources are scarce and can hardly meet the requirements. Adaptive management techniques may be adopted to ensure that the quotas are set at sustainable levels and adjusted accordingly. WWF *et al.* (1997) have developed the so-called 'triangulation method' for setting quotas in these situations.

- **The triangulation method**

The method uses information on wildlife from several sources to build up an accurate picture of the wildlife population status in the Hunting Area. A useful term for comparing the information from several sources to check if they all indicate the same, is called 'triangulation'. A case study of the method is presented in Table 10. The method comprises the following steps:

- **Step 1: collecting information from various sources**

  The method is best suited to Hunting Areas where data are sparse and/or difficult to accumulate. To overcome this, information is sourced from all relevant stakeholders: local villagers (e.g. observations on species distribution and numbers), the safari operator (e.g. trophy size), and from any routine wildlife management activities (e.g. patrols, law enforcement). In some instances, it may be possible to access ground and aerial survey data.

More than one source of information is recommended for knowing what is happening in a Hunting Area, because no single method gives a totally reliable picture. For example, counting animals is difficult and produces information that can be inaccurate: small animals (e.g. impala, warthog) are easily missed in aerial surveys while they can more easily be seen during ground-based surveys. Therefore, estimates from these two sources may be conflicting. This is where we may need to include other sources of information, such as trophy size and the observations of villagers and the safari operator, to try and establish what is really happening.

- **Step 2: setting an initial quota and monitoring its impact**

Using this information, an initial quota is set and the quota is harvested.

The manager of the Hunting Area then monitors a wide range of indicators to see what has been happening to the wildlife population since the harvest of the former hunting season. These indicators may include: offtake levels, trophy quality, hunting success, encounter rates, abundance indices (from aerial and ground surveys), sample counting over a small area, changes in sex and age composition, illegal offtakes, human/wildlife conflicts etc.

- **Step 3: adjusting the quota**

The whole set of these data is then discussed by all stakeholders to check on whether the original quota was set too high or possibly too low. If necessary, the quota is adjusted before the next harvest. After the next harvest, again counting methods and indices methods are used to find out what is happening to the population.

This process of continual monitoring allows the stakeholders to reconsider the quota and adjust their management decisions both in the light of the objectives and any changes taking place in the wildlife population. By continually monitoring the impact of the hunting activities, and applying an adaptive management approach (see Figure 7) it is possible to set quotas objectively.

Such a method might even be applied to situations without any initial census. A theoretical initial quota can always be adjusted yearly, whether downwards or upwards, by using a set of indicators. Such an adjustment must be applied per game species, given that each species may react differently to its own harvesting rate. So, even if the total population size of a given species is not initially known, indicators will provide evidence that the population has then grown or decreased, thus allowing stakeholders to decide whether the quota has to be enlarged or reduced for the next hunting season.

It is worth mentioning that, for setting annual quotas, most developed countries have abandoned classical censuses and are now using different versions of the triangulation method.

Table 10: *Case study of the quota-setting sheet for 1996 in Omay Communal Land (Zimbabwe): proposed 1996 hunting and cropping quota (Source: WWF* et al.*, 1997)*

Species	1995 Quota	Aerial Survey	Trophy Quality	Safari Operator	Community Poaching Information	1996 Quota	Comment (PAC = problem animal control)
Elephant bulls	20	↑ →	→ ↓	→	↑	20	8 PAC
Elephant cows	6	↑ →		→	↑	10	10
Buffalo bulls	110	→	→	→	↑↑↑	110	10 PAC or cropping
Buffalo cows	40	→		→	↑↑↑	40	
Lion	8			↓	↑	6	
Lioness	2			↓	↑	2	PAC only
Hyaena	8			↑		4	
Crocodile	6		→	↑	→	10	Population seems to be increasing
Sable	8	→ ?	→	→	→	10	
Bushbuck	32	?	→	→	→	32	
Waterbuck	30			↓	↑	30	
Impala male	910	↓↓↓	↓	↓↓	↑↑↑	160	Trophy only
Impala female	790	↓↓↓			↑↑↑	40	

Key to table							
↑	population increasing	→	population stable	↓	population decreasing	?	population changes unknown

- **Advantages of the triangulation method**

The triangulation method presents a number of advantages to be considered when choosing a quota-setting method. The method is:

- **inclusive:** all relevant stakeholders receive consideration in the quota-setting process;
- **participative:** the quota proposal is prepared by the manager of the Hunting Area together with all relevant stakeholders who express their opinions;

- **bottom-up as opposed to top-down:** the quota proposal is submitted to the wildlife authority by the manager in agreement with all stakeholders, in contrast to quotas imposed by the wildlife authority on the manager with little or no consultation of stakeholders;
- **promoting local knowledge:** the knowledge of the villagers can be sought; hunters and even poachers can be employed to use their skills as wildlife monitors to collect information; maps drawn by communities can also be useful monitoring tools;
- **cheaper:** the limited funds available are not all spent in regular expensive surveys for trying to estimate the absolute abundance of wildlife, and some resources can be spared to collect data for informing trends in wildlife populations.
- **more efficient:** it is now widely accepted by the scientific community that wildlife censuses are less efficient, given their cost, than monitoring methods;
- **adaptive:** the method is adaptive in essence since it relies on year-to-year assessments of trends.

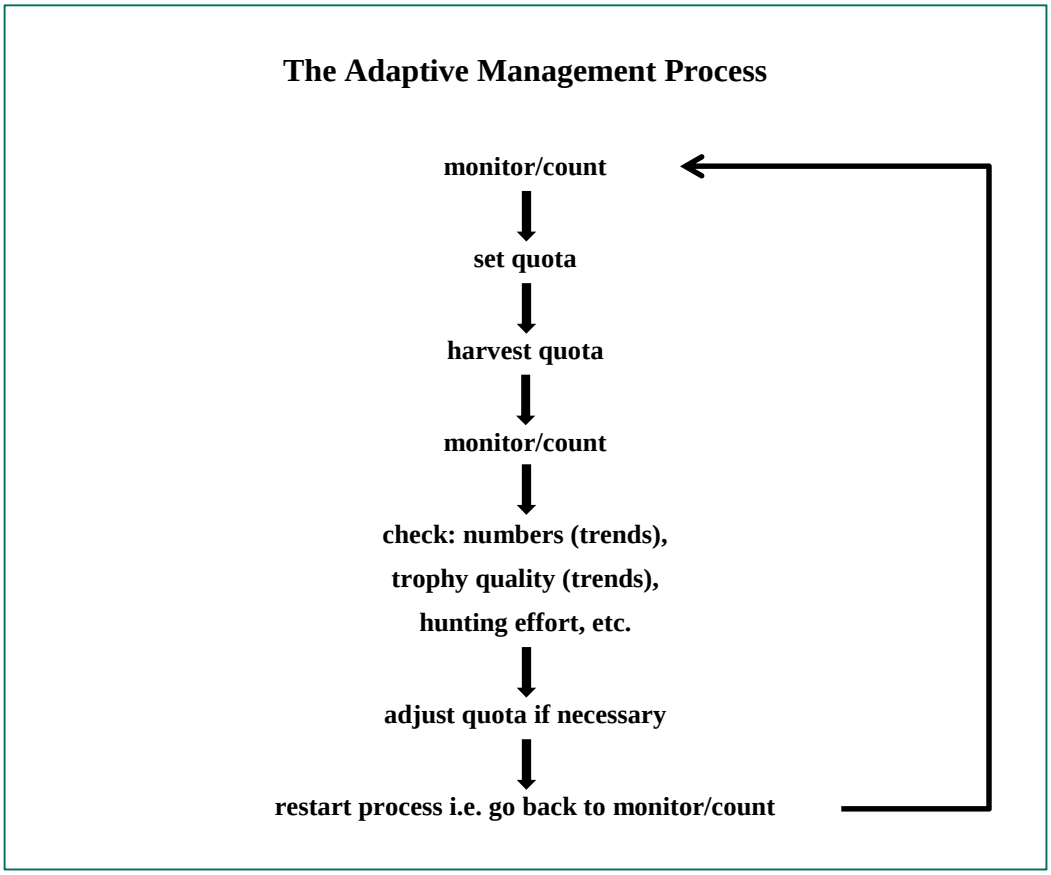


Figure 7: *The adaptive management process for setting quotas (Source: WWF et al., 1997)*

4.4. METHOD FOR EVALUATING THE MANAGEMENT OF HUNTING AREAS

Monitoring the performance of hunting operators is essential for the wildlife authority to gauge how Hunting Areas are managed, especially regarding their compliance with the terms and conditions of the hunting lease contracts.

To facilitate this, a number of categories are identified, each of which has several criteria against which hunting operators and Hunting Areas are assessed. Each category can be assessed independently from the others, and rated using a general scale with scores ranging from +5 to -5. Within this general scale, the rating chosen for each criterion makes it possible to weight the criteria according to their importance (Magane *et al.*, 2011).

The assessment result (global or per subject area) is then attributed a score. This score is calculated as a percentage ([score obtained/maximum possible score]*100), which allows for classification of the hunting operators and Hunting Areas into Very Good (100–76%); Good (75–51%); Medium (50–25%); Bad (24–0%) and Very Bad (negative percentages).

Much of the data to complete the assessment of the hunting operation can be extracted from the annual Hunting Season Report, submission of which should be compulsory. This can be supplemented by an interview with the hunting operator and staff or by visiting the hunting concession where the information, including the services provided by the hunting operator, can be verified. Because some of the criteria rely on trends, the assessments should be conducted regularly with field visits conducted at least every third year. To augment this assessment, the hunting operation should also be gauged against a series of key milestones as defined in the 5-year business plan for the Hunting Area.

