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Wildlife Working for Sustainable Development

BARRY DALAL-CLAYTON

This Gatekeeper Series is produced by the International Institute for Environment and Development to highlight key topics in the field of sustainable agriculture. Each paper reviews a selected issue of contemporary importance and draws preliminary conclusions of relevance to development activities. References are provided to important sources and background material.

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Barry Dalal-Clayton is Director and Programme Coordinator of Field Services of the International Institute for Environment and Development.

WILDLIFE WORKING FOR SUSTAINABLE DEVELOPMENT – LESSONS FROM ZAMBIA'S LUANGWA VALLEY

Barry Dalal-Clayton

The conservation of wildlife is sometimes presented as being at best irrelevant, at worst an obstacle to development. It is, in fact, neither. The actual and potential contribution of wildlife to economic and social development could be substantial (Prescott-Allen and Prescott-Allen, 1982), but has long been overlooked. By carefully conserving and managing wildlife in protected areas, development planners can capitalise on its value in terms of food and by-products (hides, etc.), employment generation, trophies and fees, and can maximise its value on the hoof to tourism. The revenues accruing from well-managed wildlife utilisation are very considerable and, if ploughed directly back into rural development programmes, can benefit local communities.

The value of wildlife to the economy is illustrated by Zimbabwe where annual revenues from wildlife in 1985 were estimated at about US\$ 200 million. By comparison, the annual revenues from wildlife in Zambia in the same year were considerably less, and probably no more than US\$ 5m (no reliable figures are available). This difference is largely the direct result of a lack of investment and proper wildlife management in Zambia compared with Zimbabwe. With a land surface almost twice as large as Zimbabwe and with 32% of its land set aside as national parks and hunting areas, Zambia should be able to earn much more from wildlife. The gross standing value of its wildlife (calculated on the value of horns, tusks, meat, etc.) runs into hundreds of millions of dollars.

The wildlife of Zambia's Luangwa Valley, a tributary of the Zambezi river, is potentially amongst the most important and economically valuable in Africa because it is dominated by large and valuable heavy game animals such as elephants and buffalos. In the Lupande Game Management Area¹ which lies within the Luangwa Valley, the potential annual revenues from sustainable hunting have been estimated at between US\$ 0.5–1 m. The total potential annual revenues from all kinds of wildlife utilisation in this area (i.e. including non-consumptive uses such as game-viewing, photography and increased tourism) have been estimated at between US\$ 5.7–7.5m (Larsen, 1987). Studies in Zimbabwe within the Zambezi Valley have indicated that potential annual revenues from wildlife utilisation can be US\$ 14/hectare (Norderhaug, 1987).

The Luangwa Valley is rich in natural resources (Dodds and Patton, 1968; FAO, 1973). Apart from wildlife, its abundant forests contain hardwoods, building materials and

1. A Game Management Area (GMA) in Zambia is a buffer zone around a national park in which licensed safari and subsistence hunting is permitted.

fuelwoods. It also contains areas of fertile arable soils and is well watered. Yet in spite of these rich natural resources, large parts of the Luangwa Valley are sparsely inhabited and its people are relatively disadvantaged (Abel and Blaikie, 1986; Marks, 1984).

Poor (mostly seasonal) road access causes a general scarcity of inputs, extension, credit and marketing capabilities. Poverty and malnutrition are widely evident, and schools and health care facilities are minimal. Tsetse flies prevent the keeping of livestock for ploughing and draft purposes and farm sizes are therefore small.

In the past most of the revenues deriving from the wildlife resources of the valley, such as hunting licence fees and safari earnings, have been externalised to central government or businessmen living outside the area. As a result, communities in the valley have gained very little direct benefit from the local wildlife resources, and there has been a wave of wildlife poaching over the last 15 years, much of it on a highly organised commercial basis by gangs armed with automatic rifles. The profits have been siphoned out of the valley to the urban areas and to outside Zambia.

The severity of the poaching problem and the enormity of the financial consequences are best illustrated by the fate of the black rhino and elephant populations in the whole Luangwa Valley. The black rhino population has been reduced from perhaps 8000 in the late 1960s to probably less than 100 today. Elephant numbers have been reduced from about 100,000 in the early 1970s to under 30,000 today. According to Dr Thor Larsen, a Norwegian expert in wildlife management, the poaching of rhino horn and elephant ivory in the area over the last 15 years has robbed the mainstream Zambian economy of wildlife products worth about US\$ 200m (Larsen, 1987).

