



6.2 Addressing the bushmeat crisis through certification

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Forestry operations in the tropics have been linked to promoting unsustainable levels of hunting for consumption or trade by increasing access to and human densities in remote forest areas (Bennett 2001). The unsustainable hunting of bushmeat¹ has been shown to create “empty forests” (Redford 1992). This has grave consequences for the food security and livelihoods of many forest-dependent people.

It also affects important fauna-dependent ecological processes such as pollination and seed dispersal (Wright 2003, Wright et al. 2007). Among the various recommendations or guidelines put forward to mitigate the negative impacts of hunting (e.g., ITTO/ATO 2003, ITTO/IUCN 2009, CIC/FAO 2008, and CBD 2009), forest certification appears to be a promising but overlooked measure in the context of production forests. Indeed, the Convention on Biological Diversity (CBD) recently recognized the importance of appropriate voluntary market-based certification schemes to the conservation and sustainable use of forest biodiversity (decision IX/5).

This article briefly reviews the recent inclusion of bushmeat-related provisions in the certification schemes of the Programme for the Endorsement of Forest Certification (PEFC) and the Forest Stewardship Council (FSC). It also examines the coherence of these provisions with CBD Bushmeat Liaison Group’s recommendations (CBD 2009), and the potential of certification schemes to contribute to national and international implementation of these recommendations.



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Impacts of timber harvesting on bushmeat hunting

Timber operations facilitate access to remote forests by opening roads in previously isolated areas. Roads provide access to markets and bushmeat can become a commodity, transforming hunting from a largely subsistence activity into a commercial one (Poulsen et al. 2009). Infrastructure and equipment linked to logging, such as camps, cars and trucks, have in several instances been used for the commercial trade of hunted species, often protected ones.

Settlements and camps linked to forestry company infrastructure attract large numbers of people (workers, family members and traders) to areas that were formerly sparsely populated. Logging in remote areas has been shown to drive human population growth in those areas, with increased immigration intensifying the bushmeat trade (Poulsen et al. 2009). A recent study estimates that 29% of forested areas in central Africa is likely to have increased wildlife hunting pressures due to the access and market opportunities provided by new logging towns (Laporte et al. 2007).

Although the negative impacts of timber operations on forest biodiversity are well documented, the potential of well-managed logging concessions to be “wildlife reservoirs” — compared with unsustainably managed forests — is also increasingly recognized (Clark et al. 2009). Well-managed and certified production forests can be an important addition to protected areas, which are often too small, fragmented or ineffectively managed to support wide-ranging or rare species. Forest industries can promote the sustainable use of biodiversity and human livelihoods by engaging in sustainable practices that explicitly consider the direct and indirect effects of their activities on wildlife (Aviram, Bass and Parker 2003; Bass, Aviram and Parker 2003).

Forest industries can mitigate the negative impacts of their operations on wildlife by controlling and managing bushmeat hunting in their concessions (Nasi et al. 2008). Many of these measures are outlined in article 3.1 in this issue. Other practices suggested in the literature include banning commercial hunting in concessions, establishing conservation zones within concessions where hunting is forbidden, prohibiting nonselective hunting methods such as snare hunting and trap hunting, and producing educational and information materials for both the public and staff (Meijaard et al. 2005). Wherever possible, local governance structures and customary sustainable use by indigenous and local communities should be strengthened, in addition to other measures to achieve sustainable levels of hunting.

The CBD Liaison Group on Bushmeat

The CBD Liaison Group on Bushmeat met in October 2009 at the World Forestry Congress in Buenos Aires and elaborated national and international recommendations for the sustainable use of bushmeat (CBD 2009). The eleven national-level and nine international-level recommendations cut across various themes such as climate change, health, science and alternative means of subsistence. The recommendations highlight the need to engage the private sector and extractive industries and recognize the requirement for forest

certification schemes to take into account the conservation and sustainable use of wildlife to maintain healthy forest ecosystems:

