Wildlife and Development Series No 8

FROM LIABILITY TO ASSET:

Wildlife in the Omay Communal Land of Zimbabwe

Russel TAYLOR

IIED

In association with The CAMPFIRE Collaborative Group

Preface

The first eight papers in this series are a linked set which focus on Zimbabwe's *CAMPFIRE* programme. The views presented are those of the authors, not of IIED.

The Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) is an exploration of rural development and conservation in Africa. It seeks to restructure the control of Zimbabwe's countryside, giving people alternative ways of using their natural resources. A wholly African initiative, *CAMPFIRE* emerged in the mid-1980s with the recognition that, as long as wildlife remained the property of the state, no one would invest in it as a resource. Since 1975, Zimbabwe has allowed private property holders to claim ownership of wildlife on their land and to benefit from its use. Under *CAMPFIRE*, people living on Zimbabwe's impoverished communal lands, which represent 42% of the country, claim the same right of proprietorship. Conceptually, *CAMPFIRE* includes all natural resources, but its focus has been wildlife management in communal areas, particularly those adjacent to National Parks, where people and animals compete for scarce resources. Since its official inception in 1989, *CAMPFIRE* has engaged more than a quarter of a million people in the practice of managing wildlife and reaping the benefits of using wild lands.

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Number 8

From liability to asset: Wildlife in the Omay Communal Land of Zimbabwe

Russel Taylor

Introduction

The damage inflicted by wild animals upon rural people, their property, crops and livestock, is a major source of conflict throughout much of rural Africa with far reaching implications for both conservation and development. Elephant are a particular problem where they exist, but other wild species - both large and small can also be highly destructive. Consequently, rural people are usually highly intolerant of wildlife.

The traditional response to problem animals, especially dangerous game, is the harassment or destruction of the culprit(s) which might be involved. The success of such action has yet to be critically evaluated despite the killing of many thousands of animals on control work. The nature of the problem needs careful assessment, especially where the economic potential of animals might greatly exceed their cost as a nuisance, and where the sustainability of their on-going use might be threatened by excessive control measures.

Under Zimbabwe's Communal Areas Management Programme for Indigenous Resources (CAMPFIRE), responsibility for wildlife was conferred on the Nyaminyami District Council in northern Zimbabwe when it received "appropriate authority" status from the Wild Life Department in January 1989. Since then the District Council has been charged with the administration and management of the wildlife resources within its jurisdiction. The scheme seeks to improve the livelihoods of the rural poor in Nyaminyami through sustainable wildlife use while promoting sound and sustainable land use options and enhancing biological conservation.

This paper highlights some of the features of CAMPFIRE within the Omay Communal Land, a large portion of Nyaminyami District that is particularly rich in wildlife due to its position surrounding Matusadona National Park. Emphasis is placed on the way the district has tried to manage elephants so as to minimise conflict and increase tolerance towards them on the part of local people.

Omay Communal Land
Matusadona National Park
Msampckanuma
Nebiri
Sickobvu
Negande
Mola
Chalala
Buml Hills
Lake Kariba
major settlement areas
completed electrified game fencing
proposed electrified game fencing
N
0
km
10

Omay Communal Land

The Omay Communal Land, on the southern shore of Lake Kariba and adjacent to Matusadona National Park, has a total area of 2,870 sq. km and a population of 19,000 people. Settlements are centred around four chieftainships, those of Mola, Negande, Nebiri, and Msampakaruma. The households and villages in each chieftainship are organised into administrative units called "wards". Commercial growth, based on tourism and fishing, is focused on two lakeside locations, Bumi Hills and Chalala. The village of Siakobvu is the administrative centre for Nyaminyami district.

The environment is semi-arid, with seasonal and highly variable rainfall falling between November and March and rarely amounting to 650 mm a year. The climate is hot with maximum temperatures in excess of 40°C and minimum temperatures rarely falling below 17°C. Agriculture is limited to subsistence cultivation and livestock holdings are confined mostly to goats - cattle having been precluded until very recently due to the presence of tsetse fly. Wild herbivore populations in Omay are typical of the Zambezi Valley. They include 2,000 elephant, 6,000 buffalo, 15,000 impala, and lesser numbers of a further 12 species.

Elephant distribution

Census data for elephant in Omay have been obtained on an annual basis over the past 13 years. Although the mean number estimated over the most recent 10 of these annual counts is 2,098 the data indicates a long-term upward trend, estimated at 3-4 per cent per annum. Localised densities in uninhabited terrain, where elephant distribution is clumped, may be as high as three elephants per sq. km.

