

# Hunting for Sustainability in Africa



**Hunting is a 'lens' through which we can examine how people interact with biodiversity**

Hunting provides a valuable case study in the use of biodiversity because it involves tens of millions of people globally, it is conducted across a wide range of land tenure and use systems, and it is an important source of revenue and protein, particularly in developing countries. Hunting is also embedded in social structures and cultural patterns and plays a key role in conflicts over natural resource management around the world. HUSA is part of an EU-FP7 funded project undertaken by a multidisciplinary consortium of partners with the aim of assessing cultural, institutional, socio-economic and ecological aspects of hunting across a range of contexts in Europe and Africa.

Case studies were carried out in Scotland, Norway/Sweden, Spain, Croatia/Slovenia, Tanzania and Ethiopia. HUSA is the African component of the wider FP7 project.



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## Hunting for Sustainability in Africa (HUSA)

is carried out by Frankfurt Zoological Society,  
the Ethiopian Wildlife Conservation Authority, the Tanzania Wildlife Research Institute,  
and the James Hutton Institute, supported by Imperial College London and the University of Stirling, UK

### Hunting in Ethiopia

Ethiopia is a country exceptionally high in globally unique biodiversity, however wildlife populations throughout the country have been reduced to a fraction of what they were due to a number of causes, including hunting. This appears to have several root causes, including cultural traditions, subsistence, buffers during famines and reprisal against government. Several national parks and controlled hunting areas are spread across the country, but the institutional and financial capacity for protected area management is low and benefit sharing mechanisms with communities are lacking. Hunting management is highly focused on revenue derived from concessions and trophy fees, particularly those targeting the endangered mountain nyala - the world's rarest mammal still subject to commercial harvest. HUSA examines the multiple drivers and impacts of hunting in both highland and lowland areas and assesses the potential for benefit sharing to help develop sustainable approaches to wildlife conservation.



### Hunting in Tanzania

The Tanzanian component of the project focuses on the role and impacts of hunting in the Serengeti ecosystem, which is famous for the largest herds of migratory ungulates in the world. Two million wildebeest, zebra and gazelle migrate annually from the short grass plains of Ngorongoro and Serengeti to the Mara River. These migratory herds, coupled with resident ungulates, support around 10 000 hyenas and lions as well as other mega-fauna, making the Serengeti one of the most important ecosystems for mammals in Africa. Illegal hunting is considered a serious threat to wildlife in the Serengeti ecosystem. Previous studies suggest that poverty and lack of alternative sources of protein are the primary drivers of local bushmeat consumption. However, the cultural, socio-economic and ecological basis and consequences of bushmeat hunting in the Serengeti ecosystem are not completely understood. HUSA provides scientific knowledge on these issues to help mitigate illegal bushmeat hunting and foster sustainable wildlife management in the Serengeti ecosystem.

### A Multi-disciplinary Approach

The FP7 consortium brings together a breadth of technical experts to identify the social, economic and ecological facets affecting hunting across a range of contexts nationally, regionally and internationally. Communities are also directly involved through group discussions, in-depth interviews and stakeholder fora.



### Research Briefings - Ethiopia

The following briefings summarise some of the findings from our research in Ethiopia to date. We would like to thank everybody who has supported our work. For updates, comments and questions please contact:

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## Revenue sharing from wildlife tourism and hunting

### Background

- Local people often bear the cost of protected area designations, including controlled hunting areas, as they forego income from alternative land uses
- In many places across the world, revenue sharing schemes have thus been developed, based on the assumption that people will support wildlife conservation if they receive tangible benefits from it
- We analyse here the governance processes of a scheme that aims to share revenues from trophy hunting and wildlife tourism in the Southern Nations, Nationalities and Peoples Regional State, Ethiopia
- Qualitative data were collected through a combination of document analysis, semi-structured interviews, focus group discussions and stakeholder workshops that included governmental authorities as well as community members

### Key findings

- All study participants welcomed the scheme and saw it as work in progress. Four areas of the current legislation and implementation practice were seen to require improvement:
  - Information on the detail of the scheme was lacking among many actors
  - Roles and responsibilities of the actors were imbalanced – district governments were very influential whereas local communities tended to be passive
  - Accountability was compromised, as limited provisions had been made for monitoring and evaluation
  - Disbursement of the shares was usually not associated to hunting or tourism, and overall revenue was too limited to have an impact