- Whenever possible, the responsibility for wildlife management should be transferred to local stakeholders, who have a vested interest in maintaining the resources, and the capacity of these empowered local communities should be built and strengthened to ensure that they have the capacity to exercise these rights.
- National governments should increase their capacity to monitor levels of bushmeat harvesting and consumption and incorporate this information in national statistics to inform policy decisions and planning.
- While an effective network of protected areas is critical to ensure the conservation of wildlife, wildlife populations outside protected areas are also essential, and management should encompass the largest possible landscape scale.
- The development of alternative food and income sources is necessary, as wildlife cannot sustainably support current or future livelihood needs, but these palliative measures alone (such as farming, ranching and captive breeding) are unlikely to be effective in conserving wildlife resources. In the long term, there is no substitute for effective management of the resource for protection and production.
- To achieve conservation and the sustainable use of wildlife resources, capacity building and public awareness are needed at national and local levels, including governance and law enforcement, wildlife monitoring and management and livelihood alternatives; collaboration across government, private and public sectors is also required.
- The conservation and sustainable use of wildlife resources are enhanced through the use of the most ecologically benign (e.g., species-specific), cost-efficient and humane hunting methods.

Since the recommendations are targeted at national and international levels, they are also relevant to national or global forest certification schemes. Forest industries should work collaboratively with governments and other stakeholders to implement these recommendations by, for instance, contributing to monitoring activities, capacity-building, awareness-raising, landscape-scale wildlife management, and the provision of alternative food sources. These and other recommendations of the liaison group should be included in major forest certification schemes to mitigate the impacts of logging concessions on bushmeat hunting.

Forest certification schemes and bushmeat hunting

Several major global certification schemes include provisions to mitigate the impacts of timber operations on bushmeat hunting.

Forest Stewardship Council

Several FSC principles and criteria are relevant to bushmeat hunting:

- a requirement to respect national laws and international agreements (principle 1);
- the protection of rare and endangered species and the control of inappropriate hunting (principle 6, criterion 6.2);

- monitoring of changes in fauna (principle 8, criterion 8.2); and
- the maintenance of high conservation value forests (principle 9, criterion 9.3).

The principles and criteria (FSC 1996 and Appendix 2 of this issue) thus offer opportunities for synergies between forest operator activities and the national and international activities recommended by the Liaison Group on Bushmeat. For example, through monitoring, information on the scale of hunting occurring within the forest concession can be used in national statistics for improved management, policy and planning. It can also contribute to further research, monitoring systems and information management related to bushmeat harvest and trade.

Regional FSC standards include more explicit indicators to address bushmeat hunting. The draft Congo Basin Sub-Regional Standard, for instance, requires that timber operators prohibit their staff from hunting or transporting wildlife on company vehicles and that they control illegal hunting.

FSC principles and criteria could further address certain recommendations of the liaison group, including providing alternative means of subsistence for employees or local populations; prohibiting non-selective and inhumane hunting methods such as snares; and awareness-raising for staff, as well as blocking of non-essential roads to reduce access to remote areas.

Examples from the field have shown that responsible logging — including that achieved through FSC certification — provides, in comparison to other forms of logging, a better assurance of suitable living conditions for great apes in logging concessions, in large part due to reduced hunting pressure (van Kreveld and Roerhorst 2009; also see article 4.3 in this issue).

Programme for the Endorsement of Forestry Certification

PEFC has in its membership 35 independent national forest certification systems, 28 of which to date have been endorsed by the PEFC council. Most of the required elements for endorsement are based on intergovernmental processes for promoting sustainable forest management. For example, national certification schemes in countries covered by the African Timber Organization (ATO) must be compatible with the joint ATO and International Tropical Timber Organization (ITTO) Principles, Criteria and Indicators for the sustainable forest management of African natural tropical forests (ATO/ITTO PC&I). For ITTO member countries not covered by the ATO/ITTO PC&I, forest certification criteria for management of natural tropical forests must be compatible with the ITTO guidelines on the sustainable management of natural tropical forests (1992) and the ITTO/IUCN guidelines on the conservation and sustainable use of biodiversity in tropical timber production forests (ITTO/IUCN 2009).

The ATO/ITTO PC&I include many measures related to bushmeat, such as forbidding the use of forest concessionaire vehicles for bushmeat hunting, closing unnecessary roads after harvesting, and forbidding non-selective hunting methods. The PC&I also address

livelihood concerns through the use of indicators such as no noted scarcity in the supply of bushmeat for subsistence living in the village settlements and the presence of a store well-stocked with alternative food sources for employees and their families.

