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Wildlife – a Forgotten Resource

Every forestry department would be well-advised to make it their aim to use the state forests in such manner as would permit future generations to derive at least as much benefit from them as the present generation.

Georg Ludwig Hartig (1764 – 1837)

1. The Potential of Wildlife as a Natural Resource

In the tropical regions of Africa, wildlife is much more varied and numerous than in Europe. Biomass in the savannahs of Eastern and Southern Africa can be up to 20 tons per km², the highest of any ecosystem. This high productivity is the result of adaptation of animals to the habitat in the course of evolution:

- Different species feed from different parts of the plants.
- Competition between numbers of one species as well as between different species leads to extensive and balanced use of ranges.
- Game can live with less water than domestic livestock or reacts with seasonal migration and mobility.
- Vegetation is very efficiently transformed into meat.

Reproduction of some species is high and allows for considerable offtakes. These high game populations have always played a considerable role in the diet of the rural poor, in particular in such areas where it is not possible to raise domestic livestock.

Game management is therefore not the introduction of hunting into otherwise undisturbed game populations. On the contrary, one major aim normally is bringing the offtake to sustainable levels.

Practical experience shows that the harvesting of surplus populations allows sustainable yields. Production can be even increased by partly replacing natural mortality through cropping. Game populations may also answer cropping pressures with increased breeding.

The utilisation of wildlife offers a form of land use in areas which would otherwise not be suitable for production purposes. Nowadays with technological development even such arid and semi-arid areas can be cultivated in one form or the other. The eradication of the tsetse fly opens up huge areas for extensive cattle ranching. Sometimes such schemes are implemented with a political justification only. In such cases hard evidence for or against such projects is superfluous. In all other cases different alternative types of land use have to be compared in economic and ecological terms.

Interestingly enough, practical experience comparing livestock husbandry and game utilisation on marginal arid and semi-arid lands often shows economic advantages in favour of the latter. For respective areas gross income is estimated as 1:3 in Zimbabwe and 1:1.4 in Botswana. Investment and running costs of game management are considerably lower, e.g. in Zimbabwe 50%. If the expenses of tsetse eradication, research, etc. were included in the economic analysis, comparison would be even more favourable to game management. Foreign exchange component of revenue depends on the specific conditions. It is high, if tourism or safari hunting is included in wildlife utilisation.

Ecological aspects are not considered in conventional economic analysis. Nevertheless, they are important. Even high game populations can sur-

vive on marginal lands. The same lands are destroyed after short spans of cattle keeping. Well controlled livestock husbandry might be possible on such lands, but lack of control and overstocking is the reality whether one likes it or not. From an ecological point of view the toxic effects of widespread application of chemicals in tsetse eradication might not be the worst aspect of the matter. An analysis of past and present tsetse projects shows

that the subsequent land use is the real problem. Often no provisions are made for proper land use and if they are, they cannot normally be implemented. So overgrazing, erosion and eventually desertification is the normal outcome more often than not. In such fragile habitats wildlife management should be at least assessed as a possible alternative in land use planning.

A comparison of cattle monoculture with a multi-species indigenous wildlife production system in lower rainfall areas. Source: WWF (modified)

Advantages of cattle

Cattle monoculture

Harvesting relatively easy and cheap.

Easy to ensure hygienic conditions for meat processing.

Higher prices for beef.

Well-established state marketing institutions and infrastructures.

An accepted form of land use for development, particularly by international development agencies.

Multi-species indigenous wildlife

Offtake more difficult.

Difficult to ensure hygienic conditions for meat processing in remote areas.*

Lower prices for game meat.*

Poor market development of all commodities except safari hunting.*

Poor acceptance and recognition as a system of land use.

* not relevant in the case of subsistence production

Advantages of wildlife

Cattle monoculture

Often associated with land degradation in marginal areas, particularly soil erosion.

Grazers less suited to dry environments.

Lower economic return in marginal areas.

Require vaccination and treatment for disease.

Require regular access to drinking water and are relatively less efficient at using water.

Products limited to meat, milk, hides and live sales.

Higher capital overheads and investment.

Beef is exported or consumed by wealthy strata of population.

Multi-species indigenous wildlife

Degraded lands can be rehabilitated once cattle are removed and wildlife species introduced.

Grazers and browsers, with varied dietary strategies, more suited to drier environments.

