



UK Bushmeat Working Group

9th June 2009

14.30-17.00

Council Room, Zoological Society of London

Meeting Report

Attendees

Noëlle Kümpel – Zoological Society of London (ZSL)
Juliet Wright – Lebialem Hunters' Beekeeping Initiative
Anne-Lise Chaber – independent
Ian Watson – Watson Fish Consulting
Katherine Homewood – University College London
E.J. Milner-Gulland – Imperial College London
Marcus Rowcliffe – ZSL Institute of Zoology
Björn Schulte-Herbrüggen - ZSL Institute of Zoology and University College London
Stuart Nixon - ZSL
Lauren Coad - Environmental Change Institute, University of Oxford
Sharon Brooks - Cambridge University
Natasha Pauli – ZSL and GLOBE International
Heidi Ruffler - Bioko Biodiversity Protection Program
Paul De Ornellas - ZSL
Edmund Kingcott - independent
Max Hug Williams – film-maker
Olly Hymas – ZSL Institute of Zoology and University College London
John Oates – Hunter College, City University of New York
Emily Coleman – British Trust for Ornithology

Apologies

Matthew Hatchwell – Wildlife Conservation Society
Chris Ransom – ZSL
Ian Redmond – Great Ape Survival Programme (GRASP)
Helen Thirlway – International Primate Protection League
Rosamunde Almond – UNEP-WCMC (United Nations Environment Programme World Conservation Monitoring Centre)

The Chair, **Noëlle Kümpel**, welcomed the attendees and outlined the purpose of the UK Bushmeat Working Group (UKBWG) as a forum for discussion on bushmeat-related research and policy amongst government, industry, NGOs and academia. ZSL took over secretariat responsibilities of the UKBWG from the Tropical Forest Forum in 2006 and is funded by DEFRA. She mentioned that the previous meeting had been held in April on the health and conservation implications of bushmeat imports to the UK/Europe, drew attention to the minutes, which are also available on the UKBWG website (www.zsl.org/ukbwg) and announced that HMRC and Defra had agreed to respond to some of the issues raised in the next meeting of the UKBWG, planned for the autumn.

She briefly outlined the focus of this meeting, namely the interactions between bushmeat and livelihoods, tying in with a ZSL Scientific Meeting to be held in the evening on 'Bushmeat and fisheries in the livelihood context: what are the implications for conservation?'. The Chair asked the attendees to introduce themselves, before drawing attention to the agenda.

Björn Schulte-Herbrüggen, ZSL/loZ and University College London
The role of bushmeat within the livelihoods of cocoa farmers in Ghana – preliminary results

Björn's PhD research is investigating the role that bushmeat plays in the livelihoods of cocoa farmers in Ghana. There are around 720,000 cocoa farmers in Ghana, and cocoa has an export value of about US\$900 million (Barrientos et al 2008). The annual value of bushmeat was estimated at US\$350 million in the late 1990s (Ntiamao-Baidu 1998). Björn noted that cocoa farming provides a highly seasonal income, peaking between October and January and dropping off at other times in the lean season. He also observed that cocoa farming had a big impact on bushmeat production.

The study site is Wansampobiriampa village within the Sui River Forest Reserve (timber concession) located in the Western Region in the south-west of the country. Wansampobiriampa is around 40km away from the nearest town and 2km inside the forest which Björn noted was unusual for Ghana. The village itself is known to have existed for at least 100 years, traditionally living off hunting, but has recently turned to cocoa farming. The study focussed on 65 cocoa farming households and although Björn acknowledged it was still in its early stages certain trends did seem to be present:

- Food crops are of most economic value during the lean season whilst a sudden surge in household income takes place in Oct/Jan on the basis of cocoa revenue.
- Poorer families derive a greater proportion of their income from natural resources, approximately 25%, which is of particular significance in the lean season.
- 480 interviews have been conducted looking at both 24-hour offtake inventories and 2-week recall. There was very little bushmeat harvested overall. Small animals made up almost all the bushmeat harvested with pouched rats (*Cricetomys* spp.) being relatively highly represented with 25 records. Björn noted that the rats were worth £1.20 each - equivalent to 1 day's work for a labourer.
- Hunting itself overwhelmingly took place in the forest (>90%) and trapping was the technique of choice with guns only used by the poorer households. Björn wondered whether the small proportion of hunting which took place in farmland was a result of the cocoa monoculture.
- In terms of usage bushmeat was generally eaten at home or given as gifts by all but the poorest during the Oct-Jan period. During the lean season sale was much more important, up to 50% of the bushmeat being sold. During the cocoa season the proportion of bushmeat in the diet fell for all but the poorest households with Björn suggesting this reflected the use of money from sale of cocoa to buy livestock meat when households could afford it.