Overall, the density of elephants does not differ between Matusadona National Park and neighbouring Omay, but there are marked differences in distribution, group size, home-range size and movement. This is largely a reflection of the management treatments to which elephants are subjected in the two areas. Whereas elephants enjoy protection and the absence of human disturbance in the national park, they are subjected to hunting, harassment, and other human activities in the communal land.

Problem elephant and their control

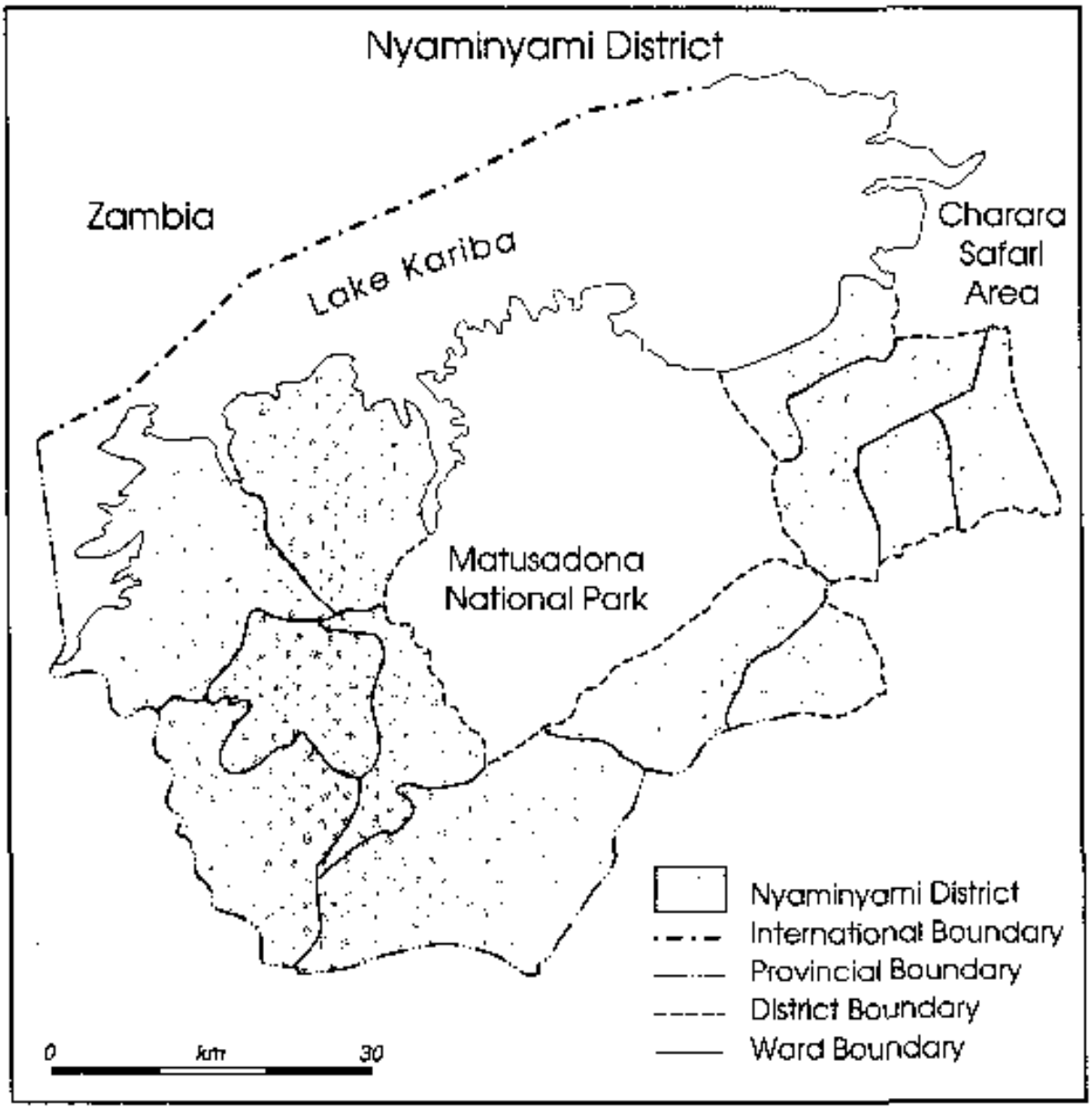
Elephants have been shot to protect crops and people in the Omay Communal Land since the late 1950s following the relocation of the Tonga people to the area after they were displaced by the filling of Lake Kariba. In the northern Sebungwe area asa whole (of which Omay forms a significant part), some 348 elephants were shot between 1955 and 1979 on crop protection measures. In the Omay itself, probably less than 10 elephants were shot annually during the 1970s because numbers of both people and elephants were relatively low at the time, so conflict was minimal. Furthermore, Wild Life Department personnel saw their role principally as one of animal protection and therefore minimised efforts to deal with local villagers' problems.