Higher economic return in marginal areas.

Indigenous species naturally resistant to many endemic diseases.

Have evolved physiological and behavioural water conservation mechanisms.

Wide range of products including meat, hides, curios, non-consumptive tourism, safari hunting and live sales.

Lower capital overheads and investment; labour intensive.

Improved food supplies for poor rural populations.

If economic analysis shows an advantage of game management and if the environmental impact analysis of a planned project warns against conventional agriculture then planners should at least give game serious consideration. Game and cattle can also be kept side by side and such a mixed system often allows for an optimal use of the land.

There are, finally, areas which are at present not earmarked for agricultural purposes and which are not national parks. Wildlife management allows for the productive use of such lands while maintaining and enhancing options for their future use. Emotional reluctance to touch animals living in such areas is not normally of any help either to the animal species or to the local people.

2. Three Concepts of Man-Wildlife Relationships

2.1. Conservation against the people

The relations between local populations and animals are complex, difficult to understand for outsiders and controversial. Game has always constituted the major source of animal protein in most remote areas. On the other side small scale farmers often compete with game for scarce land resources and suffer from crop damage. Traditional concepts of game conservation were often directed against the people living in the respective areas. Colonial legislation labelled traditional hunting rights as illegal. But for a tribesman it was difficult to understand why his hunting for meat was poaching whereas town people were hunting for a full bag of trophy and meat animals in his communal area without the community having any benefit from it.

This concept which could be called "conservation against the people" still dominates to some extent European conservationist thinking. Chief G. Mapande in the Zambian Luangwa Valley made the local point of view quite clear when he addressed a seminar on wildlife conservation: "Many of you have never visited this area before and may not know or understand the attitudes toward wildlife by those who live here year round. We are honest people who are keepers of the wildlife. We do not like poaching and we have been keeping the ani-

mals here a long time for the Government, but we receive no benefit for this service ... Tourists come here to enjoy the lodges and to view wildlife. Safari companies come here to kill animals and make money. We are forgotten ... Teach us how to manage wildlife by ourselves and we will protect and keep wildlife here always." (Larsen et al. p. 91)

The German weekly *Der Spiegel* (12/1986) observed quite correctly that for most people "conservation is still an emotional matter. Towns people want to decide conservation matters in the rural areas, and Europeans want to direct conservation in Africa."

As people in the game areas found themselves deprived of a resource which they thought they should rightfully utilise, a conflict emerged: conservation laws, game reserves and game rangers were regarded as enemies by the rural people. The conservationists and game rangers, on the other hand, regarded every tribesman as a potential poacher, as an enemy of the game. For years to come police action, rifles and handcuffs were regarded by the authorities as the instruments to settle this conflict. This approach was based on the fundamental error that governments were in control of the game and its utilisation. Nothing was further from the truth, less still since African administrations and economies have been declining in recent years. Today very little effective law enforcement takes place anywhere, with the possible exception of Zimbabwe.

Whereas the conventional anti-poaching efforts continue to have their place in combatting commercial poaching for trophies and meat, the interaction between the rural communities and their wildlife should be governed by different rules. A new balance between men and animals and between conservation and development has to be found. It is no coincidence therefore that, for example, the *Frankfurt Zoological Society* underlines the importance of rural development projects for the small farmers in the encroachment areas around national parks. It is understood that the villagers depend on the overutilisation of wildlife within the parks for their survival. Controlled utilisation of game outside the park should be allowed in order to provide direct benefits from the animals for

the population. Other professional conservation organisations are also propagating this new approach. The former *World Wildlife Fund* does not regard itself any more as a mere organisation for the preservation of wild animals. The recent change of name to *Worldwild Fund for Nature* indicates the new line of thinking and the World Conservation Strategy of IUCN defines the new concept of conservation: The management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations.

Preservation and sustainable utilisation are not mutually exclusive. They are both part and parcel of conservation. Wise utilisation of wildlife is a way of gaining benefits from it and protecting it at the same time – provided that offtakes are sustainable.

If it is accepted in principle that wildlife utilisation should contribute towards development there are different ways of integrating the local communities.

