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THE BUSHMEAT TRADE

There is increasing concern about the commercial trade in 'bushmeat' (the meat of wild animals) originating in West and Central Africa. Unsustainable levels of bushmeat hunting could threaten both wildlife populations and the people who depend on bushmeat for food or income. Of particular relevance to the UK are the implications of the trade for human and animal health through possible disease transmission. This briefing summarises the causes and effects of the bushmeat trade, UK policy and remaining challenges.

What is bushmeat?

'Bushmeat' is an African term for the meat of wild animals. Although duikers (small antelope), rats, porcupines and monkeys are most commonly eaten, bushmeat can be any type of terrestrial wild animal, from snails to elephants. While some amphibious or semi-aquatic freshwater animals, such as frogs, turtles and crocodiles, are also regarded as bushmeat, fish are not. Although the hunting and trade of wild animals for meat is a worldwide phenomenon (Table 1), this briefing concentrates on the tropical forest area of West and Central Africa, the centre of the current 'bushmeat crisis'.

Why focus on West and Central Africa?

The pressure on forests and wildlife varies greatly between continents (Table 1). Africa sits on a continuum from the relatively intact forests of Amazonia to the human-dominated landscape of the Asian humid tropics. Each of these areas has very different issues and potential solutions. This POSTnote focuses on Africa's equatorial forest zone (but see Box 1), as this region is where dependence on wild meat is most acute, and is thus where most recent research has been conducted.

Why is there a 'bushmeat crisis'?

People have been hunting wildlife in the forests of West and Central Africa for 100,000 years or more but in recent years consumption in many areas has increased beyond sustainable limits, due to factors such as:

- uncontrolled development and population growth
- habitat loss and increased access to previously inaccessible areas (often a result of road construction for resource extraction such as logging or mining)
- improvements in hunting technology (such as guns and wire snares)
- a lack of rural economic or nutritional alternatives
- a growing wealthy urban elite with a preference for bushmeat.

Table 1: Comparison of human density and bushmeat harvest between continents[1]

Area	Human population density (people/km^2)	Wild meat harvest (tonnes/year)
Asia (S and SE Asia)	522	Unquantified
Africa (Congo Basin)	99	1– 3.4 million
Latin America (Brazilian Amazon)	46	67,000 – 164,000

Contrary to popular belief, tropical forests are relatively unproductive: they contain ten times fewer mammals by weight than grassland. These fragile ecosystems can probably support only one person/km^2, but the actual population density far exceeds this, even in the relatively unpopulated Amazon Basin (Table 1). However the quantity of bushmeat harvested is enormous: 1–3.4 million tonnes (including about 28 million bay duikers and more than 7 million red colobus monkeys) are taken from the Congo Basin every year. This is estimated to be on average six times the sustainable rate.[1]

The bushmeat trade is a large but often invisible contributor to the national economies of West and Central Africa. For example, the value of the trade in the Ivory Coast was recently estimated at US $150 million p.a. (1.4% of GNP). The vast majority of the trade is domestic; only a tiny proportion is illegally exported to countries like the UK. Reduction or loss of this resource may have devastating consequences for the millions of people who are dependent on it for food or income.[2]

Box 1: Is Asia the picture of the future for Africa?
In south-east Asia many species have already been hunted to extinction. Wild meat is still consumed—in large quantities—but now as a luxury by a few wealthy city-dwellers rather than as a general staple. In both Asia and Africa forest peoples prefer wild to domestic meat. In Asia, as forests shrank and populations increased, people made the shift to domestic meat. The question remains whether Africans will do the same once the wildlife has gone, or indeed whether they would now if the bushmeat trade were banned.

The answer is unclear, for several reasons. Firstly, there is a much longer history of agriculture and domestication of livestock in Asia than in Africa. Secondly livestock disease, such as trypanosomiasis, is rampant in African forests, making it harder to rear livestock there. Thirdly, African forests have higher densities of game than Asian forests, and the continent has less coastline, so people naturally eat less fish and more meat. Finally, frequent wars in Central Africa mean that livestock can be a risky investment.

At present, bushmeat is a necessity rather than a luxury for millions of Africans. A 1991 study found that 75% of the entire protein needs of Liberia were met by bushmeat. For many rural people, bushmeat provides a nutritional 'safety net' in times of household crisis. Trade bans will not work if people depend on the resource. However, as wildlife disappears, a switch to domestic protein will be necessary if severe malnutrition is to be avoided.

