

Theme Four: Improving Livelihoods & Protecting Biodiversity

'Is the best the enemy of the good? Livelihoods perspectives on bushmeat harvesting and trade – some issues and challenges'

David Brown
*Forest Policy & Environment Group,
ODI, London*

Abstract

This paper makes a case for bushmeat as a theme of interest to development policy. Drawing on a range of secondary sources, it argues that there two are principal reasons for development assistance to address the issue of bushmeat management: its importance in the livelihood strategies of the poor, and its relevance to wider issues of public governance in forest-rich areas. However, in view of what is known about the present levels of the trade on the condition of the resource, it is judged unlikely that the trade could play a primary role in rural transformation.

Considered from a livelihoods perspective, the balance sheet is much more positive than has often been assumed. These positive livelihoods dimensions have tended to be discounted in conservation strategies. Recent research is reviewed which supports the view that the poor benefit significantly from the trade.

A livelihoods perspective is also indicated when considering issues of forest governance. On the one hand, the favoured instruments to improve forest governance, such as timber certification and associated codes of conduct for forest industry may not be well adapted to the realities of resource use in the humid tropics, and to the tenurial contexts in question. At the same time, there are growing indications of the principles which must be applied if bushmeat is both to be actively managed and to contribute to broader improvements in public governance.

Introduction

This paper is concerned with an often-neglected class of NTFPs with important livelihoods dimensions, namely animals hunted for consumptive use linked to local livelihoods. For simplicity's sake, the colloquial African term 'bushmeat' is used to describe the class, despite its geographical restrictions and (for some) alleged colonial

connotations. Non-consumptive uses, such as for community-based ecotourism, are not considered here.¹

The paper focuses on the question: *‘Why should bushmeat be of concern to international development policy?’* It is suggested that the answer is two-fold. On the one hand, the safety-net functions of bushmeat and similar forest products are crucial to the livelihoods of the poor in the humid tropics, particularly in areas with little immediate prospect of transformation out of poverty. And on the other, progress in the management of internationally high profile and emotive resources such as wildlife may leverage broader benefits in terms of good governance. The paper argues the case for the centrality of a livelihoods perspective in the development of public policy on forest governance.

The paper is in three sections. The first provides a reminder of the scale of the bushmeat trade, and the conservation issues which this raises. The second examines the evidence concerning the role played by bushmeat in the livelihoods of the poor. And the third considers the potential which exists for bushmeat to figure as a component of improved governance.

1. The scale of the bushmeat trade

Bushmeat is one of those minor forest products which have been shown to have major significance for rural communities, particularly in the humid and sub-humid tropics. The levels of offtake vary by ecological zone, country and continent. By and large, levels of offtake are highest in the humid forests of West-Central Africa, lower (though still significant) in Asia and South America. A number of factors have been held to account for these differences. Inter-continental variations can be explained partly in terms of the productivity of the forest ecosystems, the Central African forests being considerably more productive than those of South America (Fa and Peres, 2001). The relatively high ratio of sea coast to land area in the Asian case – and hence, increased potential for penetration by sea fisheries – may account for the historically lower contribution of mammalian meat to the diet on this continent, and the higher contribution elsewhere (Robinson and Bennett, 2000). The higher offtake levels from humid forest than savanna ecosystems may seem paradoxical, given the much greater productivity of the latter. However, this may be explicable in terms of the high potential of savanna ecosystems to support domesticated fauna, and the associated cultural preference for farmed meat in such areas (Chardonnet *et al*, 1995). Other factors such as abundance and accessibility also influence levels of human dependence on the resource. For example, the relative importance of fish over bushmeat in human diets in the Amazon basin can be explained not only in terms of the high productivity of the Amazonian river systems, but also by the fact that the mammalian biomass there is not only low in volume, but being predominantly arboreal, is also inaccessible (Fa and Peres, 2001).

Estimates for the size of the harvest in the core production areas vary greatly, but by any standards the offtake is economically and ecologically of major significance (see Bennett & Robinson, 2000). Wildlife is estimated to play a significant and direct part in the livelihoods of up to 150 million people, much of this from consumptive use (*Ibid*). One

¹ Neither are partly consumptive uses linked to tourism, such as the ‘Campfire’ initiative. To take on these issues would move the paper into a well-covered area of debate of only limited relevance to the questions which are central to this paper.

recent estimate puts the continent-wide production for Africa at over million tonnes per annum (Elliott, 2002), though this could well be a major underestimate. The current harvest in Central Africa alone, for example, could well be in excess of two million tonnes annually (Fa *et al*, 2003); the sub-regional human population is 33 million, which could imply consumption in excess of 60 kgs./person/year. Table One is recognised by its authors to be only suggestive, but it does point to the great importance of the commodity in Central Africa, in terms both of diet and volumes of trade. Table Two provides an Africa-wide perspective on consumption, broken down by ecosystem.

The offtake on other continents is often conspicuously lower, and less evenly distributed. Nevertheless, high levels of dependence are found particularly among the indigenous populations. For example, annual consumption of wild animals by local peoples in Amazonas State, Brazil, has been estimated as 2,800,000 mammals, 531,000 birds and about 500,000 reptiles (see Robinson & Redford, 1991).

South East Asia presents a comparable picture. The trade in animal products from Laos to China is valued at upwards of \$12 million per year. In Sarawak, the economic value of wild meat consumed by rural populations, expressed in domestic meat equivalents, has been estimated at \$75 million per year; meat to the value of £3.75 million is sold on the open market. (Bennett & Robinson, 2000: p.3)²

² This is only an estimate. One of its assumptions is that one quarter of the population of Sarawak depends significantly on wild meat.

Table One: Extent of bushmeat consumption in Equatorial Africa

[Source: Wilkie & Carpenter, 1998]

Country	Forest Area km ²	Population		Bushmeat eaten		
		Forest	Urban	kg/year	kg/km ² /year	kg/person/year*
Cameroon	155,330	1,424,000	2,214,620	78,077,172	503	21
CAR	52,236	219,500	539,775	12,976,507	248	17
Dem.Congo	1,190,737	22,127,000	3,782,369	1,067,873,491	897	41
Equat.Guinea	17,004	183,000	227,500	9,762,838	574	24
Gabon	227,500	181,700	581,440	11,380,598	50	15
Rep.Congo	213,400	219,500	1,245,528	16,325,305	77	11
Total:	1,856,207	24,354,700	8,591,232	1,196,395,911	645	35

[* this column assumes that all the bushmeat produced in each country is consumed within it.]