2.2. Conservation for the people

In the early 1980s the *Zimbabwean Game Department* started a programme in the Sebingwe area called "Operation Windfall". The idea was to change the conventional system whereby all income from wildlife goes to the Treasury with very little or nothing being channelled back to the population in the game areas. Under Operation Windfall a major part of the revenues went back to the District Councils to finance clinics, schools and other forms of social infrastructure. At the beginning of the programme poaching went down and this was seen as indicating that the local population regarded game now as their own resource from which they could gain benefits and which would therefore be worth protecting. This situation did not prevail very long and poaching soon reached prior levels again.

The major reason for the failure is seen by the Department in the fact that there were no *direct* benefits for the population. People were not involved in the management of the resource. They observed that outsiders utilised the resource and that they

eventually received some benefit through improved social services. And it was not unknown to them that such social services were provided by the Government also in areas with-out game populations, so they would receive them anyway, with or without game.

Nevertheless the most progressive innovation Game Departments can think of in most African countries is to introduce such "conservation for the people". In practice this normally means that villagers receive some meat from culling operations or that some revenues are remitted to District Councils.

Although this is certainly better than neglecting the local population completely, experience shows that this is not sufficient in order to integrate the villagers into wildlife management. Additionally in such cases the exploitation itself is normally in the hands of government departments and this leads more often than not to losses so that very little is left to distribute.

2.3. Conservation through the people

If development policy is guided by the priorities

- rural development,
- food security,
- participation of target groups
- and basic needs orientation,

then wildlife management will have a future only if it corresponds with these objectives and norms.

Practical experience shows that the more people run development schemes themselves the more likely they are to be successful. "It is far better that governments work with local communities to arrive at development plans that both satisfy the needs and aspirations of their people while accomplishing the objectives of the government, than that they impose from above a decision with which the local community is expected to agree. This is equally true of a major development scheme requiring alteration of traditional patterns of activity, as it is with the creation of a national park or nature reserve that requires abandonment by local people of the use of the resources of an area on which they have depended." (Dasmann, 1984, p. 10)

This last concept we would call "conservation *through* the people". Any such scheme has to be unsophisticated, as the people have to manage it themselves. In a communally managed area there will not be a modern abattoir but a number of people preparing biltong (dried meat) in the traditional way. Hygienic standards of meat preparation correspond to local needs and requirements. There will not be culling teams in four-wheel drive vehicles but a number of village hunters with single barrel shotguns. Potential cash expectations are smaller but realistic. Projects are less impressive but viable. One possible approach in this direction is the new Zimbabwean CAMPFIRE programme, which gives local communities the right to utilise the game in their village areas for their own benefit.

The problems which will be encountered should not be overlooked. It is difficult to control the management and avoid overexploitation. How can the people organise themselves into viable self-help groups so that they can exploit the wildlife resource? How can a balance be found between agriculture and natural resources management? But development always requires finding answers to such questions.

If game management is to be successful as an efficient instrument of conservation two principles have to be applied:

- material self interest of those who are in a position to protect the resource;
- utilisation may not go beyond reproductive levels.

Both principles are in conflict with the present situation whereby wildlife is a common good. Common goods, however, tend to be over-exploited. It is a prerequisite for sustainable wildlife utilisation therefore to restrict its use. Such an approach has to contain the following elements:

- community manages and utilises wildlife in its own long term interest;
- annual offtake is limited to sustainable production level;
- internal rules limit the individual access to the resource;
- in turn: protected ownership rights or long-term

user rights are granted to local communities;

- authorities control, advise and promote;
- main objective of economic activities is satisfaction of basic needs, in particular food security;
- management rests on local self-reliance, i.e. it draws from local knowledge, uses local resources and appropriate technologies.

3. Wildlife Management: a Plea for Action

The reasons for past neglect of wildlife in development strategies are manifold. In any case a valuable resource has been overlooked which could have otherwise contributed towards development.

We neither overestimate the role of wildlife in rural development and food production nor do we overlook the practical political, socio-cultural or management problems. Nor do we wish to offer a blueprint solution for the conservation of natural resources and anti-desertification efforts. Game management is not a panacea that will solve Africa's food problem. However, its potential contribution to subsistence production is so large and so little realised and potential areas are so close to the people who need the protein that it should receive more emphasis than it has so far. Wildlife has a special, though limited, place in extensive agricultural development. Any practical approach has to be tailor-made according to local conditions. There is no model solution for all countries and regions.