Recent surveys indicate that about nine elephants are poached daily in South Luangwa National Park alone (Kaweche et al., 1987), representing an annual loss of between US\$ 16 and 33 million. If such funds were invested in development, it would have an enormous impact in the remote and relatively ignored Luangwa Valley. Realistically, of course, the Luangwa Valley cannot support elephant harvesting at such a rate and extinction will soon occur. But serious investment in bringing such destructive poaching under control would allow wildlife populations to stabilise and increase. This, in turn, would allow an opportunity to promote a change to the sustainable use of these wildlife resources, including legalised hunting and culling. The revenues from a controlled and legalised off take would still be very considerable.

To date little attention has been paid in Zambia to the value of non-agricultural resources such as wildlife and forestry in conventional development planning. A major effort to exploit these resources in a sustainable fashion is represented by the Luangwa Integrated Resource Development Project (LIRD), formally initiated in 1986. It covers an area of some 15,000 sq km incorporating the South Luangwa National Park and the adjacent Lupande Game Management Area (Figure 1) with a human population of 28,000. The project incorporates several component programmes, which include agriculture, soil survey and land use studies, marketing and cooperatives, Tsetse control, forestry, fisheries,

women's activities, water development, wildlife management and the development and maintenance of roads and other infrastructure.

The objective of the project is to "improve the standard of living of the people of the project area through sustainable use of the full range of available resources". LIRD is an 'integrated resource development project' and, as such, is distinguished from 'integrated rural development projects' which, in Zambia, have focused on the development of agriculture within the District Council framework. LIRD emphasises sustainable use of non-agricultural resources (i.e. wildlife, forestry, fisheries and water) in addition to agricultural resources. A major objective is to replace the illegal over-exploitation of wildlife with legal sustainable use, and to ensure the ploughing back of revenues from wildlife and other non-agricultural resources to the area via a revolving fund. These revenues are seen as "the engine driving the economy of the undeveloped rural areas", and will eventually obviate the need for external funding for the project.

Without abundant wildlife, the sustainability of the whole LIRD programme is questionable. Consequently, the wildlife management component of the project gives top priority to the protection of wildlife, particularly rhinos and elephants. But the existing capacity of the National Parks and Wildlife Service to combat poaching is inadequate. The guards are ill-equipped, lack mobility and are poorly serviced, particularly with food supplies. A small anti-poaching unit funded by the Save the Rhino Trust is active in the area but is only successful on a limited scale. LIRD will enhance law enforcement capabilities by increasing the number of guards, by improving training in the handling of automatic weapons and in combating heavily armed groups of poachers. Better equipment including vehicles, portable radios and air-based surveillance will be provided. In addition, the network of tracks in the National Park will be restored (lack of funds has prevented their maintenance), both to facilitate patrolling and to increase access for tourists.

Basic research will be undertaken in such subjects as landscape classification for land use zonation, the dynamics and productivity of woodlands and grasslands, and the effects of bush fires. Studies and monitoring of the status and off take potential of selected wildlife species will determine hunting and, where necessary, culling quotas. These various studies will be integrated with the development of management plans for the national park and GMA.

The Lupande GMA will be divided into sectors with hunting rights in each vested in a LIRD Local Leadership Committee. These will determine allocation of hunting licences to individuals or safari operations on a quota system. All revenues, including concession fees, hunting licence fees, and meat and bi-product profits, will accrue to the revolving fund. It has been estimated that hunting concession fees alone could yield between US\$ 120,000 and 150,000 annually (Larsen, 1987). Greater safari activity will mean a significant increase in revenues from individual animal licence fees, hunting permits and GMA permits. There will be more jobs for local people as guides, trackers, skinned and camp personnel. Mechanisms are being introduced to ensure that game meat from commercial safari hunting is made available at locally-affordable prices to the people of the area.

A pilot project in part of the Lupande GMA has been operating since 1986 in which a village-based cooperative has been permitted to cull a restricted number of 'surplus' hippos. The meat has been sold locally and the hides and other products marketed in Lusaka. The resulting profits have already funded a much needed health clinic. As a consequence, the local people have begun to appreciate the community value of managed wildlife. A village-scout programme has also been initiated through which local communities accept overt responsibility for law enforcement. Village-scouts are empowered to make arrests, and there has been a significant fall in the rate of village-based poaching (for the pot). More importantly, there has been a dramatic reduction in commercial poaching since villagers will no longer tolerate gangs from outside the area killing 'their' game. This pilot project has already demonstrated that attitudes can change quickly and that once a tangible value is given to wildlife, communities will begin to police their own areas. This means that the costs of law enforcement should progressively diminish as social pressures take the place of formal policing.