Table Two: Relative importance of game meat in Africa (1994)

[Source: Chardonnet et al, 2002]

Ecological region	Population (millions)	Game meat production		All meat production	
		Total (m.tonnes)	Average/person (kg/person./year)	Total (m.tonnes)	Average/person (kg/person./year)
<i>Savannah</i>	344	405,421	1.2	4,857,133	15.2
<i>Savannah/Forest</i>	163	533,763	3.3	1,571,732	9.7
<i>Forest</i>	54	287,225	5.3	418,527	7.8
<i>Islands</i>	16	3846	0.2	378,029	22.7
Total	577	1,230,255	2.1	7,225,422	12.5

A success story?

On the surface it, the scale, vigour and penetration of this trade might be viewed in a highly positive light, as one of the great success stories of autonomous food production in the developing world, and testimony to the resilience and self-sufficiency of its populations.

Its virtues include low barriers to entry and high social inclusivity. The poor may benefit less than the rich but - it is argued - this is always the case, and is a feature of inequality not of bushmeat. Unregulated and decentralised in trade, a fair proportion of the value of the product is retained by the primary producer (the hunter) – much more so indeed than

has historically been the case with other forest products such as timber and beverage crops. Unlike domestic animal husbandry, the labour inputs which it requires are discontinuous and easily reconciled with the agricultural cycle. Bushmeat is the product of a system of farm/forest management which collectively offers high returns from a range of activities. For the risk-averse small farmers to whom labour is the major constraint, all this has much to commend it.

The trade is likewise low risk and flexible, with minimal capital costs, and thus particularly attractive to the poor. Extractive technology is generally low level and accessible. Gender aspects are also remarkably positive. In most situations, it is men who do the hunting, but women who take charge of all the downstream processing and commerce, to the point of sale in the scores of 'chop bars' and restaurants which are a familiar feature of the urban scene in the South. Bushmeat has excellent storage qualities, in a manner compatible with the storage of agricultural produce. And easily transportable and with a high value/weight ratio, bushmeat fits in with the realities of rural life in the tropics in other respects, particularly for the poor.

Arguably, the starting point in any analysis of the bushmeat trade should be these positive benefits, and any attempt to improve its management should take the preservation of them as its fundamental parameter.

In reality, however, the international profile of bushmeat is almost entirely negative, and its livelihood benefits are largely discounted both nationally and internationally. Bushmeat hardly figures at all, except repressively, in public policy in the range states. The fact that the positive values of such a major commodity are unacknowledged by most policy makers, failing to appear in national economic statistics or to be subject to budgetary allocations by the state, reveals much about the political economy of natural resource exploitation in the tropics, as well as about the historical evolution of tropical governance. Bushmeat and other products of the hunt tend to feature among those goods conceded by range state governments, as part of a tacit agreement which separates 'traditional' products for domestic consumption and the generation of lower-level public sector rents from 'modern', industrial commodities which enter into the circuits of national wealth generation and political patronage, and over which the population at large has no established right of voice. One of the questions which needs to be posed when evaluating new initiatives relating to bushmeat is whether they challenge or support this marginalisation within policy discourse. We will return to this issue below (Section 3).

A bushmeat crisis?

A trade in primary products on this scale and of a fundamentally extractive type raises important issues of future sustainability. It is beyond the scope of this paper to evaluate in detail the evidence for and against the view that this has now reached 'crisis proportions'. Suffice it to say that while the conservation interests which are driving much of the international policy agenda may be prone to exaggerate the problem, it would be surprising if there were not a looming crisis, given what is known of the potential of forest ecosystems to support the animal populations at stake, and the lack of management systems in place.

Total carrying capacity of tropical forests varies according to the context, but Robinson estimates that the maximum biomass of larger mammals in evergreen forests is unlikely to exceed 3000 kgs/squ.km. (in open mosaic forests, carrying capacity may be five times

as much). Assuming a fairly generous diet of animal protein, this suggests that human carrying capacity for people totally dependent on bushmeat for protein would be unlikely to exceed one person per squ.km (ie, approx. 150 kg/squ.km/year, 65% of it edible meat). (Robinson, 2000: 202-4)

If these figures apply, then existing rates of offtake must be severely threatening the stock. Much of conservation opinion is in line with this view. A recent study by Fa *et al* suggests that 60% of mammalian species are harvested unsustainably (2002). Offtake levels in the Congo Basin are estimated to be almost 50% higher than production and four times sustainable levels. Fa and his colleagues predict that bushmeat protein supplies would drop by 81% in all the Central Africa countries in less than 50 years, and that only three countries would be able to maintain a protein supply above the recommended daily requirement of 52 g/person/day. (2003)

The issue of the contribution of the bushmeat trade to local extinctions is controversial, for causality is often difficult to attribute at the single factor level. However, many species consumed as bushmeat are threatened with extinction, for this or other reasons. Hunting pressure has been specifically identified as a threat for 84 mammalian species and subspecies from West and Central Africa (IUCN, 2000 quoted in Bowen-Jones *et al*, 2002, p.64). Thirty-four of these species are listed as threatened with extinction.³ This is a concern in its own right, though there are wider ecosystem effects. The greatest impact tends to be on species with the most restricted and specialist habitats. These are often heavy-bodied high forest species with important roles in maintaining forest structure and composition. (Hawthorne, 1993; Bodmer *et al*, 1988) While these functions can be exaggerated, particularly in relation to the necessity of the role of wildlife in seed dispersal (cf. Parren and de Graaft, 1995, quoting Hawthorne and Parren), the effects are nevertheless significant.

