

10150 688

AGENCY FOR INTERNATIONAL DEVELOPMENT		1. TRANSACTION CODE A = Add C = Change D = Delete		Amendment Number	DOCUMENT CODE 3
PROJECT DATA SHEET		<input type="checkbox"/> A			
2. COUNTRY/ENTITY Zimbabwe		3. PROJECT NUMBER 690-0251			
4. BUREAU/OFFICE USAID/Zimbabwe		5. PROJECT TITLE (maximum 40 characters) Natural Resources Management			
6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 08 31 95		7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4) A. Initial FY 89 B. Quarter 4 C. Final FY 90			

8. COSTS (\$000 OR EQUIVALENT \$1 =)						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	5,333	4,758	10,091	14,077	5,453	19,530
(Grant)	(5,333)	(4,758)	(10,091)	(14,077)	(5,453)	(19,530)
(Loan)	()	()	()	()	()	()
Other U.S.						
1. Host Country		11,783	11,783		11,783	11,783
2. Other Donor(s)		810	810		810	810
TOTALS	5,333	17,351	22,684	14,077	18,046	32,123

9. SCHEDULE OF AID FUNDING (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1)	SADF	200	098			19,530		19,530	
(2)									
(3)									
(4)									
TOTALS									

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each) 031 050 200 610 620 964						11. SECONDARY PURPOSE CODE 100	
12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each) A. Code BR ENV PVOU PVON							
B. Amount							

13. PROJECT PURPOSE (maximum 480 characters)

The purpose of the project is to improve the social and economic well-being of residents of targeted rural communities by implementing sustainable community-based wildlife conservation and utilization programs.

14. SCHEDULED EVALUATIONS Interim MM YY MM YY Final MM YY 08 92 08 95				15. SOURCE/ORIGIN OF GOODS AND SERVICES SADCC <input type="checkbox"/> 000 <input checked="" type="checkbox"/> 941 <input checked="" type="checkbox"/> Local <input checked="" type="checkbox"/> Other (Specify) countries			
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16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment.)

USAID/Zimbabwe Controller concurs with the proposed methods of implementation and financing.

Clearance: Controller, USAID/Zimbabwe: MLBaer: *McMullin Baer*

17. APPROVED BY	Signature <i>Allison B Herrick</i>	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION
	Title Allison B. Herrick Director, USAID/Zimbabwe	
		MM DD YY 10/03/89

NATURAL RESOURCES MANAGEMENT PROJECT

USAID PROJECT NO. 690-0251
SADCC PROJECT NO. 5.0.18

VOLUME 1

REGIONAL OVERVIEW

AUGUST 18, 1989

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USAID/BOT
USAID/BOT
USAID/BOT

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Min. Nat. Res.
DNPW

List of Acronyms and Abbreviations

ADMADE	Administrative Management Design (Zambia)
A.I.D.	Agency for International Development
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources (Zimbabwe)
CASS	Centre for Applied Social Sciences (Univ. of Zimbabwe)
CITES	Convention on Int'l Trade in Endangered Species
CORDE	Cooperative for Research, Development, and Education (Botswana)
DDC	District Development Committee (Botswana and Zimbabwe)
DLUPU	District Land Use Planning Unit (Botswana)
DNPW	Department of National Parks and Wildlife (Malawi)
DNPWLM	Department of National Parks and Wild Life Management (Zimbabwe)
DWNP	Department of Wildlife and National Parks (Botswana)
EA	Environmental Assessment
EEC	European Economic Community
ENDA	Environment and Development Activities--Zimbabwe
FAO	United Nations Food and Agriculture Organization
GMA	Game Management Area (Zambia)
IFB	Invitation For Bid
IQC	Indefinite Quantity Contract
IUCN	International Union for the Conservation of Nature
KCS	Kalahari Conservation Society (Botswana)
LDP	Lupande Development Project (Zambia)
LIRDp	Luangwa Integrated Resource Development Project
LOP	Life-of-Project
LSU	Livestock Unit
MCI	Ministry of Commerce and Industry (Botswana)
MFDP	Ministry of Finance and Development Planning (Botswana)
MLGL	Ministry of Local Government and Lands (Botswana)
M/SER/OP	A.I.D.s Washington Office of Procurement
NGO	Non-governmental organization
NORAD	Norwegian Aid and Development
NPWS	National Parks and Wildlife Service (Zambia)
NRCT	Natural Resources Conservation Trust (Botswana)
NRTC	Natural Resources Technical Committee (Botswana)
ODA	Overseas Development Agency (U.K)
OPG	Operational Program Grant
PACD	Project Assistance Completion Date
PID	Project Identification Document
PIL	Project Implementation Letter
PIO/C	Project Implementation Order/Commodities
PIO/T	Project Implementation Order/Technical Assistance
PP	Project Paper
PSA	Procurement Services Agent
PSC	Personal Services Contract
RAD	Remote Area Dweller (Botswana)
RCMO	Regional Commodities Management Officer
RDSS	Regional Development Strategy Statement

REDSO/ESA	Regional Economic Development Services Office/Eastern and Southern Africa
RFP	Request for Proposal
RPSO	Regional Procurement Services Organization
SADCC	Southern Africa Development Coordination Conference
SER/OP	Services and Operations
SIDO	Small Industries Development Organization (Zambia)
UNDP	United Nations Development Program
USAID	United States Agency for International Development Country Mission
VDC	Village Development Committee (Botswana)
WCB	Wildlife Clubs of Botswana
WCRF	Wildlife Conservation Revolving Fund (Zambia)
WMA	Wildlife Management Area (Botswana)
WMS	Wildlife Management Sub-Authority (Zambia)
WMU	Wildlife Management Unit (Zambia)
WUU	Wildlife Utilization Unit (Botswana)
WWF	World Wild Fund For Nature
WWF-US	World Wildlife Fund (U.S.)
ZimTrust	Zimbabwe Trust
ZNTB	Zambia National Tourist Board

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NATURAL RESOURCES MANAGEMENT PROJECT
(690-0251)

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Summary and Recommendations

A. Recommendations

The Project Development Committee recommends authorization of \$19,530,000 in grant funds for the Natural Resources Management Project of which \$7,400,000 is to be obligated to the Government of Botswana, \$1,530,000 to the Government of Malawi, \$3,000,000 to the Government of Zambia, and \$7,600,000 to the Government of Zimbabwe. It is also recommended that in addition to the separate bilateral Project Grant Agreements to be signed between each resident USAID Mission Director and the Governments of Botswana, Malawi, Zambia and Zimbabwe, the five parties should signify their mutual interest in this program by signing a Memorandum of Understanding covering the project as a whole.

B. Summary

The project will provide assistance to three member countries of the Southern Africa Development Coordination Conference (SADCC) -- Botswana, Zambia and Zimbabwe -- and to the Ministry of Forestry and Natural Resources of Malawi serving as SADCC Sector Coordinator for Forestry, Fisheries and Wildlife.

To improve the social and economic well-being of residents of targeted rural communities in Botswana, Zambia and Zimbabwe, the project will help establish sustainable community based wildlife conservation and utilization programs. To improve the capacity of the SADCC Coordinator to promote regional cooperation in natural resource data collection and analysis, the project will provide an adviser to help analyze data and establish fora and communication bulletins for exchange of information.

Upon completion of the project, it is expected that natural resource utilization will be demonstrated to be a preferred and profitable land use in agriculturally fragile rural and communal lands; self-sufficient resource management programs will have increased opportunities for local employment and income generation and revenues for local development projects; the role of women in the economy and their access to income will be expanded; and interested governments and leaders in the natural resources sector throughout the SADCC region will be better informed on approaches to and impact from management of natural resources, particularly of wildlife.

Project elements will include (i) Community Based Resource Utilization; (ii) Planning and Applied Research; (iii) Conservation of the Resource Base; (iv) Conservation Education and Training; and (v) Regional Communication and Exchange of Information.

A central underlying principle of effective community-based resource utilization is that communities must participate in decisions concerning the natural resources of their area and must be able to distribute the economic benefits from more efficient management and conservation of the resource. At project sites in Botswana, Zambia and Zimbabwe the authorities will assure that revenues from utilization of wildlife are retained in or returned to the

communities and, together with participating agencies, will help strengthen the capacity of local institutions to manage the resource base and distribute the benefits. Applied research activities in each of these countries will develop data for ecological monitoring and for understanding the socioeconomic dimensions of increased local responsibility for resource management, including the impact on the status of women.

At the local level the program will also develop skills to monitor, manage and protect wildlife, and at the national level it will promote cooperation among participating countries and agencies in monitoring and protecting major wildlife populations, including elephants. Participating communities, and the countries at large, will be exposed to environmental issues and information on conservation through formal and non-formal activities. The lessons learned from the varying models of resource utilization at project sites and from analysis of data on utilization of wildlife resources will be shared throughout the SADCC region under the leadership of the SADCC Sector Coordinator.

The project was designed by USAID/Zimbabwe staff with assistance from consultant expertise in environmental issues and conservation, the technical aspects of utilization of wildlife, institutional development, women in development, and social analysis. Major contributions to the design were made by the staffs of USAID/Botswana and USAID/Zambia, the Regional Legal Advisors and Regional Contract Management Officer from USAID/Swaziland, and staffs of the parks and wildlife departments and NGOs operating in the four participating countries.

The analyses of technical, economic and financial, institutional and social aspects of the project show the project to be feasible in each of the three countries where specific community level projects will take place. Conditions precedent to disbursement and special covenants pertaining to each implementing country will be included in the appropriate grant agreements.

In Zambia and Zimbabwe, where the principle of devolution of income from the management of wildlife resources has already been implemented and shown to be sound, specific project sites have been selected. A major role will be played in these two countries by non-government organizations (NGOs) that have already been involved in community programs, in cooperation with the governments. For Botswana, where the legal framework for devolution of income exists but has not been implemented, the project establishes criteria for selection of sites and projects, and activities will not begin until specific steps have been taken to ensure that local communities will control and benefit from revenues generated. A facilitating contractor will provide technical expertise to help prepare community level projects for approval, make grants to NGOs to assist local communities, and monitor results.

In Malawi, the interest and structure exist to carry out the sector coordination and information dissemination responsibilities. The project will provide a full time adviser to organize this function as it relates to utilization of wildlife and prepare the Department of National Parks and Wildlife to carry it out in future.

Cost estimates and plans are incorporated in the design of the project consistent with the requirements of Section 611(a) of the Foreign Assistance Act of 1961, as amended. No specific negative environmental factors pertain to the project. Ecological and economic monitoring to be carried out under the project will contribute toward better understanding of general environmental questions identified by the consultant expert. Left-hand drive vehicles will be procured by the project under the general waiver approved by State 079274. All statutory criteria have been satisfied.

Project activities will be monitored through the Project Coordinating Committee to be set up by the SADCC Sector Coordinator. The Coordinator will also gather and analyze data from throughout the region on experience in utilization of wildlife resources and will share lessons learned through seminars and workshops at regular intervals during the life of the project. Two project-funded evaluations of the effort as a whole will assess progress generally and in each country component at mid-term and at the end of the project. Project managers will contract with non-federal auditors at least twice during the project period to assess financial aspects of project implementation in Botswana, Zambia and Zimbabwe.

1. Project Rationale

1.1. Problem Statement

The land base of Southern Africa imposes severe limitations on conventional agricultural and economic activities. This issue is fundamental to understanding the region's development prospects. Much of the region sustains a natural vegetation of semi-arid savannas and open woodlands of limited productivity, droughts are frequent and often protracted, and surface water supplies are limited except in a few major river valleys. Soil, water, and climate conspire to render the ability of ecosystems to supply human needs of food, fiber, and livelihood on a sustainable basis uncertain at best.

Conventional agriculture, though it can be enormously productive on favorable soils where water supplies are relatively secure, is limited by natural constraints in the member countries of the Southern Africa Development Coordination Conference (SADCC). Highly variable rainfall makes cultivation on rain-fed land unacceptably risky, the low carrying capacity of savanna ecosystems renders cattle ranching an unprofitable proposition, and tsetse fly--present in nearly one-third of the SADCC region--forecloses grazing in some more favorable areas. Moreover, southern African nations cannot readily sell surplus crops on the world market, and the prices received by farmers are declining.

Efforts to raise living standards, if based on the limited set of conventional options, can succeed only in the short run, at a cost that includes further degradation of the land's inherent productivity. A new SADCC report on land degradation in Zimbabwe concludes that "The productivity of most grazing areas is gradually, but continuously being lost through erosion brought about by

increases in livestock densities." Signs of this degradation, the consequences of overgrazing and cultivation of unsuitable land, are visible even to the casual visitor.

Yet Southern Africa contains a rapidly expanding human population for whom secure sources of food and income are urgently needed. Botswana, Zambia, and Zimbabwe, the three countries in which project sites will be located under the Natural Resources Management project, had a collective population in 1988 of 18.5 million. Rates of population growth in the region as a whole are among the highest on the continent, averaging 3.5 percent annually. If this growth rate persists, by 2010 the region will be struggling to support 37 million people. Income levels and the nutritional status of the present population are inadequate, but conventional development strategies hold little promise of improvement, particularly for the rural majority. Following the conventional path in Southern Africa portends increased infant and child mortality, shortened lifespans, and unrelieved poverty.

Although each of the countries that will benefit from the project possesses extensive mineral resources, these have not proved sufficient to support a broad-based improvement in living standards. With a soft world copper market, Zambia's extensive copper resources provide no engine for growth, and the country faces an economic crisis. Botswana's diamond mines and chrome and other mineral deposits have fueled impressive aggregate growth, but the benefits of this growth have not fully met the needs of rural Botswana. Indeed, in all three countries there seems to be a widening income gap between urban and rural areas--a disparity that drives migration to the cities while those remaining in rural areas are forced to increase pressure on natural ecosystems in order to survive, if only in the short-term. Alternative, viable livelihoods are urgently needed in rural areas, particularly on tribal and communal lands, in Botswana, Zambia, and Zimbabwe.

But a piece has been left out of this bleak picture of the region's development prospects -- the unique resource of wildlife and the ecosystems that sustain wild species. Southern Africa shares with East Africa the most diverse and spectacular fauna of large mammals remaining on earth, species that constitute humanity's last link to the wild herds of the prehistoric past. This remarkable fauna is sustained by a diversity of habitat types ranging from the Kalahari Desert through a spectrum of open woodland and savanna ecosystems to evergreen montane forests in eastern Zimbabwe. The project area falls within the Zambebian center of plant endemism, containing plant genetic diversity of regional and indeed global significance.

African countries and the world community have recognized this unique heritage and taken steps to protect it. A network of parks and protected areas covers 12.2 percent of the combined territory of Botswana, Zambia, and Zimbabwe. In addition, all three countries have designated additional land use categories on which wildlife management and utilization is the primary intended use, including Zambia's Game Management Areas, Botswana's Wildlife Management Areas, and a large and growing proportion of agricultural land in Zimbabwe. Collectively, existing and proposed areas account for a further 19 percent of

the region's land base. Wildlife protection or utilization is the primary land use on nearly one-third of the region's territory.

Yet despite the uniqueness of the wildlife resource, and its value to the global community, wildlife lands make a contribution to Gross Domestic Product in SADCC countries far smaller than their proportion of national land area. Further, institutions for monitoring and managing wildlife lack the technical and human resources needed to fulfill their mandate.

This fundamental paradox, a comparatively abundant and extraordinarily diverse natural resource coexisting with rural communities burdened by poverty and underdevelopment, is not likely to be resolved in favor of wildlife preservation. The pressure of survival intensifies a competition between alternative uses of the land to satisfy human needs, a competition that often degenerates into conflict between humans and wildlife -- with wild species the inevitable losers, and the potentially sustainable resource of biological diversity liquidated. Wild animals are hunted illegally, the short term cash gains from poaching earned at the expense of population viability. Poaching sacrifices economic efficiency as well, as animals can earn at least five times as much if marketed properly.

As subsistence cultivation expands, often onto unsuitable lands, wild animals damage crops and threaten settlements. And as more land is devoted to farming and grazing as a primary land use, loss of habitat and interruption of migration routes accelerate the decline of wild populations. Species like wildebeest and hartebeest, once estimated to number in the millions, are now rarely seen over their former range in Botswana. The black rhinoceros declined in Africa from an estimated 65,000 animals to less than 4,000 between 1960 and 1986. Though remaining populations of most species could recover on much of their natural range, as they already are on commercial game ranches, if the pressures of poaching and conflict with human needs could be relieved, present trends are cause for alarm.

The national parks estate in Southern Africa offers no ultimate reservoir for biological diversity. Parks budgets and staffing are uniformly inadequate to protect and manage the lands for which parks authorities are responsible. Further, many species migrate or disperse beyond park borders and rely on habitat not within the boundaries of protected areas. But ultimately, the future of parks rests on an equity question: can parks and the resource of diversity they protect be justified, let alone protected, if they are surrounded by deepening human poverty? Traditionally, communities adjacent to parks harbor resentment toward protected areas whose resources they are forbidden to utilize but whose wildlife may damage their crops or prey on their livestock.

The southern African region faces an environment and development challenge of great urgency and global significance. To improve economic prospects and sustain the region's unique biological diversity, it will be necessary to increase agricultural productivity on favorable lands while developing alternative land uses for marginal lands before they are irreversibly

degraded. This project is designed to focus on the latter challenge. It addresses the question: How can the wildlife estate of the three project countries, nearly one-third of their land surface, be turned into an asset for local and national development, increasing local standards of living while satisfying the concerns of the global community for conservation and sustainable management of its unique biological heritage? The project also provides for dissemination of experience throughout the region by the SADCC Coordinator for Wildlife, located in Malawi.

1.2. Project Strategy

If wildlife is seen as an asset by rural communities rather than a liability, community members will do what is necessary to conserve it. The challenge is three-fold: first, to develop the resource of wildlife and the mechanisms to market it; second, to invest communities with proprietorship of the wildlife resource, to empower rural areas with an income-generating asset that has been previously foreclosed to them; and third, fully to inform people of this new option to facilitate intelligent resource management. The concept of "local proprietorship" supplies the cornerstone of community-based resource utilization.

The concept contravenes a tradition of resource allocation that has prevailed in Southern Africa, and indeed throughout much of the developing world, throughout the colonial era and persisted into the first decades of independence. British colonial regimes in Zambia and Zimbabwe installed a policy of "King's Game" which reserved wildlife for the use and enjoyment of the ruling authority, essentially restricting the benefits of wildlife along racial lines. With independence, wild animals remained nominally the property of the state, and revenues generated by safari hunting, citizen hunting, and so on accrued to the national treasury. In Botswana, a protectorate rather than a colony, the wildlife resource was never alienated along racial lines, yet there, too, wildlife was considered property of the state and not of any private citizen or local community. The consequence of the "King's Game" concept, in colonial or modern guise, is systematic alienation of wildlife from the people who coexist with it--with the inevitable results of uncontrollable illegal use, a black market for wildlife products, and destruction of the resource.

For obvious reasons, wildlife is a "fugitive" resource--a term used by economists to denote an asset that is not readily privatized. Under favorable conditions, wildlife populations are self-sustaining and require no "management"--the checks and balances of natural selection adjusting the distribution and abundance of species within ecosystems. As long as wildlife is a resource owned by no one, a "common" resource to which access cannot readily be restricted, it will be overexploited. No incentive to invest in protection of the population exists because there is no guarantee of future benefits. The net present value to landholders of wildlife a generation hence is effectively zero. If, however, the benefits of wildlife utilization in its various forms can be assured to a particular community, that community will

have an economic stake not only in present use but in future income streams. An effective regime of communal proprietorship can create an incentive for wildlife conservation that has not previously existed in Southern Africa.

The argument for communal proprietorship is based on the premise that wildlife can make a significant contribution to development, that its comparative advantage to rural communities is favorable. This premise has ecological, economic, and social dimensions.

The ecosystem is the foundation of all economic life in rural Africa. The solar energy captured by photosynthesis and converted to biomass provides food, fodder, and fiber. Gathering of firewood and wild plants is a direct human harvest of this primary productivity. But semi-arid savannas produce few plants that can be directly consumed by people, and the indirect conversion of grasses into protein by livestock and wild grazing animals is far more important for human interests. Under semi-arid conditions, some wild species have decided ecological advantages over domestic livestock. They tend to be more selective and complementary in grazing preferences, more tolerant of droughts, and less likely to degrade the productive potential of the ecosystem than cattle. And because of the multiple values that can be realized even at lower stocking levels, activities based on managed wild populations pose less risk to the stability of semi-arid ecosystems than domestic species.

This ecological advantage of wild species, however, means little to human communities unless wildlife utilization demonstrates a clear comparative economic advantage over other land uses. Cattle production is so widespread in Southern Africa, and so ingrained both culturally and politically, that proposals for wildlife utilization face a stiff burden of proof. However, as the Economic Analysis appended to this Project Paper shows, the value of wildlife in Southern Africa is distorted by a pricing system heavily prejudiced against it. Cattle production is supported and subsidized to various degrees throughout the region, while wildlife is effectively "taxed" by its status as a resource nominally reserved to the state. Proof that wildlife faces a comparative disadvantage that is artificial rather than intrinsic is shown by experience with wildlife production systems on private land in Zimbabwe.

Commercial ranchers have found that wildlife systems can be more profitable than cattle under semi-arid conditions on marginal land, and the comparative advantage is even greater when foreign exchange factors are considered. Moreover, the resilience of semi-arid ecosystems is better preserved by production systems based on a mix of wild species, rather than a cattle monoculture. The great majority of commercial cattle ranches in Zimbabwe now devote at least some of their land to wildlife, which often accounts for 25-50 percent of net income. The same advantage can be demonstrated on communal land if effective proprietorship is established. Indeed, tribal authorities have seen what is happening on private land and are well aware of the potential value of wildlife. Some 25 communities in semi-arid areas have requested assistance from the Department of National Parks and Wildlife Management to develop wildlife activities.

Wild species are seldom cheaper sources of protein than domestic livestock, although some wildlife schemes for meat production can produce comparable meat output with less risk of degradation of the ecosystem's productive potential. The real economic attraction of wildlife is that wild populations can be managed to sustain an array of simultaneous income-generating uses -- culling or cropping for meat production, preparation and marketing of wildlife products, safari hunting, and non-consumptive uses such as game viewing and photographic safaris. The potential for multiple uses, when properly managed, is the vital advantage that wildlife utilization has over conventional agricultural systems. Wildlife offers several economic tiers over and above the value of primary agricultural products --e.g. meat. This diversification without intensification of resource use is the essence of sustainable development.

The social dimension of communal proprietorship is equally important. Tribal social structures in Botswana, Zambia, and Zimbabwe included culturally enforced systems of allocation and management of wild species, cultural practices largely superseded by western-based institutions during the colonial period. But traditional authority structures are still in place in rural areas, though much diminished in influence, and appropriate cultural traditions could perhaps be revived by regimes for localized proprietorship of wildlife. In addition, illegal or unregulated hunting for the pot is common in rural communities, and creating legitimacy for local resource use would do much to dispel the suspicion of wildlife management authorities that prevails in many areas. But perhaps most important, vesting local communities with a stake in wildlife could do much to create a climate unfavorable for poaching. Experience in Zambia and the Mahenya region of Zimbabwe's lowveld has already shown that when communities receive legitimate revenues from wildlife, they participate in policing and reporting poaching activity -- with dramatic results.

Establishing effective communal proprietorship, in which the revenues generated by wildlife activities are returned to local communities, is by no means only an abstract principle. It is a goal toward which Botswana, Zimbabwe, and Zambia are all moving. The context differs in each country, and this project is designed to hasten the process, taking into account the unique institutional, cultural, economic, and ecological factors in each.

- o Zimbabwe has progressed furthest. The Parks and Wildlife Act of 1975, as amended in 1982, allows the Minister of Natural Resources and Tourism to delegate "Appropriate Authority" over wildlife to District Councils. In June 1989, this authority was granted to two Councils with communal lands rich in wildlife, on which community-based wildlife management projects have begun. Other District Councils have applied for the same status, and the task of the project in Zimbabwe is to assist this devolution of authority to local levels and to provide the technical and management assistance needed to initiate viable wildlife-based enterprises.

- o Zambia has in place an institutional arrangement known as Administrative Management Design (ADMADe) by which revenues generated by wildlife activities (safari hunting, sale of wildlife products, game viewing) are returned to local communities in Game Management Areas adjacent to National Parks. Some revenues are reserved for the central Treasury. Consequently, communities are not yet entitled to full benefit from wildlife, but an important step toward community proprietorship has been taken. Project activities in Zambia are designed to improve the efficiency of the mechanism and to help communities in the Luangwa Valley to diversify the range of wildlife activities they engage in.
- o Although no legal barriers prevent the return of revenues from wildlife activities to rural communities in Botswana, in practice the devolution of authority to community levels has not yet progressed very far. But interest in wildlife utilization is high, a number of Wildlife Management Areas in which such utilization would be the primary land use are under active consideration, and the Department of Wildlife and National Parks has created a Wildlife Utilization Unit whose specific mandate is community outreach. In Botswana, the project aims to encourage further steps in the devolution of proprietorship to community levels by supporting pilot projects that demonstrate the economic viability of wildlife utilization, and by strengthening the capacity of local and national authorities to monitor and manage the wildlife resource.

A special case in the context of this regional project is the status of the African elephant, a species of global significance. Though in precipitous decline throughout much of its natural range, the African elephant is both abundant and increasing in Southern Africa. The population shared by Botswana's Chobe District and the adjacent Matabeleland North province in Zimbabwe currently numbers an estimated 80,000 animals, and is believed to be growing by 4-5 percent each year.

The population already exceeds the carrying capacity of parts of the range available to it, and Zimbabwe has a long-standing program of active management of elephants through controlled population reductions, or culling. Botswana has expressed interest in strengthening its management capabilities. If the population, which must be managed by culling to avoid degradation of its habitat, can generate financial benefits for the communities of Chobe and Matabeleland, then it may be possible to manage this one last robust elephant population in perpetuity, and perhaps to reestablish the elephant in other regions where it has been depleted. If, however, trade restrictions prevent the legitimate harvest of excess animals under a managed regime, the combined pressures of subsistence agriculture and illegal poaching are likely to place this population under great pressure. This project supplies a unique opportunity to inaugurate a regional cooperative program for the African elephant.

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1.3. Key Issues of Design and Implementation

The project design process offers little time for reflection. But after w of country visits and consultations with local people, government official NGO representatives, and USAID staff, the design team concluded that certa themes, which emerged in the context of each country during project design deserve attention during implementation. These dimensions of the proposed activities are judged likely to have a major bearing on the success of the project.

a. The need for regional coordination -

Experience with wildlife utilization in Africa is not new; it has been practiced by African cultures for millennia. But effective integration of wildlife activities into the formal economy is in its infancy. Because the success of the project depends on early demonstration of economic viability; the assistance intended as a catalyst and not a subsidy to wildlife activities, the management issues transcend national boundaries. Wildlife resources are shared by neighboring countries, and neither resource protection nor marketing can fully succeed without coordination. The arrangements proposed are sufficiently novel that early experience in neighboring countries, though not strictly comparable, may prove helpful in anticipating and solving problems that arise in other project areas. Though the analysis conducted during project design suggest that wildlife-based activities should be viable in each of the three countries, regular communication can hasten day that activities become self-sustaining.

Though it accounts for only a small share of the total project budget, Malawi's role is one of disproportionate importance. The SADCC Coordinator for Forestry, Fisheries, and Wildlife must ensure that experience gained in each country is both available and circulated to communities engaged in wildlife utilization in the others, as well as additional SADCC member countries. SADCC has demonstrated this capability with respect to agricultural and transport issues, and its experience in these other sectors will be invaluable here.

b. The importance of a favorable legal and institutional setting in which devolution of authority for wildlife is possible -

The discussion above emphasizes the need for true devolution of proprietorship over wildlife resources to community levels. The argument is compelling, and indeed the process is underway to varying degrees in all the project countries. But that should not lead to complacency concerning the outcome. Those involved in project implementation must stay attuned to the political climate surrounding devolution of authority in each project country, and structure activities as far as is possible to facilitate transfer of control over wildlife to local authorities on communal lands, and ensure that revenues generated accrue to local residents.

c. Availability of the wildlife resource, in numbers and densities sufficient to yield economic benefit -

This issue may seem too obvious to bear discussion, but many factors shape the abundance and distribution of wild populations, and only a few are amenable to control within the context of this project. Few wild species tend naturally to remain at stable population levels. Drought, epidemics, and disruptions of small habitat areas critical to reproductive success are only a few among many events that can cause abrupt changes in wildlife numbers. During implementation, it will be important for project authorities to consider how projects can be designed for resilience in the face of uncontrollable events.

d. Access to markets, for both consumptive and non-consumptive forms of wildlife utilization -

Legitimate markets for wildlife products and wildlife-based activities exist, but need strengthening if the full range of proposed activities is to prove feasible. The project analyses suggest that commercialization at local levels will prove viable with existing markets for products and tourism, but the desired spread beyond initial project areas and after the Project Assistance Completion Date (PACD) will depend on further market development. At the international level, market access will be influenced by political trends whose outcome cannot now be foreseen. Thus, implementation must be managed with an eye toward the national, regional, and international factors governing open access to markets.

e. The importance of a favorable climate of global opinion -

Given the volatility of the ivory ban issue and the focus of international community on African conservation issues, this project bears a special burden. It aims to demonstrate that local proprietorship, as discussed in this Project Paper, equates with resource conservation and demonstrates sustainable development in practice. This raises the stakes considerably, even beyond the urgency of initiating new development paths for communal lands dwellers in Southern Africa. The project is potentially a watershed in development assistance in the natural resources field, and pains must be taken to ensure that it receives deserved attention in Africa and worldwide.

Ultimately, the Regional Natural Resources Management project aims to enhance the capacity of local communities to organize and manage themselves toward the goals of: (i) conservation of the resource base, (ii) sustainable local development through economic diversification, and (iii) sharing of experiences with wildlife utilization at the national and international levels.

1.4. Relation to A.I.D., SADCC, and Host Country Priorities

1.4.1. Relationship to A.I.D. Policy and Strategy

a. A.I.D. Environment and Natural Resources Policy. Agency policy is based on the premise that environmental protection and conservation of natural resources are essential to sustained economic and social development. A.I.D.'s traditional approach has been to prevent negative environmental consequences of project activities, but the 1988 A.I.D. Policy Paper introduced a second approach, to support activities having as a primary objective sustained natural resource management or environmental protection.

The project meets Congressional and USAID concerns for preservation of biological diversity and for the generation of alternative sources of income to reduce pressure on wildlands from subsistence activities. It will provide technical assistance to strengthen public and private institutional capacities and local skills in resource management. In addition, it will support activities specifically designed to achieve sustained natural resource productivity and management while protecting or enhancing the environment.

The project is consistent with A.I.D.'s explicit policy on more immediate and narrowly focused measures to protect biological diversity, which includes promotion of anti-poaching measures and support for training, education, and public awareness.

b. Africa Bureau Plan for Supporting Natural Resources Management. The proposed project directly addresses geographic, technical, and ecological priorities identified in the Bureau Plan approved in February 1987. The project directs resources to Botswana, a Bureau-designated priority country, for natural resource management assistance. Project activities emphasize the creation of economic incentives for safeguarding wildlife, thus directly addressing the Bureau's technical priority concerning the loss of biological diversity. Because the project is focused on alternative uses of marginal lands degraded by other uses, the project also speaks to the Bureau technical priorities on loss of vegetation and soils.

c. Regional Development Strategy Statement (RDSS) 1991-1995. A strategic objective of the RDSS for Southern Africa is to strengthen the potential for sustainable regional food security through increased agricultural productivity and improved income. The emphasis is not only on policies that affect availability and affordability of food, but, also, the relationship of household income to food security. Incomes in rural areas are strongly related to productivity of the resource base. Large areas of agriculturally marginal semi-arid savannas in the Southern Africa region sustain intense, damaging pressure from inappropriate uses such as cattle grazing. Communities with access to wildlife resources could benefit economically by utilizing wild species adapted to these marginal conditions rather than continuing to devote fragile lands to unsustainable and unprofitable practices. The RDSS recognizes that, as yet, there are few concrete economic incentives for people living on communal lands to maintain the unique natural resource of wildlife.

The economic value of the returns from wildlife management and utilization has been recognized in Zimbabwe for over 20 years, although mainly among large commercial farmers and natural resource specialists. In recent years the real growth rate of wildlife-based activities in the commercial sector has increased dramatically, and there is now a demand originating from residents of Zimbabwe's communal lands for similar development. Economic factors similar to those already stimulating interest in Zimbabwe exist throughout the region.

1.4.2. Relationship to SADCC Policy and Strategy

The Southern African Development Coordination Conference (SADCC) has adopted a Regional Natural Resource Policy and Development Strategy which identifies wildlife as an important integral component of the regions natural resources. The "Strategy Document for Natural Resources and Environment" adopted in 1988, states that management of wildlife encompasses conservation, utilization, and control activities aimed at: (i) provision of sustained utilization benefits such as food, hides, and other wildlife products; (ii) creation of employment opportunities in income-weak rural areas; (iii) optimum productivity of agriculturally marginal lands; (iv) enhancement of environmental stability; (v) conservation of genetic resources, scientific, cultural, and recreational values inherent in wildlife; and (vi) reduction of detrimental effects caused by wildlife. The proposed project is consistent with these emphases, and preliminary discussions indicate strong SADCC support for its development.

1.4.3. Relationship to Host Country Policy and Strategy

a. Botswana: Botswana has a well-articulated set of natural resources management objectives and policies with which the proposed project is consistent. One of the major policies embraced in the Sixth National Development Plan (1985-1991) is "to initiate further planning of the management of natural resources." Sustained-yield utilization of wildlife resources for rural employment is emphasized. The National Wildlife Conservation Policy approved in 1986 also stresses sustainable use of the wildlife resource for income generation and rural job creation. Wildlife Management Areas (WMAs), authorized under the Tribal Grazing Lands Policy (1975), are specifically intended to support sustainable wildlife utilization as the primary land use. Ten WMAs have been approved by districts, and two others are under active consideration. A National Conservation Strategy is in draft and pending official approval.

b. Zambia: Zambia's national policy objectives of decentralization and diversification of economic activities in less developed rural areas fit within the framework of the country's National Conservation Strategy, which highlights the importance of sustainable development through rational use of natural resources, cites conservation as a priority, and presents a broad plan for achieving its objectives. Officially adopted in 1985, Zambia's was the first such strategy completed in Africa. The proposed project is entirely

consistent with, and indeed was in part inspired by, the promising framework for community-based wildlife utilization known as Administrative Management Design (ADMAD), launched under Zambia's auspices and described in more detail in Volume II of this Project Paper.

c. Zimbabwe: The National Conservation Strategy for Zimbabwe was published in April 1987. The goals of the Strategy are to integrate sustainable resource use into all aspects of the nation's social and economic development and to rehabilitate resources that are already degraded. To achieve these goals, the country is undertaking action plans to ensure that resource use is equitable, productive, and sustainable. The proposed project is consistent with the National Strategy, and there is enthusiastic support within Zimbabwe for its development. The plan for implementation of the strategy calls for a community approach to the ownership and management of natural resources, so that those deriving benefits from resources are responsible and accountable for their conservation. The Strategy's emphasis on non-arable lands (80 percent of Zimbabwe's surface) is particularly germane to the proposed project activities.

1.5. Other Donor Support

The national parks services of the participating countries have received support from other donors, especially from EEC and the Nordic countries, for their conservation and anti-poaching programs. EEC has also funded an adviser to the Ministry of Forestry and Natural Resources of Malawi to help fulfill its responsibilities as SADCC Coordinator for Forestry, Fisheries and Wildlife. The parks services have also benefited substantially from contributions by various non-government organizations, such as the World Wide Fund for Nature, African Wildlife Foundation, and Save African Wildlife Foundation, as well as from in-country organizations such as Zimbabwe Trust and Kalahari Conservation Society.

Outside support for programs to involve local communities in the management of wildlife resources has been particularly strong in Zambia, where Norwegian aid has supported the Luangwa Integrated Rural Development Program and World Wildlife Fund-U.S. has helped finance and implement the Lupande Development Project. Otherwise, these incipient programs have been locally funded.

The proposed project will be the first to offer major external assistance for the region that is specifically targeted to community wildlife management programs and to analysis and sharing of experience among SADCC member countries.

2. Regional Project Description

2.1. Project Objectives (Goal, Purpose, Outputs)

The project consists of assistance, within the framework of SADCC, to facilitate regional cooperation among participating SADCC member states in managing and protecting the natural resource base of the SADCC region for purposes of sustainable social and economic development as well as protection of ecological diversity, and to disseminate knowledge of community management of wildlife resources among SADCC member States. The goal of the project is to increase incomes and enhance capability to meet basic human needs through sustainable utilization and conservation of natural ecosystems. Successful conservation of wildlife resources and better integration of wildlife into the nation's economic development program will accomplish the project's subgoal of promoting sustainable development of communities through appropriate land use practices on lands that are marginally suitable for agriculture.

The general purpose of the project is to improve the social and economic well-being of residents of rural communities by implementing sustainable community-based wildlife conservation and utilization programs. The expected accomplishments of the project as a result of successful implementation are as follows:

1. Natural resource utilization will be demonstrated to be a preferred and profitable land use in rural and communal lands.
2. Resource management programs established in the target areas will be self-sufficient, will offer increased local employment opportunities and incomes, will result in sustained wildlife resource yields, and will provide the communities with access to a renewable source of revenues for local development projects.
3. Institutions and decision-making procedures for sustainable resource management and distribution of economic benefits resulting from the natural resource base will be established and strengthened at the village, ward and district levels on communal lands. The participating institutions will assume complete responsibilities by the end of the project.
4. Participation of women in resource management programs will increase at the village, ward, and potentially, district levels. The role of women in the economy and their access to income will be expanded through income-generating activities that use the natural resource base in a sustainable manner.
5. Interested governments and leaders in the natural resources sector throughout the SADCC region will be better informed on the effectiveness of different models of natural resource management methods and impact, particularly with respect to wildlife.

- . 6. In participating SADCC member States, rural social welfare will be increased through higher income and/or access to protein, community development projects, and the expanded participation of women in the development process.

Within each participating SADCC member State, the project will provide support for already initiated and continuing activities which demonstrate the technical and economic viability of community based natural resource management for increasing household and community incomes while sustaining natural resources; and for improvement of national capabilities to halt the decline in the wildlife resource base through training, education, protection, communication, and technology transfer.

2.2. Summary of Project Elements

2.2.1. Community Based Resource Utilization

A central underlying principle of community-based resource utilization is that communities receive the economic returns derived from the resource base. It has been found that when the link between sustainable use of the resources and continued economic returns is made, the revenues can act as an incentive for more efficient management and conservation. To form the links, experience suggests that communities must participate in decision-making concerning resource management and the distribution of benefits. Moreover, for community resource management actions to directly result in increased benefits to that community, the resource base must be defined as a community asset, rather than as an individual or national one. It is clear that communities must also have assured, long-term rights to those resources so that long-term conservation and management decisions will be seen as justifiable based on expectations of future benefits.

The community based resource utilization component supports the sustainable use of wildlife and veld products (e.g.: insects and wild plants). As described above, wildlife is seen as a communal asset with communal benefits. As such, benefits are distributed through district authorities in Zimbabwe and Botswana, and through the traditional chiefs in Zambia. Benefits will be used primarily for public infrastructure, including the construction of schools, clinics, grain mills, etc. Throughout project implementation, these authorities will formulate acceptable means of returning revenues to the communities that share the land most directly with the wildlife and pay the greatest costs. In Zimbabwe, the concept of receipt of differential benefits based on differential costs will be implemented through a compensation scheme for crop damage. Individuals will also benefit from the project as employment opportunities are generated, particularly through locally recruited game scout positions, and from increased processing activities generating form efficient wildlife management.

Veld products are an important natural resource exploited primarily by women in the three countries. Although veld products are a communal asset, they are

primarily used for individual gain through collection, processing, and marketing activities. Project activities supporting the utilization of veld products focus on two complementary facets: (1) the promotion of sustainable use of the resource with emphasis on regeneration; and (2) increased income generation from the resource.

The two primary elements to community-based resource utilization are: (a) Wildlife Management; and (b) Institutional and Community Development. Each of the three participating countries addresses these elements, albeit to differing degrees.

a. Wildlife Management

The Departments of Wildlife and Parks in each country will continue to set offtake quotas for wildlife and will provide technical assistance and training to district authorities and, in Zimbabwe and Zambia, to locally recruited game scouts. However, district authorities will decide the means of utilizing and benefiting from the wildlife. Depending on the resources available, options may include: joint ventures with safari companies; subsistence hunting by local residents; tourism development; and lease of the resources; among others. In Zambia and Zimbabwe, local authorities will also be financially responsible for management. In Zambia, these funds (40 percent of the revolving fund) are programmed by the Department of Wildlife and Parks and are used to pay salaries and operating costs of their efforts to manage wildlife in the management unit. In Zimbabwe, these decisions are left to the district councils.

b. Institutional and Community Development

To varying degrees, the programs in each country strive to strengthen local level institutions, through training and technical assistance, in terms of their capability and capacity to manage the resource base and to establish policies and procedures for the distribution of revenues. Through the process of designing, implementing, and evaluating their own programs, local level authorities will gain necessary skills and experience in determining their own development. The Departments of Wildlife and Parks, through the Wildlife Utilization Unit in Botswana, the ADMADE program in Zambia, and local NGOs (ZimTrust in Zimbabwe), will work collaboratively to support the local level institutions. These organizations will also assist local authorities, where necessary, to develop the communication links between residents and representational bodies.

Each of the country programs specifically addresses the needs of women and their use of the natural resource base, particularly of veld products. Given the role of women in the household economy, this project will support economic diversification through income generation activities. In addition, women's participation in the decision-making process will be encouraged in Zimbabwe and Zambia by providing a channel for communication to the local level authorities. In Zimbabwe, a Manager for Women's Activities will be assigned to the target area, in Zambia, the Community Development Officer will address

the specific needs and constraints facing women, and in Botswana, 50 percent of the fund for activities supporting the use of veld products is targeted to women. In each country, project implementors will collaborate with existing women's organizations and extension workers addressing these issues.

2.2.2. Planning and Applied Research Support:

The project includes provisions for ecological research and monitoring in each of the three countries, with special reference to wildlife population and habitats as described below in the Conservation of the Resource Base Section. In addition, the project also provides for planning and applied research activities on land use and the socioeconomic dimensions of resource management as a central component in a viable and optimal scheme of resource utilization. Land use planning is necessary to ensure a clear understanding of the resources available and the most appropriate means of exploiting them. On the land available to most communities, this will imply a mix of land use activities determined by both ecological conditions and the range of economic requirements of local populations. Thus, the project provides support for examining natural resource use within larger management regimes of land use that examine options holistically.

Effective community-based management structures also require an understanding of motivational, structural, and administrative factors. Applied social science research can supply the necessary analysis of the dynamics involved and in suggesting management options that are accessible and feasible to both central planners and local communities. No single management model is available that will effectively apply to all community contexts, and it is therefore necessary for an applied social science component to be available that will provide both community-specific data of planning relevance and also analyses of generalizable utility.

Applied research activities will be directed towards the provision of data for both monitoring and analytic purposes. For monitoring and evaluation, baseline surveys will be conducted in project target areas and will include: demographic data; data on agricultural and other economic activities; attitudinal perspectives; and local institutional structures. In accordance with A.I.D. policy, data will be collected on a gender-disaggregated basis where practicable. Periodic replications of this exercise will be conducted throughout the life of the project to provide quantitative indices for evaluation. In-depth analyses of structures and processes will also form part of the applied research component and will cover a range of issues, including: the role of women in natural resource management; center-periphery relationships in the bureaucratic and administrative structures involved; community-level motivational and decision-making factors; the socio-legal aspects of resource protection; and the impact of local natural resource proprietorship on general community development.

The methodological approaches to be used in this research include standard social science techniques such as surveys using questionnaires based on carefully constructed sampling frames, yielding quantitative data. However, the nature of the issues involved also requires a case study approach that examines community dynamics over time. Communities will be involved in the research, where appropriate, through participatory action research strategies. Thus, the research is not only a data-gathering process, but also a learning process for both management and communities. Through this process, planning by local communities for themselves will be enhanced.

Land use planning activities in Zambia will be conducted by personnel in the National Parks and Wildlife Services (NPWS) associated with the ADMADE program, in Botswana by the Ministry of Local Government and Lands and the Department of Wildlife and National Parks (DWNP), with assistance from the Kalahari Conservation Society (KCS), and in Zimbabwe by the Centre for Applied Social Sciences (CASS) at the University of Zimbabwe, the Department of National Parks and Wild Life Management (DNPWLM), and Zimbabwe Trust (ZimTrust). In all cases, local communities and other relevant government agencies will be involved. In Zimbabwe, applied social science research will be carried out primarily by CASS, with the help of ZimTrust. In Botswana, provision has been made for assistance to the social scientist working with the Wildlife Utilization Unit of DWNP, and in Zambia the activity will be undertaken by the Community Development Officer located in the ADMADE program, possibly with assistance from University staff. The dissemination of research results will be community feed-back sessions, reports to district authorities, regional and national seminars and workshops, and through publications.

2.2.3. Conservation of the Resource Base

On nearly one third of the land area of Botswana, Zambia and Zimbabwe wildlife is the designated or nominal form of land use. Despite the rich wildlife resources of the region and the exceptionally large area available to wildlife the resource is under threat. Large mammals, particularly elephant and rhino, in the protected area system of some 212,800 sq. km. are not secure because the agencies responsible for their management are seriously under staffed and poorly financed. The agencies are consequently unable to devote resources to the protection of wildlife outside of park areas or to servicing neighboring wildlife management areas, or game management areas. Expanding subsistence agriculture and demands for fuel wood and grazing pose further threats to these areas and the resource base. This is because wildlife and protected areas seldom provide any benefits to rural communities.

Simply providing funds and men to protect wildlife is unlikely to solve the problem because the resources required are too great and this approach fails to address the root of the problem which is the attitude of rural farmers to wildlife. The strongest source of support for conservation and protection of wildlife resources is likely to come from farmers and communities who can benefit from sustainable utilization of the wildlife resource. This policy is now being actively pursued by three countries involved in the programme. The

Natural Resources Management project thus seeks to improve the conservation of the wildlife resource base by three concurrent strategies. These are:

- (1) To develop the capacity of rural communities to protect, manage and benefit from the utilization of wildlife resources and their land.
- (2) To strengthen the capacity of government agencies to protect and manage such key resources as elephant and rhino.
- (3) To develop the capacity of government and non-government agencies to service the aspirations of rural communities to establish viable and sustainable wildlife utilization schemes.

A major focus of the program is to develop skills at district and village levels to monitor, manage, and protect wildlife resources. At the national level resources are being provided to improve the monitoring and protection of elephant populations in particular.

2.2.4. Conservation Education and Training

Conservation education will contribute to successful efforts to conserve the resource base and to promote effective resource management and utilization programs. When people become thoroughly aware of the threat to their land, soil and water, and of the potential economic value of veld products and wildlife, they will be more likely to actively support and participate in conservation and utilization activities. This project addresses environmental issues, including information on both general conservation and on wildlife utilization, through formal and non-formal activities, including:

- o the integration of conservation issues into the existing primary and junior secondary school curriculum;
- o training of teachers, education administrators, literacy tutors, and extension agents in the use of new curriculum/training materials and environmental issues;
- o the strengthening of the Interpretation and Extension Units of the Departments of Wildlife and National Parks through workshops, equipment, and construction of visitor's/interpretation centers;
- o production of education materials, including scripts for use on radio programs, videos, Action' magazine, and other teaching tools;
- o workshops with village, district, and provincial authorities on community-based resource utilization; and
- o presentations to the general public.

The project also supports non-formal training in technical, project planning/implementation, and problem solving skills. In addition, funds are provided for project staff to attend relevant short-term courses (U.S. and Third Country) and professional degree programs at colleges and universities in Africa. Research conducted as part of these degree programs will be conducted in the project target areas.

2.2.5. Regional Communication and Exchange of Information

The models of resource utilization and management are different in the three countries, taking into account variations in national policies and in environmental and socioeconomic contexts. Through the monitoring and evaluation process, and through the comparison of the results, these models provide a unique opportunity for formulating theories regarding the necessary conditions and policy environment for success, viability of differing approaches, and implementation constraints. These lessons learned will provide a valuable input to the design of future community based resource utilization programs. Thus, although project activities will be carried out in Botswana, Zimbabwe, and Zambia, results and lessons learned from the target areas will be disseminated on a SADCC regional basis to gain a broader acceptance and appreciation of the concept of community-based resource management and utilization, as well as a technical knowledge of local, national, and international actions required to ensure that benefits accrue from resource utilization and conservation.

The SADCC Coordinating Unit for Forestry, Fisheries, and Wildlife in Malawi will serve as the central clearing house for information dissemination and the planning of seminars, workshops, and conferences for information exchange. Participants will be from key groups at various levels, including government officials, the private sector, community organizers local level authorities, and traditional leaders. The project will also sponsor numerous reciprocal visits by parks and wildlife services personnel to keep current on what approaches are working and to exchange ideas and assistance. In addition, the dissemination of lessons learned will receive broad support through conferences, government sponsored workshops, donor meetings, and other forums.

The Malawi component is also geared toward promoting regional cooperation in natural resource data collection and analysis. The SADCC Sector Coordinating Unit will compile baseline information, monitor changes that occur, and draw together data on natural resources, rural communities, and governmental and non-governmental institutions.

A.I.D. will provide assistance to the Government of Malawi in the form of financial support for carrying out research, analysis and publication of results, organizing of conferences, and through the provision of a project adviser.

2.3. SADCC Regional Coordinating Role

SADCC has adopted a Regional Natural Resource Policy and Development Strategy which identifies wildlife as an important integral component of the region's natural resources. This strategy recognizes the technical viability and economic advantages of wildlife utilization in areas only marginally or completely unsuitable for agriculture, categories which apply to large portions of the region's land surface. It seeks to extend this form of land use, already demonstrated as viable on privately owned marginal lands in Zimbabwe, to lands under communal forms of management where local populations have received little direct benefit and where the wildlife resource is under heavy pressure from commercial poaching. Unless exploitation of wildlife in these communal lands is controlled and subjected to sustainable forms of utilization, the region will largely be deprived of one of its most productive natural resources, leading to further environmental degradation from which rural populations are likely to suffer most. The SADCC Strategy, taking a lead from the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) approach developed in Zimbabwe, has made the development of local management regimes for indigenous resources in rural areas a top regional priority.

Implementation of the Regional Strategy rests with Malawi's Ministry of Forestry and Natural Resources, which serves as the SADCC Coordinator for Forestry, Fisheries, and Wildlife. Its mandate stems from the policy of SADCC to decentralize responsibility for development of the various economic sectors that are important for regional cooperation. The Ministry's Department of National Parks and Wildlife has responsibility for wildlife within this mandate and its Chief Officer is the Technical and Administrative Coordinator for Wildlife within the SADCC Coordinating Unit for Forestry, Fisheries, and Wildlife. This Unit has gained approval of the SADCC Council of Ministers for Project No. 5.0.18 entitled "Regional Development of Community-Based Management and Utilization of Wildlife Resources in Marginal Areas" for inclusion in the SADCC Programme of Action.

The project, in its regional dimension, will be located in the SADCC Sector Coordinating Unit. This Unit will establish a Project Coordinating Committee on which the SADCC Coordinator, A.I.D. as SADCC's Cooperating Partner, the three participating states, and any contracting agencies or non-governmental grantees will be represented. The SADCC Unit will collaborate closely with the project coordinating committees in each of the participating states in the regional communications and exchange of information component of the project.

This project element has the objective of promoting a better understanding and technical knowledge of local, national and international actions required to ensure that benefits accrue from wildlife utilization and conservation. The results and lessons learned from project activities in Botswana, Zambia and Zimbabwe will need to be shared between the three countries on a continued basis for optimal and incremental project development and need to be disseminated on a SADCC regional basis to gain broader acceptance for the concept of community-based resource management.

To achieve this objective, the project will assist the Coordinating Unit to compile baseline information, monitor changes that occur, and draw together data on wildlife resources, rural communities, and government and non-government institutions. The project will also assist the Unit in organizing liaison visits, regional workshops and technical seminars, and in servicing the Project Coordinating Committee. In supporting these activities, the project will both integrate country-specific components and also strengthen the institutional capacities of SADCC to address issues of natural resource utilization on a regional basis.

3. Regional Project Implementation

3.1. Administration and Implementation Arrangements

3.1.1. A.I.D. Responsibilities

USAID project administration, including assistance with procurement of vehicle and office equipment, will be provided by USAID/Zimbabwe under the direction of a USAID Officer of the Agricultural Development Office, who will be the drafter of the initial (and subsequent substantive) Project Implementation Letters (PILs). The USAID Officer, supported by a Project Administrator (further described below) located in Zimbabwe will be responsible for project backstopping of the Zimbabwe, Zambia and Malawi components. The Director of USAID/Zimbabwe will redelegate to the Director, USAID/Botswana, authority to implement the Botswana component of the project.

The USAID Officer will monitor the work of a Project Adviser (further described below) to be located in the SADCC Coordinating Unit according to agreed terms of reference and in relation to the other components of the project. USAID/Zimbabwe will also serve as the authorized accounting services station for all project components. Vouchers are to be submitted for payment to the Controller, USAID/Zimbabwe.

Expected project implementation support services and related costs, including the salary of a Project Administrator, will be funded under the Zimbabwe Project Component. The Administrator will serve under a personal services contract, reside in Harare, and report to the USAID/Zimbabwe Project Officer. Office space will be provided by the DNPWLM. The primary responsibility of the Project Administrator will be to provide administrative support to the USAID Project Officer for implementation of the Zimbabwe, Zambia, and Malawi components, to include the drafting of project implementing and administrative documents, project implementation reports, and other general and specific administrative duties assigned by the USAID Project Officer.

3.1.2. Implementing Agency Responsibilities

a. SADCC Sector Coordinating Unit

The implementing agency responsible for the regional aspects of the project is the SADCC Sector Coordinating Unit for Forestry, Fisheries, and Wildlife located in the Department of National Parks and Wildlife (DNPW) of the Republic of Malawi's Ministry of Forestry and Natural Resources. Project management will be the responsibility of the Chief National Parks and Wildlife Officer of the DNPW, supported by a Project Adviser (described below). The DNPW will ensure administrative and logistical support for the Adviser. In addition, the DNPW will assign a member of its staff to assist the Project Adviser in project-related activities. The staff member will work fulltime on SADCC matters. The DNPW will also request an additional staff member to help coordinate the SADCC program as the number of projects under implementation. Finally, the DNPW will assign a planning officer to work with the Project Adviser to learn data collection and analysis techniques.

In response to a need for transport and fuel to facilitate project coordination, the project will provide a four-wheel drive vehicle and funds for fuel costs during the six-year life of the project. The DNPW, which has its own staff of mechanics, will maintain the vehicle and provide a driver. The vehicle will be registered as a Government vehicle and will be subject to regulations as to its use. It will be available to the Project Adviser according to his needs.

b. Project Coordinating Committee

The SADCC Coordinating Unit will establish a Project Coordinating Committee on which the SADCC Coordinator, USAID as SADCC Cooperating Partner, the participating SADCC member States, and any contracting agencies or non-governmental grantees will be represented. The Project Coordinating Committee is to be chaired by the SADCC Coordinator for Forestry, Fisheries, and Wildlife. The Project Coordinating Committee will collaborate closely with the Project Implementing Committees in each of the participating SADCC States to implement the Regional Communication and Exchange of Information project element.

c. Project Implementing Committees

At the national level, in each of the SADCC participating States, the project will support the activities of a Project Implementing Committees on which will be represented all participating agencies in the country project component. The duties of the Project Implementing Committees are more fully discussed in the individual project component descriptions, and will involve detailed project implementation planning and scheduling. Of particular importance at the earliest stages is each Committee's elaboration of a detailed project implementation plan and schedule, definition of accounting practices and procedures, procurement plans and specifications, waiver requirements,

preparation of terms of reference for contract actions, decentralized project monitoring methods and other aspects of project implementation planning, monitoring and evaluation.

d. Project Adviser (Data Collection and Analysis Specialist)

The project will provide assistance to the Government of Malawi acting in its capacity as the SADCC Sector Coordinating Unit for Forestry, Fisheries, and Wildlife in the form of financial support and the provision of a Project Adviser who will be located in the DNPW of Malawi. The Project Adviser will be a specialist in data collection and analysis and will report to the Chief National Parks and Wildlife Officer, who is the Technical Coordinator for Wildlife of the SADCC Coordinating Unit for Forestry, Fisheries, and Wildlife. The Adviser will also serve as secretary of the Project Coordinating Committee. The Terms of Reference for the Adviser are discussed in the Malawi Project Component Description.

3.2. Monitoring and Evaluation Arrangements

3.2.1. Monitoring

The project will be subjected to three sets of monitoring processes. The first is the continual, internal evaluative exercise funded under the SADCC/Malawi component where information about the results of the application of community based resource utilization will be monitored on a continual basis. The records will be available to all interested parties and will serve as a source of information for external project evaluators.

The second form of monitoring is described in the Regional Evaluation Plan. Two project-funded external evaluations are called for - one at the mid-term and one shortly before the Project Assistance Completion Date (PACD).

The third set of evaluative exercises is the project's planned non-federal audits. Budgets for each project component contain funding for at least two non-federal audits to be scheduled at the direction and convenience of USAID Zimbabwe (in the instance of the Zimbabwe, Malawi and Zambia components) and USAID Botswana.

3.2.2. Evaluation

The project evaluation requires four crucial points for in-depth research to assess the achievement of planned outputs: (1) baseline studies against which to measure change over time; (2) an implementation review; (3) a mid-term evaluation; and (4) a final impact evaluation. The baseline studies will be undertaken on a country-specific basis. The mid-term and final evaluations will be conducted on both a regional and country-by-country basis in the four countries in years three and six, respectively. As the program in Zambia is

planned for only four years, a mid-term evaluation may be necessary in year two. Following A.I.D.'s policy, data must be collected on a gender-dissagregated basis wherever possible.

The baseline studies will be undertaken by project staff, with short term assistance from consultants if necessary. The implementation review will be completed by USAID staff, as appropriate. The mid-term and final evaluations (the responsibilities of USAID/Zimbabwe) and non-federal audits (the responsibilities of the cognizant USAID) will be conducted by external teams financed by the project through IQC work orders. Funds for the audits are included in each individual country budget, while funds for the evaluations are included in the regional budget.

a. Baseline Studies

Two types of baseline studies are required by this project: (1) data on wildlife populations and their habitats in Botswana, Zambia and Zimbabwe; and (2) socio-economic data on the residents and institutions of the project target areas. Given that patterns of use of the natural resource base by wildlife and human populations are interrelated, the results from these baseline studies must be shared and data requirements modified as needed. Elements contained in the wildlife baseline studies include, but are not limited to:

- o numbers, trends, age structures, and distribution of elephants and other critical species being utilized (to inform culling quotas and other management activities);
- o the number of wildlife carcasses (to determine the level of poaching activities);
- o the character, condition, and quantity of woody and other vegetation (to assess damage to the environment resulting from increased wildlife populations); and
- o size, distribution, and health of livestock populations and grazing resources, as well as amount of land under agricultural production (to monitor changes in these current land uses and sources of income).

Elements to be included in the socio-economic baseline studies include:

- o types and amounts of consumptive and non-consumptive uses, social and economic basis of these uses, and types of ecological impacts (to assess the impact of a wildlife utilization program);
- o sources, levels, and uses of income and other resources within the household economy, as well as labor patterns, by gender (to determine benefits being received from wildlife utilization and their contribution to family well-being);

- o distribution of settlement and infrastructure (to monitor changes in both voluntary and forced resettlement);
- o number and condition of small enterprises and social services and ownership by gender (an indication of economic development);
- o social control mechanisms relating to environmental issues (to monitor changes and assess the effect of these mechanisms on illegal use of wildlife and other natural resources);
- o the current role of women in the utilization and processing of wildlife and other veld products and their perceived needs (to identify possible project activities and to monitor changes in related responsibilities and roles);
- o cultural and attitudinal variables in environmental perceptions;
- o existing organization, responsibilities and actual activities of the authorities, sub-authorities, and other local institutions (to contribute to an understanding of the changing roles of these structures); and
- o amount and basis of community stratification and cohesion, differential interests, and competition.

b. Implementation Review

Given that the project is primarily designed as a framework, with ongoing definition of specific activities by local communities, district authorities, and project implementors, USAID Missions in collaboration with host country counterparts will be expected to undertake an implementation review at the end of year one. The review will allow for any modifications to be made early in the life of the project.

c. Mid-Term Evaluation

The mid-term evaluation will assess progress made to date in achieving planned outputs in the four participating countries. The evaluation will include a preliminary comparison of the validity of the models being pursued, taking into account differences in national policies and socio-economic contexts. The mid-term evaluation is intended as a tool to plan for the remainder of the project, with the evaluation team and project implementors jointly reviewing and modifying the objectives and expected outputs. In addition to reviewing change in terms of the data collected during the baseline studies, the mid-term evaluation will:

- o assess the validity of assumptions made during project design;
- o assess the degree to which target groups are receiving revenues and other benefits from wildlife utilization activities;

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- o gauge the efficiency and effectiveness of the collaborative arrangements between implementing agencies;
- o assess the effects of changes in national and international policies regarding wildlife use on community-based resource utilization, as well as the reverse: the effects of the demonstration projects on national policies;
- o assess the capability and capacity of local institutions for self-management and self-determination regarding natural resource utilization;
- o identify causal factors if the project is not achieving the expected outputs; and
- o recommend changes in design and produce a status report on plans to incorporate additional target areas, if appropriate.

d. Final Evaluation

The final impact evaluation team will collect data for comparison with that in the baseline studies, as well as with the data generated and the conclusions and recommendations made during the mid-term evaluation and at other points during project implementation. At the regional level, the evaluation will compare the different models being applied in each country and make hypotheses regarding their effectiveness and impact on community residents, given the differing political, economic, environmental, and cultural contexts. The coordination and information dissemination roles of the SADCC unit in Malawi will also be assessed.

3.2.3. Audit

The mid-term and final audits will be on a country-by-country basis in years three and six, and will review the financial statements of the implementing agencies, expenditures made under the project from all sources, and the state of the commodities purchased. The ability of the relevant government departments and other cognizant institutions to assume all financial responsibilities for project activities by the PACD will be assessed.

3.3. Consideration of Small, Disadvantaged and Women-Owned Firm (Gray Amendment)

Consideration has been given to the potential involvement of firms and organizations covered by the Gray Amendment. Given the nature of the project--community based resource utilization of African wildlife, the services required do not qualify for a set-aside under Section 8a of the Small Business Act. The implementation of the project requires an in-depth

knowledge and understanding of the countries and cultures within which the project will be implemented. The evaluation and financial services will be obtained through an Indefinite Quantity Contract which is already in effect to serve the needs of AID programs in East and Southern Africa.

3.4. Project Budget

The Project Budget is included in Tables 1, 2, and 3.

4. Regional Project Analyses

4.1. Technical Analysis

Introduction

The regional Natural Resources Management project focuses on community based wildlife utilization and seeks to promote rural development through appropriate, sustainable, commercial use of indigenous wildlife resources. Although wildlife resources have long been present in many remote areas of the region they have not until recently been legally available as an economic resource to rural communities. This was largely because wildlife was seen as a national resource that belonged to the state. Both colonial and independent governments in Africa have tended to consider that game should be preserved for present and future generations by setting aside land where it could be protected in perpetuity. People could then enjoy viewing it, photographing it and, in some areas, hunting it in a "natural environment."

Present initiatives to develop community-based utilization projects see wildlife primarily as an economic resource as opposed to an aesthetic or cultural resource to be preserved. The initiatives rest largely on assumptions about the wildlife resource base and the ability of communities to use and manage it in a sustainable fashion. Some of the assumptions are:

1. That the wildlife resources are adequate, or will become adequate, to sustain significant commercial exploitation. This also implies that underlying resources of soil, water and vegetation can sustain wildlife populations adequate to meet the needs of target communities.
2. That wildlife utilization is a sustainable and appropriate form of land use which will successfully compete with other extensive forms of land use.
3. That communities deriving wealth from wildlife resources will both wish to, and be able to, protect those resources.
4. That communities will not only be willing to manage these resources but will also be capable of doing so. That is, the technology required is both available and appropriate.

Table 1: Sources and Uses of Funds
(US Dollars)

	USAID		HOST GOVERNMENT		OTHER DONORS		GRAND TOTAL
	FX	LC	FX	LC	FX	LC	
I. TECHNICAL ASSISTANCE	475,000	88,000		227,500			790,500
II. COMMODITIES	66,500						66,500
III. RESEARCH	89,000	30,000					119,000
IV. REGIONAL COMMUNICATION	1,123,795	240,000		3,743,615			17,635,190
V. COMMUNITY BASED RESOURCE UTILIZATION	2,968,500	4,000,000		4,749,280		810,000	12,527,780
VI. WILDLIFE CONSERVATION	1,076,500	200,000		477,000			1,753,500
VII. CONSERVATION EDUCATION	397,000	400,000		536,000			1,333,000
VIII. PROJECT MANAGEMENT	2,272,160	350,000		125,000			2,747,160
IX. CONSERVATION & COMMUNITY DEVELOPMENT	985,500			819,355			1,804,855
X. ADMADE INSTITUTIONAL DEVELOPMENT & SUPPORT	475,000			1,105,380			1,580,380
XI. TRAINING	347,000						347,000
XII. PLNG & APPLIED RESEARCH	1,254,000	145,000					1,399,000
XIII. AUDIT/EVALUATION	740,000						740,000
XIV. CONTINGENCY (5%)	886,148						886,148
XV. INFLATION (5%)	920,898						920,898
TOTAL	14,077,000	5,453,000		11,783,130		810,000	32,123,131

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Table 2

USAID PROJECT EXPENDITURES
BY PROJECT ELEMENT
BY FISCAL YEAR
(IN U.S. DOLLARS)

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
I. TECHNICAL ASSISTANCE	90,000	127,000	132,000	137,000	77,000	563,000
II. COMMODITIES	33,000	14,500	9,000	5,000	5,000	66,500
III. RESEARCH	15,000	23,000	28,000	25,000	28,000	119,000
IV. REGIONAL COMMUNICATION	286,500	246,000	273,125	278,384	279,786	1,363,795
V. COMMUNITY BASED RESOURCE UTILIZATION	2,508,000	1,967,000	1,356,500	747,000	390,000	6,968,500
VI. WILDLIFE CONSERVATION	765,000	113,500	150,000	146,000	102,000	1,276,500
VII. CONSERVATION EDUCATION	253,500	231,000	147,000	112,500	53,000	797,000
VIII. PROJECT MANAGEMENT	615,000	568,500	504,150	506,100	428,410	2,622,160
IX. CONSERVATION & COMMUNITY DEVELOPMENT	948,000	12,500	12,500	12,500		985,500
X. ADMADE INSTITUTIONAL DEVELOPMENT & SUPPORT	350,000	65,000	55,000	5,000		475,000
XI. TRAINING	145,500	70,500	70,500	60,500		347,000
XII. PLNG & APPLIED RESEARCH	490,000	332,000	280,000	152,000	145,000	1,399,000
XIII. AUDIT/EVALUATION			335,000	50,000	355,000	740,000
XIV. CONTINGENCY (5%)	324,975	188,525	167,639	111,849	93,160	886,148
XV. INFLATION (5%)	341,224	197,951	176,021	118,091	87,612	920,898
TOTAL	7,165,699	4,156,976	3,696,434	2,466,924	2,043,967	19,530,000

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Table 3

HOST GOVERNMENT CONTRIBUTION
(U.S. DOLLAR EQUIVALENT)

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
COUNTERPART STAFF						
SALARIES/BENEFITS*	1,075,000	1,128,250	1,169,388	1,228,579	1,225,119	5,826,335
OTHER STAFF TRAINED*	65,000	67,250	67,513	57,788	51,078	308,628
PER DIEM/SUBSISTENCE*	95,000	100,500	107,175	103,034	100,085	505,794
OFFICE SPACE/UTIL/MAIN*	369,000	388,700	409,710	402,128	330,894	1,900,432
SUPPLIES/OFFICE EQUIPMENT	96,500	103,050	105,153	112,858	52,336	469,896
HOUSING--GOB/USAID POOL	150,000	150,000	75,000	60,000	60,000	495,000
SMALL ENTERPRISE DEVELOPMENT	25,000	50,000	25,000	25,000		125,000
PUBLICATIONS/WORKSHOPS	5,000	5,000	5,000	5,000		20,000
TRAINING--NYALUMA SCHOOL	100,000	50,000	50,000	50,000		250,000
VEHICLE MAINTENANCE/OPER**	305,000	332,000	358,100	388,495	155,861	1,539,456
RESEARCH	60,000	63,000	66,150	69,458	72,930	331,538
SPARE PARTS	2,000	2,100	2,205	2,315	2,431	11,051
TOTAL	2,347,500	2,439,850	2,440,393	2,504,655	2,050,733	11,783,130

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5. That the demand for the product (or goods and services) is such that it will be able to support the widespread development of this form of land use.