Source: *Bennett, E.L. & Rao, M., in Mainka, S. & Trivedi, M., eds, IUCN Species Survival Commission Occasional Paper 24, 2002*

Why is bushmeat relevant to the UK?

The bushmeat trade affects the UK directly in terms of illegal bushmeat imports. The government also has a rôle that extends beyond its borders, as a major funder of international conservation and development work.

Wildlife conservation

Over-hunting has caused local and global extinctions and has fragmented wildlife populations. Species vary in their ability to withstand hunting pressure. Slow-reproducers such as large carnivores and primates are particularly vulnerable to over-harvesting. Scientists, conservation bodies and animal welfare groups are increasingly worried about the threats to rare 'flagship' species such as the Great Apes (gorillas, bonobos and chimpanzees in West and Central Africa). Even if not specifically targeted, such rare species continue to be caught opportunistically while common species are being hunted. Unfortunately the difficulty of research in forest habitats means that the biological understanding of many species, including their capacity to sustain hunting, is limited.

International development

Poor people in remote, marginal and forested areas have limited livelihood opportunities, and many are dependent on bushmeat for income and food.[3] Bushmeat reliance can increase seasonally or in times of stress, such as famine or drought, or when fish catch is low.[4] When wildlife declines or access to wildlife is prevented, poor people can adapt, but often at a short- or long-term cost.

Risk of disease emergence and transmission

The handling of freshly butchered bushmeat, in particular primates, brings about a risk of transmission of new zoonoses (human diseases originating from animals). Pathogens that do not cause disease in their natural hosts can do so in their new hosts, or evolve to do so, as was the case with Simian Immunodeficiency Virus (SIV) and Human Immunodeficiency Virus (HIV) (Box 2). Although bushmeat hunting is not new, the opening up of new areas through activities such as logging can increase the likelihood of human-wildlife contact. Different types of disease vary in their contagiousness. Viruses like SIV are relatively non-contagious as they are only transferred through body fluids such as blood from a fresh carcass. However the risk of transmission of diseases which can be passed through the skin such as anthrax (a bacterium which is lethal to chimpanzees as well as humans) is higher and that of highly infectious airborne viruses such as influenza is greater still.[6]

Threats to human and animal health in the UK

Rapid advances in infrastructure and transportation, coupled with increased human migration around the globe, mean that infected people, animals or meat can move further from the source of infection, faster. Illegally imported bushmeat poses a low threat of transmitting a zoonosis to a person in the UK. However, the main risk to human health is food poisoning from consuming putrid meat.

As most bushmeat is destined for human consumption, the risk of livestock contamination is low. However, the outbreak of Foot and Mouth Disease (FMD) in the UK in 2001 is a reminder of the devastating economic and social costs of transmitting an infectious disease to livestock.

Box 2: Zoonoses and potential zoonoses
Emerging zoonotic diseases are among the most important public-health threats facing humanity. However, very little is known about what makes an animal disease a zoonosis (pathogenic to humans) and likely to cause a disease outbreak of epidemic (community-wide) or pandemic (country- or world-wide) proportions. The following are African examples.

- Several strains of **SIV** are thought to have separately crossed over from African monkeys and apes into humans and, after a long incubation period, evolved into **HIV**. Each strain has different pathogenicity, with HIV-1, from central African chimpanzees, being the most virulent, and the strain that has now spread to millions of people around the world.
- **Simian Foamy Virus** (SFV) is a retrovirus like SIV and HIV. Antibodies to SFV have recently been found in Cameroonians who have had exposure to fresh bushmeat, but it has yet to prove pathogenic to humans.[5]
- **Ebola haemorrhagic fever** is endemic to Africa. The virus is transmitted like retroviruses via bodily fluids and causes rapid mortality. It is lethal in a variety of different species and has wiped out significant numbers of gorillas and chimpanzees as well as humans. Its carrier and natural reservoir are still unknown.

Public interest in the bushmeat trade

There has been considerable interest in the issue in Parliament, and from non-governmental organisations (NGOs) and the general public. A 1.9 million-strong petition against the illegal bushmeat trade was presented to the European Parliament in January 2002 and led to a resolution passed unanimously by that Parliament. A UK parliamentary Early Day Motion on Bushmeat in 2003 (number 1129) was the third most popular of that session with 322 signatures. The 'bushmeat crisis' is regularly reported in the media.