Examples of these methods are provided in the C**ompendium: Chapter 4_Hunting Administration/*Hunting Administration*.**

5. ADMINISTERING HUNTING OPERATORS AND PROFESSIONAL HUNTERS

5.1. GENERAL PRINCIPLES AND PROCESSES

Hunting is regulated by central Governments (and eventually by provincial Governments, e.g. in South Africa) and is often administered by a combination of departments that fall under different ministries, such as ministries in charge of environment, tourism or agriculture, with responsibility for different facets of the hunting industry. There is variation between countries as to which departments assume responsibility for overall hunting administration, and these are outlined in the **Compendium: Chapter 5_Operators and Professional Hunters.**

Regulated hunting is implemented by hunting operators (also called hunting companies or outfitters) and Professional Hunters (PHs, also called professional hunting guides). Hunting operators are privately owned business enterprises through which international hunting clients (or tourist hunters) arrange hunts (or trophy-hunting safaris). These hunting operators market safaris internationally and arrange all the logistics for their clients including permits, travel, suitable Hunting Areas, camps where clients are accommodated and catered for, and personnel to track and skin the game. They contract appropriately qualified PH to accompany the clients (see Section 1.5 for further information). Hunting operators are responsible for ensuring that Hunting Areas have the correct trophy species and sufficient animal densities. They are also required to obtain the necessary permits and licences for clients to legally hunt and export trophies according to domestic and international laws. Hunting operators, who might themselves be PH, are frequently based within the countries in which they provide their services, but can also be located outside those countries if Government legislation allows it. A number of hunting operators work in several countries throughout Africa, taking advantage of different hunting seasons and which offer their clientele a variety of hunting opportunities.

A PH is a qualified and licensed individual who works for a hunting operator and acts as the guide for international hunting clients during safaris. A PH always accompanies clients during hunts, ensures that they have the necessary permits and appropriate hunting equipment for the species they intend to hunt, is responsible for their safety at all times, for locating suitable animals, and making sure that hunts are conducted legally and in an ethical manner. This includes ensuring that the correct calibre of rifle is used for hunting a particular species (see Box 10 for one set of regulations on this).

A PH also helps clients to select the correct animal of a given species, i.e. to identify (i) a male, which is generally compulsory for most species in most countries (and not straightforward for some species and some clients), (ii) an old-enough male, which is required for some species such as the lion in Tanzania and Zimbabwe for example, (iii) a big-enough trophy, which is compulsory in some countries such e.g. Benin and Burkina Faso which have legally set minimum-sized trophies that may be hunted. General requirements for training and examining PHs are described below, whereas detailed country regulations are outlined in the **Compendium: Chapter 5_Operators and Professional Hunters/*PH Training***.

BOX 10

Minimum ballistics to hunt plains game and dangerous game

The Zimbabwe Parks and Wildlife (General) Regulations, 1990 (S.I. 362 of 1990), Section 53-54 state:

(1) Subject to subsection (2), no person shall use for hunting purposes:
(a) Any rifle or shot-gun capable of firing more than one cartridge as a result of one pressure on the trigger; or
(b) Any weapon with a barrel less than five hundred millimetres in length; or
(c) A pistol or revolver or a bow and arrow.

(2) Paragraph (c) of subsection (1) shall not apply to communal land unless the Minister, with the consent of the appropriate authority for such land, by notice in the Gazette, declares that it shall apply to the whole or any part of such land.

(3) Any person who hunts any animal specified in Part A of the Third Schedule (*black rhino, buffalo, elephant, hippopotamus, square lipped rhino)* shall use a weapon having a rifled barrel and propelling a projectile of not less than nine comma two millimetres in diameter with not less than five comma three kilo-joules of energy at the muzzle.
(4) Any person who hunts any animal specified in Part B of the Third Schedule (*eland, lion, giraffe)* shall use a weapon having a rifled barrel and propelling a projectile of not less than seven millimetres in diameter with not less than four comma three kilo-joules of energy at the muzzle.

(5) Any person who hunts any animal specified in Part C of the Third Schedule (*leopard, blue wildebeest, brown hyaena, spotted hyaena, hartebeest, zebra, crocodile, gemsbok, kudu, nyala, roan, sable, tsessebe. waterbuck)* shall use a weapon having a rifled barrel and propelling a projectile of not less than seven millimetres in diameter with not less than three kilo-joules of energy at the muzzle.

(6) Any person who hunts any animal specified in Part D of the Third Schedule (*bushbuck, bush pig, impala, reedbuck, sitatunga, warthog)* shall use a weapon having a rifled barrel and propelling a projectile of not less than five comma six millimetres in diameter with not less than eight hundred and fifty kilo-joules of energy at the muzzle.

Part A: Calibre 9.2mm (or .362 in) 5.4 kilo-joules (3982 ft/lbs)
Part B: Calibre 7mm (or .275 in), 4.3 kilo-joules (3172 ft/lbs)
Part C: Calibre 7mm (or .275 in), 3 kilo-joules (2213 ft/lbs)

A further restriction imposed on calibre which may be used on small game other than those listed under Part A, B and C are:

Part D: Calibre 5.6mm (or .22 in), 810 kilo-joules (597 ft/lbs)

Source: adapted from La Grange (1990).

- **Professional hunting associations**

  - **National**

Administration of the professional hunting industry is supported in many countries by professional hunting associations, which are non-Governmental bodies that engage with Governments to create links with hunting operators and PHs.

Some examples of national professional hunting associations are: Professional Hunters' Association of South Africa (PHASA) (http://www.phasa.co.za/), Hunters Confederation of South Africa (CHASA) (http://www.chasa.co.za/), Namibia Professional Hunting Association (http://www.napha-namibia.com/home/), Tanzania Hunting Operators Association (TAHOA) (http://www.tzpha.com/tahoa), Tanzania Professional Hunters Association (http://www.tzpha.com/), Zimbabwe Professional Hunters and Guides Association (ZPHGA) (http://www.zphga.com/), Zimbabwe Safari Operators Association (SOAZ) (www.soaz.net/), 'Le Royaume du Trophée' in Burkina Faso.

PH associations do not set policy, but can help guide it by working closely with agencies that influence legislation. All of them participate in forums and liaise with official stakeholders to safeguard safari hunting. Examples of their participatory roles include:

- The Wildlife Forum of South Africa, which is hosted by the Department of Environmental Affairs and includes representation by provincial nature conservation authorities (who administer and regulate hunting policy); although this forum has no decision-making powers, proposals from here are taken to the Government's working group for consideration;
- A Hunters Forum that takes firearms-related issues to the South African Police Service (who regulate the use of firearms);
- Meetings with the Tourism Business Council of South Africa, which can impact on the quality of the experience of foreign hunting clients.

Professional hunters' associations can make an important additional contribution to the hunting industry by regulating ethical hunting practices and codes of conduct for their members. In South Africa for example, provincial legislation makes little provision for regulating hunting ethics, but PHASA plays a key role by taking disciplinary action against its members who contravene their rules. Such associations also keep members informed about current developments in the hunting industry.

  - **Regional**

In countries of East and Southern Africa where regulated hunting occurs, there are seven national professional hunting associations that form a regional association called the Outfitters and Professional Hunters Association of Southern Africa (OPHASA). Member countries include Botswana, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe. These have passed a joint memorandum of understanding. The 'Fédération Ouest-Africaine de la Chasse Sportive' gathers the professional hunting associations of West Africa.

- **International**

  At international level, the International Professional Hunters' Association (IPHA) (http://www.internationalprohunters.com/) is one of the oldest organizations of its kind in the world. It was officially formed in 1969, and patterned in many aspects after the East African Professional Hunters' Association (http://www.internationalprohunters.com/). Others include the African Professional Hunters Association (http://www.africanpha.org/), *l'Association des Guides de Grande Chasse* (AGGC) (http://www.aggc.fr/), *l'Association des Guides de Chasse Professionnels* (ACP) (http://www.guideacp.com/).

Activities and contact details of PH associations in different countries are described in the **Compendium: Chapter 5_Operators and Professional Hunters**.

5.2. GUIDELINES FOR EXAMINING PROFESSIONAL HUNTERS

Many countries practicing regulated hunting require PHs to pass an exam for obtaining their PH license. The training and examination requirements for PHs vary across sub-Saharan Africa. Some countries (e.g. South Africa and Zimbabwe) have specific regulations in place for both training and examination, whereas others (e.g. Namibia) have rigorous examination requirements but no prerequisite training programmes. Most countries in East and Southern Africa do not recognize PH licences obtained in other countries and require individuals to pass their own national exams before being granted a PH licence. An exception to this is Mozambique, which does not yet have a system of examining candidates for PH licences and currently recognizes qualifications from other countries. In West and Central Africa, countries such as Benin, Burkina Faso and Central African Republic also have their own examination standards.

Candidates for PH licences should be able to demonstrate knowledge and proficiency in the following fields before obtaining a licence to guide foreign hunters:

- **Hunting legislation for each country in which clients are to be guided, including:**
  - PH licence requirements;
  - Hunting permit requirements;
  - Dates of hunting seasons;
  - Species that can be legally hunted;
  - Species that are restricted, listed or require CITES permits;
  - Species quotas;
  - Legal and illegal hunting methods.

- **Firearm theory and proficiency, including:**
  - National legislation;
  - Ballistics;
  - Calibre requirements;
  - Handling safety;
  - Sighting in and shooting.

- **Hunting theory and proficiency, including:**
  - Ethics;
  - Species identification;
  - Tracking;
  - Shot placement;
  - Dangerous game;
  - Trophy estimation;
  - Skinning, treating and shipping trophies.

- **First aid, including:**
  - General principles and their application;
  - Specific needs for remote bush areas of Africa (e.g. snakebite, bee sting etc.).

This list is only a guide, not a prescription, because the details of how a PH is examined are at the discretion of individual countries. Nevertheless, without these basic skills, a PH will be ill-equipped to lead hunting safaris with paying clients in a professional manner.