The socio-economic and institutional issues embedded in these questions are treated in the Social Soundness and Institutional and Administrative Analyses conducted for each country. This analysis will focus primarily on the biological resource base and the land use, conservation and wildlife management issues raised by these assumptions.

A. Wildlife Utilization, Land Use and Conservation

The development of wildlife utilization schemes in the region is closely tied to existing protected areas and to prevailing systems of land use and land classification. It is also closely linked to the broader issues of resource conservation and land use in the region.

The protected area system of the three countries is very well developed and covers some 212,822 km², or 12.2 percent. In Botswana and Zambia a further 266,000 km² is designated as Game Management Areas (GMAs) or as Wildlife Management Areas (WMAs), while in Zimbabwe about 66,000 km² outside protected areas is under wildlife utilization. These areas provide a further 326,000 km², or 19 percent, under wildlife utilization. Wildlife is thus nominally the primary form of land use in about one third of the region.

There are over 45 species of large mammal in the three countries covered by this project. Of these, 38 are large ungulates (Table 1) giving the region one of the richest large mammalian herbivore communities in the world. This diversity has implications for conservation, biological productivity and tourism.

Habitat diversity ranges from the Kalahari desert in the southwest to the evergreen mountain forests in eastern Zimbabwe. Most of the region is covered by deciduous broad and fine leaved woodlands, bushlands or open savanna grasslands. Major wetlands are found in northern Botswana (Okavango, Linyanti and Chobe) and in Zambia (Kafue, Bangwelu, etc.). In phytogeographic terms Zambia, Zimbabwe, and north eastern Botswana fall within the Zambebian regional center of endemism. The Zambebian region probably has the richest and most diverse flora of all the African phytochoria with a wide range of vegetation types (White 1983). The south western part of Botswana is covered by the Highveld-Kalahari regional transition zone. Sand covers 90 percent of the surface and wooded grassland is the characteristic vegetation type. These habitats have, however, increasingly been subjected to human influences and over the last century there have been major fluctuations in both wild and domestic ungulate populations.

The region has not always been endowed with abundant wildlife resources. The rinderpest pandemic of the 1890's greatly reduced the numbers and distribution of most wild antelope populations along with domestic livestock. The surviving game stocks were soon placed under protection by the authorities of

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the day. As populations increased they remained the preserve of the state and legal use was restricted by license fees to those who could afford them or to administrators who had special dispensations. The management and protection of wildlife came to rest firmly with central government. It is only in the last decade that serious attempts have been made to engender custodial and managerial authority at a local level and to involve communities in the management of the resource.

The rinderpest pandemic also greatly reduced the distribution of tsetse flies in the region and some formerly inhabited areas, such as Hwange National Park are still free of the fly and therefore of trypanosomiasis, the disease they transmit. As wildlife populations recovered there was a resurgence of tsetse fly which threatened the expanding livestock industry, particularly in Zimbabwe. Attempts to control tsetse by eliminating their hosts, game animals, occurred in all three territories. Large numbers of game animals were killed on tsetse control hunting operations, mainly during the 1950s and 1960s. These operations further served to delay the full recovery of wildlife populations in areas outside of Parks and game reserves. Data on tsetse control hunting operations are given by Child, von Richter and Smith (1970) for Botswana and by Child and Riney (1987) for Zimbabwe.

B. The Protected Area System and its Sustainability

The protected area system of the region forms a center piece to the development of community-based wildlife utilization projects. Parks form core areas adjacent to most of the community based projects currently being considered. Despite this the future of these parks may ultimately depend on the development of viable community based wildlife utilization projects on their boundaries. The present protected area system is subject to severe financial and manpower constraints and to pressures related to human population growth and land use. (Cumming, 1986).

(1) Financial and Manpower Constraints

Probably the single greatest deficiency in the parks system in the region is the lack of financial resources both to employ staff and to meet their operational expenses. Apart from Zimbabwe and Namibia, all countries in the SADCC region had budgets in 1981 which were about 5 percent to 20 percent of the level needed to adequately protect and manage the areas for which they were responsible (Table 2). These budgets have since been eroded and even in Zimbabwe this figure now falls below the US \$ 200 per km² considered to be the minimum expenditure density for adequate park management (Bell & Clarke, 1984).

These data compare with a density expenditure of \$3 129 per km² km. for the United States Park Service land of 79.4 million acres (31.7 600 km²) and a staff density of 1 man to 19.5 km². For the lower 48 states these densities are much higher since Parks in Alaska comprise about 70 percent of the parks area but account for less than 5 percent of the budget.

Essentially similar considerations apply to staffing levels. Parker (1979) considered that the minimum density required to provide adequate protection in Africa is one man to 50 km² and this requirement is met only in Zimbabwe (Table 2). Bell and Clarke (1984) consider a density of 1 man per 20 km² to be desirable for the protection of high priority species such as rhinos. There is also a serious shortage of scientific manpower which has consequences for the region's capacity to conduct research and apply it to the management of ecosystems in protected areas.

The Regional Natural Resources Management Project addresses some of these constraints by strengthening the ability of the national parks departments in important areas such as monitoring wildlife populations and habitats, and the provision of key technical positions to develop expertise both within departments and communities.

(2) Population Growth and Land Use

Human populations have, since 1900, increased by between ten and sixteen times. The population of Zimbabwe, for example, increased from about 500,000 in 1900 to just over 8 million in 1982. Cattle, the dominant domestic animal, have increased similarly except in regions still infested by tsetse fly. The level of urbanization is low at less than 25% of the population, and subsistence agriculture is the dominant form of land use with wood fuel as the primary source of energy (Bhagavan 1984).

Deforestation, overgrazing, and consequent soil erosion are, besides human population growth, the greatest environmental problems faced by the region. Agricultural development, including forestry, has been largely confined to the introduction and husbandry of exotic plants and animals. There has been no significant investment in developing sustainable production systems based on indigenous plant and animal resources.

Large populations of wild ungulates have been greatly reduced by disease or by veterinary control measures either in the form of cordon fences or hunting to control tsetse fly in Botswana, Namibia and Zimbabwe (Taylor & Martin 1987). The extension of livestock programs and associated aid programs for fencing have also had their effects. The ready availability of wire to make lethal snares has been a prime factor in reducing large ungulate populations. By far the greatest changes have been brought about simply by the growth of human populations and the expansion of subsistence agriculture. The major source of fuel is wood which is being harvested from indigenous woodlands over wide areas at well beyond sustainable levels. The consequent deforestation combined with shifting cultivation and overgrazing, has changed habitats over large areas of the region.

Given the current standard projections for human population growth in the region we can expect to have twice as many people by 2010 and five to eight times as many people in the region by the year 2050 (Table 2). If subsistence agriculture continues to be the dominant form of land use environmental degradation on a grand scale is inevitable. Much of the region is arid, and a

repetition of the Sahelian and Ethiopian experiences is possible. A key actor in this process is the stockman rather than the cultivator.

At the level of subsistence agriculture with no inputs of energy most of the region can only sustain one to two families per km² (Cumming 1985). The carrying capacity of the land has already been exceeded in the more arid countries such as Botswana and Namibia (World Bank 1986), and in much of Zimbabwe, Malawi and parts of Zambia and Tanzania. The major thrust of current development is to open new land to subsistence agriculture. This means that present problems will be spread over a larger part of the region and the urgent need to find better ways of using existing agricultural land will be further delayed.

The impacts of these developments on protected areas are increasing pressures from surrounding communities through poaching, collecting firewood, setting fires, illegal grazing of livestock and the erection of fences for animal disease control. These problems are further aggravated by the lack of resources to protect and manage the parks system. With human populations doubling every 20 years or so the pressures of poaching, grazing, and harvesting timber mentioned earlier are escalating and the prospect of parks resisting these, even with increased budgets and manpower, is unlikely. Present trends suggest that the short term prospects (say next 20 years) for Parks could well be a continuing decline in financial and manpower resources leading to a collapse of the present protected areas system.

These problems are endemic to most third world countries and certainly to most of Africa. While it is easy to pass them off as being an integral part of the syndrome of underdevelopment and poverty their ubiquity, in Africa at least, points to an underlying cultural or philosophical problem with the concept of parks and its applicability or suitability to these countries.

If this is so, then the provision of funds and equipment to support these parks, while necessary in the short term, is more in the nature of treating symptoms instead of treating the underlying causes of the problem.

Parks are seldom welcomed by adjacent rural communities. Rarely do they derive any benefits from the parks which are often a source of lions which attack livestock and elephants which eat crops. Antipathy to parks is not surprising when it is remembered that many early parks were created as game reserves in a political climate which evicted local inhabitants and prevented them from legally using their wildlife resources.

Despite evident cultural conflicts surrounding their origin parks have survived and, in terms of the amount of land provided for them they have flourished since independence (Fig 1). The main users of parks are, however, city dwellers and foreign tourists. Whereas in North America the rural population is less than 10 percent of the total population in the SADCC region it is closer to 80 percent (Table 2).

Tourists from the developed countries form a major constituency for some parks in Africa and this tends to impose alien values on the management of parks and the use of indigenous wildlife resources. This cultural influence is very clear in western attitudes to the use of wildlife products like ivory, leopard skins, and crocodile hide. It is in keeping with the view that the prime purpose of nature conservation is for its scientific, educational, recreational and inspirational value (Selman,1985).

These considerations point to an imposed system of land use with values that are not in sympathy with the rural population in the region. Timber, grazing, wildlife and water are considered free resources. Their presence within a National Park where they are not available for use represents a social cost to the community and to the country. That perceived social cost is not being paid and the system consequently holds little promise of being sustainable in its present form.

The budgetary and other problems which all third world parks systems face are unlikely to be resolved or improved without a radical change in the way parks are integrated into the fabric of rural development and land use.

Wildlife resources extend from the wilderness to city centers and each component of the landscape, and of man's activities, has some capacity to contribute to the conservation of biological resources and diversity. Often it requires only very minor changes in the way things are done, or used, to make an enormous difference to conservation and perhaps to the quality of life of those living in these areas. This is the challenge for administrators, agriculturists, ecologists, economists, and social scientists. It is primarily a battle involving change in social institutions - particularly those which involve developing the options for rural communities to manage and benefit from wildlife resources.

This is essentially an argument for the introduction of systems of alternative land use which, in southern central Africa, can readily be integrated with the management of protected areas. It means that the conservation/land use issue has to be taken outside the parks. Without this it will not be possible to correct the major deficiencies of parks as vehicles of biological conservation.

The solutions lie, first, in an intensification of agricultural production in those areas suited by rainfall and soils to absorb and sustain higher inputs. The region is very well endowed with fossil fuels and industrialization seems feasible. And, second, a comprehensive approach to land management is needed which fully explores the potential of the region's indigenous plant and animal resources. Parks can then become the biological, economic and cultural core to appropriate systems of land use rather than a set of anachronistic ecological islands.

The present project attempts to make a contribution to resolving this land use and conservation dilemma by promoting the sustainable use of wildlife resources particularly in areas adjacent to protected areas. In this way there is a chance of integrating protected areas into the fabric of

surrounding land uses and for the protected areas to provide real economic benefits in the form of dispersing animals and a reservoir of a wider range of species for restocking adjacent lands. Over the last two decades the Hwange National Park has performed this function admirably as land use surrounding it has moved from conventional agriculture and forestry to wildlife utilization.

C. Wildlife and Animal Production Systems

Because some habitats, notably alluvial areas in National Parks, exhibit spectacular seasonal concentrations of a diversity of large mammal species, it is commonly held that game populations are more productive than domestic livestock. There is little basis for this belief, and the following generalizations about community structure and productivity for large mammal communities in the region hold:

1. Despite the large number of species the number typically present in any one area or ecosystem is in the region of 10 to 20 species. In the more arid areas of Botswana this is usually in the region of 5 to 10 species.
2. The standing crop biomass of a large herbivore community is usually dominated by one or two species, at most four species and the remainder typically contribute less than 5% to the energy turnover in the system.
3. Standing crop biomass is closely related to rainfall. At high rainfall biomass tends to be dominated by one or two species of bulk roughage feeders while at lower rainfalls there is a more even distribution between species.

The impressive vista of herds of indigenous antelope at ecological carrying capacity attuned to their environment does not necessarily translate into an equally superior animal production system. It is too easy to confuse ecological adaptations with economic advantage. The ecological features and adaptations of wildlife, as Parker and Graham (1971) so clearly pointed out, only become an advantage if they can be incorporated into animal production systems. Ecological advantage per se does not exist and many of the adaptations we see in Africa's wildlife may be entirely useless or even inimical to some production systems.

A key question is "Do indigenous wildlife communities produce more protein than domestic livestock or pastoral systems as is so frequently claimed?" Evidence is available from two sources. One is from observed standing crop biomasses of large herbivores in wild and domestic systems the other is from actual production trials.

Much of the variability in the standing crop of large herbivores in any system be it wildlife or domestic stock can be accounted for by variations in rainfall and soil fertility. This was shown by Coe, Cumming and Phillipson

(1976) and has since been further elaborated by Bell (1982) who drew attention to the influence of soil type and by East (1984) who examined the relationship between rainfall, soil type and biomass density for each of a wide range of species in African ecosystems.

The initial analysis by Coe et al (1976) noted that the highest standing crop biomasses occurred on volcanic soils at higher rainfall. They also noted that biomass in pastoral systems with wildlife were higher than wildlife or domestic livestock system across a range of rainfalls. This pattern has been amply confirmed by Western (pers. comm.) who has examined a very much larger data set. It now seems fairly clearly established that the highest standing crop biomass of ungulates can be expected where both wildlife and domestic stock are run together. The ecological basis for this apparent facilitation has still to be elucidated.

At the gross level of standing crop biomass there is little to suggest that African wildlife systems offer an inherently higher production potential than domestic stock. The evidence from measured production of meat from game ranching is equivocal.

Goodman (1985) compared net annual harvested production from six areas in the semi arid bushveld of northern Natal. These comprised two commercial cattle ranches, two commercial game ranches and two conservation areas from which animals were cropped annually. Goodman found that the maximum sustained yield from extensive game systems could not compare with that from intensively managed cattle systems. The meat production per hectare from the game section of Buffalo Range has, on the other hand, been equivalent to that of the cattle section on the same ranch (Child, 1989).

Wildlife systems are unlikely to produce more significantly more protein than wildlife under normal ranching conditions. The key feature, however, is whether wildlife systems are capable of producing greater wealth from the land at the same or lower levels of standing crop biomass. Given their capacity for greater diversity of marketable products there is every indication that this may be possible. The yield per kilogram of livemass on the veld may be as much as three times higher from wildlife systems (Child, 1989).

It is the diversity of uses to which wildlife can be put that is crucial. Any attempt by organizations outside Africa to constrain the exploitation of this diversity, as is presently happening with the ivory trade, can only act against the long term interests of conserving the indigenous resources of Africa. If the one third of the regions land that is presently available for wildlife utilization does not provide an economically sound basis for continuing that use then it will be put to use in other ways which are unlikely to be sympathetic to wildlife.

Apart from these broad issues of resource use and markets there are the equally cogent questions of whether the existing resources are sufficient to sustain economically viable utilization projects. Information on both the numbers of animals in target areas and the annual offtake (both legal and

illegal) was not generally available. In Zambia the quotas for each GMA for safari and local hunters had been used for some years and were apparently sustainable because hunters were still able to secure their bags and trophy quality was being maintained. In Botswana, one of the likely project areas had placed a ban on all hunting for the past four years despite the issue of a quota by central government. Wildlife populations in the district were reported to be recovering. In Zimbabwe, the numbers of elephant in the Tsholotsho area were known and quotas had been set accordingly. There is little wildlife in the Hwange Communal Land and it is not clear how an adequate resource base can be developed despite the enthusiasm of the District Council. The plan to translocate 6,000 impala into the district will provide some animals which can be cropped in the next season but there is still little likelihood of a viable safari hunting concession developing in the area unless additional land is made available to the council.

An important concern which does not seem to have been addressed in the project design is the level of revenues which are expected from each of the project areas and how this is related to the number of families in the area. It would be desirable to know how much revenue can be expected per family and how this level of revenue compares with revenue from other forms of agricultural production in the area. Even if the revenue is used for community development, rather than as private income, it would still need to provide a sufficient collective incentive to sustain the resource. If the returns are too low then the chances of the resource being sustained are limited. The thresholds of community and individual benefits necessary to sustainably manage and conserve a common resource are not known and would bear investigation in this program.

D. Management of Wildlife Resources

Wildlife utilization in Africa, excluding game viewing and photographic safaris by tourists, takes three distinct forms:

- (1) There is a large informal and often illegal commercial trade in wildlife products ranging from meat to ivory and rhino horn. For the most part this utilization is undocumented and uncontrolled. It is exploitive and, with few exceptions, unsustainable. There is little doubt that over the greater part of Africa this accounts for a significant part of protein production and consumption on the continent. It is also a significant economic enterprise which in ivory and rhino horn alone amounts to an annual trade in excess of US\$ 50 million.
- (2) Some countries have encouraged safari or recreational hunting which is controlled through the allocation of hunting concessions and quotas. It is aimed at wealthy clients from the developed nations and only some seven countries in Africa presently have a well developed safari hunting industry. In southern Africa safari hunting provides a viable and competitive form of land use on both state and private land.

- (3) Protein production from multispecies game communities involving game farming, ranching, cropping or culling schemes, or a combination of these, have been tried in a number of east and southern African countries.

These categories of wildlife utilization are, of course, not mutually exclusive and various combinations of multispecies systems of land use are feasible. The following is a listing of these options:

- a. Game viewing and photographic safaris
- b. Safari and trophy hunting of wild populations
- c. Combinations of game viewing and trophy hunting
- d. Cropping of wild populations for meat and other products
- e. Cropping of fenced populations (game ranching)
- f. Combinations of sport hunting and cropping wild populations
- g. Intensive management of confined populations of a few species (game farming)
- h. Running cattle or other domestic livestock with wildlife under options one to six.

Game ranching and the profitable management of wildlife has been practiced on private land for over thirty years in South Africa. Some commercial farms in Zimbabwe have been successfully running wildlife alone or in conjunction with cattle for from 5 to 25 years. The Matetsi Safari Area in Zimbabwe has supported a profitable commercial safari operation for over 15 years on land unable to support cattle ranching without considerable government subsidies. This experiment in land use has now shown that commercial use of wildlife can be more profitable than cattle ranching and leads to ecologically sustainable use of the land. Yet decision makers, agriculturists, land use planners and many land owners remain skeptical. This skepticism is understandable because few, if any, of these apparently successful schemes have been critically examined or fully reported upon.

While there have been some successes in wildlife utilization schemes, particularly in Zimbabwe and South Africa, there have also been some marked failures (Parker 1984). There is still a need to maintain a diversity of approaches and to avoid the oversimplified views of non-consumptive tourist use as the only route to effective wildlife resource management and conservation.

There are strong pressures from conservation and animal rights movements in North America and Europe to limit Africa to non-consumptive forms of wildlife utilization. An argument often put forward to this end is that far greater revenues can be derived from a high volume tourist trade based on game viewing

and photography than can be earned from hunting or cropping. While this may hold for certain game parks in East Africa it does not hold for the scenically less attractive and much less well developed parks of southern central Africa. The infrastructure just does not exist to carry the advocated tourist trade, game densities are too low to attract them and besides which the local communities should be free to decide how they wish to use the resources on their land. In many instances the investment required to carry a high tourist traffic is prohibitive and unlikely to be cost effective. The most cogent argument against dependence on non-consumptive tourism is that despite decades of the highest tourist traffic in Africa the game parks of Kenya have shown little ability to protect their resources from poaching or from encroachment by surrounding forms of land use.

It is nevertheless true that many people believe that the consumptive use of large wild mammals is inappropriate on ethical grounds. This may place constraints on the volume of the market for certain wildlife products or on such cost effective uses of wildlife as safari hunting. The potential importance of these constraints would bear thorough investigation.

E. Wildlife Management Techniques

Many of the early attempts to implement wildlife utilization projects in Africa failed because they involved inappropriately high levels of technology. In some cases expensive abattoirs were built while in others attempts were made to supply venison to urban markets requiring the highest levels of veterinary inspection and hygiene. The capital requirements and costs of production were such as to prejudice project viability from the outset. These operations also required unsustainably high levels of expertise which further added to their costs. It is therefore important to examine the levels of technology envisaged in the proposed project from the point of view of whether it is appropriate and sustainable.

The three main types of operations are harvesting of one form or another, capture and translocation, and protection of the resource.

(1) Harvesting

Safari hunting can be technically the least demanding of community-based wildlife utilization schemes. It requires only that the community monitor what is killed. This is readily accomplished by attaching a member of the community to the safari hunting camp. Safari hunting is presently carried out by experienced and state licensed hunters who provide the full backup of vehicles, camp equipment and hunting and processing gear. The commercial safari operator is also responsible for marketing hunts, meeting and hosting clients, arranging for the treatment, licensing and export of trophies. These operations require a high level of expertise if clients paying fees of the order of US \$750 per day are to leave satisfied. The transfer of this range of skills to the community level is not easy. The relationship between safari entrepreneur and community may take various forms and the possibilities of

joint ventures which make provision for the transfer of skills are being investigated in the region.

Game harvesting and cropping for the production of meat and hides can be carried out at village level. This may vary from subsistence hunting with traditional weapons, such as bows and arrows or spears, to hunting with the aid of vehicles and high powered rifles. Experience suggests that the greater the inputs, particularly in terms of capital equipment (e.g. vehicles and refrigeration) the less likely will the operation be financially viable (Cumming and Taylor, 1989). Where the infrastructure, equipment and expertise exist and can be used for a cropping operation, as recently occurred in the Omay Communal Land in Zimbabwe, then cropping operations may be financially viable. Another alternative is for the land holder to hire commercial cropping companies as happens in Namibia. Commercial concerns capable of carrying out this type of operation are available in Zimbabwe.

The culling of elephant requires a very high level of expertise, high labor inputs if all the products (meat, hides and ivory) are to be recovered, and transport for the recovery of these products. An aircraft and ground to air radio communication are also required for the efficient and humane culling of family units. Such expertise exists within the Zimbabwe NPWLM and in the private sector.

Perhaps the key requirements in all game harvesting are low cost techniques and minimal disturbance.

(2) Capture and Translocation

There is only one part of the project which envisages the capture and translocation of animals as a necessary component and that is the Hwange Communal lands where the Zimbabwe DNPWLM plans to move 6,000 impala. The Department has an equipped capture unit working under the guidance of a veterinarian which can undertake this operation. Experienced capture units are also available in the private sector in Zimbabwe and in Botswana. These units have also operated in Zambia. The skills thus exist within the region to capture and translocate a wide range of species if need be.

(3) Resource Protection

Successful protection of wildlife resources requires effective and regular ground coverage by scouts or game guards operating with the support of the community. These may be government employees or volunteers or employees of the community. The important feature is that ground coverage be sufficiently frequent and intensive to detect poachers before they kill animals rather than after they have done so. The traditional focus on the apprehension of poachers, while important, does not place sufficient emphasis on the prevention of illegal killing. Community-based projects in Zambia have made considerable progress in training village based scouts and the involvement of communities in resource protection has started in Zimbabwe. The major requirements are for training, some equipment such as uniforms and camping

gear, leadership and an ability to communicate, by radio, with the appropriate authorities when support is required.

The protection of very valuable species such as rhino and elephant has been the responsibility of government rangers in Botswana and Zimbabwe while in Zambia villagers have been increasingly involved. There are reports which suggest the elephant and rhino populations may have stabilized in those areas where communities are fully involved in resource protection. Because poaching gangs hunting these animals are usually heavily armed, more highly trained and equipped anti-poaching forces are often needed. The support to the Zimbabwe DNPWLM for the management of the Hwange elephant and rhino populations takes this factor into account. There may soon be a need for similar support in Botswana.

F. Products and Marketing

The community-based wildlife utilization projects being developed in the region will be producing meat for local consumption, hides, and trophy animals for both local hunters and high fee paying foreign safari hunters. The production and marketing of meat for local rural markets does not require high level technological inputs and there is a ready market for the products. The preparation of hides is generally not good, and there will be a need for training and simple inputs, such as salt and drying frames, if the quality of hides for tanning is to be improved. In at least one potential project area in Botswana there is a vegetable tanning facility.

Ivory recovered from the control of problem animals is marketed by governments through their auction floors. In Zimbabwe elephant hide is similarly auctioned on behalf of communities thus ensuring the best prices.

The marketing of safari hunting is undertaken by commercial safari operators. They are also responsible for the recovery, preparation, licensing, shipment and export of trophies. Likewise commercial tour operators handle the bookings and travel arrangements for non-consumptive photographic and other tours. While the raw products which rural communities have to offer can be readily marketed there is a need to transfer skills if a greater proportion of revenue is to return to the local level.

The development of rural secondary industries, such as home crafts, has received attention in Botswana but not in Zimbabwe and Zambia - at least not within the framework of this project.

G. The Elephant Problem

The joint Zimbabwe-Botswana elephant population presently numbers more than 80,000 animals. The population is growing at nearly 5 percent per annum. This represents a doubling time of approximately 15 years which means that if fully protected the population would reach 160,000 by the year 2005. The

Zimbabwe government has been attempting to contain the growth of the elephant population in Hwange National Park for the last 20 years. If no control had taken place the population in Hwange would now be nearer 50,000 than the current 21,000. Both the Governments of Botswana and Zimbabwe have stated that they intend to actively manage their elephant populations through controlled population reductions, or culling. Regardless of the question of trade in elephant products this elephant population will have to be managed and the products recovered. If it is not managed its expansion will have major effects on the habitats of the region and it will become increasingly vulnerable to illegal commercial exploitation.

Attempts by western governments and some African states, supported by western conservation groups, to place the African elephant on Appendix I of the Convention on International Trade in Endangered Species (CITES), which lists species considered in danger of extinction throughout their natural range, could severely prejudice current attempts to develop community wildlife utilization projects. If elephant are placed on Appendix I this will not only prevent trade in ivory but also in the equally valuable products of hides and hair. The products are, incidentally, not recovered and traded by poachers. If the regional populations remain on Appendix II, trade in these products can legitimately continue. If Botswana, Zambia and Zimbabwe take out a reservation then they will only be able trade with those other countries that may also have taken out a reservation.

Although the community based projects in Zimbabwe rely mainly on revenue from the safari hunting of elephants, which is not affected by a CITES Appendix I listing, they nevertheless stand to earn considerable revenue from the sale of ivory, hide and hair from problem animals which are killed. These animals are killed mainly in the defense of crops. In Zambia the effects are likely to be very much more severe since some 60% of the revenue earned by the revolving fund is from ivory, much of it confiscated from poachers.

An Appendix I listing would have serious consequences not only for the conservation of elephants but also for the amount of land which can remain under wildlife utilization. As noted earlier, about one third of the region is nominally under wildlife utilization in one form or another. Increasingly this land will have to justify such use on economic grounds. If one of the key wildlife resources of the region is rendered commercially valueless by conservation interests elsewhere then we can expect a disinvestment in the management of that resource. A considerable proportion of the present and potential elephant range may thus be lost and with it the potential for the expansion of the elephant herd of the region. This is particularly true of Zambia where the present GMA's could readily hold an elephant population of 50,000 animals (based on 150,000 km² of GMA with a density of 0.33 elephant per km²). If elephant are of no value to the communities living in the GMAs, then there is little doubt that elephant will not survive in those areas in the long term. Subsistence agriculturists will quite correctly see them as a nuisance and welcome, if not join, with those who would illegally exploit the resource.

If the major economic wildlife resource of the region is rendered largely valueless then there is little doubt that the range it would have justifiably occupied will also be denied to a wide range of other large mammal species.

H. Veterinary Issues

None of the pilot project areas presently envisages the export of venison or the marketing of venison to major urban centers. The strict veterinary inspection and hygiene normally required for such markets are therefore not presently a concern in project design or development.

In both Zimbabwe and Botswana the maintenance of beef exports to Europe has been a paramount concern for many years. Foot and Mouth disease (FMD) is carried by buffalo, and an elaborate series of fences and cordons in the region separates cattle from buffalo in order to maintain control over the spread of FMD. These fences have in the past had severe effects on wildlife populations (Child, 1972; Williamson, Williamson and Ngwamotsoko, 1989). Of the project areas, only the Tsholotsho area is presently affected by the presence of a cordon fence separating the Communal Land from the Hwange National Park. This fence restricts the movement of buffalo and other game animals into the communal lands.

The use of insecticides and odor baited traps has replaced game elimination as a means of controlling tsetse flies. Thus although none of the target areas is in danger of any direct influence of the present EEC regional control programme those in Zambia may in due course be affected by the influx of cattle in the wake of successful tsetse eradication.

I. Specific Country Issues

Technical issues specific to each country are briefly discussed in the Summary of Project Analyses provided for each country in Volume II of the Project Paper.

Table 4. List of large Ungulates Occurring in Botswana,
Zambia and Zimbabwe (Based on East, 1989)

African elephant	<i>Loxodonta africana</i>
White rhinoceros	<i>Ceratotherium simum</i>
Black rhinoceros	<i>Diceros bicornis</i>
Burchell's zebra	<i>Equus burchelli</i>
Hippopotamus	<i>Hippopotamus amphibius</i>
Warthog	<i>Phaenoceros aethiopicus</i>
Bushpig	<i>Potamochoerus porcus</i>
Giraffe	<i>Giraffa camelopardalis</i>
Grey duiker	<i>Sylvicapra grimmia</i>
Blue duiker	<i>Cephalophus monticola</i>
Natal Red Duiker	<i>Cephalophus natalensis</i>
Yellow-backed duiker	<i>Cephalophus silvicultor</i>
Steenbok	<i>Raphicerus campestris</i>
Sharpe's grysbok	<i>Raphicerus sharpei</i>
Klipspringer	<i>Oreotragus oreotragus</i>
Oribi	<i>Ourebia ourebia</i>
Springbok	<i>Antidorcas marsupialis</i>
Impala	<i>Aepyceros melampus</i>
Southern reedbuck	<i>Redunca arundinum</i>
Mountain reedbuck	<i>Redunca fulvorufula</i>
Puku	<i>Kobus vardoni</i>
Waterbuck	<i>Kobus elyptiprimus</i>
Lechwe	<i>Kobus leche</i>
Gemsbok	<i>Oryx gazella</i>
Sable antelope	<i>Hippotragus niger</i>
Roan antelope	<i>Hippotragus equinus</i>
Lichtenstein's Hartebeest	<i>Alcelaphus lichtensteinii</i>
Red hartebeeste	<i>Alcelaphus buselaphus</i>
Tsessebe	<i>Damaliscus lunatus</i>
Bontebok	<i>Damaliscus dorcas</i> (Introduced)
Blue wildebeest	<i>Conochaetes taurinus</i>
Bushbuck	<i>Tragelaphus scriptus</i>
Nyala	<i>Tragelaphus angasi</i>
Sitatunga	<i>Tragelaphus spekii</i>
Greater kudu	<i>Tragelaphus strepsiceros</i>
Cape eland	<i>Tragelaphus oryx</i>
African buffalo	<i>Synceros caffer</i>

Number of species = 38 (Excluding subspecies of lechwe, waterbuck and wildebeeste).

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4.2. Economic and Financial Analysis

A. Introduction

The following economic assessment of wildlife utilization programs breaks into two parts.

The first is a generic justification of the economic role of wildlife utilization in developing the economies of semi-arid rangelands. This is based largely on information derived from experience in Zimbabwe. Here the removal of institutional limitations (specifically common or Crown-type ownership) has resulted in a very rapid expansion of wildlife enterprises by allowing landholders themselves to obtain the profits, which are high relative to conventional systems. Wildlife has a similar, if not greater, economic potential in both Botswana and Zambia but this, generally, is not being attained. The primary reason is the same as that which afflicted Zimbabwe in the past. Institutional structures prevent landholders from benefiting fully from wildlife, and therefore disadvantage wildlife in its struggle for resources. These structures include a complex of ownership and pricing mechanisms that act to support the value of conventional agriculture (e.g. individually owned livestock on common range) to landholders while, simultaneously, removing the value of wildlife. The second part evaluates those specific projects that have been identified.

These two sets of evidence suggest that wildlife utilization programs in southern Africa will be profitable and successful, and once implemented can continue without donor subsidization. The challenge of this project, therefore, is to catalyze this situation. It does so largely by encouraging mechanisms that devolve a greater share of the benefits and management of wildlife to rural communities, and by facilitating marketing and informed decision-making.

The greatest contribution of this project, the development of communities' capacity to manage and to retain a more equitable portion of the resources under their influence, cannot be subjected to economic analysis. However, the contingent commercial gains more than justify the investment. In some situations, particularly Botswana, the project may fail since it entails a fundamental and difficult advance in resource management - the potential gains from such an important step, though, are enormous. A feature of this project is that the greater the risk of failure, the greater the potential gain - the more a system needs to be changed to improve economic efficiency and equity, the more the resistance to change, but the greater the reward of success.

B. Novel approach to land use

This project advocates a novel approach to land use, an approach that agriculturalists unfamiliar with recent developments in southern Africa might, at first glance, mistrust. There is, however, ample evidence to show that wildlife utilization has become a legitimate, profitable and sustainable

farming system with a considerable comparative advantage over conventional livestock enterprises in the semi-arid savannas of southern Africa. It is now a rapidly growing and substantial industry in the region, no longer just the hobby-horse of concerned biologists. The real proof is that wildlife utilization is being rapidly adopted by landholders because it substantially raises profit levels. The reason is that commercial wildlife enterprises can avoid the ecological limitations and degradation that have left livestock production as a marginal venture with a high propensity to cause environmental damage.

The case for wildlife utilization is now clear. Current thinking in resource economics argues a strong theoretical case for wildlife utilization, which is supported by empirical data that show its great advantages over conventional livestock systems. The actions of land managers bolster these conclusions, as livestock is progressively removed to make way for wildlife. Moreover, trends in resource prices and the opening of new markets suggest that wildlife's advantage will continue to grow. It is an industry on the move in a continent where such progress is all too rare.

At this point it should be noted that the argument usually is not for wildlife or livestock. In many cases these are compatible and the best option is often a combination of the two.

C. Comparative economic advantage of wildlife utilization

Wildlife utilization in its many forms has been severely disadvantaged by traditional systems of proprietorship; by negative attitudes, for instance fears of wildlife-borne disease; by a preoccupation with conventional agricultural products that is reflected in pricing and marketing policies; and by a strong tendency to 'preserve' wildlife that kindles a refusal to see it as an income-generating asset. The net effect has been to remove the financial value of wildlife to landholders, together with its ability to compete for resources with conventional agriculture which, unlike wildlife, has been heavily subsidized and developed. Not surprisingly, wildlife habitat has consequently been replaced by cropland and pasture not only in Africa, but in many parts of the world. Where conditions favor arable agriculture this is often justifiable, but with the increasing scarcity and demand for wildlife, the situation has changed on Africa's semi-arid rangelands. Wildlife and tourism ventures are now more profitable than livestock in these habitats in southern Africa.

The disappearance of wildlife reflects a pricing system heavily prejudiced against it, and the value judgment of past decades, rather than a comparative disadvantage. Indeed, detailed research in Zimbabwe and indicators (e.g. trends in land allocation; farmers' opinions) here and elsewhere in southern Africa suggest that wildlife has a strong and, further, a rapidly growing comparative advantage. This is sufficient to favor wildlife over conventional livestock in many areas even where impediments still exist.

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Recent steps to replace common ownership of wildlife or "King's Game" status (a situation which prevents market prices being established) with more clearly defined systems of proprietorship has led to a rapidly expanding wildlife industry wherever this has occurred in southern Africa. This expansion, moreover, has required little state support and has occurred even in situations where conventional livestock remains heavily subsidized and official attitudes towards wildlife utilization are still skeptical or antagonistic.

The message is clear. Wildlife utilization has a comparative advantage in the semi-arid rangelands of southern Africa. It will foster sustainable economic development where market forces permit prices to reflect true economic values.

D. Economic Objectives

The Natural Resources Management project (690-0251) has important economic implications in that it aims to correct price signals so that resource allocation is improved, and, where this is achieved, to provide demonstration models for other areas. This will be achieved partly by establishing institutions and modifying landholder perceptions so that the financial management of resources, including wildlife, reflects economic comparative advantage. The project is designed to facilitate the leap from a conventional land use system to one based on the commercial exploitation of wildlife. It achieves this by providing information, promoting dialogue, and furnishing part of the capital necessary to establish sustainable wildlife-based enterprises.

These aims alone are not sufficient. The project must also:

- 1) develop the capacity of rural communities to manage their own resources.
- 2) foster the conservation of the resource base -- the savanna ecosystem -- on which economic activity in these rangelands depends. Wildlife species, and elephant in particular, are important in this regard.

Research and monitoring of these ecological, economic, and social developments is also built into the project. This monitoring capacity will facilitate the adaptive management required with such novel land use systems and will also extract lessons from the experiment.

E. Project not suited to conventional economic 'analysis'

This project is not suited to standard economic analysis. Benefits include unpriced values: resource conservation, enhanced human management capacities, socio-economic evolution, and an improved understanding of resource use. Moreover the impact of the project on these dimensions, and its effects on income generating activities, are impossible to quantify. The project, nevertheless, should be accepted despite its challenge to standard economic analysis for two reasons.

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First, it facilitates the quantum leap from a livestock-based land use system that cannot support sustainable economic development to a wildlife-based system which can, and which:

- * is proving relatively and increasingly profitable;
- * is growing very rapidly since, unlike most agricultural commodities, it is limited by supply rather than demand: landholders can sell as many trophy animals as they can produce, but cannot meet demand and are therefore setting aside land to produce more. Moreover, although supply is growing at 10-20% annually, prices are rising at about 10% demonstrating that demand is strong;
- * has other conservation values, for instance the conservation of biological diversity, including species of global significance such as the African elephant and both African species of rhino;
- * imposes substantially lower environmental costs, especially in terms of the productivity of savanna ecosystems. These are very susceptible to degradation, and its associated high costs in lost output and foregone profits through the overgrazing often caused by livestock under marginal financial conditions; and
- * is proving itself an economic resource well suited to poor landholders on communal lands, and an important catalyst to sustainable development in these areas.

The relative economic value of wildlife utilization will be discussed in more depth below.

Second, although there is no way of predicting the consequences of the proposed approach to integrated human development and conservation, the methods proposed have already proven themselves in southern Africa, in Zimbabwe in particular, and exciting advances have been made. By contrast, few other development strategies have proven as successful, and a growing consensus holds that the approach suggested has the greatest chance of success.

Project funding falls into three categories. The first involves funds used to catalyze the adoption of wildlife utilization by enabling, facilitating and encouraging rural communities to undertake these ventures. The returns to this category of expenditure are expected to be high since the initial investment acts to remove a bottleneck - it enables communities to use a valuable resource that is already present and can yield high returns immediately. A second category involves funds needed to manage the wildlife resource properly and sustainably. It is difficult to apportion financial benefits directly to these inputs, but they serve both as insurance for the utilization schemes by promoting sustainable resource management and as protection for dwindling wildlife resources, including elephant, about which the world community has vociferously expressed its concern. The third category involves financial support to research and monitoring where returns are generally high, particularly where an idea is ripe for commercial development.

F. Relative Economics of Wildlife Utilization

(1) The Economic Premise

This project rests on the premise that the economic returns from semi-arid rangelands in southern Africa can be improved substantially by incorporating wildlife into conventional livestock enterprises, or by replacing these conventional systems entirely.

The commercial use of wildlife is fully described in section 4.5. Such use presently depends largely on safari hunting with meat production as a side line, although benign tourism is rapidly becoming more important.

(2) Problem of market distortion

Detailed investigations in Zimbabwe have demonstrated conclusively that wildlife utilization is significantly more profitable than conventional livestock enterprises in financial terms, and that its relative comparative advantage tends to improve significantly when market prices are adjusted to reflect social values, and also when environmental factors are added to the evaluation. Moreover, these studies have shown that the economic viability of wildlife is improving rapidly, with considerable potential for diversification and improved efficiency. Here it should be noted that the wildlife utilization schemes considered in the study were those based largely on safari hunting, using populations that had formerly been heavily depleted to make way for agriculture; that meat production was a useful by-product but will only provide similar yields to livestock and is disadvantaged by the lack of market development; and that other income generating enterprises, especially non-consumptive forms such as game viewing, had still to be added. In contrast to wildlife, the viability of livestock was declining in accordance with falling world beef prices. Moreover most opportunities to increase efficiency in cattle production have already been addressed through many years of research and supported development.

The relative financial (as opposed to economic) viability of cattle and wildlife in southern Africa is much influenced by market distortions. Countries throughout the region show a strong tendency to subsidize cattle and to tax wildlife production. Critical inputs are provided free to commercial cattle producers, for instance veterinary and research support, markets and infrastructure, and producer prices that exceed world levels. In contrast, most of the income from wildlife is presently appropriated by central governments - an indirect but inescapable 'tax' on wildlife enterprises. Added to this, cattle are a privately owned resource depending on common (i.e. free) grazing. In contrast, access to wildlife is often unrestricted so wild species are not valued in the market-place and are perceived as worthless. Thus wildlife is severely disadvantaged. However, if the income from wildlife is allowed to return to landholders, rather than appropriated by the state or non-landholders, wildlife utilization can out-compete its subsidized, sanctioned alternatives on agriculturally marginal semi-arid savannas.

(3) Basis of Comparison

Production systems in semi-arid rangelands use herbivores to harvest the natural vegetation. Output therefore depends on the amount of herbage, largely grazing, available.

The palatable grass of these savannas is therefore the capital on which production depends. Therefore, like financial assessments in which output or interest is related to the amount of capital invested, production systems on semi-arid rangelands must be compared in terms of the net financial gain per unit of biomass, since biomass is an appropriate measure of the use of the grazing resource.

(4) Ecological Limitations

Ecological limitations are extremely serious in semi-arid production systems. Many development efforts in these ecosystems have failed because flows of ecological capital have been ignored - primary capital flows are excluded from accounting systems that are supposed to measure them. Because this project must not repeat these mistakes, costs associated with them deserve careful consideration.

The factor limiting production and profits in conventional livestock systems on semi-arid rangelands is the availability of grazing (browsing, or tree-borne fodder, is relatively unimportant and, indeed, a proliferation of woody species greatly reduces grass production and fodder availability). Since the productivity of grass is particularly sensitive to over-use, attempts to increase the output of domestic stock by overstocking inevitably causes widespread and severe productivity losses. Very short-term gains, however, do occur, so grazing resources to which access cannot be restricted (i.e. common grazing) are particularly prone to such mismanagement.

Evidence from a relatively very well managed ranch in Zimbabwe demonstrated that overgrazing reduced productivity by 60 percent, from 18 to 11 kg meat/hectare/year. This loss occurred during a spate of exceptionally good rainfall seasons when production should have doubled and indeed, on the adjacent wildlife section, did. The effects on profits were even more serious owing to economies of size and the particularly high level of fixed costs associated with livestock production in these environments. In only ten years overgrazing destroyed the viability of what had been a profitable cattle ranch. Moreover, a catastrophic spiral was initiated, as ever more intense grazing was required simply to break even.

Under semi-arid conditions, conventional livestock practices do not lead to sustainable development; their viability depends largely on explicit and implicit subsidies and on a lack of legitimate, viable alternatives. Common sense suggests that livestock productivity cannot be maintained over the long term when range productivity is declining since it is extremely difficult to raise output with simultaneously reducing range productivity. Moreover, the terms of trade for agricultural produce including meats are currently

declining while production costs are growing. These economic forces virtually guarantee environmental degradation, even before accounting for demographic factors.

Wildlife presents a contrasting scenario. The key to wildlife's potential is that it offers a wide range of simultaneous uses - meat production, safari hunting, game viewing, intangible conservation and scientific values, to name a few - for which the demand is increasing. Through these uses, value can be added to the production process without raising stocking rates. This gives wildlife a crucial advantage. It means that the economic output from rangelands can be raised without causing ecological and economic degradation. Wildlife utilization sidesteps the ecological limitations that have caused the widespread failure of livestock projects.

(5) Empirical evidence

Empirical evidence to substantiate the theoretical advantage of wildlife was collected from four individual operations and from four surveys of groups of operations in Zimbabwe. The findings, summarized in table 1, are corroborated by the opinions and land use decisions of over 100 private ranchers with the following conclusion.

The populations of wild animals are still recovering on private land after removal to make way for agriculture, so that both populations and diversity are low and the most valuable species (i.e. elephant, buffalo, lion), in particular, are missing. Even in this situation (i.e. second grade wildlife resource), the net financial return from wildlife for each unit of grazing used (i.e. the limiting factor and capital foundation) is twice or more that from domestic stock. Moreover, the returns from wildlife are increasing rapidly as:

- (a) Land managers gain experience, particularly in marketing safari hunting and game viewing;
- (b) Demand raises prices by roughly 10% annually in US\$ terms, and thus by about 30% in the softening currencies of the southern African region;
- (c) The supply of animals grows. Private ranchers are increasingly investing in wildlife (purchase of animals; provision of water supplies, anti-poaching etc.) and to some extent removing cattle to release range resources for wildlife throughout Zimbabwe. The commercial ranchers bordering the Hwange/Matetsi project area, for instance, have switched entirely from cattle ranching to wildlife utilization since 1985, and although the value of land in this area has doubled (or more) as a consequence, few ranchers are willing to sell.

The Matetsi Safari Area is an excellent example with implications for the project areas in both Zimbabwe and Botswana since it is representative of these. This land was expropriated from ranchers by government when, after years of effort, it became obvious that agriculture would fail unless heavily

subsidized. It now generates gross outputs of US\$ 8 and net margins of US\$ 5 per hectare (1984 prices), profits which exceed those in significantly more productive cattle ranching areas. Neighboring ranchers have all emulated this example and commonly state that they are making money for the first time. Until now they have depended mainly on safari hunting, but the general attitude is that the growing wildlife populations will soon be able to support non-consumptive tourism. This can be as profitable as safaris on its own, but the two enterprises can be combined with sensible zonation. The tremendous optimism in the wildlife Table summarizing the results of economic surveys of wildlife enterprises in Zimbabwe industry stands in sharp contrast to many conventional agri-business activities, especially those in semi-arid regions.

Wildlife is a production system that had many skeptics and opponents as recently as 1985. It has developed despite this, and in competition with a highly subsidized cattle industry which is often protected at the expense of wildlife (e.g. buffalo and tsetse eradication). Moreover, almost all of the income from wildlife is in foreign currency, and this is extremely important in countries (i.e. Zimbabwe and Zambia which lack Botswana's diamond exports and also have closed economies) where the scarcity of foreign currency severely limits development. Wildlife also has ecological advantages where the consequences of environmental degradation to rangeland productivity are serious.

The relative viability of wildlife is now well established. Ranchers, and now even farmers on communal lands, when approached with arguments that wildlife is profitable respond "I know that" - they no longer need convincing. There is a clamor for wildlife and wildlife schemes although the industry is still in an interim phase of development with a large potential for growth. Many forms of hunting (e.g. bow-hunting, holiday hunts) have yet to be fully developed, non-consumptive tourism is beginning to expand very rapidly, and wildlife populations are still expanding at maximum rates in response to demand.

(6) Economic development on communal lands

Wildlife is particularly suited to catalyzing economic development on communal lands.

First, these marginal areas are especially suited to wildlife, and particularly unsuited to livestock, so that the incremental net income from introducing wildlife utilization is relatively high. Communal areas, unlike commercial ranches, often have the really valuable species (elephant, buffalo, lion), and are generally more suited to outdoor recreation with scenic and cultural values attractive to tourists.

Second, by replacing domestic, individually-owned animals by wildlife species, the serious problem of privately owned livestock grazing on common range is avoided. Similarly, the ability of the rich, the large cattle owners, to appropriate resource at the expense of the poor is reduced since income can be distributed more equitably and unjust allocations are more visible. It was

initially thought that the sharing of wildlife revenues among the community might produce insurmountable problems. However, where governments have agreed that the income from wildlife rightly belongs to the landholders on whose land it occurs, agreement on the allocation of income appears possible.

Third, high levels of capital investment are not required and income generation is, in many cases, immediate so there is no lag period that requires income supplementation. Risk, and the need for up-front capital investment, can be completely avoided by contracting commercial operators to sell animals so that net income can be guaranteed. A further advantage is that such contracting in effect combines the land and wildlife resource of the peasant farmers with the capital and entrepreneurial experience of the operators. The complementarity of this combination gives rise to a potential for gains by both parties, with the important result that amicable agreements are easily reached. Safari operators also form joint ventures with rural communities attractive because long-term tenure reduces their costs (e.g. building camps), and reduces risk since they have to market at least a year in advance. This might facilitate the entry of rural communities into the cash economy. Exchange through markets will improve their net income since they have a comparative disadvantage in the production of food but an advantage where cash commodities like wildlife and tourism are concerned.

Experience in two remote, marginal Zimbabwean communal areas that are pioneering wildlife utilization confirms that wildlife is a powerful tool for true economic development. The wildlife is generating large amounts of income (US\$ 1 million), while landholders are becoming directly involved in wildlife management and enjoying the benefits from it (meat and money). Moreover, these communities have tapped a resource which, for the first time, has given them sufficient economic power to develop as they want to. They are becoming less dependent on capital infusions (e.g. infrastructure) imposed from above and are developing a capacity to manage their own affairs.

Specialization according to comparative advantage, exchange, and the consequent growth in income and economic autonomy surely are the ingredients of true economic development. Sociologists have recognized the immense importance of the process of economic evolution being catalyzed by wildlife, and are investigating the rapid evolution of communities that are beginning to use wildlife resources commercially.

G. Conclusion

Wildlife is a valuable resource that can and should be exploited to support sustainable economic development in semi-arid rangelands where conventional livestock systems are often destined to long-term failure. Investments that initiate wildlife utilization earn a high return: they can double incomes, reverse environmental degradation, and launch a process of comprehensive economic improvement. Much of this, however, requires that institutions that allocate resources must be modified to reduce the distortion of market prices so that resources are allocated more efficiently - according to intrinsic comparative advantage.

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H. The Case of Botswana

(1) Extrapolation of Data from Zimbabwe

The economic case for wildlife utilization was studied on private ranchland in Zimbabwe primarily because market prices were less distorted there than elsewhere. Conclusions regarding the relative economics of wildlife utilization can be extrapolated to similar ecosystems in the sub-region. The same cannot be said for the financial situation, particularly in Botswana where cattle are heavily subsidized but where landholders receive only a small fraction of the benefits from wildlife.

One of the central aims of this project is to correct the latter distortion by encouraging a larger share of wildlife revenues to flow to landholder communities, and to improve awareness of values through education. A restructuring of the pricing system to remove the massive but false incentives afforded cattle producers, however, is not attempted. This was not necessary in Zimbabwe where wildlife is out-competing a subsidized livestock industry. The level of subsidization in Botswana, though, appears much higher, but pilot projects, if situated in northern Botswana, will generally avoid this problem. They are outside the EEC export catchment, and through their geographical position receive less direct support for cattle.

(2) The Value of Wildlife Utilization

In economic terms, wildlife utilization in Botswana is probably even more profitable than in Zimbabwe. Prices for hunting, for instance, are higher since the wilderness value of Botswana is perceived to be greater. More rugged conditions will raise operating costs, but this is outweighed by the ready availability of items such as spares and equipment which Zimbabwean operators struggle to obtain. Cattle profitability, too, is probably lower in Botswana. An extrapolation of Zimbabwean trends would suggest that cattle production is, at best, marginal since this is the case in western Zimbabwe where rainfall is higher and less variable than in most of Botswana.

This economic advantage unfortunately is not reflected in market prices - Botswana's landholder communities receive a derisory proportion of this income, and cattle are heavily subsidized.

(3) Derisory Share of Wildlife Revenues to Landholders

Quantitative evidence emphasises that landholders receive almost none of the substantial income generated by wildlife. Of the gross income from tourism accruing to Botswana of P 50.6 million (it has been suggested that an equivalent amount remains outside the country), only P 2.26 million (or 4%) is returned to the resource owners, essentially the Government, in the form of income tax, licenses, duties and rent, and virtually none of this benefits landholders. Where wildlife concessions gross about one million pula annually, paltry concession fees of P 17,000 or considerably less are returned to the local landboards. Communities in areas having wildlife get nothing. It is hardly surprising that even communities in prime wildlife areas like

Chobe District would prefer cattle, or that they are hostile towards commercial operators who are making huge profits out of resources these communities perceive as their own.

(4) Opportunity Costs - The Livestock Alternative

An assessment of the value of wildlife utilization is of limited use unless viewed in relation to alternative land use practices. In most of Botswana, classified as semi-arid savanna, only wildlife and cattle ventures are real possibilities.

If given the choice, the average Motswana will sensibly choose to replace wildlife with cattle. The marketable value and profitability of cattle are good, and are substantially higher than wildlife, with the consequence that the demand for land to support cattle is high and that wildlife are being replaced.

There are two reasons for this disparity between the actual situation and the economic ideal. The first - landholders not being remunerated for wildlife on their land - was discussed above. The second concerns the massive, multi-faceted support of the cattle sector.

Livestock is promoted in many ways. It is heavily subsidized by the Government through investments in boreholes, fencing, veterinary services, vaccines and drugs, trek routes, artificial insemination, the bull subsidy scheme, guaranteed markets, etc. It is also one of the few investments which civil servants are permitted and they, and other wage-earners, use it for saving.

Producer prices, too, are advantageous and, through the Lome Agreement with the EEC, are significantly (20-60%) above world levels.

Perhaps the most important 'subsidy' is free grazing. Open access to grazing artificially lowers production costs. It encourages further over-exploitation of the already seriously degraded foundation of the industry - the grass layer of the savanna. We have already emphasized the dire consequences of such ecological mismanagement to livestock productivity.

Heavy support of the cattle industry is unwise and inequitable as well as uneconomic. First, ecological degradation caused by the over-stocking which is encouraged by subsidization and open-access to grazing, is a serious and repeatedly mentioned problem in Botswana. Second, high producer prices are dependent on the continuation of preferential access to the European market. This situation could easily change with the growing antagonism towards agricultural subsidization in Europe. For this and more general reasons, diversification away from cattle is sensible. Third, the heavy subsidization of the cattle industry, while inefficient, is also inequitable since cattle ownership is highly skewed: 50% of the population owns only 17% of the cattle and many of these, Botswana's poorest people, own none and have no access to this subsidization.

(5) Potential Gains from the Project

The project could lead to important economic developments. If it succeeds in giving rural communities custodianship of wildlife and the capacity to manage this resource, it will demonstrate the economic superiority of this land use system. This should lead to real economic development in rural communities as described above. It could also pioneer and catalyze a shift away from cattle, and the associated diseconomies and range degradation discussed above, towards a more sustainable wildlife economy in other parts of the country. The potential for wildlife and tourism is enormous on land that otherwise offers very little. These habitats once supported spectacular wildlife populations comparable with those of East Africa, a situation which can be retrieved if action is taken soon. They now also contain Africa's largest elephant population. There is also the well publicised Okavango Delta, the Makgadigadi, the Central Kalahari and the nearby Victoria Falls and Zimbabwean tourist facilities.

Botswana's relatively undeveloped and mismanaged tourist industry already generates P 50 million (perhaps P 100 million if leakages could be retrieved), compared to P 170 million from cattle, yet uses considerably less of the country and creates less ecological damage. Zimbabwe's infant and rapidly expanding industry generates P 250 million from a similar resource, but has still not approached the levels set by Kenya. The potential of wildlife and tourism in southern Africa is huge.

I. Economic Assessments of Specific Cases

(1) Introduction

The income generating components of four Zimbabwean community based wildlife management programs were assessed regarding their economic viability using spreadsheet models. For Hwange, Binga and Plumtree only one scenario is presented. Sensitivity analysis focused on the Tsholotsho area, but the effects of changes to the central assumptions are easily extrapolated.

Four main forms of resource utilization were considered:

- * safari hunting including elephant,
- * safari hunting without elephant,
- * elephant cropping for products,
- * photographic (benign) tourism.

(2) Spreadsheet Models

Scenarios summarizing the projected incomes, and giving the relevant assumptions, for wildlife management programs in Tsholotsho, Plumtree, Binga and Hwange are given in table 8. Only one case is described for each area except Tsholotsho where the sensitivity of these is tested. These summaries were extracted from larger models, an example of which is given in table *3* by way of explanation.

The costs of running the programme, given in the first block of table *3*, break into the initial development costs funded by USAID, and the overhead costs incurred by the District once the wildlife utilization programme is up and running. US\$ 50,000, rising at 5 percent annually, was considered more than adequate to cover expenditure which involves little more than maintaining water supplies and patrolling the resources, since wildlife, unlike domestic livestock, incurs few other management costs.

In these analyses, only the costs involved in the commercial management of wildlife are included. The costs of developing community management capacity, training etc. are excluded since they are not expected to provide financial returns. This investment, nevertheless, is the key to the success of the scheme as the social soundness and institutional and administrative analyses show.

Gross margins accruing from commercial wildlife activities are summarized in the second block, and calculated using the stated assumptions, listed in full for Tholotsho in Table 9 but summarized for each scenario below the cash flow statement in Table 13. Note that the variable costs of these operations are accounted for in the assumptions. For example, an elephant bull can be sold for US\$ 10,000 and it is the purchaser that incurs all the costs of hunting this trophy.

The viability of the programs can be assessed by inspecting the cash flow projections (i.e. column reading "less AID costs"). Net Present Values were calculated for a range of interest rates (5% to 60%), but Internal Rates of Return were less useful - in most case there were no negative cash flows so IRRs could not be calculated.

(3) General conclusions

The Tsholotsho, Plumtree and Binga schemes are all viable and likely to remain so since the availability of elephants and other species for trophy hunting will, if anything, increase. This is the trend on much of Zimbabwe's private ranch land and in Safari Areas. The situation is highly unlikely to deteriorate given present market trends and the availability of elephant where the current problem, unlike much of Africa, is not declining numbers but over-population. These programs, moreover, are already in place and the Department of National Parks and Wildlife Management sells elephant and other trophy animals in all three areas, where the levels of offtake given are conservative and certainly sustainable. Above this, there is still considerable scope to increment safari hunting operations by adding other enterprises. For instance, the proceeds from elephants cropped for products (meat = \$ 1,000; hides = \$ 1,200; ivory = \$ 1,400) or from tourist activities can add significantly to the viability established by the safari hunting operations. The Tsholotsho results are indicative. For instance in year 10, when it is considered that elephants might first be harvested for products, the following income may accrue:

Income	
Trophy Hunting	395,589
add:	
Elephant Cropping	40,000
Tourism	236,619
Total	<u>672,208</u>

Hwange differs from these schemes. Its resource is not primarily an abundance of wildlife, but rather its proximity to the tourist centre at Victoria Falls and its scenic attraction which include the Zambezi gorges below the Falls and the upper reaches of Lake Kariba (the damming of the Zambezi river at Batoka Gorge will considerably improve tourism potential, making any experience that the Hwange community gains before this (scheduled for 1992) invaluable since the dam falls entirely in their District). The viability of Hwange therefore hangs on tourism rather than safari hunting. This market is buoyant with a rapidly growing demand for more facilities and destinations. Activities suggested for Hwange (e.g. tourist accommodation near Victoria Falls and Lake Kariba), however, are untested and therefore risky. They do nevertheless have considerable potential in an area with few alternatives.

(4) Tsholotsho Communal Area

Safari Hunting:

Wildlife activities in Tsholotsho presently centre on safari hunting and a quota of 20 elephant bulls plus limited other game including lion, buffalo and antelope. These alone generate a net cash income rising from US\$ 250,000 (Scenario 7) with a high NPV of \$ 1 million using a 10% (high) interest rate. The probability of this safari hunting failing, moreover, is low - safaris continued even during the civil war - so this programme is robust. The projected rate of growth (5%), too, is very conservative since the value of hunting is presently rising at 10 per cent per annum and the development of Tsholotsho for wildlife (e.g. boreholes) will induce a rapid increase in wildlife populations as similar experience on adjacent Forest land has demonstrated.

Tourism:

Tsholotsho also has potential for game viewing tourism, initially in the adjacent Hwange National Park, but ultimately also in the Communal area. Tsholotsho can mimic the private landholders in analogous areas on the eastern border of the Park, basing tourist facilities on their own land but depending on the Park for a proportion of their game viewing. If a small (40 bed) tourist facility were developed successfully in, say, the attractive Ngamo areas, this might increment safari incomes by about \$ 200,000 annually (i.e. scenario 1 less scenario 7; table 3). The combination of both safari hunting and tourism (scenario 1) gives a NPV (10%) of \$ 1.7 million. Tourism, on its own, would still be viable (scenario 3: NPV ,10% = \$ 409,972; IRR = 0.21).

(5) Elasticity of Demand

There is insufficient data with which to calculate the elasticity of demand for safari hunting and tourism. However, in southern African region, the price of safari hunting has been rising at about 10 percent annually at the same time that the supply of trophy animals has been growing at a similar rate. Discussions with tour operators and their agents, further, indicate that the demand and price for game viewing tourism is presently growing at at least this rate. It is difficult to extrapolate tourism trends since tourism has only caught on since civil strife in Zimbabwe ceased in 1987 - operators, though, are optimistic. The same is not true of safari hunting where the upward trend has continued since at least 1980.

If the industry were to stagnate (i.e. zero growth), the returns from wildlife would be slightly reduced but not so much as to have any significant impact on the viability of the project (scenario 5). The returns from hunting activities would have to degenerate by 25% annually, and the income from tourism only reach \$ 30,000 (scenario 6), for the wildlife programme to be reduced to a break-even level.

(6) Failure

Only with the simultaneous failure of both safari hunting and tourism will this scheme fail (scenario 4), but the community will still have a small positive cash flow from year 4 of about \$ 30,000 (the initial investment, though, cannot be repaid) from the sale of elephant meat and other trophy animals. Thus even with this worst case scenario, the community is not put at risk as the lost income is the provided by USAID, the risk-bearer.

The ban on elephant products, provided it does not affect trophy hunting, will have little impact on success (scenario 2) since this will only be introduced well into the development of the scheme and then only if elephant populations expand (by growth and immigration) as expected. Although Tsholotsho is frequented by bulls best used for trophy hunting, the resident elephant population is low due to lack of water (this may change with water development) and it will probably be ten years before elephant will be cropped for products.

(7) Corroborative Evidence:

The spreadsheet analyses indicate that the potential of wildlife programs in Tsholotsho is excellent. This is corroborated by trends on neighboring private land where ranchers have abandoned cattle ranching after many years of struggle and are now making good profits from wildlife. The consequent demand for land in this area has increased land prices several fold in the past four years. These private landholders initially depended largely on safari hunting, but tourist activities are being added and the opinion is that these will soon exceed the value of hunting. It follows that the promising financial projections for these community-based resource utilization are not over-optimistic.

(8) Bululima Mangwe and Binga

Bululima Mangwe borders Tsholotsho and has similar potential, except that the area is smaller. A pessimistic scenario was presented, having only 5 elephants and few other species on quota with no tourism at all. This nevertheless suggests that wildlife utilization is viable here (IRR = 6%) especially as there are few alternatives.

Binga has much greater potential than even Tsholotsho. It has good wildlife populations including elephant and buffalo, the high value species for profitable safari hunting. It also has the Kariba lake shore, attractive mountainous country and hot springs with which to attract tourists. Even without tourism, however, Binga is extremely viable with a NPV (10% interest rate) of \$1.2 million.

(9) Park and Elephant Management

Monies that ensure the adequate management of the Parks and Wildlife Estate including elephant, other animal species and habitats are well spent since this is the foundation of the wildlife resource in Matabeleland North. The Estate supports a considerable tourist industry (c \$ 25 million annually) including a \$ 1.5 million safari industry in the Matetsi Safari Area; it enables, and continues to facilitate, the switch to land use based on wildlife on neighboring land including the present initiatives with rural communities; and the culling of the elephant population to maintain its present level, let alone reducing it to the desired stocking rate, permits an offtake of 1,000 animals each year worth some \$ 4 million.

(10) Conclusions

The Tsholotsho, Bululima Mangwe and Binga wildlife utilization programs have the economic potential to be successful with safari hunting, and to be even more successful if tourism is added. The probability of success, moreover, is high provided the necessary social and institutional changes are made - the corresponding social, institutional and administrative analyses and recent empirical experiences suggest that this is highly likely. The Hwange scheme, likewise, has potential but by not having an established safari operation nor the potential for one, and therefore depending on entering the tourism market, the risk of failure is higher. Funding is important here to carry this risk. All schemes might develop without funding of commercial operations since rural communities can combine with commercial operators in joint ventures. However, funding of efforts to develop the communities' capacity to manage or bargain, and to develop their land as wildlife habitat, are easily justified. These efforts should be given priority. Funding for commercial ventures is also important, but it may be preferable to provide soft loans, rather than grants, since the returned monies can then be used to capitalize additional programs.

J. Zambia

For safari hunting, the wildlife resource of Zambia is at least as good as that in Zimbabwe. Although Zambia lacks elephants (due to poaching), it is renowned for its buffalo, lion and leopard trophies and has a wide spectrum of plains game. In economic terms, therefore, wildlife utilization in Zambia should be at least as profitable as in Zimbabwe, especially if shadow exchange rates are used since income is in foreign currency which is critically short.

In financial terms, however, the viability of the wildlife programs is suspect without elephant (see financial analysis) because these programs depend on the Wildlife Conservation Revolving Fund (WCRF) for management inputs and this institution is presently not viable if the income from ivory is excluded. This is a reflection largely of the institutions that direct the income flows from wildlife since, in economic terms, wildlife is viable.

The overhead costs of wildlife management in the Game Management Areas, and the split of the financial returns from wildlife, excluding the sale of raw and worked ivory, are:

<u>KW</u>	
Income:	
Revolving fund (WCRF)	1.856
NPWS/ZNTB	<u>1.016</u>
sub total	<u>3.016</u>
Village development	<u>1.484</u>
Total	<u>4.500</u>
Expenses:	
Operating Expenses for the Revolving Fund	<u>8.000</u>
Net Loss	3.500
	=====

The anticipated incremental operating expenses for the 9 project Game Management Areas (GMAs) if the USAID project is implemented are approximately KW 5.0 million annually. This creates a total revolving fund shortfall of KW 8.5 million. Additional sources of revenue are therefore required.

Even if the monies presently accruing to the National Parks and Wildlife Service (NPWS) and Zambia National Tourist Board (ZNTB) (total of KW 1.016 million) are redirected into the revolving fund, there is a shortfall of KW 5 million at existing operating levels, and KW 9.0 million if the incremental operating costs for increased activity levels for the 9 GMAs is included. This shortfall can be overcome in two ways.

The sale of ivory products will cover costs as it did in 1988 (assuming ivory sales remain at the 1988 level of KW 9.5 million and the sales price increases

by only 5%). However, with the present situation in the ivory trade, and Zambia's recent stand on this, this is a risky option.

It must be noted here that ivory is crucial to the viability of the revolving fund. However, unlike other products, all the income from ivory is credited to the fund, so it is of lesser importance to the viability of the scheme as a whole.

There is a second alternative, however, that might permit financial viability of the WCRF thereby allowing the scheme to succeed. By reallocating the income generated from wildlife, the principle constraint to the development of sustainable, community-based wildlife management is addressed. The constraint, which also limits the development of wildlife programs in Botswana and parts of Zimbabwe, is that very little of the income from wildlife accrues to landholders. In Zambia, too, landholders using wildlife are heavily 'taxed'. Some 25 percent of the gross income from Game Management Areas (i.e. trophy fees + ZNTB + NPWS payments) accrues to central government compared to only 15 percent for the community, half of which the community can use for development and the other half of which is required to manage the wildlife.

The 350,000 hectare Munyumadzi/Fulaza GMA, which accounts for roughly one fifth of the ADMADE programme, is used as an illustration. With a quota of buffalo (34), leopard (16), lion (14), sable (2), roan (13), eland (12), wildebeest (32) and other species, it should generate a gross income of approximately US\$ 470,000 (\$ 150,000 trophy fees; \$ 320,000 daily rate). This income is split roughly as follows:

<u>Gross Income from Safaris</u>				
US\$ 470,000				
<u>Operator Income</u>	<u>Concession Fee</u>	<u>Trophy Fee to Govt</u>		
280,000 (60%)	\$95,000 (20%)	\$95,000 (20%)		
Profit= 140,000?	<u>Income</u>	<u>Split</u>	<u>% Gross income</u>	
Costs = 140,000?	ZNTB	9,500	10%	2%
	NPWS	14,250	15%	3%
	WCRF	38,000	40%	8%
	Village	33,250	35%	7%

Estimated Revolving Fund Expenses at increased operating level in 1989+	KW 2.000 mil
Estimated Revolving Fund Expenses at increased operating levels + 30% inflation factor due to devaluation of local currency	KW 2.600 mil
	equals \$162,500

The ADMADE programme will generate a gross income from safari hunting of approximately US\$ 2.5 million. Management of the Wildlife Management

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Authority program at the increased operating level will require about \$ 1 million, or 40 percent of the gross income from safaris. The split given above shows, however, that only 8 percent of this gross income presently accrues to the WCRF.