Björn suggested a number of conclusions could be drawn from the study so far:

- Cocoa income influences the level of bushmeat offtake and its pattern of use.
- The poorest households rely more on bushmeat and non-timber forest products (NTFPs) than the richer ones, particularly during the lean season, as a source of food.
- Cocoa is a major priority for the government in Ghana, with subsidies for farmers and land allocated for cocoa rather than food crops. This dependence on cocoa income can lead to seasonal income shortages and does not necessarily help the poorest households.
- A decrease in income from cocoa could lead to an increase in pressure on wildlife making it potentially vulnerable to global markets and fluctuations in cocoa prices.

Noëlle thanked Björn and invited any questions.

Sharon Brooks asked whether there was any information on bushmeat/domestic meat prices in the area or on local preferences. **Björn** replied that the study hadn't looked at prices but that local people seemed to prefer fish.

Ian Watson asked whether there was any evidence of bushmeat being exported from the area. **Björn** noted that although it was not unusual to see bushmeat being sold along roadsides, no professional trade was observed. He also suggested that given the nature of the observed offtake (i.e. low volume), large scale trade for export would be unlikely.

John Oates noted that this was not a typical site for Ghana given its location within the timber concession. He also observed how small scale the bushmeat trade was here with very little offtake and went on to suggest that in this area bushmeat had no role in livelihoods as in essence there was very little left to hunt. **Björn** agreed that this site may be unusual but stressed they were not seeking or claiming to be studying a representative site, merely investigating the role of bushmeat in livelihoods in this one village.

Heidi Ruffler picked up on the fact that **Björn** had mentioned that at least one hunter had recently moved into the village and wondered whether this had caused much friction. **Björn** commented that relations were generally good with problems arising only when the hunter tried to sell locally-hunted bushmeat at a different village (which was more profitable).

Stuart Nixon, Zoological Society of London

Threats to okapi and other wildlife from hunting, charcoal production, timber extraction and agricultural expansion in northern Virunga National Park, Democratic Republic of Congo, and alternative livelihood options

Stuart began by introducing the background to this project. Okapi are currently listed by IUCN as Near Threatened and are only found in Democratic Republic of Congo (DRC). The species was first described in 1901 from a type specimen that originated from the Watalinga forest of the northern sector of Virunga National Park (NP). However, very few surveys have been carried out in this area since its establishment as a National Park in 1925 and until recently the last record of okapi in Watalinga was from 1959. WWF and ICCN (the Congolese institute of nature conservation) recorded signs of okapi west of the Semliki river in 2006 and ICCN reported signs east of the Semliki during patrols in 2007. Since then, okapi have been confirmed elsewhere outside of the current DRC protected area network at Usala (Nixon and Bahati 2007), Bili-Akiti (Hicks 2008) and Lomani, west of the Congo river (Hart 2008). Nevertheless, the species' status across its range and particularly in Virunga NP is largely unknown and given the security situation since the 1990s gathering information has proved difficult. The Watalinga forest is highly isolated, comprised of almost 1100km² of mixed mature lowland forest making up about 15% of Virunga NP. The local economy is made up of cocoa farming, shifting cultivation for food crops (using slash and burn techniques), charcoal production and timber for construction.

Stuart went on to describe the surveys carried out by a joint ZSL and ICCN team in the Watalinga forest between June and September 2008, which had the aims of:

- assessing distribution and relative abundance of okapi as well as threats;
- assessing the impact of the recently rehabilitated Mbau-Kamango road which cuts through the forest on okapi and other wildlife in Watalinga;
- conducting a pilot camera trap monitoring study for okapi;
- providing essential training and capacity building for biomonitoring for ICCN rangers.

216km of 'recce' surveys were carried out, covering 50% of Watalinga. **Stuart** pointed out that activity by both NALU (National Army for the Liberation of Uganda) and Mai-Mai rebels limited safe access to certain areas of the park.