Government actions

As the bushmeat trade is complex and wide-ranging, many different Government departments and agencies are involved in tackling its various aspects. Box 3 details current Government-funded activities on bushmeat.

Bushmeat as a conservation concern

The Department for Environment, Food and Rural Affairs (Defra) is the main Government department involved with bushmeat. It has a broad remit, including species conservation, forestry management, meat imports and wildlife crime. Resources are allocated to evaluate the bushmeat trade and its impact on protected species.

Defra was active in getting the unsustainable trade in bushmeat onto the agenda of the Convention on International Trade in Endangered Species (CITES), and proposed the creation of the CITES Bushmeat Working Group in 2000. However, it is now thought that the domestic trade is a greater threat to endangered species than the international trade. Consequently in 2004, following a UK proposal, CITES Parties invited the United Nations' Food and Agriculture Organisation to organise a workshop to develop a new, coordinated, international strategy on the bushmeat trade.

The Inter-departmental Ministerial Group on Biodiversity was formed in 2004, including ministers from Defra, the Department for International Development (DFID) and the Foreign and Commonwealth Office (FCO). One of its tasks is to review the Government's policy on bushmeat.

Human dependency on bushmeat

DFID believes that bushmeat and poverty are linked, but that bushmeat hunting is best addressed by tackling illegal logging and promoting sound forest management. The UK was one of 40 countries to sign a ministerial declaration on illegal logging, which included measures to address bushmeat, at the African Forest Law Enforcement and Governance (AFLEG) conference in October 2003.

Since the mid-1990s, DFID has moved away from funding individual projects. It now agrees poverty reduction strategy papers (PRSPs) with central governments in partner countries and provides them with direct budgetary support. Few PRSPs include wildlife-linked projects as partner governments rarely see them as a primary tool for poverty reduction.[3]

Box 3: Government-funded bushmeat activities

- Defra has contributed funds to the CITES Bushmeat Working Group and funded a UK-based bushmeat research project.[7]
- Defra funds the UK Tropical Forest Forum's Bushmeat Working Group (UK-TFF BWG), which considers strategies for a sustainable bushmeat trade.
- Defra funds the Darwin Initiative, a small-grants programme that aims to promote biodiversity conservation and sustainable resource use. There are currently three bushmeat-focused Darwin projects.
- Defra and the FCO have together contributed over £500,000 to the Great Ape Survival Project (GrASP), which views the bushmeat trade as a major threat to the African Great Apes.

Health threats

A 2002 Cabinet Office report commissioned after the outbreak of FMD recommended improvements to UK imported food controls. Following this, Defra increased its focus on the animal health risks of illegal meat imports. In 2004, it commissioned the Veterinary Laboratories Agency (VLA) to assess the risk of importing FMD and other livestock diseases into the UK. It concluded this was low but constant. After UK pressure on the EU, it is now illegal to import meat and dairy products in personal baggage from a non-EU country.

Following the 2002 report, a new Imported Food Division of the Food Standards Agency (FSA) was created, to address issues of public health with respect to imported food controls, both at borders and inland. The FSA coordinates work with the Department of Health, the Health Protection Agency and Defra through groups such as the UK Zoonoses Group and the Human Animal Infections and Risk Surveillance Group. The FSA believes that the main risks to public health from bushmeat are those associated with well-known food pathogens which will be destroyed by cooking, and have concluded that a formal risk assessment is not warranted. However it is planning to commission a review of the microbiological hazards that could be associated with bushmeat, to determine whether any additional advice is required.

Responsibility for anti-smuggling controls of all animal products at borders was transferred from local authorities (LAs) to Her Majesty's Customs and Excise (HMCE) in April 2003. HMCE works closely with Defra, the FSA and LAs on the control of all illegal meat imports, including bushmeat. In 2003 ministers pledged a total budget of £25 million over three years for this work. In early 2005 the National Audit Office will publish the findings of a study on stopping illegal meat imports, focusing on whether HMCE are doing all they can within resource constraints to detect and deter illegal meat imports.[8]

Challenges

Control of illegal imports

The 2004 VLA report estimated that 4,000 – 29,000 tonnes of illegal meat enters the UK each year from non-EU countries, but emphasised that these figures should be treated with caution. Meat smuggled via EU borders

can pass undetected into the UK. The £25 million recently awarded by the Government for control of illegal meat imports has funded initiatives such as publicity campaigns and the training of 10 meat sniffer-dogs at Heathrow Airport. This compares with £246 million spent on border control in Australia, which reflects the lesser role of agriculture in the UK economy and the delays that increased checks would cause to the greater volume of traffic passing through the UK.

