



FOR / Olivier Girard

Collaborative Partnership on Sustainable Wildlife Management

The Collaborative Partnership on Sustainable Wildlife Management (CPW) is a voluntary partnership of international organizations with substantive mandates and programmes for the sustainable use and conservation of wildlife resources. The mission of the CPW is to increase cooperation and coordination among its members and other interested parties on sustainable wildlife management to promote the sustainable use and conservation of terrestrial vertebrate wildlife in all biomes and geographic areas.

Sustainable wildlife management

Sustainable wildlife management (SWM) is the sound management of wildlife species to sustain their populations and habitat over time, taking into account the socioeconomic needs of human populations. This requires that all land-users within the wildlife habitat are aware of and consider the effects of their activities on the wildlife resources and habitat, and on other user groups. In this factsheet, the term “wildlife” refers to “terrestrial or semi-terrestrial vertebrates”.

In view of its ecological, social and economic value, wildlife is an important renewable natural resource, with significance for areas such as rural development, land-use planning, food supply, tourism, scientific research and cultural heritage. If sustainably managed, wildlife can provide continuous nutrition and income and contribute considerably to the alleviation of poverty as well as to safeguarding human and environmental health.

The objective of the fact sheets produced by the CPW is to inform decision-makers, stakeholders and the general public about issues and opportunities relating to the sustainable use and conservation of terrestrial and semi-terrestrial vertebrate wildlife.

What is at stake?

A key food source for many people

Wildlife makes an essential contribution to food security for many people worldwide, food security being considered to exist where people have access to sufficient, safe, and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Estimated bushmeat¹ consumption in the Congo Basin alone is over 4 million tonnes per year.² For many, wild meat may be the main type of meat available, an important component of food diversity, or a food that contributes to cultural identity. Wild meat is a natural healthy food, although (as with domestic stock) its use may carry health risks related to

zoonoses – diseases transmitted to humans through the handling or consumption of animals. Declines in wildlife due to over-hunting or other causes, whether direct (e.g. habitat degradation) or indirect (e.g. weak governance or climate change) could significantly affect many people’s food security and nutritional health.

Key issues

Wild meat and nutrition

In many regions of the world, wild meat is consumed as the only available source of animal protein, either directly harvested from the wild, received as a gift within tight social exchange networks, or purchased





from the market. The majority of wild meat is obtained and consumed locally, but it also enters international trade, both legal and illegal, to supply overseas demand. In less developed regions, it plays an essential role in people's diets, especially where livestock husbandry and fishing are not feasible options or to complement livestock when unexpected production drops occur, such as during drought periods in savanna and desert areas. Worldwide, high wild meat consumption rates coincide with high poverty rates (as in Central Africa). In such contexts, wild meat is a crucial source of protein, fat, iron and other micronutrients. In other areas, wild meat is not necessarily a common item in people's diets, but contributes to dietary diversity. The choice to consume wild meat may be driven by taste preference, sociocultural identity or tradition, including use as a festival food or luxury product. Terrestrial vertebrates are also hunted and traded commercially for their use in the manufacture of medicines. In fact, there is often not a clear line between consumption of animal products for food or for their perceived medicinal or tonic effects.

Zoonotic diseases

Wild meat trade and consumption may lead to disease transmission via the hunters, middle market distributors and sellers, and consumers that come into contact with the animals or meat. The emergence of new infectious diseases, particularly zoonoses (derived from animals), is increasing. Because many animals typically consumed as wild meat are known to carry zoonotic pathogens, the use of wild meat may present a risk to human and animal health. A number of studies have described disease outbreaks related to game hunting and the consumption of wild meat. Although Ebola is one of the most widely known through the media, other zoonoses transmitted through the handling and consumption of wild meat, such as internal parasites, are more widespread and may kill silently. Zoonoses are not

specific to wild meat since many of them may also be transmitted by domestic sources of meat.

Governance

Current regulations and policies are usually centred around the pressures posed by the overexploitation of threatened animals for their wild meat and ignore the contribution of wild meat to food security. An increasing number of vertebrate species are being hunted to dangerously low levels as a result of increased commercial demand for meat and medicines, with many now in danger of extinction. This indiscriminate hunting constitutes a bottleneck for the legal and sustainable use of wildlife. In many countries, wild meat trade is banned and hunting regulations are not adapted to ecological and social contexts. Due to weak natural resources governance in some places, these regulations, where they exist, are often not enforced. Instead, informal and traditional rules are applied, without formal recognition of the role of sustainable wildlife use. In some countries, institutions that manage hunting are well established, with a combination of private and public sector involvement. Wild meat trade is strictly regulated although efforts are being made to expand wild meat trade and consumption, which will require innovations in wild meat certification schemes.