Utilisation of wildlife outside national parks by itself will certainly not safeguard the resource. Strict supervision by the authorities concerned is indispensable in order to avoid malpractices. Appropriate hunting methods, the monitoring of populations, the limitation of annual offtakes, control of bushfires and waterholes and similar management practices are necessary. But an economic interest in the resource by local populations and national governments will serve as an economic incentive to protect this source of protein and income. Presently we are observing the fast destruction of wild animal populations. It is "five-minutes-before-twelve" in many countries. In some the point of no return has already been reached.

It is proposed therefore that wildlife management should be practised with the following main objectives:

- (1) food self-sufficiency: production of protein for the rural poor at reasonable cost;
- (2) desertification control: ecologically balanced land use in marginal and fragile habitats;
- (3) conservation: protection of the resource by utilising it on a sustainable basis.

3.1. Food first

Regions with wildlife populations normally belong to the poorest and undeveloped areas of the respective countries. Local communities belong to the lowest echelons of society. They should be the direct and major beneficiaries of wildlife management. Production should primarily increase food supply, with other products, e.g. skins, leading to the development of cottage industries, employment and income. Proceeds from the sale of licences (trophy hunting, culling, tourism) should go to the local communities, at least partly. If processing is needed, e.g. for drying of meat, it should be technically simple in order to allow for actual management of the resource through the local population. This is preferable to any kind of scheme which is managed from outside.

The main problem for such communal management schemes is achieving a suitable organisational structure. Self-help organisations – like cooperatives, farmers' groups, ranching associations – are appropriate. Extensive game ranching on private lands has proved its viability in quite a number of countries already. Experiences with communal management is limited so far and concentrated on Zimbabwe. Neighbouring countries have expressed their interest in starting such schemes.

3.2. Anti-desertification

In marginal areas wildlife can offer higher outputs per unit area and higher returns per investment than other forms of agricultural land use and this on a sustainable basis. Game populations normally do not degrade and eventually destroy fragile ecosystems.

We are currently observing a serious ecological crisis in Africa which is so advanced that environmental protection in many cases has to be regarded as a basic need of the rural poor. Land use planning should therefore consider wildlife management as an alternative whenever suitable. The wisdom of eradicating the tsetse fly in fragile and marginal environments, such as the Zambezi Valley or the Okavango, can be questioned on economic and ecological grounds. Wildlife management offers an ecologically safe and economically sound alternative in such situations. It can even contribute to the rehabilitation of degraded habitats and is thus a practical method of desertification control. Practical compromises between different forms of land use have to be found.

3.3. Conservation

Neither *laissez-faire* policies nor strict legislation could prevent the destruction of game populations we are experiencing. This paper does not intend to indulge in the ideological and emotional battle between those who want mere protection and those who want to utilise game like any other natural resource. It is intended rather to offer a technocratic and pragmatic approach.

Preservation of nature in the conventional sense, i.e. non-utilisation and protection from human interference, should be continued where it is possible, realistic and where it can be financed. Protection in the form of national parks is, however, not a universally applicable blueprint in societies which desire economic development, where rapidly growing populations lack food and where funds are not sufficient to implement conservationist legislation in the field.

So game utilisation is complementary and not competitive to mere protection. The underlying rationale is that a natural resource which produces benefits is protected, whereas a resource, which results only in costs and which is regarded as a competitor for the use of land, is not.

4. Outlook

Recently a number of African countries have started schemes for the utilization of wildlife as a form

of land use on marginal lands. In July 1986 the National Assembly of Botswana approved a National Conservation Policy which earmarks 20% of the total land area for the commercial utilisation of game. Care will be taken to ensure that the wildlife industry is consistent with accepted conservation practices. Zimbabwe is implementing a "Communal Areas Management Programme For Indigenous Resources" (CAMPFIRE) with the aim of introducing a system of group ownership of natural resources, in particular wildlife. In Zambia WWF is presently preparing programmes to involve the local population in the management of game and other indigenous resources in the Luangwa Valley, the Bangweulu swamps and the Kafue Flats.

Wildlife management is also a regional topic for the Southern African Development Coordination Conference (SADCC). Malawi has been given the mandate to coordinate the programme.

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For advice while preparing this article I would like to thank Mssrs. J. Mulder and F. Nagel, EEC Brussels.

Opinions expressed are those of the author.