

## **Sport Hunting as a Sustainable Wildlife Conservation Strategy in Kenya: Prospects and Challenges**

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### **Abstract**

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Sport hunting is considered by some researchers as promoting wildlife conservation while others feel otherwise. It is pointed out that with proper regulation, enforcement and control sport or trophy hunting would be beneficial to wildlife populations. However, wanton and indiscriminate killing of certain wildlife species can have disastrous ecological consequences. This paper aims to contribute to the on-going debate by examining critically the relationship between sport hunting and wildlife management in Kenya. It is the thesis of this paper that well regulated sport hunting could benefit wildlife populations and may be the only way to ensure their very survival. Therefore, the paper reviews available literature on trophy hunting in Africa and the rest of the world with the objective of assessing both positive and negative impacts of hunting on conservation. Lessons learned can be used as basis for re-introducing sport hunting in Kenya. The main finding is that there is evidence that wildlife populations especially for elephants, rhinos and buffaloes are increasing in the countries where sport hunting is encouraged and the reverse is the case where it has been restricted or banned. Therefore, it is recommended that Kenya borrows a leaf from these success stories and re-introduces trophy hunting to save its wildlife.

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**Key words:** Conservation, Kenya, Local communities, Sport hunting, Wildlife

### **Introduction**

Loveridge *et al* (2006) observes that in the last decade or so, there has been a raging debate on whether or not sport hunting supports conservation. The debate reached fever pitch in 2015 following the death of Zimbabwe's famed Cecil, the Lion at the hands of an American trophy hunting hobbyist named Water Palmer (Natural Resources, 2016). Sport hunting, also referred to as trophy hunting, game hunting, and safari hunting, involves the hunting of wildlife for sport or recreation (Akito, 2012). This is an old form of recreation which is still practised today. Besides, the importance of consumptive wildlife tourism including sport hunting and fishing has been highlighted in literature (Lovelock eds., 2008).

Proponents of trophy hunting contend that it is a potential source of funding for wildlife conservation. They argue that lawful, ethical and vigilant hunters play an important role in public acceptance of sustainable hunting as a vital tool for modern wildlife conservation and management. They further contend that trophy hunting can create incentives for conserving habitat and ecosystems where hunted animals roam. Critics counter by arguing that trophy hunting can be mismanaged and potentially contribute to declines in the populations of species, and that the same land used for trophy hunting can support lucrative photographic tourism (Hofer 2002; Novelli and Humavindu, 2005, Novelli, Barnes, and Humavindu, 2006).

However, it should be borne in mind that trophy hunting takes place in different types of governance, management, and ecological contexts, so its impacts on conservation vary enormously, from negative to neutral to positive. In many contexts good evidence is lacking or scanty, so it is currently impossible to evaluate precisely how widespread each outcome is. Negative conservation impacts of poorly managed sport hunting can include over harvesting, artificial selection for rare or exaggerated features, genetic or phenotypic impacts due to hunting (such as reduced horn size), introduction of species or subspecies beyond their natural range (including into other countries), and predator removal. But, with effective governance and management, trophy hunting can and does have positive impacts.

Habitat loss and degradation, driven primarily by expansion of human economic activities, is the most important threat to terrestrial wildlife populations (Mace et al., 2005), along with other threats such as poaching for bush meat and illegal wildlife trade and competition with livestock. Demographic change (population expansion) and demands for food, income and land for development are increasing in many biodiversity-rich parts of the globe, exacerbating these pressures on wildlife and making the need for viable conservation incentives more urgent. In contrast, hunting can be a positive driver for conservation because it increases the value of wildlife and the habitats it depends on, providing critical benefit flows that can motivate and enable sustainable management approaches (IUCN, 2016).

This paper aims to contribute to the on-going debate by examining critically the relationship between sport hunting and wildlife management in Kenya. It is the thesis of this paper that well regulated sport hunting could benefit wildlife populations and may be the only way to ensure their very survival. Therefore, the paper reviews available literature on trophy hunting in Africa and the rest of the world with the objective of assessing both positive and negative impacts of hunting on conservation. Lessons learned can be used as basis for re-introducing sport hunting in Kenya.