Wildlife protection and management will run in parallel with the promotion of increased tourism. LIRDPA will encourage the development of more lodges and other forms of accommodation, and improvements to the all-weather road network within the park. Increased numbers of visitors will directly increase revenues through park entry fees and tour operator concession fees. It has been estimated that by increasing tourist bed numbers from the current 270 to 400 and, by extending the tourist 'season' length by up to 40% through road improvement, annual revenues will be increased to US\$ 4.5 million. LIRDPA could expect a return of 5% (US\$ 225,000) in concession fees and a similar amount in visitor entry fees, representing an annual total of US\$ 0.5 million (Larsen, 1987). Small cooperatives have been initiated which now cultivate and supply fruit and vegetables to the lodges. The latter previously obtained all their supplies from distant markets. In addition, more lodges will provide a market for Luangwa arts and crafts.

Most of the project activities will be implemented by local communities themselves, with technical and administrative support. Revenues entering the revolving fund will be made available to local communities to improve their standards of living. Priorities will be determined by the LIRDPA Local Leadership Committee and by the local, ward, district, province and central representation.

The project depends crucially on community participation. Particularly important in its development were two week-long workshops held in 1983 and 1987 (Dalal-Clayton, 1984; Larsen, 1987). These were attended by local chiefs and village representatives, who gave their views on the problems they face and indicated their needs and aspirations, and by government officials (national and local) and technical experts (both indigenous and expatriate). The discussions with local leaders helped in problem identification, which greatly benefited the evaluation and endorsement of the plans and proposals. Support for the project is now strong at the local, national and international level. The very close personal interest and active involvement of President Kenneth Kaunda has been very important in galvanising inter-ministerial and inter-provincial cooperation.

LIRDPA is designed to coordinate all government and non-government actions in the area related to land and resource use. It is fully integrated with and strengthens existing

government and community organisations and structures. This is to ensure that its viability can be sustained and replicated in the long term. But achieving such integration was very difficult. The first phase of the project focused on the development of mechanisms for co-ordination, consultation and participation in the taking of decisions which will ensure the active involvement of both formal government agencies (from national to local level) and traditional authorities in the project area. This has been achieved through an interacting set of committees.

The responsible authority for the project is a Steering Committee at Central Committee and Ministerial level, chaired by the President. Such high level political involvement is indispensable to the success of LIRDPA because of the constitutional implications of the project, particularly the introduction of the revolving fund and the creation of formal inter-ministerial cooperation mechanisms. An Executive Committee at Permanent Secretary level provides policy guidelines. Local leaders' Sub-Committees of the Executive Committee (comprising chiefs, ward chairmen, local MP's, and local administrators) provide local inputs into LIRDPA planning and decision making. Sub-committees operate in various technical areas to review programmes and budgets, and to coordinate the programmes of the various ministerial technical departments concerned with land and resource use.

LIRDPA is seen by the government and donors as a crucial element in the implementation of Zambia's National Conservation Strategy. It is viewed as a pilot project to demonstrate the real benefits of applying conservation principles to development. If successful, the government intends to use the LIRDPA model for rural development in other areas of the country. The government has given it top priority status for external funding support. The Norwegian Agency for International Development (NORAD) provided financial support for the workshops and the early phase and has committed funds for the next phase. This support is rather bold in development project terms given the inclusion of a significant wildlife component. In addition, the International Union for Conservation of Nature and Natural Resources (IUCN) has funded the two project Directors, Dr Richard Bell and Mr Fidelis Lungu. The forging of the structural mechanisms to implement the project is largely the result of their intensive efforts. Other agencies have been requested to support selected components of the project.

The experimental approach to development based on ecological principles and involving the sustainable use of wildlife and grass roots community participation now being adopted in Zambia's Luangwa Valley is likely to provide important lessons which will have far reaching implications. A similar experimental approach involving community participation in managing natural resources is also underway in the Sebungwe region of Zimbabwe where the Communal Area Management Programme for Indigenous Resources (CAMPFIRE) has been successfully operating for a few years (Anon, 1985; Martin, 1984). It is still too early to assess the likely success of LIRDPA. However, the preliminary results of the hippo culling pilot project and the village-scout programme are very encouraging. They suggest that the LIRDPA philosophy is on the right lines.

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NOTE: Further information about the project can be obtained from:
The Co-Directors (Administrative and Technical), Luangwa Integrated Resource Development Project, PO Box 510249, Chipata, Zambia.



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International Institute for
Environment and Development
3 Endsleigh Street
London
WC1H 0DD

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