In addition to these basic requirements, a PH would do well to know the fundamentals of conservation, ecology, animal behaviour and plants. Having communication skills that allow positive interactions with clients and local people would also be highly recommended.

Case studies of training and examination requirements are provided in the **Compendium: Chapter 5_Operators and Professional Hunters/*PH Training***.

5.3. ETHICS AND CODES OF CONDUCT OF REGULATED HUNTING

5.3.1. International ethics and codes of conduct of regulated hunting

- **Conservation ethics: the IUCN guidelines and principles**

Fundamental to all hunting is the concept of conservation of natural resources. Hunting in today's world involves the regulated harvest of individual animals in a manner that conserves, protects, and perpetuates the hunted population.

The IUCN endorses the sustainable use of wildlife through sustainable regulated hunting and welcomes hunters and hunting organisations as IUCN members (e.g. CIC, FACE and CF are IUCN members). The IUCN Species Survival Commission (SSC) has developed a comprehensive set of guidelines and policies for hunting and trophy-hunting: *IUCN/SSC Guiding Principles on Trophy Hunting as a Tool for Creating Conservation Incentives* (https://cmsdata.iucn.org/downloads/iucn_ssc_guiding_principles_on_trophy_hunting_ver1_09aug2012.pdf). These consider that regulated hunting is likely to contribute to conservation and to the equitable sharing of the benefits of using natural resources. Accordingly, hunting programmes should incorporate the following components (IUCN/SSC, 2012):

  - Biological sustainability;
  - Net conservation benefit;
  - Socio-economic-cultural benefit;
  - Adaptive management;

- Planning, monitoring, and reporting;
- Accountable and effective governance.

- **International ethics of regulated hunting**

As hunting practices evolved in Europe and the USA, so too did the development of laws and regulations appropriate to hunting wildlife for food or for sport. Initially there were no or few laws, and not many hunters considered conservation. Because hunters are among the most important users of these wildlife resources, it makes sense that they have taken the lead in developing codes of ethical conduct that give hunters credibility as caretakers of wildlife, in contrast to unregulated and unrestricted hunting for markets or other purposes (see Box 11).

BOX 11

Recreation and regulated hunting

"Hunting for sport is an improvement over hunting for food in that there has been added to the test of skill an ethical code, which the hunter formulates for himself, and must live up to without the moral support of bystanders. That the code of one hunter is more advanced than that of another is merely proof that the process of sublimation, in this as in other atavism, is still advancing."

Aldo Leopold, 1933

At the outset, the codes defined the rules of behaviour required of a true sportsperson. They comprised common-sense guidelines, and by accepting them, the hunter respected regulations such as hunting seasons, bag limits, and appropriate means and methods for taking game.

The Boone and Crockett Club, the oldest wildlife conservation organization in North America founded in 1887 by Theodore Roosevelt and George Bird Grinnell, has long been recognized for its conservation and ethics leadership (https://www.boone-crockett.org/huntingEthics/ethics_overview.asp?area=huntingEthics). The Club advocates to all hunters an ethic of respect for wildlife, land and other users of wildlife. It promotes outdoor ethics for all people emphasizing shared use of natural resources to protect multiple options for use of enjoyment and specially to protect wildlife populations, public and private land habitats, and associated outdoor recreational experiences.

A condition of membership in the Safari Club International (SCI) is ethical behaviour. The SCI Bylaws require all members to live by the SCI Hunter's Code of Ethics, which is printed in the annual SCI Directory (http://member.scifirstforhunters.org/static/Field-Manual/2007-2008/pdfs/Ethics_Process.pdf). The SCI member subscribes to the Hunter's Code of Ethics by recognizing his/her responsibilities to wildlife, habitat and future generations.

To be able to hunt in Europe requires that the hunter conduct the hunt in a professional and ethical manner. The codes of conduct vary from country to country in Europe, but the common themes found throughout include the following:

- **In relation to the law**

  - All hunting and shooting must take place in accordance with the current hunting legislation; hunting must not be degraded to mere shooting of game;
  - All hunting and shooting must adhere to quotas and animals available on the issued licence, to ensure sustainable use of game populations;
  - Whenever possible, all game shot must be used for food or fur products, or as trophies, or in some other appropriate manner;
  - All species of game must be treated humanely;
  - Always leave the countryside as found; hunting must not leave traces of its activities (e.g. spent cartridge cases);
  - Never hunt released game that does not have a natural behavioural pattern;
  - Never hunt during periods or in areas in which game are subject to adverse conditions, for example, during periods of drought;
  - Hunters should contribute towards preserving game and its habitats;
  - Hunters should exercise the highest standards of behaviour and expect the same from others;
  - Respect hunting etiquette and the traditional manners and conventions of hunters;
  - Novices should learn first from experienced hunters, where possible.

- **In relation to hunting**

  - Be fully familiar with the target species and only shoot when sure of an animal's identity;
  - Contribute to acquiring essential knowledge about the game populations;
  - Limit disturbance caused by hunting whenever possible;
  - Hunters should manage their game and game preserves in the same manner that they would like others to manage theirs.

- **In relation to weapon handling**

  - Always use the appropriate weapon and ammunition for the relevant hunting occasion;
  - Weapons must suit the individual hunter and must be tested and zeroed at the start using good-quality ammunition;
  - Hunters should improve and maintain their marksmanship with relevant weapon's training;
  - Never shoot without having a firm rest or support for the rifle;
  - Do not try long-distance shot;
  - Hunters should shoot standing game unless there are good reasons for shooting running game;
  - Shoot only when there is an absolutely clear shot;
  - Do not shoot at unfavourable angles; never shoot an animal from behind;
  - Do not shoot if there is a risk that more than one animal can be hit;
  - Only shoot a second shot when the possibility of a killing shot is as good as that of the first shot;

- If the first shot wounds the animal, do not attempt to shoot another until the wounded animal has been dealt with;
- Always assist with recovering wounded game, including those wounded by other hunters;
- When hunting with a rifle, the number of bullets used should be almost equal to the number of game killed;
- Kill wounded game in a humane manner.

o **In relation to hunting companions and non-hunters**

- Hunters are not the only ones entitled to enjoy the countryside; they should always be friendly to non-hunters;
- Non-hunters are typically not familiar with weapons; always show due consideration and apply great care;
- Always handle weapons carefully and observe safety precautions;
- Never hunt when it is obviously disadvantageous to others;
- Always keep a safe distance from other hunters and non-hunters;
- Respect the rights of other hunters and of non-hunters;
- Do not capitalize on neighbouring game populations and never shoot at game which is driven from neighbouring grounds onto your own Hunting Area;
- Always report on hunting or shooting that is contrary to hunting legislation or in conflict with ethical hunting codes.

o **In relation to safety**

- Apply red cap ribbons or other visible signal apparel;
- Weapons should be carried unloaded;
- For game bird hunts, between beats, weapons should be carried in the open or drawn position with vertical barrels;
- Locate the positions of adjacent hunters and establish visible contact with them; safety angles must be at least 30 degrees and special care must be taken if there is any risk of ricochet from shot or bullets;
- Never apply a low shot towards indefinite backgrounds;
- Never discharge a rifle unless there is a safe background to absorb the bullet.

Britain has a long history of regulated hunting that has helped shape its game management and conservation. With over 135,000 members, an organisation such as the British Association for Shooting & Conservation (BASC http://www.basc.org.uk) fiercely defends the principle that wildlife thrives where land is properly managed and governed for hunting and shooting. The foundation for this belief lies in their Code of Good Shooting Practice (http://basc.org.uk/cop/code-of-good-shooting-practice/), which applies to all game shooting, whether walked-up, driven, wild bird or reared.

5.3.2. Ethics and codes of conduct of regulated hunting in the African context

Much of the ethics and codes of conduct that govern regulated hunting in Africa originated from Europe and America where hunting is intensely managed through national laws and

regulations, but also through hunting associations and clubs with strict codes of conduct. Members are held accountable in terms of these codes of conduct that have developed over many decades.

- **'Fair chase'**

The concept of 'Fair Chase' is the cornerstone of hunting ethics adopted in virtually all African countries and is applicable not only to the pursuit of big game. How hunters conduct themselves and the image that they project is just as important when hunting small game as when pursuing big game. It also does not matter if hunting is done with a bow, rifle, crossbow, shotgun, or muzzleloader. The code of conduct defined by the respective country associations remains paramount.

  - **'Fair chase' and the Boone and Crockett Club**

    The long-standing definition of 'Fair Chase' by the Boone and Crockett Club was much defined in respect to hunting in Africa. The Club's Fair Chase statement (www.boone-crockett.org/huntingEthics/ethics_fairchase.asp?area=huntingEthics) was the keystone of the establishment of hunting seasons, bag limits, and the abolishment of market hunting practices at the turn of the century. This legacy continues through activities and accomplishments in hunter ethics, and ethics for other outdoor users.

    'Fair Chase', as defined by the Boone and Crockett Club, is the ethical, sportsmanlike, and lawful pursuit and taking of any free-ranging wild, native big game animal in a manner that does not give the hunter an improper advantage over such animals. In simpler terms, it means hunting without taking advantage of the animals and allowing them a fair chance to escape in defence. Responsible hunters practice 'fair chase' by not taking unfair advantage of game animals. When hunters take unfair advantage of game animals it creates a poor hunter image.

  - **'Fair chase' and the Safari Club International**

    The African Chapter of Safari Club International expects every sport hunter to pursue an animal only by engaging in fair chase of the quarry. "Fair Chase" is defined as pursuit of a free ranging animal possessed of the natural behavioural inclination to escape from the hunter and be fully free to do so.

    A sport-hunted animal should exist as a naturally interacting individual of a wild sustainable population, located in an area that meets both the spatial (territory and home range) and temporal (food, breeding and basic needs) requirements of the population, of which that individual is a member. Sport hunted animals should, wherever possible, be sustained within an ecologically functional system.