## **Literature Review**

The discussion concerning trophy hunting is polarized, with animal rights groups and protectionists on one side, and hunters and pragmatic conservationists on the other (Hutton and Leader-Williams, 2003; Loveridge et al., 2006). This polarization is exacerbated by a lack of reliable data on the impact of trophy hunting on wildlife conservation. Most information on African trophy hunting occurs in unpublished grey literature, and discussion of hunting in the popular media is sometimes emotive and unbalanced. There is need for a well balanced exposition of the positive and negative impacts of sport hunting on wildlife populations. This is what this paper attempts to achieve. In this section, available literature either supporting or opposing sport hunting is critically reviewed.

There is little doubt that legal and well regulated trophy hunting programmes can and do play an important role in delivering benefits for both wildlife conservation and for the livelihoods and wellbeing of indigenous and local communities living with wildlife (IUCN, 2016). However, there are major challenges to be surmounted in countries where sport hunting is practiced. These include weak governance, corruption, lack of transparency, excessive quotas, illegal hunting and poor monitoring. This poor practice requires urgent action and reform. Well managed trophy hunting, which takes place in many parts of the world, can and does generate critically needed incentives and revenue for government, private and community landowners to maintain and restore wildlife as a land use and to carry out conservation actions. It can provide the much needed income, jobs, and other important economic and social benefits to indigenous and local communities in places where these benefits are often scarce. In many parts of the world indigenous and local communities have chosen to use trophy hunting as a strategy for conservation of their wildlife and to improve sustainable livelihoods.

Some countries such as Botswana, Kenya and Zambia have imposed blanket bans on sport hunting. Blanket bans or restrictions affect both good and bad hunting practices. They are likely to undermine important benefits for both conservation and local livelihoods, thus exacerbating rather than addressing the prevailing major threats of habitat loss and poaching (IUCN, 2016). Trophy hunting is often erroneously classified together with poaching for the organized international illegal wildlife trade (IWT) that is currently devastating many species including the African elephant and African rhinos. However, trophy hunting takes place as a legal and regulated activity under programmes implemented by government wildlife agencies, protected area managers, indigenous and local community bodies, private landowners, or conservation/ development organizations. In a number of cases revenues from hunting are in fact funding law enforcement or providing community benefits that counter incentives to engage in IWT (IUCN, 2016).

As Lindsey et al (2006) observes, Kenya is the birth place of African trophy hunting and as such it is viewed with nostalgia by hunters. However, trophy hunting was banned in the country in 1977 due to over hunting and corruption (Booth, 2005; Leader-Williams and Hutton, 2005). Sport hunting in East Africa is now limited to Tanzania, which has a sizeable and growing hunting industry. More buffaloes, leopards and lions are hunted in Tanzania than anywhere else in the world ((Baldus and Cauldwell, 2004b).

Africa is considered the hunters' paradise with about 18,500 hunters converging on the continent from all over the world in search of trophies. It is also estimated that about half of Sub-Saharan African countries officially authorize sport hunting (Roulet, 2004). Well monitored trophy hunting can be self-regulating, because modest off-take is required to ensure high trophy quality and thus marketability of the area in future seasons. Accordingly, off-takes for many species are well below available quotas. On a local level, financial incentives for sustainable hunting are likely to be most effective where the same hunting operators are given tenure over hunting areas for multiple seasons. Low off-take rates mean that trophy hunting can play a key role in endangered species conservation (even when excessive hunting was the original cause of the conservation problem). Revenues from tightly regulated trophy hunting can provide important incentives for careful management, protection and reintroductions. On private lands in South Africa, trophy hunting has facilitated the recovery of black wildebeest and cape mountain zebra by providing financial incentives for reintroductions (Flack, 2003). Similarly, the recovery of southern white rhinoceros populations was accelerated by incentives from trophy hunting, which encouraged reintroductions onto game ranches (Leader-Williams et al., 2005).

The impact of the approaches adopted by two African countries on wildlife populations, namely Kenya and Namibia are examined. The two countries have taken very different approaches with sport hunting. Once upon a time, Kenya was the number one safari destination for hunters from Theodore Roosevelt, Ernest Hemingway, and so many more. However, that ended in 1977 when Kenya put a ban on all big game hunting. This ban has not had the desired effect on wildlife populations. Since then, 30%-70% of wildlife has been lost to poaching and habitat loss (Irandu, 2007). Outside of national parks and protected game reserves, wild animals are either shot on sight or they are snared for bush-meat after they had lost their value and were both a nuisance and danger to the locals. It is not clear why Kenya can not re-introduce hunting after realizing that wildlife populations for elephants, black and white rhino, zebras, giraffes, impalas, gazelles, lions, leopards and many others are declining (Irandu, 2007; Ogutu et al., 2009).