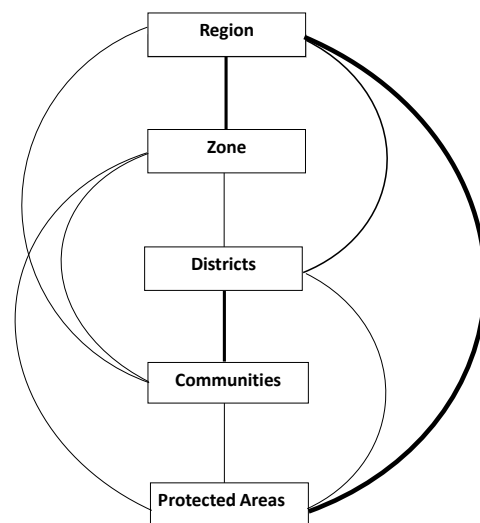


Fig.: Information flows between actors. Thicker lines denote more frequent communication.

### Conclusions

- The revenue sharing scheme was established in 2007, and it was thus too early to assess its impacts on conservation-related attitudes and behaviour. Our analysis of governance processes now informs the government’s current revision of legislation and implementation practice
- It seems unlikely that the scheme will lead to attitude and behaviour change among the local population in the future, given the missing connection between conservation-relevant behaviours and the amount of revenue distributed. This might be addressed by a turn towards co-management of the protected areas, where responsibility for wildlife is shared between government and local communities
- However, at a political level, formalised revenue sharing as in this scheme might help to make the monetary value of wildlife conservation visible, thus providing arguments against land conversion

## The role of women in hunting in lower Omo, Ethiopia

### Background

- Hunting without a permit is illegal in Ethiopia. Partly due to such uncontrolled hunting, wildlife populations in many areas, including southern Ethiopia, have declined substantially in recent years. Illegal hunting is thus a major conservation concern
- Hunting by local residents of the lower Omo valley in southern Ethiopia, such as the Hamar, Mursi or Arbore, has received comparatively little academic attention, but is often portrayed as a male activity, focusing on large game, connected to bravery and manhood
- To provide insights into the cultural and social context of illegal hunting in lower Omo, we explore here the role of women

### Method

- We analysed qualitative data from focus group discussions and interviews in 7 villages (n=105 participants) inhabited by Hamar, Bashada, Kara and Arbore ethnic groups. Separate discussions were held for women



### Results

- Women played an important role in male hunting activities by actively encouraging hunting and discouraging non-hunting through a variety of verbal and non-verbal means. These included, e.g., ...
  - Ritualised activities: welcoming a successful first-time hunter with symbolic gifts, songs and a ceremony
  - Preference for successful hunters as partners, and withdrawal of affection from non-hunting men
  - Praise for hunters, and insults and explicit disregard of non-hunters
- Non-hunting men were portrayed as a category in between ‘man’ and ‘woman’

*“During the dancing, during the songs, the girls will not choose the one who didn’t kill a buffalo. They choose only the killer.” (Man, age 50)*

### Conclusions

- Overall, female behaviours in relation to male hunting were very diverse and ritualised. However, the stark decline in wildlife meant that such rituals would nowadays only rarely be carried out
- Still, hunting of large game has high cultural importance in lower Omo. It both contributes to and is encouraged by the definition of gender roles
- Conservation interventions that aim to address illegal hunting of large game need to consider interactions between genders in order to be successful

## Hunting, social structure and human-nature relationships

### Background

- Hunting has often been portrayed as the ultimate form of human-wildlife interaction, emphasising the close connection between hunter and game
- In southern Ethiopia, illegal hunting, usually described as a culturally important activity, is a conservation concern, due to stark declines in wildlife populations
- Can a better understanding of the human-wildlife relationships enacted through hunting help us to address conservation concerns related to illegal hunting in the lower Omo valley, Ethiopia?
- To address this question, we analysed qualitative data from focus group discussions and interviews in 7 villages (n=105 participants), inhabited by Hamar, Bashada, Kara and Arbore ethnic groups

*“The girl will see him and say: ‘He is the hunter’, and run towards him and put her necklaces on him; she is called misha.”*

(Man, age 40)

### Key findings

- Hunting helped people to develop and maintain social structures beyond family bonds. Hunting of large game was central to the establishment of long-term relationships between two hunting friends (called *misso*) and between a successful first-time hunter and a girl, his ‘honorary elder sister’ (called *misha*). *Misso* and *misha* relationships could be seen as social capital which could be drawn on in difficult times
- By contrast, hunting seem to hold very little meaning for the hunters’ relationship to wildlife or nature. Study participants had recently experienced dramatic degradation of their environment (e.g., disappearance of wildlife, lack of grazing for livestock), but seemed to accept these changes in an almost fatalistic manner. Attempts to understand and explain these changes were limited