Results of the forest reconnaissance surveys

1. 42% of the surveyed segments had signs of okapi with 93 indirect observations noted giving a dung encounter rate of 0.2/km which is consistent with rates seen in the post-

conflict Okapi Faunal Reserve (RFO). Stuart suspects that given the nature of the landscape and the large river Semliki, genetic mixing between the east and west populations would be impossible. There is very little evidence of okapi in the south of the survey area. Although 'recce' surveys are prone to bias, extrapolating from the survey results for the RFO, where transects have been carried out alongside recces and similar dung patterns found, would suggest only 50-100 individuals are present in the survey area.

2. There were low encounter rate for chimpanzees throughout the park although observation of bamboo eating and terrestrial nesting was made at 2300m elevation.
3. There was no sign of forest elephants at all and species such as bongo and buffalo had very low encounter rates which Stuart suggested is indicative of hunting with automatic weapons. Red river hog and giant forest hog were encountered at low rates and four species of duiker were found to be locally abundant.
4. People are widespread everywhere within the survey area, with hunting the most commonly detected human activity, particularly snaring for duikers. High levels of human activity tended to be associated with low relative wildlife abundance. This is supported by local interviews where people report low levels of wildlife in areas with significant rebel activity and no ICCN presence.

Assessment of threats

1. The survey team recorded heavy hunting in the Semliki river area and okapi skins and meat reported in the towns of Beni and Eringeti. Stuart reported that people are cautious in discussing hunting, especially those living around the park. There appears to be evidence of commercial hunting and that bushmeat represents a luxury item. In most population centres it is twice the price of domestic meat. Overall there is a complex relationship between local people, rebels, Congolese military and hunting for bushmeat.
2. Charcoal production is the most pressing problem, as it is in the southern part of the park. Primary forest trees are targeted and the new road has added to this pressure by increasing access and local settlement. Stuart noted that in Beni 30km away there is a 100% mark-up in charcoal from \$6 per sack to \$12.

Stuart then went on to report on the Mt Hoyo region, 40km to the north of Virunga NP, and its potential as a wildlife corridor and for ecotourism. Mt Hoyo Reserve, DRC's only zoological reserve, already has full official protection status and before 1996 was popular with tourists. There is local support for redeveloping it and reports of okapi, chimpanzees and elephants, although full surveys are required to substantiate this. It faces many of the same threats as Virunga NP in terms of slash and burn agriculture, hunting and illegal development. A UNICEF-funded school has recently been built inside the reserve. There is intact tourist infrastructure and much potential for development as a wildlife corridor between Virunga and Ituri forest to the north-west. Stuart reviewed several alternative livelihood possibilities:

- REDD (reduced emissions from deforestation and forest degradation) funds from avoided deforestation in the corridor between Virunga NP and Mt Hoyo Reserve – at present no framework exists for this under the UNFCCC (United Nations Framework Convention on Climate Change), although carbon credits can be sold under the voluntary market. Much capacity building would be required in terms of community management and monitoring of the forests as well as clarification of land tenure and the legal framework for community managed forests, and an improvement in the security situation. An estimated 3000 households could be supported within the corridor.
- Crops – shade cocoa of good quality has been grown in the Virunga region (by ESCO-Kivu); due to its long-term nature, this has the potential to reduce reliance on shifting cultivation but does require strong community and technical support as well as land tenure rights to be addressed. It could be grown in the corridor buffer zone.
- Fuel efficient stoves/non-timber briquettes – stove models are currently being tested in the area around south Virunga NP. The non-timber briquettes are about 33% less efficient than charcoal. To have an impact will involve capacity building in enterprise development and marketing.
- Ecotourism - there is some scope for ecotourism development with the small communities around Mt Hoyo. However at the moment the security situation precludes ecotourism and there is no ICCN, government or NGO presence in the area.

Noëlle thanked Stuart and pointed out that time was running short before inviting questions.

Marcus Rowcliffe asked Stuart what the briquettes are made from. Stuart replied that they were made from compressed banana leaves.

Juliet Wright, Lebialem Hunters' Beekeeping Initiative
Could beekeeping be an economic alternative to bushmeat hunting in Cameroon?

Juliet set out the aims of her MSc research in investigating the social aspects of hunting for bushmeat in Lebialem, a district of 60,000 people bordering the forest in Cameroon's South West Province. She sought to identify the reasons behind hunting and the local communities' reliance on bushmeat both economically and for nutrition. To do this she spent 2.5 months from May to July 2007 in Lebialem carrying out semi-structured interviews with 90 hunters and participatory rural appraisal in 6 villages. Over 64% of people sold more bushmeat than they consumed, although this was the not the case for the two most remote villages which Juliet felt probably reflected their lack of access to markets. Overall fish was the major source of protein consumed on a regular basis.