On the other hand, Namibia which had put into action a system that had local farmers participate in conservation and allowed safari outfitters to set up hunting lodges that the locals can collect benefits from such as meat, jobs and income. After 20-30 years of this policy, the results speak for themselves. Not only has poaching been virtually eradicated but wildlife population is recovering at a rate unique to Sub-Saharan Africa. The lion population is one of the few on the continent that is confirmed to be increasing and the country boasts the largest free roaming population of rhinos on Earth. Even the black rhino which is struggling in much of Africa is thriving in Namibia. Therefore, using the Namibian success story, it can be argued that trophy hunting clearly has its benefits, especially when locals are allowed to reap benefits from it.

Even though trophy hunting is beneficial as demonstrated by the Namibian case, it still attracts large amount of criticism due to certain unsustainable practices by some hunters. Probably one of the best examples of unsustainable trophy hunting with no benefits to conservation is India. Like Kenya, India was a crown jewel in the sporting community. Hunters from far and wide flocked to the country to have a chance of scoring a trophy tiger, leopard, rhino and so on But unsustainable sport hunting in India led to dramatic reductions of many species such as the Bengal tiger, the Asiatic lion, and Indian rhinoceros among others. Another unsustainable practise is the killing of lions that are running prides. Excessive trophy hunting could theoretically cause male replacements and associated infanticide to become common so as to prevent cubs reaching adulthood. If this continues, the next generation of lions could experience a severe bottleneck. However, more and more people have realized this now and are combating the problem by setting an age restriction for lions. In Tanzania for instance, the age that a lion is eligible to be taken as a trophy is 6+ years old when a male lion will weaken and be kicked out of the pride soon. There is also a perception emerging that some of the majority of the economic benefits in Africa go to white landowners who hold a privileged position in the economy due to the past injustices of colonialism and Apartheid. This is particularly so in Namibia and South Africa (Duffy, 2000; Lindsey et al., 2013).

The main benefits of sport hunting programmes highlighted in literature include:

1. Provision of incentives to landowners to conserve or restore wildlife on their land.

Benefits to landowners from hunting can make wildlife an attractive alternative land use thereby encouraging them to maintain or restore wildlife habitat and populations, remove livestock, invest in monitoring and management, and carry out anti-poaching activities.

2. Generation of revenue for wildlife management and conservation for government, private and communal landholders.

Government agencies in most parts of the world depend at least in part on revenues from hunting to manage wildlife and protected areas (IUCN, 2016).. For example, state wildlife agencies in the USA are funded primarily by hunters through various direct and indirect mechanisms including the sale/auction of trophy hunt permits (Mahoney, 2013). Private land-owners in South Africa and Zimbabwe and communal landowners in Namibia also use trophy-hunting revenues to pay guards and rangers, buy equipment, and otherwise manage and protect wildlife.

3. Increasing tolerance for living with wildlife, reducing human-wildlife conflicts and illegal killing.

Where wildlife imposes serious costs on local communities, such as crop damage, predation on livestock or causing human injury or death, and there are no legal mechanisms for people to benefit from it, retaliatory killing and local poaching are likely to result. This is particularly important in Africa where elephants and other species destroy crops and large cats kill humans and livestock (Rajotte, 1983, Baker, 1997; Barnes & Jones. 2009; Akito, 2013).

Concern has also been raised that trophy hunting is driving declines of iconic African large mammals such as elephants, rhinos and lions. While there is evidence for a small number of populations that unsustainable trophy hunting has contributed to local declines (see. Loveridge et al., 2007, Packer et al., 2009, 2011), it is not a significant threat to any of these species and is also a minor threat to African wildlife populations (Lindsey, 2015).