*“We are worried about it. We don’t know; maybe the land turned upside down and brought up the soil, which we have never seen before. The land is bare; this is new for us. The cattle are there, the goats are there, but we don’t know whether they will be saved or perish. We are just here because we are born here and have nowhere to go.”* Man, age 55

### Conclusions

- Overall, in lower Omo, hunting was important to establish relationships between people, but did not seem relevant for developing relationships with nature or wildlife, or knowledge about the natural environment. Ironically, this strong focus on social relations might contribute to the disappearance of hunting and its social functions
- The social importance of resource use practices (such as hunting), human-nature relationships and the ways how knowledge about the environment is acquired need to be understood to create a meaningful basis for conservation and development interventions.

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# Trophy hunting and conservation of mountain nyala

## Background

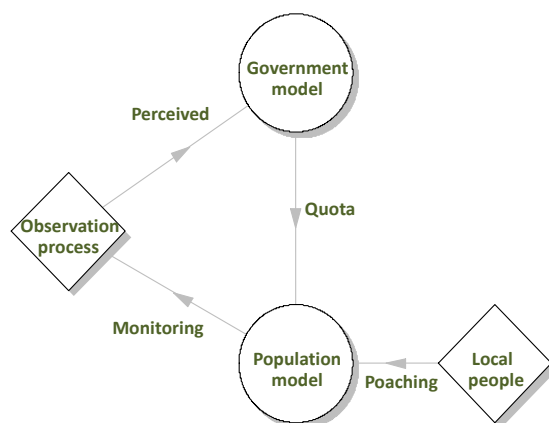
- The mountain nyala (*Tragelaphus buxtoni*) is an endangered antelope that is endemic to Ethiopia with an estimated population size around 4000. It is trophy hunted for its large spiralled horns
- Trophy hunting has the potential to support conservation of trophy species and wider biodiversity
- However, making decisions to benefit species, habitats and people is challenging because priorities differ between interest groups, but also because of a lack of information on key components of the system, such as mountain nyala population sizes

## Method

- We used a new modelling method that facilitates decision making when there is limited information and diverging objectives. This approach is widely used in fisheries and explicitly lays out the trade-offs involved in different policies, so that decision-makers can act with a clearer understanding of uncertainties and consequences associated to these policies

## Key findings

- The quality and quantity of information available to decision-makers determines their ability to make informed decisions. Our study on mountain nyala showed that the 10 years of monitoring data currently available are sufficient to make informed decisions
- However, robust decision-making is currently hampered by large uncertainties in the precision of population monitoring. The effects of poaching and habitat loss (from human encroachment) on the nyala population are unknown



## Conclusions

- The proposed framework is transferable and appropriate for many small-scale terrestrial systems in developing countries. It is very flexible and easily integrated into adaptive management
- Our approach can use qualitative and quantitative information (e.g. social, economic and ecological data) and the full extent of past data (time series)
- Quota setting for mountain nyala should ideally take population trends and past harvest quota into account. This balances the trade-offs between conservation of mountain nyala, economic profit and stability better than the commonly used rule of taking a proportion of the population. Under current uncertainties, an adaptive, iterative approach which uses estimates of poaching and habitat loss, population monitoring and past quotas will most likely lead to higher harvests than the current management. However, an increase in quota will only be sustainable if also habitat loss and poaching are kept at a sustainable level

# The economic potential of trophy hunting in Ethiopia

## Background

- Every year, about 40 trophy hunters, most of them from North America and Europe, visit Ethiopia to hunt. Currently, most hunts include mountain nyala (*Tragelaphus buxtoni*)
- Trophy hunting has the potential to support nature conservation, and can, in principle, provide income to both the national economy and local communities
- Hunting trips are governed by strict regulations, including the quota set for mountain nyala
- Here, we examine international hunters’ willingness-to-pay for hunting in Ethiopia under a variety of conditions, to explore the potential demand for trophy hunting if these conditions were modified

## Method

- Survey of international trophy hunters’ preferences (n=224) and choice modelling
- Each survey participant had to indicate their preferred hunting packages (see Fig.)
- Packages varied in relation to the following six attributes: bag mix, presence of livestock in the hunting area, share of the revenue given to local communities, share given to governmental bodies, trip duration and license fees

**Figure: Sample choice card**

Please mark your preferred options (only one from each choice card).