Before attempting to look at possible alternative livelihoods Juliet looked into people's current sources of income. Although most people had a range of incomes, 58% gave their primary source of income as farming and 28% as hunting. Juliet reviewed some of the options for alternative livelihoods (livestock and micro-livestock rearing, captive breeding of wild species, harvesting of NTFPs, improved agricultural productivity, manufacture of traditional crafts and beekeeping: Archer et al. 2002; Rushton et al. 2004; Nasi et al. 2008) before moving on to discuss beekeeping in Lebialem.

Beekeeping was chosen as it had a number of similarities with hunting such as minimal capital set-up, no land requirements, few barriers to entry, high market demand locally, flexible labour inputs, short market chains, good storage qualities and high earning potential. Important differences include the higher value:weight ratio of bushmeat compared to honey which Juliet noted is important for transport. Returns from beekeeping are seasonal with yields being realised twice yearly which contrasts with hunting's year-round potential. Start-up costs of beekeeping can be high if modern methods are introduced but beekeeping can have positive environmental impacts (in terms of pollination).

Juliet went on to describe some of the features of the African honey trade and beekeeping as an alternative livelihood. Less than 5% of Africa's honey potential is currently exploited, Cameroon alone imports \$700,000 honey annually which sells at \$6-21/kg (Baiya 2006; Nuesiri and Fombad 2006). This reflects poor organisation of producers, lack of trust in supply and selling chains, poor distribution networks, inadequate packaging, labelling and branding and inconsistent quality of the product. She mentioned a number of reasons for failure of other projects including: lack of follow up beyond the duration of the start-up process, use of inappropriate western technology which greatly increases capital and training costs, insufficient training in business skills and inadequate market development (Lohr 2005; Bees for Development 2008). She described the Lebialem Hunters' Beekeeping Initiative as differing in being locally-led, mixing modern processing with traditional hives, and ensuring that business and marketing skills as well as record-keeping are included in training. Products are collectively packaged and distributed through village cooperatives. Juliet also mentioned that she felt not addressing the absence of banking experience and therefore culture of financial planning had been a major hindrance to the success of alternative livelihood schemes and to this end micro-financing was provided in this project.

Education and ongoing evaluation schemes have been built into the project to try and both alter attitudes amongst the hunters and monitor progress. Outreach programmes help inform local people about the species present locally (through the Great Ape Film Initiative – GAFI). The project also makes use of financial records to compare beekeeping with hunting as well as regular in-depth interviews and standard of living assessments to see if and when beekeeping provides better returns for hunters.

Achievements to date are:

- 135 hunters from 7 villages trained in beekeeping and supplied with equipment;
- Common Initiative collective groups established in each village to process and market honey and bee products;
- Over 2000 people have seen the outreach films (shown in 30 villages since 2007).

Juliet noted several challenges experienced by the project, including maintaining hunter enthusiasm and commitment, realising economic returns from beekeeping as quickly as possible, ensuring high honey yields by increasing the abundance of bee-loving flowering plants, establishing coordinated distribution networks, overcoming the corruption culture, and encouraging long-term financial management.

In conclusion, Juliet noted that there is potential in beekeeping as it provides a flexible alternative and can provide comparable returns to bushmeat. She feels that many challenges remain particularly with regards to marketing and financial management and acknowledges that no single solution exists to the bushmeat problem, with further investigation needed into all potential alternatives to understand the real costs and benefits of each approach.

Noëlle thanked Juliet for her presentation and invited any questions.

Oilly Hymas asked whether or not Juliet had looked into non-monetary values of bushmeat. He compared this with his own experiences in Gabon on the cultural and political importance of bushmeat in that country, particularly for the elite. **Juliet** agreed that this was also the case in Cameroon, with the rich eating bushmeat and porcupine being the preferred species. She went on to say that this project, however, had been set up with the goal to stop hunting of primates. **Oilly** commented that, for example an antelope species is hunted specifically by politicians in Gabon and therefore a culture of secrecy surrounds discussing it. **Juliet** responded that she was aware that primates were hunted on demand for export, especially to Nigeria. **Oilly** also suggested that the production of honey wine would be popular and would overcome the issue of seasonality.

Lauren Coad asked whether the project had provided incentives not to hunt or just education and alternatives. **Juliet** answered that they hadn't provided incentives not to hunt but that local people were keen as they complained that hunting effort was increasing all the time, presumably as a result of unsustainable offtake depleting local wildlife. She also mentioned that people are keen to follow the project through.