ITTO/IUCN guideline 36 includes measures to avoid unsustainable levels of hunting. The guideline specifies that relevant stakeholders should assess local communities' level of dependence on bushmeat and seek ways of reducing this; collaborate to increase awareness of the risks posed to biodiversity by unsustainable hunting; compile and share information on commonly-hunted threatened species; determine the drivers of the bushmeat trade and increase consumer access to domestically-raised meat; and — through participatory processes — establish hunting zones and employ local people and private companies to help control these areas. The guideline also recommends that timber companies provide forest employees with meat and fish obtained from sustainable sources. This approach emphasizes sustainable livelihoods, awareness-raising and monitoring.

Although these guidelines provide a strong basis for including bushmeat-related measures in certification schemes, the measures of PEFC-endorsed schemes are not necessarily consistent across regions. Some countries with prominent national PEFC-endorsed certification schemes, such as Chile, are not covered by the ATO/ITTO PC&I or the ITTO/IUCN guidelines.

Conclusions

Forest certification has the potential to contribute to the conservation and sustainable management of species presently hunted at unsustainable levels in tropical forests. The most widely used forest certification systems, PEFC and FSC, include several provisions related to mitigating the effects of logging on bushmeat hunting. Both these systems are currently revising their criteria and indicators, and it is recommended that they both apply the CBD Bushmeat Liaison Group recommendations (CBD 2009) during this process. They should also consider ways in which to further mitigate the impacts of logging on bushmeat hunting and trade. In particular, certification schemes could improve their consideration of livelihoods aspects by including provisions for alternative food sources and for capacity-building and management systems that support legal and sustainable hunting.

An assessment of the impacts of forest certification on the hunting of wildlife would help evaluate the effectiveness of provisions related to hunting. As van Kuijk, Putz and Zagt (2009) conclude, there is little information, if any, on whether certification has reduced hunting pressure in logging concessions, despite the fact that certification systems include specific measures targeted to unsustainable hunting. Research and data collection on the hunting of wildlife in certified and uncertified production forests, by identifying effective provisions, would help further improve certification systems to better address the unsustainable use of wildlife.



In addition to timber companies, many different stakeholders are moving towards the more sustainable use of bushmeat, including indigenous and other local communities, governments, non-government organizations, applied research centres, and others. Collaboration and shared responsibility among these stakeholders is essential. For instance, cost-effective and harmonized methods to monitor wildlife and bushmeat trade in logging concessions can only be achieved as a result of cooperation among applied research centres, non-government organizations, governments and timber companies. Promising examples exist, including some from Cameroon,² Ghana³ and northern Congo.⁴ They show that it is possible for logging operators, conservation NGOs, research bodies, and local populations to work together to conserve and manage wildlife. Certification now needs to step in to consolidate these examples and set standards.

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 forests for food and for non-food purposes, including for medicinal use.
2. Wildlife Wood Project of the Zoological Society of London; www.zsl.org/conservation/regions/africa/wildlife-wood-project.
3. Wildlife Wood Project of the Zoological Society of London; www.zsl.org/conservation/regions/africa/wildlife-wood-project.
4. PROGEPP project with *Congolaise Industrielle des Bois*, WCS and ITTO; www.wcs-congo.org/projects/progepp.htm.