Implementing CITES

The UK has some of the strongest CITES-implementing legislation of all EU members in the form of the COTES (Control of Trade in Endangered Species) Regulations 1997. The Criminal Justice Act 2003 increased the powers and penalties for COTES offences, and Defra is currently consulting on a draft replacement for COTES to bring these into effect. CITES prosecutions for meat imports are rare, as HMCE views illegal meat as a health risk, and destroys all confiscated meat without testing to identify the species. Thus the proportion of endangered species in bushmeat imports is unknown.

Integrating conservation and development

Although there is now clear evidence that reliance on bushmeat is linked to poverty, success in addressing both issues together has been elusive. Bushmeat research has tended to be driven by conservation concerns, so the livelihood linkages have in the past not been well understood. Development workers fear that the social impacts of protected areas have often been negative, with local people bearing the cost of conservation (losing access to resources they depend on) instead of reaping rewards in terms of new livelihood options (such as jobs through ecotourism). Whereas traditional conservation strategies advocate strictly enforced protected areas and bans on hunting and trade, many now believe that some trade should be allowed, limited to fast-reproducing species such as rodents which are able to sustain a certain level of hunting. Initiatives such as the UK-TFF BWG (Box 3) and a series of conferences on bushmeat hosted by the Zoological Society of London (ZSL) provide fora to identify feasible solutions for people and wildlife.

Finding alternatives to wild meat

Wild animals are hunted to meet the growing demand for fresh meat in West and Central Africa. This will continue unless livestock husbandry and fisheries are developed as alternatives. However, spending on agricultural research and development in this region has declined significantly during the past 30 years, while relative agricultural research spending has doubled in the US and almost quadrupled in Australia.[1] A recent paper has shown that in Ghana people turn to bushmeat when fish yields are low, and suggests that EU-subsidised fleets operating in the region are accelerating the decline in fish stocks.[4] However, the extent to which other protein sources can replace bushmeat varies; where there is a cultural or other preference for bushmeat the availability of alternatives may not reduce demand.

Working with the logging industry

Bushmeat hunting is often closely linked to logging. Commercial logging operations open up intact tracts of forest, and introduce hundreds of workers, who hunt to feed themselves and often to make some extra income. The Wildlife Conservation Society (a US NGO) has been running a project with a logging concession in the Congo for several years, developing alternative sources of protein and income and monitoring hunting activity, with costly but clear success. ZSL and TimbMet, the UK's leading hardwoods trader, are planning to pilot a project in a Ghana concession to evaluate the feasibility of 'bushmeat stewardship'. Although there is a growing market for certified wood, profit margins are tight and the additional costs of bushmeat certification are likely to be too great for the producer to bear. TimbMet argues that public money could support early production until consumer demand has increased to absorb the cost.

Governance issues

Weak governance is a problem in many of the countries where bushmeat is hunted. Where wildlife legislation does exist, the resources and political will to enforce it often do not. In corrupt administrations, officials can benefit from the trade in bushmeat through bribes. For those countries in a state of current, recent or recurrent war, the conservation of wildlife is a very low priority. A sustainable bushmeat trade is theoretically possible given effective regulation to limit demand and protect vulnerable species. This will require multilateral political will and, some argue, political pressure or incentives.

Deciding who should pay

Protected areas are largely state-owned, so the benefits accrue nationally or internationally, but costs are borne locally. The conservation of species that are hunted for bushmeat is likely to be achieved only at some cost, whether to hunters and traders in the form of reduced income or food supply, or to the state in enforcing protection.

Endnotes

1 Wild meat: the bigger picture, *Milner-Gulland, E.J. et al*, Trends in Ecology and Evolution 18: 351-357, 2002
2 http://www.4apes.com/bushmeat/report/bushmeat.pdf
3 Wildlife and Poverty Study, *DFID*, 2002
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5 http://news.bbc.co.uk/1/hi/health/3520968.stm
6 Hansard Vol. 420, column 1059, Session 2003-4
7 http://www.odi-bushmeat.org/download_files/Bushmeat2002.pdf
8 http://www.nao.org.uk/publications/workinprogress/illegal_meat.htm

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