Some qualifications are required, however. Much of the conservation interest, for example, relates to animal stocks in climax forest ecosystems, when, at least in some countries, much of the hunting takes place in the more productive farm-bush ecotone.⁴ This may help to account for the frequent discrepancy between estimated stock levels and the offtake⁵. It also warns against assuming too readily that the maintenance of vast tracts of climax forest vegetation should be the preferred option for the wildlife-rich range states, and that this will be as beneficial to local populations as to the international conservation community. The quality of some of the data on which carrying capacity figures and future wildlife scenarios have been based might also be questioned, in that it is prone to biases in favour of the conservation case.(cf. Fairhead and Leach, 1998) Much of the evidence on human consumption patterns is grossed up from small populations, which may be atypical, and the national and sub-national population statistics are often unreliable. There are also controversies concerning the base lines against which changes in human populations and patterns of demand are estimated.

³ i.e. listed in the threat categories: Critically Endangered, Endangered, or Vulnerable (Bowen-Jones *et al*, 2001:64).

⁴ As evidence of the different potential: Wilkie estimated that primary forests in the Ituri area of DRC could provide 50 kgs. of wild meat per squ.km per year, whilst nearby secondary forests provided up to 318 kgs per squ.km. per year (1989, quoted in Bennett & Robinson, 2000: 25).

⁵ Wade reports, for example, that the Antelope Specialist group estimates the Congo basin Duiker population at 20 million but a recent hunting estimate puts the kill at 300 million – one of these must be wrong [BCFT email circular, August 2002].

Nevertheless, even if the above estimates prove to have been exaggerated, the outlook must surely still be very bleak. (Fa et al, 2003). Among other things (and as will be discussed below), the present situation is usually characterised by a complete lack of management by the state, as well as strong disincentives for local populations to attempt to regulate the harvest.

The chances are, therefore, that there is an impending bushmeat crisis of quite significant proportions. What does not necessarily follow, however, is the view that the way to manage this very large and lucrative, if unsustainable, trade is to attempt to ban it altogether. The arguments against such an approach are both welfare-related (in terms of livelihood and economic benefits) and practical (the low likelihood of success). Yet this is the strategy which has been most strongly advocated by the conservation lobby both outside and within the main producer states.

2. Bushmeat in Livelihoods

Bushmeat and international aid policy

The tensions which exist between conservation and pro-poor development are well-illustrated in the title of a recent paper on the theme of hunting for wild meat in the humid tropics. Written by two eminent conservationists, it is entitled 'Will alleviating poverty solve the bushmeat crisis?' (Robinson & Bennett, 2002). From a livelihoods perspective, such a proposal would seem something of an inversion of priorities. Resolution of the scourge of human poverty is surely a supreme value, not a means to a subordinate end. While the point is taken that economic development provides no guarantee of sound environmental stewardship (indeed, the evidence is often in the opposite direction), it would seem more appropriate to ask what roles bushmeat and other forest goods might play in poverty alleviation. The authors' response to their rhetorical question is hardly any more reassuring. They write:

"The only way out of this crisis will be offered by long-term, integrated efforts to provide alternative sources of protein and income for the rural poor, curtail the commercial trade in wildlife, secure wildlife populations in protected areas, educate hunters and buyers....". (2003:p.332)

The people whose behaviour must change, they say, are "the millions of people at the margins of the cash economy in Asia, Africa and Latin America ... whose lives are intertwined with natural areas". There is "no 'silver bullet' for the twin goals of conserving wildlife across the humid tropics and preventing the people whose lives now depend on wildlife from being driven further against the wall". (*Ibid*)

Coming at a moment in which most international aid agencies are seeking to limit their fields of activity, and to concentrate on those investments which offer the greatest chance of delivering poverty alleviation with maximum efficiency (cf. SoS, 2002), such a conclusion is challenging to those who have sought to deploy international aid resources so as to reconcile global interests in tropical forests with national and local realities. It raises important questions about the trajectory of conservation policy, and the locus of policy change.

The question of whether the bushmeat trade could ever contribute to poverty eradication on a substantial scale has rarely been treated directly in the literature (except as a component of wider debates around wild products). Nevertheless, there are good

reasons to doubt it as a general proposition. A distinction needs to be drawn between those livelihood benefits for the poor which relate primarily to coping strategies and safety-net functions, and those which have potential to contribute to the transformation of the rural economy. The evidence suggests that the long-term prospects for bushmeat relate to values of the former 'buffer' type, and that it is unlikely to figure strongly in any process of capital accumulation. As with many other NTFPs, the main livelihood benefits relate to timing and compatibility with the types of multiple enterprise which are the bedrock of the peasant economy, not the volume of the trade. (Arnold and Ruiz Perez, 2001) Viewed from the perspective of volume, bushmeat offers an unencouraging prospect. Even if the projections of sustainable offtake cited above prove over-cautious, they are often so far below existing offtake levels as to make it most unlikely that sufficient capital could be generated from the sector to sustain long-term economic change. And while bushmeat may be unusual among NTFPs in the elasticity of the demand for it, much the same conclusion can be drawn about its potential to fuel growth even where, with growing scarcity, it takes on the characteristics of a luxury commodity.

Ecosystem considerations are relevant to this debate, though these are complex and ethically obscure. It is far from clear, for example, as to how much animal biodiversity we need. One of the strongest arguments in favour of a systematic commitment to animal preservation is in terms of the ecosystem functions. While there are strong arguments relating to the preservation of forest integrity, it may be unduly demanding to maintain this as the main goal of conservation policy, given the range of other pressures that the forest ecosystem has simultaneously to confront. Issues of 'pattern' vs. 'process' are pertinent here. Rather than attempt to preserve the pattern of the forest estate with something close to its present composition, in an allegedly pristine state, it may be more sensible to treat this primarily as an issue of adaptation, and focus on process aspects – ie. the maintenance of a range of robust systems capable of long-term survival and recovery. Thus, high offtake levels, even risking local extinctions, may be tolerable within a context of broader social change, as long as the process potential is secured. Account must also be taken of the fact that products of the hunt have often helped to underwrite the costs of the agricultural development in tropical societies, which has itself contributed to the growth of pro-forest conservation movements with wide public support. Cocoa in Ghana is an obvious such example. Thus, even a decapitalising stock can play a part in economic growth and structural change of long-term benefit both to the poor and, arguably, the environment (eg. Asibey, cited in Cowlshaw et al, 2003; but cf. Oates, 1998).