    The animal is to be hunted without artificial light source, or motorised mode of transport and in an area that does not by human design concentrate animals for a specific purpose or at a specific time, such as a water hole, salt lick or feeding station. No ethical hunter shall take female animals with dependent young.

- **Codes of conduct of national hunting associations**

The codes of conduct of international hunting associations must be respected by overseas hunting clients travelling to Africa for hunting there. However, all the national hunting associations in Africa do have their own code of conduct. The principles are enshrined in the code of conduct or ethics of various hunting associations and organisations, e.g.: Code of Conduct of the Associação Moçambicana dos Operadores de Safari (AMOS), Code of Ethics (http://www.huntingbotswana.com/Code_of_ethics.html) of the Botswana Wildlife Producers Association (BWPA), Code of Conduct (http://www.phasa.co.za/about-phasa/code-of-conduct.html) and Disciplinary Code (http://www.phasa.co.za/about-phasa/disciplinary-code.html) of the Professional Hunters of South Africa, Code of Conduct of the Zimbabwe Safari Operators Association, the Hunting Ethics of the Zimbabwe Professional Hunters and Guides Association, etc. (see the **Compendium: Chapter 5_Operators and Professional Hunters/*Ethics*** for examples).

All these codes of conduct assume that the hunter engages in a one-to-one relationship with the quarry and his or her hunting should be guided by a hierarchy of ethics related to hunting, which includes the following:

- Obey all applicable laws and regulations;
- Respect the customs of the local communities where the hunting occurs;
- Conserve, protect, and perpetuate the hunted populations;
- Exercise a personal code of behaviour that reflects favourably on the abilities and sensibilities as a hunter;
- Attain and maintain the skills necessary to make the kill as certain and quick as possible;
- Behave in a way that will bring no dishonour to either the hunter, the hunted, or the environment.

Nevertheless, even though highly reputable hunting associations exist in the various countries, most do not have the legal authority to police their members nor is it compulsory to be a member of one of these associations. At worst, a professional outfitter or hunter can have their membership suspended or withdrawn. Recommendations can also be made to the authorities to impose a fine in terms of the relevant act and regulations, but it is only in exceptional cases that a wildlife authority will withdraw a professional outfitter or hunter's licence or restrict the offending person in any way. For this reason, many of the principles have been incorporated in the laws and regulations governing hunting.

- **The debate on ethics**

The questions of ethics and codes of conduct are always hotly debated in hunting forums (Dickson, 2009). The general opinion is that the most effective way for maintaining standards is through the self-motivation of the professional outfitters or hunters themselves, and having a management authority with the highest professional standards and integrity. It is important that the governance regimes are vigorously applied, with severe penalties including the withdrawal of hunting rights and privileges. Local governance regimes are the important determinants of whether a hunting programme generates a net conservation benefit that more than compensates for the loss of individual animals and whether property or tenure-based conservation incentives from hunting favour long-term conservation over short-term profits (Harris *et al.*, 2013).

Fair chase hunting in the rain forest, Cameroon (©Dorothée Preaut)

Fair chase hunting in savanna landscape, Benin (©Corinne Bernon/Club Faune)

6. ADMINISTERING THE HUNTING SECTOR

6.1. GENERAL PRINCIPLES AND PROCESSES

The day-to-day administration of the hunting industry is guided by policy, legislation and regulations. In its formative years, the "game department" issued simple permits and licences to local resident hunters and controlled hunting seasons. In today's modern times the industry requires far more attention, especially with regard to international conventions. There is also a need to be in a position to answer questions regarding the performance of the industry at various levels, and be able to address concerns raised in different internal and external political forums.

Unfortunately, some of the weakest links in the regulated hunting sector in Africa are first maintaining consistent and reliable records and databases and second, putting those records to good use. In most cases the record keeping is poor to non-existent, and only very rarely does the hunting fraternity invest significantly in its own hunting organisations, and almost never invests in research or monitoring. These important functions are often left to dedicated research institutions or NGOs with the result that administrators of the industry are left vulnerable to misinterpretation of the data and in a weak position to defend the merits of the industry or negotiate with national and international stakeholders.

6.2. MAINTAINING A NATIONAL HUNTING DATABASE

A national hunting database is a living instrument that allows any country practising regulated hunting to know, manage and control its hunting industry. It also allows the wildlife authority to produce every year an annual hunting season report for communicating and reporting on the situation of the hunting industry. Finally, it helps the country to quickly and easily respond to any query raised by trophy importing countries or international conventions.

The national hunting database records and analyses all the data on the hunting industry in the country. Establishing and maintaining a database of the hunting industry depends on the resources available. It can be as simple or as sophisticated as one needs. Some databases use a generic platform such as Microsoft Access, however these require persons with advanced computer skills to populate and maintain the software. Simpler systems can be developed using spreadsheets such as Microsoft Excel to capture the basic data. Whatever system is adopted, it is essential that the type of data entered is easily accessible and can be reliably entered into the database. Data must also be available long-term so that comparisons can be made, and the methodology can be easily transferred from one person to the next. Finally, the data to be captured needs to be carefully assessed to avoid entering data that is likely to become redundant or be time-consuming.

6.2.1. Data captured in the national hunting database

The type of data that would provide a long-term record of the industry can be summarised as follows:

- **Baseline information of the actual Hunting Area or block**
  - Area;

- Location;
- Date declared/gazetted;
- Any other information (spectrum of animals, management plan, year of surveys, management staff, local communities, etc.).

- **Quota management**
  - Requested quota vs. approved quota by year;
  - Variation in quota allocation by year by species;
  - Utilization of each species (offtake) in each area per year;
  - Revenue generated by year by species.

- **Hunting operators and professional hunters**
  - Name and number of hunting operators, nationality, years in business;
  - Name and number of PHs, nationality, years in business;
  - Revenue generated from licences and permits (PH licence, Firearm imports, CITES export permits, tags, etc.).

- **Hunting operation**
  - Number and origin of clients;
  - Type of safaris sold (big game, plains game, etc.).

- **Employment and community benefits**
  - Number and origin of management staff;
  - Number of camp staff and law enforcement personnel;
  - Number of casual labour;
  - Location and size of local community beneficiaries.

- **Infrastructure investment**
  - Extent of roads;
  - Airstrip in the Hunting Area or access to the nearest airstrip;
  - Accommodation and camp facilities;
  - Radio communication equipment.

6.2.2. Collating and analysing the data in the national hunting database

- **Collating data**

Much of the information can be extracted from the annual hunting season reports (HSR) produced by the hunting operators (see Section 3.6.2) and from the management plans of the Hunting Areas. These data can be updated annually in most cases. A more detailed input and effort is needed to capture data of the actual hunting operations. More importantly these data need to be consistent so that the database can be interrogated to provide a number of reports.

Figure 8 provides a scheme presenting the flow of information and the process of managing the data: (i) starting from the hunt return form (HRF) per hunting party in a given Hunting Area, (ii) to the HSR which is collating all the HRF's during the season in the Hunting Area, and (iii) ending with the national hunting database which is using the data reported by all the HSR's.

Inspection of lion trophies by the Wildlife Division, Tanzania (©Philippe Chardonnet/IGF Foundation)

Contribution to the international governance of regulated hunting: the annual African Wildlife Consultative Forum

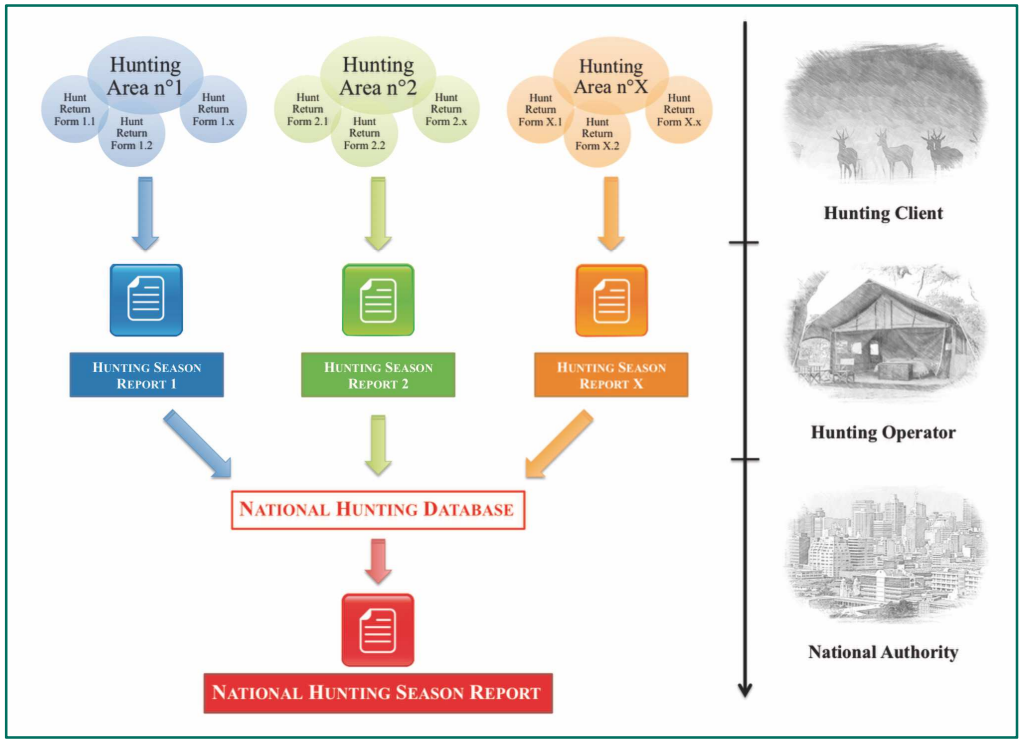


Figure 8: *Scheme representing the collation and management of all data on hunting from the level of the Hunting Areas to the level of the country*

Using the applications within Excel (e.g. Lookup, filter etc.), it is possible to construct a database that can:

- Automatically insert the name of the hunting operator using the lookup facility in Excel;
- Insert the name of the PH from a drop-down menu (and the PH licence number);
- Enter the name and nationality of the client with the hunting licence number;
- Select the type of hunt from a drop-down menu;
- Record the hunt return form number;
- Record the number of hunter days and number of guest days;
- Select the species hunted from the drop-down menu;
- Enter the trophy measurements either as SCI, Rowland Ward or both;
- Enter the age of the trophy (if available) and the GPS coordinates.