Some scholars argue that the major causes of wildlife population declines especially of the large mammals targeted for trophy hunting (e.g. the African Elephant, African Buffalo, White Rhino, Black Rhino among others), are habitat loss and degradation, competition with livestock, illegal or uncontrolled poaching for meat and trade in animal products and retribution killing for human-wildlife conflict. For lions specifically, the most important causes of population declines are indiscriminate killing in defense of human life and livestock, habitat loss, and prey base depletion (Bauer et al., 2015). For all of these species, it can be argued that well-managed trophy hunting can promote population recovery, protection, and maintenance of habitat.

According to Hall (2015), proponents of sport hunting argue that the practice is sustainable because the hunted animal is usually identified by sex and age before any killing occurs, and the total harvest is so low that hunting has little impact on the population as a whole. This view is reinforced by considering the quick recovery of different species in other parts of the world such as the United States and Canada through sustainable management practices.

According to Akito (2012), sport hunting plays an important role not only in the tourism industry, but also in conservation policy in Africa. Some scholars and governments regard sport hunting as a tool that can be used to support Community Conservation efforts (Baker, 1997; Chardonnet et al., 2002). For example, in the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) project in Zimbabwe between 1989 and 2001, 89% of the total project revenue came from sport hunting, and about half of the total project revenue was disbursed to communities (Frost and Bond, 2008).

Some researchers have argued that sport hunting is both economical and ecologically sustainable (e.g. Backer, 1997; Bond et al., 2004; Lindsey et al., 2007). They argue that sport hunting can support wildlife conservation policies and local development by providing huge amounts of revenue, and it can ensure ecological conservation through the enforcement of strict hunting rules.

While there is little doubt that over hunting has led to reduction in the numbers of some wildlife species such as the American bison in the 19th century, it is unclear whether recreational hunting or commercial hunting could be responsible. Today, the science of achieving biological sustainability is well developed.

Thus it is possible to accurately monitor and model populations, set harvest quotas for sustainable yields, and reduce the potential for genetic loss while harvesting trophy males. For example, populations of white rhino in South Africa have been recovered through scientific strategies that include regulated recreational hunting. These strategies have included offering landowner's incentives to keep animals, provided a limited number of surplus animals may be hunted. The success of the approach with white rhinos has been replicated in similar programs for black rhinos in both South Africa and Namibia. The bottom line is that there is need for countries in Africa and elsewhere to address issues of poaching and habitat loss, because it is felt that these could have far more reaching impacts than sport hunting.

In many parts of the world, conservation had its roots in an era where wild species were preserved to be hunted by small, wealthy elite. For example, Kenya was the traditional home of elite sport hunting since colonial times until the 1970s when the country banned sport hunting in 1977 (Hurt & Ravn, 2000; Loveridge, *et al* 2006).. It should be borne in mind that unlike in the past, in the contemporary conservation, there are many interest groups each with a legitimate claim on wildlife and its habitats. Thus, as Loveridge, *et al* (2006) argue, there is need to evaluate sport hunting against other viable alternative land uses.

### Materials and Methods

This is an exploratory research to analyze possible benefits of sport hunting to the local communities and land owners in Kenya. The relationship between sport hunting and wildlife management is also discussed. The information and data used in this research was obtained from various sources including documents on wildlife policy in the SADC region where sport hunting has been a thriving form of recreation in several countries. The research engaged content analysis of literature available on sport hunting from theses or dissertations, journal articles, published and unpublished reports among others. Thus the paper relies heavily on secondary data. Face to face interviews with senior officials of the Ministry of Tourism and personal observations were also used in the study. Personal observations focused on the costs incurred by local communities and land owners who lose their crops, livestock, property or even lives from attacks by wild animals in Kenya.

### Results and Discussion

From the literature reviewed, it has been established that sport hunting can generate substantial revenue. Some hunters spend extravagantly and travel extensively and may pay high fees for logistical support and tour guiding (Pacec 2000). Sport hunters may pay high prices to shoot spectacular species (Table 1). The earnings from hunting affect economies at local, regional and national levels. For example, expenditure on hunting in the UK exceeds £1.4 billion annually (Cobham Resource Consultants, 1997). Employment created by foxhunting in the UK is approximately 6,000 to 8,000 full time equivalent jobs (Pacec 2000). In Africa, sport hunting generates annual gross revenues of at least US\$201 million (Lindsey *et al.*, 2007).