After Independence in 1980, the question of conflict between people and wildlife, especially elephants, took on a much greater political significance. As a result the Wild Life Department was required to deal with problem animals in communal lands far more diligently than it had previously. With the granting of appropriate authority status in 1989, Nyaminyami District implemented a problem animal monitoring programme in Omay. A comprehensive, yet simple, report and return form was designed for completion by authorised control officers and others involved in dealing with these problems. Between January 1989 and December 1989, some 1,000 problem animal reports were filed at Siakobvu. Together with six years of similar data from the Wild Life Department, these records provide a wealth of information on conflicts between people and animals. Close examination of this data shows that over 70 per cent of reports were elephant-related and occurred during the rainy season, between January and the end of April. These elephant problems peaked in the main crop growing period of February and March with the raiding of fields of maize millet and sorghum.

However, despite the high number of incidents, and the fact that there are no quotas set for the killing of problem animals, the number of elephants shot on problem animal control (PAC) in Omay did not increase substantially. Between 1983 and 1992 an average of only eight problem elephants were killed each year, (Table 1) though records show that the number of requests to deal with problem animals far exceeded the numbers actually killed. The reason appears to be that the council authorities implementing the CAMPFIRE programme have recognised that elephants, and especially bull elephants, are valuable when taken by foreign sport hunters, but practically worthless when shot for crop raiding. This has relevance to the community too, as a large portion of the revenues from the hunting concessions find their way to the producer wards and households.

Table 1: Problem Animal Control (PAC) and Trophy Bull Elephant off- takes in Omay Communal Land,1983-1992. (Assumes an elephant population of 2,000)

Year	PAC Off-take Number	%	Trophy Off-take Number	%	TOTALS Number	%
1983	5	0.25	12	0 60	17	0.85
1984	8	0.40	12	0.60	20	1.00
1985	6	0.30	12	0.60	18	0.90
1986	10	0.50	12	0.60	22	1.10
1987	6	0.30	12	0.60	18	0.90
1988	9	0.45	16	0.80	25	1.25
1989	9	0.45	14	0.70	23	1.15
1990	8	0.40	12	0.60	20	1.00
1991	12	0.60	10	0.50	22	1.10
1992	8	0.40	12	0.60	20	1.00
Total	**81**	-	**124**	-	**205**	-
Means	**8.1**	**0.41**	**12.4**	**0.62**	**20.5**	**1.03**


Nyaminyami District
Zambia
Lake Kariba
Charara
Safari
Area
Matusadona
National Park
Nyaminyami District
International Boundary
Provincial Boundary
District Boundary
Ward Boundary
0
km
30

Safari Hunting

Big game animals in Africa are highly sought after for their trophies by foreign tourists, mostly from North America and Europe, and safari hunting has been undertaken in the Omay Communal Land for over 20 years. Neither the local community nor the district council try to run the highly complex and costly hunting business themselves. Instead, the council leases the hunting opportunities in Omay to commercial safari operators for a three to five year period. This activity is considered an excellent form of eco-tourism for the area, being both *ecologically and economically* sustainable and directly benefiting rural people through the return of revenues.

Elephant are the key species in the tourist hunting system in Omay. Hunters preferentially seek male elephants with large ivory tusks which they take as trophies. In order to sustain good quality trophy elephant hunting, off-take quotas ideally should not exceed 0.7 per cent of the estimated total population. Over the last 10 years, the annual offtake quota for elephant, based on a population estimate of 2000, has usually been 0.62 per cent of the total number, and has never exceeded 0.8 per cent. However, when the number of elephants killed as problem animals is added to those taken during sport hunting, the total offtake amounts to 1.03 per cent, clearly exceeding the level which would ensure that trophy quality remains constant. Either the number of animals shot on safari or the number shot as problem animals has to be reduced if Nyaminyami District is to continue offering competitive big game hunting on the international market.