All the trophy data for that particular client is entered before the next client is selected and the operation repeated.

- **Analysing data**

Once all the data are entered, it is possible to filter the data in a number of ways, for example:

- By Hunting Area;
- By hunting operator;
- By PH;
- By hunting client;
- By game species;
- By hunt return form number.

This allows the flexibility to analyse the data, for instance:

- To calculate the mean trophy size by species by area or by hunting operator or by region or by PH;
- To track the number of buffalo hunted by a particular PH by year or in a given Hunting Area over the years;
- To search for particular clients and extract the number of animals that they have hunted.

Clearly, data must be recorded accurately if the old maxim "rubbish in equals rubbish out" is to be avoided.

6.3. SETTING FEES FOR TROPHIES AND OTHER SERVICES

The main sources of income for Government agencies, wildlife authorities and the private sector stem from the sale of hunting rights and the various receipts from hunting a variety of trophy animals (Table 11). With the exception of statutory Government levies and fees, the law of supply and demand plays a significant role in setting the pricing structures of hunting, especially the daily rate and trophy fee (Booth, 2002; 2009). Establishing competitive prices and fees is therefore essential in determining whether the hunting industry is under- or over-valued (see Section 1.5.3). Understanding market trends and how hunting is marketed will allow hunting administrators to fully realize the value of sustainable use for both wildlife conservation and local, national and regional economies.

- Trophy fees are set per species on quota; generally, the more scarce and/or sought after the species the more expensive the trophy fee;

- Two categories of trophy fees are in use:

  - Government trophy license fees, also named simply Government trophy fees, are set by the Government at national level:
    - Theoretically, Government trophy fees should be regularly readjusted to markets trends, although this is often not the case;
    - In some countries, all or part of Government trophy fees for animals on quota must be paid before the coming hunting season, although this might encourage hunting companies to harvest a maximum number of animals on quota;

- Government trophy fees are usually paid only for the animals which have been effectively harvested (or wounded) by the clients; however, some Governments oblige hunting companies to pay a minimum number of game licenses per Hunting Area (e.g. 40%) to avoid possible losses for the Government if the quota is underused for a reason or another (e.g. the hunting company did not book enough clients); in some rare instances, the Government trophy fee has to be paid whether or not the game has been taken;
- Government trophy fees may be paid directly by clients although this is becoming rare;
- Government trophy fees are usually paid by the hunting companies who charge their clients at a profit; in this case the trophy fees are named "Commercial trophy fees" (see below) and are obviously higher than Government trophy fees;

o Commercial trophy fees (see above) are set by hunting companies and are made of two components:
- The Government trophy fees that are compulsory and fixed;
- A flexible profit margin that is adjusted to international market prices.

Table 11: *Sources of income to Government and hunting operator*

Recipient	Source	Basis for payment
Government	Permits	- Authority to hunt (PH and client) - Export of trophies - Temporary firearm import permits - Other Government taxes (veterinary inspection, etc.)
	Government trophy fees	Government trophy fees (or game licences) for various species on quota (the fees are usually paid by hunting operators, sometimes by clients)
	Concession fees	Right to hunt in a specific Hunting Area as set out in a contract
Hunting operator or outfitter	Commercial trophy fees	Fees paid by clients to their hunting operators for the animals they have taken (theses fees include the above-mentioned Government trophy fees)
	Daily rates	Fees received by hunting operators for daily support services
	Other services	Fees paid by clients to cover the cost of trophy package and export, etc.

Government policy determines the price of various permits and licenses. However, the prices for trophy fees (or trophy licenses, or game licenses) follow a slightly different pattern (see also Section 1.5.3):

- Unless the wildlife authority closely monitors trends in the international market, the value of the game fees could fall behind ever-increasing market prices. Regular reviews are therefore necessary to ensure that all parties are receiving an equitable return.

Table 12 provides a baseline dataset comparing the Government trophy fees between countries in sub-Saharan Africa. This table might help Government officers to adjust the fee levels in their respective country to the fee levels of other concurrent countries while keeping in mind all other prices and fees in each country.

However, for Government officers to determine the levels of Government trophy fees, it must be recalled that:

- Most hunting companies charge their clients with their own commercial trophy fees at higher rates than Government trophy fees, providing that they duly pay the official Government trophy fees;

- Trophy fees are only a fraction of the whole price of a hunting package. As a consequence, a proper comparison of prices for hunting package does not solely rely on trophy fees. It must take into account all other price components.

    - As a purely theoretical example, a hunting package for hunting only one buffalo trophy might cost the same price (e.g. in this theoretical case study, a total cost of US$ 16,000) with extremely different price structures, for instance:

        - In South Africa, the commercial trophy fee may be US$ 12,000 and the daily fee US$ 800 for a 5-day hunt, i.e. US$ 4000;
        - In Mozambique, the commercial trophy fee may be US$ 2000 and the daily fee US$ 1400 for a 10-day hunt, i.e. US$ 14,000.

        Reasons for such differences:

        - The trophy fee is higher in South Africa because the ranch owner had to invest in buying buffaloes and must manage his buffalo population on an intensive basis, while in Mozambique buffaloes are wild and available with no need for purchase;
        - The daily fee is higher in Mozambique because (i) the Hunting Area is remote and landlocked, implying high costs for creating and managing tourist facilities, and (ii) the hunt is more hazardous in an open area than in a game ranch.

    - In other words, for Government officers to determine the levels of Government trophy fees, the position of their respective countries in the international market must be carefully analysed in view of the national context.

Table 13 provides a baseline dataset comparing prices for commercial trophy fees in a number of countries in East and Southern Africa. There are few of such baseline datasets that provide an example of comparative prices. Damm (2005) summarised the daily rate and trophy fee data from over 200 South African hunting websites. Similar but limited data are available from Zimbabwe (Booth, 2010) with a more comprehensive dataset that compares the average 2008 and 2009 daily rates and trophy fees (in US$) and the number of days of various “1 hunter x 1 professional hunter” packages from Tanzania, Zambia, Zimbabwe, Mozambique, Botswana, Namibia and South Africa.

Table 12: *Average Government trophy fees (US$) for the main trophies available in Africa*

Category	Trophy	Benin (2014)	Burkina Faso (2014)	Cameroon (2014)	C.A.R. (2014)	Congo (2014)	Ethiopia (2014)	Mozambique (2012)	Senegal (2009)	Tanzania (2015)	Uganda (2014)	Zambia (2012)	Average
Big Game	Buffalo (2)	938	858	953	381	1,400	3,000	888	953	1,900	1,600	1,600	**1,316**
	Elephant (3)			1,906				7,988		15,133		10,000	**8,757**
	Leopard				1,906			1,775		3,500	5,000	2,650	**2,966**
	Lion	2,875	5,717	1,906	1,525			3,107		4,900		4,200	**3,461**
Specialist	Bongo			1,906	1,906	1,784							**1,865**
	Giant eland			1,906	1,525								**1,716**
	Mountain nyala						15,000						**15,000**
	Southern Sable							888				3,000	**1,944**
Primary	Crocodile			76				750		1,700		1,600	**1,032**
	Gerenuk						3,000			2,500			**2,750**
	Hippopotamus	2,000		953				888		1,500	800	1,600	**1,290**
	Lesser kudu						3,000			2,600			**2,800**
	Nyala							888					**888**
	Sitatunga			381	953	1,784				2,000	2,500		**1,524**
Secondary	East. & South. eland							888		1,700	1,500	2,500	**1,647**
	Eastern roan									2,550			**2,550**
	Eastern sable									2,550			**2,550**
	Fringed-eared oryx									2,800			**2,800**
	Giant forest hog			191	762		1000			445			**600**
	Greater kudu							799		2,200		1,600	**1,533**
	Klipspringer						1,100			1,200			**1,150**
	Korigum			381									**381**
	Menelik bushbuck						6,000						**6,000**
	Topi & tiang						1,100			800	750		**883**
	Waterbuck	750	667	476	305			533		800	1000	840	**671**
	West. & Cent. Roan	938	858	953	572				762				**817**
	Wildebeest							710		650		1,350	**903**
	Yellow-backed duiker			191	572	216							**326**
	Zebra							799		1,200	550	720	**817**
Common	Buffon's kob	575	572	191	267								**401**
	Bushbuck	575	619	191	267			266	305	600	600	380	**423**
	Bushpig			191	191	176		155		420	150	320	**229**
	Common duiker	288						155	152	250	250	350	**241**
	Dik dik						200			250			**225**
	Gazelles (4)			191			440			475			**369**
	Hartebeest	750	572	381	305			533	457	650		780	**554**
	Impala							222		390	400	120	**283**
	Oribi	288	76		114			222	152	250	350	250	**213**
	Other duikers (5)	388	286	95	114	72		266		360		530	**264**
	Puku									800			**800**
	Reedbuck	750	619	191			770	266		450	450	420	**490**
	Warthog	388	191	191	191			200	29	450	350	360	**261**

1	US$ 1 = € 0.8 = FCFA 524.8 = MTS 33.8	
	In some countries, the trophy fees for game hunted by bow & arrow are higher than for game hunted by rifle	
	For a given species, all subspecies included except those specifically mentioned if any	
	Some game species do not appear here such as blesbok, black wildebeest, grisbok, lechwe, steenbok, vaal reedbuck, etc.	
2	Buffalo:	trophy fee for the first buffalo, the fees for additional buffaloes being more expensive
3	Elephant:	average price per country since, in some countries, prices differ with tusk weight, e.g. Tanzania: US$8500/15kg, 15,000/27kg, 21,900/32kg
4	Gazelles:	Grant's gazelle, red fronted gazelle, Robert's gazelle, Thomson gazelle
5	Other duikers:	duikers other than common duiker and yellow-backed duiker (with a few different fees between other species)