**Table 1: Estimated Market Value for “Big 5” trophies in 2015**

Animal Species	Trophy Value(USD)
Lion	8,500 -50,000
Elephant	25,000 -60,000
White Rhinoceros	>125,000
Leopard	15,000- 35,000
Buffalo	12,500- 17,000

**Source: Natural Resources, 2015, page 10.**

Fees for hunting animals for trophies vary considerably from one country to the other and are based on an animal's rarity, the effort required to hunt it, and its popularity for hunting (see Table 2. The cost of the right to hunt a black rhinoceros in Namibia is about \$350,000(Natural Resources, 2016).

It is clear that this is a lucrative industry and that those involved have the means to contribute significantly to the conservation of the species they hunt, as well as the wherewithal to ensure that they are acting responsibly and not promoting practices that are detrimental to wildlife. However, as the tragic death of Cecil the Lion showed us, trophy hunters do not always play by the rules, and the trophy hunting industry needs to be regulated and held accountable for there to be any hope of a consistent conservation benefit.

**Table 2: Sample Trophy Fees for Select Animals from an Outfitter in Zimbabwe in 2016**

Animal Species	Trophy Value(USD)
Lion	19,500
Lioness	8,450
Elephant	38,000
Leopard	15,000
Buffalo	13,250
Crocodile	6,450
Hippo	7,950

**Source: Africa Sky Hunting Outfitters at <http://www.africanskyhunting.co.za/pricelist.html>**

The experience of some of the Southern African Development Community (SADC) countries provides valuable lessons to use in formulating wildlife policy in Kenya. The key lessons learned are:

1. Support of local communities and landowners is crucial for conservation efforts to succeed.

In the absence of benefits, poor communities are unwilling and unable to look after natural resources wisely. This is why SADC countries such as Namibia and Zimbabwe have initiated programmes to transfer ownership of wildlife, land use rights and decision-making responsibilities to local communities. These countries encourage sport hunting, which clearly generates substantial revenue for the governments, landowners and local communities. In addition, conservation of wildlife in the SADC region is assured as all stakeholders benefit from increasing wildlife populations (Traffic, 2006). This is in sharp contrast with Kenya where the number of certain large herbivore species is declining possibly due to illegal hunting and trapping for bush meat (table 3).

2. Appropriate wildlife policy formulation

For instance, Zimbabwe has led the SADC region in establishing the necessary wildlife policy and legislative frameworks to promote wildlife management both in Parks and also in the private and communal lands. The growth of sport hunting industry in the country bears testimony to the key role that it has played in implementing Zimbabwe's Wildlife Policy. Since Independence in 1961, Tanzania's Government has also demonstrated its commitment to the conservation of its natural heritage by recognizing not only the biological, but also the economic value of its wildlife resources. The government's intention is clearly outlined in the Policy for Wildlife Conservation and Utilization of 1986 which states the overall objective in part as:

"Further development of a wildlife industry based on game viewing, hunting, ranching/farming and village wildlife schemes which will provide employment, revenue, income and food to rural communities and revenue to the government" (MTNRE, 1995a).

Tanzania has an estimated 130 hunting concessions covering an area in excess of 200,000 km<sup>2</sup> that are leased to hunting outfitters licensed to conduct tourist hunting. More than 60 species can be hunted. Tourist hunting plays an important role in the majority of these areas; many of which are rangelands unsuitable for other forms of tourist activity. They are either located in far flung places or do not support adequate wildlife populations. Therefore, these areas are unable to compete with major game viewing areas such as the Serengeti National Park. Tourist hunting is considered the most economically viable form of wildlife utilization and plays an important role in the economic development of many remote areas. Without the income generated from tourist hunting, many important wildlife areas in Tanzania would cease to be viable (Baldus & Cauldwell, 2004). Thus, sport hunting forms an integral component of the Tanzania's wildlife industry, with trophy hunting by foreigners being recognized as a sustainable and economically viable form of wildlife utilization that is consistent with the country's wildlife policy.

Trophy hunting can undermine wildlife conservation if it results in alterations to ecosystems, such as habitat fragmentation, the introduction of exotic species, or targeted reduction of predators of trophy animals. Scientists report that trophy hunting can affect a specific, localized population of a given species in many ways: by reducing the number of animals in the population, by reducing the population's reproductive capacity, and by altering the ecosystem where the species resides. If quota levels are not based on scientific information, or are fixed in a way that ignores changes in the population's size and behavior, trophy hunting could have negative consequences for the population's health. High rates of trophy hunting could also combine with other factors, such as poaching, to cause wildlife population declines.