The safari hunting season usually commences at the end of April or beginning of May, following the cessation of the rains. Consequently, most elephants shot on the safari hunting quota are taken from May onwards, during the dry season, but there is no legal restriction to hunting during the rains. One possible solution to reduce the number of bull elephants *killed is to* encourage safari hunting during the rainy season when most conflict occurs. By bringing the safari hunting of elephant bulls forward into the rainy season, it is possible for crop-raiding animals to double up as safari trophies. However, there are good reasons for the traditional dry season hunting calendar, not least the comfort of the hunter, and any shift in the hunting season will have to occur gradually over a number of years. In practical terms it is suggested that the usual total off-take of 20 bull elephant be formalised as a quota covering both sport hunting and problem animal control. Then, subject to a number of conditions, the commercial safari operators should be allowed, and even encouraged, to market problem elephants in addition to the trophy portion of the quota. The aim is to ensure that within five years most of the problem elephants will be marketed to foreign hunters and that a lot of this hunting will take place in the rainy, crop growing season. As these

desired changes are introduced, so there should be a complimentary reduction of the quota to 12 animals. The allocation of the quota between rainy season problem animal control and dry season trophy hunting can vary and be adjusted between years at the discretion of the district council in consultation with the resident safari hunting operators.

In adopting this approach, there will be less wastage of the bull elephant resource and an increased financial return to the council and communities. Ultimately, this will contribute to the process in which a liability - the elephant - will be increasingly viewed as an asset.

Conditions and marketing

Principal amongst the conditions that would be set for the commercial safari operator is the requirement that each elephant shot in the rainy crop growing season must be a genuine problem animal destroyed where the conflict has arisen. This will increase the difficulty of hunting enormously, and greatly inconvenience the foreign hunter. Therefore good marketing will be essential to the establishment of safari hunting in the rainy season. There is no doubt that, initially, there may be market resistance. It will be difficult for the safari operator to sell full hunts since many species are hard to find when vegetation is in full flush, nor will there be enough separate hunting periods (of approximately 12 days) in the rainy season between January and April to share out the number of problem elephants in a commercially useful way. Therefore, the safari operator will have to be encouraged and helped to market cheaper, shorter hunts. Because of the conditions imposed upon the client, it is suggested that a sliding price scale can be attached to both the daily rate and weight of ivory from a problem animal control elephant. The full trophy and daily rate fees would only be charged for an elephant shot with tusks of at least the average trophy weight for the district. Fortunately, many safari operators are very keen to market elephant hunting in this way, particularly as very good trophy ivory of 3,645 kg per tusk has been taken in communal lands during the wet season. Safari operators also recognise that it is in the long-term interest of their business to reduce the number of animals which are killed as problems, without the benefit of a return from a foreign hunter.

Fencing

Another way to reduce conflicts is to erect barriers between elephants and legitimate human activities. In the late 1980s, in Negande, one of the wards within Omay, a small fence was installed around a 3 hectare irrigation plot which produced green crops at the height of the dry season. The fence was severely battered during the first dry season when irrigated crops were grown but no elephants broke through. Following reaping of the crop, villagers returned to their traditional rainy season fields and abandoned maintenance of the fence. Not only did elephants and other animals then penetrate the fence, but much of it was badly damaged or swept away by the seasonal rains. Subsequently, in September 1991, an electrified elephant-proof fence of 18 km was erected around the whole 50 sq. km Negande settlement area. The fence was not closed along a 12 km opening along the north where an abrupt, steep-sided escarpment provides a physical barrier to elephant movement. This huge project followed protracted community debate which commenced in late 1988 and ultimately involved the moving of three villages which would otherwise have remained exposed to marauding animals. Although the Negande fence encloses only 10 per cent of the ward, following completion of the fence, crop raiding incidents fell by 65 per cent. Arguably, the effectiveness of the fence could be improved if the open end were to be closed, but it has not been established if such closure is cost-effective.

Technically, both of the fencing projects were successful and although there were some construction defects, these were easily rectified. However, no economic cost-benefit analysis has been undertaken for the Negande fence. Whilst the most important perceived benefit is the reduction in crop losses, there is no quantification of the economic saving thus made, especially when the costs of fence construction and maintenance are taken into account. Moreover, the real economic benefit may well lie in the number of bull elephants that are saved from being destroyed as problem animals. Further fencing programmes are planned for the other major settlements in Omay but cost-benefit analyses are essential prerequisites to their implementation.