Nevertheless, even discounting these uncertainties at the ecosystem level, it seems most unlikely that the main future justification for donor involvement with bushmeat is going to come from a positive assessment of its poverty eradication potential on any major scale, sustainable or not. The primary interest must rather be with the livelihoods dimension, both in its own right - as an aspect of food security to vulnerable human populations, both rural and urban - and also as a means of underpinning and reinforcing the drive to improved public governance.

Both of these are central pillars of the new architecture of international aid, and key components of its preferred instrument, the national poverty reduction strategy. To the extent that livelihoods and governance improvements could be affirmed as major outcomes, then donor investment in the sector could well be justified. This lays out a number of questions for research. In an era in which important questions are being posed as to the poverty efficiency of all aid investments, a strong case needs to be

made to defend an industry which has proven difficult to discipline, and the aims of which incur the opprobrium of a powerful and well-funded animal welfare constituency.

The major challenge lies in addressing the public governance dimensions without surrendering the livelihoods focus. Arguably, this has been the major defect of international conservation policy in recent decades – a deficiency which, despite ever increasing claims to the contrary, would seem to have been only partly addressed (if at all) by the concession of a human dimension to initiatives whose ultimate rationale is animal preservation and welfare. It is the contention of this paper that a human livelihoods focus is not only a moral fundamental but also a practical necessity. It is suggested, moreover, that the near-universal failure of animal welfare and conservation initiatives to advance their cause in the producer countries derives precisely from their weakness on both these fronts.

Livelihoods of the poor?

A number of recent studies have begun to address the livelihoods aspects directly, and to link these to issues of policy. Several have been in the West-Central African heartland of the bushmeat trade. These do not necessarily support the view that dependence is greatest among those living in the most extreme poverty, as had been previously proposed (cf. Scoones et al, 1992). However, the situation is complex, and defies simple poverty/non-poverty labelling.

A case in point would be the study undertaken by De Merode in the Zande area of Eastern DRC (de Merode *et al*, 2003). While significant variations in patterns of consumption and sale were found, correlated with relative wealth, all the families in the study could be classed as 'living in extreme poverty' by the standard international test (income of less than US\$1 per day). Thus the variations were only relative.

De Merode's very careful study sought to address three questions:

- Whether wild foods (including bushmeat) were valuable to households, in terms of both consumption and sales'
- Whether the value varied according to the season;
- Whether the value was greater to the poorer or less poor.

In summary, it was found that while wild foods in general formed a significant proportion of household production, most was sold on the market and not consumed. This was particularly the case with bushmeat and fish, where more than 90% of production was sold. Consumption levels varied by household, with both seasonality and wealth effects. Consumption of wild foods increases significantly during the hungry season (particularly bushmeat, where consumption rose on average by 75%). Bushmeat and fish consumption were fairly even across all wealth ranks, except the poor (who consumed very little of their own production, though they made up for this through bushmeat gifts); bushmeat sales were exceptionally influenced by the wealth rank of the household, with the richer households more likely to be involved in market sales. This was unrelated to questions of land access and tenure (all families had equal theoretical access to the production zones, and – unlike with fishing – there were no restrictions on activity related to non-membership of a craft guild). However, it was strongly correlated with access to capital (shotguns, nets) and to the wealth required to generate a surplus over consumption needs, to be released for market sale. Interestingly, both fish and bushmeat exhibited the characteristics of 'superior goods' (ie, luxury items consumption

of which increased exponentially with increasing wealth). By contrast, wild plants were 'inferior goods', in that increasing wealth implied decreasing household consumption.

A particularly interesting finding of the study was that, for families living in extreme poverty, market sales of bushmeat were more important than household consumption. This challenges the view put forward in certain conservation quarters, that the way to reconcile the interests of the poor with those of conservation, in a 'win-win' scenario, is to prohibit market sales, but turn a blind eye to subsistence use (cf. Bushmeat Crisis Task Force, 2003, for example).

For a view of the pro-poor dimensions of the bushmeat commodity chain, there is some useful evidence from an overlapping team of ZSL/UCL researchers concerning mature bushmeat markets in Ghana. In a series of papers on the bushmeat trade in Takoradi, SE Ghana, Cowlishaw, Mendelson *et al* discuss the relative incomes and influence of five primary actors – commercial hunters and farmer hunters (always men) and wholesalers, market traders and chopbar operators (always women). While the latter handle the largest volume of produce, profitability is highest, in percentage terms, among the hunters. Hunters are found to capture 74% of the final sales price in Takoradi chopbars, a figure which is comparable to those found by other researchers elsewhere in Ghana. Ntiamoa-Baidu found that hunter income was similar to that of a graduate entering the Wildlife Service, and 3.5 times the government minimum wage. (This compares with Asibey's findings in 1977-8 that hunters earned comparable salaries to civil servants, or 8.6 times the earnings of government labourers. [see Mendelson *et al*, p.18]). Taking into account the fact that most hunters are also farmers, bushmeat provides an important supplement to rural incomes in this group. These authors note that there are few barriers to entry to hunting in Ghana, as the investment costs are relatively low by national standards (shotgun and ammunition and/or snares - to which must be added transport costs, as most hunters sell direct to the urban market). By contrast, the capital investment to run a wholesale business or chop bar is likely to be much higher. A substantial proportion of these entrepreneurs inherit their businesses from family members. Thus, the major entry-points for rural dwellers seeking to complement agriculture-based livelihoods are likely to be at the upper reaches of the commodity chain.

An interesting proposition of this work is that the sustainability of the current market profile is the result of the operation of an extinction filter. That is to say, vulnerable species (such as the slower-reproducing and larger, more vulnerable ungulates) have already been wiped out in the more accessible areas, so that only more robust and fast-reproducing species (chiefly rodents and smaller, farm-bush resident ungulates) now figure in the trade. The possibility then opens up of sustaining the industry from sustainable stocks of non-vulnerable species in the highly productive farm-bush, using forest protection more selectively to preserve the vulnerable species in isolated forest areas. It would clearly be unwarranted to extrapolate from these findings to draw conclusions as to the lack of connection between biological diversity and human welfare, but this does at least offer a more positive scenario than the doomsday view. The best strategy for achieving a win-win scenario might be to compromise early with the industry's needs, rather than – as is so often the case – to assume that the only way to save the weak and endangered species is to oppose the trade, in its entirety and implacably.