Sustainable harvesting of wild meat

In many parts of the world, hunting has become unsustainable, due either to an increase in hunting pressure or to a decrease in wildlife related to a diversity of direct or indirect factors. Unsustainable hunting leads to the decline or extirpation of vulnerable species, which may in turn affect the ecosystem as a whole (e.g. decline in dispersers, depletion of top predators). On the other hand, controlled and sustainable hunting may help regulate populations and reduce competition among species, when animal populations of certain species become too high.

Experience and knowledge

Alternatives to unsustainable use of wildlife for food

Because wildlife can play a crucial role in the diets and livelihoods of people, conservation and development managers and planners need to further investigate options to reduce harvest levels, other than blanket banning. Some of the most common approaches to dealing with the unsustainable use of bushmeat in tropical areas are based on short- to medium-term projects implemented with external funds. These generally consist of discouraging people from hunting (except for community wildlife management projects) and can be classified as follows: diversification of income sources, domesticated meat production, small-scale breeding with small indigenous species, game ranching, payments for ecosystem services and certification of wildlife-based or wildlife-friendly products. These efforts show that the most successful alternatives are those that ensure economic competition and nutritionally viable substitutes for wild meat, without increasing pressure on other natural resources, ecosystem processes, or locations. A careful anthropological approach is needed to understand the social and cultural meanings of different sources of meat and the likelihood of substitution according to gender, age, and ethnic background, before embarking on a program to support alternatives. The focus is to manage hunting in a sustainable way.

Also, while the alternatives mentioned above have a role to play, the best means of mitigating the unsustainable use of wild meat is probably to ensure that the wildlife populations remain at, or are allowed to recover to, levels where their use can be sustainable. This might involve stronger tenure and management rights, provision of technical expertise to support management, integration of traditional/indigenous knowledge with science, and management measures such as temporary bans, active wildlife population recovery interventions (e.g. restocking), and carefully managed regimes that focus on the removal of non-productive animals only (e.g. size, sex and age restrictions). Such interventions require the full support and cooperation of users. The participatory monitoring programme of moose (*Alces alces*) in Sweden, initiated in 1985, is a successful example of local involvement by hunters, who provide voluntary feedback which is then used to establish sustainable harvesting levels.³

OPPORTUNITIES

Multifunctional, adaptive management

There is an enormous opportunity for sustainable wildlife management to transform currently unsustainable (and often illegal) harvesting of wildlife for food into a well-managed, culturally and economically appropriate activity, which can buffer socio-economic and ecological shocks and is based on

clear and enforceable rights (including the role and rights of indigenous peoples and local communities). Sustainable wildlife management is multifunctional and should cover the provision of food, recreation, economic revenues, population and disease control, land-use management and ecosystem conservation. There is a growing need to develop methodological and institutional innovations to manage wildlife for multiple purposes (including food security), using adaptive management processes and involving practitioners, governmental institutions and researchers.

Challenges

Catering to local realities and needs

The basic challenge is to maintain food security through management options that reduce the ecological and health risks associated with wild meat consumption without disrupting the multiple socio-economic functions of wildlife management. A deeper understanding of the issues and a stronger political will at international (including regional), national and local levels is necessary to ensure that best practices are shared, and to actively promote policies that foster innovative initiatives that benefit both conservation and human well-being.

The possibility of sustainable use in a modern context remains absent from legislation in many countries, where some members of civil society, as well as government, fear that legislating wildlife management practices will lead to uncontrolled markets and the depletion or even extinction of vulnerable species. Existing command and control measures have to a large extent already failed, particularly where local realities and subsistence needs have not been taken into account. In the context of sustainable use strategies, legislation and law enforcement should support users' rights to manage and sustainably use their resources, and will be most effective where users are fully engaged in policy development and anti-poaching efforts, and benefit from sustainable wildlife management.



What is still to be learned?

- The importance of wild meat use and the drivers of wild meat consumption in a context of rapid social and economic change, to model consumption patterns of the future.
- How human-induced habitat disruptions are leading to increased zoonosis and disease transmission across increasing distances.
- The need to develop and implement monitoring systems of wild meat harvest and trade based on integration of traditional, indigenous and scientific knowledge, to objectively assess exploitation levels and allow for status, trends and comparability of wild meat harvest and trade.
- The development of appropriate models for sustainable wildlife management in different ecological conditions that integrate ecological, economic and cultural trade-offs.
- The identification of existing weaknesses in regulatory frameworks for the formulation of policy recommendations and legislation that allow innovative approaches to sustainable wildlife management.