Thus, the WCRF, and the wildlife management programme which depends on it, will only be financially viable if the entire concession and trophy fee (at present levels) are retained by the WCRF. Even with this restructuring, no funds will remain for village community development. To maintain the present level of income to villages, the trophy and concession fees charged to the safari operator will have to be raised from 40 to 52 percent of gross income. This will cut the operator's profits significantly (from, say, 30% to 18% of gross income), but it is likely that operators can survive this increased cost.

A schematic representation of the break-even benefit flow structure, as just discussed, is:

<u>Gross Income from Safaris</u>		
US\$ 2.5 million		
<u>Operator Income</u>	<u>Hunting Fees</u>	<u>Trophy Fee</u>
\$ 1.2 m (48%)	\$ 1.3m (52%)	(0%)
<hr/>		
	<u>Income</u>	<u>% Gross income</u>
Profit= 56,000?	ZNTB 50,000	2%
Costs = 140,000?	NPWS 75,000	3%
	Village 175,000	7%
	WCRF 1.0 million	40%

With restructuring of benefit flows, therefore, the ADMADE programme can break even financially. This is essential if it is to continue, but it is also necessary to demonstrate that the net economic benefits are positive, and certainly higher than the financial returns.

Effect of Using Economic Prices

The reason that this project is acceptable when its financial viability is marginal is that, first, it can survive financially and, second, that it has a range of desirable economic effects and its economic returns are positive. Cognizance of shadow prices, price trends, and the recategorization of items that are costs in financial terms but are really economic gains, justifies the proposed program.

The increased cost of the revolving fund caused by this project stems mainly from a greater effort to conserve and manage the resource base through higher staffing levels, training programs, and the provision and maintenance of equipment, including vehicles. The intention is to promote higher wildlife populations; to prevent wasteful use of these by poaching; and to involve local communities more fully in both the management of and the benefits from

the wildlife resource. The final objective is to raise income levels, and to promote economic development based on the use of an ever more scarce, increasingly valuable, natural resource.

Improvements flowing from this project should be aided by the rising price of safari hunting and tourism on the world market. These possibilities were not incorporated into the financial appraisal of the viability of the WCRF since they may take several years and the WCRF fund has to be viable immediately. In a similar vein, the Kwacha has just devalued by 60 percent and it is likely to continue to soften against the harder world currencies with which tourists generally pay. This suggests that even if the price of safari hunting remains constant in US\$ terms, and it is rising, the returns to Zambian residents (who deal in Kwacha) will rise. A softening of the Kwacha will also increase costs, but to a much lesser extent since a significant proportion of the inputs into wildlife management are local. This suggests that the margin between income and expenditure will widen, and that wildlife will become increasingly profitable. This is certainly the trend in Zimbabwe where hunts worth US\$ 10,000 earned Z\$ 6,000 in 1982 and now earn some Z\$20,000.

The most important probable impact of the project is the provision of more real jobs and, through this, the development of self esteem and human capacity to manage in areas previously lacking these. Further, in the financial assessment, employment was treated as a cost to the WCRF. In economic terms, however, it should be considered a benefit of the program, rather than a cost, since the opportunity cost of labor in areas such as these is low. It has already been shown that the introduction of the ADMADE programme raised rural incomes in Lupande from KW 700 (1983) to between KW 2,500 and KW 5,500 for 100 people out of a workforce of 700-800. Improvement is significant.

Conclusion

The Zambian project can survive financially if the flow of benefits from the wildlife resource is adjusted so that a greater share is returned to the resource base. This is essential if the WCRF fund is to be made viable, and the viability of this fund, moreover, is essential for the continuation of the project since it is used to manage the resource base, and is also the primary means of benefiting landholders through employment generation.

The economic benefits from the project are expected to be significant. Employment generation is important, and experience in the southern African region demonstrates that wildlife has a growing comparative advantage over alternative ventures in agriculturally marginal areas. Sound wildlife management, therefore, would be expected to promote sustainable economic development in the targeted areas. In addition to greater material rewards, the social and institutional analyses suggest that wildlife is an important catalyst for holistic economic development since it encourages improvements in the management capacity of rural landholders.

K. Botswana

The primary objective of the Botswana community based component of this project is to identify communities with good wildlife potential, and to advise these communities of the value of this resource and on the means by which they can obtain these benefits. The aim is to encourage them to insist that both the management, and the considerable potential benefits, of the wildlife resource are devolved to the community level. This will promote sustainable economic development in ecosystems where wildlife has enormous potential, but where it is presently neglected in favor of lesser forms of land use because landholders are isolated from these benefits. Both the human and wildlife populations can be expected to benefit from such developments, as the experiences of all Botswana's neighbors, including Zambia and Zimbabwe, illustrate.

Presently, control of the wildlife resource is inefficient, with landholders receiving few, if any, benefits, and the wild animals being perceived as valueless and, as a consequence, being neglected or actively discouraged. The catastrophic disappearance of the vast herds that occupied much of Botswana as recently as 1982 indicates the serious nature of the situation.

An example, based on data in Cumming and Taylor's report on the potential of wildlife in several Districts, confirms that wildlife utilization would benefit rural landholders considerably. The Cumming and Taylor data for the Chobe Enclave was used to develop a spreadsheet projection of the consequences of adding wildlife to present agricultural systems.

Table 11 lists the species in the Chobe Enclave. Estimates of income potentials are based on the number of trophies that can be sold, the price of these, and the payments made by clients for the services required to hunt these. For example, with 790 buffalo, 16 can be shot annually assuming a trophy offtake rate of 2 percent. The charge for a buffalo trophy to a client is US\$ 1,000, so the total trophy fee from buffalo is \$ 16,000. However, each buffalo will take, on average, four days to hunt. The safari operator will charge the client \$ 700 daily for his services, so each buffalo generates an additional 'daily rate' income of \$ 2,800, or a total for the 16 animals of \$ 44,800. Each buffalo, moreover, provides 225 kg of meat (animals dress out at about half their livemass) valued at \$ 1 per kilogram. The gross income from buffalo, thus calculated, is \$ 64,400 (\$ 44,800 daily rate + \$ 16,000 trophy fee + \$ 3,500 meat value). It costs an operator roughly \$ 200 per client day so the net income from buffalo is \$ 51,000.

On the basis of similar calculations, the total income from wildlife in the Chobe Enclave is \$ 682,438 and the net income is \$ 583,038. This translates to 8.6 cents and 7.3 cents on a kilogram biomass basis (see table 11). By comparison, the gross income from livestock would be 4.5 cents per kg, but no estimate of net income is available.

However, all of the income from livestock presently accrues to landholders who, in contrast, get nothing from wildlife. This does not affect potentials and, indeed, is the problem the project aims to overcome.

Landholders could, for instance, earn about 4.0 cents per kg from wildlife if they were permitted to benefit from it, with the remainder of the 7.3 cent net income being retained by the safari operator as a return on his capital.

In this area, it appears that wildlife generates significantly higher economic returns than livestock (8.6 versus 4.5 cents), although the net returns to landholders would be similar at, perhaps, 4 cents per kg. If a trade-off had to be made, landholders would be equally happy with either alternative (except they are traditionally cattle owners, a factor which must be balanced against the reality that the poorer landholders probably do not own the livestock and thus have less access to this income), but from the national perspective wildlife is preferable since its adoption would not reduce landholder's income, and an additional enterprise, safari hunting, enters the economy.

The reality, however, is that there is no major trade-off: the livestock and wildlife resources presently co-exist. Thus, the income from wildlife is additional to the income from livestock. In the situation described, moreover, the wildlife biomass is double that of the livestock biomass. The consequence of managing wildlife for the local communities would therefore be to treble their income levels if the assumption that they can extract 4 cents out of every 7.3 cents net income the operator makes is correct. Under present circumstances, the problem is that rural communities receive none of this income. The figures presented represent ultimate potential and these communities are unlikely to obtain anything like this share for some time. However, a start must be made, and even only half this share represents a doubling of income levels. The share is also likely to increase the more rural communities become aware of the value of their wildlife and the more they compete to obtain a share of it. They presently do not have this awareness, as a result of the problems this project sets out to address.

It should be noted that the incomes discussed above only represent safari hunting, and parts of Botswana, particularly those in the north, have a similar or greater potential for non-consumptive tourism.

Conclusions

The example presented demonstrates that wildlife utilization can significantly raise income levels in rural Botswana. To do this, a move which will help the poorest communities in the country and which will serve to conserve a rich wildlife resources with additional non-monetary values, it is necessary to devolve the authority over wildlife to landholder communities. In aiming to do so, this project could catalyse a significant economic improvement, both at the local and national level, and in terms of efficiency and equity.

From an economic perspective, the project can be summarized as an attempt to bring market prices closer to social prices and, in so doing, to improve the efficiency of resource allocation. This attempt, despite the possibility of failure, aims at important, though subtle, economic restructuring, and is well worth pursuing. It could have consequences well beyond wildlife utilization, since it might initiate grass-roots progress in addressing one of the central factors limiting economic development, especially in rural areas, in Botswana - open access to ever more scarce resources. This is certainly the result of similar schemes in Zimbabwe.

Table 5

Some basic indicators for human population size and growth, protected areas, agriculture and energy in the Southern African Development Coordination Conference (SADCC) region including Namibia

SADCC: Pop./Dev./Land use	ANGOLA	BOTSWANA	MALAWI	MOCAMBIQUE	TANZANIA	ZAMBIA	ZIMBABWE	NAMIBIA
Area (sq.km.)	1,246,700.0	600,372.0	118,484.0	783,030.0	945,087.0	752,614.0	390,245.0	824,292.0
Human population:								
Numbers (millions) 1985	8.6	1.1	7.0	13.9	22.2	6.7	8.5	1.2
2000	13.2	1.8	11.4	21.7	36.9	11.0	14.3	1.9
2050	32.3	3.8	28.7	53.7	96.4	26.8	33.1	4.2
Growth rate (1985)	2.8	3.5	3.4	2.9	3.3	3.4	3.5	
Growth rate (2000)	2.7	2.5	2.9	2.8	3.0	2.9	2.7	2.7
Ha per person (2000)	9.4	34.1	1.0	3.6	2.6	6.8	2.7	44.3
Rural Pop. (% tot. in 2000)	64.7	78.8	87.8	86.7	87.5	37.5	66.6	
Doubling time (yrs)								
Protected Areas:								
Total area (sq.km.)	82,307.0	103,953.0	12,622.0	32,250.0	108,307.0	59,451.0	49,418.0	63,660.6
% of country protected	6.6	17.3	10.7	4.1	11.5	7.9	12.7	7.7
sq.km. per 1000 people	6.2	59.1	1.1	1.5	2.9	5.4	3.5	34.2
Number of areas	13.0	9.0	21.0	9.0	15.0	19.0	30.0	12.0
Mean size (sq. km.)	6,331.3	11,550.3	601.0	3,583.3	7,220.5	3,129.0	1,647.3	5,365.0
Men per 1000 sq.km. (1981)	?	1.7	21.8	9.9	8.7	12.5	43.0	3.6
Budget (US \$ per sq.km.)	?	10.0	45.0	19.0	47.5	41.0	263.0	?
Agriculture:								
Arable land (sq.km.)	35,000.0	13,600.0	23,330.0	30,800.0	52,000.0	51,580.0	2,782.0	6,570.0
Cattle (1,000's)	3,350.0	2,900.0	910.0	1,450.0	14,000.0	2,400.0	5,800.0	2,000.0
Sheep "	245.0	165.0	89.0	114.0	4,100.0	42.0	500.0	6,000.0
Goats "	955.0	800.0	770.0	355.0	6,100.0	350.0	1,100.0	2,300.0
Area under tsetse fly	372,250.0	27,500.0	7,529.0	497,030.0	587,250.0	296,250.0	62,900.0	0.0
Energy:								
Per Cap. Consumpt. (GJ)	14.9	27.3	26.8	26.9	24.5	26.1	33.0	?
Wood fuel as % total fuel	77.3	56.1	94.3	89.1	91.4	58.3	52.0	?

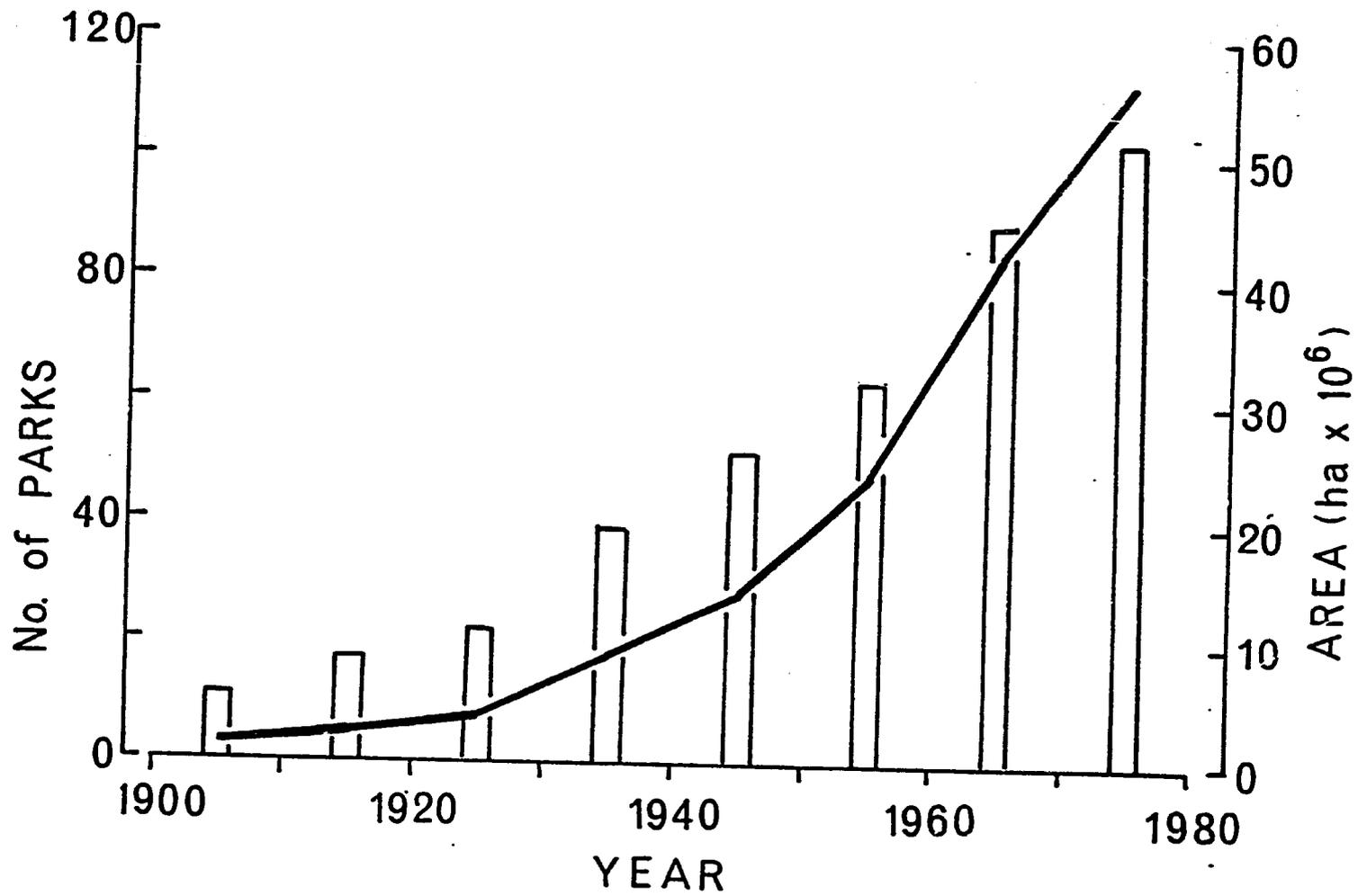


Table 6

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Table 7:

A Comparison of Income and Profits (Gross Margin, Net Margin)
from Cattle and Wildlife in Eight Areas in Zimbabwe

(all prices in cents (1984=1.00))

Area	Wildlife	Cattle	Wildlife / cattle
<u>Buffalo Range</u> <u>Financial</u>	24-27c/kg GI 0-3c/kg NM 0.4-4.3c/gr NM	20//kg GI 2c/kg NM	1.2-1.4 0 - 1.5 0.2-2.2
best	15c/kg NM 23c/gr NM	15c/kg NM	1.0 1.5
<u>Economic</u>	9-11c/kg NM 13-18c/gr NM	-4c/kg Ni.	>> >>
best	19-35c/kg NM 28-54c/gr NM	4c/kg N.	>> >>
less environ. costs	490-621c/kg ^{ha} NM	-800c/kg ^{ha} NM	>>>>
Iwaba ranch best	17-22.4c/kg NM 54c/kg NM	7-10c/kg NM	2+ 5+
Midlands	20c/kg GI 17c/kg GM	20c/kg GI 7c/kg GM	1.0 2.4
Lowveld	37c/kg GI 32c/kg GM	20c/kg GI 7c/kg GM	1.9 4.6
Nuanetsi	2.6c/kg NM 6.6c/kg gr NM	1.7c/kg NM	1.2 3.9
best	6.3c/kg NM 15.7c/kg gr NM	9.1c/kg NM (double sales)	0.69 1.7
Rosslyn best	529/ha NM 960/ha NM	unprofitable	>> >>
Matetsi ICA	613-1159/ha GI 416-895/ha GM	182/ha (118/ha)	3.4-6.4
Matetsi Safari Area	517-1159/ha NM		

Note: * GI (gross income), GM (gross margin), NM (net margin) compared per hectare (ha), per unit liveweight (kg) and per unit gross liveweight (gr).
* >> means 'much greater than'

Table 8a

Cash Flow Projections of Communal Area Wildlife Programmes in Zimbabwe.

SCENARIO 1 Best estimate of potentials for wildlife management in Tsholotsho. (Safaris + tourism + jumbo crop-yr10)				SCENARIO 2 Sale of elephant products and is banned. (Safaris and Tourism)			
Year	Total Net Income	less Tsh costs	less AID costs	Year	Total Net Income	less Tsh costs	less AID costs
1	255,000	205,000	4,000	1	255,000	205,000	4,000
2	267,750	215,250	14,250	2	267,750	215,250	14,250
3	281,138	226,013	188,013	3	281,138	226,013	188,013
4	348,849	290,968	290,968	4	348,849	290,968	290,968
5	417,264	356,489	356,489	5	417,264	356,489	356,489
6	486,417	422,603	422,603	6	486,417	422,603	422,603
7	546,124	479,120	479,120	7	546,124	479,120	479,120
8	573,431	503,076	503,076	8	573,431	503,076	503,076
9	602,102	528,229	528,229	9	602,102	528,229	528,229
10	672,207	594,641	594,641	10	672,207	594,641	594,641
	NPV (5%)	2,806,327	2,399,760		NPV (5%)	2,806,327	2,399,760
	NPV (10%)	2,126,531	1,749,138		NPV (10%)	2,126,531	1,749,138
	NPV (15%)	1,657,647	1,305,894		NPV (15%)	1,657,647	1,305,894
	NPV (20%)	1,325,346	996,272		NPV (20%)	1,325,346	996,272
	NPV (30%)	904,348	613,501		NPV (30%)	904,348	613,501
	NPV (40%)	662,431	402,460		NPV (40%)	662,431	402,460
	NPV (50%)	512,545	277,952		NPV (50%)	512,545	277,952
	NPV (60%)	413,627	200,209		NPV (60%)	413,627	200,209
	IRR	-	-		IRR	-	-
Assumptions:				Assumptions:			
1)	Venture growth rate:		5	1)	Venture growth rate:		5
2)	Elephant bull quota:		20	2)	Elephant bull quota:		20
	price (US\$):		10000		price (US\$):		10000
3)	Value - other trophies:		50000	3)	Value - other trophies:		50000
4)	Tourism starts in year 4, reaches potential in year 7.			4)	Tourism starts in year 4, reaches potential in year 7.		
	* beds		40		* beds		40
	* occupancy		0.7 %		* occupancy		0.7 %
	* GM/night		20 US\$		* GM/night		20 US\$
5)	Elephant cropping			5)	Elephant cropping		
	* Begins year		10		* Begins year		10
	* Population		1000		* Population		1000
	* Net value/carcass		1000		* Net value/carcass		1000

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Table 8b
Cash Flow Projections of Communal Area Wildlife Programmes in Zimbabwe.

SCENARIO 3 Sale of elephant products and trophies is banned. (Tourism only)				SCENARIO 4 Sale of elephant products and trophies is banned. Tourism fails. (Jumbo meat; non-jumbo safaris)			
Year	Total Net Income	less Tsh costs	less AID costs	Year	Total Net Income	less Tsh costs	less AID costs
1	75,000	25,000	(176,000)	1	75,000	25,000	(176,000)
2	78,750	26,250	(174,750)	2	78,750	26,250	(174,750)
3	82,688	27,563	(10,438)	3	82,688	27,563	(10,438)
4	140,477	82,596	82,596	4	86,822	28,941	28,941
5	198,473	137,698	137,698	5	91,163	30,388	30,388
6	256,686	192,872	192,872	6	95,721	31,907	31,907
7	304,907	237,902	237,902	7	100,507	33,502	33,502
8	320,153	249,798	249,798	8	105,533	35,178	35,178
9	336,160	262,287	262,287	9	110,809	36,936	36,936
10	392,968	315,402	315,402	10	156,350	78,783	78,783
	NPV (5%)	1,092,042	685,474		NPV (5%)	262,652	(143,916)
	NPV (10%)	787,365	409,972		NPV (10%)	201,417	(175,976)
	NPV (15%)	582,395	230,642		NPV (15%)	159,228	(192,525)
	NPV (20%)	441,036	111,962		NPV (20%)	129,281	(199,793)
	NPV (30%)	269,421	(21,426)		NPV (30%)	91,086	(199,761)
	NPV (40%)	177,107	(82,864)		NPV (40%)	68,789	(191,182)
	NPV (50%)	123,844	(110,749)		NPV (50%)	54,680	(179,913)
	NPV (60%)	91,203	(122,215)		NPV (60%)	45,145	(168,273)
	IRR		0.28		IRR		-0.043
Assumptions:				Assumptions:			
1)	Venture growth rate:		5	1)	Venture growth rate:		5
2)	Elephant bull quota:		20	2)	Elephant bull quota:		20
	price (US\$):		1000		price (US\$):		1000
3)	Value - other trophies:		50000	3)	Value - other trophies:		50000
4)	Tourism starts in year 4, reaches potential in year 7.			4)	Tourism starts in year 4, reaches potential in year 7.		
	* beds		40		* beds		40
	* occupancy		0.7 %		* occupancy		0 %
	* GM/night		20 US\$		* GM/night		20 US\$
5)	Elephant cropping			5)	Elephant cropping		
	* Begins year		10		* Begins year		10
	* Population		1000		* Population		1000
	* Net value/carcass		1000		* Net value/carcass		1000

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Table 8c

Cash Flow Projections of Communal Area Wildlife Programmes in Zimbabwe.

SCENARIO 5 Wildlife option with tourism and hunting, but assuming industry stagnates - zero growth.				SCENARIO 6 International markets must deteriorate by 25% annually for a negative NPV (50% interest) within 10 years.			
Year	Total Net Income	less Tsh costs	less AID costs	Year	Total Net Income	less Tsh costs	less AID costs
1	255,000	205,000	4,000	1	255,000	205,000	4,000
2	255,000	202,500	1,500	2	178,500	126,000	(75,000)
3	255,000	199,875	161,875	3	124,950	69,825	31,825
4	306,100	248,219	248,219	4	120,465	62,584	62,584
5	357,200	296,425	296,425	5	94,226	33,450	33,450
6	408,300	344,486	344,486	6	75,858	12,044	12,044
7	459,400	392,395	392,395	7	63,000	(4,004)	(4,004)
8	459,400	389,045	389,045	8	54,000	(16,355)	(16,355)
9	459,400	385,527	385,527	9	47,700	(26,173)	(26,173)
10	603,400	525,834	525,834	10	187,290	109,724	109,724
	NPV (5%)	2,358,618	1,952,051		NPV (5%)	493,100	86,533
	NPV (10%)	1,801,020	1,423,628		NPV (10%)	434,789	57,397
	NPV (15%)	1,415,291	1,063,538		NPV (15%)	389,896	38,143
	NPV (20%)	1,140,958	811,884		NPV (20%)	354,126	25,052
	NPV (30%)	791,330	500,483		NPV (30%)	300,295	9,449
	NPV (40%)	588,491	328,520		NPV (40%)	261,309	1,339
	NPV (50%)	461,491	226,899		NPV (50%)	231,530	(3,063)
	NPV (60%)	376,770	163,352		NPV (60%)	207,935	(5,483)
					IRR		0.425
Assumptions:				Assumptions:			
1)	Venture growth rate:		0	1)	Venture growth rate:		-30
2)	Elephant bull quota:		20	2)	Elephant bull quota:		20
	price (US\$):		10000		price (US\$):		10000
3)	Value - other trophies:		50000	3)	Value - other trophies:		50000
4)	Tourism starts in year 4, reaches potential in year 7.			4)	Tourism never reaches potential. Stays at 30,000 from year 4.		
	* beds		40		* beds		40
	* occupancy		0.7 %		* occupancy		0.7 %
	* GM/night		20 US\$		* GM/night		20 US\$
5)	Elephant cropping			5)	Elephant cropping		
	* Begins year		10		* Begins year		10
	* Population		1000		* Population		1000
	* Net value/carcass		3600		* Net value/carcass		3600

Table 8d

Cash Flow Projections of Communal Area Wildlife Programmes in Zimbabwe.

SCENARIO 7				BINGA			
Safari hunting only.				Best estimate of potentials for wildlife management in Binga (Safaris; no tourism yet)			
Year	Total Net Income	less Tsh costs	less AID costs	Year	Total Net Income	less Binga costs	less AID costs
1	255,000	205,000	4,000	1	227,000	202,000	88,000
2	267,750	215,250	14,250	2	238,350	212,100	98,100
3	281,138	226,013	188,013	3	250,268	222,705	203,205
4	295,194	237,313	237,313	4	262,781	233,840	233,840
5	309,954	249,179	249,179	5	275,920	245,532	245,532
6	325,452	261,638	261,638	6	289,716	257,809	257,809
7	341,724	274,720	274,720	7	304,202	270,699	270,699
8	358,811	288,456	288,456	8	319,412	284,234	284,234
9	376,751	302,878	302,878	9	335,382	298,446	298,446
10	539,589	462,022	462,022	10	352,152	313,368	313,368
	NPV (5%)	2,040,784	1,634,217		NPV (5%)	1,923,810	1,694,992
	NPV (10%)	1,580,680	1,203,287		NPV (10%)	1,502,842	1,290,340
	NPV (15%)	1,260,187	908,434		NPV (15%)	1,206,672	1,008,519
	NPV (20%)	1,030,387	701,313		NPV (20%)	992,392	806,940
	NPV (30%)	733,557	442,710		NPV (30%)	712,529	548,505
	NPV (40%)	557,709	297,738		NPV (40%)	544,642	397,944
	NPV (50%)	445,184	210,592		NPV (50%)	436,209	303,764
	NPV (60%)	368,515	155,097		NPV (60%)	361,832	241,290
	IRR	-	-		IRR	-	-
Assumptions:				Assumptions:			
1)	Venture growth rate:		5	1)	Venture growth rate:		5
2)	Elephant bull quota:		20	2)	Elephant bull quota:		10
	price (US\$):		10000		price (US\$):		10000
3)	Value - other trophies:		50000	3)	Value - other trophies:		50000
4)	Tourism starts in year 4, reaches potential in year 7.			4)	No tourism included. But has considerable potential.		
	* beds		40		* beds		0
	* occupancy		0 %		* occupancy		0 %
	* GM/night		20 US\$		* GM/night		20 US\$
5)	Elephant cropping			5)	Elephant cropping		
	* Begins year		10		* Begins year		1
	* Population		1000		* Population		1000
	* Net value/carcass		3600		* Net value/carcass		3600
					* Offtake rate		0.02

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Table 8e

Cash Flow Projections of Communal Area Wildlife Programmes in Zimbabwe.

PLUMTREE Pessimistic estimate of potentials for wildlife management in Plumtree (Low elephant quota; no tourism)				HWANGE Best estimate of potentials for wildlife management in Hwange Tourism only. No safaris.			
Year	Total Net Income	less Plum costs	less AID costs	Year	Total Net Income	less Hwa costs	less AID costs
1	60,000	35,000	(79,000)	1	5,000	(20,000)	(271,000)
2	63,000	36,750	(77,250)	2	5,250	(21,000)	(212,000)
3	66,150	38,588	19,088	3	5,513	(22,050)	(55,050)
4	69,458	40,517	40,517	4	59,443	30,503	30,503
5	72,930	42,543	42,543	5	113,388	83,000	83,000
6	76,577	44,670	44,670	6	167,346	135,439	135,439
7	80,406	46,903	46,903	7	211,100	177,598	177,598
8	84,426	49,249	49,249	8	221,656	186,478	186,478
9	88,647	51,711	51,711	9	232,738	195,802	195,802
10	93,080	54,296	54,296	10	244,375	205,592	205,592
	NPV (5%)	333,333	104,516		NPV (5%)	638,914	198,117
	NPV (10%)	260,393	47,892		NPV (10%)	437,151	26,325
	NPV (15%)	209,077	10,924		NPV (15%)	303,695	(80,687)
	NPV (20%)	171,949	(13,502)		NPV (20%)	213,499	(147,404)
	NPV (30%)	123,458	(40,566)		NPV (30%)	107,787	(213,328)
	NPV (40%)	94,369	(52,330)		NPV (40%)	54,393	(234,368)
	NPV (50%)	75,581	(56,864)		NPV (50%)	25,975	(236,025)
	NPV (60%)	62,694	(57,848)		NPV (60%)	10,233	(229,308)
	IRR		0.170		IRR	0.720	0.110
Assumptions:				Assumptions:			
1)	Venture growth rate:		5	1)	Venture growth rate:		5
2)	Elephant bull quota:		5	2)	Elephant bull quota:		0
	price (US\$):		10000		price (US\$):		10000
3)	Value - other trophies:		5000	3)	Value - other trophies:		5000
4)	No tourism included. But has considerable potential.			4)	Tourism projection		
	* beds		0		* beds		40
	* occupancy		0 %		* occupancy		0.7 %
	* GM/night		20 US\$		* GM/night		20 US\$
5)	Elephant cropping			5)	Elephant cropping		
	* Begins year		0		* Begins year		1
	* Population		1000		* Population		1000
	* Net value/carcass		3600		* Net value/carcass		3600
	* Offtake rate		0		* Offtake rate		0

Example of spreadsheet model used to produce the summary scenarios.

Table 10

SCENARIO 1 Best estimate of potentials for wildlife management in Tsholotsho. (Safaris + tourism + jumbo crop-yr10)			
Year	Total Net Income	less Tsh costs	less AID costs
1	255,000	205,000	4,000
2	267,750	215,250	14,250
3	281,138	226,013	188,013
4	348,849	290,968	290,968
5	417,264	356,489	356,489
6	486,417	422,603	422,603
7	546,124	479,120	479,120
8	573,431	503,076	503,076
9	602,102	528,229	528,229
10	572,207	594,641	594,641
NPV (5%)	2,806,327	2,399,760	
NPV (10%)	2,126,531	1,749,138	
NPV (15%)	1,657,647	1,305,894	
NPV (20%)	1,325,346	996,272	
NPV (30%)	904,348	613,501	
NPV (40%)	662,431	402,460	
NPV (50%)	512,545	277,952	
NPV (60%)	413,627	200,209	
IRR	-	-	

Assumptions:	
1) wildlife populations and therefore hunting activities expand 1.05 % - aided by water supplies and management.	
2) tourism development: 50 bed camp at Ngamo	US\$
Beds	40
Occupancy	0.7
Days open	365
Client nights	10220
Gross margin/night	20
GM full operation	204400
Tourism begins in year 4 and is at full capacity by year 8. Value of tourism increases at 5% per annum.	
3) Lease of safari camp:	
Daily charge	50
Days (5days/jumbo)	100
	5000
4) Elephant cropping programme	
(Assuming sound wildlife management, including water supplies, there will be a resident elephant population of 1000 animals after ten years. Cropping commences in year 10). Value:	
Elephant population	1000
Offtake rate	0.04
Offtake	40
Net value/elephant	1000
Total value:	40000
Value and elephant population increases at 5% annually	

Assumptions:	
1) Venture growth rate:	5
2) Elephant bull quota: price (US\$):	20 10000
3) Value - other trophies	50000
4) Tourism starts in year 4, reaches potential in year 7.	
* beds	40
* occupanc	0.7 %
* GM/night	20 US\$
5) Elephant cropping	
* Begins year	10
* Population	1000
* Net value/carcass	1000

Table 11

Example of the possible financial returns from a wildlife programme in northern Botswana.

SUMMARY	Biomass (kg)	Gross Income (US\$)	Income US\$/kg (cents)
Cattle	3,159,900	142,257	4.5
Wildlife	7,965,450	682,438	8.6
W-net	7,965,450	583,038	7.3

Species	Mass (kg)	Number in this Area	Offtake Rate (%)	Trophy Fee (US\$)	Trophy Quota	Days to hunt each trophy	INCOME			Meat Income
							Trophy fees	Gross Income per day 700	Net 500	
Buffalo	450	790	2	1,000	16	4	16,000	44,800	32,000	3,600
Bushbuck	30	790	3	200	24	1	4,800	16,800	12,000	360
Eland	340	32	2	600	1	2	600	1,400	1,000	170
Elephant	1,725	5,054	0.5	6,500	25	6	162,500	105,000	75,000	21,563
Giraffe	750	221	2	1,000	4	2	4,000	5,600	4,000	1,500
Impala	45	505	3	100	15	1	1,500	10,500	7,500	338
Kudu	136	316	2	600	6	1	3,600	4,200	3,000	408
Lechwe	72	32	2	300	1	1	300	700	500	36
Roan	185	32	2	1,200	1	2	1,200	1,400	1,000	93
Sable	185	379	2	1,200	8	2	9,600	11,200	8,000	740
Sitatunga	60	32	2	2,000	1	2	2,000	1,400	1,000	30
Tsessebe	132	253	3	450	8	1	3,600	5,600	4,000	528
Warthog	45	316	5	75	16	1	1,200	11,200	8,000	360
Wildebees	165	95	3	400	3	1	1,200	2,100	1,500	248
Zebra	200	5,118	2	500	102	1	51,000	71,400	51,000	10,200
Ostrich	68	190	10	500	19	1	9,500	13,300	9,500	646
Duiker	10	221	3	75	7	1	525	4,900	3,500	35
Steenbok	10	221	3	75	7	1	525	4,900	3,500	35
Lion				2,500	5	5	12,500	17,500	12,500	0
Leopard				1,500	5	4	7,500	14,000	10,000	0
							293,650	347,900	248,500	40,888
							TOTAL INCOME:		930,938	

4.3 Social Soundness Analysis

A. Introduction

Any evaluation of the social soundness of the project proposals must be informed by an understanding of the historical background out of which current Zimbabwean initiatives on wildlife utilization in communal lands have evolved. Traditional, pre-colonial use of wildlife resources in Zimbabwe was characterized by a situation in which human populations at lower densities than now prevail managed wildlife resources through localized regimes of communal proprietorship. Utilization was largely for local consumption, although the commercial exploitation of ivory was a component. The establishment of a settler regime in 1890 brought with it the concept of the "King's Game", wildlife becoming the property of the State. Given the racially-structured political economy of the society, this had the effect of making legal exploitation of the resource the exclusive domain of whites. For communal land inhabitants wildlife could no longer be regarded as a resource but only as a liability, an alienated component of their environment to be tolerated, covertly destroyed or illegally cropped. An added cost to the society has been that the existence of this system for several generations has, to a great extent, suppressed the cultural perspectives of an earlier era which linked wildlife conservation with sustainable exploitation.

To encourage game cropping and the country's entry into the growing international safari market, the Parks and Wildlife Act was enacted in 1975, a specific objective being "to confer privileges on owners or occupiers of alienated land as custodians of wildlife." This Act was a significant departure from the "King's Game" concept, the insight being that efficient and sustainable regimes of wildlife utilization were likely to be enhanced by local proprietorship. As the quote implies, the Act was directed largely at commercial farmers, but it contains a provision enabling the Minister to designate district councils in communal lands as appropriate authorities on lands under their jurisdiction, analogous to the custodianship of wildlife conferred on owners of alienated lands. Up to 1988 however no steps had been taken in this direction and the Department of Parks and Wildlife Management has continued to act as appropriate authority for wildlife in communal lands. Particularly important are the communal lands in the Zambezi Valley and the Project Area, Matabeleland North. In many instances these communal lands contain wildlife resources yielding significant safari incomes and are also strategically located for the maintenance of genetically viable species-specific populations. They are also zones of acute human/wildlife conflict, often being located on the boundaries of national parks and safari areas. At the same time they have been largely neglected in the development efforts of the country, are food-deficient and in some instances, have clearly been exploited for the benefit of national economic interests as, for instance, through the creation of the Kariba Dam, the nationalization of major tourist attractions and the appropriation of areas for parks and state safari lands.

In an initial attempt to address the issues involved the Department of National Parks and Wildlife Management (DNPWM) introduced in 1978 a programme to return wildlife proceeds to the communal lands in which they had been generated. This was to be done by making meat from culls in adjacent National Parks estate available to local inhabitants and by returning revenues from safari hunting to the relevant district councils. In the event the programme largely failed to achieve its objectives. Little meat found its way back to local communities and only a small proportion of the proceeds survived the attrition of the multi-staged route of bureaucratic accountancy it had to travel before returning to district councils; let alone to originating communities. An even more fundamental deficiency was the program's failure to generate local participation in decision-making and a sense of local-level proprietorship. The little in the way of revenues which did find its way back to source communities was regarded as a government handout, conveying little sense of the relationship between the receipts from, and the management of, the resource.

Aware of the deficiencies of this programme and encouraged by the Government of Zimbabwe's policy commitment to localized planning and implementation in the development process, DNPWM produced a new programme in 1986 entitled CAMPFIRE ("Communal Lands Management Programme for Indigenous Resources"). The scheme seeks to:

- obtain the voluntary participation of communities in a flexible programme which incorporates long-term solutions to resource problems;
- introduce a system of group ownership with defined rights of access to natural resources for the communities resident in the target areas;
- provide the appropriate institutions under which resources can be legitimately managed and exploited by the resident communities for their own direct benefit;
- provide technical and financial assistance to communities which join the programme to enable them to realize these objectives.

A key mechanism in the strategy to achieve success for the CAMPFIRE programme is the use of the provision for the conferment of 'appropriate authority' status on district councils contained in the Parks and Wildlife Act cited above. This conferment is accomplished through a straightforward gazetting of the decision by the Ministry in regard to the relevant district council and has the effect of allowing the council to be in direct receipt of safari revenues and in general to determine wildlife exploitation regimes for the benefit of the people it represents.

It also places on councils the responsibility for controlling illegal hunting, dealing with problem animals, devising compensation schemes for crop and livestock losses and generally ensuring that the objectives of CAMPFIRE are achieved. The conferment can be provisional, and in all instances DNPWM reserves the right to set offtake quotas. DNPWM is anxious to implement the

utilization of this mechanism as rapidly as prudent oversight will permit, seeing it as a critical first step in the achievement of the CAMPFIRE programme. In January 1989 two district councils, Nyaminyami and Guruve, received appropriate authority status and a number of other district council applications are under consideration, including those from Tsholotsho and Hwange. Applications from the Bululima Mangwe and Binga District Councils are also anticipated. District councils are also keenly interested in receiving appropriate authority status, seeing it as a channel for increased autonomy in local affairs and as a means of increasing their ability to service the development needs of their constituent wards.

B. Socio-Political Feasibility

The proposed project is contextualized firmly within the CAMPFIRE programme outlined in the introductory section above, and the text makes it clear that the project is viable in the context of Zimbabwe's current socio-political environment. It is based on an evolved experience which has included considerable experimentation. It is consistent with Government's policy stance on decentralized planning and management, as evidenced by the President's Address to Parliament of 24th June 1987 which contains the statement, "With regard to wildlife management, it is my Government's intention to extend this responsibility to the communal people through the management of indigenous resources." It is consistent with current Zimbabwean policy directions on environment conservation which have as their central insight that this is only viable when it is undertaken by relevant populations as an investment in a sustained programme of resource exploitation. These policy directions have the further insight that the 'relevant populations' are those who live within the micro-environments which sustain the natural resources concerned, who pay the price for their sustained maintenance and who must reap the benefits of this investment. Viability of the project is further enhanced by a legal framework, through the Parks and Wildlife Act and the District Councils Act, which provides the essential components of proprietorship and authority on a decentralized basis. The project has the active support of the relevant Government ministry and the district councils themselves. Within the current Zimbabwean context the socio-political and legal climate is therefore extremely favorable for the success of the project.

C. Socio-Cultural Feasibility

A social soundness assessment of a community-focussed project cannot, however, rest solely on macro-structural considerations of a socio-political and legal nature. For any programme involving communally-based utilization of wildlife resources attention must be given to salient cultural perspectives, to economic motivations, to the issue of potential for socio-economic stratification and differential benefit for different categories of persons, and to local institutional capacities for management and self-regulation. These issues are discussed below.

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(1) Cultural Perspectives

The project's rationale, and that of Zimbabwe's CAMPFIRE programme, rightly places emphasis on economic benefit as a central motivational dynamic in the proposals. This should not however be allowed to obscure the fact that traditional, pre-colonial Ndebele and Shona cultures provided an environmental ethic which considered the land and its natural resources as communal property requiring communal husbandry and a sharing of benefits. This ethic was articulated largely through a set of religious beliefs and practices, positioning the ancestral spirits as guardians of the land and exercising control over its use through religious proscriptions and messages conveyed through spirit mediums. Hunting of wildlife was regulated in this manner, with game animals regarded as being an integral part of an ancestral heritage to be preserved. Few taboos over the eating of game meat, with the exception of a person's totem, existed; the proscriptions were directed rather towards hunting activities which benefitted only individuals to the exclusion of community interests. As mentioned earlier, this ethic of communal proprietorship was largely suppressed by the policies of the colonial era. Its cultural matrix still exists however, and the project proposals have no incompatibility with their Shona or Ndebele cultural traditions. On the contrary, they provide a useful fulcrum for the revival of a healthy environmental consciousness with roots in indigenous perspectives.

(2) Economic Motivation

At community and household levels, economically motivated perspectives on wildlife utilization in communal lands must be examined within the context of the dominant production mode, which is small-scale subsistence agriculture incorporating livestock, supplemented by some cash-cropping and wage labor inputs predominately by males. The demands of household economies are those usual under subsistence agricultural conditions: food, shelter and clothing, augmented by the need for cash contributions from the household to community services such as schools, clinics, transport services and other infrastructural community requirements. Wildlife, given its alienation from the community through the "King's Game" concept, is not regarded widely as a resource although it has been exploited covertly through subsistence poaching. Under these circumstances wildlife is generally regarded as a liability rather than an asset, a component in the environment that threatens agricultural production through crop damage and livestock losses. There is further a fear of dangerous animals, sometimes justified by incidents of injury or death in the community due to wild animals.

A further possible change to communities contemplating wildlife utilization schemes is the opportunity cost involved in assigning land to wildlife rather than cattle grazing. This issue is sometimes raised by perceptive community members and is in fact taken into consideration by preliminary plans by the Tsholotsho District Council, which project the use of some unoccupied land for communal grazing and some for wildlife. The comparative advantage of livestock, wildlife or multi-species regimes of specific micro-habitats available to communities requires careful determination by ecologists, a task

which will fall to the DNPWM specialists designated in the project. District Councils and community authorities have little technical basis for making such determinations although their hands-on experience of their environment may provide shrewd and valid insights. The implication is that project implementation must include careful consideration of these issues, and further that planning for wildlife utilization will be contextualized within broader land use planning in the communal lands concerned.

Given the perceived and potential costs of a wildlife presence in communal lands, it is not surprising that many community members, both in Matabeleland North and elsewhere in Zimbabwe, state a preference either for the eradication of wildlife or its removal to adjacent national parks. It is perhaps more surprising that many others receive proposals for wildlife utilization schemes with cautious if somewhat skeptical optimism. Perceived potential benefits include: the provision of meat through cropping or local hunting; incomes from safari hunting for collective community benefit; dividends distributed at individual or household levels from the same source; and the generation of local employment. Of these incomes for collective community use figure most prominently in peoples' minds, possibly because of the few examples provided through Government's earlier initial programme of returning receipts to councils. When councils have used these monies to build, e.g. school buildings in relevant communities, there has been a marked shift in local attitudes. In the Guruve District, for example, a pair of attitudinal studies conducted 12 months apart show an increase in favorable attitudes to a wildlife presence from 40 percent to 85 percent, a school in the community having been built from wildlife proceeds in the intervening period. It seems clear that there is a general willingness on the part of communities to experiment in wildlife utilization, coupled with some skepticism as to whether, if the potential is realized, they will be allowed to directly benefit themselves.

A fundamental component of the project must therefore be to ensure that benefits accrue to the communities bearing the cost of wildlife production. This policy is espoused by DNPWM and accepted by district councils, but its monitoring should be a central function of the project. Success models in this regard are required and will, if present, have a significant spread effect for the programme in other communities and communal lands. Similarly, as benefits are maximized for wildlife-producing communities, costs should be to the greatest possible degree minimized. This implies the provision of electric fencing for crop protection, which is an item budgeted in the project. It also implies a compensation scheme for crop and livestock losses, which should be a charge against revenues and the responsibility of councils and communities.

(3) Equity Issues

Like any valuable resource, wildlife has the potential to become a mechanism for inducing differential access to wealth and other benefits at individual, household and community levels. Indeed at intra-council levels the project has as a fundamental principle the concept of differential cost and

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differential benefit for different wards. This however poses no fundamental problem of equity since the wards concerned are generally the more impoverished within the communal lands and the principle is essential for the motivational dynamics concerned. Attention is given here rather to the possibility that the project will unintentionally encourage intra-community socio-economic stratification and differentially benefit different categories of persons within communities. The most salient of these categories are discussed below.

(a) Entrepreneurial individuals or households. It is unlikely that the project will have the effect of allowing enterprising individuals or households to capture disproportionate benefits; indeed the nature of the wildlife resource is such as to make it particularly consonant with collective management and collective benefit. Under the conditions of Zimbabwean communal land tenure, households carry out their arable agricultural activities on land to which they have exclusive and permanent access, in de facto if not de jure terms. Thus the linkage between the resource base, labor and capital inputs, yield and income, is tight and explicit and provides a strong motivation for efficient and energetic labor and management practices. Arable production and income is in effect 'privatized' to the household level with generally effective results, even if it is attended by the consequences of inequality between household incomes. Cattle production presents a somewhat different picture. Cattle ownership is also privatized to household and individual levels but in this case the resource base, the grazing commonage, is a communal asset to which the household shares access with other households in the community. This use of common property for private production creates its own set of problems familiar to students of the 'Commons Debate' and is the cause of considerable socio-economic stratification in Zimbabwe's communal lands. Wildlife is also common property, but in this instance the nature of the resource militates against any claims to personal ownership or unequal benefit. Wildlife production therefore has an advantage over cattle production in terms of equity objectives and in the communal land context largely excludes the problems of privatized access to common property engendered in cattle production.

(b) Ethnic Groups. The project is unlikely to produce impacts differentially benefitting ethnically defined groupings in the population. Tsholotsho and Bululima Mangwe are ethnically homogeneous, the populations being almost totally Ndebele. Hwange is ethnically heterogeneous containing Nambiya and Ndebele populations, but there is no evidence to suggest that this differentiation has influenced the economic or social status of the two identities. Binga is almost totally Tonga. There is, however, one exception to the generalization made above. A population of perhaps 300 - 500 bushmen live in the western portion of Tsholotsho, in wards targeted by the district council for project activities. The interests of this population, which has utilized wildlife on a sustainable if illegal basis for generations, should be given special attention with efforts made to use their skills and labor in the management of wildlife. Within the climate of Zimbabwean political perspectives it would be inappropriate to target this population in purely ethnic terms, but the necessary consideration can be provided by giving project attention to the traditional occupants of the wards concerned.

(c) Women's Interests. It is unlikely that the project will have a direct impact augmenting women's participation in programme management, given the general male dominance in community decision-making currently prevalent in the communal land context. Nor would it be prudent to build into the project design any specific requirements in this regard. Progress in levels of women's participation in project management is however likely as part of a general evolution in the political and management roles of women in communal lands, which has shown significant movement in recent years. It is of note that the counsellor for Ward Seven, central to the Tsholotsho project, is a woman. The project will in fact augment shifts in the current structure by opening up new activities in which women can play a leadership role. The same can be said of the beneficiary impact of the project on women. Little direct and immediate benefit for women is likely since job opportunities generated by the project at community levels will probably be taken up by men. Indirectly however women stand to benefit considerably. Provision of local employment for men will benefit women in that the presence of husbands in the home will make them available for agricultural tasks that migrant labor precludes, and increase the likelihood that their incomes will be used for household needs. Community incomes for the provision of schools, boreholes, clinics and grinding mills will meet needs which rate high on women's priorities and reduce demands on their time and labor. In the longer term there is scope for women's employment in, and management of, the processing of game products. These benefits are not trivial, and it should be noted that the fact that they are labelled 'indirect' does not necessarily imply that project impact is gender-discriminatory, since most project impacts on men are similarly indirect, with the exception of local employment generation. Finally, it should be noted that, by opening up a new complex of economic activities centered on wildlife exploitation, the project will increase the potential for women to be participants in and the beneficiaries of a range of collective community activities in a development which loosens tradition-based stereotypes of gender roles. This can be encouraged by extension and training activities which are addressed in the project components.

(d) Interests of Youth. Male youth are, in terms of direct benefit, likely to constitute the group most immediately and positively impacted by the project. They will provide the bulk of services required at community levels in implementation, being provided with employment as game scouts and game guards, as electric fence attendants and technicians, and in the range of jobs required by safari operations. This is appropriate since expressed felt needs in both Tsholotsho and Hwange consistently place concern over the unemployment of young men as a prominent consideration. More broadly, the project will benefit youth of both sexes in sharpening their perspectives of the environment and its importance for cultural and economic growth.

D. Communal Capacities for Self-Management and Self-Regulation

(a) Current Capacities. Being a scheme for the management of a resource which, in recent generations has been alienated from communal land authority, the project requires institutional structures and an evolved experience in the

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general management of collective affairs as a base on which management structures specific to the programme can be built. Fortunately in the Zimbabwean situation several years of experience in district-level administration has provided this requirement at the council level, and the project team was impressed in its interviews with district councils by the grasp of general issues, the knowledge of administrative procedures and the experience in consultative decision-making exhibited. Experience in fiscal budgeting and accounting was also in evidence, and it is clear that at the council level a good foundation for self-management in respect to wildlife and natural resources already exists. At community (ward and village) levels the current situation is less positive, corresponding between traditional and modern democratic authority structures being less definitive and communication between wards and councils inhibited by a lack of constant contact. This situation arises not out of any inherent incapacity at ward and village levels but rather from the lack of experience and motivation which the non-proprietary context in which these authorities currently operate fosters. Evidence from elsewhere in Zimbabwe indicates that when a genuine authority and proprietorship of natural resources has been introduced at ward levels local leaders have responded with environmental insight and considerable skill in the handling of micro-political processes.

(b) Potential Capacities. The project potential for augmenting self-management capacities at both council and community levels is one of the strongest indicators of its social soundness. Wildlife utilization, with its potential for the provision of relatively immediate, direct and substantial revenues, can in fact act as a catalyst for the development of a spectrum of management capacities relating not only to wildlife but also to a range of other development objectives. To date district councils have generally had very limited access to locally-generated revenues and are to a great extent reduced to being local government extensions of central government bureaucracies. Wildlife revenues have the potential to turn councils from being only administrative and political institutions into economic institutions as well, with greatly enlarged scope for performing developmental roles in the areas they serve. The same applies to ward-level authority structures, provided that revenues are devolved to this level. This provision emphasized the importance of council-ward communications and negotiations in project implementation. The development of successful mechanisms to achieve this end will be one of the most important functions of the project and progress in this dimension should be carefully monitored.

(c) Self-regulation and poaching issues. Sustainable exploitation of the wildlife resource base is one of the major objectives of the project and concern has rightly been expressed about the capacities of communities to devise and implement regimes of control which prevent exploitation serving only individual interests and inimical to the collective interest of the community. The project's rationale, laying emphasis on collective community self-interest with both inclusionary and exclusionary elements, is sound and properly identifies the central motivational dynamics involved. While it is true that any authority structure must have ultimate recourse to coercive mechanisms control of poaching must largely rest on pressures exerted by

collective community opinion reinforced by a sense of personal and community loss if private off-take is permitted. This mode of producing conformity through community consensus is well established in Africa cultures and is both efficient and cost-effective. The evidence of experiments in Zambia and elsewhere in Zimbabwe supports this contention. This applies particularly to poaching for localized meat consumption, but the dynamic involved will also benefit measures against more serious commercial poaching in that local communities will become active allies of law enforcement agencies charged with the suppression of this activity.

E. 'Spread' Effects

The potential for the diffusion of the principles, procedures and structures of the project is high, particularly to communal lands with significant wildlife populations. Evidence for this assertion is already available, in that the initiatives of the Tsholotsho and Hwange District Councils are themselves the product of experiments elsewhere in Zimbabwe. Further evidence is provided by the fact that the requests from the Bululima Mangwe and Binga District Councils for inclusion in the programme have rapidly followed on from planning in Tsholotsho and Hwange. One reason for this rapid escalation in interest is that the project components address a set of problems and potential which are common in their general profile, if different in their specifics, throughout communal lands in Zimbabwe where arable agriculture is rendered marginal by ecological considerations. In this diffusion of interest and insight the regional workshop activities of the Zimbabwe Trust have played an important role, and provision is made in the project components for continued activities of this type by ZimTrust.

F. Potential Obstacles and Problems

The text of the preceding sections makes it clear that the project is socially sound and institutionally viable. Attention is drawn in this section to potential obstacles to success. Among these are factors falling largely outside the project design, as follows:

(a) Dissident Activity. Both Tsholotsho and Hwange are in a region of Zimbabwe which up to the end of 1987 was plagued by dissident activity and political strife. The Unity Accord achieved by Zimbabwe in 1988 has dispelled this problem and the political and security climate in Matabeleland North is now favorable for project implementation. This potential problem is thus raised here only to be dismissed.

(b) Competing claims for grazing land. Much of the land targeted for wildlife utilization by district councils is seen in some circles as potentially viable for livestock grazing, and project implementation may precipitate some conflict on this issue. This potential conflict can be of benefit to the project if it engenders further ecological research on optimal regimes of land use and council and community debates on the same subject.

As advocated earlier, the project should be related to broader land use planning in the communal lands concerned and lead to holistic programs of natural resource management throughout the areas involved.

(c) Competing claims for unoccupied land. Unoccupied or sparsely settled lands targeted by district councils for wildlife utilization may, in certain regional or national political circles, be regarded as convenient dumping grounds for the resettlement of persons living in overcrowded communal lands elsewhere or those with no place to go after lives of employment in wage labor. The ecological unsoundness of such a perspective is something of which the Zimbabwean Government is well aware, but a danger exists that effective controls on unplanned or politically expedient resettlement may occur before effective controls are in place. The project contains components which can directly assist in the resolution of this issue, particularly since it should contribute to a sense of finiteness in the resource base among communities and councils. It is important therefore that communities and councils give attention to structures regulating access to membership in the resource communities involved, and that the project provides a forum for continuous monitoring on this issue by the government ministries concerned.

Within the project design itself certain potential problems have been identified in this text and certain provisos for successful implementation stipulated. These include the linkage with broader land use planning, the provision of ecological research on optimal regimes of wildlife/livestock usage, the provision of schemes for problem animal control and compensation for crop and livestock losses, and effective negotiations mediating council and ward interests.

G. Implementation Issues

Implementation issues are dealt with in various sections of the Project Paper; comment here is confined to issues directly related to this social soundness assessment.

(a) Participatory action strategy. The basic design of the project is one of an 'adaptive management' approach, in which specific components are progressively evolved as the project develops. In its community-based components this approach requires the active participation of communities and councils in detailed planning and implementation. This implies a flexibility in project projections, allowing for a dialectic sequence of problem definition, option-identification and decision-making. The project design allows for this flexibility and is socially sound in this respect.

(b) The integration of agency activities. Successful implementation will require close coordination between implementing agencies, and between these agencies and the councils concerned. The implementation agencies (DNPWM, CASS and ZimTrust) have established effective modes of coordination which should be further strengthened through involvement in the project.

(c) Devolution of institutional responsibility. This issue relates particularly to the facilitative activities of ZimTrust in respect to the district councils concerned. The project design calls for a progressive shift in institutional responsibility from ZimTrust to these councils, which again is socially sound. Consideration should be given, perhaps at the point of mid-project review, for the payment of donor funds marked for some components of recurrent management expense directly to the councils concerned.

H. Social Soundness Assessment: A Summary

The project is found to be socially sound across the spectrum of relevant considerations. The socio-political context is favorable and the necessary socio-legal structures in place. No major cultural impediments exist and the project components are responsive to the economic and self-management aspirations of the target populations. Furthermore, these components are found to articulate effectively with the social dynamics currently present which provide the potential for effective regimes of environmental control and resource use at community levels. Administrative and institutional structures are present which provide a foundation for the management objectives of the programme. The project impact is considered to be consistent with the equity principles of the donor. The project has high potential for diffusion to other communal lands, and its potential impact is polyvalent, going beyond sustainable wildlife utilization to encompass broader and holistic natural resource management programs. Potential obstacles and problems have been examined and these are found to be challenges drawing on the potential of the project rather than intrinsic defects.

4.4 Environmental Analysis

4.4.1 Summary

The project entails the management of wildlife for the benefit of both people and the ecosystem on which they depend. The general effect will be to preserve regional ecology, especially selected wildlife species, through management of both the human and natural resources.

Potential environmental consequences could result from project related activities such as cropping, translocation, fencing, fire management, water hole development, illegal use control (protection) and tourists. Such activities were noted to have either a positive impact or are easily mitigated. The analysis cautions, however, that the above activities should be carefully monitored during the project life. A data collection plan is suggested with information to be collected and reported on an annual basis.

In addition to the activities noted above, annual reporting would also be useful for non-project activities such as processing facilities, and village resettlement.

The analysis did not identify any endangered species in the proposed management area. However, this item is suggested to be included on the monitoring list in the event any endangered plants or animals occur.

4.4.2. Environmental Assessment

A. Introduction

Perhaps the most fundamental tenet of wildlife management is that when you destroy a species' habitat, you destroy a species. Shakespeare knew the truth of this for as Shylock, the merchant of Venice, said, "You take my life, when you take the means by which I live." As basic and inarguable as this idea is, it does not speak to the most critical wildlife conservation issue of southern Africa. In large areas of this region, natural ecosystems remain largely intact, providing suitable habitat for the most remarkable diversity and abundance of large mammals on earth. But there is a very serious flaw in this picture--because of over-exploitation by people, these ecosystems are largely bereft of their unique assemblage of large mammals. This is a double tragedy. Not only is the world inexorably losing one of its finest natural treasures, but these people, compelled to over-exploitation by poverty, are destroying a resource that has, if properly managed, tremendous potential for rescuing them from their plight. The project described above is designed to intercede in this dilemma, and if successful it will have profound benefits for both people and the ecosystems on which they depend. However, no large manipulation of an ecosystem, no matter how benign the intent, is without ramifications for features of the ecosystems far beyond those targeted. The following environmental assessment explores the potential consequences of the proposed activities and, where possible, recommends ways they might be mitigated. It begins by briefly reviewing these activities and summarizing key features of the terrestrial environments of southern Africa.

B. Proposed Activities

While this project has many diverse facets it is all predicated on the idea of managing wildlife as a resource for human benefit. Wildlife management itself can be a diverse enterprise involving management of populations, habitats, and people and their interactions with wildlife; we will briefly consider each of these in turn, enumerating some specific topics that may have environmental consequences that require assessment.

Cropping (1) populations of large mammals such as buffalo, hippos, and impala to produce a sustainable production of meat and other products, and hopefully major revenues, is central to this project. Ideally cropping is a form of compensatory mortality that only replaces other types of mortality, such as starvation, and thus has little net effect on population size. If carried out on a substantial scale, it is also a population management technique because it can be a significant form of mortality and thus it may avoid problems of animals degrading their habitat through over-population. Often the term culling is used when the primary objective is to reduce a population that is too large. Translocation (2) (shifting animals from areas of high abundance to places where their populations have been eliminated) is also a form of population management that will comprise a small part of this project. Conversely, fencing (3) to prevent animals from moving into areas where

they are unwanted--because they might compete with cattle, damage crops, or carry diseases--is also a form of population management that will play a small role.

Wildlife habitat management is not explicitly an important part of the project as currently designed, but it is inevitable that managers will explore means to increase habitat quality and thus productivity. The oldest wildlife habitat management technique known is still commonly practiced in much of Africa--setting fires (4). Traditionally, people have set fires during the dry season in grasslands and woodlands with a grassy under story, because the green flush that follows is comprised of palatable grasses preferred by grazing animals. In some areas modern managers have superimposed a far more complex regime of fire management by, for example, setting cool early-season fires to prevent hot late-season fires, and burning blocks of habitat defined by firebreaks in a carefully planned rotational sequence. The most fundamental way to improve a terrestrial ecosystem's productivity is to assure that there are adequate nutrients and water, but fertilization and irrigation are generally far too expensive to use for wildlife management. One narrow exception is that creating water holes (5) in arid ecosystems can reduce the role of water availability as a limiting factor for many animals and thus increase their populations.

The human dimensions of wildlife management are usually by far the most complex and this project is no exception. If the utilization of wildlife is to be efficient and sustainable it must be controlled, and this means controlling illegal use (protection)(6). Controlling illegal commercial use by people who come from other regions to decimate high value species such as rhinos and elephants, is easily justified. Controlling local people who take game to supplement their diet is harder to justify but still necessary lest people, through their short-sightedness, "kill the goose that lays the golden egg." Tourists (7) who come to Africa to see, photograph, or hunt wildlife must also be managed because their activities and requisite facilities have the potential to affect wildlife and their environment.

Two types of activity, not specifically part of the project as currently designed, may well be developed in the latter stages of the project. Once wildlife utilization becomes a village-based industry, rather than the enterprise of a few individuals acting illegally, centralized processing (8) will be developed. This will involve converting carcasses into meat, hides, soap, and other products, activities which will consume firewood and generate wastes such as blood and brine that must be disposed of properly. The type of people management with the greatest social impact, and potentially significant environmental impact, is resettlement (9). Moving people from their traditional homes to a new site is a fairly common exercise in large-scale projects such as dam construction, but it is not to be undertaken lightly.

There are other activities described in this project paper--training, research, monitoring, planning, etc.--that have no direct environmental impact and will not be considered in this environmental assessment. As the economic status of rural communities improves, there could be a wide variety

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of environmental impacts depending on how people choose to spend their money. This could happen at the tribal or village level where monies might be spent on building schools, roads, bridges, or at the individual level where someone might choose to buy more cattle. An improved local economy might also stimulate immigration to the area, thereby further taxing local resources. Because it is difficult to predict how people will use their monies, (the scope is limited only by the people's imagination and funds), and because the impacts of the likely activities are well-known, these issues will not be addressed here.

C. The Southern Africa Environment

(1) Zambia, Zimbabwe, and Botswana

Although they occupy nearly two million square kilometers and reach from 27 degrees South latitude to nearly 8 degrees, Zambia, Zimbabwe, and Botswana do not have a particularly diverse climate. This is because their altitudinal range is quite modest (the range is about 300-2200m with most the land falling between 1000 and 1500m) and they are isolated from both the Atlantic and Indian Oceans (Fullard 1978). Annual precipitation ranges from about less than 250mm in the Kalahari region of Botswana to about 1500mm in northeastern Zambia, but most areas receive 500-1000mm. Throughout the region there are single wet (November-March) and dry seasons but the patterns of precipitation are quite complex. There appear to be cyclical patterns of droughts with a quasi-periodicity of 18 years, plus long-term changes, particularly in the temporal distribution of effective rain (Tyson 1986). Mean winter (July) temperatures range from 10-18°C with the coldest temperatures being experienced in the Kalahari where minima well below freezing occur. In the summer (January) the average temperatures reach range between 18-25 degrees C, with the hottest being in the Kalahari.

The vegetation of the three countries reflects climate, physiography, soils and the history of fire, herbivores, and people, but climate is the dominant factor at a macro-scale. Thus, at a coarse level of resolution, the vegetation can be assigned to just three types, depending on whether or not trees, shrubs, or grass are dominant. Most common are the woodlands that are widespread in the region, except in the Kalahari areas of central and southwestern Botswana where there is insufficient rainfall to support trees. These woodlands are comprised of small (usually less than 10 m) deciduous trees, typically forming a canopy open enough to have a well-developed grass or shrub stratum. Two common subtypes are miombo woodlands dominated by Brachystegia, and mopane woodlands dominated by mopane trees (Colophospermum mopane). The second most common type are the shrublands; they dominate most of the Kalahari for, although this area is too dry to support trees, it is not a true desert and thus has a well-developed vegetation. Shrublands occur in other areas as well; for example, mopanes of shrub stature form distinct ecosystems in many places. Grasslands can be thought of as a transition type between the woodlands and shrublands, although this is a gross simplification and ecosystems dominated by grass--some large, some small--occur in a patchy mosaic with other ecosystem types, rather than as a distinct transitional band.

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An even simpler classification has been proposed by Huntley (1982) that calls virtually all the region's vegetation savanna then distinguishes between moist/dystrophic savannas, in which the rainfall is above 650mm and the soil has been leached of calcium, magnesium, potassium, and sodium, versus arid/eutrophic savannas that are dried and have more nutrients. Both classifications overlook minor vegetation--marshes, riverine forests, and more--that may not be important at a geographic scale, but are often critically important habitat for a unique biota. Overall, the region undoubtedly supports many tens of thousands of plant and animal species, but the status of most species, apart from vertebrate animals, is not well-known. (Appendix 1 lists those species considered by the IUCN to be globally threatened in Zambia, Zimbabwe, and Botswana.)

(2) Environmental Consequences

In this section the potential environmental consequences of each of the activities described above will be examined. However, before doing so three overarching issues need to be considered.

D. Overarching Issues

(1) Wildlife Versus Game

There is a growing support for a definition of wildlife that goes beyond a traditional focus on game mammals and birds to include all forms of life that are wild. For example, the 1986 supplement to the Oxford English Dictionary defines wildlife as "the native flora and fauna of a region," and this definition is used by the government of Zimbabwe. However, in practice, most wildlife management agencies still restrict their purview to terrestrial vertebrates, especially large mammals, and thus their approach to the larger issue of biological diversity is largely limited to dealing with those species of mammals, birds, reptiles, and amphibians that are endangered components of the entire biota. This traditional, narrow perspective on wildlife management is reflected in this project paper for some salient and sensible reasons: first, southern Africa's game animals are a natural resource of great potential; and second, certain species, most notably the black rhinoceros, are among the most critically endangered elements of the earth's biological diversity. However, this emphasis on game management has certain consequences for biological diversity management. For example, it reverses the normal flow of the coarse-filter/fine-filter approach to maintaining biological diversity (Fig. 1) by putting primary emphasis on a fine-filter species, the elephant, and relegating the coarse-filter approach to a secondary role.

This raises questions such as: will an emphasis on elephants and other game mammals mean short shrift for ecosystems with limited large mammal populations? For example, the four target areas selected in Zambia are all important sites for large mammals, especially elephants; Zambia's important wetland areas were not targeted (Sayer and Lavieren 1975). In Zimbabwe, as in most of Africa, montane forests have not been given adequate protection

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(Huntley 1978, Stuart 1981). Furthermore, will manipulating large mammal populations and habitats have a negative impact on other species that share the same environment? For example, in Botswana's Chobe National Park, elephant populations have severely degraded the riverine woodland vegetation along the Chobe River, while a few hundred meters from the river the vegetation has been modified by elephants, but not badly degraded (Simpson 1978). Overall the elephants have not exceeded the ecosystem's carrying capacity for elephants; their population is still increasing. This may be an acceptable situation for the elephants, but for species directly dependent on the riparian zone -- herons, fish eagles, crocodiles, monitors, otters, and others -- the elephants have practically eliminated their habitat, one of the least common ecosystems in the area (SMEC 1989). (Also see Anderson and Walker [1974] and Guy [1981]). Furthermore, depending on the relationship between the riparian zone and the river, this impact may well extend to the aquatic ecosystem and its fisheries.

Fortunately, the consequences of focusing a disproportionate share of the management efforts on elephants are minimized for two reasons. First, the elephant is a habitat generalist with large home ranges, and thus any attempt to manage an elephant population will inevitably involve maintaining large areas, and probably a variety of ecosystems, in a natural state. Second, the elephant is a classic example of a flagship species around which public sentiment can be rallied and conservation efforts initiated, which will have a positive effect on a broad spectrum of species.