References

- Aviram, R., M. Bass and K. Parker. 2003. Extracting hope for bushmeat: case studies of oil, gas, mining and logging industry efforts for improved wildlife management. Issue brief in the series "Uncertain Future: The Bushmeat Crisis in Africa." Sustainable Development and Conservation Biology Graduate Program, University of Maryland, College Park, 57 pp. Available at www.bushmeat.org/uncertain_future.
- Bass, M., R. Aviram and K. Parker. 2003. Timber certification: prospects and progress in addressing wildlife issues in central Africa. Issue brief in the series "Uncertain Future: the Bushmeat Crisis in Africa." Sustainable Development and Conservation Biology Graduate Program, University of Maryland, College Park, 75 pp. Available at www.bushmeat.org/uncertain_future.
- Bennett, E.L. 2001. "Timber certification: where is the voice of the biologist?" *Conservation Biology* 15: 308–310.
- CBD (Convention on Biological Diversity). 2009. *Report of the Liaison Group on Bushmeat Meeting*. Buenos Aires, October 15–17, 2009. UNEP/CBD/LG-Bushmeat/1/2. Available at www.cbd.int/doc/?meeting=LGB-01.
- Clark, C.J., J.R. Poulsen, R. Malonga and P.W. Elkan. 2009. "Logging concessions can extend the conservation estate for Central African tropical forests." *Conservation Biology* 23:1281–1293.
- CIC (International Council for Game and Wildlife Conservation) and FAO (Food and Agriculture Organization of the United Nations). 2008. *Best practices in sustainable hunting: A guide to best practices from around the world*. CIC Technical Series Publication No.1. 65 pp.
- FSC (Forest Stewardship Council). 1996. *FSC International Standard. FSC Principles and Criteria for Forest Stewardship*. FSC-STD-01-001 (version 4-0) EN. www.fsc.org/fileadmin/web-data/public/document_center/international_FSC_policies/standards/FSC_STD_01_001_V4_0_EN_FSC_Principles_and

Criteria.pdf, accessed online January 2010).

International Tropical Timber Organization (ITTO)/African Timber Organization (ATO 2003). *ATO/ITTO principles, criteria and indicators for the sustainable management of African natural tropical forests*. www.itto.int/policypapers_guidelines, accessed online January 2010.

International Tropical Timber Organization (ITTO)/International Union for the Conservation of Nature (IUCN). 2009. *ITTO/IUCN Guidelines for the conservation and sustainable use of biodiversity in tropical timber production forests*. ITTO Policy Development Series No. 17. Yokohama: ITTO. www.itto.int/policypapers_guidelines, accessed online January 2010.

Laporte, N.T., J.A Stabach, R.G Grosch, T.S. Lin and S.J. Goetz. 2007. "Expansion of industrial logging in Central Africa." *Science* 316: 1451.

Meijaard, E., D. Sheil, R. Nasi, D. Augeri, B. Rosenbaum, D. Iskandar, T. Setyawati, M. Lammertink, I. Rachmatika, A. Wong, T. Soehartono, S. Stanley, S. and T. O'Brien. 2005. *Life after logging: Reconciling wildlife conservation and production forestry in Indonesian Borneo*. Bogor: CIFOR, 370 pp.

Nasi, R., D. Brown, D. Wilkie, E. Bennett, C. Tutin, G. van Tol and T. Christophersen. 2008. *Conservation and use of wildlife-based resources: the bushmeat crisis*. Secretariat of the Convention on Biological Diversity, Montreal, and Center for International Forestry Research (CIFOR), Bogor. Technical Series no. 33, 50 pp.

Poulsen, J.R., C.J. Clark, G. Mavah and P.W. Elkan. 2009. "Bushmeat supply and consumption in a tropical logging concession in northern Congo." *Conservation Biology* 23: 1597–1608.

PEFC (Programme for the Endorsement of Forestry Certification Schemes). 2009. *Basis for Certification Schemes and their Implementation*. Annex 3. Normative Document. 13 November 2009 10 pp. www.pefc.org/index.php/standards/technical-documentation/pefc-international-standards/item/download/93, accessed online January 2010.

Redford, K. 1992. "The Empty Forest." *BioScience* 42: 412–423.

van Kreveld, A. and I. Roerhorst. 2009. *Great apes and logging*. Zeist: WorldWide Fund for Nature. www.worldwildlife.org/what/globalmarkets/forests/WWFBinaryitem13597.pdf.

van Kuijk, M., F.E. Putz and R.J. Zagt. 2009. *Effects of Forest Certification on Biodiversity*. Wageningen: Tropenbos International, 94 pp. www.tropenbos.org/images/Tropenbos/publications_TBI/forest_certification/forest_certification_and_biodiversity.pdf.

Wright S.J. 2003. "The myriad consequences of hunting for vertebrates and plants in tropical forests." *Perspectives in Plant Ecology, Evolution and Systematics* 6: 73–86.

Wright S.J., A. Hernández and R. Condit. 2007. "The bushmeat harvest alters seedling banks by favoring lianas, large seeds, and seeds dispersed by bats, birds, and wind." *Biotropica* 39: 363–371.