Table 13: *Average commercial trophy fees (US$) for a selection of trophies available in some countries offering various hunting packages in 2009 (Booth, 2010)*

Category	Trophy	Botswana	Mozambique	Namibia	South Africa	Tanzania	Zambia	Zimbabwe	Average
Big Game	Buffalo	3,744	2,734	n/a	11,175	1,650	2,133	2,822	**4,043**
	Elephant ±60lb	19,000	24,500	-	-	16,000	-	14,000	**18,375**
	Leopard	7,150	4,444	3,313	2,500	5,417	4,000	3,640	**4,352**
	Lion	29,000	7,940	n/a	31,500	7,083	6,000	5,983	**14,584**
Specialist	Gerenuk	n/a	n/a	n/a	n/a	3,593	n/a	n/a	**3,593**
	Roan	n/a	n/a	7,750	n/a	n/a	4,683	n/a	**6,217**
	Sable	3,000	3,630	7,250	9,750	3,067	4,425	3,394	**4,931**
Primary	Crocodile	4,592	2,296	n/a	n/a	2,025	1,950	3,120	**2,797**
	Hippopotamus	n/a	3,055	n/a	2,850	1,917	1,983	2,833	**2,528**
	Lesser kudu	n/a	n/a	n/a	n/a	3,650	n/a	n/a	**3,650**
	Nyala	n/a	2,650	n/a	2,253	n/a	n/a	2,450	**2,451**
	Sitatunga	n/a	n/a	n/a	n/a	3,355	3,717	n/a	**3,536**
Secondary	Eland	2,479	2,229	1,779	2,500	n/a	2,767	1,372	**2,188**
	Gemsbok	1,709	n/a	697	1,230	n/a	n/a	2,500	**1,534**
	Greater kudu	1,634	2,215	1,012	1,664	n/a	1,833	1,083	**1,574**
	Tsessebe	1,785	n/a	n/a	2,558	n/a	2,150	1,014	**1,877**
	Waterbuck	1,838	1,699	1,975	1,879	1,028	1,067	1,739	**1,604**
	Wildebeest	1,601	n/a	1,060	976	748	1,313	819	**1,086**
	Zebra	1,923	1,150	897	1,100	1,271	950	961	**1,179**
Common	Bushbuck	n/a	839	n/a	550	450	633	700	**634**
	Bushpig	900	426	n/a	499	454	500	313	**515**
	Dik dik	n/a	n/a	n/a	n/a	342	n/a	n/a	**342**
	Duiker	328	439	382	310	400	450	211	**360**
	Gazelle	n/a	n/a	n/a	n/a	567	n/a	n/a	**567**
	Impala	523	329	624	392	300	283	248	**386**
	Puku	n/a	n/a	n/a	n/a	n/a	700	n/a	**700**
	Reedbuck	n/a	759	n/a	845	527	600	600	**666**
	Springbok	505	n/a	452	474	n/a	n/a	n/a	**477**
	Warthog	496	400	486	408	561	525	320	**457**

6.4. WHAT IS CITES?

CITES regulates international trade in species of wild fauna and flora; that is, the export, import and re-export of live and dead animals and plants and of parts, and their derivatives, based on a system of permits and certificates which can only be issued if certain conditions are met, and which have to be presented before consignments of specimens are allowed to leave or enter a country (see http://www.cic-wildlife.org/publications/other-cic-publications/). CITES definition of a hunting trophy is as follows (Wijnstekers, 2011):

"The term 'hunting trophy' means a whole animal, or a readily recognizable part or derivative of an animal, specified on any accompanying CITES permit or certificate, that:

i. is raw, processed or manufactured;
ii. was legally obtained by the hunter through hunting for the hunter's personal use; and
iii. is being imported, exported or re-exported by or on behalf of the hunter, as part of the transfer from its country of origin, ultimately to the hunter's State of usual residence."

The Convention provides for a Secretariat and a Conference of the Parties (CoP), which play a major role in the functioning of the Convention. There are currently 180 Parties to CITES. The CoP has established a number of permanent committees – the Standing Committee, Animals Committee and Plants Committee – which play important roles between three-yearly meetings of CoP.

The fact that not all countries are Party to the Convention is regrettable but unavoidable. To cope with this problem, the Convention provides for Parties to require documentation from non-Parties that their measures conform substantially to those required for CITES permits and certificates.

Other provisions include procedures for amending the Convention and its Appendices; enforcement measures to be taken by the Parties; assessing the Convention's effects on domestic legislation and on other international conventions; the resolution of disputes; ratification, accession and denunciation; and allowance for the entry of reservations.

6.4.1. Functioning

Each Party must designate at least one Management Authority to be responsible for issuing CITES permits and certificates, as advised by one or more of the Scientific Authorities designated for that purpose. The animal and plant species subject to different degrees of regulation are listed in three appendices:

- **Appendix I**

Appendix I includes species threatened with extinction, for which trade must be subject to particularly strict regulation, and only authorized in exceptional circumstances.

- **Appendix II**

Appendix II species are not necessarily now threatened with extinction but can become so unless trade is strictly regulated. Appendix II further contains so-called look-alike species,

which are controlled because of their similarity in appearance to the other regulated species, thereby facilitating a more effective control thereof.

- **Appendix III**

Appendix III contains species that are subject to regulation within the jurisdiction of a Party and for which the cooperation of other Parties is needed to control the trade.

Conditions for the issue of permits and certificates involve questions as to whether trade overall, or a certain type of trade, will be detrimental to the survival of a species. Appendix I specimens cannot be exported or imported if they are to be used primarily for commercial purposes. Hunting trophies of Appendix I species are for the personal use of the hunter, not for profit or commerce, so export and import are permitted (Res. 2.11, Revised CoP 9).

The Convention provides for several exemptions from its provisions. These concern transit and transhipment; specimens acquired before the Convention became applicable to them; certain specimens that are personal or household effects; captive bred animals and artificially propagated plants; the exchange of specimens in the collection of scientists and scientific institutions; and captive-bred or pre-Convention specimens held by travelling exhibitions. Hunting trophies are included in these exemptions as they are considered to be personal effects. Although the United States does not recognize the personal effects exemption, it does recognize that imports of hunting trophies are not commercial (Res. Conf. 2.11, Rev. CoP9).

Hunting trophies of Appendix I species that meet this definition require an export permit from the country of origin and an import permit from the country of destination. The latter document must be issued before the export permit. This can cause practical difficulties because a hunter is not necessarily sure what trophies will be brought home. Appendix I trophies cannot be imported for the purpose of sale; they can only be imported for non-commercial purposes.

Appendix II hunting trophies only need an export permit if the country of origin requires one. They do not require an import permit, unless the destination country has stricter controls than required under the Convention. The United States does not recognize the personal effects exception of CITES, so it always requires an export permit for Appendix II listed species and export permit or certificate of origin for Appendix III species. However, the European Union and the United States of America, for example, have their own stricter national legislation that may require both export and import permits for Appendix II hunting trophies and also apply import bans on several Appendix II hunting trophies (see Section 6.5.2 below for further information). Anybody intending to hunt abroad and come back with trophies is therefore well advised to contact the Management Authority of his State of usual residence in order to avoid possible difficulties at the time of importation.

6.4.2. Monitoring

The monitoring of trade is an essential tool for achieving the aims of the Convention. Scientific Authorities must monitor export permits granted for Appendix II species as well as the actual export. Scientific Authorities must advise the Management Authorities of suitable measures to limit the issue of export permits whenever it should be limited in order to maintain a species throughout its range at a level consistent with its role in the ecosystems and well above the level at which it might become eligible for inclusion in Appendix I.

A second important monitoring system is based on the trade records to be kept by all Parties and to be reported to the Secretariat on an annual basis. The annual reports of all Parties together should provide statistical information on the total volume of world trade in CITES species, which is an invaluable element for the assessment of their conservation status. These reports further reflect the performance of Parties regarding CITES implementation when all reported exports and re-exports are compared with all reported imports. The required biennial reports from Parties are intended to provide information on the implementation of the Convention through legislation, enforcement action, etc.

6.4.3. Animals Committee Review

The CITES Animals Committee is responsible for reviewing the status of listed fauna and its trade. It makes recommendations to the Standing Committee that in turn advises the Parties. It has two review procedures of growing importance to hunting trophy trade: the Significant Trade Review Process, and the Periodic Review.

- **Significant Trade Review Process**

Parties are not supposed to trade wildlife parts of listed species without first making a non-detriment determination (ND), that the trade is sustainable (ART III, IV and Resolution Conf. 10.3). If a finding that the trade is not detrimental cannot be made, then the trade should not be permitted. The Significant Trade Review Process has evolved as the process to select species to be reviewed and to review suspect non-detriment findings by export countries of Appendix II species to insure the trade does not lead to up listing to Appendix I or otherwise be detrimental. When the Animals Committee selects an Appendix II species for review and makes an inquiry of an exporting State, that party State must timely respond, otherwise the trade of that species can and will be suspended. Witness the suspension of hippo trade in Cameroon and Mozambique when trade was not timely documented to be sustainable. In such a case, the trade will remain suspended indefinitely until an adequate, documented basis for the non-detriment finding is provided and accepted. This, of course, should be avoided. The best practice is for a CITES authority to monitor the status of each Appendix II species that are traded as trophies and to maintain a file of ready information.