Incidentally, beyond their ecological roles there are also economic benefits to be derived from smaller forms of wildlife--guinea fowl, medicinal herbs, silkworms, edible insects--that may represent an important resource, especially for women. Some activities based on these less conspicuous forms of wildlife are included in the project design.

(2) Elephants

As George Orwell wrote in "Animal Farm," "All animals are equal, but some animals are more equal than others," and this is certainly true of the African elephant. Economically, its tusks and meat make it a very valuable resource, while in some areas it can be a significant agricultural pest. Ecologically, it can have a profound influence on ecosystems by consuming trees, dispersing seeds, excavating water holes and salt licks, opening trails, etc. Culturally, it is a spectacular species known and valued by people throughout the world. These facts, plus precipitous declines in populations in many parts of Africa, have made the elephant a primary concern of conservationists. Moreover, the complexity of elephant management has created a rather controversial affair, encapsulated in the simple phrase, "the elephant problem".

In brief, the elephant problem can be boiled down to two opposing views. The wildlife manager's view: Elephant populations should be culled to keep them from severely modifying their environment through excessive browsing (Laws et al. 1975, Cumming 1981). The wildlife preservationist's view: Elephant

populations should be allowed to modify their environment, even though this may ultimately lead to degradation of their habitat and a subsequent population crash, because such "boom and bust" cycles are a natural phenomenon (Phillipson 1975). Concomitant with these perspectives are two opposing views that see the elephant as a renewable resource to be harvested versus a special species that must be diligently protected.

Obviously, some components of this project are predicated on the idea of using elephants as a sustainable resource and keeping populations within the carrying capacity of their habitat. It is necessary to define 'carrying capacity' here because much of the controversy over elephants revolves around ambiguity over this term. The carrying capacity of an ecosystem for elephants is the maximum number of elephants that an ecosystem can sustain over an extended period. Some people would define carrying capacity as the number of elephants an ecosystem can sustain without being significantly modified by the elephants, but this is not consistent with a strict definition of carrying capacity. Elephants modify an ecosystem at population densities that are much lower than the densities at which they begin to exceed an ecosystem's ability to support elephants. This dichotomy of definitions can be viewed another way. If one thinks of an ecosystem narrowly as elephant habitat, degradation does not occur until the carrying capacity of elephants is exceeded. However, if one thinks of the ecosystem as habitat for other species, degradation occurs when changes effected by the elephants begin to negatively affect the ecosystem's carrying capacity for those other species.

Thus wildlife managers in southern Africa advocate keeping elephant populations below their carrying capacity for three reasons. Most important is concern for species other than elephants. Second, if elephants do exceed the carrying capacity of their habitat it may take a very long time for the habitat to recover. Finally, the maximum harvestable surplus of elephants can be obtained when the population is at approximately half the carrying capacity.

In some parts of southern Africa, keeping elephant populations below carrying capacity may involve significantly reducing elephant populations. Therefore, if those people who maintain that elephant populations are naturally cyclical are correct, human control of elephant populations could alter long-term ecosystem dynamics by preventing a cycle of natural disturbances and succession (Caughley 1976). This is analogous to arguments about fire as a natural disturbance factor in forest ecosystems, which was recently exemplified by the controversy in Yellowstone National Park. Among professional ecologists and resource managers the importance of disturbance regimes and succession is widely recognized, but in much of the world, the general public still labors under a "Smokey, The Bear" attitude toward disturbance. In this case, it is unclear whether or not the phenomenon even exists, let alone what it's consequences are.

While it may not be possible to say definitively which view is correct, the issue deserves further explanation. It seems likely that in the past elephants did exceed the carrying capacity of their habitat, at least

occasionally, but the key questions are: (1) how intensively did they alter their habitat, and thus how long did it take for a given site to become suitable habitat again?; and (2) how extensively did they alter their habitat, and thus did they have the opportunity to mitigate the impact by moving to new areas. These two questions can be combined to ask: was there a cyclical pattern of using a sequence of areas intensively then moving on, not returning to the first area until it recovered? This idea is quite plausible, but it has not been documented, perhaps because the likely scale of the phenomenon -- thousands of square kilometers and decades or centuries -- would make it difficult to detect. Even if elephant routinely degraded their habitat in the past, it is very likely that modern occurrences of elephant over-population are more common and more intensive, because human activities have concentrated elephant populations into small areas and prevented them from moving in response to habitat degradation. In short, the realities of current conditions are such that, even if it were demonstrated that over-populations of elephant are part of a natural pattern of disturbance and succession, this should not negate the idea of culling populations to keep them within the carrying capacity of their habitat. This said, the issue does warrant further investigation.

(3) Local Control of Wildlife Management

Although wildlife management finds its historical roots in the practices of game-keepers, it evolved into a scientific discipline early in the 1930s when it was infused with ideas from the emerging science of ecology. Today, the entire tool kit of wildlife management techniques, and the research and monitoring upon which they are based, presents a rather complex array, but fortunately, one does not have to have the entire kit to undertake sound wildlife management. The ability to undertake wildlife management is an issue for this project because it proposes shifting significant responsibilities for wildlife management to local governments that do not have a staff of professional wildlife managers. Obviously much can be done to alleviate this problem: for example, local people can be taught the basic principles and techniques of wildlife conservation; they can be given advice on a regular basis, on both wildlife management and negotiating with private entrepreneurs; and complex responsibilities can be retained by central authorities. It should be recognized however, that with responsibility comes the latitude to make mistakes, and some will happen. Hopefully, there will be sufficient foresight by central authorities that the mistakes will be minor and quickly rectified.

E. Project Activities

(1) Cropping

To establish a cropping regime, one first needs to have reasonable estimate of the carrying capacity of the ecosystem; that is the population level of a given species that can be sustained over an extended period. To determine carrying capacity with accuracy requires a sophisticated knowledge of an

animal's population dynamics and how these are affected by interactions with forage, prey, predators, competitors, and other features of the biological and physical environment. At the other end of the spectrum are estimates of carrying capacity that group all large herbivorous mammals together and estimate the total biomass that can be sustained, based on rainfall (Cumming and Taylor unpublished manuscript, Coe et al. 1976, Bell 1982, East 1984). The former approach is expensive, the latter susceptible to erroneous assumptions. If the latter technique is used and mistakes made, there could be a negative impact on game populations and their ecosystems. Obviously, this can be mitigated by doing the requisite work to make more accurate assessments of carrying capacity. Simply being conservative and cropping fewer animals may not be wise. Indeed, in many instances it is better to over-harvest than to under-harvest, because if too many animals are removed a healthy population will soon recover, but if too few animals are removed and the carrying capacity greatly exceeded, it may take a considerable time before the environment recovers.

Once the carrying capacity is known, it is relatively straightforward to monitor population size and use reasonable assumptions about mortality and natality rates to estimate how large a harvestable surplus will be generated each year. Restricting harvests to this level may present logistical difficulties. One needs to know the extent of the illegal take, and, in the case of mobile species such as wildebeest, one needs to account for harvests made in other areas. Furthermore, if the offtake is being sold commercially, not just used for local subsistence, the temptation to respond to markets needs to be moderated.

Besides assuring that levels of cropping are appropriate to a population's size and intrinsic rate of increase, other issues must be addressed. First, one also needs to consider the social structure of the animals being harvested. For example, if the matriarch or patriarch of a group is removed it may lead to undue stress to the remaining animals. For this reason it is common practice to remove an entire group of elephants. Thus, it should also be assured that each local unit performing cropping has adequate firearms and marksmen to eliminate whole herds at once, quickly and humanely. This may not be necessary for less social species, but the issue should be considered. The territorial behavior of animals also complicates the cropping issue. For example, Zambia's ADMAD program is currently studying the spacing patterns of Luangwa River hippos to determine how harvesting from one shore will affect hippos on both sides of the river.

If harvesting affects one age class or sex more than another, its impact on the overall population structure must be evaluated. This is not to say that cropping should be designed to have no impact on population structure. In many instances it may well be desirable to harvest a disproportionate number of one age-sex class because it can be done with less impact on overall productivity. For example, because most mammals are polygynous it is often possible to remove far more males than females with little impact on natality rates. Obviously, this kind of manipulation requires a fairly sophisticated understanding of a species' population dynamics and social structure, but if

this understanding is lacking there is always the fall-back position of removing members of each age-sex class proportionately. Even in this fall-back position it should be noted that, to some degree, mortality through natural selection will be replaced by artificial selection. Are the individuals most likely to succumb to starvation, disease, or predation, the same ones most likely to be cropped?

Another issue is the topic already discussed above with regards to elephants. To the extent that culling is used to smooth out population cycles it is interfering with a natural process. Interfering with a species, like the elephant, that has a profound impact on its environment may have many ramifications. The elephant discussion need not be reiterated here, but it should be noted that other species, hippos for example (Thornton 1971), may also have a significant effect on their habitat.

Although this project focuses on the cropping of large mammals, other uses of wild plants and animals will be promoted and it must be assured that these cropping schemes are also sustainable. This is not necessarily the case currently. For example, in Botswana, good markets for grapple plants (exported to European pharmaceutical industries) and mokola palms (woven into baskets) have severely diminished populations of these species in accessible areas. Coping with this problem may prove difficult because the use of plants and smaller animals, often called veld products, is considered a free right by long-standing tradition.

(2) Translocation

An extensive survey of mammal and bird translocation efforts in North America, New Zealand, and Australia concluded that the failure rate was extremely high, primarily because the recipient areas were seldom prime habitats and thus the modest numbers of animals translocated were not able to form viable populations (Griffith et al. in press). This is not an environmental impact per se, except that it amounts to a waste of monies that could be used on other environmental projects, and a waste of the lives of the translocated animals. The latter does become a serious environmental issue when the translocated animals are members of an endangered species. The proposed translocation of 5,000 impala from areas of Zimbabwe where their populations are too high to the Hwange Communal Lands is likely to be successful because the habitat is suitable and the number of animals involved is very large. In general, translocation of large mammals in Africa has been fairly successful (Penzhorn 1971).

Translocation also opens the door to introducing animals to areas where they have never existed. Many species have been moved around the planet, often with disastrous results (Elton 1958, King 1984). For example, two exotic large mammals, red deer in New Zealand and wild boar in the United States, now must be controlled at great expense.

(3) Fencing

Some of Africa's large mammals move long distances each year or at longer intervals in response to the changing availability of water and palatable forage. If fences bar their routes the results can be very severe; in the last decade over 100,000 wildebeest have died when droughts forced them to move from the central Kalahari north toward the Okavango Delta, and their route was blocked by the Koke fence (Owens and Owens 1983, Williamson et al. 1988). Fortunately, these migration routes are largely traditional and thus this problem can be mitigated through careful planning if the political will to do so is present. Research is needed to understand both episodes of movement in response to drought, and how they affect the long-term balance between a population and its habitat. The need for fences as a means of disease control should also be investigated because the transmission of disease between cattle and wild ungulates is not well understood (FGU 1989).

The idea of deliberately restricting the mobility of animals directly contravenes a maxim of conservationists that has received considerable attention in recent years. In much of the world, human developments have fragmented environments into units that are too small to sustain viable populations, especially of species that have large home ranges such as large mammals. The inability of species to move among these fragments and the resultant genetic inbreeding make habitat fragmentation a proximate cause of extinction and thus it has been suggested that habitat corridors be provided to allow animals to disperse among these habitat fragments (Noss 1987). Proposals for fencing should be carefully evaluated from the perspective of de facto isolation of small populations.

The actual construction of fences poses a problem because trees large enough to make fence posts are scarce in some environments; indeed in the Ngamiland District of Botswana people travel up to 30 kilometers to find trees for posts (Gibson 1988).

It should be noted that fences can benefit wildlife by keeping cattle out of areas designated for wildlife, and that not all fences have a measurable negative impact. For example, the veterinary cordon fence completed in 1983 along the western edge of the Okavango Delta has apparently had little effect on wildlife (SMEC 1989). In fact, its net effect may have been beneficial because it prevented incursions by cattle into the Delta region.

(4) Fire

The primary goal of fire management in Africa is to maintain the types of habitats favored by large mammals (more often cattle than wild mammals) and to improve the quality of their forage (Edwards 1984). This narrow focus leaves room to question the impacts of fire on other animals and plants plus environmental features such as long-term soil fertility (as mediated by nutrient concentrations, organic matter content, and soil structure) and air quality. It is easy to dismiss these concerns knowing that: (1) lightning-generated fires have probably always been a regular phenomenon in

grass-dominated ecosystems; and that (2) where ever people have inhabited grasslands and woodlands, they too have routinely set fires, perhaps since they first acquired the use of fire. Nevertheless, it is worth asking if the frequency, intensity, or types of fire have changed in recent years because of a change in human behavior or an increasing density of settlement.

This is a very complex topic because fire is not a monolithic ecological event; its impact is very much dependent on the varying climatological and ecological circumstances under which it occurs (Booyesen and Tainton 1984). With this caveat in mind, at least two generalizations can be made. First, changing the fire regime significantly will probably change the type of ecosystem. For example, increasing the frequency of fires will generally favor grass and shrub regeneration over tree regeneration, and thus in the long-term it will promote grasslands and shrublands and their associated biota over woodland or forest ecosystems. It may also effect a shift to fire-resistant grass species, which tend to be less palatable.

Second, all fires produce by-products that have been linked to problems of global atmospheric pollution, notably carbon dioxide, carbon monoxide, methane, and ozone. Indeed, a recent study by atmospheric scientists at the Max Planck Institute for Chemistry in West Germany indicate that African savannah fires generate three times as much of these gases annually as the fires set by farmers and settlers in the Amazon and other parts of South America (Simons 1989). This figure should be put into perspective: World-wide only a third of carbon dioxide comes from the burning activities of rural people; two-thirds is from industrial consumption of fossil fuels. It is also not clear which will produce more gases: several light, annual fires, or a single heavy fire that will inevitably occur after several years of fuel accumulation.

(5) Water Holes

Because availability of drinking water is often a limiting factor for animals in arid and semi-arid ecosystems, creating artificial water holes can increase the populations for some species. The drawback to this technique is that concentrating animals in a restricted area may have serious impacts (Ayeni 1975). Excessive use of nearby vegetation is the most obvious impact; often water holes are surrounded by a broad zone largely devoid of vegetation. This impact is especially striking because water holes are often placed in areas where large mammals are normally only found during wet seasons, thus allowing them to expand their dry season range. Concentrations of animals often invite disease and poachers and tourists, and may alter the balance of predation and competition, both among wild animals and between wildlife and cattle.

One obvious mitigation technique is to diffuse the impact by having many water holes so that no one of them is used excessively, but this becomes an expensive proposition, especially in places where wells are so deep that diesel pumps, rather than windmills or solar-powered pumps, are required. This approach has been used in Hwange National Park in Zimbabwe and the Kalahari Gemsbok National Park, RSA (FGU 1987). Alternatively, one could argue that by

having only a few water holes only a small portion of the management area will be negatively affected, although of course, then the positive impacts on animal populations will be similarly constrained. To resolve this issue, further study of the ranging behavior of animals around water holes and interactions within and among species is necessary. Three mitigation techniques are quite straightforward: limiting pump operation to the driest periods of the year, rotating operation of water holes, and integrating water holes operations with cropping.

(6) Controlling illegal use (protection)

While the social and economic implications of controlling illegal activities are many and complex, the potential for direct environmental consequences is rather simple and limited. If mortality due to illegal use is controlled and not replaced by cropping, some species may experience over-populations and habitat degradation. This is probably only a serious problem with elephants and hippos, which are subject to little natural predation and which can easily overtax their environment as discussed above.

(7) Tourists

Foreign visitors require amenities such as roads, vehicles, and lodges, all of which may have certain environmental impacts (Pienaar 1968). In most cases the problems and solutions are extremely obvious--for example, providing sewage treatment facilities for lodges, and maintaining roads and forcing vehicles to stay on them to minimize erosion -- and thus they do not need to be enumerated here, especially as they are not a direct endeavor of the project.

Less obvious are the problems tourists can pose to animals, if they persist in approaching closely and remaining near animals for long periods (Babich 1964). For example, in some popular parks of East Africa, cheetahs lose their kills to scavengers when tourists move in to watch them feed. Some species will readily habituate to people, although this in itself can become a problem because a semi-tame animal is often a dangerous one and may need to be destroyed before it injures someone.

Given that most trophy hunters are accompanied by a game scout and quotas for their harvests are intelligently set, their oftakes should have no effect on game populations. Ideally, a trophy animal is an older individual no longer in its reproductive prime and thus the impact of its removal is further diminished. In practice, the trophies are often dominant males in their prime and this suggests that there should be some concern about their removal having a disproportionate impact as was discussed above under cropping. Sustainable oftake quotas for trophy animals have been estimated (2 per cent per year for most antelope, 3% for larger species of antelope, 8% for cats, and 0.5% for elephants) (Cumming and Taylor unpublished manuscript).

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F. Potential Activities

The last two activities to be reviewed are not currently part of the proposed project activities, but may well be developed in the future. At such time, when details are known, a further environmental assessment should be conducted.

(1) Processing Facilities

Converting carcasses into a variety of products constitutes a village-based industry and generates certain waste products. Simply producing meat results in sizable quantities of blood and brine, although these are easily disposed in seepage pits. Viscera and meat unfit for human consumption because of spoilage or parasites can be taken to suitable places for scavengers to consume, although care must be taken to not overtax the consumptive capacity of the scavengers, or to give them meat contaminated with transmissible parasites such as tape worms (FGU 1989). Tanning hides could potentially involve using significant quantities of toxic chemicals. Here, the simple solution is to avoid the problems and expenses associated with treating the hides chemically locally and simply treat them with salt before shipping them to a central tannery. Another advantage of avoiding a large capital investment at the local level is that there would be a dangerous temptation to fully utilize such a facility, even during a period when it would be wiser to cut back on cropping the resource, for example, following a drought.

The most cost-effective methods of preserving meat in the village context are sun-drying or, less commonly, smoking. Smoking meat will generate a modest amount of air pollution, but more importantly, the required fuelwood may represent a significant drain on local woodlands. Both problems can be mitigated by constructing tight smoke houses that require relatively little fuel and generate relatively little smoke.

(2) Resettlement

Like interdicting illegal users of wildlife, resettling villagers is an activity that may have profound social and economic consequences, but its environmental impacts are rather limited and easily mitigated. In the context of this project, resettlement would involve the voluntary movement of groups of 3-5 families from areas of important large mammal habitat. The main issue is to make sure that the location to which the people are resettled is not important in another ecological context; for example, a river bank important for nesting crocodiles, or the site of a rare plant. This is easily accomplished with careful planning, if one is willing to make an important exception. Unfortunately the best habitat for people--fertile soils with adequate water--is often the habitat that will support the greatest abundance and diversity of wildlife, and is particularly suitable for generalist herbivores like elephants. Wildlife is often associated with marginal lands, but this is because they have generally been displaced from the best lands. This concession of wildlife's interests to human interests has been made many times in the past, and is no doubt appropriate in the context of this project too.

G. Conclusions

It is hardly surprising that an environmental assessment of a project based on wildlife conservation should identify no serious impacts that warrant abandoning or significantly altering the project. However, some issues need further consideration before project implementation, and some questions have been raised that may influence the perspective of the project managers and result in fine-tuning as the project proceeds. Some of these questions merit active research and hopefully the answers will be forthcoming in time to shape this and successive projects.

H. Monitoring

The following information should be collected and reported to the project manager annually:

- (1) **Cropping:** Numbers of animals killed in each region by species, sex, and age class and the proportion of each species' population that this represents, by sex and age class.
- (2) **Translocation:** Numbers of animals moved by species, sex, and age class, their origin and destination. The fate of the animals should be monitored at least quarterly and reported annually.
- (3) **Fencing:** Kilometers of new fencing erected each year and kilometers of fencing active. Numbers and species of any animals found dead along the fences. A qualitative assessment of the effectiveness of the fence in meeting the objectives.
- (4) **Fire:** Ideally one would monitor the location, date, size, and origin of fires; in practice this would be fairly difficult to accomplish.
- (5) **Water holes:** Number of new holes drilled. Number of holes active. A qualitative assessment of conditions around each hole.
- (6) **Controlling illegal use:** To plan cropping operations it is necessary to know the illegal offtake.
- (7) **Tourists:** Number of visitors by location and date. Number of animals killed by foreign hunters by species and sex and size.
- (8) **Processing:** Number of carcasses processed by species. Total quantities of fuelwood and chemicals used.
- (9) **Resettlement:** Number of people moved, their origin and destination.
- (10) **Endangered species:** The status (abundance, distribution, and recruitment if possible) of any endangered plants or animals that occur in the management area.

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4.5. Commercialization Of Wildlife Resources

Introduction

There are a wide array of options for utilizing wildlife (defined here to include wildland) resources to generate income. Potential areas to consider include:

- game cropping / meat production
- safari hunting
- non-consumptive tourism (photo safaris, canoe safaris, others)
- retailing of wildlife products
- crocodile farming

All of these are not necessarily viable options for any given community or region. An area's wildlife resource, or potential resource, is the primary factor limiting the options that can be considered. But a whole range of other factors will also influence the viability of any given wildlife commercialization scheme. These include; capital and resource constraints, market potentials, management and labor requirements, and likely returns. Issues in these areas must be examined closely to best assess a region's potentials for income generation from wildlife.

This analysis will broadly outline each of the commercialization options, and discuss the requirements of each, paying particular attention to the important constraints involved. In this way, a project manager or a given community can take a first cut at assessing what options for commercialization of the wildlife resource are worth further consideration.

A. Meat Production/Game Cropping

Various methods of cropping game populations for meat production and other by-products are already being carried out in the region. These includes intensive farming of selected species, cropping game populations as an adjunct to a safari hunting operation, or harvesting wild populations on an organized

or individual basis. The wild game provides a source of meat in several potential forms - fresh game meat, frozen game meat, dried meat/biltong, pet food, and others. Game also provides various by-products - hides, skins, horns, teeth, bones, and hair. In addition, many of these by-products can be turned into curios, apparel, jewelry, and other retail items.

A prerequisite to all game cropping options is that individuals or communities must have the right to utilize the wildlife resource and realize the benefits. Unless this is the case, harvesting is considered poaching and as such is illegal.

To provide sustainable yields over the long term, game cropping relies on harvesting animals from a wild population at levels of off-take that are at least balanced by that population's natural growth rate. For example, impala populations can grow at an annual rate of 20% or more. As trophy hunting can only utilize a few percent of that population each year, this leaves considerable room for harvesting the population for meat and other by-products. One safari ranch in Zimbabwe of 12,000 ha averages off-takes of close to 700 impala a year. The meat value alone is US\$14,000. The same situation applies for other game species though the growth rates and initial population sizes will vary; and thus the level of sustainable yields. In fact, population growth rates are inversely proportional to body mass - with smaller sized species capable of supporting larger off-takes.

(1) Commercial Enterprises - General Method

Commercial approaches to game cropping vary considerably in level of investment and management required. However, the various steps required in cropping, processing, and marketing the game are fairly common to all.

It is necessary to monitor the game populations and habitat closely. This requires an experienced manager familiar with wildlife ecology. The habitat must be assessed, animal numbers monitored, and the harvestable surplus determined.

Wild animals cannot be slaughtered in a central abattoir as cattle can. This has certain implications - not least of which is the increased cost of harvesting the animals. A mode of transport is required to locate the game and transport carcasses back to a local or portable slaughter area. When cropping wild populations several considerations are important: minimal disturbance, efficiency, low wounding loss, minimal damage to carcasses, and adequate bleeding on site. A recovery team must follow the hunters to help process and transport the carcasses. The animals must be bled first. Small animals can be taken to the slaughter area whole, but large animals must be quartered before transport. If the animals are to be marketed fresh, there must be a means of cooling the carcasses quickly. Depending on the market, veterinary inspections are also required.

Processing of the carcass can occur on a concrete slab or in a large abattoir. (Non-commercial operations may butcher the animal in the bush or

back yard.) For hygienic, high quality meat, refrigeration facilities are necessary. This requires a generator or source of electricity. Large investments are required if an operator is going to supply fresh or frozen meats to distant markets. Otherwise fresh meat can be delivered to a local butcher for immediate sale. A water supply is necessary for all operations. If refrigeration is not used, the meat must be preserved by air drying, smoking, or salting. These approaches are labor intensive and time consuming.

(2) Specific Approaches

(a) Intensive farming of game populations:

Game farming involves management of specific wildlife populations in a small, enclosed area. Farming involves intensive husbandry of the populations and may include seasonal supplementary feeding, veterinary treatment, and other management tools. Game farmers often market their wildlife not only as meat but for tourism or hunting. However, the smaller the area, the less room available for non-consumptive uses and/or hunting. Cropping the wildlife for meat and other by-products may be the predominant form of land use on a game farm.

Typically, this type of game farming relies on soft skin plains game, most often impala. To generate a harvestable population on a farm or ranch requires careful management of the wildlife and habitat. Initially it may require translocation of game. Game farms are best located near potential markets. This minimizes transport costs and increases the chances of marketing the wildlife for recreational uses.

In many ways, this kind of game farming is not dissimilar to cattle ranching. It was first tried in the Southern Africa region in the early 1960's. However, game farming for meat production alone is generally not profitable. As markets are presently structured, cattle ranching is usually a more profitable land use than intensive game farming, when the latter is restricted solely to meat production and other by-products (B. Child, 1989). Though the capital investment for game is well below that required for cattle, the yield of meat per hectare is often less. On Buffalo Range in Zimbabwe, game yielded 4.77 kg-meat/ha while cattle yielded 6.0 kg-meat/ha. In addition, the market price for game meat is lower than that for cattle in most areas.

(b) Commercial game cropping as an adjunct to a safari operation:

When the value of a wildlife resource can first be captured through hunting or tourism, the opportunity cost of meat production drops considerably. Trophy hunting utilizes only a small percentage of a game population, leaving considerable room to crop for meat production. In this manner, cropping game populations can be a profitable sideline. In fact, it is often a necessary management tool for control of the game populations for optimum hunting populations.

This form of land use often takes place on game ranches. They are larger in size than game farms and thus have more room to offer hunts and safaris. Wild, free-ranging ungulates are the typical wildlife resource base for a game ranch. Management of these populations is less intensive than that required for game farming. As game ranches are often not fenced, issues of co-ownership and utilization of wandering animal herds that cross property lines can become important issues.

Because management of wild animal populations either for provision of hunting stock or meat production are similar, and the two uses do not preclude each other, they are often successfully combined.

(c) Organized harvesting of more remote, wild populations:

Though management costs are low, capture and processing costs associated with culling wild, dispersed populations in remote areas are quite high. The returns do not often justify such culling on commercial grounds. An exception to this is sometimes found with large, gregarious animals like elephant, buffalo, and hippo. Because they are often found in herds, and the returns from such animals can be high, they have greater potential for generating positive returns. This is particularly so with elephant. The additional value of their ivory and hides can make such operations commercially viable.

(d) Individual hunting or trapping for meat and other products:

Hunting by individuals may be the most economical, and most widespread, method of utilizing game populations for meat. Individuals living in rural areas in proximity to wildlife, using either traditional or modern means, often hunt game as a source of food or income (from sale of the meat or by-products). Traditional methods may include snares, traps, and arrows. Modern methods include the use of a gun. However, until communities and individuals are given the rights to manage and utilize their wildlife resource, this type of use is considered poaching. As long as this use remains illegal, it is difficult to control. (The use of natural-fiber snare traps is considered legal in some areas.) Consequently, it is hard for a community to manage this type of utilization for sustainable yields.

(3) Associated Costs

The costs of harvesting wild game populations, combined with substantial market constraints, severely limit the present options for profitable utilization of wildlife through cropping for meat production alone.

Management costs for maintaining wild populations of game are relatively low. Depending on the land area, these costs can range from zero to a level somewhat below that for cattle. In remote regions, the wildlife resource can often best take care of itself. On a game ranch, input costs may be fairly substantial. It can include fencing, water supplies, protection, monitoring, and other inputs.

The costs of harvesting, processing, and marketing the game can be quite high, and often prohibitive. This is particularly the case if populations are dispersed over remote terrain. Costs can be excessive unless the population is readily accessible and numerous. Transport is needed to track and locate the animals, move hunting and processing teams about, and bring the carcasses back to a central location for finished processing and storage. With dispersed populations in remote areas, these costs alone may be prohibitive.

For commercial operations, additional processing costs are incurred. There must be a means of butchering the animals and storing the meat and by-products. At a minimum, this requires staff with the necessary skills for processing the carcass and hides, a hoist for large animals, a concrete slab area with a running water supply, and storage facilities (depending on the marketing strategy, this can include a large refrigeration unit and/or a deep freeze). For commercial processors that intend to service markets beyond the local area with fresh or frozen meat, the capital costs of processing and transport are considerable. (Quality and veterinary controls for non-local markets are stringent.) These overhead costs can be prohibitive unless the operator has access to, and is equipped to harvest from reasonably dense and accessible game populations.

For capital intensive game harvesting to be profitable, it is best carried out on managed ranches or farms. But as noted, even here, it is usually only profitable when operated as a sideline to hunting or tourism. Presently, higher prices and better markets make cattle production a more profitable alternative to operations which rely solely on game meat production (B. Child, 1989). In addition, a much greater value can be captured from a wildlife resource if it can first be utilized for hunting or tourism.

The high costs of harvesting and processing may not be an impediment to profitable utilization of large game such as elephant, buffalo, and hippo. This is particularly the case with elephant, as the hide and ivory add considerably to the potential income from cropping. However, even here, several caveats apply. First, if an effective ban on the international trade in elephant products is established, the value from the hide and ivory would be lost. Second, large animals, particularly buffalo and elephant, have far greater value as hunting trophies and are best utilized as such where possible. Third, considerable attention needs to be paid to the monitoring of the size and growth rates of these populations in a given area and determining whether sustainable yields are possible, and of what size.

(4) Returns

As noted, returns from wildlife used for meat production alone are often not large enough, given present markets, to generate positive returns. But when combined with other wildlife uses (hunting or tourism for example), significant positive returns can be generated. Game meat and other wildlife by-products can make substantial contributions to a wildlife utilization enterprise.

Figures from 1986 give an indication of the potential value of various game species in terms of their meat and hides. (Elephant returns are discussed separately)

Game animal values

	Body Mass kg	Dressed weight kg	z\$/kg meat	Total meat	z\$/kg hide	Total hide
Eland	340	200	\$2.00	\$400.00	\$10.00	\$40,00
Buffalo	450	270	2.00	540.00		60.00
Impala	40	24	2.00	48.00	5.50	10.00
Kudu	136	80	2.00	160.00	12.00	40.00
Warthog	45	30	1.50	45.00	1.25	20.00

(5) Market Constraint

Market constraints are the other major hurdle to the profitable utilization of wildlife through game cropping and meat production. Presently, there are few possibilities for marketing game meat outside of the local area because of strict veterinary controls. International markets are all but completely closed because of health and veterinary restrictions. It is likewise with urban markets. Transport of game meat outside the originating locality is heavily regulated. As each animal must be inspected, the cost is prohibitive except in the case of large-scale operations. Even if veterinary requirements are met, urban markets are not well developed. Extensive marketing is necessary if taste preferences of urban consumers are to be developed for game meat. Pricing policies must also be researched and adjusted relative to consumer preferences and the price of beef. The urban market for game meat that presently exists is predominantly for biltong.

The costs of collecting, processing, and transporting game meat in a hygienic fashion to insure high quality meat hinders the development of markets outside of the local areas. These costs work to further restrict commercial game-cropping schemes to those that are large-scale and capital intensive.

Because of veterinary restrictions, high production costs for processing and transporting quality game meat, and the poorly developed urban markets, rural communities remain the most important market for game meat. But even here, traditions, taste preferences, access to other protein sources, and prices all play a key role in market viability.

(6) Potential For Rural Communities

For the near future, given the constraints discussed above, there remain two important alternatives through which rural communities can utilize their wildlife resource for meat production. First, rather than large-scale commercial cropping, harvesting can be done on a small-scale or individual

level using low-cost inputs, and directed to local markets. With traditional or modern means, individual hunters can provide an important source of protein for their families and/or communities.

However, unless communities are given authority over their wildlife resource this kind of hunting will remain illegal and difficult to control. To be managed for sustainable yields, the communities themselves will need to have authority over local hunting. Though game cropping at the community level may not be viable in most cases as a profit-making venture, it can help provide needed food and employment for community members.

The other possibility is to contract out with a commercial operator to harvest herds of the big game such as elephant, buffalo, or hippo. In terms of generating returns, this should only be done if the possibility of marketing them first through hunting or tourism is not available.

But even cropping these animals does not guarantee substantial returns. The Omay district in Zimbabwe contracted with a private operator to crop a herd of impala recently. As far as financial costs, the district broke even. What they did gain was the provision of relatively cheap meat to the local community. Even this does not always work. One large-scale elephant and hippo cropping operation in the Luangwa Valley did not even break even. The local population lacked the money to buy the biltong and there was no significant market for the meat in the urban areas.

(7) Elephant Culling

As mentioned, culling elephant to reduce the size of the herd, where necessary and allowable, can be a profitable operation in its own right. The present value of elephant products (ivory, hide, and meat) is high enough that returns can exceed the costs for an efficient operator.

However, elephant cropping is a management intensive, high input operation. As cropping operations must take whole breeding groups, the operator must be equipped both to crop the entire herd at once as well as immediately field dress the products to prepare for future sale. An aircraft, 3 hunters, vehicle support, and labor for field processing the elephants are required. If capital and recurrent costs cannot be spread over a large operation, they may be excessive. In 1986, the operating costs alone for a large outfit, culling 1000 elephant a year at 40 per day, ran to US\$50 per elephant for killing and field processing. This may appear inexpensive relative to the value of the elephant products, but capital inputs, marketing, and other costs have not been included.

For culls, the ivory returns per elephant are not as great as for hunting since herds contain large numbers of female and young. Potential returns from marketing the ivory also depend on whether it remains the property of the state or not as well as the international status of trade in elephant products. But at an average of approximately 4 kg of ivory per elephant in a herd, the ivory could gross up to US\$1000 per elephant if auctioned on

Zimbabwe's ivory market. Other returns are also substantial. Hide is valued at US\$5 per kg and could return US\$325 per elephant (average hide weight per elephant for culled herd is 65 kg). Dried meat sold on the local market sells for US\$2 per kg and could return US\$100 per elephant (average yield of 50 kg per elephant). Elephant tails are also worth up to US\$15 each.

To acquire the expertise and specialized equipment necessary to cull one herd a year (if for instance a rural community wanted to cull a herd on its land) would be prohibitively expensive. On the other hand, rural communities could contract with a private culling operator and share in the proceeds. But even here, the costs may be great enough that the only positive returns to the community may be the provision of meat (not an unimportant benefit).

For rural communities, returns from elephant are also possible when they are taken individually as problem animals. Input costs here can be lower while returns per elephant depend on its size. For a large adult male the ivory, hide and meat may be worth as much as US\$20,000. For problem animals, it is important that some of the returns are put into a compensation scheme for those that have incurred the crop damage costs.

So, although large-scale culling operations can yield substantial returns, rural communities do not often have large enough elephant populations to support culling as a sustainable utilization policy. Even if they have enough elephant to support culling a herd or two, the returns from this should be balanced against the returns from marketing the elephant through hunting safaris. Where possible, utilizing the elephant on a hunting quota will provide greater returns than culling or cropping for its product value alone.

B. Safari Hunting

Safari hunting is one of the most profitable ways to utilize an area's wildlife resource. Twenty-one day big game safaris can earn US\$25,000 and up. Hunting uses only 2-3% of any given wildlife population per year. As such it is only mildly consumptive and there remains considerable latitude to further utilize the wildlife resource through cropping or non-consumptive tourism. Resources that cannot earn their keep are increasingly endangered in this region. The high returns of a wildlife resource that can be utilized through hunting helps to insure its conservation and viability.

Though a viable wildlife population is important to a successful hunting operation, the profitability of a safari hunting enterprise depends more on the quality of its service inputs. Gross returns can be quite large. But an operator's marketing skills and his ability to satisfy clients will have the most effect on whether these returns can be translated into profits.

(1) Commercial Enterprise - General Method

Though the approach varies somewhat between commercial operators, the highly specialized nature of the safari hunting business, and the narrow client base,

mean that the requirements of running a commercial operation are fairly similar throughout the region.

An operator starts with a quota of animals that he can offer for hunting. On public lands, or where the private landowner does not have authority over the wildlife, this quota is typically set by the relevant National Resource or National Park authority. The size of the quota for a given land area is based on surveys and sustainable yield data. For hunting trophy quality animals on a sustainable basis, the off-take ranges from less than 1% to 3% or more depending on the species. Typically, the quota is bought by the operator who then has the right to package and sell this quota in the form of hunts to his clients.

For any given hunt, an operator charges a daily rate plus a trophy fee for the animals hunted. The daily rate depends on the game to be hunted. The daily rate for a ranch hunt with only small plains game may be less than US\$250 per day. The hunt itself may be only a few days long. As first large plains game (eland, kudu, zebra, sable, others), and then dangerous game (elephant, lion, leopard, and buffalo) are added, both the length of the hunt and the daily rate that can be charged increases. A big game hunt which includes a lion or elephant can support 21 days of hunting at a daily rate of from US\$700-900. A typical big-game hunt may include an elephant or lion, a leopard, a buffalo, and several species of large and small plains game (for example, 1 sable, 3 impala, 1 warthog, 1 eland, and others). The client must pay the operator the daily rate for the full number of hunting days purchased up front. For a 21 day big-game hunt with a US\$800 daily rate, the client would pay the operator US\$16,800. This fee is collected regardless of how many days (not to exceed 21) the client hunts, or whether he kills all the animals in his quota or not. On top of this daily rate, the client must also pay a license fee or trophy fee for the animals he hunts. Some operators collect this up front and others charge the client the trophy fee for only those animals he shoots. These fees can range from US\$75 for an impala to US\$5000 and up for an elephant.

Because of the differing fees that can be charged, the composition of an operator's available quota, and his ability to package them into hunts and market them to clients is critical. If an operator can offer balanced "bags" or "hunts" that can support high daily rates and longer hunts, the returns will be greater. Few areas include both dangerous game and a good mix of large plains game. Typically, commercial game ranches have quotas of valuable plains game, while public lands support quotas of dangerous game. Operators that can access both can offer the best hunts.

Packaging the quota into separate hunts is only the first step in a commercial hunting operation. The operator must then market these hunts, either on his own or through an agent. (Agents can charge as much as 25% commission.) The vast majority of clients are overseas. Marketing to these clients is highly specialized. The operator or agent attends hunting conventions, advertises in specialty magazines, and works through word-of-mouth. Word-of-mouth may, in fact, be the most important marketing device an operator has. But for this

reason, it becomes critical that he runs a top notch operation. If a client is not satisfied with a hunting safari, the close knit nature of the hunting community means the word will get out and future business will suffer. Hunting safaris are a high service industry and to be successful quality standards must be maintained.

A registered safari hunter is, or must employ, a qualified professional hunter. The operator must also provide for all the client's needs during the course of the hunt. This includes accommodations and meals in a bush camp, guiding on hunts, processing any trophies that are shot, and in general keeping the client, and his guests, satisfied and entertained for the duration of the safari. Accommodations, though in the bush, must be first-rate. Vehicles must be in excellent working order. Supplies must be maintained. With clients paying upwards of US\$50,000 for a big-game hunt, expectations are obviously high. Even down to the minutia of having the client's favorite drinks on hand at all times becomes critical.

The success of a safari hunting operation thus depends on the size and composition of the quota, the daily rate and the trophy fee premium the operator can charge, the skills with which the operator packages the quota into hunts, the ability to market the hunts internationally, the efficiency with which the operation is run, and the ability to satisfy clients.

(2) Possible Options For Rural Communities

When the landowner (public or private) and safari operator are not one and the same, a variety of arrangements are possible through which both can profit from hunting. Rural communities with a huntable quota can:

- auction off their quota to a variety of operators.
- lease the hunting rights on their land to an already established safari operator for a concession fee.
- enter into a joint venture arrangement with an already established safari operator.
- establish their own safari operation.

Each have their costs and benefits which must be considered.

(a) Auctioning the Quota:

Public auctions can provide the greatest monetary returns for an area's huntable quota. However, under this arrangement the community cannot choose the operator that is best for the area, and so loses out on the ability to insure reliability and quality. In addition, auctioning hunts means that several operators with short-term interests will be using the area. The long-term investment in an area's resource that can be provided by a single operator with an exclusive right to the area's hunting is lost.

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(b) Leasing the Hunting Rights:

To lease hunting rights an operator pays an annual concession fee for the exclusive right to hunt in an area. The term of the lease can be of any length. However, longer leases (upwards of 5 years) provide the operator time to recoup his investment. As the operator has a chance to learn the area, he will be able to provide better and more efficient hunts. It may also take several years to recover the cost of building the hunting infrastructure (chalets, abattoir, roads). With the long-term lease, the operator also has a stake in maintaining the viability of an area's resource.

A variable lease arrangement that is linked to an operator's annual gross earnings can have advantages over a fixed-value, five-year lease. During the initial years when an operator's start-up costs (building the tourist infrastructure and learning the area) may be considerable, a fixed high concession fee would deter investment. But a fixed low concession fee would not fairly compensate the community in the later years if earnings increased considerably.

If long-term leases are granted, the community must pay careful attention to the choice of operator, or they may be locked into an unsatisfactory arrangement a few years down the road. In addition, unlike public auctions, the allocation of concessions may be susceptible to corruption if not done carefully. As opposed to a joint venture option, leases will not necessarily provide the local community with a mechanism through which they can begin to acquire the necessary skills to someday run their own safari operation. Despite these drawbacks, concession fees may be the best way for a community with no experience, expertise, or capital for running hunting safaris to gain revenue from its huntable quota.

(c) Joint Venture:

For a community that eventually wants to set up its own operation, joint venture possibilities can offer a sensible starting point. This could be done through a management contract with a commercial operator, through joint ownership, or through some type of phase-in arrangement. It will not be an easy process to structure a joint venture that is satisfactory to both private entrepreneur and community government. With joint ownership, the private interest would need guarantees of insulation from political interference. If the enterprise cannot fail or succeed on business grounds alone, but is liable to be undermined by political acts of community councils, the entrepreneur will be less willing to enter into a joint venture. Phase-in arrangements in which the local community eventually takes over full control of an enterprise would also be difficult to structure. Incentives would need to be created to induce a private entrepreneur to enter into a joint venture from which he will eventually be phased out.

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(d) Community-Run Safari Operation:

Given the high input costs, the level of expertise required, and the marketing constraints of building up a client base overseas, it would be very difficult for a community with no experience in hunting safari operations to start a successful enterprise on its own. It is advisable to gain experience through a concession arrangement or joint venture first before taking such a step. Even if given outside funding to cover initial capital inputs, the service inputs required in building and maintaining a satisfied client base in such a highly specialized industry works against first time entrants with little private enterprise experience.

(3) Associated Costs

Gross returns from safari hunting can be considerable. A daily rate of US\$750 and trophy fees in the thousands certainly make hunting safari operations look attractive. But this must be carefully balanced by the high costs and the fragility of an enterprise that is so dependent on quality service inputs. The costs of a safari operation include:

- capital expenditures (vehicles, accommodation facilities, weapons, others)
- cost of capital
- depreciation of equipment and spares
- salaries for professional hunter, field staff, camp attendants, labor
- operating costs (food, catering, running vehicles)
- marketing costs
- commission to agents
- administrative costs
- game management costs
- insurance
- concession, lease, trophy, and/or license fees

Little data exists on actual costs versus returns for the hunting safari industry but one study found the following percentage breakdown for input costs (Frost, 1989):

- concession and trophy fees - 16%
- operating costs - 37%
- labor costs - 27%
- marketing costs - 17%

For an example of actual costs, Ngamo Safaris in Zimbabwe has the following annual costs:

- recurrent expenditures - US\$250,000
 - anti-poaching, game water supplies, game capture and translocation,
 - game fencing and maintenance, game surveys, road maintenance, and
 - miscellaneous

capital expenditures - US\$375,000
vehicles, staff housing, client chalets, engines, fencing, radios,
and others

TOTAL - US\$625,000

These are annual figures and do not include the initial capital outlays required to get started. Revenue generated by Ngamo Safaris for the same year totaled US\$750,000.

(4) Returns

Net returns to an operator will obviously depend on costs and efficiency. But gross returns are usually quite substantial and are dependent on the daily rate charged and the trophy premium or license fee collected. An operator that can market his quota in such a way as to maximize the number of hunts with big-game can charge the higher daily rates. The same plains game that could be sold for a daily rate of a few hundred dollars can be sold for US\$500-900 when combined with buffalo, elephant, lion, or leopard. For most operators, the daily rate will cover his operating costs. The gross returns from the trophy premiums often translate into an operator's profit margin. An operator must first buy his quota from the relevant authority, either in the form of trophy or license fees. He can then turn around and charge a premium for this when sold to the client. In Zimbabwe, the government trophy fee to the operator is charged in Z\$'s and the operator charges the client the same figure, only in US\$'s. Sample trophy fees charged to clients include:

-Elephant	-US\$4,500 + \$50/kg ivory in excess of 20kg.
-Lion	-US\$2,500
-Leopard	-US\$2,000
-Hippo	-US\$1,500
-Buffalo	-US\$ 900
-Sable	-US\$1,200
-Zebra	-US\$ 500
-Impala	-US\$ 150

The community (that is not also the operator) can realize additional returns from hunting safaris. Concession fees are quite substantial. Depending on the land area, and the quality of its quota, these fees may range from US\$10,000 to US\$75,000 or more per year. To realize this benefit, a community must have the right to these fees (as opposed to the national treasury or other government department collecting them). Safari operators also generate local employment. Labor is needed to run the camps and process the trophies once shot. In addition, the local community often receives the meat (for free or at subsidized rates) from the animals that are shot in the area.

Above and beyond the returns to the operator and the community, there are additional returns for the region. These include:

- foreign exchange
- air travel
- hotel costs (aside from safari)
- curios purchased
- incidentals
- word-of-mouth marketing for the country
- support for local taxidermy industry
- shipping costs
- tax to government
- conservation

(5) Market Constraints

A community that has a huntable quota should have no problem selling this (as a concession or at auction) to an operator. The demand for hunting is such that the community will have to expend little or no effort attracting operators. If the resource is there, an operator will come along.

But marketing the hunts as an operator is a different matter all together. As noted, safari hunting is a highly specialized industry with a selective and fairly elite clientele. Marketing efforts must be well directed to the overseas clientele. This is most often done through specialty agents. Much of the marketing takes place by word-of-mouth. For this reason, an operator's reputation is of the utmost importance. An agent, will not work for long with an operator that does not run a first-rate operation. Though general country marketing on an international level would have large returns for the tourism industry, it would not have the same impact for the hunting industry. Highly selective, specialty marketing works best. However, as hunting safari operators increasingly turn to offering photographic safaris and other non-consumptive safaris as part of their operations, national marketing would have significant benefits.

C. Non-Consumptive Tourism

For wildlife utilization, tourism offers the largest single source of potential revenue for the region. Though all tourism is not wildlife or natural resource based, few international visitors come to the region without in some manner taking advantage of the natural resource attractions (including wildlife). It is one of the region's biggest drawing cards on the international tourist market.

While traditional game viewing is still a staple of the tourist industry in the region, recreational activities such as canoeing safaris, adventure safaris, fishing, hiking, and others are becoming increasingly important.

The tourist industry in the region has considerable room for expansion, even as some estimates already put its value at US\$100 million for Zimbabwe alone. But for any given community, the potential revenue from natural resource based tourist development is dependent on several factors. For the rural community,

these include, among others: geographic features of scenic beauty, wilderness areas, the mix and density of the wildlife resource, recreational features (rivers, lakes, mountains, etc.), proximity to other tourist attractions, convenience, tourist facilities, and marketing. There is no one formula that indicates what a given resource may potentially attract, nor what would be needed to best develop the attraction. The tourist market is as varied as the tourist. Some tourists seek remote rugged experiences with few conveniences while others want the remote rugged feel, but with comfort. Other tourists will have nothing to do with remote areas, regardless of comfort.

For rural communities then, potential revenue from tourism will be highly dependent on the available resource base and how this is then packaged and marketed. For areas with a rich and varied wildlife resource, photographic game safaris are a possibility. For areas along the Zambezi, canoeing safaris offer a different alternative. But for any given choice of tourist development, the marketing skills employed are likely to have the greatest impact on the amount of revenues that can potentially be generated. Though marketing competition within a country can be intense, the non-consumptive tourist industry would gain substantial benefits from general, national marketing strategies. If a country can enhance its image on the international tourist market, the benefits would be shared by all operators, large and small.

As with hunting safaris, running a tourist outfit is a management intensive operation that is heavily dependent on quality inputs (vehicles, accommodation facilities, catering, marketing, etc.). And as with hunting safaris, there are a variety of arrangements through which a rural community can enter into the tourist market. These include:

- usage fees or concession arrangements
- joint ventures
- or community-run operations.

Given the management, capital, and marketing constraints, some type of concession arrangement or joint approach with a private operator offers the most promise for rural communities at the present. These can be designed in a manner similar to that discussed in the hunting safari section. A private operator wanting to conduct photographic safaris (or canoeing, or hiking, or other safaris) within a community's jurisdiction would pay some type of usage or concession fee for that right, or enter into a joint venture arrangement satisfactory to both parties. With non-consumptive tourism, revenue is potentially quite variable over time. For any long-term arrangements it is important that this variability is taken into account. A concession fee based on a percentage of revenue, or a fixed usage fee per client are two possibilities. Under either arrangement, tourist concessions are also likely to generate local employment. And they can form a market base for development of a local handicraft and curio industry.

For the region, given the potential size of the market, and its relatively non-consumptive nature, tourism offers great promise for generating sustainable revenues from an area's natural resource base. It can be

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particularly important for those rural communities that have depleted their wildlife resource but have areas of natural attractiveness that can be utilized for recreational tourism.

D. Retailing Of Wildlife Products

A large handicraft industry, based primarily on natural products, now exists in the region. Its recent growth has been driven by tourist demand for souvenirs. Products include wood, stone, and ivory carvings, basketry, jewelry, pottery, embroidery and crochet work among others.

Present production processes occur in two distinct forms. One is primarily urban based, with crafts-people working full-time for licensed curio dealers. The other is rural based, with subsistence farmers and others working independently on a part-time basis.

(1) Full-Time, Urban Crafts Industry

Much of the wood, stone and ivory carving is done by full-time crafts-people in urban or semi-urban settings. Most are young men who are employed by licensed curio dealers. Some are independent crafts-people who sell their work by the piece to licensed dealers.

By law, every person working in ivory must be licensed. The result has been that virtually all work in urban settings for a registered enterprise. Ivory carvers represent the majority of crafts-people in the region who are on wage contracts. Most are paid on a piece-rate basis. Carvers are provided with work space, raw materials, and tools, but few if any benefits. Wages vary in the ivory carving industry from US\$100 to US\$400 or more per month but this represents only a small share of the value of a worker's production.

Many of the wood and stone carvers also work in urban settings on a full-time basis. Most carvers in the urban areas work on a commission or piece-rate basis. Wood and stone carvers are restricted by law from selling directly to tourists. They must sell their products to licensed curio dealers. These restrictions are unfavorable to the local producer. A few large traders (curio dealers) control the marketing of the products and receive the lion's share of the returns. As a result, illegal hawkers have become commonplace.

In Zimbabwe, most of the ivory comes from culling operations carried out by the Department of National Parks. The ivory is sold at public auction to legal permit holders in two forms. Embargoed ivory cannot be exported by the purchaser and during 1989 auctions sold for US\$160/kg. Non-embargoed ivory can be exported in its raw state and has recently sold for US\$250/kg. In the past some of this ivory has gone to small-scale producers but as the price of ivory has risen they have been pushed out of the market. In the mid-1980's, four of the registered ivory carving enterprises in Zimbabwe (out of 39) employed 55% of the registered carvers. A large part of the market for worked ivory in Zimbabwe consists of nationals and foreign residents. Tourists buy

less than half of the production. Much of this local market for ivory has been a direct result of currency export restrictions. Ivory purchases have been used as loophole through which nationals could generate foreign currency outside the country. The export market for finished ivory products is negligible.

As countries move to ban the import of elephant products, the ivory carving industry will be hurt considerably. The tourist segment of the ivory market will diminish markedly.

(2) Part-Time, Rural Producers

Independent producers in the rural areas non-ivory are typically subsistence farmers who work in their spare time on craft production. Wood carvers are typically men. Basketry, pottery, and crochet work are done by women. The necessary skills have been passed on from generation to generation by elders. However, the quality of production is dropping as crafts-people no longer produce for traditional markets, but rather for the tourist market which is far less discriminating. As plastic buckets have replaced baskets for home use, the demand for high quality production has dropped.

Like the urban market, licensing restrictions prohibit individual producers from marketing their own products. They must be sold to registered curio dealers. As a result, the net income to the local producers and their communities is very low. Most of the profit goes to those who market the products - the dealers. In an attempt to get around this, many rural producers have turned to the "illegal" hawking of their products. But this does not work to the producer's advantage either. Price wars among hawkers cut potential incomes substantially. In addition, the unattractive marketing technique of accosting tourists on the street benefits few.

Several other problems limit the income rural producers receive. As most production in rural areas is individually based, production costs are unnecessarily high. A lack of commercial skills affects quality, production efficiency, and marketing. Products are often not priced properly relative to the input costs. Further, with many individual producers, there is a lack of organization in the procurement of the raw materials. As a result, many of the resources are being exploited beyond a sustainable basis and this is undercutting the producer's income. Quality grass for baskets has been depleted, or is non-existent in many rural areas.

(3) Possibilities For Rural Communities

The market for curios and handicrafts in the region is large. And local individuals with handicraft skills are already the primary producers of these goods. However, as the industry is presently structured, these local producers and their communities receive only a small percentage of the returns from curio sales. For local communities to receive greater benefit from their production, assistance and training with production techniques, organizational skills, basic business skills, and marketing requirements will be important.

This can be done on a local level through any of the ministries or departments that deal with community development, women, youth, cooperatives, or other relevant areas. In addition, present licensing restrictions will need to be addressed if rural producers are to gain a larger share of the potential revenues generated from their production.

Products made for local consumption from the by-products of community culling or hunting operations offer an additional market for wildlife products. Locals can be employed to make shoes and other leather goods, soap, and glue. These can then be retailed locally. Production of this kind can help fill local consumer needs as well as provide employment.

(Some of the information for this section was drawn from an FAO Report entitled, "Studies on the Promotion of Production and Marketing of Handicrafts by Local People in Communal Areas, Zimbabwe. Final Report, 1987").

E. Crocodile Farming

Commercial crocodile ranches and farms occur throughout the region. Crocodiles are raised primarily for their skin which is a valuable commodity on the export market. Because of intensive management requirements and high capital costs, successful commercial crocodile schemes have for the most part been restricted to private operations. Aside from generating local employment, the industry has offered little direct benefit to the rural communities that actually live with the crocodiles.

Crocodiles are listed by CITES as an Appendix I endangered species. The countries in Southern Africa have successfully had their crocodile populations moved to Appendix II allowing for controlled ranching or farming subject to a quota. Commercial export is then permissible. This has benefitted the area's crocodile populations.

(1) Commercial Ranching and Farming

Crocodile ranching involves the removal of eggs or hatchlings from wild populations and then rearing the crocodiles in captivity. Crocodile ranches must then return a certain percentage of their juvenile crocodiles to the wild. Egg and hatchling mortality in the wild is as high as 95%. Ranches can have 80% or better success at rearing the eggs. So by returning a small percentage of these to the wild (5-10%), ranches insure a sustainable population of wild crocodiles, and in most cases, improve population numbers.

Crocodile farming uses captive breeding rather than collection from the wild. There are fewer regulations governing captive breeding farms since they do not have as direct an effect on wild populations as ranching schemes. This does not imply, however, that they are preferred commercially or ecologically. Food inputs are one of the biggest constraints to crocodile schemes. Commercially, food for ranched populations all goes to marketable crocodiles. On farms, large food inputs are required to maintain the adult captive

breeding stock. Ecologically, ranching can be a highly effective means of helping to manage the wild populations of crocodile.

Crocodile rearing is capital intensive, though many ranches and farms are over capitalized. For ranches, egg collection is the first step. Farms start with eggs produced by captive breeding populations. This must be carefully managed to insure wild populations are not adversely affected. Incubation requires a heated room maintained at 32 degrees centigrade with the eggs in a packing medium. Most ranches achieve 80-90% hatching rates. Hatchlings must "hardened-off" in a hygienic ventilated room at 34 degree centigrade for 24-48 hours. For the first year, hatchlings are very susceptible to stresses and mortality can be quite high on poorly managed ranches or farms.

Temperature is the most important variable controlling mortality. During the cool season, it is particularly important to have a means of maintaining high temperatures for hatchling stations. Maintaining the temperature as high as 30 degree centigrades or more can have substantial benefits for growth and mortality reduction. Enclosures must also be kept hygienic. Once the crocodiles are a year old, mortality drops significantly. Unless the ranch or farm is in a particularly cool area, it is usually less than 5%. Rearing stock ponds must be drained, cleaned, and refilled every other day.

Access to sufficient and reliable food supplies is the other major constraint. Kapenta (small dried fish) and game meat from cropping schemes are the primary source. Supplements of vitamins and calcium are often required, particularly if red meat is the only food source.

The temperature and food constraints have significant bearing on where crocodile rearing schemes can be located. Cooler areas (such as highveld) are not ideal because of the large heating inputs that are then required. Progressively, however, the highveld is becoming one of the few areas left with ready access to sufficient food supplies.

(2) Associated Costs

To produce marketable crocodiles, a rearing station requires: a supply of crocodiles (adults or eggs), a supply of food, a supply of good quality water, facilities (ponds, incubators, hatching rooms, skinning rooms, deep freeze, etc.), a proper thermal environment (artificial or natural), and knowledgeable management in crocodile raising. One analysis of a model ranch producing 500 hides a year by M. R. Van der Reit, found that it would take 10 years to realize a profit from the capital outlay required to start a ranch of this size. Starting such a venture would not be attractive. Profitable ranches have had advantages. Either they were started when construction costs were much lower, they are part of a hunting safari operation or other complementary business so costs are spread out, or their production level is well in excess of 500 hides per year.

For a 500 hide/yr production ranch, initial capital outlays in 1987 would approach US\$100,000 (1987 costs). The 500 crocodiles would consume 20,000 kg

of meat in a year. (Where there is no market for crocodile meat, 3,500 kg of this can come from the crocodile carcasses). For farms, a breeding population of only 18 crocodiles would consume an additional 1800 kg of food a year.

High input costs, and the susceptibility of crocodiles to high mortality rates if not managed properly, have tended to restrict crocodile ranching/farming to private enterprises.

(3) Returns

Potential sources of revenue for crocodile ranches/farms include the sale of skins, meat, and live animals along with tourism. Presently, there is no export market for the meat, and what local market exists is often limited to tourist game lodges. Tourism is not always a possibility either, depending on location. But for those operations that are located near tourist markets, this can be quite significant. The skin is the most important single source of value for the crocodile ranch/farm. The skin is valued per cm of belly width. Current prices are US\$4-5 per cm. The average 2 year old crocodile's skin is 28 cm for a total value of up to US\$140. A ranch producing 1000 skins a year would generate US\$140,000. Zimbabwe is expected to produce 15,000 skins in 1989 and that should rise to 25,000 in 1990 for a total of US\$2,500,000 in foreign exchange earnings. It is an important industry for the region.

(4) Marketing

The primary markets for crocodile skins are the US, Europe, and Japan. Most of the tanneries for final processing are located in Europe and Japan. Though trade in crocodile skin has fallen drastically since the 1950's and 60's, it now appears to have reached a more sustainable level. Much of the early trade was a result of over exploitation of the resource. As listed on Appendix II of CITES, the crocodile appears able to support a stable market. In contrast, the present legality of, and market for, elephant products is highly volatile.

(5) Potential For Rural Communities

The high level of required capital inputs tends to restrict profitable crocodile ranching/farming to large enterprises. For rural communities with little capital, this can be prohibitive. In addition, intensive management requirements also limit a rural community's ability to enter the industry. Crocodile ranching can provide direct benefits through employment of locals but the numbers are not large. The sale of meat to crocodile ranches by community culling operations could be a source of indirect local benefits.

(Two excellent resources from which much of this information was derived are the "Proceedings of the SADCC Workshop on Management and Utilisation of Crocodiles in the SADCC Region of Africa," 1987 and "Management of Nile Crocodiles in Zimbabwe," 1984, by Graham Child.

(6) Input Requirements/Returns For Wildlife Utilization Options

The following chart provides a rough estimate of the input requirements and potential areas of return for the various wildlife utilization options discussed in the annex.

H = High
M = Moderate
L = Low
V = Variable

Capital Input	H	M/L	L	H	L	H	L	H
Management Skills	H	M	M	H	M	H	M	H
Resource Base Rqmt	H	M	H	H	H	H	L	L
Marketing Needs	H	M	L	H	L	H	M/H	M
Potential Returns	V	V	H	H	H	H	V	V
Employment Generation	M	V	M	M	V	M	V	L

ADDITIONAL REFERENCES

In addition to references noted under individual sections, and numerous interviews, the following documents also provided important information for this analysis:

Child, B. (1989) "Economic Development, Employment and the Wildlife and Tourism Industry" Department of National Parks and Wild Life Management, Zimbabwe.

Child, B. (1989) "Wildlife Utilization and Economic Development in Zimbabwe's Semi-Arid Rangelands" Department of National Parks and Wild Life Management, Zimbabwe.

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Clarke, V.J. and others. (1986) "The Comparative Economics of African Wildlife and Extensive Cattle Production" Proceedings of FAO African Forestry and Wildlife Meeting, Mali.

Cumming, D. (1989) "Commercial and Safari Hunting in Zimbabwe" from Hudson, Drew and Baskin (ed), Wildlife Production Systems. Cambridge University Press.

Frost, P. "Annex H - Wildlife and Tourism" from the Zambezi Valley Master Plan, funded by the UNDP.

Muir, Kay. (1988) "The Potential Role of Indigenous Resources in the Economic Development of the Arid Environments in Sub-Saharan Africa" Dept. of Agricultural Economics and Extension, Univ. of Zimbabwe.

Muir, Kay. (1987) "Marketing Wildlife Products and Services" Dept. of Agricultural Economics and Extension, Univ. of Zimbabwe.

The International Symposium and Conference on Wildlife Management in Sub-Saharan Africa, 6-12 October 1987, Harare, Zimbabwe. Numerous papers in this document were helpful, including:

Mmari, Paul. "Reflexions on Aspects of Wildlife Cropping."

Child, G. and Brian Child. "Economic Characteristics of the Wildlife Resource."

Style, Clive. "The Economics of Game Ranching in Zimbabwe."

ACTION: AID-3 INFO: CHG//4

VZCZCSB0460
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 R 081523Z JUL 89
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 INFO RUEHOR/MEMBASSY GABORONE 9552
 RUFHNR/AMEMBASSY NAIRBI 7706
 RUEHMB/AMEMBASSY MEABANE 6748
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UNCLAS SECTION 01 OF 05 STATE 21656 OFFICIAL FILE

AIDAC NAIROBI FOR REDSO; SWAZILAND FOR RLA

F.O. 12356: N/A

TAGS:

SUBJECT: ID GUIDANCE FOR SARP NATURAL RESOURCES MANAGEMENT PROJECT (690-0251)

DATE	ACTION	INFO
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DO		<input checked="" type="checkbox"/>
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SUBJECT 7-14-89		
ACTION TAKEN		
INITIALS DATE		

1. THE AFRICA BUREAU ECPR MET ON MAY 5, 1989, TO REVIEW THE SARP NATURAL RESOURCES MANAGEMENT PID, 690-0251. THE ECPR WAS CHAIRED BY AFR/PD DIRECTOR, TIMOTHY J. BORA AND AID/W PARTICIPANTS INCLUDED AFR/TR/ANR, AFR/PD/SA, AFR/SA, GC/AFR, PPC/PDPR, AND LAC/DR/RD. THE MISSION WAS PRESENTED BY DEPUTY DIRECTOR FRED ZOBRIST. THE PID WAS APPROVED AND DELEGATION OF AUTHORITY TO THE MISSION DIRECTOR, USAID/ZIMBABWE TO PROCEED TO DESIGN AND AUTHORIZE THE PROJECT WAS CONFIRMED, SUBJECT TO THE GUIDANCE CONTAINED HEREIN.

2. A SUMMARY OF EACH OF THE ISSUES DISCUSSED AND RESULTING GUIDANCE FOLLOWS:

A. ISSUE NO. 1: IS THE PROJECT'S STRATEGY FOCUS ON MANAGEMENT OF WILDLIFE RESOURCES TOO NARROW?

DISCUSSION: THE PROJECT IS EXCLUSIVELY ORIENTED TOWARD PROTECTION AND ECONOMIC MANAGEMENT OF THE WILDLIFE RESOURCE. IT IS A WELL WRITTEN AND WELL DOCUMENTED PID WITH A CLEAR COMMUNITY-BASED STRATEGY FOR ACHIEVING ITS PURPOSE. AT THE SAME TIME, THE PROJECT CONTRIBUTES TO THE REGIONAL STRATEGIC OBJECTIVE OF STRENGTHENING THE POTENTIAL FOR SUSTAINABLE REGIONAL FOOD SECURITY THROUGH INCREASED AGRICULTURAL PRODUCTIVITY AND IMPROVED INCOME. TO SUPPORT THIS OBJECTIVE, THE PROPOSED PROJECT IS LINKED TO AN INTERMEDIATE OBJECTIVE; I.E., PROMOTING RATIONAL LAND USE. WHILE THIS OBJECTIVE IS CERTAINLY WITHIN THE MISSION'S PROGRAM MANDATE, THE PROPOSED PROJECT'S ALMOST EXCLUSIVE EMPHASIS ON WILDLIFE RESOURCE MANAGEMENT UNDERCUTS ITS JUSTIFICATION AS A LAND USE MANAGEMENT PROJECT. NEITHER THE PROJECT COMMITTEE NOR THE PCPF WISH TO ENCOURAGE THE MISSION TO BROADEN THE OVERALL SCOPE OF THE PROJECT INTO LAND USE RELATED ACTIVITIES THROUGHOUT ALL OF THE PROJECT COMPONENTS. BUT CONSIDERABLE CONCERN WAS EXPRESSED THAT AT THE

COMMUNAL LEVEL THE PROJECT SHOULD PROMOTE A RATIONAL LAND USE STRATEGY THAT ENCOMPASSES DIFFERENT TYPES OF LAND USE ACTIVITIES WHERE APPROPRIATE.

ECPR RECOMMENDATIONS AND GUIDANCE: THE ECPR RECOMMENDS THAT THE MISSION FOCUS THE MEASURABLE OBJECTIVES OF THE PROJECT (EOPS AND OUTPUTS), ESPECIALLY THOSE RELATED TO COMMUNITY ACTIVITIES, ON RATIONAL UTILIZATION OF THE LAND RESOURCE, NOT ONLY THE WILDLIFE RESOURCE. IN DOING SO, WE WOULD EXPECT THAT THE EOPS AND MEASURABLE IMPACT OF THE PROJECT BE PRESENTED IN TERMS MORE DIRECTLY LINKED TO THE INTERMEDIATE AND STRATEGIC OBJECTIVES OF THE RDSS. ACTIVITIES AT THE COMMUNITY LEVEL WOULD FOCUS ON RATIONALIZING LAND USE FOR SPECIFIC ECONOMIC ACTIVITIES.

B. ISSUE NO. 2: TO WHAT EXTENT IS THE SUCCESS OF THE PROJECT DEPENDENT ON: DIRECT A.I.D. SUPPORT FOR ANTI-POACHING EFFORTS?

DISCUSSION: THE APRIL 1988 A.I.D. POLICY ON ENVIRONMENT AND NATURAL RESOURCES STATES, CONSISTENT WITH FAA SEC. 119, THAT QUOTE A.I.D.'S POLICY ON THE MORE IMMEDIATE AND NARROWLY FOCUSSED MEASURES TO PROTECT BIOLOGICAL DIVERSITY IS TO ... ENCOURAGE THE ESTABLISHMENT AND MAINTENANCE OF WILDLIFE SANCTUARIES, RESERVES, AND PARKS, AND PROMOTE ANTI-POACHING MEASURES UNQUOTE. SEVERAL PROPOSED PROJECT ACTIVITIES WOULD SUPPORT AND EXTEND THE ACTIVITIES OF GAME WARDENS, PARK RANGERS AND FORESTERS BY PROVIDING COMMODITIES AND TRAINING IN ANTI-POACHING TECHNIQUES. TO THE EXTENT THAT THE JOB RESPONSIBILITIES OF THESE UNITS INVOLVE LAW ENFORCEMENT ACTIONS OF A POLICE-FUNCTION NATURE (I.E., SURVEILLANCE OR ARREST OF POACHERS), HOWEVER, THE PROPOSED ASSISTANCE WOULD SEEM TO FALL WITHIN THE PROHIBITION OF FAA SEC. 660. THIS SECTION PROHIBITS ASSISTANCE (INCLUDING USE OF LOCAL CURRENCY GENERATIONS) FOR TRAINING, ADVICE, OR FINANCIAL SUPPORT FOR POLICE, PRISONS QUOTE OR OTHER LAW ENFORCEMENT FORCES UNQUOTE OR FOR QUOTE ANY PROGRAM OF INTERNAL INTELLIGENCE OR SURVEILLANCE ... UNQUOTE.