Conservation strategies and local livelihoods

Conservation policy has, at least until recently, failed to give serious consideration to the direct livelihoods dimensions of the bushmeat trade. Typically, the dominant legal framework is one which supports the preservation of nature, with a strong emphasis on interdiction and non-consumptive uses and restricting public access to the resource. The principles which are typical of forest laws, and which have long characterised exploitation of the timber resource – regulated access, licensed operators, financing arrangements to minimise investor risk, and rules to discourage damage to the resource while permitting consumptive use – are rarely in evidence. Though some international conservation agencies have attempted to address this issue (WWF-Cameroon's Conservation Programme [WWF-CCPO] being a promising example), successes have been few and far between. A range of factors – including the pressure of external fund-raising constituencies and the targets set in international conventions, both isolated from the consequences of living with the resource – act to restrict the possibilities.

Much greater efforts have been expended, in fact, on indirect approaches to management than on an attempt to accommodate the realities of the trade. These alternatives are often vulnerable to criticism precisely because of their lack of cognisance of livelihood interests.

Alternative income generating strategies have been particularly favoured among conservation agencies. The logic has been conservation-oriented, and de-linked from the livelihood realities. If, it is argued, other income generating opportunities can be identified, then it should prove possible to relieve the pressure on the forest by promoting them as alternatives. However, the linkage between the two is not self-evident. Logically, there seems no reason why these other activities should not figure as complementary rather than as alternatives, unless other conditions are also met. (cf. Brown, 1998) Hunting is a livelihood opportunity that has low entry costs and can be undertaken flexibly throughout the year. For this reason, it is particularly attractive to young adult males with limited social and agricultural responsibilities. Alternative livelihood options for this category of the population are unlikely alone to reduce hunting pressure unless they offer superior benefits to them, and successfully compete for their labour time.

The alternatives which have typically been promoted are open to question on both social and economic grounds. A class- or gender-switch is often implied, which defies both the conservation and economic logic. For example, substitution of bushmeat consumption with meat of domestic origin, through livestock-rearing schemes, involves a switch from a livelihoods-based activity involving poor young males (as hunters) and females (as traders and restaurateurs) to a capital-intensive industry benefiting quite a different social category, capitalist entrepreneurs. The economics of intensive livestock-rearing are often prohibitive for the smallholder. With cattle, the issues are likely to be tsetse control, crop damage and labour/fodder requirements; for pig-rearing, the high nutritional demands of such monogastrics may be equally inhibiting, particularly for producers who are not generating a significant surplus even for their own consumption needs. Attempts to substitute indigenous low-productivity but hardy land race fowls such as African pullets by high-yielding but high-risk cross-breed layers have often foundered with the very first attack of Fowl Pest. And so on.

Captive rearing schemes (Cane Rats in Africa, Paca in South America) have attracted much publicity, and are seen by some as the most promising conservation strategy.

However, the high labour inputs for tendance needed to accommodate these nervous and biologically unsuited animals means that, where they have succeeded, this has tended to be in urbanised settings remote from the forest environment, where the returns are enough to justify the investment costs. Again, the connection between breeding of such vermin species and the conservation of threatened ones is not immediately apparent. Finally, it must be wondered whether captive breeding could ever successfully compete with hunting, as long as wild-caught animals are abundant in the surrounding bush, and available as more or less a free good.

There could well come a time when such options do prove more attractive to investors in the range states, but the evidence is that this time is still very far off in the situations of greatest conservation interest. Except where donor involvement is a significant factor (GTZ's work in Benin being one example, the ECOFAC project in Gabon another), captive breeding is rarely likely to offer a diversion from the challenge of improving governance.

3. The approach from governance

The second area of current justification for donor interest in the bushmeat trade is the potential which it offers to contribute to improved governance. This final section of the paper considers some of the possibilities and risks which accompany the attempt to address the issue of forest governance as it pertains to bushmeat, through developing management models and other means.

The challenges are undoubtedly immense. On the one hand, most of the source areas are subject to major failures of governance which affect the utilisation of all forms of natural resources, not just wildlife. Approaches which require the pre-existence of effective systems of governance are thus unlikely ever to take root. On the other, there is little by way of successful experience of wildlife management in any comparable situation on which to build. However, investing in bushmeat management could be justified not only by the mutually reinforcing effects with existing governance improvements, but also by its role in expanding the voice of the rural majority in longer-term political reform.

Governance considerations feature in the bushmeat debate principally in two ways; firstly, as adjuncts to other initiatives that impinge on the issue of bushmeat, and its role in livelihoods; and secondly, in the way that they inform strategies to improve on the management of the bushmeat resource. Forest certification provides an example of the former; attempts to institute new management models for wildlife harvesting an example of the latter. We shall consider each in turn.

3.1 Forest certification

To date, the debate in relation to forest certification has centred not on the bushmeat chain of custody itself, but on the role which certification might play in mitigating the negative impacts of the timber industry on the wildlife resource. While the former approach would have virtues, a well-managed and sustainable trade is such a distant prospect as to make this of conjectural interest at the present time. By contrast, certification of tropical timbers is an active issue and commends itself more readily as a means of influencing the bushmeat supply. And being a non-state mechanism, it largely

avoids the paradox of requiring the pre-existence of the public governance systems that it is intended to promote.

Wildlife and hunting already figure among certification principles and criteria, or can be construed as such, in relation to such issues as forest use rights, indigenous peoples' rights and environmental impacts (for example, FSC principles 2, 5 and 6). In addition, a number of proposals are currently on the table for the more explicit integration of wildlife management standards into forest certification. The most prominent is the Ape Alliance's 'Code of Conduct to minimise the impact of hunting in logging concessions' (1998). The more recent proposal by Woodmark on behalf of Fauna & Flora International proceeds on essentially similar lines (Dickson, *pers.com.*).