Available evidence points to the fact that trophy hunting has negative impacts across sub-Saharan Africa. This is because unsustainably high rates of trophy hunting has led to population declines in African lions and possibly African leopards.<sup>60</sup> Many hunting areas are also fenced, which fragments the habitat into small blocks and alters species migrations. Some scientists argue that an increase in tuskless elephants in parts of Africa could be attributed to selective hunting and poaching of elephants with large tusks.<sup>62</sup> Hunting and poaching of wild elephants are likely to outpace the reproductive rate of the species, causing an unsustainable loss of elephants annually.

### **Conclusion and Policy Recommendations**

In this paper, it has been established that sport hunting can benefit conservation by preserving habitat and biodiversity. Overall, it would appear that the benefits of sport hunting can outweigh any disadvantage if responsibly managed and monitored. Sport hunting in the SADC region is an important economic activity that contributes not only to the national economies but also to maintaining the livelihoods of many of the region's poor rural communities. In particular, the move by the governments in the SADC region to devolve wildlife management responsibilities to communal and private landowners, together with incentives to utilize such resources on a sustainable but profitable basis, has led to successful conservation efforts in Botswana, Namibia and Zimbabwe

It is imperative for Kenya's future tourism development to be organized in such a way as to maximize revenue accruing at the local level to rural population. Ranchers and local communities should derive benefits from keeping on their own lands the wildlife on which the tourist industry depends. These benefits should exceed wildlife costs to the landowners and local communities. This would give landowners and local communities an incentive to manage and enhance wildlife populations. Thus, sport hunting should form an integral part of the country's Wildlife Policy.

In the light of the above lessons, what should Kenya do to ensure sustainable wildlife management? As Rajotte (1983) argues, wildlife in Kenya is in jeopardy unless wildlife conservation can be seen to be directly generating more income for local communities and landowners than it is costing them in damages and opportunity costs. Further, it is not clear whether Kenya is not losing out to Tanzania which allows sport hunting. The two countries share common ecosystems such as the famous Maasai Mara Game Reserve and Mkomazi National Park. Obviously animals so jealously protected in Kenya may face the hunter on crossing to Tanzania. Following the above findings and subsequent discussion, this study recommends that:

1. Sport hunting be re-introduced in Kenya and be properly regulated to prevent any further abuses of hunting licenses. There should be a carefully monitored register for all local and international hunters. Quotas should be correctly assessed to permit sustained yields of all wildlife species.
2. Hunting permits could be sold to tourists to hunt on private ranch lands that are least suitable for game viewing purposes, thereby enhancing local incomes considerably.
3. License fees could be increased to reflect international market rates, the relative scarcity of a particular game species, value of trophy and accessibility of hunting concessions. For instance, as Mwenge International (1980) recommended, if elephant populations build to a level to permit hunting, the license fee should exceed the international value for ivory thus reducing the incentives for poaching. It is expected that abuses of the quota system would occur as they did prior to the hunting ban of 1977. However, it is recommended that in the proposed Draft Wildlife Policy, stricter enforcement of the quota should be emphasized.