THE QUESTION OF WHETHER FAA SEC. 119(B) CREATES AN EXCEPTION TO FAA SEC. 660 FOR ASSISTANCE TO UNITS THAT ARE ENGAGED IN ANTI-POACHING ACTIVITIES IS UNDER ACTIVE REVIEW IN A.I.D./GC, BUT HAS NOT BEEN RESOLVED.

MISSION SHOULD CONSIDER, TO BE ON THE SAFE SIDE, ALTERNATIVE SOURCES OF FUNDING FOR ANTI-POACHING ACTIVITIES COVERED BY SEC. 660, PARTICULARLY FOR

~~PROCUREMENT OF OBVIOUS ENFORCEMENT-RELATED ASSISTANCE~~
~~SUCH AS PROCUREMENT OF AIRCRAFT AND VEHICLES.~~ IF
 ALTERNATIVE SOURCES OF FUNDING CANNOT BE IDENTIFIED, IS
 THE PROJECT CONCEPT STILL VIABLE IN ALL THREE
 COUNTRIES? WOULD THE PROJECT BE ABLE TO ACCOMPLISH ITS
 OBJECTIVES IF A.I.D. SUPPORT FOR QUOTE CORE UNQUOTE
 ANTI-POACHING ACTIVITIES WERE CONSTRAINED?

RECOMMENDATIONS AND ECPR GUIDANCE: THE GENERAL
 CONCLUSION OF THE ECPR WAS THAT EVEN IF ANTI-POACHING
 MEASURES CANNOT BE FUNDED BY A.I.D., THE INVESTMENT IN
 COMMUNITY BASED WILDLIFE RESOURCE MANAGEMENT MIGHT STILL
 BE VIABLE. THIS CONCLUSION ASSUMES, HOWEVER, THAT SOME
 A.I.D. ASSISTANCE CAN BE PROVIDED TO NATIONAL PARK AND
 WILDLIFE PERSONNEL. IT IS THE NATURE AND EXTENT OF THE
 ASSISTANCE THAT WILL BE CLARIFIED BY GC DURING DESIGN.
 THE ECPR VIEWED THE INTERACTIVE ROLE OF THE PARK
 RANGER/WILDLIFE MANAGEMENT SPECIALIST WITH THE LOCAL
 COMMUNITIES AS CRUCIAL TO THE SUCCESS OF THE PROGRAM.

DURING INTENSIVE DESIGN, AND CERTAINLY PRIOR TO
 AUTHORIZATION, THE MISSION SHOULD PROVIDE MORE SPECIFIC
 INFORMATION ABOUT THE NATURE AND TYPE OF ANTI-POACHING
 ACTIVITIES IT WOULD LIKE TO SEE FINANCED UNDER THE
 PROJECT (INCLUDING ALL ANTICIPATED USES OF AIRCRAFT AND
 VEHICLES AND ANY PROPOSED USE RESTRICTIONS) TO GC/AFR
 AND THE RLA FOR FURTHER GUIDANCE ON FAA SECS. 119(B) AND
 660. FOR ITS PART, AS GC IS BETTER ABLE TO CLARIFY THE
 GUIDANCE CONTAINED HEREIN, ESPECIALLY AS IT RELATES TO
 THE INTENT OF FAA SEC. 119(B), INFORMATION WILL BE
 PROVIDED DIRECTLY TO THE MISSION.

C. ISSUE NO. 3: WILL THE MISSION SELECT PROJECT SITES
 PRIOR TO AUTHORIZING THE PROJECT?

DISCUSSION. THIS CONCERN WAS RAISED BECAUSE THE
 OBLIGATION STRATEGY OF FINANCING GRANTS, NOT CONTRACTS,
 FOR PVO AND NGO PROJECTS IMPLIES THAT ACTUAL PROJECT
 SITES WILL BE DETERMINED BY PVOS POST-AUTHORIZATION.
 THE ECPR RAISED THE FOLLOWING QUESTIONS TO THE MISSION
 REPRESENTATIVE: TO WHAT EXTENT CAN THE MISSION
 DETERMINE ACTUAL PROJECT SITES PRIOR TO AUTHORIZATION?
 IS THE MISSION PREPARED TO UNDERTAKE A PROCESS OF
 REQUESTING AND REVIEWING GRANT APPLICATIONS DURING THE
 DESIGN PROCESS?

RECOMMENDATIONS AND ECPR GUIDANCE: THE ECPR CONCLUDED
 THAT TO THE MAXIMUM EXTENT POSSIBLE, ACTUAL SITES FOR
 COMMUNITY MANAGEMENT ACTIVITIES SHOULD BE IDENTIFIED IN
 THE PROJECT PAPER. WE UNDERSTAND THAT THIS MAY REQUIRE
 FIELD EXAMINATION OF ALTERNATIVE SITES, AND WE BELIEVE
 THAT SUCH EXAMINATION IS INDISPENSIBLE TO SOUND PROJECT
 DESIGN. IF, AFTER UNDERTAKING A THOROUGH REVIEW OF
 POSSIBLE SITES THE MISSION CAN DEFINITELY CHOOSE LESS
 THAN A FULL COMPLMENT OF SITES, A LIMITED LIST OF
 ALTERNATIVE SITES AND COMMUNITY BASED PROJECTS SHOULD BE
 INCORPORATED INTO THE DESIGN. THIS LIST SHOULD BE
 ACCOMPANIED BY A DETAILED LIST OF CRITERIA THAT THE

MISSION WILL EMPLOY TO DECIDE AMONGST THE ALTERNATIVE SITES.

D. ISSUE NO. 4: IS THE SCOPE OF THE PROPOSED ECONOMIC ANALYSIS SUFFICIENT?

DISCUSSION: THE DESIGN STRATEGY CONTAINED IN THE PID PROPOSED TO CONDUCT A COST-BENEFIT ANALYSIS OF THE REVENUE PRODUCING ACTIVITIES (THE COMMUNITY BASED WILDLIFE MANAGEMENT PROGRAMS) TO ASSESS RETURNS TO INVESTMENT AND POTENTIAL INCOME-GENERATING EFFECTS OF THE PROJECT. THE PROJECT COMMITTEE POINTED OUT THAT THE ULTIMATE SUCCESS OF THE PROJECT IS BASED ON AN ASSUMPTION THAT THE PID ITSELF STATES; I.E., THAT "ECONOMIC RETURNS ON MARGINAL LANDS FROM WILDLIFE MANAGEMENT CAN BE HIGHER THAN THOSE FROM CROP AND LIVESTOCK PRODUCTION". SINCE IT IS CRUCIAL TO THE SUCCESS OF THE PROJECT THAT THIS HYPOTHESIS BE VALID, THE PROJECT COMMITTEE WAS CURIOUS AS TO WHY TESTING THE HYPOTHESIS WAS NOT INCLUDED IN THE SCOPE OF THE ECONOMIC ANALYSIS.

ECPR RECOMMENDATIONS AND GUIDANCE: THE MISSION REPRESENTATIVE AGREED TO UNDERTAKE A THOROUGH ECONOMIC ANALYSIS OF THE STATED ASSUMPTION IN ADDITION TO A STANDARD COST/BENEFIT ANALYSIS OF THE RETURNS TO WILDLIFE PROTECTION/MANAGEMENT ACTIVITIES. IT SHOULD ALSO BE OUR MUTUAL CLEAR UNDERSTANDING THAT SOME QUANTITATIVE ANALYSIS AS TO THE DEMAND FOR WILDLIFE (AS A TOURIST ATTRACTION OR AS PRODUCT) AND THE ELASTICITY OF THAT DEMAND SHOULD BE PROVIDED IN ORDER TO LAY THE FOUNDATION FOR A REASONABLE BENEFIT CALCULATION.

E. ISSUE NO. 5: IS THE PROPOSED SOCIO-CULTURAL ANALYSIS SUFFICIENTLY COMPREHENSIVE?

DISCUSSION: ONE OF THE BASIC PROJECT HYPOTHESES IS THAT IT IS POSSIBLE TO REDUCE POACHING, ESPECIALLY IN TARGET AREAS. TO PROVE OR DISPROVE THIS, A SOUND SOCIAL ANALYSIS NEEDS TO BE CONDUCTED WHICH EXAMINES WHO THE POACHERS ARE AND WHO THEIR FINANCIAL BACKERS ARE. ONCE THIS IS KNOWN, THE POTENTIAL SUCCESS OF THE PROJECT MUST BE EVALUATED IN TERMS OF WHO WINS AND WHO LOSES IF THE PROJECT IS SUCCESSFUL. MORE SPECIFICALLY, IT SHOULD ASK WHO HAS TO WIN AND WHO HAS TO LOSE TO MAKE IT SUCCESSFUL.

RECOMMENDATION AND ECPR GUIDANCE: THAT THE MISSION INCLUDE A COMPREHENSIVE SOCIAL FEASIBILITY ANALYSIS WHICH DELVES INTO THE ISSUE OF THE REDISTRIBUTION OF FINANCIAL RETURNS FROM WILDLIFE ACTIVITIES AWAY FROM POACHING TO COMMUNITY MANAGEMENT AND THE SOCIAL DIMENSIONS OF SUCH A REDISTRIBUTION.

F. ISSUE NO. 6: DOES THE POLICY ENVIRONMENT NECESSARY FOR SUCCESSFUL PROJECT IMPACT CURRENTLY EXIST IN THE THREE COUNTRIES?

DISCUSSION: THE PID LISTS A SERIES OF IMPORTANT POLICY ISSUES THAT MUST BE RESOLVED IF THE PROJECT IS TO HAVE ITS INTENDED IMPACT. BOTH THE PROJECT COMMITTEE AT THE ISSUES MEETING AND THE ECPR DISCUSSED THE RELATIVE IMPORTANCE OF HAVING THESE POLICIES IN PLACE PRIOR TO INITIATING PROJECT ACTIVITIES. A.I.D/W DOES NOT VIEW THE ABSENCE OF A GOVERNMENT NATURAL RESOURCES PROTECTION POLICY, PER SE, TO BE PARTICULARLY DETRIMENTAL TO THE POTENTIAL IMPACT OF THE PROJECT. HOWEVER, THE ECPR VIEWS THE POLICY IN BOTSWANA WHICH, WE UNDERSTAND, ESSENTIALLY PROHIBITS LOCAL COMMUNITIES TO RETURN FINANCIAL GAINS RECEIVED FROM WILDLIFE RELATED ACTIVITIES TO BE A SERIOUS PROBLEM FOR THE BOTSWANA COMMUNITY MANAGEMENT ACTIVITIES. WITH SUCH A POLICY IN

PLACE, IT IS HARD TO SEE HOW THE PROJECT PURPOSE COULD BE ACHIEVED IN BOTSWANA. THE PID PROPOSES A STRATEGY OF DEALING WITH THIS ISSUE EITHER AS A CONDITION PRECEDENT TO DISBURSEMENT OR WITHIN THE CONTEXT OF IMPLEMENTATION PHASE DIALOG. WHILE THE PROJECT COMMITTEE SUPPORTS THE IDEA THAT FURTHER WORK ON ALL HOST COUNTRIES' NATURAL RESOURCES MANAGEMENT POLICIES MAY BE AN APPROPRIATE IMPLEMENTATION ACTIVITY AND SOME ASPECTS OF POLICY MAY BE APPROPRIATE SUBJECTS FOR FURTHER RESEARCH, THE REVENUE RETENTION POLICY MUST BE DEALT WITH PRIOR TO INVESTMENT OF A.I.D. FUNDS IN COMMUNITY-BASED WILDLIFE MANAGEMENT ACTIVITIES IN BOTSWANA.

RECOMMENDATION AND ECPR GUIDANCE: THE MISSION IS ENCOURAGED TO ENSURE THAT AN ADEQUATE POLICY ENVIRONMENT EXISTS PRIOR TO INITIATING A.I.D. INVESTMENTS IN ANY OF THE PROPOSED COUNTRIES. WITH RESPECT TO THE ABOVE-MENTIONED POLICY IN BOTSWANA, THE MISSION MUST (1) DESCRIBE IN SOME DETAIL IN THE PROJECT PAPER WHAT THAT POLICY IS, (2) DESCRIBE WHAT STEPS WILL BE TAKEN TO REMOVE ANY AND ALL POLICY AND PROCEDURAL HINDERANCES TO

RETAINING EARNINGS AT THE COMMUNITY LEVEL AND (S) STATE WHEN IT IS ANTICIPATED THAT SUCH HINDERANCES WILL BE REMOVED. TWO THINGS ARE TO BE EMPHASIZED. FIRST, THE ECPR CONCLUDED THAT THE REMOVAL OF THE POLICY PROHIBITING RETENTION OF FINANCIAL EARNINGS FROM WILDLIFE SHOULD BE A CONDITION PRECEDENT TO OBLIGATION OF FUNDS; NOT A CP TO DISBURSEMENT OF FUNDS. SECONDLY, THE REMOVAL OF THE POLICY SHOULD NOT BE IMPLEMENTED IN AN AD HOC MANNER; I.E.. THE MISSION SHOULD NOT CONSIDER AD HOC EXCEPTIONS MADE BY THE GOB FOR A PARTICULAR PROJECT AREA TO BE A VIABLE RESPONSE TO THIS CONCERN. SINCE FUNDING IS LIMITED, AND SINCE THE NUMBER OF ATTRACTIVE SITES WITH DEMAND FOR PROJECT SERVICES ARE ESTIMATED TO OUTSTRIP FUNDING AVAILABILITIES, THE MISSION SHOULD CONCIIOUSLY PLAN TO OBLIGATE ONLY IN AREAS WHERE THE POLICY ENVIRONMENT IS ALREADY IN PLACE AS THIS WILL ENHANCE THE CHANCES FOR PROJECT SUCCESS.

G. ISSUE NO. 7: SHOULD THE PROJECT BE AUTHORIZED IN THE FIELD?

ECPR RECOMMENDATION AND GUIDANCE. THE ECPR DETERMINED THAT THE PROJECT SHOULD BE AUTHORIZED IN THE FIELD, PURSUANT TO ECPR GUIDANCE CONTAINED HEREIN AND FINAL RESOLUTION BY AID/W AND GC OF THE SEC. 660 ISSUES. IN THE MEANTIME, ON-GOING DIALOG WITH THE RLA AND GC/AFR ON THESE ISSUES WILL BE IMPORTANT.

H. CONCERNS. IN ADDITION TO THE IDENTIFIED ISSUFS THE ECPR DISCUSSED THE FOLLOWING CONCERNS, AND CORRESPONDING GUIDANCE IS PROVIDED.

(1) FY 1989 OBLIGATION. THE BUREAU ENCOURAGES THE MISSION TO MAKE AN ALL OUT EFFORT TO OBLIGATE THIS PROJECT AT A FUNDING LEVEL SUFFICIENT IN AND OF ITSELF

TO ABSORB THE REMAINDER (AFTER MORTGAGES) OF THE SADCC APPROPRIATION THIS FISCAL YEAR; I.E. BY AUGUST 31, 1989. ECPR AND BUREAU MANAGEMENT REALIZE THAT STAFF RESOURCES ARE LIMITED FOR THIS DESIGN, AND THEREFORE ENCOURAGE MISSION TO POSTPONE OTHER LESS PRESSING TASKS TO SEPTEMBER 1989.

(2) PROJECT MANAGEMENT ARRANGEMENTS. THE ECPR DETERMINED THAT OBLIGATING ALL FUNDS TO ONE GOVERNMENT FOR ACTIVITIES TO BE IMPLEMENTED IN OTHER NATIONS IS NOT RPT NOT ADVISABLE FOR POLICY REASONS. MISSION SHOULD PLAN TO OBLIGATE ON A BILATERAL BASIS TO NATIONAL GOVERNMENTS. YOU MAY WISH TO CONSIDER OBLIGATING A PORTION OF THE AUTHORIZED FUNDING THROUGH A LIMITED RPT LIMITED NUMBER OF DIRECT HB 13 GRANTS WHERE THIS OPTION IS APPROPRIATE FOR ACHIEVING THE PURPOSES OF A SUB-ACTIVITY. THIS IS, HOWEVER, CLEARLY A SECOND CHOICE.

(3) INSTITUTIONAL ANALYSIS. WHILE THE PID DOES NOT MENTION AN INSTITUTIONAL ANALYSIS, PER SE, ECPR EXPECTS THAT STANDARD ANALYSIS REQUIREMENTS, INCLUDING FINANCIAL, ADMINISTRATIVE, AND INSTITUTIONAL ANALYSES, WILL BE CONDUCTED OF ALL POTENTIAL GRANTEEES.

I. OTHER INFORMATION PROVIDED BY PROJECT COMMITTEE MEMBERS. THE SUBJECT PROJECT GENERATED A GREAT DEAL OF INTEREST IN AID/W AND THE QUOTE PROJECT COMMITTEE UNQUOTE WAS QUOTE EXPANDED. FOR YOUR INFORMATION, YOU WILL FIND BELOW A SERIES OF OTHER POINTS AND ITEMS SUBMITTED FOR YOUR CONSIDERATION DURING THE INTENSIVE DESIGN OF THIS PROJECT.

(1) IEE. MISSION'S RATIONALE FOR NOT INCLUDING AN IEE IN THE PID WAS ACCEPTED BY THE BUREAU ENVIRONMENTAL OFFICER AND GC/AFR. MISSION SHOULD NOTE, HOWEVER, THAT THE ENVIRONMENTAL ASSESSMENT TO BE COMPLETED DURING PROJECT DESIGN MUST COVER THE NORMAL CONTENT OF A FULL ENVIRONMENTAL ASSESSMENT. ALSO, PLEASE NOTE THAT THE SCOPE OF WORK FOR THE ASSESSMENT WILL HAVE TO BE CLEARED IN AID/W BY THE BUREAU ENVIRONMENTAL OFFICER.

(2) REVOLVING FUND. WITH RESPECT TO THE PROPOSED GRANT TO ZAMBIA'S WILDLIFE CONSERVATION FUND AND THE ESTABLISHMENT OF A REVOLVING FUND, MISSION SHOULD FOLLOW AGENCY POLICY AND PROCEDURES GOVERNING SUCH FUNDS. IF A.I.D. FUNDS WERE TO BE PUT INTO A REVOLVING FUND WHERE THEY WOULD EARN INTEREST, AND BE SPENT FOR PROJECT PURPOSES MONTHS OR YEARS AFTER DEPOSIT, THIS COULD CREATE PROBLEMS ASSOCIATED WITH AUGMENTATION OF APPROPRIATIONS, DISBURSEMENT IN ADVANCE OF PROJECT NEEDS, LACK OF BONA FIDE NEEDED FOR THE FUNDS DURING THE FISCAL YEAR, AND THE REQUIREMENT THAT INTEREST EARNED BE RETURNED TO THE U.S. TREASURY. HENCE, IN DESIGNING SUB-GRANTS AND COMMUNITY WILDLIFE MANAGEMENT ACTIVITIES, MISSION SHOULD ENSURE THAT A.I.D. FUNDS ARE DISBURSED WHEN THEY ARE NEEDED FOR BONA FIDE PROJECT EXPENSES AND THAT THE PROCEEDS FROM THE ACTIVITIES (E.G., SALE OF HIDES, HORN AND MEAT OR TOURISM) ARE DEPOSITED INTO THE

REVOLVING FUND AS QUOTE PROGRAM INCOME UNQUOTE
(HANDBOOK 13, CHAPTER 1)

(3) INVOLVEMENT OF PVOS IN PROJECT DESIGN. THE USE OF REGISTERED PVOS OR LOCAL NGOS TO ASSIST IN PROJECT DESIGN DOES NOT BAR THEM FROM BEING SELECTED AS GRANTEEES OR COOPERATING AGENCIES FOR HB 13 GRANTS OR COOPERATIVE AGREEMENTS. THE REVISED CHAPTER 2 OF HB 13 (TM 13:47, DATED MAY 26, 1988) WOULD ALLOW A GRANTEE ON THE DESIGN PHASE TO CONTINUE AS GRANTEE FOR IMPLEMENTATION (SECTION 2B3B-D). SECTION 2B4 REQUIRES THE TECHNICAL OFFICE TO WRITE A JUSTIFICATION FOR SUCH A NONCOMPETITIVE AWARD, TO BE REVIEWED BY THE GRANT OFFICER IN THE FIELD. WE BELIEVE THESE SECTIONS CAN PROVIDE THE MISSION WITH THE FLEXIBILITY IT REQUIRES ON THIS ISSUE.

(4) HOLISTIC RESOURCE MANAGEMENT (HRM). HRM IS A REVOLUTIONARY ECOSYSTEM MODEL AND APPROACH TO MANAGING NATURAL RESOURCES THAT CONSIDERS ALL OF THE ELEMENTS OF THE ENVIRONMENT. HRM RECOGNIZES THAT ECOLOGICALLY SOUND AND ECONOMICALLY PROFITABLE MANAGEMENT OF WILDLIFE, OR LIVESTOCK, OR RANGE, OR TIMBER IS IMPOSSIBLE WITHOUT CONSIDERING THE INTERRELATIONSHIPS OF WILDLIFE, RANGE, LIVESTOCK, TIMBER -- AS WELL AS MANY OTHER ELEMENTS OF THE ECOSYSTEM, INCLUDING MAN HIMSELF.

THE HRM SOUNDS LIKE AN EXCELLENT MATCH WITH THE NATURAL RESOURCES MANAGEMENT PROJECT. WHAT THE PROJECT INTENDS TO DO (I.E., QUOTE DEMONSTRATE THE TECHNICAL AND ECONOMIC VIABILITY OF COMMUNITY BASED NATURAL RESOURCE MANAGEMENT FOR INCREASING HOUSEHOLD AND COMMUNITY INCOMES WHILE SUSTAINING NATURAL RESOURCES UNQUOTE) IS PRECISELY THE OBJECTIVE OF HRM.

DOCUMENTS EXPLAINING THE HRM IN MORE DEPTH WERE SENT TO THE MISSION IN MAY 1989. PLEASE CONFIRM RECEIPT.

(5) ORGANIZATION FOR TROPICAL STUDIES (OTS). DOCUMENTS OUTLINING THE SERVICES OF THIS ORGANIZATION WERE PROVIDED BY BIFAD AND ALSO WERE FORWARDED TO THE MISSION IN MAY. THE OTS MAY BE ABLE TO SERVE PROJECT DESIGNERS AS A RESOURCE. PLEASE CONFIRM RECEIPT OF THESE DOCUMENTS ALSO.

3. AID/W APPRECIATES MISSION PATIENCE IN ITS LONG WAIT FOR THIS GUIDANCE CABLE. CONTENTS AND THE REVIEW MEETINGS WERE THOROUGHLY DISCUSSED WITH BOB OTTO, CHIEF OF PARTY FOR THE CONTRACT DESIGN TEAM, PRIOR TO HIS DEPARTURE FOR HARARE.

4. AFR/PD/SA WILL FORWARD COPIES OF EXECUTED AND APPROVED PID FOR MISSION FILES WHEN THEY HAVE BEEN REPRODUCED. EAGLEBURGER

BT
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INITIAL ENVIRONMENTAL EXAMINATION
OR
CATEGORICAL EXCLUSION

ANNEX E

1 of 3 pages

Project Location: Southern Africa Regional (Botswana, Zambia, Malawi and Zimbabwe)

Project Title: Regional Natural Resources Management Project (690-0251)

Funding: \$19,500,000

Life of Project: FY(s) 89-95

IEE Prepared By: Ernest R. Rojas, Assistant Regional Engineer, USAID/Zimbabwe

Environmental Action Recommended: Positive Determination X

A positive determination is recommended for the project components that will have an effect on the endangered, threatened and/or critical habitat of wildlife. An Environmental Assessment was recommended at the PID level pursuant to 22 CFR part 216, section 216.5, Handbook 3, Appendix 2D:

Negative Determination X

A negative determination is recommended for the community based project components with respect to the construction of (i) four housing units in each country, except Malawi, consisting of a warehouse, a staff house, an office and workshop store, (ii) road maintenance for approximately 80 km of existing roads located in Hwange National Park (Zimbabwe) and (iii) the procurement of radio communication equipment. A negative determination is recommended for this limited construction, road maintenance, and procurement of communication equipment since the environmental effects will be minimal. The USAID/Zimbabwe Regional Engineer will review specifications and drawings for the construction and maintenance activities.

Categorical Exclusion: A categorical exclusion is recommended for the Education, Training, and Technology Transfer Components of the Regional Project in accordance with the criteria set forth in 22 CFR, part 216, section 216.2(c)(2)(i),(ii) and (iii).

Action Requested By: Allison B. Herrick
Director, USAID/Zimbabwe

Approved: ABH Herrick

Disapproved: 28 July 1989

Date:

Bureau Environmental Officer Concurrence: Approved: X

B. Boyd
Bessie L. Boyd, AFR/TR/ANR

Disapproved:

Date: 7/29/89

Clear:RLA (draft)

Clearances:
 FAZ,DD

Natural Resources Management (Project 690-0251)

Scoping Statement For Environmental Assessment Activities

1. Set forth below is the Scope of Work for the Environmental Assessment (EA) for the Natural Resources Management Project:

2: Project Description

The project will contribute to U.S. Agency for International Development (A.I.D.) goals of equitable economic growth and biological diversity. The objective is to deepen experience and expand knowledge within the region of natural resource management practices which effectively increase incomes while sustaining wildlife yields at the community level. Successful project implementation is expected to: (1) halt the decline of threatened wildlife populations in the short term through strengthened anti-poaching capabilities, and in the medium term through the expanded application of the concept of local participation in the economic benefits of natural resource utilization and management; (2) heighten public awareness of the importance of informed management of wildlife and related resources for national economic growth and development.

The Project purpose is to demonstrate the technical and economic viability of community-based natural resource management for increasing household and community incomes while sustaining natural resources; and to improve national capabilities to halt the decline in the wildlife resource base through training, education, communications, and technology transfer.

The core project component is Community-Based Resource Utilization, which will fund eight to ten discrete community sub-projects in target areas of Zimbabwe, Zambia, and Botswana. The sub-projects, which will be managed in a coordinated manner by relevant government agencies and non-governmental organizations (NGO's), will transfer to local communities the technical and administrative skills necessary to allow them to produce, manage, and profit from wildlife and other natural resources available where they live, a concept which has been demonstrated to be feasible in Zimbabwe and Zambia.

Other planned project components will support the core activity with resources for: (i) planning and applied research support for the community-level interventions; (ii) public education and information exchange efforts to help create the policy and attitudinal environments in which community-based resource management programs can flourish; and (iii) measures to protect the resource bases in the short term (e.g., providing assistance to anti-poaching efforts and training national parks personnel) while the longer-term solution, community management, takes root.

2

3: Environmental Concerns

The following items have to be examined in the environmental assessment:

Rangeland and Wildlife Management

1. Game cropping (Culling)
2. Translocation
3. Fencing
4. Fire
5. Water Holes
6. Illegal Use Control (Protection)
7. Tourism

4: Environmental Concerns to be examined in an environmental assessment at a later date:

1. Processing Facilities
2. Resettlement

5: Specific Environmental Analysis Activities

A: The environment specialist, under the direction of Development Alternative, Inc. (DAI) team leader will examine all items listed in Section 3 in detail and will write up findings and conclusions concerning these areas which are applicable to this project as part of the environmental assessment. Each country included in the project will be specifically addressed in the write up for each area where it is applicable.

B: The environmental specialist will have a background in wildlife resources and a Ph.D in an appropriate field:

C: The specialist will work closely together with other regional ecologists working with the Parks and Wildlife groups in the countries covered in the project:

D: The environmental assessment will be done in conjunction with the project paper development with the environmental specialist working directly with the design team as appropriate. The final assessment will be included as an annex to the Project Paper and results and recommendations included within the body of the Paper. Approval of the assessment will be included jointly with the approval of the project paper:

E: The environmental specialist will not address any environmental issues in the EA concerning technical assistance and training as they are not applicable:

IDENTIFIED AS NOT BEING MANUFACTURED IN THE U.S. AND--A
SECOND FOR THOSE VEHICLES WHICH WILL HAVE TO BE
IDENTIFIED CASE-BY-CASE. THE PROCEDURES ARE AS FOLLOWS:

a
ANNEX D
2 of 2 pages

A. FOR THE CATEGORIES OF VEHICLES IN PARAGRAPH 1A AND 1B ABOVE, ONCE THE MISSION OR A.I.D./W BUREAU RESPONSIBLE FOR A PROJECT DETERMINES THAT THE VEHICLES ARE NEEDED FOR THE PROJECT, NO FURTHER WAIVER IS NECESSARY.

B. FOR THE CATEGORIES OF VEHICLES IN PARAGRAPH 1C ABOVE, IF THE MISSION OR A.I.D./W BUREAU DETERMINES A NEED FOR A RIGHT-HAND-DRIVE VEHICLE OR MOTORCYCLE THAT MAY NOT BE MANUFACTURED IN THE UNITED STATES, THE MISSION/BUREAU WILL SEND A REQUEST TO THE COMMODITY SUPPORT DIVISION OF THE OFFICE OF PROCUREMENT (M/SER/OP/COMS) SPECIFYING THE TYPE OF VEHICLE NEED. M/SER/OP/COMS WILL DETERMINE WHETHER ANY VEHICLES MEETING THE SPECIFICATIONS ARE MANUFACTURED IN THE UNITED STATES. IF IT DETERMINES THAT THERE ARE NONE, IT WILL NOTIFY THE REQUESTOR AND THE BLANKET WAIVER AUTHORITY MAY BE USED TO COVER THE PROCUREMENT OF THOSE VEHICLES FROM OUTSIDE THE UNITED STATES.

C. IN EITHER 3A OR 3B ABOVE, SPARE PARTS SETS FOR THESE VEHICLES THAT ARE PURCHASED IN THE SAME CONTRACT OR ORDER ARE ALSO INCLUDED IN THE WAIVER.

D. MISSIONS/BUREAUS USING THIS WAIVER AUTHORITY WILL MAINTAIN A RECORD OF THE NUMBER, TYPE AND VALUE OF VEHICLES PURCHASED UNDER THIS AUTHORITY. THE INFORMATION WILL BE SUBMITTED TO A.I.D./W FOR REVIEW WHEN WAIVER RENEWAL IS CONSIDERED. BAKYR

PT
#9274

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In reply please quote 1

Telegrams: FRIANZI, Lilongwe
Telephone: Lilongwe 731 311

Communications should be addressed to:
The Secretary to the Treasury



MINISTRY OF FINANCE
P.O. BOX 30049
LILONGWE 3
MALAWI

9th August, 1989

The Mission Director,
USAID,
Box 30455,
LILONGWE 3.

Dear Sir,

FUNDING OF THE REGIONAL DEVELOPMENT OF
COMMUNITY BASED MANAGEMENT AND UTILISA-
TION OF WILDLIFE RESOURCES IN MARGINAL
AREAS-SADCC PROJECT NO. 5.0.18.

Please find enclosed a document regarding the above mentioned project.

This project proposal was approved by the SADCC Wildlife Technical Committee on the 6th of May, 1989 and is now being submitted to you for possible funding.

I shall be most grateful if our request was considered favourably.

Yours faithfully,

for : Kenna A. Mphonda
ACTING SECRETARY TO THE TREASURY

DATE: 8/12/89

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DD	
PDD	
PO	
HPN	
ADD	
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CONT	
INFO	
DUE DATE:	8/24/89
ACTION TAKEN:	

generate revenues for the local communities and create new employment for Zambian citizens without imposing an unsustainable recurrent cost burden on the Government either during implementation, or after external support to the project is completed.

The project is also consistent with the theme underlying the National Conservation Strategy for Zambia of conservation for sustainable development.

On behalf of the Government of the Republic of Zambia, therefore, I would like to request that the United States Government approve the RNRM PP, and thereby provide a grant of US\$2.6 million over a four year period to carry out the project's goal of increasing local community participation in and deriving of benefits from sustainable management and utilization of wildlife resources. In view of the importance and urgency of this project, it is earnestly hoped that USAID/Zambia will be able to take immediate steps to oblige the US\$2.6 million during the remainder of U.S. fiscal year 1989. I hope this request will meet with favourable consideration, and we look forward to our continuing warm and productive relationships during the implementation of the RNRM project.


E. M. Munalula
ACTING SENIOR PERMANENT SECRETARY
MINISTRY OF FINANCE



REPUBLIC OF ZAMBIA

ANNEX B

MINISTRY OF FINANCE

P.O. BOX RW62, RIDGEWAY
LUSAKA

26th July, 1989

Mr. Leslie A. Dean,
Mission Director,
USAID/Zambia,
LUSAKA

**SUBJECT: ZAMBIA: REGIONAL NATURAL RESOURCES MANAGEMENT
PROJECT (RNRM) (690-0251): ZAMBIA COMPONENT**

Zambia welcomes support from donors to help the Government and the Zambian people to protect, manage, and utilise the country's natural resources on a sustainable basis. The Department of National Parks and Wildlife Service (NPWS) in the Ministry of Tourism is charged with the responsibility of managing and conserving our precious wildlife resource. It is for this reason that we have been working with you and members of your staff to explore new ways in which AID might support increased community based management and utilization of wildlife resources, a vital key to the protection and sustainable utilization of this resource in the long term.

The proposed Regional Natural Resources Management (RNRM) Project, as designed to work with and strengthen the Administrative Management Design (ADMADE) program, is a manifestation of our discussions in this area. The RNRM Project Paper (PP) is based on a number of agreements with Zambian Government Ministries, Non-government institutions and local communities in Game Management Areas (GMAs). Several meetings have been held between relevant government ministries, non-government organizations and affected local communities and provided comments to USAID/Zambia at various phases of the project design effort.

The RNRM Project addresses key priorities of the Government in a number of respects. Particularly, the project will:

- develop wildlife production systems in the GMAs as sustainable economic component of the agro-ecosystems of these areas.
- rehabilitate wildlife resources in the GMAs through the involvement of local communities in the monitoring, management and protection of the wildlife resource base.
- strengthen the capacity of the NPWS to implement the ADMADE program in the GMAs.
- train unit leaders and village scouts and some senior personnel within the NPWS to effect the resource management and protection programme.

2/.....

TELEPHONE:
TELEGRAMS: FINANCE
REFERENCE:



REPUBLIC OF BOTSWANA

MINISTRY OF FINANCE & DEVELOPMENT PLANNING.

PRIVATE BAG 006

GABORONE

Reference FDP 80/2/22 [1-12]

Mr J. Hummon
Director
USAID
P.O. Box 2427
Gaborone

3rd August 1989

Dear Mr Hummon,

RE: NATURAL RESOURCES MANAGEMENT

I write to request assistance in the area of natural resource management from USAID.

This assistance would be in the fields of community-based natural resource utilization, conservation and environmental education, natural resource management and applied research, and regional communication. These areas have been the subject of discussion between yourselves and the relevant Government Ministries.

The Government of Botswana looks forward to the cooperation of USAID in this endeavour, subject to the approval and signature of a project agreement to be negotiated between ourselves on this subject.

Yours sincerely,


B. Gaolathe
Permanent Secretary

Telegram: "MINFIN", HARARE
Telex: 2141
Telephone: 722101, 794571

Private Bag 7705, Causeway



ZIMBABWE

Reference: A/28/75

MINISTRY OF FINANCE, ECONOMIC
PLANNING AND DEVELOPMENT
Mushumutapa Building
Samora Machel Avenue
Harare

31st August, 1989.

Ms. Allison B. Herrick

The Director
USAID
1 Pascoe Avenue
HARARE

Dear Ms. Herrick,

RE: NATURAL RESOURCES MANAGEMENT PROGRAMME : SADCC REGIONAL PROJECT : USAID FUNDS

The Government of Zimbabwe in cooperation with the Republics of Zambia, Botswana and Malawi wishes to pursue the SADCC adopted Regional Natural Resources Policy and Development Strategy to protect, maintain and better utilize and develop the regions natural resources. To this end the Government of Zimbabwe will be implementing a community Bases Natural Resources Management Project.

The project, which is under the auspices of the Ministry of Natural Resources and Tourism will involve activities in the following areas:-

1. Community based natural resources utilisation
2. planning and applied research support
3. natural resources conservation
4. and conservation education and training.

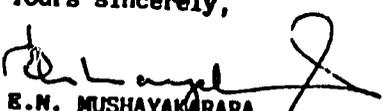
The primary target area includes two communal lands in Matebeleland North namely Tsholotsho and Hwange and it is hoped that the project will be replicated in other areas. For the successful implementation of the project the GOZ intends to contribute Z\$8.5m and it is anticipated that USAID will provide additional support to the tune of US\$3.2 million.

The purpose of this letter is therefore to officially seek your Government consideration to provide the required financial assistance.

Attached please find the necessary documents relating to the project.

I look forward to your usual and unflinching support.

Yours sincerely,


E.N. MUSHAYAKARARA

SENIOR SECRETARY FOR FINANCE, ECONOMIC PLANNING AND DEVELOPMENT.

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LOGICAL FRAMEWORK
NATURAL RESOURCE MANAGEMENT PROJECT
(690-0251)
REGIONAL LEVEL

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><u>Regional Goal:</u></p> <p>Regional cooperation among participating SADCC member states in managing and protecting the natural resource base of the SADCC region for purposes of sustainable social and economic development as well as protection of ecological diversity.</p>	<p><u>Measure Of Goal Achievement:</u></p> <ul style="list-style-type: none"> - SADCC member States meeting periodically to review progress in natural resource strategy implementation and to share expenses. - SADCC Member States cooperating across borders to address Natural Resources, particularly, wildlife management issues. 	<p><u>Means of Verification</u></p> <ul style="list-style-type: none"> - Scheduled Meeting - Progress reported at Annual SADCC meetings. - Cross Border Agreements entered into by Governments. 	<p><u>Assumptions for Achieving Goal</u></p> <ul style="list-style-type: none"> - Natural Resources, including wildlife management is a priority of SADCC member Governments.
<p><u>Regional Purpose:</u></p> <p>To obtain and disseminate knowledge of different strategies and methodologies for community management of wildlife resources among SADCC member states.</p>	<p><u>End of Project Status at Regional Level:</u></p> <ul style="list-style-type: none"> -- Increased institutional capacity of SADCC to address issues of natural resource utilization on a regional basis. -- Interested governments and leaders in the natural resources sector throughout the SADCC region will be better informed on natural resource management methods and impact, particularly with respect to wildlife. -- SADCC member Governments will have demonstrated increased commitment to extension of wildlife utilization to lands under natural forms of management where local populations have received little direct benefit and where the wildlife resource is under heavy pressure from commercial poaching. 	<p><u>Means of Verification:</u></p> <ul style="list-style-type: none"> - SADCC Sector Coordination Unit for Wildlife, Forests, and Fisheries staff increased. - Increased number of SADCC publications reporting on Wildlife Issues. - Increased number of communities in SADCC member States provided authority to manage wildlife revenues at the local level for the benefit of the community, with community investment. 	<p><u>Assumptions for Achieving Purpose:</u></p> <ul style="list-style-type: none"> - Pilot efforts include relevant models for most SADCC member countries. - Significant numbers of wildlife populations are not destroyed before local management is put into effect. - Natural or man-made disasters do not destroy important wildlife populations.

Regional Outputs:

- Record of continual monitoring and evaluation processes, including, baseline studies, an implementation review, a mid-term evaluation, and a final impact evaluation.
- Periodic newsletters
- Annual workshops
- Research, analysis, and publication of results.
- A comparative analysis of the different models being applied in each country to make hypothesis of their effectiveness and determination of impact on community residents.

In Non-Participating Countries:

- Development and enactment of policies supportive of community-based management of wildlife resources.
- Periodic

Means of Verification:

- Reports, documentation from workshops.
- Copies of documents.
- Representation/participation conferences and workshops.

Assumptions:

- effective administration and management of project inputs.

Inputs at Regional Level:

- A vehicle and operating support
- Technical Assistance through provision of a Project Advisor.
- Support for Travel to facilitate exchange and dissemination of information.
- Support for conferences, workshops, seminars, research and field visits including, support for reproduction and dissemination of documents.

A.I.D.

\$ 66,500
\$ 563,00
\$ 135,500
\$ 254,500

GRANTEE

\$227,500

Means of Verification

- Project Agreement Budgets
- Project Reports
- Audits and evaluations

Assumptions:

- U.S. economic assistance is not terminated.
- All Parties meet the terms of the agreement.

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LOGICAL FRAMEWORK
NATURAL RESOURCE MANAGEMENT PROJECT
(690-0251)
COUNTRY LEVEL

NARRATIVE SUMMARY

OBJECTIVE VERIFIABLE INDICATORS

MEANS OF VERIFICATION

IMPORTANT ASSUMPTIONS

Community Level Goal:

Increased incomes and enhance capability to meet basic human needs through sustainable utilization and conservation of natural resources, particularly wildlife.

Measures of Goal Achievement:

- Zimbabwe, Zambia, and Botswana meeting food needs through domestic production or imports funded with own resources.

Means of Verification:

- Survey of international trade records.
- Discussions with other donors re source of food imports.

Assumptions for Achieving Goal:

- Inflation does not negate improved purchasing power of increased incomes.

Country Level Sub-Goal:

To promote sustainable development of communities on lands that are marginally suitable for agriculture.

- In Zimbabwe, Zambia and Botswana households have sufficient income to ensure adequate nutrition of household members.

- Available Surveys of nutritional status.

- Demand for wildlife products is not diminished by international restrictions on trade in wildlife products.

- Increased percentage of GDP attributable to revenues from wildlife utilization.

- Available analysis of GDP.
- Land use and productivity records available through Government.

- Increased income is used to meet basic needs requirements.

Country Level Purpose:

(1) To demonstrate, through practical examples, the technical, social, economic and ecological viability and replicability of community-based natural resource management and utilization programs on marginal lands for increasing household and community incomes while sustaining natural resources; and

End of Project Status:

- Natural resource utilization will be demonstrated to be preferred and profitable land use in marginal lands in 8-10 target areas.

Means of Verification:

- Comparison of results of baseline and endline data surveys in participating communities.

Assumptions:

- Communities in target areas willing, and capable of learning skills necessary to manage wildlife and for ext resources on sustainable basis as a means of increasing their incomes.

(2) To improve national and local capability to halt the decline in the wildlife resource base through training, education, protection, communication, and technology transfer.

- Resource management programs will be self-sustaining, will offer employment opportunities, will result in optimal and sustained wildlife yields, and will generate revenues for local development.

- Review of project, SADCC, and government records; interviews with NGO's.

- Natural disasters do not obligate existing wildlife resources in target communities.

- The decline of endangered elephant and rhino populations will be halted in targeted areas and nationally.

- Project evaluation

- Continuing market for wildlife and veld products (both domestic and foreign).

- Transnational protocols for wildlife management in place.

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NARRATIVE SUMMARY**OBJECTIVE VERIFIABLE INDICATORS****MEANS OF VERIFICATION****IMPORTANT ASSUMPTIONS****Country Level Purpose:****End of Project Status:****Means of Verification:****Assumptions:**

- Governments, decision-makers and opinion leaders throughout the SADCC region will be better informed on natural resource management methods and impact.
- Heightened public awareness of the value of natural resources for economic growth and development.
- Institutions and decision-making procedures for sustainable resource management and distribution of economic benefits resulting from the natural resource base will be established and strengthened at the village, ward, and district levels on communal lands in participating SADCC member states. These institutions will assume complete responsibilities by the end of the project.
- Participation of women in resource management programs will increase at the village, ward, and potentially, district levels in the targeted SADCC member states. The role of women in the economy and their access to income will be expanded through income-generating activities that use the natural resource base in a sustainable manner.

- Field observations from site visits.

- Anti-poaching efforts near target communities protecting wildlife population.
- Communities have authority to limit rights to access to wildlife to residents and safari operators.

OUTPUTS:**A. Community Based Resource Utilization****ZIMBABWE**

- Up to 100 locally-recruited wildlife monitors and other technical and management personnel trained and employed by the District Councils to work at the community-level.
- Construction of supporting infrastructure, such as fences and watering points.
- Maintenance of optimum animal population levels for controlling problem animals.

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OUTPUT (cont...)

- Institutions capable of planning and administering their own sustainable wildlife management programs.
- Wildlife management schemes linking production and marketing established
- Establishment of community development funds.
- Expanded Government capability to promote wildlife utilization projects and to provide technical support in assessing the feasibility and implementation of these activities.
- At least two economically viable demonstration projects in wildlife utilization are initiated and implemented in selected project sites.
- Local NGOs, district, and community level institutions capable of planning and administering their own sustainable wildlife management programs strengthened or established.

B. Planning and Applied Research Support:ZIMBABWE

- Socio-economic data collection and analysis relevant to project implementation, monitoring and evaluation.
- Identification and analysis of culturally determined rights, responsibilities, and practices relating to environmental, social, and economic resources;
- Identification and analysis of micro-level individual, household, and community motivational and decision-making factors, and the range of economic options individuals perceive.
- Investigation of center-periphery relationships in bureaucratic, legal, and administrative structures, with the inherent conflicts over resource control these relationships involve.
- High level professional training for up to three research fellows in the socio-economic and institutional dimensions of environmental management.
- Publications regarding the dynamics of community based resource management in the target areas.

OUTPUT (cont...)

- Developed and refined survey and monitoring techniques.
- Improved understanding of elephant habitat interactions.
- Measurable habitat recovery in areas where elephant densities have been reduced.
- Increased elephant densities in those areas where elephant may formerly have been excluded.
- Full and efficient recovery of all harvestable products from elephant culling operations.
- Recovery of statistical data from elephant carcasses to monitor demographic parameters.
- Restocking of adjacent communal lands.
- Negligible elephant mortality due to poaching and continued protection of endangered species in the project area.

ZAMBIA

- Strengthened capacity of existing government, district, and local institutions to protect, manage, and utilize wildlife resources.
- Ecological monitoring, which includes annual estimates of the populations of the more important species and records of illegal activities.
- Declining level of illegal use of wildlife resources.
- Recovery of depleted wildlife populations.

D. Conservation Education and TrainingZIMBABWE

- The integration of conservation issues into the existing primary and junior secondary school curriculum.
- Training of teachers, education administrators, literacy tutors, and extension agents in the use of new curriculum/training materials and environmental issues.

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OUTPUT (cont...)

- Up to three baseline socio-economic surveys conducted at the beginning of the project, with parallel surveys conducted at the end of the project.
- Up to three in-depth longitudinal studies.
- Participation in regional seminars and conferences.
- Advisory services.

BOTSWANA

- Management plans for four protected areas and 12 WHAs drafted and approved by relevant DLUPUs.
- At least two case studies illustrate the utility of land-use planning in Botswana.
- At least two socio-economic studies compare baseline and follow-up data from the selected sites for the demonstration projects and present conclusions on the impact of the wildlife utilization program on residents.
- Studies of international markets for wildlife products.
- Other studies.

C. Conservation of the Resource BaseZIMBABWE

- Improved capacity to census and monitor elephant populations, conduct applied research on elephant carrying capacities in the project area, manage the elephant population, and protect the elephant population from illegal hunting.
- Habitat and vegetation monitoring.
- Annual reports and periodic updates providing full details of the numbers, trends, density, and distribution of elephant in the project area.
- Annual reports and periodic updates on habitat change in monitored plots and the relationships between such change and elephant density and management actions.

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OUTPUT (cont...)

- The strengthening of the Interpretation and Extension Units of the Departments of Wildlife and National Parks through workshops, equipment, and establishment of interpretation centers.
- Production of educational materials including scripts for use on radio programs, videos, "Action" magazine and other teaching tools.
- Workshops with village, district and provincial authorities on community-based resource utilization.
- Presentation to the general public.

BOTSWANA

- Needs Assessment
- Environmental education incorporated into the primary and junior secondary curricula.
- Environmental education incorporated into pre-service and in-service training for teachers.
- Environmental education taught in the Department of Non-formal education.
- Outreach program strengthened.
- Radio spots.
- Strengthened Wildlife Education Unit in Extension Services.
- Environmental Education reference and education materials.

INPUTS:A. Community Based Resource UtilizationZIMBABWE

- Fund for expenditures to enhance the use of wildlife through District Council activities.
- Revenues from wildlife utilization
- Technical Assistance for development of land plans.
- Commodities, including aerial photographs, maps, transport.

INPUTS (cont...)C. Conservation of the Resource BaseZIMBABWE

- Operational support for periodic aerial census surveys.
- Commodities including a main-frame computer.
- Support for a joint Zimbabwe/Botswana workshop or seminar to plan the research and monitoring component of the program.
- Equipment to undertake aerial surveys of elephant populations, including aircraft rehabilitation, upgrading of aircraft photographic monitoring capability, and main-frame computer.
- Equipment required for assistance in the restocking of communal lands (capture and translocation), including vehicles, communications equipment, and field equipment.
- Equipment, including vehicles, field equipment for anti-poaching patrols and VHF radio equipment for protection of elephant and other poached species.
- Support for liaison with Botswana.

ZAMBIA

- Equipment to support the NPWS and the GMA wildlife management authority, including vehicles and radios.
- Training of unit leaders and village scouts and some senior personnel within NPWS.
- Construction and equipping of a mechanical workshop for maintenance of vehicles.
- Provision of data processing equipment.

D. Conservation Education and TrainingZIMBABWE

- Training in conservation education through workshops, seminars, conferences, and site visits.

NARRATIVE SUMMARY

OBJECTIVE VERIFIABLE INDICATORS

MEANS OF VERIFICATION

IMPORTANT ASSUMPTIONS

INPUTS (cont...)

- Commodities, including printed materials such as Action Magazine, a mobile training unit, and educational materials.
- Commodities, including equipment for an interpretation center at the Korodziba Base Station.

BOTSWANA

- TA from a resident technical advisor.
- Commodities including a micro-computer and software.
- Funding for travel, workshops, seminars, conferences, and site visits.

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REGIONAL NATURAL RESOURCES MANAGEMENT PROJECT

(690-0251)

ANNEX F

5C(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable to: (A) FAA funds generally; (B)(1) Development Assistance funds only; or (B)(2) the Economic Support Fund only.

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

- | | <u>Botswana</u> | <u>Zimb</u> | <u>Zambia</u> | <u>Malawi</u> |
|--|-----------------|-------------|---------------|---------------|
| 1. <u>FY 1989 Appropriations Act Sec. 578(b).</u>
Has the President certified to the Congress that the government of the recipient country is failing to take adequate measures to prevent narcotic drugs or other controlled substances which are cultivated, produced or processed illicitly, in whole or in part, in such country or transported through such country, from being sold illegally within the jurisdiction of such country to United States Government personnel or their dependents or from entering the United States unlawfully? | No | No | No | No |
| 2. <u>FAA Sec. 481(h); FY 1989 Appropriations Act Sec. 578; 1988 Drug Act Secs. 4405-07.</u> (These provisions apply to assistance of any kind provided by grant, sale, loan, lease, credit, guaranty, or insurance, except assistance from the Child Survival Fund or relating to international narcotics control, disaster and refugee relief, narcotics education and awareness, or the provision of food or medicine.) If the recipient is a "major illicit drug producing country" (defined as a country producing during a fiscal year at least five metric tons of opium or 500 metric tons of coca or marijuana) or a "major drug-transit country" (defined as a country that is a significant direct source of illicit drugs significantly affecting the United States, through which such drugs are transported, or through which significant sums of drug-related profits are | N/A | N/A | N/A | N/A |

laundered with the knowledge or complicity of the government): (a) Does the country have in place a bilateral narcotics agreement with the United States, or a multilateral narcotics agreement? and (b) Has the President in the March 1 International Narcotics Control Strategy Report (INSCR) determined and certified to the Congress (without Congressional enactment, within 45 days of continuous session, of a resolution disapproving such a certification), or has the President determined and certified to the Congress on any other date (with enactment by Congress of a resolution approving such certification), that (1) during the previous year the country has cooperated fully with the United States or taken adequate steps on its own to satisfy the goals agreed to in a bilateral narcotics agreement with the United States or in a multilateral agreement, to prevent illicit drugs produced or processed in or transported through such country from being transported into the United States, to prevent and punish drug profit laundering in the country, and to prevent and punish bribery and other forms of public corruption which facilitate production or shipment of illicit drugs or discourage prosecution of such acts, or that (2) the vital national interests of the United States require the provision of such assistance?

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3. 1986 Drug Act Sec. 2013; 1988 Drug Act Sec. 4404. (This section applies to the same categories of assistance subject to the restrictions in FAA Sec. 481(h), above.) If recipient country is a "major illicit drug producing country" or "major drug-transit country" (as defined for the purpose of FAA Sec 481(h)), has the President submitted a report to Congress listing such country as one (a) which, as a matter of government policy, encourages or facilitates the production or distribution of illicit drugs; (b) in which any senior official of the

N/A N/A N/A N/A

Botswana Zimb Zambia Mala

government engages in, encourages, or facilitates the production or distribution of illegal drugs: (c) in which any member of a U.S. Government agency has suffered or been threatened with violence inflicted by or with the complicity of any government officer; or (d) which fails to provide reasonable cooperation to lawful activities of U.S. drug enforcement agents, unless the President has provided the required certification to Congress pertaining to U.S. national interests and the drug control and criminal prosecution efforts of that country?

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|--|--------------------|
| <p>4. <u>FAA Sec. 620(c)</u>. If assistance is to a government, is the government indebted to any U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies, (b) the debt is not denied or contested by such government, or (c) the indebtedness arises under an unconditional guaranty of payment given by such government or controlled entity?</p> | <p>NO NO NO NO</p> |
| <p>5. <u>FAA Sec. 620(e)(1)</u>. If assistance is to a government, has it (including any government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?</p> | <p>NO NO NO NO</p> |
| <p>6. <u>FAA Secs. 620(a), 620(f), 620D; FY 1989 Appropriations Act Secs. 512, 550, 592.</u> Is recipient country a Communist country? If so, has the President determined that assistance to the country is vital to the security of the United States, that the recipient country is not controlled by the international Communist conspiracy, and that such assistance will further promote the independence of the recipient country from international communism? Will assistance be provided</p> | <p>NO NO NO NO</p> |

	Botswana	Zimb	Zambia	Mala
either directly or indirectly to Angola, Cambodia, Cuba, Iraq, Libya, Vietnam, South Yemen, Iran or Syria? Will assistance be provided to Afghanistan without a certification, or will assistance be provided inside Afghanistan through the Soviet-controlled government of Afghanistan?	NO	NO	NO	NO
7. <u>FAA Sec. 620(j)</u> . Has the country permitted, or failed to take adequate measures to prevent, damage or destruction by mob action of U.S. property?	NO	NO	NO	NO
8. <u>FAA Sec. 620(l)</u> . Has the country failed to enter into an investment guaranty agreement with OPIC?	NO	YES	NO	NO
9. <u>FAA Sec. 620(o); Fishermen's Protective Act of 1967 (as amended) Sec. 5.</u> (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing vessel because of fishing activities in international waters? (b) If so, has any deduction required by the Fishermen's Protective Act been made?	a) NO b) N/A	NO N/A	NO N/A	NO N/A
10. <u>FAA Sec. 620(q); FY 1989 Appropriations Act Sec. 518.</u> (a) Has the government of the recipient country been in default for more than six months on interest or principal of any loan to the country under the FAA? (b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the FY 1989 Appropriations Act appropriates funds?	a) NO b) NO	NO NO	NO NO	NO NO
11. <u>FAA Sec. 620(s)</u> . If contemplated assistance is development loan or to come from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget and amount of the country's foreign exchange or other resources spent on military equipment? (Reference may be made to the annual "Taking Into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of	N/A	N/A	N/A	N/A

Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

Botswana Zimb Zambia Mala

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| 12. <u>FAA Sec. 620(t)</u> . Has the country severed diplomatic relations with the United States? If so, have relations been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? | NO | NO | NO | NO |
| 13. <u>FAA Sec. 620(u)</u> . What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operational Year Budget? (Reference may be made to the "Taking into Consideration" memo.) | Malawi, Zimbabwe and Botswana's U.N. obligations are fully paid. | | As of Jul 20, 1988, Zambia is current on its U. obligations | |
| 14. <u>FAA Sec. 620A</u> . Has the President determined that the recipient country grants sanctuary from prosecution to any individual or group which has committed an act of international terrorism or otherwise supports international terrorism? | NO | NO | NO | NO |
| 15. <u>FY 1989 Appropriations Act Sec. 568</u> . Has the country been placed on the list provided for in Section 6(j) of the Export Administration Act of 1979 (currently Libya, Iran, South Yemen, Syria, Cuba, or North Korea)? | NO | NO | NO | NO |
| 16. <u>ISDCA of 1985 Sec. 552(b)</u> . Has the Secretary of State determined that the country is a high terrorist threat country after the Secretary of Transportation has determined, pursuant to section 1115(e)(2) of the Federal Aviation Act of 1958, that an airport in the country does not maintain and administer effective security measures? | NO | NO | NO | NO |

- | | <u>Botswana</u> | <u>Zimb</u> | <u>Zambia</u> | <u>Malawi</u> |
|--|-----------------|--|---------------|---------------|
| 17. <u>FAA Sec. 666(b)</u> . Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA? | NO | NO | NO | NO |
| 18. <u>FAA Secs. 669, 670</u> . Has the country, after August 3, 1977, delivered to any other country or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards, and without special certification by the President? Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either received or detonated a nuclear explosive device? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan.) | NO | NO | NO | NO |
| 19. <u>FAA Sec. 670</u> . If the country is a non-nuclear weapon state, has it, on or after August 8, 1985, exported (or attempted to export) illegally from the United States any material, equipment, or technology which would contribute significantly to the ability of a country to manufacture a nuclear explosive device? | NO | NO | NO | NO |
| 20. <u>ISDCA of 1981 Sec. 720</u> . Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Assembly of the U.N. on Sept. 25 and 28, 1981, and did it fail to disassociate itself from the communique issued? If so, has the President taken it into account? (Reference may be made to the "Taking into Consideration" memo.) | N/A | While reported to have failed to disassociate itself from the communique, this was taken into consideration by the Admin at the time of approval of the agency OYI | | |
| 21. <u>FY 1989 Appropriations Act Sec. 527</u> . Has the recipient country been determined by the President to have engaged in a consistent pattern of opposition to the foreign policy of the United States? | NO | NO | NO | NO |

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- | | <u>Botswana</u> | <u>Zimb</u> | <u>Zambia</u> | <u>Mal</u> |
|--|-----------------|-------------|---------------|------------|
| 22. <u>FY 1989 Appropriations Act Sec. 513.</u> Has the duly elected Head of Government of the country been deposed by military coup or decree? If assistance has been terminated, has the President notified Congress that a democratically elected government has taken office prior to the resumption of assistance? | NO | NO | NO | NO |
| 23. <u>FY 1989 Appropriations Act Sec. 540.</u> Does the recipient country fully cooperate with the international refugee assistance organizations, the United States, and other governments in facilitating lasting solutions to refugee situations, including resettlement without respect to race, sex, religion, or national origin? | NO | NO | NO | NO |

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria Botswana Zimb Zambia Malaw

FAA Sec. 116. Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, can it be demonstrated that contemplated assistance will directly benefit the needy? NO NO NO NO

FY 1989 Appropriations Act Sec. 536. Has the President certified that use of DA funds by this country would violate any of the prohibitions against use of funds to pay for the performance of abortions as a method of family planning, to motivate or coerce any person to practice abortions, to pay for the performance of involuntary sterilization as a method of family planning, to coerce or provide any financial incentive to any person to undergo sterilizations, to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning? N/A N/A N/A N/

2. Economic Support Fund Country Criteria

FAA Sec. 502B. Has it been determined that the country has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, has the President found that the country made such significant improvement in its human rights record that furnishing such assistance is in the U.S. national interest? NO NO NO NO

FY 1989 Appropriations Act Sec. 578(d). Has this country met its drug eradication targets or otherwise taken significant steps to halt illicit drug production or trafficking? YES YES YES YES

5C(2) - PROJECT CHECKLIST

below are statutory criteria applicable to projects. This section is divided into two parts. Part A includes criteria applicable to projects. Part B applies to projects funded from specific sources only: B(1) applies to all projects funded with Development Assistance; B(2) applies to projects funded with Development Assistance loans; and B(3) applies to projects funded from ESF.

Botswana Zimb Zambia Malawi

REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes

ADDITIONAL CRITERIA FOR PROJECT

Section 523 of the FY 1989 Appropriations Act Sec. 523; FAA Sec. 634A. If money is sought to be obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified?

Congress has been properly notified.

FAA Sec. 611(a)(1). Prior to an obligation in excess of \$500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance, and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

Yes. See technical and financial analysis sections of Project Paper.

FAA Sec. 611(a)(2). If legislative action is required within recipient country, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance?

No further legislative action is required within recipient countries.

	<u>Botswana</u>	<u>Zimb</u>	<u>Zambia</u>	<u>Mal</u>
4. <u>FAA Sec. 611(b); FY 1989 Appropriations Act Sec. 501.</u> If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, <u>et seq.</u>)? (See A.I.D. Handbook 3 for guidelines.)	N/A	N/A	N/A	N/
5. <u>FAA Sec. 611(e).</u> If project is capital assistance (<u>e.g.</u> , construction), and total U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively?	N/A	N/A	N/A	N/
6. <u>FAA Sec. 209.</u> Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.				Yes. The project is part of AID's Southern Africa Regional Program and will encourage regional development.
7. <u>FAA Sec. 601(a).</u> Information and conclusions on whether projects will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.				Specific project elements will encourage a,b,c,d; and e
8. <u>FAA Sec. 601(b).</u> Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).				U.S. firms or individuals will be competing for certain commodity supply and TA and services contracts.

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|--|----------|------|--------|-----|
| 9. <u>FAA Secs. 612(b), 636(h)</u> . Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars. | NA | NA | NA | NA |
| 10. <u>FAA Sec. 612(d)</u> . Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? | NO | NO | NO | NO |
| 11. <u>FY 1989 Appropriations Act Sec. 521</u> . If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity? | NO | NO | NO | NO |
| 12. <u>FY 1989 Appropriations Act Sec. 549</u> . Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel? | NO | NO | NO | NO |
| 13. <u>FAA Sec. 119(q)(4)-(6) & (10)</u> . Will the assistance (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other | a) YES | YES | YES | YES |
| | b) YES | YES | YES | YES |

- | | Botswana | Zimb | Zambia | Malaw |
|--|----------|------|--------|---|
| wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas? | c) Yes | Yes | Yes | Yes |
| | d) No | No | No | No |
| 14. <u>FAA Sec. 121(d)</u> . If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)? | N/A | N/A | N/A | N/A |
| 15. <u>FY 1989 Appropriations Act</u> . If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government? | | | | |
| | | | | If applicable, this provision will be complied with. |
| 16. <u>FY 1989 Appropriations Act Sec. 538</u> . If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.? | | | | |
| | | | | This provision will be complied with. |
| 17. <u>FY 1989 Appropriations Act Sec. 514</u> . If funds are being obligated under an appropriation account to which they were not appropriated, has prior approval of the Appropriations Committees of Congress been obtained? | N/A | N/A | N/A | N/A |
| 18. <u>State Authorization Sec. 139</u> (as interpreted by conference report). Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision). | | | | |
| | | | | At the time of preparing this checklist, the signing dates have not been confirmed. State L/T and AID will be appropriately notified when such signing dates are confirmed. |

B. FUNDING CRITERIA FOR PROJECT1. Development Assistance Project Criteria Botswana Zimb Zambia Malawi

- a. FY 1989 Appropriations Act Sec. 548
(as interpreted by conference report for original enactment). If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities (a) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (b) in support of research that is intended primarily to benefit U.S. producers?
- N/A N/A N/A N/A
- b. FMA Secs. 102(b), 111, 113, 281(a). Describe extent to which activity will (a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life, and otherwise encourage democratic private and local governmental
- a) Project specifically focuses on the poor at the local level.
b) Again TA will be in support of rural development.

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institutions; (c) support the Botswana Zimb Zambia Malawi self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries.

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| <p>c. <u>FAA Secs. 103, 103A, 104, 105, 106, 120-21; FY 1989 Appropriations Act (Development Fund for Africa)</u>. Does the project fit the criteria for the source of funds (functional account) being used?</p> | <p>Yes Yes Yes Yes</p> |
| <p>d. <u>FAA Sec. 107</u>. Is emphasis placed on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?</p> | |
| <p>e. <u>FAA Secs. 110, 124(d)</u>. Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?</p> | <p>No. The 25 percent contribution requirement under the FAA does not apply to projects funded under the SADCC account.</p> |
| <p>f. <u>FAA Sec. 128(b)</u>. If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?</p> | <p>Yes Yes Yes Yes</p> |

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| <p>g. <u>FAA Sec. 281(b)</u>. Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government.</p> | <p>Botswana Zimb Zambia Mala</p> | <p>Project was designed with Community input as well as Government input; also with inputs from local intellectual resources institutions</p> |
| <p>h. <u>FY 1989 Appropriations Act Sec. 536</u>. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?</p> | <p>NO NO NO NO</p> | |
| <p>Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations?</p> | <p>NO NO NO NO</p> | |
| <p>Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?</p> | <p>NO NO NO NO</p> | |
| <p>i. <u>FY 1989 Appropriations Act</u>. Is the assistance being made available to any organization or program which has been determined to support or participate in the management of a program of coercive abortion or involuntary sterilization?</p> | <p>NO NO NO NO</p> | |
| <p>If assistance is from the population functional account, are any of the funds to be made available to voluntary family planning projects which do not offer, either directly or through referral to or information about access to, a broad range of family planning methods and services?</p> | <p>N/A N/A N/A N/A</p> | |

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	<u>Botswana</u>	<u>Zimb</u>	<u>Zambia</u>	<u>Malawi</u>
j. <u>FAA Sec. 601(e)</u> . Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?	Yes	Yes	Yes	Yes
k. <u>FY 1989 Appropriations Act</u> . What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 40 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)?	NA	NA	NA	NA
l. <u>FAA Sec. 118(c)</u> . Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16? Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible:	Yes	Yes	Yes	Yes
(a) stress the importance of conserving and sustainably managing forest resources;	Yes	Yes	Yes	Yes
(b) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas;	Yes	Yes	Yes	Yes
(c) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management;	Yes	Yes	Yes	Yes
(d) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices;	Yes	Yes	Yes	Yes
(e) help conserve forests which have not yet been degraded by helping to increase	Yes	Yes	Yes	Yes

	Botswana	Zimb	Zambia	Malawi
production on lands already cleared or degraded; (f) conserve forested watersheds and rehabilitate those which have been deforested; (g) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (h) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (i) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas; (j) seek to increase the awareness of U.S. government agencies and other donors of the immediate and long-term value of tropical forests; and (k)/utilize the resources and abilities of all relevant U.S. government agencies?	f) Yes	Yes	Yes	Yes
	g) Yes	Yes	Yes	Yes
	h) Yes	Yes	Yes	Yes
	i) Yes	Yes	Yes	Yes
	j) NA	NA	NA	NA
	k) NA	NA	NA	NA
m. <u>FAA Sec. 118(c)(13)</u> . If the assistance will support a program or project significantly affecting tropical forests (including projects involving the planting of exotic plant species), will the program or project (a) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land, and (b)/take full account of the environmental impacts of the proposed activities on biological diversity?	a) Yes	Yes	Yes	Yes
	b) Yes	Yes	Yes	Yes

	Botswana	Zimb	Zambia	Mal
n. <u>FAA Sec. 118(c)(14)</u> . Will assistance be used for (a) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; or (b) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas?				
a)	No	No	No	No
b)	No	No	No	No
o. <u>FAA Sec. 118(c)(15)</u> . Will assistance be used for (a) activities which would result in the conversion of forest lands to the rearing of livestock; (b) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undegraded forest lands; (c) the colonization of forest lands; or (d) the construction of dams or other water control structures which flood relatively undegraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development?				
a)	No	No	No	No
b)	No	No	No	No
c)	No	No	No	No
d)	No	No	No	No
p. <u>FY 1989 Appropriations Act</u> . If assistance will come from the Sub-Saharan Africa DA account, is it (a) to be used to help the poor majority in Sub-Saharan Africa through a process of long-term development and economic growth that is equitable, participatory, environmentally sustainable, and self-reliant; (b) being provided in accordance with the policies contained in section 102 of the FAA;	N/A	N/A	N/A	N/A

	<u>Botswana</u>	<u>Zimb</u>	<u>Zambia</u>	<u>Malawi</u>
(c) being provided, when consistent with the objectives of such assistance, through African, United States and other PVOs that have demonstrated effectiveness in the promotion of local grassroots activities on behalf of long-term development in Sub-Saharan Africa;	NA	NA	NA	NA
(d) being used to help overcome shorter-term constraints to long-term development, to promote reform of sectoral economic policies, to support the critical sector priorities of agricultural production and natural resources, health, voluntary family planning services, education, and income generating opportunities, to bring about appropriate sectoral restructuring of the Sub-Saharan African economies, to support reform in public administration and finances and to establish a favorable environment for individual enterprise and self-sustaining development, and to take into account, in assisted policy reforms, the need to protect vulnerable groups; (e) being used to increase agricultural production in ways that protect and restore the natural resource base, especially food production, to maintain and improve basic transportation and communication networks, to maintain and restore the renewable natural resource base in ways that increase agricultural production, to improve health conditions with special emphasis on meeting the health needs of mothers and children, including the establishment of self-sustaining primary health care systems that give priority to preventive care, to provide increased access to voluntary family planning services, to improve basic literacy and mathematics especially to those outside the formal educational system and to improve primary education, and to develop income-generating opportunities for the unemployed and underemployed in urban and rural areas?				