These proposals need to be assessed not only for their relevance and effectiveness as industry instruments, but for the assumptions which they make about forest livelihoods, and their likely impacts upon them. In a context where industrial interests are dominant, the interests of other resource users have to be fought for on whatever terms are available. The disincentive for range state governments to advance progressive legislation is particularly evident. Having often inherited the beneficial legacy of a legislative framework which denies almost all tenurial rights to traditional users, these are rarely of a mind to surrender their power to endeavours which would, at best, represent only a secondary level of economic activity, as well as one for which the revenues would be much more difficult to capture. This is particularly the case where the precedents created would have political resonance. Thus, whatever the intentions, there will be strong pressures to channel governance changes towards the needs of the industry, downplaying its other dimensions. This limits their potential to act as a catalyst for more general reform.

Existing approaches are inevitably constrained by existing legal frameworks, inappropriate and unworkable as these colonial inheritances often are. The Ape Alliance Code is designed only to curb the industry, and makes no concessions to the interests of other forest users. It presumes and requires the sovereignty of the industry operator over the total land area, not merely the timber resource; accepts the validity of the existing legal frameworks and official notions of legality and illegality as a basis for the control of the wildlife resource, regardless of their public legitimacy; and encourages the development of an enclave economy (albeit a more disciplined one).

Where traditional ownership claims are accepted as valid (as in the FSC principles), these depend heavily on the notion of indigenous peoples' rights, as well as optimistic assumptions as to the clarity of their tenurial claims. Particularly in the context of West-Central Africa, where there is no history of alien conquest, and no segregation of 'indigenous' and 'settler' economies, such notions are fundamentally problematic. The situation here is more likely to be one in which traditional user rights are usurped by legislative principles that grant the state close to monopoly powers in managing resources on the public's behalf. In the case of Cameroon, for example, the recently-imposed national land use system or *zonage* disregards historical patterns of land usage in favour of a division of the forest estate into two zones: the permanent estate, reserved for forest production and conservation, where the rural majority have no rights; and the much smaller non-permanent estate, conceded for immediate or eventual conversion to other forms of usage. (Brown, 1999) It allows no recognition that there may be entirely legitimate land claims outside of this imposed structure of rights.

In summary, while there are strong grounds to support a better integration of different forms of land use, including hunting, through non-state mechanisms such as certification, present models are conceived within governance frameworks which are not well adapted to the contexts typical of the bushmeat trade, and unlikely to prove 'pro-poor'. Among the major challenges which present themselves are the need for a more constructive engagement between the industrial and local economies, and recognition that there are legitimate forms of land use which are not based on closely proximate residence.⁶

3.2 An attainable goal? – effective management of the bushmeat resource

The experience with certification warns of the difficulty of recognising livelihood imperatives in contexts dominated by powerful industrial and conservation interests. An alternative – and in principle, more promising – route to governance reform is through the active management of the bushmeat resource. The interest of development assistance donors in this option has, to date, been limited for reasons which are not difficult to understand. The existing bushmeat management systems in tropical Africa can usually be quite simply described. In most situations they are non-existent. Only the most sedentary animals show much evidence of active management by local users; in West Africa, this class is restricted to invertebrates such as snails and crabs [Falconer, *pers. comm.*].

There are, however, indications that progress can be made, provided two conditions are met. The first is the revision of the legal frameworks to create legitimate channels for the bushmeat trade. The present situation – of presumed illegality at all levels – is neither conducive to the development of participatory management models or to broader governance reform. So long as no legal channels do exist, then any attempts to tighten up on management are likely only to drive the trade further underground. (Dickson, 2003) This creates increased incentives for rent-seeking behaviour by officials, and encourages a further deterioration in standards of public governance. In the words of Egbe (2000):

“a law which makes the most common form of conduct illegal is itself an instrument of indiscipline and serves neither the interests of the State nor... the communities”

The second condition is that changes in the legal context should favour community participation in management not just for this one resource but across the board. In this way, the social capital created for each enterprise could become available to the others - a classic joint production issue, and hence a means of lowering transaction costs where they might otherwise be prohibitive. At the same time, broadening the range of legitimate interests in the forest estate is also likely to have beneficial effects on the quality of forest governance. In the case of Cameroon, for example, the allocation of forest exploitation rights to local communities may well lead not only to better management of timber and NTFP resources, but the potential for controlling hunting and bushmeat. Increasing the voice of this constituency over key livelihood resources could then have knock-on effects on governance, both through the enlargement of the public interested in the future condition of the resource, and linked effects on decentralised local government. (cf. Brown *et al*, 2002)

⁶ Hunting zones in tropical forests are not necessarily different from, say, North Atlantic fisheries in this regard.

That said, forest co-management legislation is not always well-adapted as it stands to the needs of hunting and the bushmeat trade. The areas conceded to communities for timber exploitation are often relatively small, as well as already degraded by several cycles of timber felling and allied activities. In Cameroon, for example, community forests must be 5000ha or less, and located only in the non-permanent forest estate. This provides the model for all forms of land use by communities under the legislation, including community hunting zones.

In practice, much greater areas are likely to be needed by hunters, both as basic catchments and to accommodate the range and habits of different prey species. Forest legislation is often naïve in its assumptions about the nature of land title, and presumptions as to single and exclusive usage of the forest resource. Landscape (ecosystem) approaches may therefore be indicated, to broaden the area of coverage and to allow for an integrated approach to management. Landscape perspectives may have the added advantage of broadening the range of overlapping activities which are recognised to be legitimate on any one territory. The lack of an historical span of governance wider than the village is a challenge in many forest areas, which were often notable for their 'stateless societies' in pre-colonial times. However, the pressures to create alliances and federations of local users to handle the management and marketing of other forest resources, such as timber, may also offer potential for the bushmeat industry.