- **Periodic Review Process**

The Periodic Review Process is the means to determine if species are appropriately listed. If a change is found to be warranted, a species can be up listed to Appendix I. If a species is up listed from Appendix II to Appendix I, it can trigger all sorts of regulatory requirements in importing countries. Although commercial trade of Appendix I listed species is prohibited, hunting trophy trade is not prohibited because the hunter is taking and trading the species for his personal use, not for his profit. Trophy trade of Appendix I species is exempted from the commercial trade ban under CITES Resolution 2.11 (Rev. 1994). Nevertheless, under CITES, trade in Appendix I trophies requires an import permit which the importing country in turn must base upon a determination that the purpose of the import is not detrimental. The United States and European Union both perform elaborated biological status and management reviews before permitting the import of Appendix I listed species. The process in the United States is notoriously slow and the documentation expensive and burdensome. It is necessary to furnish information on the species' status and to establish that the trade is sustainable to avoid the species being put on to Appendix I.

Range nations must monitor and participate in both of these Animals Committee meeting reviews of their own native species or actions can be taken without their participation or representation.

6.5. HUNTING TROPHY IMPORT REGULATIONS

6.5.1. Hunting trophy import regulations in the USA

With few exceptions, hunting trophies imported from Africa must come through a port designated by the U.S. Fish & Wildlife Service (USFWS: see list of designated ports at http://www.fws.gov/le/ports-contact-information.html and Box 12 for further information).

A Declaration for Importation or Exportation of Fish or Wildlife (Form 3-177) must be filed with the Service Officer at an authorized USFWS port of entry and a clearance issued before the US Customs and Border Protection will release any shipment. This declaration can be filed electronically (https://edecs.fws.gov/) or in hard-copy form (available at http://www.fws.gov/le/declaration-form-3-177.html).

An original valid CITES export document from the country of export or re-export is required if the trophy animal to be imported into the United States is protected under CITES. If the animal is listed on CITES Appendix I (for example, leopard), then an original import permit from the USFWS is also required. The import permit must be obtained from the USFWS before the trophy is imported and presented at time and point of import.

Trophies must be imported into the United States before the export and import documents (if required) expire. The CITES documents must be validated upon export by the foreign country's inspecting officials, and must contain the information required by the USFWS regulations (see http://www.fws.gov/le/ImpExp/Info_Importers_Exporters.htm) and "Service Manual", under Part 443 FW 1, "Wildlife Inspection Policy and Procedures" (see **Compendium: Chapter 6_Hunting Regulation**).

BOX 12

U.S. Fish & Wildlife Service information on the import and export of trophies

- For all the details, download the Permits fact sheet;
- Get information on other types of Service permits;
- Permit applications and instructions are available at http://www.fws.gov/permits/ImportExport/ImportExport.html ;
- View Federal Register announcements soliciting public comment on permit applications (browse the "Notices" section for a specific year);
- Learn how to apply for an endangered species permit;
- Access the full library of documents related to Permits.

Import of worked, manufactured or handicraft items made from trophies for use as clothing, curios, ornamentation, jewellery, or other utilitarian items, are once again importable and must be purpose coded "H" for "Hunting Trophy", but certain procedural requirements are now necessary.

USFWS made a number of revisions of its CITES regulations in 2014 to incorporate provisions made at the 14th and 15th Conferences of the Parties of CITES (79 FR 30400, 30412 and 30428). The most relevant to the hunting community is the change in the definition of 'sport-hunted trophy'. As of June 2014, trophies now include not just raw parts and taxidermy items, but also 'worked, manufactured and handy-crafted items that are recognizable parts of the trophy.' The USFWS has revised its 2007 regulation that hunters, export authorities and export brokers must use separate permits and a 'personal use' rather than 'trophy' Purpose Code to import worked parts of trophies (see **Compendium: Chapter 6_Hunting Regulation**)

The USFWS will now treat trophy items such as elephant hair bracelets, knife and rifle scabbards made of animal skin, footstools and other 'manufactured' items as the trophies on the condition that certain information is included on the face of the permit(s) and the parts are in the same trophy shipment with which it is connected. If not handled correctly, the item, though now recognized as a trophy, will be seized as contraband. The following is the actual regulation verbiage for all to master:

23.74 – How can I trade internationally in personal sport-hunted trophies?

(b) Sport-hunted trophy means a whole dead animal or a readily recognizable part of derivative of an animal specifically identified on accompanying CITES documents that meet the following criteria:

(1) Is raw, processed, or manufactured;

(2) Was legally obtained by the hunter through hunting for his or her personal use;

(3) Is being imported, exported, or re-exported by or on behalf of the hunter as part of the transfer from its country of origin ultimately to the hunter's country of usual residence; and

(4) Includes worked, manufactured, or handicraft items made from the sport-hunted animal only when:

(i) Such items are contained in the same shipment as raw or tanned parts of the sport-hunted animal and are for the personal use of the hunter;

(ii) The quantity of such items is no more than could reasonably be expected given the number of animals taken by the hunter as shown on the license or other documentation of the authorized hunt accompanying the shipment; and

(iii) The accompanying CITES documents (export document and, if appropriate, import permit) contain a complete itemization and description of all items included in the shipment.

To be clear, if it is coded as "P" for a 'personal use' purpose rather than as a hunting trophy purpose code, as has been required since 2007, it will be a violation of the revised regulations.

All permit conditions must be strictly followed and all trophies must be tagged or marked as required. For example, crocodile or leopard skins must have a CITES tag inserted through the skin and permanently locked in place. A mounted trophy must be accompanied by the tag from the skin used to make the mount. CITES documents must contain all information that appears on the tag.

- **Endangered Species Act**

There are USFWS wildlife regulations under the Endangered Species Act (ESA) that can restrict the import of certain trophies irrespective of their classification under CITES. For example, leopard, elephant, or bontebok are protected under the ESA and need an ESA import permit (http://www.fws.gov/endangered/permits/index.html) at the time and point of importing the trophy. The list of endangered species can be found at: http://www.fws.gov/endangered/. Most endangered listed species cannot be imported at all, with the exception of the bontebok from South Africa and black rhino from Namibia.

Some bird trophies, e.g. hoopoe, may need permits under the Migratory Bird Treaty Act (see http://www.fws.gov/pacific/migratorybirds/mbta.htm).

- **A step-by-step guide to who is responsible for what**

The USFWS has authority to seize trophies and declare them forfeited if there is any mistake in a permit. A clerical error is enough to invalidate the permit and declare the trophy as contraband. Hunters have no protected property interest in the forfeited material regardless of how innocent or personally faultless they might be. USFWS Regional Service Officers at ports, the solicitors considering petitions for remission, and the Court's hearing forfeiture claims, all take the position that the hunter is ultimately responsible for the shipment being in order. FWS policy is to "consider seizure before any other options" when a shipment is refused because of an irregularity of any kind.

A checklist compiled by Conservation Force (www.conservationforce.org, July 2014), on how to avoid seizures and forfeitures, is provided below:

  - **Tags**

    Must be 1) self-locking, 2) permanently attached, 3) through a hole. Ear, eye, mouth, nose, bullet holes are acceptable but tags must not be placed around a leg above the foot. Tag number must match that on the permit. Both the tag and export permit must contain the total annual quota (i.e. 150) as well as that for the animal (i.e. 120). The tag will therefore display 120/150.

  - **Permit expiration**

    Obtain a copy of the import permit before exporting to verify that it will not expire before shipment arrival. Check the export permit date to ensure arrival before the date of expiration.

o **Validation or endorsement**

Make sure section 14 of the export permit is fully completed, i.e. all parts itemised, dated, signed and sealed by CITES or Customs officer, otherwise the permit is not complete.

o **Manufactured or crafted parts**

The USFWS once again allows importation of manufactured or crafted trophy parts, but new procedural requirements must be followed. The item must be purpose coded "H" for 'Hunting Trophy' (50 CFR 23.23(d)).

(d) Purpose of transaction. If the purpose is not identified by a written description, the CITES document must contain one of the following codes:

Code	*Purpose of transaction*
B	*Breeding in captivity or artificial propagation*
E	*Education*
G	*Botanical garden*
H	***Hunting trophy***
L	*Law enforcement/judicial/forensic*
M	*Medical research (including biomedical research)*
N	*Reintroduction or introduction into the wild*
P	*Personal*
Q	*Circus and travelling exhibition*
S	*Scientific*
T	*Commercial*
Z	*Zoo*

o **Valuation**

Understatement of value is the cause of excessive seizures, i.e. forfeiture of $50,000 trophies for a $500 offense. A true representative value should be used, not understated. Pro-rated cost of acquisition (cost of the hunt) is best or insurance replacement value.
Note: Trophies are not taxed upon entry into the United States but they most certainly are seized. The exporter should use the full value from the beginning as import brokers carry it over onto the 3-177 declaration form. Import brokers especially heed this and enter the cost of acquisition for value on the 3-177 declaration form, particularly when there is reason to anticipate seizure.

o **In transit**

Transfer through intermediate countries must be immediate, without delay. A hunter travelling with his trophy cannot overlay in an intermediate country without appropriate CITES import and re-export permits from that country. Layover requires a re-export permit from the layover country.

- **Post-shipment corrections**

Export authorities must immediately contact and confer with Headquarters, Office of Law Enforcement (HQ/OLE), not the regional Service Officer, before issuing a retrospective export permit, not months later or after issuing a new export permit. The Headquarters of the Office of Law Enforcement's email is lawenforcement@fws.gov. The importing authorities must agree to issuance of a retrospective permit beforehand. The importing broker is the first to know of a detention or seizure, so must set corrective action in motion immediately and use cost of acquisition as market value of the trophy on the 3-177 Declaration entry form rather than carry over as the value the export fee or some other incorrect value from the export documents. In the case of loss, replacement permits must state that they are replacement and why.

- **Re-shipment**

Send trophies back whenever you can, otherwise it is treated as 'contraband that is illegal to possess' without any protectable interest, like stolen goods or illegal drugs.