	<u>Botswana</u>	<u>Zimb</u>	<u>Zambia</u>	<u>Malawi</u>
<p>9. <u>FY 1989 Appropriations Act Sec. 515.</u> If deob/reob authority is sought to be exercised in the provision of DA assistance, are the funds being obligated for the same general purpose, and for countries within the same general region as originally obligated, and have the Appropriations Committees of both Houses of Congress been properly notified?</p>	N/A	N/A	N/A	N/A
<p>2. <u>Development Assistance Project Criteria (Loans Only)</u></p>				
<p>a. <u>FAA Sec. 122(b).</u> Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest.</p>	N/A	N/A	N/A	N/A
<p>b. <u>FAA Sec. 620(d).</u> If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20 percent of the enterprise's annual production during the life of the loan, or has the requirement to enter into such an agreement been waived by the President because of a national security interest?</p>	N/A	N/A	N/A	N/A
<p>c. <u>FAA Sec. 122(b).</u> Does the activity give reasonable promise of assisting long-range plans and programs designed to develop economic resources and increase productive capacities?</p>	N/A	N/A	N/A	N/A

3. <u>Economic Support Fund Project Criteria</u>	<u>Botswana</u>	<u>Zimb</u>	<u>Zambia</u>	<u>Malawi</u>
a. <u>FAA Sec. 531(a)</u> . Will this assistance promote economic and political stability? To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of Part I of the FAA?	N/A	N/A	N/A	N/A
b. <u>FAA Sec. 531(e)</u> . Will this assistance be used for military or paramilitary purposes?	N/A	N/A	N/A	N/A
c. <u>FAA Sec. 609</u> . If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?	N/A	N/A	N/A	N/A

5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. PROCUREMENT

Botswana Zimb Zambia Malawi

- | | | | | |
|---|-----|-----|-----|-----|
| <p>1. <u>FAA Sec. 602(a)</u>. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed?</p> | | | | |
| <p>2. <u>FAA Sec. 604(a)</u>. Will all procurement be from the U.S. except as otherwise determined by the President or determined under delegation from him?</p> | Yes | Yes | Yes | Yes |
| <p>3. <u>FAA Sec. 604(d)</u>. If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company?</p> | N/A | N/A | N/A | N/A |
| <p>4. <u>FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a)</u>. If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)</p> | N/A | N/A | N/A | N/A |

- | | <u>Botswana</u> | <u>Zimb</u> | <u>Zambia</u> | <u>Malaw</u> |
|--|--|-------------|---------------|--------------|
| 5. <u>FAA Sec. 604(q)</u> . Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries.) | NO | NO | NO | NO |
| 6. <u>FAA Sec. 603</u> . Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates? | NO | NO | NO | NO |
| 7. <u>FAA Sec. 621(a)</u> . If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? Will the facilities and resources of other Federal agencies be utilized, when they are particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? | YES | YES | YES | YES |
| 8. <u>International Air Transportation Fair Competitive Practices Act, 1974</u> . If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available? | NO | NO | NO | NO |
| 9. <u>FY 1989 Appropriations Act Sec. 504</u> . If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? | YES | YES | YES | YES |
| | Any such contract will contain such provision. | | | |

- | | <u>Botswana</u> | <u>Zimb</u> | <u>Zambia</u> | <u>Malawi</u> |
|--|-----------------|-------------|---------------|---------------|
| 10. <u>FY 1989 Appropriations Act Sec. 524.</u> If assistance is for consulting service through procurement contract pursuant to 5 U.S.C. 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)? | YES | YES | YES | YES |

B. CONSTRUCTION

- | | | | | |
|--|-----|-----|-----|-----|
| 1. <u>FAA Sec. 601(d).</u> If capital (e.g., construction) project, will U.S. engineering and professional services be used? | N/A | N/A | N/A | N/A |
| 2. <u>FAA Sec. 611(c).</u> If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? | Yes | Yes | Yes | Yes |
| 3. <u>FAA Sec. 620(k).</u> If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million (except for productive enterprises in Egypt that were described in the CP), or does assistance have the express approval of Congress? | N/A | N/A | N/A | N/A |

C. OTHER RESTRICTIONS

- | | | | | |
|---|-----|-----|-----|-----|
| 1. <u>FAA Sec. 122(b).</u> If development loan repayable in dollars, is interest rate at least 2 percent per annum during a grace period which is not to exceed ten years, and at least 3 percent per annum thereafter? | N/A | N/A | N/A | N/A |
| 2. <u>FAA Sec. 301(d).</u> If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? | N/A | N/A | N/A | N/A |

	<u>Botswana</u>	<u>Zimb</u>	<u>Zambia</u>	<u>Malaw</u>
3. <u>FAA Sec. 620(h)</u> . Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries?	Yes	Yes	Yes	Yes
4. Will arrangements preclude use of financing:				
a. <u>FAA Sec. 104(f); FY 1989 Appropriations Act Secs. 525, 536.</u>				
(1) To pay for performance of abortions as a method of family planning or to motivate or coerce persons to practice abortions;	(1) Yes	Yes	Yes	Yes
(2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization;	(2) Yes	Yes	Yes	Yes
(3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; or	(3) Yes	Yes	Yes	Yes
(4) to lobby for abortion?	(4) Yes	Yes	Yes	Yes
b. <u>FAA Sec. 483</u> . To make reimbursements, in the form of cash payments, to persons whose illicit drug crops are eradicated?	Yes	Yes	Yes	Yes
c. <u>FAA Sec. 620(g)</u> . To compensate owners for expropriated or nationalized property, except to compensate foreign nationals in accordance with a land reform program certified by the President?	Yes	Yes	Yes	Yes
d. <u>FAA Sec. 660</u> . To provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs?	Yes	Yes	Yes	Yes
e. <u>FAA Sec. 662</u> . For CIA activities?	Yes	Yes	Yes	Yes

	<u>Botswana</u>	<u>Zimb</u>	<u>Zambia</u>	<u>Malr</u>
f. <u>FAA Sec. 636(i)</u> . For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained?	Yes	Yes	Yes	Yes
g. <u>FY 1989 Appropriations Act Sec. 503</u> . To pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel?	Yes	Yes	Yes	Yes
h. <u>FY 1989 Appropriations Act Sec. 505</u> . To pay U.N. assessments, arrearages or dues?	Yes	Yes	Yes	Yes
i. <u>FY 1989 Appropriations Act Sec. 506</u> . To carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)?	Yes	Yes	Yes	Yes
j. <u>FY 1989 Appropriations Act Sec. 510</u> . To finance the export of nuclear equipment, fuel, or technology?	Yes	Yes	Yes	Yes
k. <u>FY 1989 Appropriations Act Sec. 511</u> . For the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?	Yes	Yes	Yes	Yes
l. <u>FY 1989 Appropriations Act Sec. 516; State Authorization Sec. 109</u> . To be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any publicity or propaganda purposes not authorized by Congress?	Yes	Yes	Yes	Yes
5. <u>FY 1989 Appropriations Act Sec. 584</u> . Will any A.I.D. contract and solicitation, and subcontract entered into under such contract, include a clause requiring that U.S. marine insurance companies have a fair opportunity to bid for marine insurance when such insurance is necessary or appropriate?	Yes	Yes	Yes	Yes

NATURAL RESOURCES MANAGEMENT PROJECT

USAID Project No. 690-0251
SADCC Project No. 5.0.18

VOLUME II

**COUNTRY-SPECIFIC
PROJECT DESCRIPTIONS**

NATURAL RESOURCES MANAGEMENT PROJECT
(690-0251)

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1. General Project Description

1.0. Background

The Southern African Development Coordination Conference (SADCC) has adopted a Regional Natural Resource Policy and Development Strategy which identifies wildlife as an important integral component of the region's natural resources. The strategy recognizes the technical viability and economic advantages of wildlife utilization in areas only marginally suitable or completely unsuitable for agriculture, categories which apply to large portions of the region's land surface. The strategy seeks to extend wildlife utilization, already demonstrated as a viable form of land use on privately owned marginal lands in Zimbabwe, to lands under communal forms of management where local populations have received little direct benefit and where the wildlife resource is under heavy pressure from commercial poaching. The strategy recognizes that unless exploitation of wildlife in the communal lands is controlled and subjected to sustainable forms of utilization, the region will largely be deprived of one of its most productive natural resources.

The Project consists of assistance, within the framework of SADCC, to facilitate regional cooperation among participating SADCC member states in managing and protecting the natural resource base of the SADCC region for purposes of sustainable social and economic development as well as protection of ecological diversity, and to disseminate knowledge of community management of wildlife resources among SADCC member States. The goal of the Project is to increase incomes and enhance capability to meet basic human needs through sustainable utilization and conservation of natural ecosystems. Successful conservation of wildlife resources and better integration of wildlife into the participating nations' economic development programs will accomplish the project's subgoal of promoting sustainable development of communities on lands that are marginally suitable for agriculture.

1.1. Purpose

The purpose of the project is to improve the social and economic well-being of residents of targeted rural communities by implementing sustainable community based wildlife conservation and utilization programs. The expected accomplishments of the project on completion are as follows:

- a. Natural resource utilization will be demonstrated to be a preferred and profitable land use in rural and communal lands.
- b. Resource management programs established in the target areas will be self-sufficient, will offer increased local employment opportunities and incomes, will result in sustained wildlife resource yields, and will provide the communities with access to a renewable source of revenues for local development projects.

- c. Institutions and decision-making procedures for sustainable resource management and distribution of economic benefits resulting from the natural resource base will be established and strengthened at the village, ward, and district levels on communal lands in participating SADCC member States. These institutions will assume complete responsibilities by the end of the project.
- d. Participation of women in resource management programs will increase at the village, ward, and, potentially, district levels in the targeted SADCC member states. The role of women in the economy and their access to income will be expanded through income-generating activities that use the natural resource base in a sustainable manner.
- e. Interested governments and leaders in the natural resources sector throughout the SADCC region will be better informed on natural resource management methods and impact, particularly with respect to wildlife.
- f. In participating SADCC countries, rural social welfare will be increased through higher income and/or access to protein, community development projects, and the expanded participation of women in the development process.

1.2. Project Activity Components

The project will involve activities in the following areas: (i) Community Based Resource Utilization; (ii) Planning and Applied Research Support; (iii) Conservation of the Resource Base; (iv) Conservation Education and Training; and (v) Regional Communication and Exchange of Information. Except for the Regional Communication and Exchange of Information Component, which will primarily be based in Malawi with the SADCC Coordinating Unit, each of the project components will be implemented in Zimbabwe, Zambia, and Botswana.

1.2.1. Community Based Resource Utilization

A central underlying principle of community-based resource utilization is that communities receive the economic returns derived from the resource base. When the link between sustainable use of the resources and continued economic return is made, these revenues can act as an incentive for more efficient management and conservation. To form these links, communities must participate in decision-making concerning resource management and the distribution of benefits. For community resource management actions to directly result in increased benefits to that community, the resource base must be defined as a community asset, rather than as an individual or national one. Communities must also have assured, long-term rights to those resources so that long-term conservation and management decisions will be seen as justifiable based on expectations of future benefits.

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Throughout project implementation, the authorities will formulate acceptable means of returning revenues to the communities that share the land most directly with the wildlife and pay the greatest costs. The two primary elements to community based resource utilization are: (i) wildlife management; and (ii) institutional development and community development. Each of the participating countries addresses these elements, albeit to differing degrees.

(a) Wildlife Management

The Departments of Wildlife and Parks in each country will continue to set offtake quotas for wildlife and will provide technical assistance and training to district authorities and, in Zimbabwe and Zambia, to locally recruited game scouts. However, District authorities will decide the means of utilizing and benefiting from the wildlife. Depending on the resources available, options may include: joint ventures with safari companies; subsistence hunting by local residents; tourism development; and lease of the resources; among others.

(b) Institutional and Community Development

To varying degrees, the programs in each country strive to strengthen local level institutions, through training and technical assistance, in terms of their capability and capacity to manage the resource base and to establish policies and procedures for the distribution of benefits. Through the process of designing, implementing, and evaluating their own programs, local level authorities will gain necessary skills and experience in determining their own development. In addition, each of the country programs specifically addresses the needs of women and their use of the natural resource base.

1.2.2. Planning and Applied Research Support

The project includes provisions for ecological research and monitoring in each of the three countries, with special reference to wildlife population and habitats. The project also provides for planning and applied research activities on land use and the socioeconomic dimensions of resource management as a central component in a viable and optimal scheme of resource utilization.

Applied research activities will be directed towards the provision of data for both monitoring and analytic purposes. For monitoring and evaluation, baseline surveys will be conducted in project target areas and will include: demographic data; data on agricultural and other economic activities; attitudinal perspectives; and local institutional structures. Periodic replications of the exercise will be conducted throughout the life of the project to provide quantitative indices for evaluation.

In-depth analyses of structures and processes will also form part of the applied research component and will cover a range of issues, including: the role of women in natural resource management; community-level motivational and

decision-making factors; the socio-legal aspects of resource protection; and the impact of natural resource proprietorship on general community development.

1.2.3. Conservation of the Resource Base

On nearly one third of the land area of Botswana, Zambia, and Zimbabwe, wildlife is the designated or nominal form of land use. Despite the rich wildlife resources of the region and the exceptionally large area available to wildlife, the resource is under threat. The project seeks to improve the conservation of the wildlife resource base with the pursuit of three concurrent strategies: (i) development of the capacity of rural communities to protect, manage, and benefit from the utilization of wildlife resources and their land; (ii) strengthening of the capacity of government agencies to protect and manage such key resources as elephant and rhino; and (iii) development of the capacity of government and non-government agencies to service the aspirations of rural communities to establish viable and sustainable wildlife utilization schemes.

A major focus of the program is to develop skills at district and village levels to monitor, manage and protect wildlife resources. At the national level, resources are being provided to improve the monitoring and protection of elephant populations in particular.

1.2.4. Conservation Education and Training

Conservation education will contribute to successful efforts to conserve the resource base and to promote effective resource management and utilization programs. The project addresses environmental issues, including information on both general conservation and on wildlife utilization, through formal and non-formal activities, including:

- o The integration of conservation issues into the existing primary and junior secondary school curriculum.
- o Training of teachers, education administrators, literacy tutors, and extension agents in the use of new curriculum/training materials and environmental issues.
- o The strengthening of the Interpretation and Extension Units of the Departments of Wildlife and National Parks through workshops, equipment, and construction of visitor's and interpretation centers.
- o Production of education materials, including scripts for use on radio programs, videos, "Action" magazine, and other teaching tools.
- o Workshops with village, district, and provincial authorities on community-based resource utilization.
- o Presentations to the general public.

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The project also supports non-formal training. In addition, funds are provided for project staff to attend relevant short-term courses (U.S. and Third Country) and professional degree programs at Colleges and Universities in Africa.

1.2.5. Regional Communication and Exchange of Information

The models of resource utilization and management are different in each of the participating SADCC member states, taking into account variations in national policies and in environmental and socioeconomic contexts. Through the monitoring and evaluation process, and through the comparison of the results, the models provide a unique opportunity for formulating theories regarding the necessary conditions and policy environment for success, viability of differing approaches, and implementation constraints. The lessons learned will provide a valuable input to the design of future community based resource utilization programs. Thus, although project activities will be carried out in a limited number of countries, results and lessons learned from the target areas will be disseminated on a SADCC regional basis to gain a broader acceptance and appreciation of the concept of community-based resource management and utilization, as well as a technical knowledge of local, national, and international actions required to ensure that benefits accrue from resource utilization and conservation.

The project will support the SADCC Coordinating Unit for Forestry, Fisheries, and Wildlife in Malawi as the central clearing house for information dissemination and the planning of seminars, workshops, and conferences for information exchange. Project resources will also support the Unit's role in promoting regional cooperation in natural resource data collection and analysis.

1.3. Project Implementation Arrangements

The project, in its regional dimension, will be located in the SADCC Sector Coordinating Unit. The Unit will establish a Project Coordinating Committee on which the SADCC Coordinator, A.I.D. as SADCC's Cooperating Partner, the participating SADCC member states, and any participating contracting agencies or non-governmental grantees will be represented. The SADCC Unit will collaborate closely with the project implementation committees in each of the participating states in the regional communications and exchange of information component of the project.

USAID project administration of the Zimbabwe, Zambia, and Malawi project components will be provided by USAID/Zimbabwe through a Project Officer in the Agricultural Development Office in Harare. The Director of USAID/Zimbabwe will re-delegate to the Director, USAID/Botswana, the authority to implement the Botswana component of the project. USAID will serve as the authorized accounting services station for all project components.

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Expected project implementation support services and related costs, including the salary of a Project Administrator, will be funded under the project. The Project Administrator, who will work from an office of the Department of National Parks and Wildlife Management of Zimbabwe, will reside in Harare, and will report to the USAID/Zimbabwe Project Officer, will be responsible to the USAID/Zimbabwe Project Officer for administrative support for implementation of the Zimbabwe, Zambia, and Malawi components of the project. Duties will include drafting of project implementation reports and other general and specific administrative duties in support of the project as may be directed by the Project Officer.

1.4. Project Monitoring and Evaluation

The project will be subjected to three sets of monitoring processes. The first is the continual, internal evaluative exercise funded under the SADCC/Malawi component where information about the results of the application of community-based resource utilization will be monitored on a continual basis. Records will be available to all interested parties and will serve as a source of information for external project evaluators.

There will be two project-funded USAID-administered external evaluations: one at the mid-term and one shortly before the project completion. The mid-term evaluation will assess progress made to date in achieving planned outputs in the participating countries. The evaluation will include a preliminary comparison of the validity of the models being pursued, taking into account differences in national policies and socio-economic contexts.

The mid-term evaluation is intended as a tool to plan for the remainder of the project, with the evaluation team and project implementors jointly reviewing and modifying the objectives and expected outputs. The final impact evaluation team will review data on results in relation to the baseline studies, and the data generated and conclusions reached during the mid-term evaluation. At the regional level, the evaluation will compare the different models being applied in each country to assess their effectiveness and impact on community residents, given the differing political, economic, environmental, and cultural contexts. The coordination and information dissemination roles of the SADCC Coordinating Unit in Malawi will also be assessed.

The final set of evaluative exercises consists of the project's planned audits. The mid-term and final audits to be carried out on a country-by-country basis in years three and six, will review the financial statements of the implementing agencies, expenditures made under the project from all sources, and the status of commodities purchased. The ability of the relevant government departments and other cognizant institutions to assume all financial responsibilities for project activities by the project completion date will be assessed. Reports of all evaluations and audits will be made available to all signatories to this Memorandum of Understanding.

NATURAL RESOURCES MANAGEMENT PROJECT

**USAID Project No. 690-0251
SADCC Project No. 5.0.18**

ZIMBABWE COMPONENT

2. Zimbabwe Component Description

2.0. Purpose

The project activities carried out in Zimbabwe will: (1) demonstrate, through practical examples, the technical, social, economic and ecological viability and replicability of community-based natural resource management and utilization programs on marginal lands for increasing household and community incomes while sustaining natural resources; and (2) improve national and local capability to halt the decline in the wildlife resource base through training, education, protection, communication, and technology transfer.

2.01 Target Area

Project activities will be directed towards a geographically discrete target area. The primary project target area includes four communal lands: Tsholotsho, Hwange, Bululima Mangwe, and Binga. Hwange and Tsholotsho were chosen because it is expected that they will be granted Appropriate Authority to manage the wildlife resources in their jurisdictions in January 1990. Bululima Mangwe and Binga districts border Tsholotsho and Hwange communal lands, respectively, and have requested that activities be started to allow them to request Appropriate Authority by the end of 1990.

In 1982, the average density of inhabitants in Tsholotsho was estimated to be 11.6/km², with the area bordering the Park more sparsely populated (about 8/km²). Spatial distribution appears to be largely determined by the availability of water, soil types, and, to an extent, proximity to roads and services. This leads to scattered concentrations of human settlement in "villages" of 15-30 households clustered around a service point containing a school, store, or other facilities. For many, if not most, households wage labor outside of the communal land appears to be an important income component, although unemployment among men continues to be a problem. Up to 66 percent of the households are headed by women. Almost all of the population is Ndebele-speaking, with the exception of a concentration of Bushmen in the western region along the border with Botswana.

In the 1982 Census, the population density of Hwange communal land was estimated at 9.7/km², however, much of this population is concentrated in a few areas. The area is ethnically mixed, with Ndebele, Nambiya, and a few Tonga-speaking peoples. There is a relatively high growth rate, possibly due to movement from neighboring Binga district.

2.02 Beneficiaries

Beneficiaries, and the differential impacts of the project affecting them, are discussed in detail in the social soundness analysis (Section 2.3.2. below). Generally, they are the residents of the target wards in each of the districts. In Tsholotsho district, allowing for the expansion of activities to two or three additional wards, the target wards are those that border Hwange National Park to the north and Botswana to the west (Wards one, three

and seven). In Hwange district, the priority wards, at this time, are those sites to which impala relocation is planned (Sibinda, Nekaetambe, Nekabandana, and Simangani). Residents from all wards may benefit either directly or indirectly, through participation in decisions regarding their own resources, through expanded economic activity, and through the provision of community services, conservation education, infrastructure, and increased employment opportunities. However, the residents of the target wards are the primary beneficiaries as they bear the costs of coexisting with the wildlife.

As discussed in the social soundness analysis, it is unlikely that women will participate directly in the decision-making process, with the notable exception of the woman councilor from Ward 7. Generally, women will not have access to increased employment opportunities, nor will they be reached by the predominantly male extension service. Although there is the potential for a small negative impact, women will most likely be indirect beneficiaries of the project. For example, if enough rewarding employment opportunities are generated in the communal lands, men currently working outside the area may return. This return will not only contribute to the overall economy, of which women are a part, but also may relieve women of specific agricultural tasks. Given that women have limited access to monetary returns from agricultural production, even when men are away, it is unlikely that the return of men will affect women's access to revenues. Women will benefit indirectly from the provision of services through community development activities, possibly including schools, clinics, wells, grain mills, and increased availability of meat from wildlife.

The basic project may not actually disadvantage women, yet it will not involve women fully in the development and empowerment processes that will benefit the communal lands as a whole. The women's component described below is intended to address this gap. Women will be targeted as participants and direct beneficiaries through involvement in secondary processing of wildlife and veld products, among other activities, in the rural communities.

A second group of beneficiaries are those individuals participating in project activities and implementation. The most crucial participants are the district councils and other institutions that will be empowered, through training and advisory services, to manage their own natural and financial resources. In addition, researchers, students, government officials, and staff of the DNPWLM, ZimTrust and CASS will be advantaged by research grants, training and equipment. Central governments in the SADCC region will benefit from the expanded knowledge and understanding of actions and policies necessary to support community-based management of wildlife resources, through participation in international conferences, and the dissemination of knowledge and lessons learned.

Project accomplishments will stem from four discrete kinds of activity in an identified sub-project target area: (i) Community-Based Resource Utilization; (ii) Planning and Applied Research Support; (iii) Conservation of the Resource Base; and (iv) Regional Communications and Exchange of Information. The four foci of activity are described below.

2.1. Project Elements

2.1.1. Community-Based Resource Utilization

Wildlife is a resource nominally owned by the state, and therefore, management and sustainable use of that resource is not seen as the responsibility of the people closest to it. Wildlife in the communal areas is seen largely as a problem, due to the fact that communities often suffer heavy crop and livestock losses due to wildlife incursions. Because there are no legal means for farmers to manage and benefit from wild species, communities would rather see it disappear. However, it has been demonstrated that when resident communities and individuals can realize direct benefits from natural resource exploitation, there is an incentive to conserve that resource base. They must also be able to control access to the resource so that they receive future benefits from present conservation actions. Experience elsewhere in Zimbabwe has shown that the return from wildlife as a land use can exceed most other forms of production on marginal lands. The recent rise of the wildlife industry among commercial farmers and cattle breeders illustrates this point.

Zimbabwe has been pursuing wildlife utilization as a component of rural land use in appropriate communal lands since 1978. The concept of community-based resource utilization is most eloquently articulated in the Communal Areas Management Program for Indigenous Resources (CAMPFIRE) document, a project manual and funding proposal prepared by DNPWLM in 1986. The CAMPFIRE proposal supplies the philosophy and strategy for current efforts to promote wildlife utilization through the delegation of Appropriate Authority over wildlife to rural communities.

DNPWLM is the statutory authority for wildlife and natural resources in the communal lands. With few exceptions, the District Councils, the officially established representative bodies of the communal lands, are denied participation in the management of their wildlife resources. However, provision to delegate authority to communities (termed Appropriate Authority) is made in the Parks and Wildlife Act of 1975. Under the Act, the Minister of Natural Resources and Tourism can designate a District Council as the Appropriate Authority over its wildlife and natural resources. The Minister must be satisfied of the Council's intent and capacity to properly manage these resources and to do so with the full participation of and benefit to the people it represents. The current Minister of Natural Resources and Tourism supports the delegation of Appropriate Authority to District Councils in the Communal Lands. Such authority is being implemented successfully in Guruve and Nyaminyami Districts and is just beginning in Urungwe and Gokwe Districts, among other areas.

Once granted Appropriate Authority, the District Councils receive directly the income generated from the use of wildlife in the communal lands (e.g.: revenues from tourist facilities, sale of by-products from culling operations, hunting fees, and other sources). They can also control access to and use of that resource. In return, the District Councils assume responsibility for the

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management of the wildlife resources and distribution of the income to the residents of the Communal Land. Distribution schemes, determined by the Councils, can include, but are not limited to, a combination of the following:

- o A compensation scheme for residents who experience crop and domestic livestock losses to wildlife, resulting in differential benefits accruing to those people who bear the primary costs of wildlife's presence;
- o Employment of community game guards and other locally-recruited game management personnel;
- o Establishment of a district management reserve fund to be used when current revenues are inadequate to cover the recurrent costs of game management activities;
- o Community projects such as construction of schools, clinics, water systems, and payment of teachers' salaries; and
- o Services and infrastructure to enhance the management and use of wildlife (e.g. construction of tourist facilities, watering points, and fences).

Project support will contribute to achievement of the following objectives:

- (1) Demonstrate natural resource utilization as a preferred and profitable land use in Hwange and Tsholotsho Communal Lands.
- (2) Establish resource management programs in the target areas that will be self-sustaining, will offer increased local employment opportunities and incomes, will result in optimal and sustained wildlife yields, and will provide the communities with access to a renewable source of revenues for development projects.
- (3) Establish and strengthen institutions and decision-making procedures for sustainable resource management and distribution of economic benefits resulting from wildlife activities at the village, ward, and district levels in Tsholotsho and Hwange Communal Lands.
- (4) Transfer, through training and advisory services provided by Zimbabwe Trust, problem-solving organizational, accounting, and management skills, thereby empowering local institutions to plan and administer their own strategy for resource utilization.
- (5) Enable local institutions, by the completion of the project, to assume complete responsibilities for wildlife management and distribution of economic and other tangible benefits resulting from the wildlife resource base.
- (6) Increase women's participation in the resource management program at the village, ward, and district levels.

- (7) Expand women's participation in the economy through income-generating activities that use the natural resource base in a sustainable manner.
- (8) Increase social and rural welfare through increased income, access to protein, community development projects, and the expanded participation of women in the economy and development process.
- (9) Introduce rural communities to basic concepts of community-based resource management and utilization.

In support of the Government of Zimbabwe's efforts to enhance community based resource utilization, the project will support the four elements considered necessary for effective implementation of Appropriate Authority: (a) wildlife management; (b) institutional development of the District Councils and other representative bodies; (c) community development activities to ensure the involvement of local residents, particularly women, and the effective use of community development funds; and (d) training and education regarding the process and responsibilities of community-based resource utilization as well as conservation education in general. The four elements are described below.

(a) Wildlife Management

Once delegated Appropriate Authority, the District Councils will assume responsibility for wildlife management. They will receive advice and assistance from an ecologist and other DNPWLM employees stationed at Korodziba, as well as from a project manager from ZimTrust, discussed below. The District Councils will manage wildlife primarily through two mechanisms: the employment of wildlife monitors and other technical and management personnel at the community level, and the construction of supporting infrastructure, such as fences and watering points. In collaboration with DNPWLM, they will also be responsible for maintaining optimum animal population levels and for controlling problem animals.

Over the first five years of the project, up to 100 locally-recruited wildlife monitors and other technical and management personnel will be trained and employed by the District Councils to work at the community level. The U.S. contribution, through ZimTrust, toward the cost of training will decrease as the District Councils assume these costs, using a portion of their wildlife revenues. The monitors will live and work in the target wards where they will monitor wildlife activity and populations, share management information with community residents, and build and maintain infrastructure related to wildlife management. Dependent on the specific activities chosen by the District Councils, additional staff will be employed and trained.

A fund for expenditures to enhance the use of wildlife through District Council activities will be funded from the project. The fund will supplement revenues from wildlife utilization by providing an operating budget for the early years for capital investment or infrastructure. Funding is also provided for technical support for the development of land use plans, including procurement of aerial photographs, maps, transport, and other inputs.

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Specific outputs of the investments in training, technical assistance, and commodities described above include:

- Establishment and implementation of a self-sustaining wildlife resource management program.
- Infrastructure to support wildlife and its use, such as fences, watering points, and other facilities.
- Comprehensive land use plans for each district.
- Trained community game monitors employed by the District Councils for wildlife management and protection.

(b) Institutional and Community Development

The institutional and community development elements will be implemented primarily by Zimbabwe Trust (ZimTrust). Two full-time project managers for each district will be required beginning in early 1990 when Appropriate Authority status is granted. Project managers will be appointed by ZimTrust in collaboration with District councils and will be recruited from the districts if possible and, if not, from within Zimbabwe. The project managers will strengthen village, ward, and district level institutions, including wildlife committees, by providing training and assistance in accounting, organizational, and problem-solving skills. The managers will facilitate the planning and decision-making processes as these institutions select the best options for development and address issues of distribution and implementation. The managers will also act as advisors, provide information regarding options facing the local counterparts, act as negotiators with private businessmen, and ensure that villagers' needs are expressed to the Councils.

When additional expertise is required, the project manager will locate and hire non-local short-term assistance. The District Councils will have a fund, accounted for by ZimTrust, to be used as a supplement to revenues collected from wildlife utilization. Possible uses of the fund include: fencing, watering points, and tourist facilities. It is important to stress that residents, through their local institutions, will decide what avenues of development they wish to pursue and, given the knowledge and skills transferred by the project managers, will assume complete responsibility for the project activities by the end of the project.

The project managers described above will be supported by a part-time ZimTrust project supervisor. The supervisor will provide programmatic, technical and administrative guidance, and act as the link to USAID. The project supervisor, who will be in contact with similar programs throughout Zimbabwe, and the SADC region, will act as an informal source of lessons learned from other regions. In the first year, the project supervisor will continue the development efforts currently underway to gain Appropriate Authority.

Inputs are expected to be highest in years one through four, and then decrease incrementally over years five through six as the districts take on full recurrent expenditure from their own wildlife revenues. Funds are provided for ZimTrust project staff, including a part-time project supervisor, project managers, and one facilitator for women's activities. This staff will be provided with vehicles, radios, and housing in the districts. The proposed housing will also act as accommodations for visiting Harare-based project staff from ZimTrust and from CASS.

Specific outputs of the investments in training, technical assistance, and commodities described above are:

- Institutions capable of planning and administering their own sustainable wildlife management programs.
- Increased household incomes due to expanded employment opportunities, revenues from wildlife resources, and other income-generating activities.
- Establishment of community development funds.

(c) Community Development, Particularly for Involving Women

Women are intricately involved in the production economy and in assuring family well-being in Zimbabwe's rural communities. Among other responsibilities, women perform most of the agricultural tasks and raise small livestock; they provide firewood and water; they care for their children and homesteads. This is particularly true in the target areas where there is a high predominance of women-headed households (up to 65 percent of the households in Tsholotsho Communal Land; the number in Hwange, Binga and Bululima Mangwe is not known but is estimated to be comparably high). Generally, these households are headed by married women with absent migrant spouses. They have fewer resident members than male-headed households but higher dependency ratios. In general, women-headed households are the poorest in the community. It therefore becomes imperative to address the needs of these households, and the women who head them, within a culturally appropriate context.

The project seeks to expand the involvement of women in the target areas in the benefits of wildlife production and management. It will do so by promoting a general increase in the level of economic activities, by transferring technical and problem-solving skills, by expanding the harvesting and processing of veld crops and products in whose production women might more readily become involved, and by providing a mechanism to ensure that women's concerns in wildlife management and its impacts are conveyed to District Councils.

To involve women more fully in the development process and in project benefits, ZimTrust will hire a full-time facilitator for women's activities to work in the target Communal Lands. The first responsibilities of this individual will

be to assess the needs of the women, to facilitate communication of these expressed needs to the Ward and District Councils, and to inform women of their rights and obligations under the project. Another important effort of this individual will be to expand the sustainable and profitable use of the natural resource base by women.

In the social and cultural context of the project area, activities could include processing and marketing of wildlife products, but will focus on exploitation of plant and insect resources. Examples include: collection and sale of larvae of silk moths, medicinal plants, Mopane worm, thatching grass, and wood for fire and building materials; bee-keeping; basket-making and other handicrafts; and soap-making. In addition to the mentioned economic activities, women's contributions to social and rural development can be enhanced through nutrition and health education, establishment and staffing of pre-schools, and provision of clean water. To facilitate such activities, the manager for women's activities will have a small fund to respond to identified needs for technical assistance (e.g. feasibility and marketing studies), skills training, and capital.

In addition to working with community residents, the facilitator for women's activities will work with and strengthen the existing institutions for women, primarily the Association of Women's Groups (AWG) and the village-based community development workers.

A small enterprise development fund for women's activities is allocated to the project that will provide short-term technical assistance, materials, and/or capital. Project funded activities are expected to directly contribute to increased participation of women in the resource management program and in the economy.

(d) Education and Training

The widespread introduction of wildlife management and utilization schemes envisaged in this project will require the participants to have increased environmental awareness, specialized knowledge and skills, and new perspectives on land use and ownership of resources. The success of this project ultimately rests on the degree to which it is understood and embraced by the various segments of the Tsholotsho and Hwange Districts. Therefore, it is important that support be given to a wide range of conservation education and training activities. There is a need to strengthen the capacity and capabilities of the DNPWLM and ZimTrust to meet these new demands.

ZimTrust will provide training to local institutions in the necessary skills for planning and implementing project activities. In addition, conservation education will be provided through a DNPWLM extension/interpretation program to be located at the Korodziba sub-station. This officer will establish an interpretation center at the sub-station, as well as offer short presentations to community residents. She/he will use a project funded mobile training unit for this purpose. ZimTrust will provide technical assistance in materials preparation and training techniques to its own staff and to the DNPWLM

extension officer by providing a training and information specialist. The training plan includes a short study tour to the U.S. by the extension officer to observe interpretation centers and U.S. extension services, as well as a follow-on short-term course.

Both the ZimTrust staff and DNPWLM officers will coordinate with other institutions providing conservation education in the districts, such as the Ministry of Education and the Department of Natural Resources. Training will be conducted through several mechanisms, including informal discussions, presentations, workshops, seminars, conferences, and field trips, among other activities.

ZimTrust will provide a full time information and training specialist for the life of the project. In addition, project funding will be available for the production of three issues of Action Magazine and other educational materials, including a mobile training unit. The project will also equip an interpretation center at the Korodziba base station, as well as provide funds for a short-term study tour and short course in the U.S. . Project investments in technical assistance, training, and commodities are expected to contribute to the following project outputs:

- Production of conservation education and training materials, including three special issues of Action Magazine.
- Several workshops and presentations to community residents and service providers, including decision-makers, teachers, extension workers, and women's groups, among others, regarding both community-based resource management and conservation.
- Improved capability of a DNPWLM officer to provide extension and interpretation services to the communities of Tsholotsho and Hwange.
- Establishment of an interpretation center at Korodziba base station.

2.1.2. Planning and Applied Research Support

The ecological and biological sciences provide a necessary but not sufficient foundation for effective programs of environmental management. Such programs require a combination of motivational, technical, and administrative factors. Applied social science can play an important role in providing the necessary analysis of the dynamics involved and in suggesting management options that are accessible and feasible to both central planners and local communities. Applied social science research is essential not only for planning and implementation, but also for monitoring and evaluation. If development is for the people, then the impacts on them, many of which can not be foreseen, must be monitored throughout project activities. This is particularly important when a project involves innovative concepts not previously tested in the target areas.

The project component will provide in the targeted areas socio-economic data collection and analysis relevant to project implementation, monitoring, and evaluation. Results from the research will be fed back to ZimTrust, the District Councils and the DNPWLM through advisory services, publications, and workshops. Emphasis will be placed on the existing context for community-based resource utilization, including:

- Identification and analysis of culturally determined rights, responsibilities, and practices relating to environmental, social, and economic resources;
- Identification and analysis of micro-level individual, household, and community motivational and decision-making factors, including the domestic economy, pattern and phasing of different economic activities, and the range of economic options individuals perceive; and
- Investigation of center-periphery relationships in bureaucratic, legal, and administrative structures, with the inherent conflicts over resource control these relationships involve.

The methodological approaches to be used in this research include standard social science techniques such as social surveys using questionnaires and interviews based on carefully constructed sampling frames, yielding quantitative data. However, the nature of the issues involved also require a case study approach that examines community dynamics over time. These are, in effect, natural, successive experiments in which the communities involved participate in the research, an approach sometimes referred to as participatory action research.

Project funding is expected to contribute to achievement of the following project outputs:

- High-level professional training for up to three research fellows in the socio-economic and institutional dimensions of environmental management.
- A number of publications regarding the dynamics of community based resource management at Tsholotsho and Hwange Districts, socio-economic dimensions of resource management in general, and/or individual and community motivational and decision-making factors in resource utilization.
- Two to three baseline socio-economic surveys conducted at the beginning of the project, with parallel surveys conducted at the end of the project.
- Two to three in-depth longitudinal studies.
- Frequent advisory visits by senior staff at CASS.

The Planning and Applied Research Support project element will be implemented through the Centre for Applied Social Sciences (CASS) located at the University of Zimbabwe. Four primary activities include: (a) Applied Research (both baseline surveys and in-depth longitudinal studies); (b) Advisory Services to facilitate the initiation and implementation of the project; (c) High-Level professional training in the socio-economic and institutional aspects of community based resource management; and (d) information dissemination through seminars and publications. The activities are further described below.

(a) Applied Research

Applied research will be undertaken in the topics cited in the strategy for social science research described above. Baseline socio-economic surveys yielding data for project planning, implementation and evaluation will be carried out primarily by senior academic staff of CASS, assisted by student researchers. Initial visits by staff to the project target area have already been made. In-depth longitudinal studies for monitoring and evaluation of project impacts will be primarily carried out by up to three research fellows, resident for two to three years in the Communal Lands.

(b) High-Level Training

The three research fellows mentioned above will receive training in the socio-economic and institutional dimensions of community-based resource management. This will be accomplished through a study program including: up to two semesters of external study at a third-country or U.S. institution; research activities over a three to four year period described above with supervision by senior staff at CASS; and preparation of a thesis. These fellows will receive MPhil or DPhil degrees from CASS/University of Zimbabwe.

(c) Information Dissemination

Activities in information dissemination will include publications pertaining to the specific project target areas, as well as to the more general topic of community-based resource utilization and natural resource management. In addition, senior staff and research fellows at CASS will participate in national and regional seminars and conferences.

(d) Advisory Services

The results from this research will be applied through the process of advising the village, ward, and district councils in the implementation of project activities and in resolution of issues. The researchers will also be in a position to advise the councils of potential impacts of the various options on the residents of the Communal Lands.

Advisory services and supervision of the research fellows will be provided by senior academic staff of CASS. To assist staff in this task, funding for short-term consultancies by suitably qualified academics is included in the

project. Funding is also included for salaries, graduate training, and support for three research fellows during years two to five. Funds are provided for publications and dissemination of research results.

2.1.3. Conservation of the Resource Base

A central resource for community based wildlife utilization programs in western Zimbabwe and eastern Botswana is the region's large and growing elephant population. The need for conservation and management of this population stems from two factors. The first is that the growth rate of the elephant population has been close to 5% per annum for the last three decades, if not for the last 90 years. Unlike most other areas in Africa where elephant populations have been declining, in Zimbabwe they are doubling every 14 years. This rapid population eruption has implications for conserving the integrity of protected areas in the region and minimizing conflict between elephant and human communities. The second is that despite the vitality of the elephant population (or possibly because of decreasing populations elsewhere), it is increasingly likely to be threatened by poaching.

The apparently conflicting dangers of elephant overpopulation on the one hand, and of uncontrolled poaching on the other, require a sophisticated capability for research, monitoring and management by the authorities, both in Botswana and Zimbabwe. The proper conservation and management of the core elephant population (i.e., the population within the National Parks) is vital to the long term viability of the community based wildlife utilization programs being developed in the region.

Because the elephant population in question is shared by Zimbabwe and Botswana, there is a need to support co-ordination between the two countries in carrying out an elephant conservation program. Though not funded through this project, it is hoped that some level of co-ordination will take place.

The strategy to be adopted in monitoring and managing the elephant population builds on the experience of an elephant monitoring, research and management program that began in Hwange National Park in 1966. Essentially, this program has involved aerial censuses, assessments of the impact of elephants on woody vegetation in the park and large scale culling operations to maintain an optimal population of elephants in the park. Elephant population dynamics have been studied using large samples of material collected from culled animals, and the influence of elephant on woody vegetation in relation to artificial water supplies has also been the subject of detailed research. During aerial censuses the number of elephant carcasses is also recorded. This provides a sensitive measure of elephant poaching activity over large areas. For example, the carcass ratio in Hwange National Park has consistently been below 5% except on two occasions when carcass ratios in region of 30% were recorded in the south western area of the Park. On both occasions (1981 and 1986) these counts alerted Park officials to a major poaching threat which was brought under control.

More recently the cycle of censuses and culling has involved active adaptive management where large numbers were culled in two successive years in an attempt to rapidly reduce the elephant population to a desired level of 12,000 animals. The reductions also provided a test of the census techniques. Predictions about the movement of elephant in drought years and about immigration of elephants from Botswana were similarly tested during years when no culling occurred.

Active adaptive management recognizes that most ecological systems are governed by an array of factors which are poorly understood and can seldom be predicted on the basis of routine monitoring or limited conservative interventions. Management actions or interventions are therefore designed to test the system under scrutiny and so improve knowledge and understanding of the resource and its management. The approach is most appropriate to systems where free living resources, such as in fisheries, are regularly harvested. It necessarily involves the close integration of research, monitoring, and management activities, including protection, to achieve clearly defined objectives.

In this instance, the strategy will continue to be used in the Matetsi/Hwange/Tsholotsho area within Zimbabwe and might be extended to the degree possible to include the elephant population residing in Botswana.

The primary objective of this component of the project is to strengthen the existing program to conserve the regional elephant population which resides in Botswana and western Zimbabwe. The broad objective is to establish:

- o Support for the DNPWLM in Zimbabwe (and the Department of Wildlife and National Parks in Botswana) in developing the capacity to census and monitor elephant populations, conduct applied research on elephant carrying capacities in the project area, manage the elephant population and protect it from illegal hunting.

The project target area within Zimbabwe encompasses the Zambezi National Park, the Matetsi Safari Area, the Kazuma Pan National Park, Hwange National Park, the Forest Areas and the Hwange and Tsholotsho Communal Lands. In all, this covers an area of approximately 30,000 sq. km. The area straddles the divide between the Gwaai/Zambezi drainage in the north and east and the internal drainage basin of the Nata - Makgadigadi - Okavango system in the south and west. The altitude is between 1000 and 1300 m above sea level. Mean annual rainfall lies between 750mm in the north and 400 mm in the south west, with the annual dry season lasting for six to seven months (April through October). The area supports a range of mainly broad leaved deciduous woodlands and scrublands on a micro topography established by relict sand dunes. The vegetation is predominantly open mopane and combretum woodlands interspersed with dry and moist edaphic grasslands.

Major human influences on the ecosystem over the last century have included hunting, logging, burning, cattle ranching and more recently subsistence and commercial cropping. Hunting had reduced the elephant population to very low

levels by 1890, but it has since recovered to its present robust state - a level which exceeds the carrying capacity of the project area.

The implementing agency for this project component is the Department of National Parks & Wild Life Management in Zimbabwe (DNPWLM). Organizationally, the project area falls within the Matabeleland North Province and the senior Park Official for the Province is the Provincial Warden, based at Main Camp in the Hwange National Park. There are several substations within the project area which are headed by Wardens. There are two research stations headed by Senior Ecologists - one is at Matetsi and the other at Hwange Main camp. The Conservation of the Resource Base project element will comprise four principal activities: (a) Ecological Monitoring; (b) Population Management; (c) Protection; and (d) Coordination with Botswana.

(a) Ecological Monitoring

This element covers two main ecological components: the continuous assessment of the elephant populations and their habitats.

(i) Elephant Population Monitoring - In order to manage and protect the elephant population, accurate data are required annually, preferably bi-annually, on the numbers, trends and distribution of elephants in the project area and on the level of adult mortality. Elephant populations are best monitored by carefully designed and executed sample aerial censuses. The numbers and distributions of other large mammals are also recorded on these censuses, as are sightings of elephant carcasses. Censuses at regular intervals will provide information on the numbers, trends and distribution of elephant in the project area. They will also provide information on levels and trends in adult mortality based on carcass counts. Equally important, the aerial surveys provide population estimates of a number of other large mammal species (e.g. buffalo, sable, wildebeest, rhino, giraffe, gemsbok, zebra).

Attempts to borrow or hire other aircraft for aerial surveys have not been altogether successful. These aircraft have other calls on them which can disrupt the timing and continuity of surveys. A further complication is the difficulty for DNPWLM to keep its aircraft in running order. They have a relatively high number of hours on the airframe and engine assemblies and are in need of refitting and repair. Instruments necessary for surveys, such as the appropriate radar altimeter, are also not always available or tend to malfunction when transferred between aircraft.

According to Zimbabwean law, an aircraft must be checked by a qualified aircraft engineer every 50 hours of flying. Surveys of large areas may use up to 46 hours. It is unsatisfactory if aircraft have to return to Harare for a check in the middle of a survey. In addition, if the aircraft is available for other uses during the survey period it makes it difficult to plan. It is therefore, essential that DNPWLM is able to use an aircraft exclusively for surveys in order to conduct them as efficiently as possible. Most surveys are carried out during the dry season when visibility of the ground is best, and

this in effect means a short period (August to October) in which all surveys should be completed.

Density estimates have been obtained using a simple method of analysis which uses the mean density per sample (or transect) and extrapolates for the whole area. This method has a serious failing in that it assumes that animals are randomly distributed. However, elephant (and other mammals) are usually found in herds and "clumped" in their preferred habitats. The assumption of randomness is thus likely to result in underestimates.

It is important to know not only the densities of the animals but also their distributions within an area. Computer software has been developed in Canada for the mining industry to calculate the size and distribution of mineral deposits. This "GEOMIN" software has been successfully adapted to analysis of data from surveys of dolphins and has been found to be ideal for Zimbabwe's elephant surveys, producing both density estimates and density distribution plots.

This software runs on main-frame computers. At present the Department uses Hewlett-Packard PC's but the acquisition of a main-frame computer is within its program of computer expansion and will be used not only for the storage and analysis of survey data, but also for a wide range of other functions. This will include the analysis of vegetation surveys, storage and analysis of poaching data, and others.

(ii) Habitat and Vegetation Monitoring - Elephants are large generalist herbivores which exert a major influence on the structure and functioning of savanna ecosystems. If some measure of balance between elephant and their habitats is to be maintained it is necessary to monitor the habitats within the project area at regular intervals. The key indicator of elephant impact on habitats is the woody vegetation. This will be monitored by using aerial photography in conjunction with regular (annual and bi-annual) ground measurement of tree mortality and regeneration in selected plots. The photography available is that carried out by the Surveyor General at five year intervals at a scale of 1:25,000 and the DNPWLM has a Hassalblad motor drive camera which will be fitted to the survey aircraft to photograph selected plots at scales of 1:10,000 and 1:5,000.

Sampling will be stratified by vegetation type and elephant density so that a careful analysis of the results from the elephant and vegetation monitoring will provide information on the relationship between elephant density and their impact on vegetation. This information will in turn support decisions on the elephant densities required in various parts of the project area.

The DNPWLM has staff trained to use and interpret satellite imagery and has access to the National Remote Sensing facility. This provides another potential avenue for monitoring the impact of elephant on habitats and the results of management interventions.

In support of Ecological Monitoring requirements, the project will fund the following:

- A joint Zimbabwe/Botswana workshop or seminar to plan the research and monitoring component of the program.
- Equipment to undertake aerial surveys of elephant populations. The DNPWLM requires the following:
 - Repairs and modernization of the Department's four place, high wing light aircraft with long range fuel tanks and STOL conversion as well as fitting with standard radio (VHF) and radio navigation equipment (ADF,VOR), a radar altimeter and ground navigation system.
 - Fittings to the aircraft to facilitate aerial photographic monitoring of vegetation.
 - A Hewlett-Packard HP9000 or similar main-frame computer capable of running GEOMIN software for the analysis of mammal survey data, vegetation survey data and for data storage.

Project support will result in accomplishment of the following:

- Annual reports and periodic updates providing full details of the numbers, trends, density and distribution of elephant in the project area.
- Annual reports and periodic updates on habitat change in monitored plots and the relationships between such change and elephant density and management actions.
- Development and refinement of survey and monitoring techniques.
- Improved understanding of elephant habitat interactions.

(b) Population Management

Management of the elephant population depends on site or area-specific objectives which will vary within the project area. In some parts of the range there may be a need for a reduction in elephant numbers that may be accomplished by manipulating water supplies, by disturbance hunting, or by culling. In other parts of the range there may be a need to facilitate an increase in elephant numbers by providing water supplies and minimizing disturbance. Where it may be necessary to exclude elephants completely, such as in arable areas, electric fencing can be used. The level of intervention required will dictate the resources in manpower, vehicles and other equipment required. These may vary from a foot patrol of two rangers to disturb nuisance elephants in a communal farming area to a major culling operation that requires an experienced team of hunters, a back up staff for the recovery of meat, hides and ivory, a research team to collect data from each animal

killed, a spotter plane to locate herds and guide the hunting team, and vehicles to transport of staff involved in the recovery of meat, hides, ivory and lower jaws.

Natural and artificial water supplies are an important component of the management of elephant in the dry western part of Zimbabwe. Using its own resources the DNPWLM will continue to maintain artificial water supplies for game animals in the Hwange National Park through the dry season.

In support of Population Management activities, the project will fund the additional equipment required for the implementing agency to carry out its responsibilities in assisting the restocking of adjacent communal lands, (equipment for capture and translocation), including vehicles, communications equipment, and field equipment for capture and translocation.

Successful implementation of the activities described above should contribute to the following accomplishments:

- Measurable habitat recovery in areas where elephant densities have been reduced.
- Increased elephant densities in those areas where elephant may formerly have been excluded.
- Full and efficient recovery of all harvestable products from elephant culling operations.
- Recovery of statistical data (age, size, condition, reproductive status) from elephant carcasses to monitor demographic parameters.
- Capture and translocation of animals to restock adjacent communal lands.

(c) Protection

The project area has a boundary of approximately 200km along the Zambezi river. A major rhino and elephant poaching threat emanates from Zambia. Poachers have been known to cover the 60km from the Deka safari area to the Deka Zambezi junction in a night after poaching rhino. There have also been many incursions into the Zambezi National Park from across the river. There is a 300 km boundary with Botswana and in the past there have been poaching incursion for elephant from that country. These have been particularly severe in the southwestern corner of the Hwange National Park. The project covers an area of approximately 30,000 sq. km. Protection of the elephant and other wildlife species (including black and white rhino and roan antelope) requires a continuous presence and ground coverage by patrols as well as two mobile anti-poaching units. One of these would be based in the Matetsi area in the north and the other in Hwange National Park in the south.

The DNPWLM has the staff but lacks the equipment to make these men fully mobile and effective. The major assistance required is for equipment,

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including vehicles; field equipment for anti-poaching patrols; and VHF Radio equipment.

Successful implementation of the activities described above should contribute to achieving negligible elephant mortality due to poaching; and continued protection of endangered species (black and white rhino, roan antelope) in the project area.

(d) Planning and Coordination with Botswana

Botswana and Zimbabwe share a common border of approximately 300 km in the project area. Elephant move freely back and forth along most of this boundary. Major efforts in Zimbabwe over the last decade to contain the growth of the elephant population in the Hwange-Matetsi areas have not been successful because large numbers of elephant have moved in from a similarly erupting elephant population in Botswana. Both countries face a similar threat from poaching and it is therefore, in their interests to coordinate their efforts to manage and protect the joint elephant herd of some 70,000 to 90,000 elephants. This can be accomplished through appropriate meetings and liaison at government, provincial and district levels on either side of the border.

2.1.4. Regional Communications and Exchange of Information Component

Results and lessons learned from project activities will be disseminated both within Zimbabwe and at a regional level over the six year life of the project. In order to facilitate this process it will be necessary to have a series of meetings and reciprocal visits by Department of Wildlife and National Parks personnel and others involved in the project (e.g. staff of CASS and ZimTrust). At the national level, the project coordination will be carried out under the guidance of a Project Implementation Committee. The Project Implementation Committee will be chaired by the Director of National Parks and Wildlife Management or someone designated by him. Meetings will be held on a periodic basis to discuss issues relating to project implementation. This committee will thus serve as a forum for discussion and as a means of disseminating information.

At the regional level, the SADCC Wildlife, Forestry, and Fisheries Sector Coordinating Unit in Malawi will serve as the central clearing house for information exchange and the planning of seminars, workshops, and conferences. Coordination of meetings and information dissemination will be facilitated by the Project Coordinating Committee comprised of representatives from each of the SADCC participating countries. Meetings will be held on a periodic basis to discuss issues relating to project implementation. The project includes funds to enable individuals engaged in project activities to travel to the meetings which are arranged by the Coordinating Unit as well as by departments or organizations within individual countries. At least one formal meeting will be required each year to review progress on the overall project implementation in participating countries.

Members of the Project Coordinating Committee will require funds for travel to other countries where meetings, seminars, and discussions will be held. Funds are also required for the holding of workshops. One suggestion by DNPWLM is that a meeting be held during the early phases of the project which deals with issues relating to elephant conservation. As the project progresses, other critical topics will be identified which will be useful to assess at regional seminars or workshops.

Information dissemination will be facilitated through the exchange of reports and publications. The results of the research by CASS in the target areas, for example, will be sent to other implementing agencies both within Zimbabwe and in other countries. Data generated by the research on elephants on Hwange National Park will be shared with Botswana both informally and at meetings of the joint management committee which already exists. Reports will also be prepared and presented at regular meetings sponsored by the Malawi Coordinating Unit.

2.2. Project Implementation

2.2.1. Project Budget

Project Budget appears as Table 2.1 through Table 2.12.

2.2.2. Project Implementation Schedule

Project Implementation Schedule appears as Table 2.13.

Table 2.1

USAID/ZIMBABWE
SOURCES AND USES OF FUNDS
(IN U.S. DOLS)

	U S A I D		GOVT. OF FX	ZIMBABWE LC	OTHER DONORS LC	TOTAL		GRAND TOTAL
	FX	LC				FX	LC	
I. WILDLIFE CONSERVATION	1,076,500	200,000		4,749,280		1,076,500	4,949,280	6,025,780
II. COMMUNITY DEVELOPMENT	1,700,500	2,200,000		3,743,615	810,000	1,700,500	6,753,615	8,454,115
III. REGIONAL COMMUNICATION & TRAINING	799,295	100,000				799,295	100,000	899,295
IV. PLNG & APPLIED RESEARCH	554,000	145,000				554,000	145,000	699,000
V. AUDIT	100,000					100,000		100,000
VI. CONTINGENCY (5%)	343,765					343,765		343,765
VII. INFLATION (5%)	380,941					380,941		380,941
GRAND TOTAL	4,955,000	2,645,000		8,492,895	810,000	4,955,000	11,947,895	16,902,895

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Table 2.2.

GOVERNMENT OF ZIMBABWE
HOST COUNTRY CONTRIBUTION

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
COUNTERPART STAFF SALARIES/BENEFITS	975,000	1,023,750	1,074,938	1,128,684	1,185,119	5,387,490
OTHER STAFF TRAINED	5,000	5,250	5,513	5,788	6,078	27,628
PER DIEM/SUBSISTENCE	70,000	73,500	77,175	81,034	85,085	386,794
OFFICE SPACE/UTIL/MAIN	264,000	277,200	291,060	305,613	320,894	1,458,767
SUPPLIES, OFF EQUIP, ETC	41,000	43,050	45,203	47,463	49,836	226,551
AIRCRAFT/VEHICLE MAINTENANCE	120,000	126,000	132,300	138,915	145,861	663,076
RESEARCH	60,000	63,000	66,150	69,458	72,930	331,538
SPARE PARTS	2,000	2,100	2,205	2,315	2,431	11,051
TOTAL	1,537,000	1,613,850	1,694,543	1,779,270	1,868,233	8,492,895

*INDICATES IN-KIND AND CURRENT OPERATING BUDGET LEVELS AT DNPWLM FOR THEIR RESPECTIVE GAME MANAGEMENT AREAS.

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Table 2.3.

USAID/ZIMBABWE
SUMMARY EXPENDITURES BY PROJECT ELEMENT

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
I. WILDLIFE CONSERVATION	765,000	113,500	150,000	146,000	102,000	1,276,500
II. COMMUNITY DEVELOPMENT	1,713,000	1,089,000	501,500	332,000	265,000	3,900,500
III. REGIONAL COMMUNICATION & TRAINING	185,000	165,000	184,125	189,384	175,786	899,295
IV. PLNG & APPLIED RESEARCH	280,000	167,000	130,000	87,000	35,000	699,000
V. AUDIT			50,000		50,000	100,000
VI. CONTINGENCY (5%)	147,150	76,725	50,781	37,719	31,389	343,765
VII. INFLATION (5%)	154,508	80,561	53,320	39,605	52,947	380,941
TOTAL	3,244,658	1,691,786	1,119,727	831,708	712,122	7,600,000

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Table 2.4.

USAID/ZIMBABWE
 DETAILED EXPENDITURES BY PROJECT ELEMENT
 WILDLIFE CONSERVATION

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
AIR SURVEY						
CESSNA REPAIRS/MAINTENANCE	75,000					75,000
RADAR ALTIMETER	20,000					20,000
VHF/ADF AVIONICS	25,000					25,000
HP 9000 COMPUTER/SOFTWARE	78,000					78,000
PERSONAL COMPUTERS/SOFTWARE	15,000					15,000
OPERATING COSTS	15,000	16,000	15,000	12,000	6,000	64,000
RESEARCH & MONITORING						
VEHICLES (3)	50,000					50,000
RESEARCH EQUIPMENT	10,000	5,000	4,000	35,000		85,000
PERSONAL COMPUTERS/SOFTWARE	75,000		10,000	3,000		22,000
OPERATING COSTS-VEHICLES	7,000	8,000	7,000	6,000	5,000	85,000
SUPPLIES	5,000	7,500	10,000	8,000	6,000	33,000
WORKSHOP	25,000		30,000		35,000	36,500
WILDLIFE MANAGEMENT						90,000
VEHICLES (10)	250,000					250,000
FIELD EQUIPMENT	40,000	30,000	20,000	10,000	10,000	250,000
RADIOS	30,000			25,000		110,000
OPERATING COSTS-VEHICLES	30,000	35,000	40,000	35,000	30,000	55,000
PLANNING/COORDINATION	15,000	12,000	14,000	12,000	10,000	170,000
TOTAL	765,000	113,500	150,000	146,000	102,000	63,000
						1,276,500

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Table 2.5.

USAID/ZIMBABWE
 DETAILED EXPENDITURES BY PROJECT ELEMENT
 COMMUNITY DEVELOPMENT

TSHOLOTSHO	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
VEHICLES (7)	212,500			0		212,500
TRAINING	92,500	64,750	19,000	6,000	5,000	187,250
KORODZIBA BASE STATION	130,000	100,000	40,000	30,000		300,000
PROJECT MANAGEMENT	91,000	63,500	88,500	56,000	53,500	352,500
PROJECT RESEARCHER	30,000	22,500	25,000	25,000	5,000	107,500
FENCING	76,000	76,000	38,000			190,000
GAME WATER SUPPLIES	50,000	50,000				100,000
CAPITAL & INFRASTRUCTURE DEV	75,000	75,000				150,000
OPERATING COSTS	70,800	72,570	67,850	70,800	53,100	335,120
SERVICE INPUTS	22,500	20,000	17,500	15,000	10,000	85,000
RADIOS	5,000					5,000
EQUIPMENT	18,000		1,500			19,500
SMALL ENTERPRISE DEVELOPMENT	30,000	30,000	30,000	30,000	30,000	150,000
TOTAL	903,300	574,320	327,350	232,800	156,600	2,194,370

Table 2.6.

USAID/ZIMBABWE
 DETAILED EXPENDITURES BY PROJECT ELEMENT
 COMMUNITY DEVELOPMENT

RANGE	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
VEHICLES (8)	212,500					
TRAINING	92,500	64,750	19,000	0		212,500
WILDLIFE TRANSLOCATION	80,000	20,000	10,000	6,000	5,000	187,250
PROJECT MANAGEMENT	91,000	63,500	88,500	56,000	53,500	110,000
PROJECT RESEARCHER	30,000	22,500	25,000	25,000	5,000	352,500
FENCING	46,000	46,000	23,000			107,500
GAME WATER SUPPLIES	50,000	50,000				115,000
CAPITAL & INFRASTRUCTURE DEV	75,000	75,000				100,000
OPERATING COSTS	49,200	50,430	47,150	49,200	36,900	150,000
SERVICE INPUTS	22,500	20,000	17,500	15,000	10,000	232,880
RADIOS	5,000					85,000
EQUIPMENT	18,000	1,500				5,000
SMALL ENTERPRISE DEVELOPMENT	30,000	30,000	30,000	30,000	30,000	19,500
INTERPRETATIVE MATERIALS	10,000	10,000	5,000	5,000	3,000	150,000
TOTAL	811,700	453,680	265,150	186,200	143,400	1,827,130
BINGA/PLUMTREE	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
VEHICLES (2)	50,000					50,000
FENCING	78,000	78,000	39,000			195,000
GAME WATER SUPPLIES	100,000	100,000				200,000
CAPITAL & INFRASTRUCTURE DEV	50,000	50,000				100,000
TOTAL	278,000	228,000	39,000			545,000

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Table 2.7.

USAID/ZIMBABWE
DETAILED EXPENDITURES BY PROJECT ELEMENT
REGIONAL COMMUNICATION & TRAINING

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
TECHNICAL ASSISTANCE						
PROJECT ADMINISTRATOR	130,000	126,500	133,075	134,729	116,465	640,769
VEHICLE	25,000					25,000
OPERATING COSTS	5,000	5,500	6,050	6,655	7,321	30,526
TRAVEL	15,000	21,000	30,000	30,000	32,000	128,000
WORKSHOPS	10,000	12,000	15,000	18,000	20,000	75,000
TOTAL	185,000	165,000	184,125	189,384	175,786	899,295

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Table 2.8.

USAID/ZIMBABWE
 DETAILED EXPENDITURES BY IMPLEMENTING AGENCY
 COMMUNITY DEVELOPMENT
 ZIMBABWE TRUST

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
PROJECT MANAGEMENT	130,000	125,000	135,000	110,000	105,000	605,000
VEHICLE (5)	125,000					125,000
OPERATING COSTS	63,000	63,000	55,000	65,000	55,000	301,000
SERVICE INPUTS	45,000	40,000	35,000	30,000	20,000	170,000
SMALL ENTERPRISE DEVELOPMENT	60,000	60,000	60,000	60,000	60,000	300,000
RADIOS	10,000					10,000
WILDLIFE TRANSLOCATION	30,000					30,000
TOTAL	463,000	288,000	285,000	265,000	240,000	1,541,000

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
FIELD RESEARCHER	60,000	45,000	50,000	50,000	10,000	215,000
VEHICLES (4)	100,000					100,000
OPERATING COSTS	32,000	30,000	35,000	35,000	23,000	155,000
EQUIPMENT	36,000		3,000			39,000
TRAINING						90,000
PROJECT MANAGEMENT	52,000	2,000	42,000	2,000	2,000	100,000
TOTAL	280,000	167,000	130,000	87,000	35,000	699,000

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Table 2.10.

USAID/ZIMBABWE
 DETAILED EXPENDITURES BY IMPLEMENTING AGENCY
 COMMUNITY DEVELOPMENT
 DISTRICT COUNCIL

	9/90	FY 91	FY 92	FY 93	FY 94	TOTAL
ELECTRIC FENCING	200,000	200,000	100,000			500,000
VEHICLE (4)	100,000					100,000
GAME WATER SUPPLIES	200,000	200,000				400,000
CAPITAL & INFRASTRUCTURE DEV.	200,000	200,000				400,000
TOTAL	700,000	600,000	100,000			1,400,000

Table 2.11.

USAID/ZIMBABWE
 DETAILED EXPENDITURES BY IMPLEMENTING AGENCY
 COMMUNITY DEVELOPMENT
 PARKS AND WILDLIFE MANAGEMENT

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
KORODZIBA BASE STATION	130,000	100,000	40,000	30,000		300,000
VEHICLES (6)	150,000					150,000
TRAINING	185,000	39,500	38,000	12,000	10,000	284,500
WILDLIFE TRANSLOCATION	60,000	20,000				80,000
INTERPRETATIVE MATERIALS	10,000	10,000	5,000	5,000	3,000	33,000
OPERATING COSTS	25,000	30,000	25,000	20,000	12,000	112,000
TOTAL	560,000	199,500	108,000	67,000	25,000	959,500

Table 2.12.

USAID/ZIMBABWE
ILLUSTRATIVE FINANCIAL PLAN
NATURAL RESOURCES MANAGEMENT PROJECT
PROJECT 690-0251

PROJECT ELEMENT	CURRENT YEAR OBLIGATIONS			FUTURE YEARS OBLIGATIONS			TOTAL		
	A.I.D.	GRANTEE	OTHER	A.I.D.	GRANTEE	OTHER	A.I.D.	GRANTEE	OTHER
I. WILDLIFE CONSERVATION		2,400,000			1,500,000			3,900,000	
II. COMMUNITY DEVELOPMENT	2,051,000	2,300,000	600,000	890,000	1,800,000		2,941,000	4,100,000	600,000
III. REGIONAL COMMUNICATION & TRAINING	350,000	200,000		549,295	292,895		899,295	492,895	
IV. PLNG & APPLIED RESEARCH	447,000		210,000	252,000			699,000		210,000
V. AUDIT				100,000			100,000		
VI. CONTINGENCY (5%)	142,400			89,565			231,965		
VII. INFLATION (5%)	230,100			13,463			243,563		
TOTAL	3,220,500	4,900,000	810,000	1,894,322	3,592,895		5,114,822	8,492,895	810,000

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Table 2.13.

Implementation Schedule - Zimbabwe

	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.6	PACD
AID PROJECT ADMINISTRATION							
Project Administrator hired	X						
General project reports to mission	X	X	X	X	X	X	X
General project administration activities	X	X	X	X	X	X	X
COMMUNITY BASED WILDLIFE UTILIZATION							
Staff hired	X	X					
Staff to field	X	X	X	X	X	X	X
Procurement of equipment	X			X			X
Capital and infrastructure development		X	X	X	X	X	X
Training Activities (see training plan)	X	X	X	X	X	X	X
Submission of progress reports	X	X	X	X	X	X	X
Submission of financial reports	X	X	X	X	X	X	X
APPLIED RESEARCH							
Registration of 3 research fellows	X						
Socio-economic data collected	X	X	X	X	X	X	X
Procurement of commodities	X	X	X	X	X	X	X
Detailed research design prepared	X						
Overseas training			X	X			
Research thesis preparation				X	X		
Consultancies		X	X	X	X	X	X
Advisory visits	X	X	X	X	X	X	X
Submission of progress reports	X	X	X	X	X	X	X
Submission of financial reports	X	X	X	X	X	X	X

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Table 2.13. (cont...)