Once effective (even if partial) land title is secured over adequate areas for hunting purposes, it is arguable that users will be encouraged to consider innovative arrangements for their management. Conservationists are typically sceptical of any notion that a selectivity principle can be applied to the hunting industry, at the point of kill. The argument is that once the hunter has an antelope in his sights, it is unlikely that his decision will be much influenced by its CITES listing or long-term ecosystem effects. Rare and endangered species which would not be economically worth hunting on their own merits are made more vulnerable because of by-catch considerations, and thus incentives to encourage the hunting of unlisted species are likely to impact very negatively on wildlife that is at risk. Such arguments no doubt have some validity. But once again, an environment totally devoid of positive incentives to manage the resource provides a very poor arena in which to assess how individuals would behave if their livelihood interests were acknowledged as legitimate. Conditional licensing of local users which encourages active management and discrimination in decision-making strategies cannot be derived from an institutional milieu based on the repression and stigmatisation of the livelihood strategies of the majority.

A livelihoods perspective is also indicated when assessing the potential of alternative management models, particularly those which derive from contrasting social environments. We can illustrate this point by reference to the types of harvesting systems which have been proposed as applicable to the bushmeat trade. The most celebrated of these is the principle of individual transferable quotas (ITQs) which has been employed to regulate several of the major industrial sea fisheries. (cf. Inamdar *et al*, 1989) With some licence, this can be taken as illustrative of a broader class of cognate management models.

The evidence of cognate models: ITQs in sea fisheries

Though controversial in their application and with many (and legitimate) detractors, ITQs have led to some real, albeit qualified, improvements in the management of sea fisheries. It is the institutional dimensions of these improvements which commend themselves to the bushmeat case. On the one hand, they have helped to create an active constituency of those with user rights, often in complex jurisdictions over straddling stocks. They have helped clarify access in relation to a resource which, like bushmeat, has fugitive characteristics. At the same time, they have offered an incentive to this constituency to monitor and self-regulate the harvest. This has been achieved without need for perfect knowledge of the condition of the resource, being based rather on a willingness to adjust yields in line with catch data on a year-on-year basis. All of these provide useful leads to the management of the bushmeat trade.

Some key differences occur, however, with implications for local livelihoods. Sea fisheries are subject to a degree of centralisation of markets and management arrangements, both of which are generally lacking in the bushmeat trade. The sustainability challenges facing the industry at the time that ITQs were introduced had as much to do with over-capitalisation and over-sophistication of technology as the drive for equity. Issues such as security of access to the resource and exclusivity of ownership rights, while politically controversial, are not insurmountable in the types of wealthy and rapidly changing industrial societies involved in the major sea fisheries. The principle of transferable rights, and the risk of concentration of ownership through it, though of real concern, are ones which can be monitored and managed where good governance of the society is generally assured. None of these applies to the typical contexts of bushmeat production, particularly in Africa. In these situations, decentralisation is more of a virtue than a vice, from the perspective of the poor. While technology has permeated the industry in the last fifty years (along with increased access to forest areas, this has contributed to an exponential increase in the offtake), it is nevertheless at a fairly low level compared to fisheries technology, and much closer to neutral in its equity effects. A new surge of technological change is unlikely to hit the bushmeat industry, at least in the short-medium term. And, given the problems of public governance which affect the range states in question, it is highly unlikely that the principle of transferable rights could be managed in a way which protected the interests of indigenous rights holders. Thus, while bushmeat management may be able to gain from the experience of the fisheries sector, there are likely to be only limited gains to be made from the wholesale transfer of its management ideas.

Conclusion: managing bushmeat to support local livelihoods

We are driven, therefore, to the conclusion that the point of departure for the resolution of the bushmeat crisis must be the effective management of the bushmeat resource, according to principles specific to the sector, and giving major priority to livelihood concerns. None of the alternative strategies on offer – interdiction through protected area designation, substitution of alternative income generation opportunities, or imposition of governance arrangements from cognate disciplines – looks to be able on its own to generate the livelihood guarantees and/or the conservation benefits which effective management of the resource requires.

The case for international assistance to support the development of a well-regulated bushmeat industry must be based in the first instance on a recognition of its important

livelihood benefits, and in the second, on its potential to contribute positively to the growth of good governance of the broader forest resource. An essential prerequisite for the latter must be to bring the bushmeat trade into the open and clearly identify the possibilities for legal and legitimate trade. Unless this is done, the likely effect will be to drive the trade further underground, and the only benefits will be increased opportunities for rent-seeking behaviour, with no improvements to the condition of the resource.

What has been lacking to date is an understanding of the centrality of social interests to conservation goals. As others have noted, sustainability is not, at the end of the day, an issue of purely biological concern (Hutton & Dickson, 2002:443). To argue that social and livelihoods issues are more pressing is merely to acknowledge that the decisions as to what resources to retain and what to consume will ultimately be made not by conservationists but by those whose lives are directly affected by their day to day contact with the wildlife resource.

Bibliography

APE ALLIANCE. 1998. *The African Bushmeat Trade – A Recipe for Extinction*, Fauna and Flora International, Cambridge, 74 pp.

ARNOLD JEM AND RUIZ PERES M. 2002. 'Can non-timber forest products match tropical forest conservation and development objectives?' *Ecological Economics* pp.437-447.

BENNETT E AND ROBINSON J. 2000. 'Hunting for the Snark' Chapter 1 of Robinson & Bennett, pp.1-9.

BOWEN-JONES E. 2003. 'Bushmeat: Traditional Regulation or Adaptation to Market Forces?' in Oldfield S (ed.)

BOWEN-JONES E, BROWN D AND ROBINSON E. 2001. 'Assessment of the Solution-orientated research needed to promote a more sustainable Bushmeat Trade in Central and West Africa', research report to DEFRA, Bristol, pp. .

BROWN D. 1998. Participatory biodiversity conservation: rethinking the strategy in the low tourist potential areas of tropical Africa. *Natural Resource Perspectives, No.33, ODI*, 6pp.

BROWN D. 1999. Principles and Practice of Forest Co-management: evidence from West-Central Africa' *EU Tropical Forestry Papers No.2*, ODI London, 33pp.

BROWN D, MALLA Y, SCHRECKENBERG K AND SPRINGATE-BAGINSKI O. 2002. 'From Supervising 'Subjects' to Supporting 'Citizens': Recent Developments in Community Forestry in Asia and Africa', *ODI Natural Resource Perspectives N^o. 75*, February, 4pp.