**References**

- Adams, W. & Humle, D. (2001): Conservation and Community: Changing Narratives Policies and Practices in African Conservation. In African Wildlife and Livelihoods the Promise and Performance of Community Conservation (Eds. Hulme & M. Murphee)pp. 9-22, Oxford.
- Akito Y. (2012). Is sport hunting a breakthrough wildlife conservation strategy for Africa? A case study of northern Cameroon, Vol. 6 | 2012. Accessed on 11<sup>th</sup> December, 2016, factsreports-1362pdf-Adobe Acrobat Reader DC
- Baker, J. E. 1997. Trophy hunting as a sustainable use of wildlife resources in southern and eastern Africa. *Journal of Sustainable Tourism* 5 (4): 306-321.
- Baldus, R.D. and. Cauldwell, A.E (2004). Tourist hunting and its role in development of wildlife management areas in Tanzania, GTZ, Dar es Salaam, Tanzania.
- Barnes, M. (2001): Economic Returns and Allocation of Resources in the Wildlife Sector of Botswana, South African Journal of Wildlife Research 31: 141-153.
- Bond, I, (2001): CAMPFIRE and the Incentives for Institutional Change. In African Wildlife and Livelihoods The Promise and Performance of Community Conservation (Eds. D. Hulme & M. Murphee) pp.9-22, Oxford.
- Booth, V. (2002). Analysis of wildlife markets (sport hunting and tourism). WWF-SARPO report, Harare.
- BWMA (2001): Economic Analysis of Commercial Use of Wildlife in Botswana, Unpublished Document.
- Chardonnet, P., B. des Clers, J. Fischer, R. Gerhold, F. Jori, and F. Lamarque. 2002. Value of wildlife. *Revue Scientifique et Technique* 21(1): 15-51.
- Cobharn Resource Consultant (1997): Countrywide Sports: Their Economic Social and Conservation Significance. Standing Conference on Countrywide Sports. Reading.
- Cooper, S.M, (1991): Optional Hunting Group Size-The Need for Lions to defend their Kills against loss to spotted hyenas. *African Journal of Ecology*, 29: 130-6
- Crosmary, W.G., S. D. Côté, and H. Fritz. "Does trophy hunting matter to long-term population trends in African herbivores of different dietary guilds?" *Animal Conservation* 18.2 (2015): 117-30. Web. <<http://onlinelibrary.wiley.com/doi/10.1111/acv.12144/abstract>>.
- Cumming, D. (2004): Performance of Parks in a Century of Change. In Parks inTransition: Biodiversity, Rural Development and the Bottom Line (Ed. H. Child) pp. 105-24: Earthscan, London.
- Deere, Nicolas J. "Exploitation or Conservation? Can The Hunting Tourism Industry in Africa Be Sustainable?" *Environment Magazine*, July-Aug. 2011. Web. 09 Dec. 2014. <<http://www.environmentmagazine.org/.../2011/exploitation-or-conservation-full.html>>..
- Duffy, R. (2000): Killing for Conservation: Wildlife Policy in Zimbabwe. African Issues. International African Institute, Oxford.
- Flack, P. H. "Consumptive Tourism—A Useful Conservation Tool," in Vision Business Ecotourism and the Environment, ed. D. Butchart (South Africa: Endangered Wildlife Trust, 2003): 155–57.
- Fergusson, R. (1 990): A Preliminary Investigation of the Population Dynamics of Sable Antelope in the Matetsi Safari Area, Zimbabwe, MSc. Thesis University of Zimbabwe,Harare.
- Guulland, E.J. (2006): Does Sport Hunting Benefit Conservation. In Macdonald, D. W. Topics in Conservation Biology. pp.226 -40.
- Humavindu, M.N. & Barnes, J.I. (2003): Trophy Hunting in the Namibian Economy: An Assessment, South African Journal of Wildlife Research 33: 65-70.
- Hurt, H. (2000): A Preliminary Investigation into Tourist Hunting in Tanzania. Unpublished Document.
- Hurt, H. & Ravn, P. (2001): Hunting and its Benefits: An Overview of Hunting in Africa with Special Reference to Tanzania. In Prins, H.H.T. et al (Eds). *Wildlife Conservation by Sustainable Use* Kluwer Academic Publishers, USA. IUCN (2016). Informing decisions on trophy hunting, Briefing paper April 2016. IUCN.
- Jackson, N, J. (1995): A Tourist Hunter's Perspective of Tanzania's Hunting Industry. In: Leader-Williams, N. Kayera, J.A. and Overton, G.L. (Eds). *Tourist Hunting in Tanzania, Planning and Assessment for Wildlife Management*, Department of Wildlife, Dares Salaam. Tanzania, pp. 17-19.
- Jones, B.T.B. (1995): Wildlife Management, Utilization and Tourism in Communal Areas: Benefits to Communities and Improved Resource Management. Research Discussion Paper No.5, Windhoek, Namibia.