Implementation Schedule - Zimbabwe Continued

	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.6	PACD
ELEPHANT CONSERVATION							
Procurement of Research and field equipment		X	X		X		
Establishment of census protocols	X		X		X		X
International Elephant Conservation Workshop		X					
Procurement of Supplies	X		X		X		
Elephant survey conducted		X	X	X	X	X	
Habitat survey conducted	X	X	X	X	X	X	X
Korodziba base station constructed		X	X		X	X	X
Wildlife translocation		X					
Submission of progress reports	X	X	X	X	X	X	X
Submission of financial reports	X	X	X	X	X	X	X

REGIONAL LIAISON							
Project Coordinator hired	X						
Organization of Office, data base		X					
Procurement of commodities		X					
Data Collection	X	X	X	X	X	X	X
Inter-nation Conference			X	X	X	X	X
Visits to participating countries	X		X		X		X

EVALUATION AND AUDIT							
External Evaluation and Audit				X			X

X = event occurs
 X-----X = continuous activity

2.2.3. Methods Of Financing and Implementation

This grant will be implemented using the standard operating procedures which have been established between the Government of Zimbabwe and the USAID for bi-lateral grant agreements. Specifically, the project will be obligated by a grant agreement signed by the Government of Zimbabwe and the USAID. The grant agreement will authorize the USAID to negotiate and sign a specific support agreement with the University of Zimbabwe who will administer the research component of this project and a operational program grant with Zimbabwe Trust who will be responsible for project management and implementation in Tsholotsho, Hwange, Binga and Bululima Mangwe. The balance of funds (\$3.24 million) will remain under the control of the Government and will be committed and disbursed upon the mutual concurrence of the USAID and the Government.

The grant will contain in Annex 1 a detailed project description which will provide 1) a comprehensive project narrative, 2) an overall project budget, 3) a project budget by implementing agent and 4) a project budget reflecting estimated expenditures by project year by implementing agency. Annex 1 will describe the responsibilities of all parties under the grant and will be supplemented by a project implementation letter which will amplify specifically how the project will be administered and implemented.

Project oversight will be provided by an implementing committee composed of participants from the Ministry of National Parks and Tourism, ZimTrust, CASS, and USAID. This committee will be responsible for reviewing the grantees' (CASS and ZimTrust) annual workplans and budget and will provide policy guidance, as required, to the grantees. The committee will be responsible for establishing with the grantees and USAID, annual goals and objectives. The grants to CASS and ZimTrust will require that the grantees submit quarterly operational and financial status reports to the Government of Zimbabwe and USAID/Zimbabwe. In addition, an annual workplan will be submitted to all parties to the agreement at least 60 days prior to the end of each operating year. This workplan and budget will be reviewed by the implementing committee to ensure its consistency with the goals and objectives of this project as well as the policy guidance provided by the implementing committee.

The grantees, using the approved workplan as amended by the quarterly reviews, would have complete authority and responsibility for implementing the project. Day to day operational decisions and implementation would be administered by the contractor without further review by either USAID or the Government of Zimbabwe.

USAID/Zimbabwe will have responsibility for project management and financial accountability for this multi-country regional project. This will facilitate regional project reporting responsibilities, ABS preparation, and Congressional reporting.

Payments to the grantees (ZimTrust and CASS) will be by direct payment or reimbursement. These procedures are approved methods of financing. To the

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extent required, periodic advances will be provided to the grantees in order to facilitate commodity procurement or community based resource projects. Advances will be limited to the amount required for immediate disbursing needs in accordance with U.S. Treasury cash management guidelines.

USAID/Zimbabwe and REDSO/RCMO/Nairobi will be responsible for procurement of vehicles and personal computers under the project using the RPSO/Tokyo. Procurement of the vehicles and computers will be handled under one procurement action by USAID/Zimbabwe under a PIO/C funded by the various bi-lateral missions to ensure that the lowest costs are obtained due to the large volume of commodities to be provided. The Project officer will prepare the PIO/C in conjunction with the Regional Commodity Management Officer to ensure that all specifications are in compliance with AID regulations and the various grantees' needs. The PIO/C, after completion, will be forwarded to the REDSO/RCO for contracting action.

The Grantees will be responsible for procuring all necessary supplies and leasing of all necessary equipment through competitive procurement procedures. In addition, the Grantees will be responsible for providing suitable individuals who will furnish short- and long-term technical assistance to the Government of Zimbabwe, USAID, and the District Councils.

USAID/Zimbabwe will be responsible for locating suitable short- and long-term training opportunities for the National Parks and Wildlife Services staff as funds become available. It is anticipated that some employees of DNPWLM will be sent overseas, either to the U.S. or a third country, for short- and long-term courses relevant to their field of expertise.

ZimTrust will provide grants to local NGOs, District Councils, or other implementing groups who will implement pilot projects in community based resource utilization. The Grantee will be responsible for ensuring that these organizations have adequate management and accounting systems in place to safeguard U.S. government funds prior to approving any project proposal. In addition, the Grantee will be responsible for ensuring the financial viability of each of the proposed activities or projects as well as its compliance with the guidelines established by the implementing committee prior to disbursement of funds to the implementing group. Funds for these activities will be provided on a cost-reimbursement basis unless the Grantee justifies the necessity of providing funds on an advance basis. Funds provided for pilot projects will be committed under a sub-grant or sub-contract using approved AID procedures.

In addition, each Grantee will be responsible for identifying short- and long-term technical assistance needs in wildlife conservation, community based resource utilization, base-line research/studies, etc. It is anticipated that most of this technical assistance will come from within the SADCC region. Logistical support, housing and furnishings, and other benefits as required will be provided for long-term expatriate consultants by the Grantee in accordance with their personnel policies.

Project management will be the responsibility of the Grantees for the funds budgeted for ZimTrust and CASS. Funds for a project director and necessary support staff for these Grantees (secretary, accountant, etc.) have been provided as necessary under the project. Logistical support (housing, furnishings, customs clearance, etc.) will be arranged by the Grantee or the USAID. Costs for such will be charged to the project. The Grantees will be responsible for providing all other logistical arrangements (travel, allowances, etc.).

Project funds have also been budgeted for a USAID personal services contractor who will be located at USAID/Zimbabwe and will have overall project management responsibility. It is anticipated that a SADCC national will be recruited to fill this position. The contractor will receive allowances and benefits in accordance with USAID regulations for third-country nationals.

Project funds have also been budgeted for travel and conference/workshop attendance by Government of Zimbabwe employees. These funds will be obligated as part of the host government grant and will be committed using invitational travel orders or PILs. Funds for these activities will be disbursed on a direct reimbursement basis.

Non-Federal audits (NFAs) will be provided under the regional indefinite quantity contracts managed by RIG/Nairobi or under a direct contract awarded by REDSO/ESA. Evaluation will be handled under regional funds obligated under the USAID/Malawi bi-lateral grant agreement. Evaluation will be done on a regional project-wide basis under a direct contract or indefinite quantity contract work order arranged by USAID/Zimbabwe at the end of year 3 and the end of the project.

Table 2.14.

METHODS OF FINANCING AND IMPLEMENTATION - ZIMBABWE

<u>ELEMENT</u>	<u>METHOD OF IMPLEMENTATION</u>	<u>METHOD OF FINANCING</u>	<u>TOTAL</u>
<u>Wildlife Conservation</u>	Direct Grant with Host Government	Direct Reimbursement or Advance	<u>\$1,276,500</u>
Commodities	USAID procurement under PIO/C	Direct Payment	745,000
Operating Costs	Direct Grant with Host Government	Direct Reimbursement or Advance	378,500
Workshops	Direct Grant with Host Government	Direct Reimbursement or Advance	90,000
Planning/Coordination	Direct Grant with Host Government	Direct Reimbursement or Advance	90,000
<u>Community Development</u>			<u>\$3,900,500</u>
Commodities	USAID procurement under PIO/C	Direct Payment	418,000
Construction Infrastructure Korodziba Base	Direct Grant with Host Government & Coop. Agreement with NGO	Direct Reimbursement or Advance	1,200,000
Training	Direct Grant with Host Government	Direct Reimbursement or Advance	284,500
Wildlife Translocation	Direct Grant with Host Government & Coop. Agreement with NGO	Direct Reimbursement or Advance	110,000
Project Management	Cooperative Agreement with NGO	Direct Payment or Advance	605,000
Game Water Supplies	Direct Grant with Host Government & Coop. Agreement with NGO	Direct Reimbursement or Advance	400,000

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Table 2.14. (cont...)

<u>ELEMENT</u>	<u>METHOD OF IMPLEMENTATION</u>	<u>METHOD OF FINANCING</u>	<u>TOTAL</u>
Operating Costs	Direct Grant with Host Government and Cooperative Agreement with NGO	Direct Reimbursement or Advance	413,000
Service Inputs	Cooperative Agreement with NGO	Direct Payment or Advance	170,000
Small Enterprise Materials	Cooperative Agreement with NGO	Direct Payment or Advance	300,000
<u>Regional Communications/Training</u>			<u>\$ 899,295</u>
Project Administrator	Direct PSC	Direct Payment	640,000
Commodities	USAID Procurement under PIO/C	Direct Payment	25,000
Operating Costs	Direct Grant with Host Government	Direct Reimbursement or Advance	158,526
Workshops	Direct Grant with Host Government	Direct Reimbursement or Advance	75,000
<u>Planning & Applied Research</u>			<u>\$ 699,000</u>
Researcher	Specific Support Agreement with UZ	Direct Payment	215,000
Commodities	USAID Procurement under PIO/C	Direct Payment	139,000
Project Management	Specific Support Agreement with UZ	Direct Payment	100,000
Training	Specific Support Agreement with UZ	Direct Payment	100,000
Operating Costs	Specific Support Agreement with UZ	Direct Payment	100,000
<u>Audit</u>	Work Order under IQC	Direct Payment	100,000

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2.2.4. Administrative and Monitoring Arrangements

(a) USAID Responsibilities

USAID/Zimbabwe will have primary responsibility for project management. An officer in the Mission's Office of Agricultural Development will be designated as USAID Project Officer and will be responsible for all project implementation activities. He or she will be assisted by a Project Administrator, hired as a personal services contractor who will be financed by funds set aside under the project. The Project Administrator will be responsible to the USAID Project Officer for support of all aspects of project administration.

The responsibilities of the USAID Project Administrator will include continuous monitoring of all project activities including preparation of quarterly Project Implementation Reports for the USAID Project Officer, drafting of Project Implementation Letters (PILs) and Project Implementation Orders (PIOs), maintaining regular contact with SADCC, GOZ, and NGO project management teams, keeping other SADCC A.I.D. Missions advised (through the USAID Project Officer) of project status, problems, and issues. The Project Administrator will also conduct regular site visits to observe progress of all project elements.

Upon signing of the project agreement with the Government of Zimbabwe, USAID will agree upon implementation mechanisms with DNPWLM, enter into a specific support agreement with the University of Zimbabwe's Centre for Applied Social Sciences and execute a cooperative agreement with the Zimbabwe Trust. Following establishment of these official linkages, USAID will solicit implementing agencies, constituted as a Project Implementation Committee, a coordinated first year operating plan. The plan is to contain a description of the proposed activities to be carried out by each grantee, objectives for the year, resources required for their achievement and how these will be deployed during the year.

The USAID Project Officer, with assistance from the Project Administrator will assist participating agencies in their preparation of local procurements and, working with the M/SER/OP, REDSO/ESA and RCO/Swaziland, will prepare PIO/Ts and PIO/Cs for all USAID-direct procurements as required. (Details of procurement actions planned and how they will be carried out are contained in the Project's Procurement Plan).

The USAID Project Officer will also arrange and supervise external project evaluations and audits. Mid-term evaluation and audit reviews are planned during Year 3 of the Project, while a final evaluation and non-federal close-out audit is planned prior to the Project Assistance Completion Date. The USAID Project Officer will be responsible for review of the results of these reviews with Mission management and counterparts and for taking corrective actions as necessary.

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(b) Implementing Agency Responsibilities

(i) DNPWLM Responsibilities

The Director of National Parks and Wild Life Management will be responsible for project management within that agency and will provide internal coordination of the work of the executing departments. The Assistant Directors of the DNPWLM departments involved will be responsible to him for the planning and execution of field activities, for the effective use of resources and the achievement of stated objectives.

DNPWLM will provide office space for the Project Administrator. It will also be responsible for all Project correspondence to USAID and for the submission of financial documentation on a quarterly basis and project progress reports semi-annually.

The Director will coordinate the management and control of DNPWLM operations overlapping with other project participating agencies through a Project Implementation Committee formed of representatives from DNPWLM, CASS, and ZimTrust. DNPWLM will prepare, in concert with USAID, ZimTrust, CASS and the participating District Councils through the Project Implementation Committee, a detailed annual project implementation plan and will work with USAID in preparing specifications for all procurements of DNPWLM commodities and services.

(ii) Centre for Applied Social Sciences (CASS) Responsibilities

CASS will be responsible for socioeconomic data collection and analyses in the target areas. Baseline socioeconomic surveys will be conducted to provide information that will be used for project monitoring. In-depth studies will be conducted during the Project.

The baseline surveys and in-depth studies in the target areas will be carried out primarily by a research fellow appointed by CASS for that purpose. CASS will provide high-level professional training of up to three research fellows in the socioeconomic and institutional dimensions of environmental management. Supervision of research fellows will be the responsibility of senior staff at CASS.

CASS will provide advisory services to other agencies, including DNPWLM, ZimTrust, District Councils, and local communities in order to facilitate project implementation. CASS will provide data and information for use by the external mid-term and final evaluation team and will participate in the preparation of annual project implementation plans as a member of the Joint Project Coordinating Committee.

CASS will be expected to cooperate in the dissemination of the results of its research through seminars, reports, and publications. Statements of audited accounts of expenditures will be provided by the University Bursar. A semi-annual progress report to USAID will be prepared and submitted on the anniversary of the signing of the grant.

(iii) Zimbabwe Trust Responsibilities

Zimbabwe Trust (ZimTrust) will be responsible for working with the District Councils, wards, villages, and household members in the target areas in an effort to strengthen their capacity for managing their natural resources. This work will include providing advice on management, conducting training, and assisting in administration.

ZimTrust will provide the professional human resource inputs necessary to establish, monitor, and operate the Project. Project managers will be provided in each area, and their activities will be overseen by a Project Supervisor. Work will be carried out under the direction of the Director of the Trust, the General Secretary, and the Communal Areas Wildlife Management Program Director.

ZimTrust personnel will be responsible for assisting and advising the District Council and local institutions in project management, accounting, and record-keeping. The records will be reviewed by ZimTrust during the course of project implementation and be made available to USAID upon request.

ZimTrust will be responsible for preparation, in collaboration with other members of the Project Implementation Committee, of an annual project implementation plan, semi annual progress reports and quarterly financial statements.

2.2.5. Procurement Plan

Procurement for the Zimbabwe section of the project falls into five generic categories: technical assistance, construction, supplies, training and evaluation/audit.

(a) Technical Assistance

Technical assistance will be largely procured by USAID directly through two grants. The first, a cooperative agreement with the Zimbabwe Trust, will provide Project Managers as well as other short-term technical assistance and informal, short-course training for the Community Development efforts. Operational costs associated with the above activities will be funded under the Grant.

The second grant, to the Centre for Applied Social Sciences at the University of Zimbabwe, will finance researchers and supporting costs for the Community Development element of the project.

USAID will also execute a Personal Services Contract for a Project Administrator to manage the Zimbabwe, Zimbabwe and Malawi components of the project.

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(b) Construction

Construction will be procured in two ways. The Korodziba Base Station construction in the Tsholotsho Community Development effort will be procured by the Ministry of Public Construction and National Housing of the Government of Zimbabwe under USAID Handbook 11, Chapter 2 procedures. Construction of tourism infrastructure in the Hwange and Tsholotsho Community Development efforts will be procured under the direct USAID Grant to Zimbabwe Trust as a sub-agreement using Handbook 13 requirements.

(c) Supplies

It is anticipated that commodities will be procured largely by USAID, either directly or indirectly. It is anticipated that fencing, game water supplies and radio equipment for the Tsholotsho and Hwange Community Development efforts will be procured by Zimbabwe Trust through its direct Grant from USAID using Handbook 13 requirements. It is envisaged that vehicles, computer equipment, reproduction and other office equipment, aircraft, technical equipment, and communication equipment will be procured by A.I.D. acting on behalf of the GOZ. USAID procurements will be carried out through PIO/C's issued by USAID/Zimbabwe. Finally, the DNPWLM will procure some consumable office supplies following Handbook 11, Chapter 3, procedures.

An illustrative listing of proposed equipment is contained in the project budget. This is a preliminary listing which will be refined by RCMO in conjunction with the recipients of this assistance at the time RCMO reviews procurement capabilities.

(d) Training

Formal short-term training will be provided both in Zimbabwe and in other countries. The DNPWLM will provide the in-country training, and will procure the necessary logistics under Handbook 11 procedures. The out-of-country training will be processed by USAID/Zimbabwe in accordance with Handbook 10 procedures.

(e) Evaluations/Audits

Evaluations will be held at the end of year 3 and the end of the project (year 6). The services required will be provided by means of Work Orders issued under indefinite quantity contracts (IQCs) by M/SER/OP in Washington. USAID/Zimbabwe will prepare and submit PIO/Ts. Non-federal audits of Zimbabwe Trust and CASS Grants will be performed by Work Orders against IQCs issued by REDSO/ESA, or contracts issued by either REDSO or USAID/Zimbabwe. These audits will be performed at the mid-point and after completion of the Zimbabwe Trust Grant and after completion of the CASS Grant.

The time-phasing of procurement actions should be as follows:

(a) Pre-agreement Actions

- Registration of Zimbabwe Trust as a PVO with AID/W (USAID/Zimbabwe)
- Completion of commodity specifications (in conjunction with RCMO) for vehicles, computers, reproduction equipment, communication equipment, aircraft repair, technical equipment and other major non-consumable items for the Government, evaluation of procurement capabilities of Grantees by RCMO, and final determination of procurement procedures by USAID and RCMO
- Preparation of PIO/Ts for Grants (USAID/Zimbabwe)
- Preparation of PIO/Cs for all AID-direct procurement of supplies by USAID/Zimbabwe and RCMO
- Completion of all procurement waivers as appropriate by USAID/Zimbabwe and RCMO

(b) Upon Signature of the Project Agreement

- Signature of and issuance of PIO/Ts and PIO/Cs to REDSO/ESA, RCO/Swaziland or M/SER/OP as appropriate.
- Local advertisement for Project Administrator by USAID/Zimbabwe
- Project Coordinator by GOZ.

(c) Within 30 days of Project Agreement Signing

- Cost proposals sought from Grantees
- All Commerce Business Daily advertisement placed by REDSO, RCO/Swaziland or M/SER/OP.
- Candidate selected for Project Administrator by USAID/Zimbabwe and PSC signed.

(d) Within 60 days of Project Agreement Signing

- Zimbabwe Trust and CASS Grants in place
- IFB/RFP documents for supplies prepared by various A.I.D. contracting offices

(e) Within 120 days of Project Agreement Signing

- Contracts signed for AID-direct procurement of supplies

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- Contracts signed by Zimbabwe Trust for supplies to be procured under the Grant.

(f) Within 180 days of Project Agreement Signing

- Contract(s) for construction of Korodziba Base Station let by Government of Zimbabwe;
- First deliveries of AID-direct supplies.

(g) Periodically after Project Agreement Signature

- Supplies procured locally by GOZ;
- Participants sent to training by USAID/Zimbabwe.
- Contract(s) for construction of tourist infrastructure let by Zimbabwe Trust.

2.2.6. Training Plan

The following training plan (see accompanying chart) is illustrative of the five types of training to be conducted over the life of the project, including:

- I. Short-term overseas training and MSc or PhD program at University of Zimbabwe
- II. Conservation education
- III. Institution building and technical skills
- IV. National and international conferences
- V. Development of materials

The plan also shows the implementing agency and the expected number of training events by year for the life of project. Since training and education activities will respond to the needs of the participants, it is not possible to determine exact numbers of activities.

Most of the training activities are limited to the project target areas. Given this focus, the criterion for selection of trainees is that individuals must be working in the project area. Thus, U.S. and third-country short-term courses are to be tailored to the needs of the CASS research fellows, the extension/interpretation officer, and the ecologist; the conservation education element is to be directed to the residents of the communal lands, and the technical and institution-building skills will respond to the needs of the District Councils and residents of the communal lands. However, education

materials developed under the project will be circulated to additional communal lands and local institutions pursuing community-based resource management and conservation education programs.

Evaluation of the effectiveness of the conservation education element will be conducted indirectly by the CASS resource fellows, who will periodically analyze changes in perspectives and practices regarding wildlife. While these changes cannot be attributed solely to the impact of the training, comparisons between groups who have and have not received training can give some indication of the effectiveness of the training being provided.

Evaluation and supervision of the CASS research fellows will be provided by senior staff at CASS and by outside consultants. While this process will be ongoing there are four crucial points for evaluation: (1) review after the first year of field work; (2) upon completion of overseas study at a U.S. university; (3) following the second year of field work; and (4) at completion of the degree program.

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Table 2.15.

ILLUSTRATIVE TRAINING PLAN

Element	Implementing Agency	No. of training events						Total No
		Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.6	
I. SHORT-TERM OVERSEAS AND UNIVERSITY								
- Training of DNPWLM staff located in the project area (short courses/study tours)	DNPWLM	1	1	1	1			4
- Research fellowships reading to MA/PhD	CASS	3 (2)			1			3
- Degree studies for research fellows	CASS		3 (2)					3
II. CONSERVATION EDUCATION								
- Conservation for schools (3 editions "Action" magazine)	ZIMTRUST	1		1		1		3
- Conservation education for general public in the target areas (presentations and a few field trips)	DNPWLM	40	40	40	40	40	40	240
- Conservation education and project related training for special groups (e.g.: school children; teachers; extension workers; and women's groups) (presentations/field trips workshops)	DNPWLM/ ZIMTRUST	10	10	10	10	10	10	60

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Table 2.15. (cont...)

ILLUSTRATIVE TRAINING PLAN CONTINUED								
Element	Implementing Agency	No. of training events						Total No
		Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.6	
III. INSTITUTION BUILDING AND TECHNICAL SKILLS								
- Training and refresher course for community game monitors	DNPWLM	3	3 (1)	2 (1)			2 (1)	10
- District-level w/shops or activities		2		2		2		6
- Ward-level w/shops or activities		10		10		10		30
- Provincial level w/shops or activities			1		1			2
- National-level w/shops or Seminar			1		1			2
- Training local personnel in special skills as required (includes women specific activities)	ZINTRUST	4	4	4	4	2	1	19
- On site individual and group training in project planning and implementation	ZINTRUST							
IV. NATIONAL AND INTERNATIONAL CONFERENCES								
- International conference on Elephant ecology and research	DNPWLM	1		1		1		3
V. DEVELOPMENT OF MATERIALS								
- Training materials development	DNPWLM/ ZINTRUST							

- (1) At least 1/2 of the participants will be at a refresher course.
 (2) Number of participants for 4-year program.

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2.3. Project Analysis Summaries

2.3.1. Technical Analysis

Wildlife utilization is an appropriate and sustainable form of land use in the region. This is most strongly supported by historical trends in land use which have over the years shifted toward wildlife utilization in both Commercial and Communal Farming Lands.

The Hwange National Park has played a central role in maintaining the core wildlife resources for these developments over the last 60 years. It is therefore, important that wildlife resources of the Park continue to be effectively managed. The project addresses this problem by providing support to the Department of National Parks and Wild Life Management (DNPWLM) in a way that will serve to strengthen their capacity without creating a dependence on that assistance.

The wildlife-based community development project in the Tsholotsho Communal Land is almost entirely based on the presence of elephant and their value to the safari hunting industry. There is a need to broaden this resource base by encouraging the recovery of other species, and this may in part depend on resolving the issue of veterinary fencing along the southern boundary of the Hwange National Park.

The Hwange Communal Land has few, if any, wildlife resources available to it. The community is attempting to acquire two areas of State Land adjacent to the Deka Safari area which will provide some returns from safari hunting. The Zambezi River valley possesses considerable potential for tourist development, potential which will be further enhanced by the completion of the Batoka Gorge Dam. Initiation of the project at a community level rests on the translocation of a large number of impala into the area.

In communal land projects, there is a need to attempt to relate the returns expected from wildlife to the human population. The return will need to be high enough either in terms of community benefits, or benefits to a sufficiently high proportion of individuals, for wildlife utilization to survive as a form of land use. Such analyses will be performed during the course of the project.

2.3.2. Social Soundness Analysis

In pre-colonial Zimbabwe, use of wildlife was governed by a tradition of communal proprietorship at the local level. European settlers introduced the "king's game" concept, which alienated wildlife from local control and made wildlife the property of the state, and in effect, the property of the whites who governed the colony. In communal areas, wildlife was no longer an asset, but a liability. Persistence of this colonial attitude into post-independence Zimbabwe has effectively suppressed earlier cultural perspectives, which were more consistent with the philosophy underlying the proposed project activities.

The Parks and Wildlife Act of 1975 marked the first formal departure from the "King's Game" tradition. It granted proprietorship of wildlife to private landowners, and allowed the Minister of Natural Resources and Tourism to delegate "Appropriate Authority" over wildlife to District Councils on communal lands. Until 1988, the Department of National Parks and Wildlife Management (DNPWLM) continued to act as Appropriate Authority on communal lands in the Zambezi Valley and in the proposed project area, Matabeleland North Province.

In 1978, DNPWLM introduced first program designed to return wildlife proceeds to communal lands where they had been generated. Meat from culling in adjacent National Parks was supplied to local communities, and revenues generated by safari hunting on communal lands were returned to District Councils. This effort did not succeed for a number of reasons, particularly because local participation in decision-making was limited.

DNPWLM introduced the Communal Areas Management Programme For Indigenous Resources (CAMPFIRE) in 1986, which sought voluntary participation from local communities, defined rights of access to natural resources more clearly, supported development of institutional capacity for resource management at the local level, and provided technical and financial assistance to communities involved. CAMPFIRE was the first initiative designed to support District Councils who sought "Appropriate Authority" status in developing wildlife utilization activities.

Councils who accept such status also accept certain responsibilities on lands under their jurisdiction, including poaching control, dealing with problem animals, compensation for residents who incur crop or livestock losses, etc. Offtake quotas for wildlife on communal lands are still set by DNPWLM.

In January 1989, Nyaminyami and Guruve became the first two District Councils to receive Appropriate Authority, and several other applications are being considered, including the project areas Tsholotsho and Hwange. Others are anticipated.

Participation to Date: All participating institutions and a considerable number of rural residents were involved in the project design process, to a degree rarely found in development projects. DNPWLM, CASS, and ZimTrust made proposals to the project design team which were considered and incorporated as appropriate into the project paper. Two workshops were held to address issues of concern to all involved in this process. The team also met with the District Councils of the target areas to discuss project design and implementation. The District Councils provided the team with their initial ideas regarding land use, wildlife management, and distribution of revenues. The project paper incorporates many of their ideas into the project design. In addition, the District Councils have held preliminary discussions with district residents that will be affected by this project.

Socio-political feasibility: The proposed project is judged fully consistent with the objectives of the CAMPFIRE program, and clearly viable in Zimbabwe's

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contemporary socio-political context. Implementation will benefit from Zimbabwe's prior experience in devolution of authority over wildlife to local levels. The necessary legal foundation for the proposed activities is supplied by the Parks and Wildlife Act and the District Councils Act.

Socio-Cultural feasibility: Traditional Ndebele and Shona cultures possessed an environmental ethic based in religious beliefs, which established a cultural framework within which hunting could be effectively regulated. This ethic, suppressed during the colonial era, still exists, and the proposed activities would be consistent with cultural traditions.

Economic motivation: The dominant production mode on Zimbabwe's communal lands is small-scale subsistence cultivation and livestock grazing, supplemented by cash-crop production and wage labor. Wildlife is not viewed as an economic resource, but rather a threat to subsistence activities. Competition for grazing land may be an issue in some project areas. The best use of land for individual and community benefit will be investigated during implementation. Community benefit from wildlife utilization will have to be clearly demonstrated. A survey conducted in Guruve District showed that people's expressed attitudes shifted sharply in favor of wildlife after a community school was financed with wildlife-generated revenues. This and other information suggests that communities are willing to experiment with wildlife utilization, although they remain skeptical about benefits that will accrue to them.

Given communities' dependence on small-scale cultivation, cost borne by communities who coexist with wildlife must be reduced to the extent feasible within the project, through the provision of electric fencing for crop protection, compensation schemes for crop losses, etc.

Equity issues: The wards involved in the proposed project activities are among most impoverished within communal lands, and at the community level the project poses no problems of equity. Possible socioeconomic stratification within communities includes several categories:

1. entrepreneurial individuals and households
2. ethnic groups
3. women
4. youth

These categories are addressed in detail in the analysis, and potential for stratification is judged low, with significant benefits likely to accrue to currently disadvantaged groups.

Communal capacities for self management: District-level administration is strong, including financial management capacity. At the community level, management capacity is constrained by the uneasy coexistence of traditional authority structures and modern democratic processes. One constraint is lack of clear authority over local resources, which would enable wards to deal with District and higher levels of governance from a position of strength. The project has the potential to augment self-management capacity at council and community levels--an important demonstration of the project's social soundness.

Wildlife utilization is judged likely to catalyze other economic activities. The empowerment of District Councils with economic as well as political authority, should enhance their legitimacy within their communities. If revenues are returned to ward levels as well, as is desirable, interactions between Councils and wards during project implementation should be carefully monitored.

Self-regulation and poaching: Through its emphasis on community self-interest, the project is likely to enhance community involvement in the control of poaching, both by community members and by commercial poachers from outside the local areas. The conformity through community consensus necessary for effective local control is a long-standing feature of African cultures.

"Spread effects": The requests from Tsholotsho and Hwange District Councils for Appropriate Authority status were inspired by experience elsewhere in Zimbabwe, other communities have made applications after hearing of the planning in these Districts. Zimbabwe Trust, one of the implementing agencies, has facilitated this process, and the diffusion of interest in other communal lands is likely to continue.

Potential obstacles: The analysis considers the prospects that dissident activity, competing claims for grazing land, and competing claims for unoccupied land--particularly for government-sponsored resettlement schemes--could compromise project activities. While the project design has taken some of these issues into account, dialogue should be maintained with central government during project implementation particularly with regard to the latter issue.

Implementation issues: The "adaptive management" approach recommended in the project paper is designed to involve community involvement in planning and implementation, an appropriate method for the proposed activities. Implementing agencies will need to coordinate their activities closely, and the agencies involved already have experience with this. The devolution of responsibility to District Councils, the central feature of project activities, should be fostered by ZimTrust during implementation.

Conclusion: The project is judged socially sound across the range of relevant considerations considered.

2.3.3. Institutional and Administrative Analysis

In Zimbabwe, the Natural Resources Management Project will be implemented by (1) the Department of National Parks and Wildlife Management (DNPWLM) of the Ministry of Natural Resources and Tourism, (2) the Center for Applied Social Sciences (CASS) of the University of Zimbabwe, (3) Zimbabwe Trust (ZimTrust), a local non-government organization, and (4) two District Councils, Tsholotsho and Hwange. The institutional and administrative analysis of the various organizations reveals them to be fully capable of implementing the project.

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The analysis indicates that they have the organizational, managerial, technical, and financial capacity to carry out their project-related responsibilities.

The DNPWLM is charged with overseeing Zimbabwe's national parks and wildlife areas and promoting conservation and proper utilization of the country's wildlife resources. DNPWLM is a professional organization with responsibility both to the Ministry of Natural Resources and Tourism and to the Parks and Wildlife Board under the Parks and Wildlife Act, 1975 as amended on the 1st January, 1982. From the standpoint of research, management, and extension, the department's personnel and staffing situation is adequate to meet current needs. As the number of requests by district authorities for wildlife projects increases, however, it is likely that the capacity of the department to carry out these activities will be stretched. As a consequence, DNPWLM has sought assistance from other agencies, including CASS and ZimTrust, in planning and implementing community-based wildlife projects.

ZimTrust is a non-government organization that was established in Zimbabwe and the United Kingdom in 1980. The major aim of ZimTrust is the relief of poverty and improvement of the lives of people in Zimbabwe through provision of financial assistance and strengthening of community institutions which will then be capable of initiating, managing, and sustaining projects. ZimTrust has a Communal Areas Wildlife Management Program which has worked with District Councils in setting up and running wildlife schemes. Judging from its past record, ZimTrust is an effective development agency fully capable of assisting in the creation and management of viable resource management institutions.

The Center for Applied Social Sciences at the University of Zimbabwe is an applied social science and research department which has both teaching and research functions. In 1988, CASS initiated a research program on natural resources management in Zimbabwe's communal lands, the principal objectives of which are (a) to provide research findings of planning and program significance for resource management schemes as they evolve, (b) to provide institutional and research inputs aimed at augmenting community district level capabilities for planning and implementing resource management programs, and (c) to provide a research context for interdisciplinary training programs. Analysis of the staffing situation, organizational structure, and financial situation of CASS suggests they are adequate for meeting current and planned responsibilities.

At the district and local level, the Natural Resources Management Project will be implemented through (1) District Councils, (2) ward committees (Wardcos), and (3) village development committees (VIDCOS). Traditional institutions relevant to the project include the chiefdom, the headman's area, the neighborhood or community, and the homestead. In addition, there are single-purpose and multi-purpose committees and institutions which have arisen in the project areas, such as women's groups and wildlife management committees.

In this project, work will be carried out at the District Council and community levels. Efforts will be made to strengthen local capacities to plan and manage wildlife utilization projects. The Tsholotsho and Hwange District Councils have already taken steps toward obtaining Appropriate Authority under the Parks and Wildlife Act. Both districts have designated tentative target areas for wildlife-related development, and consultations have already begun with DNPWLM, ZimTrust, and CASS.

Other District Councils, including those of Binga and Bululima Mwanze, have also requested assistance in their development and resource management efforts. Assessments of the capabilities of these institutions indicates that they are willing and able to undertake project activities.

Judging from information on the workings of traditional institutions in the proposed project areas, it appears that the implementation of the project will not have a negative impact on the status of traditional leadership or organizations. It might, however, have the effect of increasing the socio-economic significance of modern organizations such as District Councils. Issues were raised during the course of project design as to whether the District Councils would be willing to allow lower-level institutions to retain proprietorship over resources, something which is crucial to project success. The analysis concludes that the strengthening of local institutions through the combined efforts of DNPWLM, ZimTrust, CASS, and District Councils will facilitate the process whereby communities conserve their natural resources while gaining economic benefits.

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NATURAL RESOURCES MANAGEMENT PROJECT

**USAID Project No. 690-0251
SADCC Project No. 5.0.18**

ZAMBIA PROJECT COMPONENT

3. Zambia Component Description

3.0 Strategy

Zambia contains some of the largest remaining concentrations of African savanna wildlife and has a high degree of local dependence on wildlife resources, particularly among the isolated rural populations that practice subsistence hunting. But, with the declining national economy, both commercial poaching and subsistence hunting have reached unsustainable levels and it has become essential to limit illegal use.

The project design strategy recognizes that when resident communities can realize a direct share in the benefits arising from legal natural resource exploitation, an incentive for conserving that resource base is created. It also recognizes that communities must be able to control access to the resource in order to receive future benefits from short-term conservation actions. The expected result of applying the forementioned principles in a natural resources management intervention is that community based resource management and utilization will promote sustainable use of wildlife populations, as well as benefit the communities that share their land with wild species.

3.01 Purpose

The project activities carried out in Zambia will: (1) demonstrate through practical examples the technical, social, economic and ecological viability, and replicability of community-based natural resource management and utilization programs on marginal lands for increasing household and community incomes while sustaining natural resources; and (2) improve national and local capability to halt the decline in the wildlife resource base through training, education protection, communication, and technology transfer.

3.02 Objectives

- (1) Demonstrate wildlife utilization as a preferred and profitable land use in four command areas, and, through confirmation of local capacity for sustainable management influence change in national policy to confer proprietorship to the community.
- (2) Establish self-sustaining resource management programs in the target areas that will increase local employment opportunities and incomes, result in optimal and sustained wildlife yields, and provide the communities with access to a renewable source of revenues for development projects.
- (3) Establish and strengthen institutions and decision-making procedures involving the local communities in sustainable resource management and distribution of economic benefits from the wildlife resource base.

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- (4) Enhance social and rural welfare through increased income and access to protein, community development projects, and expanded participation of women in the development process.
- (5) Build the ability of the sub-authority to capture returns from wildlife utilization directly and to influence policy changes supporting direct return of economic benefits to communities.

3.03 Administrative Structure

The rationale behind the Administrative Management Design (ADMADE) program, the administrative framework within which project assistance will be provided, is that in order to effectively conserve and manage wildlife and protect its habitat from irrational use and harmful exploitation, the people on whose land such wildlife exists must participate fully in the management and development of the wildlife resources. Furthermore, they must receive a major share of the revenue derived from exploitation of the area. At the same time, in order for the program to be ecologically sustainable, some of the revenues generated must be set aside to support formal wildlife management programs. Without such investments in maintenance of the resource base, it will inevitably deteriorate over time.

The ADMADE structure seeks to balance national level management responsibility for the wildlife resource with systems of local participation at the political, traditional, and village levels. The main features of the ADMADE program are as follows:

(a) Wildlife Management Unit (WMU)

A Wildlife Management Unit is a unit of management made up of either a Game Management Area (GMA), a hunting block, or both. A Unit Leader, a civil servant employed by the National Parks and Wildlife Services (NPWS), is the manager of the unit. In addition to the Unit Leader, members of staff include NPWS Wildlife Officers and other employees. The Unit Leaders are trained at Nyamalumain in a program based on the experiences of the ADMADE program in the Lupande region.

(b) Wildlife Management Authority (WMA)

For every Wildlife Management Unit there is a Wildlife Management Authority (WMA). The District Governor is Chairman of the WMA. The membership includes both political and traditional leadership including the ward Chairman, Chiefs, members of Parliament, and local technical officers. A Wildlife Warden in whose command the WMA falls is the secretary of the WMA. The WMA has specific terms of reference, and serves as the policy body of the Wildlife Management Unit.

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(c) Wildlife Management Sub-Authority (WMS)

To ensure that decision-making is based on grassroots needs and priorities, every Chiefdom within a WMU has a WMS. The membership of the WMS includes Party branch chairmen, headmen, head teachers, the unit leader (secretary), clinical officers, and the chief (chairman). The terms of reference for the WMS includes determining what projects are to be funded out of the revenue returned from wildlife utilization to the village for community development activities.

(d) Unit Leader

Every WMU has a Unit Leader who is a civil servant employed by NPWS. The Unit Leader, the manager of the WMU, implements the decisions of the WMA and any other management policies.

(e) Finance

Revenue generated through safari concession fees for hunting is held by the Wildlife Conservation Revolving Fund (WCRF) and apportioned as follows:

10 percent to Zambia National Tourist Board (ZNTB)

15 percent to operational costs of the National Parks

35 percent to the village for community development activities

40 percent to the wildlife management programs (including employment of local villagers in the WMU as village scouts)

Each WMA establishes a development account in which the money earmarked for village community projects is held. The WMA administers the account and implements its projects.

Membership of the District Governor and the District Development Secretary on the WMA is intended to facilitate the implementation of the projects. The two officials wield considerable power within the council. They are expected to use their influence in order to mobilize resources which may be required to implement village community projects.

Before the WCRF disburses any money earmarked for the village community projects (the 35 percent share) to any unit, the WMA is required to establish a budget clearly showing the details of the project to be financed. Any WMA that has come up with a detailed budget for a village or community project can then request the WCRF to disburse funds.

The 40 percent share spent on the wildlife management program is controlled by the WCRF. Before any of it is spent, a detailed budget of the wildlife management program must be worked out and approved by the WMA. Once the WMA approves the budget, the Unit Leader can start spending on wildlife activities.

Although the 15 percent of ADMADE proceeds are available for National Park protection and management, an important future goal is to increase funds directed to this critical component of Zambia's conservation system.

3.04 Target Area

Four National Park and Wildlife Service (NPWS) commands comprise the project target area, as follows:

<u>Command</u>	<u>Game Management Areas</u>
(i) Kafue (Ngoma)	Sichifulo-Molobezi Mumbwa Namwala

The Kafue command is sparsely populated, with people living primarily on the periphery of the Game Management Areas (GMAs). Sichifulo-Molobezi has the advantage of a railroad line that runs through the GMA and provides potential access to external markets. The area supports a large herd of elephants as well as other harvestable species and has high potential for revenues from wildlife. For example, the revenues from hunting rights in the two GMAs totaled over \$125,000 in 1987. Wildlife authorities and sub-authorities have been established in both GMAs.

(ii) Bangweulu (Mpika)	Munyumadzi Fulaza
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Bangweulu is also sparsely populated with most settlement concentrated along the rivers. The resident ethnic groups, Bisa and Bemba, practice subsistence agriculture, supplemented by fishing. The area is generally not developed, due to problems of access, and there is a lack of social services. Munyamadzi is the most profitable of all the GMAs, with revenues of \$95,000 in 1987, and Fulaza possesses important potential for elephant recovery. Munyamadzi has an established Wildlife Authority, with strong support from the District Governor at Mpika. Fulaza is just initiating activities.

(iii) Luangwa (Chipata)	Lumimba East Musalangu
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Most of the sparse population is found along the Luangwa River and its tributaries. However, Lumimba has the potential for precious stone mining and the number of non-residents entering to exploit that resource has been increasing. Lumimba is adjacent to Lupande, the site of the Nyamaluma training center. Total from Safari concession fees in 1987 from the two GMAs was \$95,000. The combined land area of these two GMAs is 14,300 km². While the authorities appear to be well established, several of the sub-authorities have not yet been organized.

(iv) Northwest (Solwezi)

Lunga-Luswishi
Kasonso-Busanga

The Northwest command, covering a large area (over 18,860 km²), is north of Kafue National Park and close to the copperbelt area. It has a small population, and suffers from heavy poaching. Revenues from the lease of hunting rights in these two GMAs in 1987 was \$54,000.

3.05 Beneficiaries

Beneficiaries, and the different impacts of the project affecting them, are discussed in detail in the Social Soundness Analysis. Generally, it is the residents of the Game Management Areas in the targeted Command Areas who will benefit, directly or indirectly, from the application of wildlife quotas to resident village hunters, the increased availability of meat from safari companies, expanded economic activity and employment opportunities, and the provision of community services.

A second group of beneficiaries are those individuals participating in project activities and implementation, including staff of the NPWS, unit leaders, and game scouts who will receive training, as well as traditional leaders and chiefs who will be participating in the decision-making process.

Central governments in the SADCC region will also benefit from the expanded knowledge and understanding of actions and policies necessary to support community-based management of wildlife resources, through participation in international conferences and the dissemination of knowledge and lessons learned.

As discussed in the Social Soundness Analysis, it is unlikely that women will be direct participants in the decision-making process. One notable exception is the Vice Chairman of the Sichifulo/Mulobezi Wildlife Authority (Area District Political Secretary), who is a woman. Generally, women will not have access to increased employment opportunities nor will they be reached by the unit leaders unless they are specifically targeted.

However, as members of the community, women will benefit indirectly from the provision of community services, such as schools, clinics, wells, and grain mills. If women's interests are included in the process of deciding the priority and location of this community infrastructure, the benefits they receive may increase. For example, given that women use health facilities more often than men, on average, asking women where they would like the clinic to be located may result in a more appropriate location and, in the final analysis, increased use of the facility.

Negative impacts on women could result from project activities in some areas. Women are the primary gatherers of fruits, plants, and insects in the surrounding forest areas. Women in Sichifulo have already expressed their fear of entering those areas as they feel threatened by the wildlife. Thus, the range of forest available to women for their gathering activities could

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decrease as animal populations increase in the GMAs. Secondly, women have also expressed concern about their fields, the primary means of providing for their families, and current levels of crop destruction. Although the ADMADE program includes a means of collecting data on crop destruction, no formal means of compensating the women farmers has been proposed. It must be noted, however, that there is an informal compensation scheme; when an animal is shot in the field, the concerned individuals receive the meat.

The ADMADE program staff presented a proposal to the project design team, which was considered and incorporated as appropriate into the project paper. Any changes proposed by the team were discussed in detail with ADMADE staff and decisions regarding project design were reached by consensus. The team also interviewed village residents, headmen, game scouts, unit leaders, staff at the Nyamaluma training center, and NPWS wardens and biologists. Their contributions were critical to the design process.

3.1. Project Elements

3.1.1. Community Based Resource Utilization

(a) Wildlife Management

Up to two unit leaders for each GMA will be trained at the Nyamaluma center. They will have responsibility for wildlife management as outlined below in the description of the Conservation of the Resource Base component. In addition, the local chiefs will select young men, primarily school leavers, to become game scouts following training at Nyamaluma. The unit leader will convene and act as chairman of the wildlife sub-authority, the mechanism for informing and involving the community in wildlife management. NPWS will also prepare land use plans. The plans will be presented and discussed with the WMS.

Issues Relating to Women - In Zambia, as elsewhere in Africa, women's traditional role in managing and utilization of large mammals is limited. While they may be involved in processing the meat and by-products, women are not directly involved in tracking and hunting wildlife. Among other factors, their responsibilities for child rearing and household management preclude traveling for extended periods of time over long distances into the bush. However, their responsibilities for providing food, firewood and, frequently, medicines make women primary users of the natural resource base. Given that wildlife is just one component of the ecosystem, this project, over time, will focus not only on wildlife management, but also on the impacts of that wildlife on its habitat and implications for the use of the natural resource base in its entirety by both women and men.

(b) Community and Institutional Development

Given the importance of community involvement to the ADMADE program, this project will expand and strengthen local participation and development. As described above, the unit leader will convene the meetings of the

sub-authority. The WMS provides a forum for the exchange of information concerning not only wildlife management, but also community development. It is through the participation of the chief and headmen that residents' interests and concerns are formally expressed to the unit leader. The unit leader then acts as the conduit of this information to other service agencies as appropriate. The unit leader is also trained in selected skills required for wildlife utilization (e.g. establishing a culling operation). One of the most important roles of the unit leader is to advise the sub-authorities and members of the community of options they may wish to pursue, to facilitate decision-making by setting priorities and selecting among these options, to collaborate with locally available technical assistance, and to bring to the community non-local technical assistance when needed.

A Zambian community development officer will be employed for the duration of the project to: provide technical assistance in developing effective community development activities; advise on the role and potential involvement of women in the project; design, conduct, and supervise socio-economic research, including baseline studies and monitoring activities; coordinate with other donor and NGO activities; and initiate and facilitate the involvement of appropriate extension agencies and ministry personnel in community development activities in the project areas. Possible topics for socio-economic research are outlined in the evaluation section of Volume I. For more information on the qualifications and duties of the community development officer, see "Terms of Reference for Zambian Positions" at the end of this section of the Project Paper.

To support the work of the community development officer and the unit leaders, community facilitators will be located in the field. The number of individuals, duration of their assignments, required skills, and responsibilities will depend on the needs expressed by the communities and on the specific activities and approaches designed by the ADMADE staff, in collaboration with unit leaders, other extension agents, and local residents.

Additional resources available to support community based resource management and utilization include: short-term technical assistance (e.g.: market studies); a fund for community development activities (e.g.: credit or capital for income generating activities; grain mills; wells); and training (e.g.: tanning techniques; leadership, problem solving). This training resource is outlined in more detail in the training plan below.

Issues Relating to Women - In Zambia, as noted above, women are intricately involved in the production economy and in assuring family well-being. Among other responsibilities, they perform most of the agricultural tasks and raise small livestock; they provide firewood and water; they care for their children and homesteads; and they contribute cash to cover the expenses of food, health care, and education for their children. This is particularly the case in the target area, where both women-headed households and unemployed men are common. Generally, the households are headed by married women with absent migrant spouses. They have fewer resident members than male-headed households but higher dependency ratios. In general, women-headed households are the

poorest in the community. Given women's positions as community members, caretakers of their families, and active participants in the economy, it is important to include them directly in community development activities.

In the target areas, women are not the traditional leaders in the public domain, although they have informal means of gathering information relevant to the community and in expressing their acceptance or rejection of decisions taken on the community's behalf. In addition, women rely on other women with authority to represent their interests, possibly including traditional mid-wives, wives of the chief, and successful entrepreneurs. During interviews with one group of women in Sichifulo, it was clear that while women were aware of the ADMADE program and its anti-poaching efforts, they were not aware of the community development aspects nor of the potential return of wildlife revenues to the community. Whether this is a product of a lack of information among community members in general, or of a lack of information among women in particular is not clear as male community members were not questioned.

To ensure that women's uses of the natural resource base, their needs, and the potential positive and negative impacts on women's lives and roles in the community are considered, this project will work through both, traditionally male decision-making structures, by suggesting the participation of women teachers and/or health providers as members of the sub-authorities, and through women's traditional organizations. While the specific form these organizations take in the target areas varies from region to region, some examples needing further exploration include: traditional savings clubs; social support groups, often organized around the birth of a child; agricultural labor groups; church clubs; and, depending on the individuals involved, the Women's League of the Party. In addition, as stated above, the project will collaborate with local extension workers working with women's programs (home economics) from the Ministry of Agriculture and from the Department of Social Development.

The potential for increasing women's employment opportunities and income generation activities is considerable in areas with marketing opportunities. Women in Sichifulo, for example, are currently processing (smoking) and marketing fish, using the revenues to purchase necessary household items such as soap and salt. If a community-based culling operation proves feasible and undertaken by the community, there is the potential for involving women in the smoking of meat and the preparation of biltong. Similarly, women could become involved in soap-making. Other potential income-generating activities deserving consideration include: basket-making and other handicrafts, insect and caterpillar collection; planting of fruit and other trees for firewood and building materials; and, in Luangwa, rat collection.

Inputs and Outputs

The inputs funded under the Community Based Resource Utilization project element will include: training, short-term technical assistance, the salary of the community development officer, a vehicle, operating expenses and a fund.

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for community facilitators and development activities. The successful delivery inputs should result in the following accomplishments:

- o Up to two trained ADMADE unit leaders and a number of trained community members as village scouts in each of the target GMAs.
- o Reduced levels of illegal uses of wildlife by both commercial poachers and subsistence hunters.
- o Establishment and implementation of a self-sustaining wildlife resource management program.
- o Increased household incomes based on expanded employment opportunities and/or income generating activities related to natural resource utilization.
- o Increased provision of community services.
- o Baseline socio-economic studies conducted at the beginning of the project, with parallel surveys conducted at the end of the project.
- o Increased community participation in wildlife management and utilization.

3.1.2. Conservation of the Resource Base

The sustainable use of Zambia's rich and diverse large mammal fauna has the potential to generate considerable wealth in rural areas. Realizing this potential is particularly important in those areas which are infested with tsetse flies and from which livestock are largely excluded. In such areas, enhancing the capacity of rural communities to manage and benefit from the sustainable use of their wildlife resources can serve the following development goals:

- o Generate wealth for rural development at a village and district level through the return of wildlife revenues to these levels;
- o Improve resource conservation and sustainable land use;
- o Foster integration between National Parks land and adjacent land which will serve to enhance the longer term protection and viability of National Parks.

The above national objectives can be most effectively realized through developing the partnership between the NPWS and rural communities to manage and protect the wildlife resources of the GMAs.

The strategy to be adopted involves enhancing the capacity of existing government, district, and local institutions to protect, manage and utilize

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their wildlife resources. This will be achieved by strengthening the capacity of the NPWS and cooperating target communities with the tools and training needed. Revenues earned from the utilization of the wildlife resource will sustain that capability. Essentially, this involves a partnership in resource management and rural development between the NPWS, the district authorities and rural communities, as described above. Annual monitoring of wildlife populations, habitats, and oftakes will provide the necessary feedback to annually set quotas estimate returns of revenue and make decisions on resource management.

The following major objectives are envisaged for the Conservation of the Resource Base component of the project:

- o Develop wildlife production systems in the GMAs as a sustainable and economically viable land use in these areas.
- o Rehabilitate wildlife resources in the GMAs through the involvement of local communities in monitoring, management and protection.
- o Strengthen the capacity of the NPWS to implement the ADMADE programme in the target areas.

The elements necessary for a successful wildlife management and protection program include ecological monitoring, managing the target populations, and protecting the wildlife populations from illegal harvests. Each activity is discussed below.

(a) Ecological Monitoring

The major elements of the ecological monitoring program comprise annual estimates of the populations of the more important species, recording numbers of animals of each species hunted or cropped each year, and monitoring trends in trophy quality. In addition it is necessary to monitor, as far as is possible, the illegal oftake of animals.

- Population estimates for many species (elephant, buffalo, sable, wildebeest, lechwe, puku) will be made using standard aerial census techniques using a light aircraft. The remaining species can be monitored using permanently demarcated ground transects which are sampled in each September. These transects provide an adequate index of abundance for species such as impala, warthog, roan, hartebeest, kudu, eland and bushbuck. These and other species such as the large cats will also be monitored using patrol records where all sightings of selected species are recorded. An index of animals seen per patrol night, for example, provides a valuable and simple way of monitoring trends in the abundance of many species.
- Animals harvested. The GMA Unit Leader and village scouts will keep a record of the numbers of each species killed, the locality of the kill and, for trophy animals, a record of the trophy measurements. Carcasses of poached animals will be also be recorded.

- Problem animals. A standardized form is being developed which will allow a record to be kept of the level of conflict between humans and wildlife. Such conflict may involve damage to crops, loss of life, and losses of livestock.

(b) Resource Management

Resource management will involve setting quotas for hunting and cropping, executing cropping programs where appropriate, setting annual early grass fires and developing game water supplies. All legal use of the resources of the area are carried under the supervision of the Unit Leader and Village Scouts.

(c) Protection

Protection of wildlife resources from illegal poaching will be accomplished by regular ground patrols covering the entire area of the GMA's in question. Patrols are carried out by village scouts under the direction and supervision of the Unit Leader, the Management Authority and the Warden in charge of the Command.

Inputs and Outputs

The project will fund the following inputs:

- Equipment to support the NPWS and the GMA wildlife management authority to manage, protect and utilize the wildlife resources of the respective GMA's included the project. The equipment will include vehicles, radios for logistical and communications support.
- Training of unit leaders and village scouts and some senior personnel within the NPWS to effect the resource management and protection programme.
- Provision of a mechanical workshop devoted to the proper maintenance of vehicles being used in the project
- Provision of data processing equipment to allow full and timely analysis of the data collected in the ecological monitoring and resource protection activities.

Successful implementation will contribute to the following outputs:

- Controlled utilization of wildlife resources under the direction of local communities working in partnership with the NPWS.
- Declining illegal use of wildlife resources.
- Recovery of depleted wildlife populations.

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- Annual censuses of large mammal populations and an evaluation of the trends in population size.
- Records of illegal activities and illegal utilization of the resource and their trends.

3.1.3. Regional Communications and Exchange of Information

Results and lessons learned from project activities will be disseminated both within Zambia and at the SADCC regional level. Information dissemination within Zambia will be facilitated through the holding of a series of meetings and visits by personnel of the National Parks and Wildlife Service (NPWS) and the World Wildlife Fund-U.S. (WWF). Coordination of the meetings and information exchange will be done by a Project Officer based in NPWS in conjunction with a Project Directorate consisting of the ADMADE co-administrators, the Director of the Lupande Project, and anyone else appointed to the committee by the Director, NPWS.

The SADCC Coordinator for Forestry, Fisheries, and Wildlife in Malawi will serve as the central clearing house for information exchange and the planning of regional seminars, workshops, and conferences. Funds are included in the project to enable individuals engaged in project activities to travel to the meetings arranged by the Coordinating Unit as well as by departments or organizations within individual countries.

NPWS and WWF will maintain records and keep copies of the bi-annual progress reports and all project-specific data and information. Dissemination of information will be facilitated through the exchange of papers, reports, and publications. Efforts will be made to maintain contacts with other organizations involved in similar activities in project areas, such as the Luangwa Integrated Resource Development Project (LIRD), Africare, and British Overseas Development Assistance (ODA). Reports will also be prepared and presented at the periodic meetings sponsored by the SADCC Coordinating Unit.

3.2. Project Implementation

3.2.1. Project Budget

The Project Budget appear as Table 3.1. through Table 3.8.

3.2.2. Project Implementation Schedule

The Project Implementation Schedule appears as Table 3.9.

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Table 3.1.

USAID/ZAMBIA
SOURCES AND USES OF FUNDS
(IN US \$)

	U S A I D		GOVT. OF ZAMBIA		OTHER DONORS		TOTAL	GRAND TOTAL
	FX	LC	FX	LC	FX	LC		
I. CONSERVATION AND COMMUNITY DEVELOPMENT	985,500			125,000			985,500 125,000	1,110,500
II. ADMADE INSTITUTIONAL DEVELOPMENT & SUPPORT	475,000			819,355			475,000 819,355	1,294,355
III. TRAINING	347,000			1,105,380			347,000 1,105,380	1,452,380
IV. PROJECT MANAGEMENT	834,000						834,000	834,000
V. REGIONAL COMMUNICATION	29,000						29,000	29,000
VI. EVALUATION/AUDIT	50,000						50,000	50,000
VI. CONTINGENCY (5%)	136,025						136,025	136,025
VII. INFLATION (5%)	143,475						143,475	143,475
GRAND TOTAL	3,000,000			2,049,735			3,000,000 2,049,735	5,049,735

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Table 3.2.

GOVERNMENT OF ZAMBIA
HOST COUNTRY CONTRIBUTION
(U.S. Dollar Equivalent)

	FY 89/90	FY 91	FY 92	FY 93	TOTAL
COUNTERPART STAFF SALARIES/BENEFITS*	45,000	49,500	54,450	59,895	208,845
OTHER STAFF TRAINED*	15,000	17,000	17,000	7,000	56,000
PER DIEM/SUBSISTENCE*	10,000	12,000	15,000	7,000	44,000
OFFICE SPACE/UTIL/MAIN*	65,000	71,500	78,650	86,515	301,665
SUPPLIES/OFFICE EQUIP*	45,000	49,500	54,450	59,895	208,845
SMALL ENTERPRISE DEVELOPMENT**	25,000	50,000	25,000	25,000	125,000
PUBLICATIONS/WORKSHOPS**	5,000	5,000	5,000	5,000	20,000
TRAINING—NYALUMA SCHOOL**	100,000	50,000	50,000	50,000	250,000
VEHICLE MAINT/OPERATIONS+	180,000	198,000	217,800	239,580	835,380
TOTAL	490,000	502,500	517,350	539,885	2,049,735

*INDICATES IN-KIND CONTRIBUTION AND
REVOLVING FUND REVENUES

+LOCAL CURRENCY GENERATIONS FROM USAID/GOZ FUNDS
AND NATIONAL REVOLVING FUND REVENUES - NRF
CURRENTLY PROVIDES APPROX \$200 THOUSAND IN POL, INSURANCE,
AND MAINTENANCE ANNUALLY

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Table 3.3.

GOVERNMENT OF ZAMBIA
HOST COUNTRY CONTRIBUTION
(KWACHA EQUIVALENT)

	FY 89/90	FY 91	FY 92	FY 93	TOTAL
COUNTERPART STAFF SALARIES/BENEFITS*	720,000	792,000	871,200	958,320	3,341,520
OTHER STAFF TRAINED*	240,000	272,000	272,000	112,000	896,000
PER DIEM/SUBSISTENCE*	160,000	192,000	240,000	112,000	704,000
OFFICE SPACE/UTIL/MAIN*	1,040,000	1,144,000	1,258,400	1,384,240	4,826,640
SUPPLIES/OFFICE EQUIP*	720,000	792,000	871,200	958,320	3,341,520
SMALL ENTERPRISE DEVELOPMENT**	400,000	800,000	400,000	400,000	2,000,000
PUBLICATIONS/WORKSHOPS**	80,000	80,000	80,000	80,000	320,000
TRAINING--NYALUMA SCHOOL**	1,600,000	800,000	800,000	800,000	4,000,000
VEHICLE MAINT/OPERATIONS*+	2,880,000	3,168,000	3,484,800	3,833,280	13,366,080
TOTAL	7,840,000	8,040,000	8,277,600	8,638,160	32,795,760

OF THESE EXPENSES, KW. 4.0 MILLION IS IN THE INCREMENTAL COSTS FOR THE NEW GMAS. BALANCE IS EXISTING ADMADRE BUDGET BUDGET. ASSUME THESE PEOPLE WILL ALSO HELP IN NEW GMAS, I.E., (LEWIS, AKIM, GILSON, ETC

£
£
£ COUNTERPART FUNDS FOR WWF
£

POL COSTS FOR NEW VEHICLES ONLY

*INDICATES IN-KIND CONTRIBUTION AND REVOLVING FUND REVENUES

+LOCAL CURRENCY GENERATIONS FROM USAID/GOZ FUNDS AND NATIONAL REVOLVING FUND REVENUES - NRF CURRENTLY PROVIDES APPROX KW 2.5 MILLION IN POL/YR

**THESE ARE COSTS WHICH WILL BE INCURRED BY WWF IN LOCAL CURRENCY. GOZ WILL BE REQUIRED TO GRANT IN LOCAL CURRENCY THESE FUNDS FROM THE COUNTERPART LOCAL CURRENCY FUND.

*+THESE ARE THE ESTIMATED COSTS FOR THE NEW VEHICLES. FUNDS FOR THESE COSTS WILL NOT BE AVAILABLE FROM EXISTING REVENUES IN REVOLVING FUND. AN ADDTL SOURCE OF REVENUE WILL BE REQUIRED UNLESS THERE IS CHANGE OF DISTRIBUTION OF REVENUES TO THE ZTC AND NPWS AND A POLICY CHANGE WHICH ALLOWS THE REVOLVING FUND TO COLLECT AND DISTRIBUTE REVENUES FROM HUNTING LICENSES AND TROPHY FEES.

1
21
1

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Table 3.3. (cont...)

ASSUMPTIONS:

1. NRF CONTRIBUTED KW 2.5 MILLION TO POL, INSURANCE, AND MAIN. IN 1988.
2. NRF CONTRIBUTION TO SUPPLIES/OFFICE EQUIP WAS KW 1.9 MIL. INCLUDING FIREARMS/AMMUNITION OF KW 1.5 MILLION.
3. NRF CONTRIBUTION TO SALARIES/BENEFITS WAS KW 250,000 PLUS EST KW 160,000 FOR UNIFORMS
4. NRF CONTRIBUTION TO

PROJECT HAS 30 NEW VEHICLES @AVG KW 96000/YR OPERATING COSTS OR KW 2,880,000/YEAR. COSTS ARE FOR NEW VEHICLES ONLY. DOES NOT INCLUDE EX. FLEET @KW.2.5 MIL AMOUNT BUDGETED IS FOR SUPPLIES ONLY; NO FIREARMS OR AMMUNITION.

SALARIES ARE FOR EXISTING STAFF. COSTS OF STAFF FOR NEW GMAS ARE ALSO INCLUDED IN BUDGET. IF INCLUDE INCREMENTAL, TOTAL ADDTL IS KW. 4.0 MILLION. THIS BUDGET ASSUMES THAT EXISTING STAFF WILL MAKE A CONTRIBUTION ALSO AND THIS WILL BE PART OF HCC.

TRNG WAS KW 252,000 IN 1988.

5. OFFICE BLDG/CONS. IN 1988 WAS KW 5.1 INCLUDING KW 4.9 MIL. CONSTRUCTION.
6. PER DIEM/SUBSISTENCE IN 1988 WAS APPROX. KW 45,000.

ESTIMATE KW 600,000 YR. IN UTIL., OFFICE SPACE, PLUS DEPRECIATION VALUE FOR OFFICE SITES.

ISSUES:

IN 1988, NRF GENERATED KW 9.5 MILLION FROM THE SALE OF IVORY—RAW & WORKED. TOTAL ESTIMATED REVENUES WERE KW 14 MILLION. IF THE IVORY BAN IS UPHELD, THE REVOLVING FUND WILL NOT BE ABLE TO PAY ITS OPERATIONAL EXPENSES AND WILL REQUIRE SIGNIFICANT AMOUNTS OF INPUTS FROM OTHER DONORS

TOTAL OPERATING EXPENSES WERE KW10.8 INCLUDING BLDG AND UNIFORM COSTS OF APPROX KW 7.5 MILLION NRF WILL STILL NEED TO PROVIDE UNIFORMS, BUT AT MUCH LOWER LEVEL (KW 150 - 200 THOUSAND) PER YR.

EST. REV	14,000,000
LESS IVORY SALES	(9,500,000)
BALANCE	4,500,000
EXPENSES	
OPERATIONAL (CUR.LEVEL)	3,300,000

UNIFORMS	200,000
NEW VEHICLES	2,800,000
OPER. COSTS (NEW SITES)	???????
TOTAL	6,300,000
MINIMUM SHORTFALL	(1,800,000)

blc

Table 3.4.

USAID/ZAMBIA USAID PROJECT EXPENDITURES BY PROJECT ELEMENT					
	FY 89/90	FY 91	FY 92	FY 93	TOTAL
I. CONSERVATION & COMMUNITY DEVELOPMENT	948,000	12,500	12,500	12,500	985,500
II. ADMADE INSTITUTIONAL DEVELOPMENT AND SUPPORT	350,000	65,000	55,000	5,000	475,000
III. TRAINING	145,500	70,500	70,500	60,500	347,000
IV. PROJECT MANAGEMENT	295,000	245,000	165,000	129,000	834,000
V. REGIONAL COMMUNICATION	29,000				29,000
VI. AUDIT				50,000	50,000
VI. CONTINGENCY (5%)	88,375	19,650	15,150	12,850	136,025
VII. INFLATION (5%)	92,794	20,633	15,908	14,142	143,475
GRAND TOTAL	1,948,669	433,283	334,058	283,992	3,000,000

abf

Table 3.5.

USAID/ZAMBIA
 DETAILED EXPENDITURES BY PROJECT ELEMENT
 CONSERVATION AND COMMUNITY DEVELOPMENT

	FY 89/90	FY 91	FY 92	FY 93	TOTAL
EQUIPMENT/VEHICLES—GMA					
VEHICLES	225,000				225,000
FIELD EQUIPMENT	20,000				20,000
BOATS	7,500				7,500
OUTBOARD ENGINES	10,000				10,000
RADIOS	90,000				90,000
UNIFORMS	67,500				67,500
LIGHTING SYSTEM	13,500				13,500
WATER SUPPLY	27,000				27,000
VILLAGE/COMMUNITY DEVELOPMENT					
TECHNICAL ASSISTANCE	7,500	7,500	7,500	7,500	30,000
VEHICLE	25,000				25,000
SMALL ENTERPRISE DEVELOP.**	25,000	50,000	25,000	25,000	125,000
SURVEYS/RESEARCH/MONITOR					
VEHICLE	25,000				25,000
RESEARCH EQUIPMENT	10,000				10,000
BASELINE STUDY	5,000	5,000	5,000	5,000	20,000
CESSNA REPAIRS/MAINTENANCE	75,000				75,000
COMMAND OPERATIONS					
VEHICLES	250,000				250,000
TRACTORS	60,000				60,000
RADIOS	30,000				30,000
TOTAL	948,000	12,500	12,500	12,500	985,500

**THESE FUNDS WILL BE PROVIDED UNDER A GRANT TO WWF FROM THE GOVERNMENT OF ZAMBIA FROM USAID/GOZ COUNTERPART FUNDS.

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Table 3.6.

USAID/ZAMBIA
DETAILED EXPENDITURES BY PROJECT ELEMENT
ADMADRE LIASION AND INSTITUTIONAL DEVELOPMENT

	FY 89/90	FY 91	FY 92	FY 93	TOTAL
VEHICLES	60,000				60,000
OFFICE EQUIPMENT	75,000				75,000
SPARE PARTS AND WORKSHOP	210,000	60,000	50,000		320,000
INFORMATION DISSEMINATION	5,000	5,000	5,000	5,000	20,000
TOTAL	350,000	65,000	55,000	5,000	475,000

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Table 3.7.

USAID/ZAMBIA
 DETAILED EXPENDITURES BY PROJECT ELEMENT
 TRAINING

	FY 89/90	FY 91	FY 92	FY 93	TOTAL
NYAMULUMA SCHOOL					
VEHICLES	80,000				80,000
TRACTOR	15,000				15,000
OPERATING COSTS**	10,000	10,000	10,000	10,000	40,000
COURSE DEVELOPMENT/FEES	25,000	25,000	25,000	25,000	100,000
NPWS STAFF DEVELOPMENT					
CERTIFICATE/DIPLOMA**	8,000	16,000	16,000	16,000	56,000
SEMINARS/WORKSHOPS	15,000	20,000	20,000	20,000	75,000
OVERSEAS GRADUATE TRNG	10,000	25,000	25,000	15,000	75,000
PROFESSIONAL JOURNALS	500	500	500	500	2,000
SKILLS WORKSHOPS**	20,000	15,000	15,000		50,000
TOTAL	145,500	70,500	70,500	60,500	347,000

**LOCAL CURRENCY EXPENSES WHICH WILL BE PAID BY GOZ UNDER LOCAL CURRENCY GRANT TO WWF FROM USAID/GOZ COUNTERPART FUNDS. THESE ARE NOT PART OF U.S. DOLLAR COSTS.