BURNHAM P. 2000. 'Whose Forest? Whose Myth? - Conceptualisations of Community Forests in Cameroon' In *Land, Law and Environment: Mythical Land, Legal Boundaries*. Abramson,A. and Theodossopoulos,D., Editors. Pluto Press, London.

BUSHMEAT CRISIS TASK FORCE. 2003. email listserve and website (url: <www.bushmeat.org>)

CHARDONNET, P., FRITZ, H., ZORZI, N. & FERON, E. 1995. Current importance of traditional hunting and major contrasts in wild meat consumption in sub-Saharan Africa. Integrating People and Wildlife for a Sustainable Future, Proceedings of the first international wildlife management conference (eds J.A.Bissonette and P.R. Krausman), The Wildlife Society, Bethesda, Maryland, pp. 304-307..

CHARDONNET P, DES CLERS B, FISCHER J, GERHOLD R, JORI F AND LAMARQUE F. 2002. 'The value of wildlife' Review sci.techn.Off.int.Epiz. 21 (1), pp. 15-51.

COWLISHAW G, MENDELSON S AND ROWCLIFFE M. 2003a. 'Market Structure and Trade in a Bushmeat Commodity Chain', draft, Zoological Society of London, 2003

COWLISHAW G, MENDELSON S AND ROWCLIFFE M. 2003b. 'Evidence for Post-Depletion Sustainability in a Mature Bushmeat Market', draft, Zoological Society of London, 2003

DE MERODE E, HOMEWOOD K AND COWLISHAW C. 2003. 'The Value of Bushmeat and other Wild Foods to Rural Households Living in Extreme Poverty in the Eastern Democratic Republic of Congo', draft, University College London.

DICKSON B. 2003. 'What is the goal of regulating wildlife trade? Is regulation a good way to achieve this goal?' pp.2`-31 of Oldfield, S (ed) *The Trade in Wildlife: Regulation for Conservation*, Earthscan, London.

EGBE, S. 2000. *Communities and Wildlife Management in Cameroon*. Consultancy report presented to the DFID-Cameroon Community Forestry Development Project, Yaoundé, pp.20.

ELLIOTT J. 2002. 'Wildlife and Poverty Study', DFID Rural Livelihoods Department, London, 80 pp.

FA J, JUSTE J, PEREZ DEL VAL J AND CASTROVEIJO J. 1995. 'Bushmeat Exploitation in Tropical Forests: An Intercontinental Comparison' *Conservation Biology*, 16, 1, .

FA, J.E. AND PERES, C.A. 2001. Game vertebrate extraction in African and Neotropical Forests: an intercontinental comparison. In: Conservation of Exploited Species. eds. Reynolds, J.D., Mace, G.E., Redford, K.H. and Robinson, J.G. Cambridge: Cambridge University Press.

FA J, PERES CA AND MEEUWIG J. 2002. 'Impact of Market Hunting on Mammal Species in Equatorial Guinea', *Conservation Biology*, 9, 1107-1115, pp. 232-237

FA J, CURRIE D AND MEEUWIG J. 2003. 'Bushmeat and food security in the Congo Basin: linkages between wildlife and people's future', *Environmental Conservation*, 30 (1), pp. 71-78.

FAIRHEAD J AND LEACH M. 1998. *Reframing Deforestation: Global analysis and local realities: studies in West Africa*, Routledge, London, 238 pp.

FOREST STEWARDSHIP COUNCIL. 2000. *FSC Principles and Criteria*, FSC Secretariat, Mexico (url: www.fscoax.org/principal.html)

HAWTHORNE W. 1993. 'Forest Regeneration after Logging: Findings of a Study in the Bia South Game Production Reserve, Ghana', *ODA Forestry Series No. 3*, London/Kumasi.

HUTTON J AND DICKSON B. 2002. 'Conservation out of exploitation: a silk purse out of a sow's ear?' Chapter 20 of Reynolds *et al* (eds.)

INAMDAR A , BROWN D AND COBB S. 1999. What's Special About Wildlife Management in Forests? Concepts and Models of Rights-Based Management, With Recent Evidence From West-Central Africa, *ODI Natural Resource Perspectives No.44*, 4 pp.

MENDELSON S, COWLISHAW G AND ROWCLIFFE M. 2003 Anatomy of a bushmeat commodity chain: actors on the urban market stage of Takoradi, Ghana', draft, Zoological Society of London, London.

METCALFE, S. 1994. 'The Zimbabwe Communal Assets Management Programme for Indigenous Resources (CAMPFIRE)' in D Western & RM Wright (eds.) *Natural Connections: Perspectives in Community-based Conservation*, Island Press, Washington, pp. 161-191.

OATES JF. 1998. *Myth and Reality in the Rainforest*, Chicago University Press.

OLDFIELD S ed. 2003. *The Trade in Wildlife: Regulation for Conservation*, Earthscan, London, 210 pp.

REYNOLDS J, MACE G, REDFORD K AND ROBINSON J eds. 2001. *Conservation of Exploited Species*, Cambridge University Press, pp..

ROBINSON J AND BENNETT E eds. 2000. *Hunting for Sustainability in Tropical Forests*, Cornell University Press, 582 pp.

ROBINSON J AND BENNETT E. 2000. 'Carrying Capacity Limits to Sustainable Hunting in Tropical Forests', Chapter 2 of Robinson and Bennett (eds.), pp. 13-30.

ROBINSON J AND BENNETT E. 2002. 'Will alleviating poverty solve the bushmeat crisis?' *Oryx*, 36, 4, p. 332.

ROBINSON J AND REDFORD K. 1991. *Neotropical Wildlife Use and Conservation*, Chicago University Press, 520 pp.

SCOONES I, MELNYK M. AND PRETTY J. 1992. The hidden harvest: wild foods and agricultural systems: a literature review and annotated bibliography. IIED, SIDA and WWF, London, UK and Gland, Switzerland.

SECRETARY OF STATE FOR INTERNATIONAL DEVELOPMENT, UK. 2002. Speech by the Rt. Hon Clare Short MP to the UK Bushmeat Campaign Conference, 28 May, Zoological Society of London.

TRAFFIC (2000) *Food for Thought: The Utilisation of Wild Meat in Eastern and Southern Africa*, Nairobi.