	A	B	C	D
Bag mix	Nile lechwe and white-eared kob	Mountain nyala and other highland game	Mountain nyala and lowland game	No trip to Ethiopia
Experience of hunting site	Some livestock and some wildlife	A lot of wildlife, no livestock	A lot of wildlife, no livestock	
Share to community %	0	20	30	
Share to government %	40	30	10	
Length of trip	1 week	4 weeks	2 weeks	
License fees	10,000 USD	40,000 USD	20,000 USD	
Your choice?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Key findings

- Overall, hunters were willing to pay higher fees the more revenue was shared with communities, and the more wildlife was present in the hunting area. However, presence of livestock and revenue sharing with governmental bodies meant that they were willing to pay less for a hunting trip
- We quantified hunters’ willingness to pay (WTP) for a hunting trip by means of a choice model: For example, for a Nile lechwe and a white-eared kob, respondents were on average willing to pay 10,000 USD less than for a mountain nyala. Absence of livestock and presence of wildlife increased their average WTP by 17,000 USD. For each percentage point of hunting fees redistributed to local communities, their WTP rose by 400 USD, but if distributed to governmental bodies, it sunk by 200 USD

## Conclusions

- While these findings are only based on hypothetical choices, they do provide insights in trophy hunters’ preferences for real hunting trips, and the economic potential of the hunting sector.
- In particular, improved wildlife experience in the hunting area and revenue sharing with communities could increase income from hunting trips.

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## Hunters' views on trophy hunting in Ethiopia

### Background

- As part of our survey of international hunters' preferences for trophy hunting trips to Ethiopia (see Research Briefing #5), we also gathered their views on hunting in Ethiopia more generally

### Method

- Analysis of respondents' comments (n=76) on our survey of international trophy hunters' preferences

### Key findings

- Most comments expressed a very strong interest in and enthusiasm about hunting in Ethiopia but also raised concerns
- Many of those who offered comments believed that people living close to hunting areas should financially benefit from hunting tourism, as this was seen to incentivise wildlife conservation.
- Major concerns expressed by the respondents included:
  - Rules and regulations were perceived as rigid, and as constraining both nature conservation and hunting tourism
  - Presence of humans and livestock in hunting areas was seen to diminish experience of wildlife and nature. It also gave reason for concern about the future of wildlife populations and nature conservation
  - Pricing structure (e.g., advance payments, non-refundability, daily rates, minimum duration, steep increase in fees) deterred potential hunting tourists
  - Hunting tourism was perceived to be organised by a very small number of outfitters; a greater diversity and more competition between outfitters was desired
  - Management of the hunting sector was seen to focus on mountain nyala, thereby missing out on opportunities for other hunts (e.g., in lowland areas)

### Conclusions

- While many respondents expressed great interest in visiting Ethiopia, they found the conditions, especially related to pricing and minimum duration, too constraining, and thus decided to hunt in other countries
- Benefit sharing with local communities found wide support
- Respondents were worried about decreasing wildlife
- While these comments obviously stem from a self-selected subset of survey respondents, they are in line with the findings from the choice model (Research Briefing #5). They provide important insights into the views of potential hunting tourists that should be considered in future decision-making



## Summary and recommendations

- The research project “Hunting for Sustainability in Africa” investigated cultural, institutional and economic aspects of legal and illegal hunting in Ethiopia. Studies included:
  - An assessment of the governance of revenue sharing from hunting and wildlife tourism in southern Ethiopia
  - Cultural factors influencing illegal hunting in the lower Omo valley
  - A model to identify sustainable harvest rates for mountain nyala
  - International hunters’ preferences for trophy hunting in Ethiopia
- Our findings from lower Omo show that hunting is deeply embedded in the cultural and social structures of the area. Environmental education campaigns that aim to reduce hunting have raised awareness of the formal illegality of hunting, but not changed its cultural and social meaning. Despite the disappearance of wildlife from the area, the social importance of hunting still prevails and informs behaviour. Our study raises the question if a greater awareness of the social importance of hunting and its likely future demise, partly due to overhunting, might help local people to develop more sustainable hunting practices – for example, to abandon the use of automatic rifles for hunting
- As it stands, revenue sharing from trophy hunting and conservation might not have the intended impact either, as revenue disbursement is not directly coupled to wildlife populations. As a consequence, the revenue sharing scheme might not influence hunting or e.g., livestock grazing practices. Co-management of protected areas could be a way to address this. However, any attempts at establishing collaborative arrangements need to take into account local residents’ ways of knowledge generation and decision-making. Our findings – that cannot be presented here in full detail – could be used as a starting point
- Our survey results suggest that trophy hunting could provide additional income – especially for communities and hunting businesses – if the hunting sector was more flexible and accommodated trophy hunters’ preferences