- **Re-shipment import permits**

When trophies are returned to the exporting country and re-shipped, new, original import permits are required because the originals are taken and marked as cancelled upon import.

- **Government errors**

Most seizures and forfeitures arise from errors on the face of the export permit. Expect and make a search for all of the above errors and expiration dates before shipment.

The responsibilities of the various stakeholders involved in the process are as follows:

- **Responsibility of export and import brokers**

The errors are commonly made by the exporting Government, hunting operator, taxidermist or export broker. Hunters have to rely upon export and import brokers to detect and correct the mistakes and also that those brokers do not make their own mistakes. Regardless of who makes the error, it is important that the export and import brokers detect and correct mistakes before shipment.

- **Responsibility of the hunting operator**

The hunting operator is the hunter's facilitator in the exporting country. Hunting operators have the knowledge, relationships and responsibility to document the legality of the hunt, the authenticity of the trophy, and to get the trophies to the appointed taxidermist or export broker. In some instances, the hunting operator tags the trophy, and has the most direct relationship with the exporting country taxidermist and export brokers. It is important that the hunting operators participate and hold accountable those contacted and contracted.

- **Responsibility of the taxidermist**

In some instances, the taxidermists in the country hunted are also export brokers, in which case they have the responsibility of both. Taxidermists certainly share most responsibility equally with the export broker. Taxidermists must ensure that skins or skulls are properly tagged and identifiable. They have the duty to secure and replace tags that are detached while in their custody. They must verify that the trophy is tagged. It might be advisable to take digital photographs of the tags and their precise location. Taxidermists are best placed to ensure that the tag and permit numbers match. In many instances taxidermists obtain the necessary export permits, in which case they need to check every detail of permits to ensure that there are no clerical mistakes and that the permits will not expire before arrival at the destination.

- **Responsibility of the export broker**

Export brokers (as well as taxidermists acting as export brokers) are important links in the process. They must use a checklist to ensure that there are no mistakes in the paperwork: Do the tag and permit numbers match? Are the dates on both the import and export permits valid before shipment proceeds? Will the shipment arrive at its destination before permit expiration(s)? Has a copy of the import permit been made? Are there any special conditions attached to the import permit, such as restrictions on the quota in the year of the hunt, and whether it matches the hunt period stated on the export permit? Brokers must not export a trophy until the relevant export permit has been validated, which involves presenting the export permit to the CITES or Customs authority and having the validation inventory boxes completed, stamped and signed. The Convention mandates this and it is now being enforced. It is the export broker and hunting operator that have the necessary relationship to the export authorities and first-hand knowledge of events in the country of origin.

- **Responsibility of the import broker**

The import broker has to get clearance from US Law Enforcement Regional Service Officers, US Department of Agriculture – Veterinary Services (USDA-VS) and US Bureau of Customs and Border Protection to clear the shipment. If the shipment contains swine or primate, the broker must also get clearance from the Centre for Disease Control. Import brokers must also contend with any errors made by others up to the point of entry, and sometimes also make mistakes themselves. The import broker is the first to know of a problem, so he must inform the export broker and hunting operator who in turn must initiate corrective measures with the export authorities and provide a defensible explanation for possible mitigation of seizure. Import brokers are responsible for contacting the export broker immediately when any problem leads to the detention or seizure of a trophy because of errors in export documentation or other requirements. The export broker must notify the permit-issuing authorities and request them to contact USFWS HQ/OLE. All correspondence with foreign authorities should be addressed to the HQ/OLE but copied to the port Service Officer who has detained the trophy, and to the import broker. The Service Manual provides that all correspondence with foreign authorities must be through HQ/OLE, but HQ must know what port of entry and Service Officer, and the import broker must know the status of the detention, so it is best both are copied. Service Officers must coordinate with HQ/OLE for all communication with the foreign CITES Management Authority and Officers must coordinate communication

with the foreign country through HQ/OLE respectively (Service Manual, Part 443 B(1)(a) and B(1)(b). The phone number is 703-358-1949. The address (after July 28, 2014) is 5275 Leesburg Pike, Falls Church, VA 22041-3803.

If a permit is lost in transit, the export authorities can provide a duplicate with an original signature. This will be accepted if the precise regulatory steps set out in the US Code of Federal Regulations are followed to the letter (see §23.52 of CFR 50, given above). A replacement permit can also be issued, again only if the US regulatory steps are followed to the letter. The import broker can no longer hold an import until errors are corrected before declaring the wildlife product for clearance. That is a violation in itself.

6.5.2. Hunting trophy import regulations in the European Union

Hunting trophies that are introduced into the European Union (EU) for non-commercial purposes are considered to be "personal effects" under the EU Wildlife Trade Regulations and hence the rules applied to the import of such specimens into the EU are similar to the rules applied to the other "personal and household effects" (http://ec.europa.eu/environment/cites/info_personal_en.htm). There is one difference, however: in the case of hunting trophies being introduced into the EU, the traveller is allowed to import them at a later date, after his or her own arrival.

Under the current legal framework, the European Union (EU) implements the provisions of CITES through its EU Wildlife Trade Regulations, in particular Council Regulation (EC) No. 338/97 of 9 December 1996 on the protection of species of wild fauna and flora by regulating trade therein (http://ec.europa.eu/environment/cites/pdf/2007_referenceguide2_en.pdf). The species protected under the EU Wildlife Trade Regulations are listed in four Annexes (A to D) of which Annex B includes most species listed in CITES Appendix II and a number of other species deemed to need particular regulatory protection.

In accordance with these regulations, specimens included in Annex B can only be imported if, in addition to an export permit issued by the exporting country, an import permit is granted by the importing country. The import permit will only be granted if the scientific authority of the importing Member State is satisfied that the current or expected levels of trade in the Annex B species will not have a harmful effect on its conservation status, or on the extent of area occupied by the relevant species' population.

The EU Wildlife Trade Regulations include a set of rules that apply to hunting trophies, which differ from the general regime described above. The main difference is that the import of hunting trophies of Annex B species is not conditional on the presentation of an import permit issued by the importing country. EU residents bringing a hunting trophy of an Annex B species into the European Union for the first time are only required to present to Customs a CITES export permit issued by a third party country.

In 2013, concerns were raised about the sustainability of trade in hunting trophies for some Annex B species or populations, especially where such trophies constitute a large share of the trade in that species in the exporting country. At the 16th Conference of the Parties of the CITES Convention, the European Union proposed tightening regulations applying to the trade in hunting trophies to systematically require export permits from the country of origin for their export. This proposal was not approved but it was agreed that permits and re-export certificates would be required for the export and re-export of rhino horn or elephant ivory contained in

hunting trophies. CITES Parties also agreed to adopt Decision 16.84 directing all CITES Parties to consider introducing stricter domestic measures to regulate the re-export of rhinoceros horn products from any source (see http://www.cites.org/eng/dec/valid16/16_84-92.php)

Stricter controls apply to the first import in the EU of hunting trophies from certain Annex B-listed species/populations due to concerns as to the sustainability of trade in these hunting trophies or for which there are indications of significant illegal trade. The species/populations to which these stricter controls apply are those listed in Annex XIII to Commission Regulation (EC) No 865/2006, currently the: (i) Southern White Rhinoceros *Ceratotherium simum simum*, (ii) Common Hippopotamus *Hippopotamus amphibius*, (iii) African Elephant *Loxodonta africana*, (iv) Argali Sheep *Ovis ammon*, (v) Lion *Panthera leo*, and (vi) Polar Bear *Ursus maritimus*. In such cases, both an import permit and an export permit are required for the first introduction of hunting trophy specimens into the EU.

It should also be noted that many of the popular hunted species are listed in Annex A of the EU Wildlife Trade Regulations and are very often also subject to national legislation in the country of origin. In addition, the Scientific Review Group may impose import suspensions on the import of certain species that may be subject to hunting and hence trophies of these species may not be imported into the EU. Since the EU recognizes that hunting trophies can play a positive role in conservation efforts, import of hunting trophies is authorised in the EU under certain conditions designed to ensure that hunting trophy programmes are not detrimental to the conservation of the species. These conditions are assessed by the Scientific Review Group, in line with Article 4 of Regulation (EC) No 338/97 and the EU Scientific Authorities guidelines for the import of Annex A hunting trophies.

More information on the EU wildlife trade regulations can be found here: http://ec.europa.eu/environment/cites/home_en.htm and **Compendium: Chapter 6 Hunting Regulation**)

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Guidelines for improving the administration of sustainable hunting in sub-Saharan Africa

While the administration of National Parks and wildlife-viewing tourism has already been widely addressed by a broad range of organizations including FAO, the administration and management of Hunting Areas and regulated hunting had not been much addressed yet.

These guidelines provide both operational and technical guidance on approaches in countries practising regulated hunting. When and where well-managed, this hunting industry brings considerable conservation benefits and socio-economic profits. However, like any sector, the hunting sector is in need of improvement in respect to nature conservation, rural socio-economy and cultural livelihoods and lifestyles. By raising the level of professionalism in its administration, it is expected that the performance and quality of services of the whole sector will improve. Good administration is obviously crucial for promoting best practices and discouraging the others.

These guidelines are designed for anyone involved in the administration and management of the sustainable regulated hunting sector. Today, about 28 African countries offer one or more types of regulated hunting. The purpose of these guidelines is to provide guidance throughout the entire process, i.e. from leasing a Hunting Area, to administering, managing, monitoring and controlling its services and performance.

These guidelines depart from a frequently adopted negative approach inspired by coercive and repressive positions. On the contrary, it aims to present a positive attitude for administering regulated hunting with constructive intentions. The principles and rules presented here should not be understood as obstacles and constraints, but rather as solutions to problems and itineraries to make progress and reach targets.

These guidelines are not prescriptive. They are not intended to dictate what should be done. They simply aim to provide administrators with options for improving the administration of regulated hunting under various contexts in the best possible spirit for both conserving nature and developing country economies.