Endnotes

1. The Convention on Biological Diversity Liaison Group on Bushmeat defines bushmeat (or wild meat) hunting as the harvesting of wild animals in tropical and sub-tropical countries for food and for non-food purposes, including for medicinal use (UNEP/CBD/LG-Bushmeat/2/4).
2. Nasi R. and van Vliet N. 2011. Empty forests, empty stomachs? Bushmeat and livelihoods in Congo and Amazon basins. *International Forestry Review*, Vol. 13(3).
3. Singh, N.J., Danell, K., Edenius, L. and Ericsson, G. 2014. Tackling the motivation to monitor: success and sustainability of a participatory monitoring program. *Ecology and Society* 19(4), 7.

Further reading

- Bair-Brake H., Bell T., Higgins A., Bailey N., Duda M., Shapiro S., Eves H.E., Marano N. and Galland G. 2014. Is that a rodent in your luggage? A mixed method approach to describe bushmeat importation into the United States. *Zoonoses and Public Health*, 61, 97–104
- Fischer, A., Sandström, C., Delibes-Mateos, M., Arroyo, B., Tadie, D., Randall, D., Hailu, F., Lowassa, A., Msuha, M., Kereži, V., Reljić, S., Linnell, J. and Majić, A. 2013. On the multifunctionality of hunting – an institutional analysis of eight cases from Europe and Africa. *Journal of Environmental Planning and Management*, 56(4), 531–552.
- Golden, C.D., Fernald, L.C.H., Brashares, J.S., Rasolofoniaina, B. J.R., and Kremen, C. 2011. Benefits of wildlife consumption to child nutrition in a biodiversity hotspot. *Proceedings of the National Academy of Sciences*, 108(49), 19653–19656.
- Leroy E.M., Rouquet P., Formenty P., Souquière S., Kilbourne A., Froment J.M., Bermejo M., Smit S., Karesh W., Swanepoel R., Zaki S.R., Rollin P.E. 2004. Multiple Ebola virus transmission events and rapid decline of Central African wildlife. *Science*, 303(5656), 387–390.
- Secretariat of the Convention on Biological Diversity. 2012. Revised recommendations of the CBD Liaison Group on Bushmeat. COP 11 Decision XI/25. Sustainable use of biodiversity: bushmeat and sustainable wildlife management. Available at <http://www.cbd.int/decision/cop/default.shtml?id=13186>.
- Secretariat of the Convention on Biological Diversity. 2011. *Livelihood alternatives for the unsustainable use of bushmeat*. Report prepared for the CBD Bushmeat Liaison Group. Technical Series No. 60. Montreal, SCBD.
- Sirén A., and Machoa J. 2008. Fish, wildlife and human nutrition in tropical forests: a fat gap. *Interciencia*, 3 (003), 186–193.
- Sirén A. 2012. Festival hunting by the kichwa people in the Ecuadorian Amazon. *Journal of Ethnobiology* 32(1), 30–50.
- Smith, K.M., Anthony, S.J., Switzer, W.M., Epstein, J.H., Seimon, T. et al. 2012. Zoonotic viruses associated with illegally imported wildlife products. *PLoS ONE*, 7(1), e29505.
- van Vliet, N. and Mbazza, P. 2011. Recognizing the multiple reasons for bushmeat consumption in urban areas: a necessary step toward the sustainable use of wildlife for food in Central Africa. *Human Dimensions of Wildlife*, 16: 1, 45–54
- Wilkie D.S., Starkey M., Abernethy K., Effa E.N., Telfer P., Godoy R. 2005. Role of prices and wealth in consumer demand for bushmeat in Gabon, Central Africa. *Conservation Biology*, 19, 268–274.

KEY MESSAGES

- **Wildlife contributes to the food security** of many people living in rural and urban areas worldwide.
- Wild meat is an important source of **protein, fat, iron and other micronutrients**.
- The use of **wildlife carries health risks, as does any contact with animals**, as zoonotic diseases may be transmitted to humans through the handling or consumption of wild meat.
- Options to reduce the ecological and health risks associated with the use of wild meat, while guaranteeing food security for a growing population, need to be developed without disrupting the **multiple functions of hunting** in societies.
- Current **policies and regulations** ignore the contribution of wild meat to food security, creating obstacles for legal sustainable use of wildlife in many countries.
- Some countries have established **institutions for the management of hunting** which enforce strict regulations on wild meat trade, while contributing to efforts to expand wild meat trade and consumption through innovative certification schemes.
- Policymakers need to better understand the complex cause-effect relationships that lead to conservation successes and failures, and **balance the needs of the rural poor with the desires of those who do not use or live near wildlife**.