- Leader-Williams, N., and J. Hutton. 2005. Does extractive use provide opportunities to reduce conflicts between people and wildlife? Pages 140–162 in R. Woodroffe, S. Thirgood, and A. Rabinowitz, editors. *People and wildlife: conflict or coexistence?* Cambridge University Press, Cambridge, United Kingdom.
- Lindsey, P. A., et al. (2006). "Potential of trophy hunting to create incentives for wildlife conservation in Africa where alternative wildlife-based land uses may not be viable." *Animal Conservation* 9.3): 283-291
- Lindsey, P.A, Roulet, P.A, Roman, S.S. (2007). Economic and conservation significance of the trophy hunting industry in sub-Saharan Africa, *Biological Conservation*, 134, 455-469.
- Loveridge, AJ. & Jonathan, C.R. & Milner- Lindsey, P. A., P. A. Roulet, and S. S. Romanache. 2007. Economic and conservation significance of trophy hunting industry in sub- Saharan Africa. *Biological Conservation* 134:455-469.
- Lovelock, B. eds. 2008. *Tourism and the consumption of wildlife hunting, shooting and sport fishing*. Routledge.
- Loveridge, Andrew J., Jonathan C. Reynolds and E.J. Milner-Gulland (2007). "Does Sport Hunting Benefit Conservation?" *Key Topics in Conservation Biology* 1st Edition. Ed. David Macdonald and Katrina Service. Malden: Blackwell Publishing, 222-238.
- Macdonald, D.W. (2001): Impact of Trophy Hunting in Zimbabwe. In *Lion Conservation Research. Workshop 2. Modeling Conflict* (Eds) AJ. Loveridge, T. Lynam and D.W. Macdonald. Pp. 18-19 October, Okavango Delta. Botswana.
- Mahoney, S.P. 2013 Monograph: Conservation and Hunting in North America. *International Journal of Environmental Studies* 70(3): 347-460.
- Mupfema, M. (2001): Community, Council and District: A Case Study in Ecotourism Development for Mahenye, Zimbabwe. In *African Wildlife and Livelihoods, the Promise and Performance of Community Conservation* (Eds. D. Hulme & M. Mupfema) pp.177-94, Oxford.
- Mupfema, M. (2004): Who and What are Parks for in Transitional Societies? In *Parks in Transition: Biodiversity, Rural development and the Bottom Line* (Ed B. Child). pp. 217-32. Earthscan, London.
- Mwenge International (1980): *A Study of the Management of Very Large Herbivores in Kenya*, Nairobi.
- Natural Resources (2016). Missing the mark; African Trophy hunting fails to show consistent conservation benefits. A report by the Democratic Staff of the House Committee on Natural Resources
- Novelli M, Barnes JI and Humavindu M (2006) The other side of the ecotourism coin: Consumptive tourism in Southern Africa. *Journal of Ecotourism* 5(1-2): 62-79.
- Novelli M and Humavindu MN (2005) Wildlife tourism: Wildlife use vs local gain: Trophy hunting in Namibia, Chapter14. In: Novelli M (ed) *Niche tourism: contemporary Issues, trends and cases* London: Routledge.
- Ogutu, J., Piepho, H., Dublin, H., Bhola, N., Reid, R., 2009. Dynamics of Mara-Serengeti ungulates in relation to land use changes. *Journal of Zoology* 278, 1-14.
- Oldfield, T.E.E., SMITH, R.J., HARROP, S.R. & LEADER-WILLIAMS, N. (2003): Field Sports and Conservation in the United Kingdom. *Nature* 423: 531-3.
- Pacec (Public and Corporate Economic Consultant) (2000): *The Economic Effects of Hunting with Dogs*. Report of the Committee of Inquiry into Hunting with Dogs in England and Wales. UK.
- Packer, Craig, et al (2009). "Sport Hunting, Predator Control and Conservation of Large Carnivores." *PLoS ONE* (2009). Web. <<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0005941>>.
- Rajotte, F. (1983): The Potential for Tourism Development in Kenya's Arid Lands. In the *Kenyan Geographer* (Special Issues). The Journal of the Geographical Society of Kenya. Vol. 5 Nos. 1 &2, pp. 133-44.
- Traffic (2006): *Sport Hunting in the Southern Africa Development Community (SADC) Region, an Overview*, Johannesburg, South Africa.
- Whitehouse, Anna M. (2002). "Tusklessness in the elephant population of the Addo Elephant National Park, South Africa." *Journal of Zoology* 257. (2) 249-54. Web.
- Whitman, Karyl, et al. "Sustainable trophy hunting of African lions." *Nature* 428.6979 (2004): 175-178.