Zoning

While strategically placed fences provide immediate benefits, the long-term conservation and sustainable use of elephants will depend very much on an integrated approach to land use which takes into account not only their presence but also their management and productive role in the economy of the district. There are two levels of land use planning and zoning in the context of elephant and other wildlife management activities in Omay which need to be considered, firstly at the district level and secondly at the ward and village level. To date, planning has occurred at both levels but not necessarily in full consultation with the community in the case of the former, and in the latter largely by agricultural extension officers who have not taken into account all the implications of wildlife management.

District level land use

Nyaminyami District has embarked upon a plan for the development of tourism based on wildlife which includes proposals for zoning for different land uses. Amongst these proposals are:

- The formal establishment of a wildlife sanctuary within the existing Bumi Hills state land where wildlife presently enjoys complete protection. Bumi Hills is an important international tourist destination with good wildlife populations and spectacular views of Lake Kariba. Here, elephants are especially important as a tourist attraction.

- The designation of a range of hills, the Mapongolas, as a Conservation Area. This would exclude human settlement providing a corridor for the movement of animals between Matusadona National Park to the east and Chizarira National Park to the west. This link is particularly important for the long-term maintenance of genetic variability within the Sebungwe elephant population as a whole.

- The establishment of a number of lease sites with lake shore frontage for the development of small rustic camps by commercial photographic safari operators. These will allow easy access for tourists to adjacent Lake Kariba Recreational Park and Matusadona National Park, parts of the government's Parks and Wildlife Estate.

- The formal recognition of a number of key conservation areas, including unique stands of vegetation such as thickets which constitute important habitats for elephant, crocodile breeding areas on the lake shore, and smaller areas in the Omay hinterland.

Much of the remainder of the district, which has very little agricultural potential, would be devoted to safari hunting. With careful separation, the consumptive use of wildlife need not conflict with other options such as game-viewing and photographic safaris. Thus, overall, zoning would be linked to development objectives

which are compatible and internally consistent.

Elements of this zoning are in the process of adoption. For example, five lease sites have been identified for tourist camps, advertised in an open and competitive market, and private sector operators objectively selected. The district is now entering into joint venture partnerships with these operators which will not only generate additional revenues for the district but also provide local employment.

Ward and village level land use

As much as 80 per cent of Omay is unsuitable for arable agriculture due to poor soils and broken terrain. Settlement presently extends over some 10 per cent of the district but this is expanding due to illegal immigration. Consequently, there is need for appropriate participatory planning at the ward and village level. This is being undertaken by the Department of Agricultural Technical and Extension Services which is planning the establishment of residential, arable and grazing areas within wards and villages, and even within individual households. Whilst this involves greater community participation than does the district level planning, the planners have largely ignored the increasingly important economic role that wildlife is playing in the district. For example, grazing holdings are being planned and allocated in anticipation of the introduction of cattle once the tsetse fly is eradicated rather than as areas for wildlife which is already established and contributing to the local economy. There are major concerns about the introduction of cattle to the area ranging from ecological sustainability to the economic effects of competition with wildlife.

Wildlife Revenues

Over the three years 1989-1991, Nyaminyami District earned ZS1,273,503 (US$467,393) from its wildlife. Moreover, in each successive year these CAMPFIRE revenues increased, albeit only slightly in real terms. Earnings have come from a number of management and utilisation activities, including hunting, cropping for meat production, problem animal control and, more recently, game-viewing and photographic tourism. Elephants are very much at the centre of these earnings, in particular, sport hunting. Not only does hunting generate 85 per cent of the total wildlife revenue, but elephants themselves contribute an average of 38 per cent of the total value of the hunting quota (the national contribution of elephant to CAMPFIRE revenues is 64 per cent) (Table 2). The fact that elephants killed as problem animals contributed less than two per cent of the total income serves to illustrate the loss of value resulting from this activity. When the same animals are taken by foreign hunters income is increased nearly twenty-fold and the prospects for sustaining and conserving this valuable resource are much improved.

In any discussion of conflict resolution between people and animals in CAMPFIRE it is assumed that the earnings from wildlife will offset its costs - that it will be a net asset to the community. However, in CAMPFIRE this depends almost entirely on the flow of money from utilisation to the people who have to bear the problem - the so called "producer community". When the Wild Life Department devolved its authority to the district council under Campfire, it laid down a set of conditions or guidelines for the council to follow for the allocation of gross revenues from wildlife. The council is expected to retain no more than 15 per cent as a levy and in addition it may also use an additional 35 per cent for expenditure linked to wildlife management. The remaining 50 per cent of revenues should be returned to wards, villages, or households. Nyaminyami District has yet to meet these requirements. Only in 1989 was the ward dividend in excess of 50 per cent of revenues and of the total Z$27 million earned by CAMPFIRE to date only 39 per cent has been returned to the wards. This is a major constraint to effective elephant management and conflict resolution based on the animal's relative value to villagers.