Noëlle stressed the importance of alternative livelihoods adding value and requiring time as an input, pointing out that if they leave plenty of spare time hunters will simply hunt in addition to rather than as an alternative to beekeeping. She emphasised that she felt it was therefore a challenge to provide successful alternatives. She also queried whether the project focussed only on men as women were often involved in trade and processing whilst men hunt. **Sharon** mentioned that women could do beekeeping while men continue to hunt. **Juliet** acknowledged this and replied that the project was trying to involve women. **Lauren** mentioned that in other projects, pooling of income and decisions can minimise inequity.

Marcus asked if Juliet felt that this project or beekeeping generally would provide a significant solution in this region. **Juliet** said that she felt that there was room for development, there was already some export to Europe and mentioned a company in Zambia with over 7,000 beekeepers.

Finally, **Oilly** asked about the taste of the honey as in his experience some of the honey produced by African honey bees was unpalatably sweet which made it hard to sell. **Juliet** agreed that developing a taste for the honey was part of the marketing the project needed to do.

Natasha Pauli, ZSL/GLOBE International
***Update on the GLOBE International Commission on Land Use Change and Ecosystems
and call for relevant information***

Natasha began by briefly introducing GLOBE as an acronym for the Global Legislators' Organisation for a Balanced Environment. Members are sitting legislators from the G8+5 states and the aim of the forum is to bring together expert advice and facilitate high-level policy decisions. GLOBE has recently started three new international commissions:

- Climate Change and Energy;
- Economic and Population Growth;
- Land Use Change and Ecosystems.

ZSL, represented by Jonathan Baillie, Alex Rogers, Noëlle Kümpel and Natasha Pauli, is involved in GLOBE's activities as scientific advisors to the International Commission on Land Use Change and Ecosystems. This commission was launched in November 2008 with important milestones including the Copenhagen UNFCCC (UN Framework Convention on Climate Change) COP (Conference of the Parties) in December 2009 and the next CBD (Convention on Biological Diversity) COP in Nagoya in October 2010. To this end they have identified six target ecosystems/issues (three terrestrial and three marine) and seek to give an overview of current status, trends and projections and provide a summary of existing knowledge for policy-makers. **Natasha** raised the question of how best to bridge the science/policy divide and the difficulties of implementation of outputs.

Noëlle thanked **Natasha** for her presentation and invited any questions.

Ian noted that GLOBE was made up mostly from developed nations. **Natasha** pointed out that it had developed from the G8+5 so would naturally represent those states but agreed that for example, forest nations from developing countries must be involved. **Marcus** drew attention to the fact that the DRC was included [as are Ghana and Cameroon in Africa].

Edmund felt that it would prove hard to have advice heeded by the G8, suggesting that any advice would likely be politically unacceptable to these nations. **Natasha** acknowledged this as a potential problem and went on to explain that they were currently in the process of developing a strategy about how best to approach things and indeed what exactly they were seeking to achieve. **Edmund** noted that having a vocal champion, perhaps individuals or groups that already had influence would be a good idea and he suggested as an example the World Economic Forum meeting at Davos.

Marcus inquired as to the existence of a link to policy via legislators as a result of the GLOBE work. **Natasha** stressed that the idea for GLOBE comes directly from legislators and so should influence policy at source.

Oilly raised the issue of how exactly GLOBE would affect matters on the ground, particular where capacity was lacking in developing countries. **Natasha** agreed that this was an old problem and that how outputs would be implemented was crucial and that they hoped to learn from past mistakes.

Noëlle apologised for the meeting overrunning and that this meant discussion had to be curtailed. She invited everyone for a drink at a reception before the evening meeting on 'Bushmeat and fisheries in the livelihood context: what are the implications for conservation?', with the following agenda:

- Dr Glyn Davies, WWF-UK: *Background issues: bushmeat and livelihoods*
- Dr Lauren Coad, Environmental Change Institute, University of Oxford & Kathryn Knights, Imperial College London: *Bushmeat and fish consumption in Gabon*
- Dr Noëlle Kümpel, ZSL: *The role of wildlife products in livelihoods in Equatorial Guinea: a comparative study*

- Dr Sharon Brooks, University of Cambridge: *Fishing and snaking on Tonle Sap Lake, Cambodia*
- Professor Katherine Homewood, University College London: *Summary*
- Panel discussion

Noëlle then thanked everyone for coming and drew the meeting to a close.