Table 2: The proportion of revenue earned from the hunting quota of elephants in relation to the total value of the quota in Nyaminyami District.

Year	Total value of quota Z$	Value of elephants Z$	%
1989	189 400	83 000	43.8
1990	238 100	90 000	37.8
1991	223 100	75 000	33.6

Discussion

Despite a growing human population in Omay, elephant numbers in the district have remained high over the past 12 years and, indeed, have probably increased. Their continued existence, whilst linked to a limit in human population growth and immigration, is very much dependent upon human tolerance towards their presence. In Omay this tolerance is being sought through the placing of an economic importance on wildlife as a whole, and elephants in particular. The elephant yields revenue principally through high-value international safari hunting. To retain this value, limits have to be placed on the number of bull elephants killed and there has to be a change in the hunting system to encourage rainy season hunting.

During 1992, four crop-raiding bull elephant were successfully hunted by foreign safari hunters following the approach described in this paper. Moreover, the Nyaminyami Council agreed that the revenues earned from these elephants should be returned direct to the affected communities. Cheques for each of the animals shot, varying in value from Z$13,000 to Z$22,000, were paid by the safari operator to ward wildlife committee chairmen. In this way, the crop-raiding elephants were effectively dealt with, villagers benefited directly from the money earned through hunting, the safari operator was able to market more elephants and the control process was kept within sustainable limits.

Non-consumptive forms of tourism, based on game-viewing and photographic safaris, are likely to become increasingly important in Omay as joint-venture partnerships come into operation over the next few years. Although this sector earned the district only six per cent of its income in 1991, this is expected to increase to exceed the hunting revenue threefold over the next five years. Total projected CAMPFIRE earnings in Omay are likely to be around Z$6 million per year, with non-consumptive tourism contributing Z$4.5 million and sport hunting Z$1.5 million. Elephants of course, are an essential component of these predictions.

Earning money from wildlife can be achieved with a great measure of success as Nyaminyami District has demonstrated. But this is only one half of the task at hand. It is even more important that the district ensures the wildlife revenues are returned to the appropriate beneficiaries - the rural poor and peasant farmers who have to live alongside the wildlife which has been so much of a problem to them in the past. Returning such benefits to people who bear the cost of living with wildlife is at the heart of the CAMPFIRE programme and this has yet to be meaningfully achieved. However, not only must benefits be returned, but there must also be greater participation on the part of local inhabitants and communities in the control and management of their wildlife. In this way they will become both responsible and accountable for their wild natural resources.

Conclusion

Elephant conservation is as much an institutional problem as it is a technical one and its resolution lies in the hands of local people who will make the ultimate decision as to how they finally use their land. That decision will be strongly influenced by what benefits from wildlife, and elephants in particular, both perceived and actual, accrue to individual householders and farmers. Only when perceived as an asset will the conservation of elephants truly become part of the locally developed and integrated approach to land use, and part of an economy that makes wise and sustainable use of natural resources.

Notes

The Wildlife and Development Series is produced by the International Institute for Environment and Development (IIED) to highlight key topics in the field of sustainable wildlife use. The Series is aimed at policy makers, researchers, planners and extension workers in government and non-government organisations world-wide. This Series arises from two sources. First by invitation of IIED to others working in this field. Secondly from IIED's own work.

This is an invitation paper. It is one of a series that reviews a selected feature of contemporary importance from Zimbabwe's Communal Areas Management Programme for Indigenous Resources (CAMPFIRE). It was arranged and edited by the Africa Resources Trust on behalf of the CAMPFIRE Collaborative Group supported by the Biodiversity Support Programme (a consortium of the World Wildlife Fund, the Nature Conservancy and the World Resources Institute) with funding by the United States Agency for International Development.

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Please note that:

- With the introduction of the Rural District Councils Act in 1988, all Rural Councils and District Councils in Zimbabwe were amalgamated to form Rural District Councils. The two terms are interchangeable in the CAMPFIRE papers.
- The Department of National Parks and Wildlife Management has been referred to as the Wild Life Department in this series of papers.

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