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Table 3.8.

USAID/ZAMBIA
DETAILED EXPENDITURES BY PROJECT ELEMENT
PROJECT MANAGEMENT

	FY 89/90		FY 92	FY 93	TOTAL
WWF PROJECT COORDINATOR	20,000		15,000	12,000	67,000
WWF/ADMADE PROJECT OFFICER	150,000		150,000	117,000	567,000
PROJECT FIN'L &MGMT CONSULTANT	50,000				100,000
TECH ASSISTANCE—SHORT TERM	25,000				50,000
PROCUREMENT SERVICES AGENT	50,000				50,000
TOTAL	295,000	245,000	165,000	129,000	834,000

NOTE: TO THE EXTENT ANY OF THESE COSTS ARE IN LOCAL CURRENCY, I.E., HOUSING, UTILITIES, ETC.
THE GOZ WILL PROVIDE SUCH CURRENCY UNDER COUNTERPART FUNDS AND GRANT
FUNDS WILL BE UTILIZED TO PROVIDE FOR FOREX COST ITEMS ONLY.

WZ

Table 3.9.

Implementation Schedule - Zambia

	Yr.1	Yr.2	Yr.3	Yr.4	PACD
I. Field Based Conservation & Community Development Activities					
A. <u>Field and GMA Operations</u>					
1. <u>Procurement:</u>					
Vehicles, Aircraft & overhaul					
Radios	x	x			
Other equipment	x	x			
2. <u>Construction:</u>					
- Unit Headquarters	x				
- Camp renovations	x				
- New camps	x				
- Unit leader residence	x				
- Vehicle workshops/storeman		x			
B. Community Development & Social Science Research					
1. <u>Personnel</u>					
Hire social scientist on board	x			x	
Land Use Planner on board	x			x	
2. <u>Operations</u>					
Gather socio/eco baseline data	x				
Land use planning	x		x		
C. Biological Research/Monitoring					
- Research operations	x				x
- Aerial surveys	x	x	x	x	

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Table 3.9. (cont...)

Implementation Schedule - Zambia (cont...)

	Yr.1	Yr.2	Yr.3	Yr.4	PACD
II. ADMADE Inst. Support					
1. Procurement					
Vehicle purchase		X			
Vehicle workshop & spares	X				
Purchase office equipment		X	X	X	
2. Operations					
- Information dissemination	X				
- Construction of a warehouse	X	X			
- Construction of a staff house	X	X			
- Construction of an office	X	X			
- Construction of a workshop store	X	X			
3. Personnel Recruitment, ADMADE					
- Natural Resource Economist	X				
- Land Use Planner	X				
- Wildlife Ranching Biologist	X				
III. Project Management					
Operations					
- WWF Grant award	X				
- WWF/ADMADE Project Officer	X				
- ADMADE Sr. Warden	X				
- WWF/US based management	X				
- Project fund Consultation/18mm	X				
- NPWS	X				
- Short-term Technical Assistance	X				
IV. Regional Liaison					
	X			X	
V. Audit					
Mid and End			X	X	

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3.2.3. Methods Of Implementation and Financing

The Zambian component of this regional project will be obligated under a bi-lateral grant agreement with the Government of Zambia. The grant agreement will require as a condition precedent that the Government of Zambia allow the USAID to sign a cooperative agreement with World Wildlife Fund who will be responsible for administering the funds and implementing the project.

Subsequent to the signing of the Cooperative Agreement, USAID/Zimbabwe (the authorized accounting station for this project) will request AID/Washington to amend WWF's Letter of Credit under which they currently receive other central and regional funds. The Letter of Credit disbursing mechanism is an approved AID method of financing and will facilitate WWF's procurement of over one million dollars in commodities.

USAID/Zimbabwe will have responsibility for project management and financial accountability. WWF will be required to provide quarterly project status reports as well as financial reports to ensure that the USAID receives timely information for project management decisions.

WWF will be responsible for procurement of commodities and supplies excluding vehicles under the project using approved USAID procedures. It is anticipated that WWF will purchase most of the commodities through competitive bid procedures outside of the host country. Shelf item procurement will be limited to items easily purchased with local currency provided by the host government through the revolving fund.

WWF will also be responsible for locating suitable short and long-term training opportunities for the National Parks and Wildlife Services staff. It is anticipated that two employees of NPWS will be sent overseas, either to the U.S. or a third country, for graduate degree level training, while a minimum of five staff members will be provided with short-term courses relevant to their field of expertise within the region. WWF will be responsible for arranging the candidate's entry into the program, providing travel and living expenses, and supervising the student's progress.

WWF will provide for a long-term project manager who will be resident in Zambia. This individual will be responsible for overseeing the smooth implementation of the project as well as providing necessary managerial and financial training. It is anticipated that the individual will be hired on a contract basis through WWF. WWF will also provide short-term technical assistance in the areas of base-line studies, administration, financial monitoring, financial systems, etc.

Table 3.10.

**METHODS OF FINANCING AND IMPLEMENTATION
(ZAMBIA)**

<u>ELEMENT</u>	<u>METHOD OF IMPLEMENTATION</u>	<u>METHOD OF FINANCING</u>	<u>TOTAL</u>
Conservation & Development	Cooperative Agreement with WWF. WWF will use competitive procurement procedures in accordance with HB13 guidelines.	Letter of Credit	\$ 985,500
Regional Liaison/ Management	Cooperative Agreement	Letter of Credit	\$ 29,000
Training	Cooperative Agreement	Letter of Credit	\$ 347,000
Project Management	Cooperative Agreement WWF will contract with one or more individuals or firms to provide both long- and short-term technical assistance and in-country project management.	Letter of Credit	\$ 834,000
ADMADE Institutional Development Support	Cooperative Agreement	Letter of Credit	\$ 475,000

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3.2.4. Administrative and Monitoring Arrangements

(a) USAID Responsibilities

Responsibility for project management will rest primarily with USAID/Zimbabwe. The Project Officer USAID/Zimbabwe, and a locally hired administrative assistant will oversee project implementation, continuous monitoring of all project activities, drafting of Project Implementation Letters (PILs) and Project Implementation Orders (PIOs), and quarterly Project Implementation Reports. The USAID/Zambia Mission Director will designate a contact person in the mission with whom USAID/Zimbabwe will maintain regular communication.

USAID/Zimbabwe will solicit from the NPWS and WWF a coordinated first-year operating plan. The plan is to contain a description of the proposed activities to be carried out, objectives for the year, resources required for their achievement, and how these will be deployed during the year. Copies will be sent to USAID/Zambia for their information.

Evaluations will be funded from regional funds obligated under the USAID/Malawi bi-lateral grant agreement. Evaluations will be conducted on a regional project-wide basis and arranged by USAID/Zimbabwe at the end of Year 3 and the end of the project. USAID/Zimbabwe will prepare the documentation required for these evaluations. Non-federal audits of WWF and the ADMADE program will be funded under the Zambian component at the mid-point and after completion of the project.

(b) Implementing Agency Responsibilities

(i) World Wildlife Fund/US (WWF)

USAID will sign the project agreement with the Government of Zambia. As a condition precedent to the disbursement of funds, the government will allow USAID/Zambia to sign a Cooperative Agreement with WWF/US to facilitate and assist the NPWS in implementing project activities. WWF will procure most commodities under the project. (Details of procurement actions planned and how they will be carried out are contained in the Project's Procurement Plan). WWF will provide project oversight through periodic visits by its Washington, D.C. staff.

(ii) National Parks and Wildlife Service (NPWS)

NPWS will establish a Coordinating Committee for the ADMADE program, consisting of the Co-Administrators, Head of the training facility at Nyamaluma, the community development officer, and other individuals as appropriate. The Committee will set policy for ADMADE, approve the selection of candidates for professional training, and review research results.

NPWS and WWF will jointly select a Project Officer (Zambian or other SADCC country national) to work with the Coordinating Committee on administrative matters. The Project Officer will: maintain communications with other

Ministries, donor projects, A.I.D., and project staff in the field; and assist in implementation of project activities. NPWS will appoint a Senior Warden as the counterpart to the Project Officer. The counterpart will assume complete responsibilities for implementation of the project by the Project Assistance Completion Date (PACD).

The Project Officer, in collaboration with the Coordinating Committee, will prepare a detailed annual project implementation plan and will work with WWF in preparing specifications for all procurements of commodities and services. This individual will also draft semi-annual progress reports.

NPWS will dedicate a full time accountant for the project. An approved accounting firm in Lusaka will be contracted on a part-time basis to provide technical assistance in setting up the accounting and bookkeeping procedures, to train the accountant in their use, and to provide auditing and further technical assistance as needed. The project accountant will submit financial documentation on a quarterly basis.

A full-time, Zambian community development officer will be hired under the project. In addition to developing the community development component more fully, this individual will conduct baseline studies and other socio-economic data collection and analyses in the target area. Results will be used to monitor project impact and success in reaching the lowest levels of the communities involved.

NPWS, using aerial and on-the-ground surveys by village scouts, unit leaders, and regular staff, will monitor changes in the wildlife population, habitat, and level of illegal poaching activities. This information will be used to inform off-take quotas, project revenues from wildlife, and to measure the effects of the wildlife management component. (For a complete discussion of monitoring and evaluation see the Regional Evaluation and Audit Plan in Volume I.)

NPWS and WWF are expected to cooperate in the dissemination of its research and lessons learned through seminars, reports, and publications. In addition, staff of the ADMADE program will attend regional workshops on community-based resource management and utilization.

3.2.5. Procurement Plan

Project supplies and services will be provided through an Cooperative Agreement to the World Wildlife Fund (WWF), or by A.I.D. acting on behalf of the GRZ. The determination of the appropriate procurement procedures will be made by WWF and USAID/Zambia, in collaboration with the RCMO prior to signing the Cooperative Agreement. If procurements are made by A.I.D., the appropriate level of funding will be retained under the bilateral grant to the GRZ and not committed under the letter of credit to WWF under the OPG.

WWF will arrange for the purchase of supplies via a subagreement/subcontract under its Grant. It is anticipated the vehicles and any other commodities procured by A.I.D. (or through an A.I.D. IQC for procurement services) will be carried out through issuance of a PIO/C to SER/OP, REDSO/ESA or RCO/Swaziland. Vehicle procurements will be carried out in accordance with the blanket waiver permitting procurement of right-hand drive vehicles from Geographic Code 935 source. Most remaining commodities will be purchased in the United States (Code 000) with some purchase within the SADCC member nations (see Illustrative Equipment List attached). Due to the probable time lag between Project Authorization and obligation of funds for the Zambian component, all other commodity procurement waivers will be deferred to a point in time closer to signing of the Cooperative Agreement with WWF. With the exception of vehicle spares for use during years 3 and 4, it is anticipated that all procurements will be made as soon as possible in year one of project implementation, in accord with the implementation schedule in this section.

(a) Responsibilities

WWF must ensure that all commodities financed under the grant are cleared through customs and properly maintained and utilized throughout the life of the grant.

The WWF Project Officer based in Zambia will be responsible for the following tasks:

- Solicit offers in accordance with WWF procedures and Standard Provisions of the Grant for any items procured in Zambia.
- Evaluate offers and award supply contracts.
- Make payments to suppliers from a Kwacha account established for procurements sourced in Zambia.
- Arrange for receipt and customs clearance for all commodities financed under the project.

The Purchasing Agent (PSA), provided for under a subagreement or subcontract with WWF, will be responsible for the following tasks:

- Review and refine specifications, as prepared by WWF in collaboration with GRZ Department of National Parks and Wildlife Services.
- Solicit and evaluate offers, and issue orders.
- Arrange for payments to suppliers (including arrangements for issuance of commercial letters of credit to suppliers if required).
- Expedite deliveries to port(s) of exit.
- Arrange for inspection and consolidation of shipments.

- Arrange freight forwarding, insurance, shipping and process insurance claims.
- Arrange for flow of clearance and other documentation and shipping information to WWF Project Officer in Zambia.

(b) Source and Origin

Except as specifically authorized by waivers, all commodities and services financed by A.I.D. under the Project shall have their source and origin in countries in A.I.D. Geographic Code 941 and Zambia.

(c) Commodity Procurement Waivers

Vehicles: The blanket source/origin waiver detailed in cable no. 89-STATE 79274 (or the follow-on annual waiver) will be utilized to procure right hand drive vehicles and spares purchased with the vehicles from countries in Code 935:

(d) Receipt and Utilization of Commodities

The Grantee shall be responsible for the receipt of all commodities financed under the Grant, customs clearance, distribution to Game Management Areas of utilization, and the physical handing-over of commodities to the appropriate officials in the NPWS. To accomplish this the Grantee will be required to maintain a system of records which must document whether commodities were received in the quantity and condition for which payment was made, provide a record of any losses, shortages, damage and insurance claims, and identify the parties to whom the commodities have been distributed. It will be the responsibility of the Grantee to ensure that the commodities are used for the purposes for which the assistance was made available. The WWF Project Officer will be required to devise and establish a reliable monitoring system for vehicle utilization and upkeep to ensure that vehicles are being properly maintained and used only for project activities. The WWF Project Officer must also coordinate and facilitate efforts to upgrade and improve NPWS workshop facilities and ensure that an effective inventory and storeroom facility is established by NPWS so that spare parts purchased for this project are used only for vehicles designated for the ADMADE Program. The Grantee will be required to maintain this system to ensure the effective control over the use and maintenance of commodities throughout the duration of the project.

The NPWS will be responsible for providing adequate physical resources and skilled personnel to ensure proper maintenance and effective utilization of the commodities provided under this assistance throughout the duration of the project. Throughout the duration of this activity, the NPWS will utilize, in a manner consistent with the objectives of the project, workshop equipment and tools, spare parts and other commodities provided by this assistance.

WWF will contract for services to utilize spare parts financed under the project to rehabilitate two Cessna aircraft owned by WWF. After

rehabilitation, it will be the responsibility of NPWS to operate and maintain the aircraft.

(e) Technical Assistance, Evaluations, Audits

WWF will also provide a long-term Project Officer and Community Development Officer, and short-term technical assistance from its international staff or contracted from its U.S. headquarters.

Evaluation of the Zambia component will be provided via a contract let by REDSO/ESA for USAID/Zimbabwe, who will manage the overall project evaluation process.

Non-federal audits (NFA) of the WWF Grant will be procured by issuing a PIO/T to REDSO/ESA for either a work order under a regional IQC or an institutional contract.

Procurement Schedule

At Time of Signing of Project Agreement

- USAID receives equipment specifications prepared by WWF in collaboration with NPWS.
- Necessary commodity procurement waivers signed
- PIO/T for OPG signed
- PIO/C for vehicles signed

60 Days After Issuance of PIO/T

- OPG signed with WWF

60 Days After Issuance of PIO/C

- Procurement of vehicles by SER/OP, REDSO/ESA, RCO/Swaziland

60-90 Days After Signing OPG

- Procurement of equipment and supplies by WWF including tractors, boats and outboard motors, HF radios, solar lighting systems, windmills, rehabilitation contract and spare parts for two airplanes, photocopiers, personal computers, video equipment, uniforms and field equipment, office equipment and supplies and cartographic equipment.

240 days after signing of OPG

- Delivery of the vehicles purchased above.

240-280 Days After Signing OPG

- Delivery of equipment and supplies purchased above.

1030 Days After Signing of ProAG - (34 Months)

- PIO/T issued for first non-federal audit (NFA)

1095 Days After Signing of ProAG (36 Months)

- PIO/Ts issued for second NFA

End of Project

- Second NFA begins

3.2.6. Training Plan

An overview of both formal and non-formal training required for the life of the project is presented in the chart on the next page. As training and education activities will respond to the needs of the program, it is not possible to determine exact numbers of activities. Training activities include:

- o Training at Nyamaluma of village scouts and unit leaders to work in the target area. Scouts will be selected by the chief. Unit leaders will be selected by NPWS and must demonstrate leadership skills, aptitude for administration, and history of committed service to wildlife. Unit leaders will be selected from the current pool of NPWS scouts and associate rangers.
- o Rangers and unit leaders demonstrating outstanding ability and commitment will be selected to attend either the certificate or diploma program at Mweka College in Tanzania. A nominee must have had at least five years experience working in the national parks and/or GMAs.
- o Funding is provided for short courses and seminars for approximately ten participants. Potential participants must meet the requirements set by the training institution, as well as prepare a statement of how they and the NPWS and ADMADDE will benefit from the proposed activity. Upon returning, the participant will be required to debrief project staff regarding the course content and its applicability to management problems encountered in the program.

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- o At least three biologists or wardens will pursue graduate studies at an African institution. For example, one participant may register for the MSc degree in the Tropical Resource Ecology program at the University of Zimbabwe. This program has been designed to provide a balanced approach to both ecological and social aspects of wildlife utilization. Thesis research will be conducted in the project area. Each participant will be required to return to the ADMADE program upon completion of studies.
- o Skills training and workshops at the community level will be conducted to fill needs determined by the community development officer in collaboration with unit leaders and ADMADE staff. Skills training may be provided by consultants or, as in the past, by the Small Industries Development Organization (SIDO).

The first step in the evaluation of this training program is for the participants and NPWS and ADMADE staff to determine their objectives for the activities and how these objectives coincide with the objectives of the project. It is against these objectives that actual impacts can be assessed. On-the-job performance will also need to be assessed.

Table 3.11.

ILLUSTRATIVE TRAINING PLAN

Element	YR 1	YR 2	YR 3	YR 4	Total
- Training of unit leaders & village scouts from target area at Nyamaluma	up to 12 ULs				up to 12 UL
	up to 100 VSS	up to 100 VSS	up to 75 VS		up to 275 VSS
- Annual workshop for ADMAD staff & unit leaders	1	1	1	1	4
- Training at Mweka College in Tanzania for rangers & selected ULs	2 part. in the Certificate (1 yr) and/or Diploma (2 yrs) program	2	2	1	7 yrs of training
- Short courses/seminars for NPWS staff	up to 3	up to 3	up to 3	up to 1	App. 10 part.
- Third country graduate and post graduate studies for biologists and/or wardens	1 MA	1 MA or PhD	1 MA/PhD or up to 3 semesters of post-graduate study		2-3 grad. deg. 2-3 sem.
- Skills training & workshops at the community level		as needed			as needed
- Regional conferences on community-based resource utilization	1	1	1	1	4 conf.
- Subscriptions to professional journals					

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3.3. Project Analysis Summaries

3.3.1. Financial Analysis

The ADMADE concept, as supported by World Wildlife Fund (WWF), is a financially viable alternative for wildlife management for communities that have adequate herds of animals or can develop such resources on a sustainable basis. These herds can be culled for commercial sale and/or safari or trophy rights sold. Local communities will only see the basis for wildlife management or conservation if sufficient revenues or benefits can be generated to the community through increased employment of local residents, low cost sources of protein, or other acceptable alternatives such as clinics, schools, roads, etc.

The ADMADE concept, as tested in the Lower Lupande game management area, as well as other game management areas into which it has expanded, has demonstrated that sufficient financial revenues can be generated to meet operating or recurrent costs in a very short time frame. Under the ADMADE concept, all game management areas receive funds from the sale of safari or trophy hunting rights (i.e. concession fees) to the public. The National Parks and Wildlife Services sell these rights on behalf of each GMA with funds received deposited in the National Revolving Fund. At the end of each year, the gross revenues deposited into this account are distributed on a pro-rata basis (35% to the GMA for community development purposes; 40% to the GMA's management fund; 15% to National Park and Wildlife Services; and 10% to the Zambia National Tourist Board). The NPWS also charge trophy fees for all individual animals, but these monies are retained by central government.

In 1988, the average income received by the Revolving Fund for hunting rights in a GMA was \$28,000 of which a local community would receive \$12,250 in revenues. These are funds which communities never received in the past. They are given directly to the community at the end of the fiscal year. The operating costs for the GMA, including the local game scout force, administrative staff, travel, fuel, etc. are the responsibility of the National Revolving Fund and are paid from the 40% management fee which is kept by the Revolving Fund for each GMA. The expenses of operating the safari or hunting concession are the responsibility of the concessionaire, a private safari operating company. Expenses incurred by National Parks staff for aerial monitoring, wardens, road development, operations, etc., are paid by the Government of Zambia and are partially offset by the revenues (15%) generated by each GMA.

Each GMA receives an annual operating budget based upon projected hunting revenues. The GMA is expected to operate within this budget unless it is a relatively new area which can then be "subsidized" by other revenues generated into the Revolving Fund. It is unclear what time frame is required for a GMA to develop a sustainable wildlife population which can be used to generate revenues to a GMA and thereby provide an incentive to a local community to stop poaching either for the "cooking pot" or for commercial purposes. However, it has been estimated that a GMA can become self-sufficient, with the exception of replacement of capital equipment, in three years.

The "Lupande model" has demonstrated that wildlife does have a financial value if the wildlife population can be increased to a density whereby safari licenses can be sold or culling programs implemented. In the Lupande areas, the model was started in 1983. The first safari licenses were sold as early as 1986 and culling operations, to generate income and employment, began in limited form in 1986, were suspended in 1987 due to disease within the animal herds, and generated a reasonable level of income by 1988.

The Lupande model has shown that the financial or economic benefits from sustainable wildlife management are significant. For example, culled hippo have an economic value of KW 6600 for non-trophy animals or KW 7300 if sold for trophy or hunting rights. This is contrasted to a "poached" value of KW750. The economic value of a culled antelope shows similar advantages (KW 1000 for non-trophy animals; KW 3800 for a trophy animal; and only KW 175 for a poached antelope).

In 1988, the Lupande area received \$10,675 in revenues for hunting rights alone. In addition, in 1988 ADMADÉ instituted a controlled culling scheme in the Lower Lupande area. The scheme was intended to provide employment for the local residents, generate revenue from the sale of game meat, skins, and other by-products, and generate ideas or alternatives for other sources of income and employment from game culling, i.e., leather work, tanning, trophy mounting, etc.

The pilot culling project authorized a limited cull of selected species (75 impala, 15 hippo, and 15 buffalo) in year 1. The project generated revenues of KW93,000 against operating expenses, exclusive of depreciation, of KW 69,500. Capital investment or sunk costs totalled KW 225,000 which is the cost of the vehicle which was used during the culling operation. This vehicle is also used for other project purposes and the estimated depreciation which should be charged to the culling project is KW 56,250 annually using an estimated useful life of 4 years. On a cash basis, the project generated KW 23,500 in profits while on an accrual basis, the loss would be KW 32,750. The profits reflected above do not represent the revenues which could have been generated if the GMA had been allowed to sell all the hides and meat culled. In 1988, the GMA was unable to sell the hippo hides on the open market or under contract. These hides had a contracted value of KW 70,000. If the GMA is allowed to sell these hides in the future, the GMA should generate profits of approximately KW 37,250 after including all capital depreciation costs. Such cropping programs are profitable.

As noted above, the culling project authorized a limited cull only. The Lupande GMA expects that revenues from culling will increase at an average of 40% over the next three years and should then level off. Revenues should increase by this amount due to increase culling as well as revenues being generated by additional uses of wildlife products. If one assumes that revenues can be generated at this level while operating costs increase only marginally (15%), the GMA would be able to generate a significant return on its investment.

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In addition, employment levels within the community have increased as a result of the ADMADE model. In 1983, the average income was KW 700 for a resident of Lupande. By 1988, this had increased to KW 2,500 for residents employed in the seasonal culling and KW 5,500 for the more permanent game management workforce. In 1988, the culling operations employed 70 people while another 25 people are permanent employees of the GMA. (The total estimated workforce is 700-800 people within the GMA.) If increased levels of culling occur in 1989 and other years, culling units employing 100-150 people would be expected with additional jobs being created for game product manufacture.

Based upon the limited analysis reflected above, the individual GMAs can generate revenues for community development, increase employment opportunities, and improve the residents' quality of life through sustained wildlife management. The GMAs receive 100% of the revenues generated through culling schemes or other wildlife programs while earning 35% of the gross revenues generated from hunting concession fees. In 1988, in the Lupande area alone, this was KW 41,000 which would not have been received without the ADMADE project. In addition, over 70 of the local residents were employed during the culling operations, by the safari operators, and by the National Revolving Fund as village scouts.

Additional revenues could be earned from the wildlife if the trophy and hunting licenses fees were also shared with the GMA. Currently, the GMA receives only its share of the hunting rights sold, while the Government of Zambia receives the fees earned for trophy and hunting licenses. These fees, if divided with the GMAs, would increase the revenues received by the GMA by almost 100%. Other sources of revenue include sale of increased number of animal by-products (soap, glue, trophy head mounts, shoes, etc), self-catering tourist or safari camps, and the possibility of the GMAs forming their own safari companies thereby keeping all the income generated by hunting which is considerably higher than what is charged for trophies and the right to hunt.

Wildlife Conservation Revolving Fund

The Wildlife Conservation Revolving Fund (WCRF) is a key component to the success of the ADMADE concept -- it provides the financial framework or facility through which revenues generated from wildlife flow. As the WCRF is designed, the National Parks and Wildlife Services Department is responsible for the management and administration of the WCRF. Revenues generated from the sale of wildlife products (e.g., poached or culled ivory), or concession fees earned from the sale of hunting rights in the Game Management Areas, are deposited into the WCRF. This fund has been legally established outside normal Government of Zambia channels and provides a financial facility for returning funds quickly to villages and communities supported under ADMADE, as well as a mechanism for funding wildlife management or the operational costs of the ADMADE program.

Currently, revenues received from the sale of hunting concessions are deposited directly into the Revolving Fund and are distributed to four beneficiaries--Zambia Tourist Board (10%); National Parks and Wildlife

Services (15%); ADMADE or WCRF administration (40%); and Village Wildlife Development (35%). In addition, the WCRF receives funds from the sale of raw and worked ivory, tender fees for hunting rights, and donations from other sources, i.e., counterpart funds from the USAID/Zambia and Government of Zambia and World Wildlife Fund. Funds received for non-hunting concession activities are used exclusively for the operations and management of the WCRF.

WCRF is managed by the WCRF Coordinator at National Parks and Wildlife Headquarters at Chilanga. Accounting and bookkeeping is handled by an individual hired by WCRF who is directed by a special accountant from the Ministry of Finance. The WCRF is required to follow generally accepted accounting procedures and the Fund is subject to audit on a regular basis. Annually, the WCRF generates reports on earning and expenditures. Administrative units, i.e., GMAs, are required to submit annual expenditure budgets, based on projected revenues for the period, which are subject to review by the District Warden, Unit Leader, and WCRF Headquarter staff.

The WCRF disburses funds on a quarterly basis to each GMA's local bank account based upon the GMA's approved budget and the previous quarter's activities. Individual unit leaders withdraw these funds either by operating a petty cash fund or by issuing checks for expenditures. The unit leaders are expected to maintain comprehensive bookkeeping records and "reimbursement" of expenses is based on acceptable receipts for all items of expenditure. The unit leader provides a quarterly cash statement and his records are subject to audit.

The operating procedures for the WCRF appear to be working satisfactorily. However, the viability or sustainability of the WCRF is questionable. In 1988, the WCRF estimated revenues of KW 14.6 million against expenditures of KW 10.8 million. On the surface therefore, the revolving fund would appear to be viable. However, the anticipated sources of revenue in 1988 were as follows:

Table 3.12.

Balance Sheet for Community Projects

<u>REVENUE SOURCE</u>	<u>Est. Revenues</u>	<u>Actual</u>
Ivory Sales	KW 9.0 mil	KW 9.5 mil
Hunting Fees	4.6	4.6
Licenses	.2	.7
WWF contributions	.8	
Other--GRZ		1.4
TOTAL	<u>KW14.6</u>	<u>KW 16.2</u>
Less: Revenues due ADMADE participants		
Village Share		1.3
NPWS		.6
ZNTB		.4
TOTAL AVAILABLE		<u>KW 13.9</u>
		=====
TOTAL AVAILABLE WITHOUT IVORY		4.4
		=====

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Table 3.12. (cont...)

EXPENSES:

Operating Expenses	KW 10.8
Less: Non-recurrent expenses	(2.5)
Village payment	(.1)
ZNTB payment	(.2)
	<u> </u>
TOTAL EXPENSES	KW 8.0

As can be seen from above, over 59% of the revenues generated were from the sale of ivory. With the recent ban on the importation of ivory, except that from trophy hunting, into many countries, this source of revenue will be reduced or even eliminated. Continued viability of the Fund will therefore necessitate significant cash inflows from other sources.

Moreover, with the proposed project assistance to the GMAs, additional recurring expenses will be incurred as a result of new capital equipment investment, hiring of additional game scouts, etc. It is anticipated that these recurring expenses will approximate KW 4-5 million per year.

Alternative sources of revenue or income from wildlife for the WCRF are available. Currently, only the proceeds from hunting concessions are deposited into the Revolving Fund. The monies generated from hunting licenses and trophy fees are paid directly into the Government Treasury and do not flow through or benefit ADMADE. These revenues are almost 50% of the monies received by either ADMADE or the Government from hunting concessions or rights. In addition, the revenues which are deposited into the WCRF do not earn interest or at least any income generated from this source is not reflected on their cash receipts report. As revenues from the hunting concession are received in U.S. Dollars, it would seem appropriate that these funds be deposited in an interest-bearing call account or short-term certificate of deposit to enable the WCRF to earn additional revenues.

According to the NPWS, the monies generated from hunting licenses and trophy fees should approximate \$500,000 per year. In KW terms this equals KW 7.5 million at the current exchange rate. At present, both NPWS and the ZNTB participate in the revenues from hunting concessions. If these groups no longer received a share of these revenues, an additional KW 1.0 million would be available to meet recurring expenses of the WCRF at the old exchange rate or KW 1.6 million at the new exchange rate.

One can assume that the expenses of the WCRF will also increase as a result of the recent devaluation of the Kwacha, but not as much as the increase in the value of hunting rights as these revenues are denominated in foreign exchange. Therefore, even these additional sources of income/revenue would still fall short of covering all the recurrent expenses of the WCRF. (See below.)

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Current revenues	KW 4.4 million
Hunting Licenses/Trophy Fees	7.5
ZNTB/GRZ contribution	<u>1.0</u>
TOTAL	KW 12.9
Current expenses	8.0
New expense levels	<u>5.0</u>
TOTAL	13.0
TOTAL SHORTFALL	KW .1 million

In the short run, USAID/Zambia and the Government of Zambia have agreed to utilize KW 5.0 million in counterpart funds to assist ADMADE. Moreover, the USAID/Zambia has agreed that additional counterpart funds could be allocated if the ivory ban is continued and while the Government implements procedures which would allow for hunting license fees and trophy fees to be earned by the WCRF.

3.3.2. Social Soundness Analysis

The four target areas in Zambia can be classified into two distinct socio-ecological regions: the riverine and alluvial plain ecosystems of the Luangwa Valley, and the savanna plateau of the Kafue region. Features common to the two regions include high wildlife potential, limited potential for agricultural expansion, low population densities, subsistence cultivation practices and little dependence on livestock, and considerable dependence by local people on wild foods.

The increased incidence of poaching within the target areas can be traced to heightened need for cash in communities formerly dependent almost exclusively on subsistence activities, driven by high population growth and reinforced by Zambia's economic crisis which has foreclosed many legitimate wage-earning opportunities. Within these communities, there is a clear need for reliable sources of cash income, for which agricultural expansion can only play a small part. Wildlife supplies the one resource available for the necessary economic diversification. In this context, the proposed activities could have significant social impacts.

Beneficiary groups: The communities in the target areas are not currently stratified along economic lines. The proposed activities are judged unlikely to either promote or increase such stratification, as long as the principle of communal proprietorship of wildlife is clearly established before introduction of new activities.

The direct benefits of the proposed activities will accrue preferentially to men, who are more likely to be employed in wildlife-based enterprises. However, women are likely to benefit indirectly or at least not be further disadvantaged within the community by the proposed activities--particularly if revenues generated are used for community purposes as intended, and not captured by individuals. The subgroup within the communities likely to benefit most is male youth, who constitute the largest labor pool.

Community development potential: The project is designed to test the hypothesis that wildlife utilization can serve as a catalyst for other economic diversification and development activities within the target communities. The traditional authority structure in the areas concerned has been constrained to some degree by its lack of access to locally-generated revenues. It is likely that revenues from wildlife-based activities could serve to revitalize these authority structures--providing certain conditions are met:

1. that revenues actually reach the communities in question;
2. that proprietorship at the community level be unambiguously established; and
3. that communities be vested with responsibilities for resource management commensurate with the benefits they receive.

At present, the ADMADE structure goes only part way toward meeting these conditions, an issue which must be addressed as the project is implemented.

Institutional structures and government policy: The explicit policy of the Government of Zambia is to encourage the decentralization of authority and promote local self-sufficiency. ADMADE provides a step in this direction, but true devolution of authority over economic activities such as those proposed in this project to the community level has a long way to go. For example, revenues paid back to local communities in GMAs through the WCRF do not include all those generated by wildlife activities--some go to the central treasury, and approximately 50 percent is returned directly or indirectly to GMAs. Despite these limitations, the incremental approach to establishing community proprietorship of wildlife embraced here is probably the only approach viable in the Zambian context, but vigilance is needed to ensure that ADMADE is not frozen at an intermediate stage of the intended devolution of authority.

Potential constraints:

- (1) Competition for grazing land in the target areas (particularly as tsetse eradication efforts proceed)--a constraint that may stimulate research into possibilities for the management of mixed and multi-species animal production systems;
- (2) Intensified commercial poaching in the target areas;

- (3) Migration into the target areas as new economic activities are established, which could increase the claims on common-property revenues. The ADMADE framework is judged capable of accommodating such pressures as long as it is coupled with full local proprietorship of wildlife as discussed above.

"Spread effect" potential: The potential for spontaneous adoption of wildlife-based activities in GMAs beyond the project target areas is deemed high. Institutionalizing ADMADE at the national level will facilitate this spontaneous propagation.

On social grounds, the project is judged consistent with broader community aspirations for self-management within Zambia, and the proposed activities are likely to stimulate the evolution of legal and institutional structures in Zambia needed to make true local proprietorship of wildlife and other natural resources possible.

3.3.3. Institutional and Administrative Analysis

The analysis reviews the mandate, organizational structure, current programs, and financial viability of the institutions involved in project implementation in Zambia, and evaluates institutional capacity in light of the goals, objectives, and purpose of the project.

National Parks and Wildlife Service (NPWS): The NPWS is the national authority vested with legal responsibility for wildlife management. The NPWS is divided into nine commands, according to a command structure reviewed in the analysis. The ADMADE administrative unit within NPWS is known as the GMA Unit, and contacts with NPWS officials confirmed that the GMA Units are not fully staffed at present. Overall, NPWS has benefitted from a documented increase in revenues from wildlife-based activities over the 1986-1989 period. One problem is a continuing shortage of funds for capital expenditure, which would equip NPWS to do more to foster expansion of wildlife-utilization activities.

World Wildlife Fund-U.S. (WWF): WWF, a U.S.-based NGO, was the first external institution to support ADMADE, playing an instrumental role in the test of the ADMADE concept through the Lupande Development Project, and the expansion of the concept to four additional GMA Units. The WWF Project Officer stationed in the field has clearly been important to the progress achieved to date, and WWF is judged capable of assuring access to the technical resources needed for continuing project support.

Wildlife management authorities, sub-authorities, and local communities: These include institutions created at the regional and chiefdom level, through which project activities will be implemented. The Sub-authorities, at the chiefdom level, are charged with identification of community projects, management of projects within GMA units, enforcement of anti-poaching measures at the local level, and the preparation of local management plans and

budgets. Traditional authority structures supply the final link to local community levels.

There is no assurance that village residents will be adequately reached through the Wildlife Management Sub-authorities. Additional efforts are deemed needed to broaden participation in ADMADE, and a social scientist assigned to the project in Zambia could help facilitate participation.

Wildlife Conservation Revolving Fund: The WCRF, established in 1985, is judged central to the success of the proposed project. The Fund's authorizing legislation empowered NPWS to generate revenues from wildlife activities and use those revenues as it saw fit, including the provision to return a portion of revenues to the communities in which they were generated. In addition to this link to communities, the WCRF has become an important source of capital and recurrent expenses of the NPWS.

The central issue, in the context of the proposed project, is the allocation of funds to local communities; the project premise argues that communities must be granted full proprietorship of wildlife resources, which would mean full return of wildlife-generated revenues to the community level. This is not yet possible within Zambia.

A related issue concerns the source of funds paid into the WCRF. The bulk of revenues generated so far come from the sale of ivory, and the WCRF may not be a viable instrument without the proceeds of ivory sales. There is a critical need to diversify the sources of revenue paid into the fund. Further, the present management of the WCRF is decidedly centralized, and this central administration and its attendant bureaucracy could tend to stifle community-level initiatives.

The analysis concludes with a recommendation that a mid-project review of the WCRF be conducted, and a possible revision of the formula through which revenues are returned to communities enacted at that point.

3.3.4. Technical Analysis

Zambia has designated some 22 percent of its land area as Game Management Areas (GMAs) in which wildlife utilization, primarily sport hunting, is seen as the major revenue earner both for the state and communities living in these areas. Historically these were areas of low human density adjacent to National Parks in which the consumptive use of large wild mammals was seen as an appropriate form of land use. The management of the wildlife resources of these areas was largely neglected until the recent advent of the ADMADE and LIRDP programs.

The wildlife resources in these GMAs in terms of numbers, distribution, and trends of the large mammal species are not known other than for the Lupande GMA, where the ADMADE program began. Some knowledge of the resource base is gained through hunting in these areas, and the annual quotas which have been

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used for some time seem to be sustainable. These uncertainties do, however, need to be addressed.

The planned village-based resource protection and monitoring schemes, together with ground transects and aerial surveys promise to provide an adequate data set on which to base decisions for managing the resource. A necessary component in the initial stages will be training and guidance of the village scouts and unit leaders in data gathering and analysis. The database should also be analyzed at higher levels within the ADMADE program and provision to carry out these analyses regularly may not have been fully provided for--both in terms of manpower and equipment.

Resource protection through the employment of village scouts has been successful in the Lupande area and the model promises to be readily adopted in the four Command areas and 9 GMAs encompassed by this project. The funding of scout salaries and returns to the communities in GMAs is via the Wildlife Conservation Revolving Fund, administered by NPWS. In 1988, nearly 60 percent of the revenue paid into the fund was from ivory, much of it confiscated from poachers. If the ivory trade ban is applied to Zambia, this may seriously prejudice the ADMADE program.

There has not been an analysis of the likely financial returns to GMA communities in terms of revenue expected per family. Neither has the expected revenue from wildlife been compared with that derived from other resource management activities or enterprises in these areas. If an incentive to maintain wildlife utilization as a form of production in these areas is to be maintained, then two avenues of action will need to be pursued. One is to ensure that the highest possible proportion of revenues earned from wildlife is returned to the community--at the moment it is only 35 percent of a part of the potential revenue generated from trophy fees, license fees, and concession fees. The second, which depends on the first, is to husband the resource base so that the maximum potential wildlife populations are realized. This may need technical advisory inputs and expertise than presently planned.

3.3.5. Terms Of Reference For Zambia Positions

Community Development Officer

Qualifications:

1. Must be a mature person and a Zambian national.
2. Must have not less than five years of field experience in community development and socio-economic research.
3. Must possess at least an undergraduate university degree, and preferably a Masters degree in a field of social science directly relevant to community development.

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4. Must have prior experience implementing community development projects in Zambia.
5. Must have a good working knowledge of both government and non-government agencies involved in community development in Zambia.
6. Must be capable of writing reports with the aid of a word processor.

Duties:

1. To develop the community development component of the ADMADE program.
2. To organize, supervise, conduct, and coordinate socio-economic surveys and studies, and use the results of such surveys and studies to monitor and evaluate the impact of the ADMADE program.
3. To be familiar with the approved community development projects recommended by the Sub-authorities and approved by the authorities for each ADMADE Wildlife Management Unit.
4. To identify problems local communities might encounter in implementing these projects and liaise with the appropriate government and non-government channels to help facilitate project implementation.
5. To monitor and evaluate the progress local communities in the ADMADE Units are making in implementing their community development projects.
6. To make biannual reports on this progress to the Co-administrators of ADMADE for circulation to ADMADE's directorate and donor representatives.
7. To help organize and implement socioeconomic and attitude surveys as baseline data against which to measure the success of ADMADE.

Project Officer

Qualifications:

1. Should have at least three letters of reference.
2. Should have not less than three years of practical experience in administrative duties in the implementation of a government-related project in Africa involving fiscal, purchasing, and report writing responsibilities.
3. Must have at least an undergraduate university degree and preferably a Masters degree, ideally in business administration or a related field.

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4. Must be competent with the use of computers for accounting, record-keeping, etc.
5. Must be a national of a SADCC member country.

Duties:

1. Fulfill duties as described in the Procurement section of the project proposal.
2. Provide an active communications link between NPWS, WWF-U.S., and USAID.
3. Oversee the use and well-being of all project capital equipment and advise the Co-administrators regarding the maintenance and management necessary to extend the life of the equipment.
4. Maintain an active reporting system on the progress of the project in terms of scheduled activities as outlined in the proposal.
5. Facilitate the work of short-term consultants involved with project activities.

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Table 3.13.

Equipment List

<u>Equipment</u>	<u>Quantity</u>	<u>Estimated Cost (FOB)</u>	<u>Probable Source/Origin</u>	<u>Waiver</u>
Vehicles 4WD Pick-Ups	17	\$ 330,000	Japan, Europe, RSA	Blanket Source/Origin (89-State 79274 attached)
Trucks (under 11,000 GVW)	5	\$ 225,000	Japan, Europe, RSA	Blanket Source/Origin (89-State 79274)
4WD Station Wagon	1	\$ 22,000	Japan, Europe, RSA	Blanket Source/Origin (89-State 79274)
Mini-Bus	1	\$ 25,000	India, other Code 941	N/A
Tractors (40-45HP)	5	\$ 75,000	India, Brazil, Mexico	N/A
Boats	5	\$ 7,500	Botswana, other Code 941 countries	N/A
Outboard Motors	5	\$ 10,000	United States	N/A
EF Radios (solar)	12	\$ 120,000	United States	N/A
Solar Lighting Systems	9	\$ 13,500	United States	N/A
Windmills	9	\$ 27,000	Code 941, Zambia	N/A
Spare Parts for Cessnas	2	\$ 75,000	U.S.	N/A
2 Photocopiers, other equip.		\$ 25,000	U.S.	N/A
4 typewriters & related spares				
Photographic & video equipment, publications	assorted units	\$ 20,000	Korea, other Code 941	N/A
Field Equipment (binoculars, compass etc)	assorted units	\$ 20,000	U.S.	N/A
Survey Equipment for Cessna	assorted items	\$ 10,000	U.S.	N/A
Personal Computers	6	\$ 30,000	U.S.	N/A
Other Office equipment (i.e., file cabinets, desks, chairs, etc)	Assorted Items	\$ 20,000	U.S., Code 941	
Cartographic Equipment	assorted items	\$ 5,000	U.S.	N/A

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Table 3.13. (cont...)

Equipment List

<u>Equipment</u>	<u>Quantity</u>	<u>Estimated Cost (FOB)</u>	<u>Probable Source/Origin</u>	<u>Waiver</u>
Workshop Equipment/Tools	Assorted items	\$ 100,000	U.S., Korea	N/A
Uniforms	675	\$ 67,500	Zambia, Code 941	N/A
Spare Parts for vehicles except buses (years 1& 2)	Assorted Items	\$ 50,000	Japan, Europe, RSA (89-State 79274)	Blanket Source/Origin
Spare Parts for vehicles in years 3& 4)	Assorted Items	\$ 50,000	Japan, Europe, RSA	Source/Origin (to be signed later)
Spare Parts for other equipment	Assorted Items	\$ 35,000	U.S., Code 941	N/A
Freight and Insurance		\$1,377,500		
		\$ 175,000		
TOTAL CIF LUSAKA		\$1,552,500		

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NATURAL RESOURCE MANAGEMENT PROJECT

USAID Project No. 690-0251

SADCC Project No. 5.0.18

BOTSWANA COMPONENT

4. Botswana Project Description

4.0 Purpose

The project activities carried out in Botswana will: (1) demonstrate, through practical examples, the technical, social, economic, and ecological viability and replicability of community-based natural resource management and utilization programs on marginal lands for increasing household and community incomes while sustaining natural resources; and (2) improve national and local capability to ensure the maintenance of the wildlife resource base through training, education, protection, communication, and technology transfer.

4.01. Analysis

A central underlying principle of community-based resource utilization is that communities receive the economic returns derived from the resource base. When the link between sustainable use of the resources and continued economic returns is made, these revenues can act as an incentive for more efficient management and conservation. To form these links, communities must participate in decision-making concerning resource management and distribution of the benefits. For community resource management actions to directly result in increased benefits to that community, the resource base must be defined as a community asset, rather than an individual or national one. Communities must also have assured, long-term rights to those resources so that long-term conservation and management decisions will be seen as justifiable based on expectations of future benefits.

The Botswana context, in terms of its policy and the legal and statutory framework examined below, allows for the return of revenues from wildlife utilization and the limitation of access to hunting to community residents. However, though the legal position permits this development, current procedures have not encouraged it. The strategy outlined below offers the opportunity to demonstrate the economic and social viability of the concept of community based wildlife utilization, as well as the Government of Botswana's commitment to actively promote and implement this approach based on the above concept elements.

4.02. Policy, Legal, and Statutory Framework

General development policy in Botswana supports decentralization in decision-making, localized self-sufficiency, and self-management and administration, including those actions related to wildlife management and use. In 1986, the Government of Botswana approved the Wildlife Conservation Policy, which sets forth the specific objective is to "develop a commercial wildlife industry to create economic opportunities, jobs and incomes for the rural population. The policy will provide the basis for the development of both an industry that is specifically rural and a source of nutrition."

The legal and statutory framework is discussed in detail in the Institutional and Administrative Analysis and in the Social Soundness Analysis. The District Councils have the authority to ratify the wildlife quotas and licenses set by the Department of Wildlife and National Parks (DWNP), enabling them to limit hunting in their area. The Southern District Council, for example, has imposed a moratorium on hunting, excluding subsistence hunting by local residents, over the past few years. The legal framework permits local communities to receive revenues from wildlife utilization activities. District Land Boards already retain wildlife revenues generated by safari concession contracts. No legal prohibition restricts district authorities from delegating management responsibilities for land use or assigning revenues from wildlife to constituent sub-authorities or communities.

It has been argued that the return of wildlife revenues to producing communities is necessary to provide an incentive for sustainable management of the resource base. It is important to note that these revenues can be returned in several ways: (1) to the community as a whole in the form of public sector development, such as the construction of schools and clinics; (2) to individuals in the form of private sector development, such as hunting by individuals, and processing and handicraft production enterprises; and (3) the development of enterprises on a cooperative basis, potentially addressing both public and private orientations. Given that community based wildlife utilization programs are still experimental in nature, there is no demonstrated argument for one approach over another.

The comments of government representatives at the Project Paper review meeting (July 26, 1989) indicated that the Government of Botswana supports the concept of returning revenues to the community. Government representatives acknowledged that, although there is the political will and the policy framework, return of revenues is not presently a reality. At the review meeting, government officials emphasized that success of this project depends on the reality of returning revenues and that there is an urgent need for the Ministries of Finance and Development Planning, Local Government and Lands, Commerce and Industry, and others to clarify procedures for implementation. In their view, depending on the wildlife resources, other programs being implemented in the area, and on other factors, the details of the mechanisms to return the revenues to the community are likely to be different in each district.

4.03. Strategy

The strategy uses a three-pronged approach, including (i) community development; (ii) technical assistance to strengthen the DWNP; and (iii) and specific targeting of women as beneficiaries of income generating activities using veld products. The project, in its component elements and implementation framework offers a structure not only for this project activity, but also for the implementation of community-based resource utilization activities by the Government of Botswana and other donors. It is foreseen that donors will be able to disburse monies into the two funds for

community based wildlife utilization, and projects to support the sustainable use of veld projects for income-generation. Coordination of activities and policy dialogue will be facilitated by implementing the project through this one structure.

(i) Community Development

Simply providing social services and physical infrastructure is insufficient to ensure the well-being of remote populations. Emphasis must also be placed on production, employment and income generating activities. Groups must also be allowed to elect their own committees and set up their own institutions so that they feel they are part of the overall development process. Strengthening of these local institutions through human resource development and training efforts goes a long way toward facilitating self-determination at the local level.

Thus, an essential component of the strategy is community development activities, generally to be implemented by Botswana NGOs, to facilitate the planning and decision making processes of local institutions as they select the best options for development, assess potential impacts on community members, and address issues of distribution of benefits. The capacity and capability of these institutions for self-determination and management (District Councils, Village Development Committees, and other local authorities) will be expanded and strengthened as they design and implement the community based wildlife utilization projects.

Community development activities must also include the political mobilization of community members so that the people themselves have a say in how development is to occur. It is only by involving people at all levels of the development process that change can be effectively implemented. Experience shows that when the actors themselves initiate change and are involved at all steps of the development process, the intended change is more likely to result. Thus, while the demonstration projects focus on local institutions, community members sharing the land with the wildlife must voice their perceptions and priorities and direct the actions of their representatives.

(ii) Technical Assistance

A facilitating contractor, contracted by and to USAID/Botswana, will assist in the implementation of the natural resource utilization component of the project, including the elements of community based wildlife utilization, projects to support the sustainable utilization of veld products for income generation, and applied socio-economic research and special studies. The contractor will lessen the administrative burdens of the DWNP and its Wildlife Utilization Unit in managing the community based utilization activities. The work of the contractor will complement the policy setting, technical support, and implementation responsibilities of the DWNP. The facilitating contractor will work under the supervision of the Implementing Committee.

(iii) Targeting of Women as Beneficiaries of Income Generating Activities

Given women's roles in maintaining the household economy in rural Botswana, as described below, special efforts must be made to ensure that women benefit from development activities. Given that women, as men, are diversifying their economic base, it is necessary to respond to their needs for expanded economic activities and training. Experience has shown that, unless women are specifically targeted as beneficiaries, project activities directed to both women and men rarely involve women.

Women are intricately involved in the production economy and in assuring family well-being. Among other responsibilities, they perform most of the agricultural tasks and raise small livestock; they provide firewood and water; they care for their children and homesteads. This is particularly the case in rural Botswana where over 47 percent of the households are headed by women. Generally, these households are headed by married women with absent migrant spouses. They have fewer resident members than male-headed households but higher dependency ratios. In general, women-headed households are the poorest in the community with the least amount of resources. It therefore becomes imperative to address the needs of these households, and the women who head them, within a culturally appropriate context.

One response to the changing socio-economic and environmental context of rural areas is for residents to shift towards economic diversification and to perform a variety of tasks to generate subsistence and income. Households rely on many different survival mechanisms through a wide range of economic activities, including agriculture, commercial hunting, pastoralism, handicraft production, domestic service, and casual labor. Sometimes men will go to the mines or cities while the women stay behind and plant small gardens and produce handicrafts; young men herd goats, hunt for other people, or go to cattle posts to seek employment. Diversified roles of women appear to be fewer among settled "full-time" agriculturalists as their labor and effort is consumed by their agricultural tasks.

Settlement of Remote Area Dwellers (RADs) has had mixed benefits for women. On one hand, women can benefit from the expanded social services available, including schools, clinics, and boreholes. On the other hand, women have lost a certain amount of their equality. In "traditional" culture, women made an equal contribution to the community, gathering food, medicines, and other veld products, while men had primary responsibility for hunting. This was reinforced by the generally cooperative and equitable nature of the social organization. With changes in labor, subsistence, and socio-political activities in settled contexts the overall contribution of women to decision making and group activities begin to decline. With settlement and increased contact with the outside, it became necessary to identify community leaders to maintain contact with government officials. Perhaps because men have traditionally dealt with outsiders or perhaps because government encouraged male representatives, women rarely assumed this position of growing authority and power.

Perhaps influenced by their tradition of equality, women have organized active women's groups in many communities. For example, in a community of Nata river Basarwa undergoing the process of self-organization and self-determination, many women felt as though they were being excluded from the decision making process and were angry that they were not represented in the various organizations being formed (including the new parent-teachers association). The women then decided to form their own organization, a Women's Development Committee, perhaps the first of its kind in Botswana in 1976.

4.04. Objectives

- o Sustainable natural resource utilization will be demonstrated to a preferred and profitable land use in selected sites.
- o The Government of Botswana will expand its capacity and capability to provide technical support and skills training to wildlife utilization projects.
- o The resource management programs established in the target areas will be self-sustaining, will offer increased local employment opportunities and incomes, will result in optimal and sustained wildlife yields, and will provide the communities with access to a renewable source of revenues for development projects.
- o Institutions and decision-making procedures for sustainable resource management and distribution of economic benefits resulting from the wildlife resource base will be strengthened at the community and district levels.
- o NGOs will transfer, through training and advisory services, problem-solving, organizational, accounting, and management skills thereby empowering local institutions to plan and administer their own strategy for resource utilization and to address issues of equitable distribution of resources and benefits.
- o By the completion of the project, a local NGO will assume the management and administrative responsibilities of the facilitating contractor to be provided by the project.
- o Successful income-generating activities that use the natural resource base in a sustainable manner will expand women's participation in the economy and access to income.

4.05. Site Selection

The Government of Botswana has proposed several sites for project implementation. At this point, however, there is insufficient definition of wildlife utilization activities, and specific district authorities and local

communities have not yet expressed their full support and willingness to follow the criteria established to guide selection of project sites. Therefore, site selection will occur during the implementation phase in response to proposals received. Proposals will be evaluated based on the following criteria, which must first be refined by the implementing agencies:

- o that they be located in districts where the district authorities agree to restrict access to hunting of wildlife in the project area to: a) hunting by local residents; and/or b) safari concessionaires providing revenues;
- o that they be located in districts where district authorities agree to return revenues from wildlife utilization to communities in the project area;
- o that the project activities be economically, socially, environmentally, and institutionally viable and sustainable;
- o that no alternative sources of funding (e.g. a loan from a bank) are available; and
- o that the project implementers solicit the views of and interests in the proposed activity from the communities and residents in the target areas.

A detailed examination of beneficiaries and the potential impacts, both intended and unintended, will be necessary for each proposed activity. The assessments will address project aspects affecting all residents of an area, including those who may not be particularly vocal.

4.06. Participants and Beneficiaries

Given that specific project sites and activities are not identified, it is possible to discuss participants and beneficiaries only in general terms. A detailed examination of beneficiaries and the potential impacts, both intended and unintended, will be necessary for each sub-project activity. It is important that such assessments address the status of all residents of an area, including those who may not be particularly vocal. The participating agencies and communities will benefit from the project in terms of institution strengthening, increased capacity for self-determination and management, and increased access to wildlife revenues.

The secondary impacts of specific project activities must also be examined. As individuals and the natural resource base interact within an integrated context, an action in one sphere will have an effect in another one. For example, increased demand for firewood for the processing of game meat can result in a decrease in the availability of firewood for home consumption. This would have a negative impact on women as they would have to walk farther to collect firewood.

Though generally not participating in the hunting of large animals, women are participants in natural resource utilization, including the exploitation of

small animals, insects, and veld products, as well as processing, and marketing activities. An examination of hunting and collecting behavior among the Tyua of the Nata River region illustrates this point. Of the women interviewed, over 42 percent had picked up tortoises, nearly a third has captured iguanas, a few had hunted occasionally, and some of them had been successful in killing large antelope (see Table 1). Additional analysis of women's participation in veld product utilization is described below. Thus, women should be considered as participants and as both direct and indirect beneficiaries of community-based resource utilization activities.

4.1. Project Elements

Project component accomplishments will stem from four activities: Community Based Resource Utilization, Planning and Applied Research, Environmental Education, and Regional Communication and Exchange of Information. The four foci of activity are described below.

4.1.1. Community Based Resource Utilization

Project resources are available for a facilitating contractor who will assist local NGOs and district authorities in designing and managing demonstration projects in community based wildlife utilization and veld projects. Monies for the demonstration activities have been included in the budget. The facilitating contractor will also provide four technical assistance advisers including a social scientist, resource economist, and two wildlife field extension officers. Expected accomplishments from the funding are described below:

- o Expanded Government capability to promote wildlife utilization projects and to provide technical support in assessing the feasibility and implementation of these activities.
- o At least two economically viable demonstration projects in wildlife utilization are initiated and implemented in selected project sites.
- o Local NGOs, district, and community level institutions capable of planning and administering their own sustainable wildlife management programs strengthened or established.
- o Household incomes increased through increased employment opportunities, revenues from wildlife resources, or income-generating activities.
- o At least four income generation projects promoting sustainable use of veld products initiated and implemented by NGOs, with 50 percent of the funds targeted to women beneficiaries.
- o Increased participation of women in the resource management program and in the economy, resulting in increased incomes.

There are three principal activities under the Community Based Resource Utilization element of the project: (a) Technical Assistance; (b) Demonstration Projects in Wildlife Utilization; and (c) Activities to Support the Sustainable Use of Veld Products for Income Generation. Each activity is described in more detail below.

(a) Technical Assistance

The several local NGOs working at the community level require technical assistance to enable them to promote community development. Through a facilitating contractor the project will provide, for three years, four long-term staff members, including a social scientist, a resource economist, and two extension service training officers. This staff specialized in wildlife utilization and community development, will provide training in wildlife processing skills, marketing, institutional development, and other skills to community residents. The extension officers will spend extended periods of time at the community-based wildlife project sites. Working in close collaboration with Government of Botswana staff members, they will transfer skills and strengthen the capacity to implement community based resource utilization by the DWNP, local NGOs, district authorities, and communities.

(b) Demonstration Projects in Wildlife Utilization

The demonstration projects will provide concrete examples of the viability of community based wildlife utilization and of alternative institutional arrangements. Once community residents see wildlife utilization as a possible and profitable option, it is expected they will demand from government increased authority over resource management and distribution of benefits. Thus, these projects will initiate a first phase in an incremental, staged strategy of devolution of management and benefits from wildlife utilization to community levels.

The demonstration projects will be selected based on proposals received from local NGOs or district authorities working at the community level and on recommendations from the Wildlife Utilization Unit. The facilitating contractor will then assess the appropriateness of the proposal for funding under the project and will submit the project for approval by the Implementing Committee. An illustrative list of possible projects follows:

- (i) The activities of the Southern District Council to establish small-scale Game Harvesting Units that involve subsistence hunters from RAD settlements as a means of creating employment and increasing local incomes in the process of making more efficient use of available hunting quotas. In addition, a crafts production component is planned to assist RADs with access to basic tools, procurement of raw materials, establishment of reliable outlets for products, and simple training to enhance the basic skills already known among RAD residents. CORDE is

collaborating with the DWNP Wildlife Utilization Unit in the review and planning of future implementation of this activity.

A recent study by D. Cumming, R. Taylor, and others supports this project with some qualifications. Before the project is considered for funding, the issues raised in their report and the economic viability of the project should be re-examined. However, it should be noted that the project is socially and institutionally sound, providing development options for RAD residents and with the full support of the District Council. Furthermore, the project is located in an area where conflicts over land use are less pronounced than in other regions of Botswana. For example, in comparison with Ngamiland where there are large numbers of cattle, the proposed Wildlife Management Area in the Southern District has only three boreholes.

- (ii) The efforts of the Nata Coordinating Conservation Committee to establish a sanctuary and to promote tourism in the area. The Committee is requesting a lease for the sanctuary, will manage the wildlife and related activities, and will return the profits to the Village Development Committee for development activities. In addition, individuals are expected to benefit through an expansion of the economy and increased employment opportunities. Under the auspices of KCS, a feasibility study has been conducted and several meetings with community residents, district authorities, and representatives from government have been held to discuss this activity.

(c) Sustainable Use of Veld Products for Income Generation

Many people in rural Botswana have an extended knowledge of their environment. They often are able to predict with a great deal of accuracy the location and yields of various wild products. These products are exploited by both food producers and mobile foragers (see Table 1 for a partial listing of wild plants used in Botswana). Many of these plants are processed to enable storage for consumption at a later date. In recent years, the availability of these wild plants has been decreasing. The harvest rates for some veld products gathered in the wild are at their maximum sustainable level. Inventories of grapple plants, mokala paims and cocoons have not been made. Utilization of such plants and insects to meet market demand may be threatening these resources.

Given that women are involved with wood collection and veld product gathering, more extension efforts should be orientated to them. This is especially relevant in the development of skills in producing value added products from veld resources and marketing schemes for veld products. Similarly, alternative energy technologies should be oriented towards women. In addition, a focus on fishing as an income generation strategy is suggested for the Okavango delta as women are already involved in this activity. Some of this fishing is done communally, often with the aid of fish basket.

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Based on women's traditional involvement in gathering activities and use of veld products, 50 percent of the funds provided for projects to promote the sustainable use of veld products and income generating activities is targeted to women beneficiaries. Though the project funding is to remain flexible and responsive to the needs of the local communities, it is expected that the target of 50 percent is not unreasonable. If it becomes difficult to meet this target, it should be changed once it is assured that all reasonable efforts to reach women beneficiaries have been made.

Projects using natural resources for income generation will be selected from proposals made to the Implementing Committee and the facilitating contractor in a similar manner as that of the demonstration wildlife utilization projects. As the technical support to the use of veld products falls under the responsibilities of several departments, primarily in the Ministry of Agriculture, the DWNP will collaborate with these institutions as appropriate.

Two central issues need to be considered when promoting income generating activities or small enterprise development targeted for women beneficiaries: access to credit; and labor requirements and availability. Women are frequently unintentionally denied access to credit for several reasons, including: (1) collateral requirements are defined in terms of capital ownership or tenure of land that women frequently can not meet; (2) complicated application procedures implicitly require that the loan recipient is literate or at least familiar with interactions with outsiders; (3) most loan centers are of considerable distance from the women's home and they are unable to take the time to travel to these centers; and (4) there is a minimum size for the enterprise that is larger than many activities pursued by women.

An examination of the Financial Assistance Program (FAP) loans, few of which have gone to women, illustrates this point. These loans require a 20 percent contribution by the recipient (10 percent for women) and that the enterprise employs at least five people. Furthermore, preference is given to manufacturing industries. For example, while some FAP loans have been given to women who wish to engage in fishing, they face the constraint of not having the collateral which they can pledge as their contribution.

Any income generating project will consider the context in which women work, particularly the availability of their labor and the motivational factors for undertaking activities. For example, Botswana craft is currently experiencing difficulties in obtaining quantities and high quality of baskets from the producers. Two factors seem to be involved: (1) the need for income, while very important, is finite and a further increase in income is less important than other activities as a motivating factor at this time; and (2) the other demands on women's labor have not decreased, with the result that women are now (July) spending their energy on home repairs and other maintenance activities instead of increasing the labor input into basket making. Similarly, if projects to conserve natural resources increase the burden of those responsible for managing them, then they will not succeed.

Activities in community development, and wildlife and veld utilization will be coordinated with women's institutions as appropriate. These institutions provide a forum for development activities and will be strengthened as members gain technical, planning, implementation, problem-solving, and leadership skills. There are a number of local women's committees and institutions in the rural areas, including Botswana Council of Women, traditional women's groups, the parent-teachers association, sewing groups, the Red Cross, social and health committees, and literacy groups, among other organizations. Within government, women's issues are addressed by the Women's Affairs Unit in the Ministry of Home Affairs and by an inter-ministerial committee. Currently, the focus of this committee is primarily on urban and legal issues. A list of potential collaborative women's organizations follows:

- i. The Botswana Council of Women (BCW) is one of the largest women's organizations and one of the most active. Involved in some economic activities (e.g. horticulture and forestry), its emphasis is generally on the development of social welfare infrastructure. BCW provides a forum for discussion of social problems and non-formal training in leadership and problem solving skills.
- ii. Botswana Young Women's Christian Association (YWCA) offers informal education, adult education, literacy programs, teaching of handicrafts, and establishing community clinics and day care centers.
- iii. The Association of Botswana's Women Organizations (ABWO) coordinates development activities and programs of registered women's organizations.
- iv. Organizations promoting the use of veld products by women beneficiaries, including Thusano Letfatsheng, the Forestry Association of Botswana, and Botswanacraft, are described below.

An illustrative list of projects for Veld Products Utilization follows:

- i. Basket-making is an important source of income for women in Ngamiland. However, due to over-exploitation, women have to walk up to five hours to collect the palm used in their production and, at continued rates of exploitation, will soon have limited access to raw materials. To address the issues of over-exploitation and to expand the income generating potentials for these women, Botswanacraft has proposed an educational and extension project to collect data on existing natural resources (primarily mokala palm), training villagers in the proper methods of harvesting and propagation, reestablishing these resources through the planting of small plots and as wind breaks, and experimenting and encouraging the use of available alternative local resources for basket production.
- ii. The Morama plant grows wild or is allowed to grow in arable lands (especially on the Ghanzi Farms) as an intercrop. The edible fruits and young tubers are either for home consumption or for sale. It is estimated that there is an initial internal market of 1,000 tons per year

mostly from households that already consume the product when available. External markets need to be explored. The price is likely to be at the same level as groundnuts, for which morema nuts substitute at all levels. Thusano Lefatsheng is exploring the potential for commercial exploitation of morama nuts and has conducted preliminary research.

- iii. The market for the Botswana mophane worm, an edible caterpillar up to 7 cm long that is considered a delicacy by mine workers and others in South Africa, is a well established one. In 1983, it was estimated that over 800 tons of mophane worm were being gathered and processed by up to 5,000 rural women in northern Botswana. Generally, women sell the worms at low prices to South African middlemen who carry out the highly profitable packaging and wholesaling operation in South Africa. Research on the sustainable production and use of the worm, as well as the establishment of local packaging enterprises could be explored.

4.1.2. Planning and Applied Research Support

Land use and resource management planning provide a critical element in the strategy for community based resource utilization. Before utilization projects are undertaken, it is important to determine the resources available and the most appropriate ways to manage these resources, and to ensure that sustainable utilization activities are the most profitable and appropriate means of exploiting them.

Resource management planning in Botswana involves negotiation and consultation with local authorities at all stages of development. In many cases, government staff and/or consultants prepare a draft plan that is presented for review by the District Land Use Planning Unit (DLUPU). Any changes requested by the DLUPU are discussed between the interested parties and a final management plan submitted after close collaboration and negotiation. In other cases, the DLUPU prepares the management plan and submits the plan to central government, which may provide additional technical inputs and negotiates a final plan.

Applied socio-economic research is also necessary as a monitoring and evaluation tool of project progress in meeting the stated objectives, and in assessing the impact on resident communities. Expected outputs from funding activities under this project element are as follows:

- o Management plans for four protected areas and 12 WMAs are drafted and approved by relevant DLUPUs.
- o At least two case studies illustrate the utility of land-use planning in Botswana. Cases will be chosen from the natural resource (conservation, management, and development) land-use category.
- o At least two socio-economic studies compare baseline and follow-up data from the selected sites for the demonstration projects, and drawing

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conclusions on the impact of the wildlife utilization program on residents.

Funding for planning and applied research support will be disbursed through the facilitating contractor to local groups. Possible organizations include, but are not limited to: NGOs (e.g. KCS for environmental management plans); the National Institute of Research, University of Botswana; and selected consulting firms as listed in the Institutional and Administrative Analysis.

Two activities are included under this project element: (1) Natural Resource Management Planning; and (2) Applied Socioeconomic Research and Marketing Studies.

(1) Natural Resource Management Planning

The natural resource management planning element consists of three activities: (a) management plans for four protected areas; (b) management plans for 12 Wildlife Management Areas; and (c) action research in management planning to develop case studies for use in training District Land Use Planning Units and Officers, among other authorities.

(a) Protected Areas - The Government of Botswana is currently preparing land use management plans for the protected areas. USAID has a history of supporting these efforts at the request of government and has provided funding to the Kalahari Conservation Society (KCS) to facilitate the development of these plans by central government and district authorities, particularly in the Okavango and Boteti River areas. Funding will be provided under this project to continue this work, for the Moremi Wildlife Reserve Management Plan, a combined proposal for Nxai Pan National Park and Makgadigadi Pans Game Reserve, the Linyanti/Chobe ecological zoning study, and other plans as requested by government. The plans may include: a natural resources inventory; a socio-economic analysis; detailed zoning for different land use categories; specific measures for protection of threatened habitats or species; and recommendations for ecological management.

(b) Wildlife Management Areas (WMAs) - An important step in the approval process of WMAs by the appropriate Land Boards and District Councils, as outlined in the Wildlife Conservation Policy (1986), is to draft a management plan for each area. The Department of Wildlife has prepared a request to USAID for WMA management planning. The plans will include: baseline data on available natural resources, physical aspects, existing infrastructure; details of utilization projects that will maximize sustainable production of the wildlife resources; secondary forms of land use; and proposed regulations for the use of the areas and the protection of the resources. A most important section will include details of all leases and rights to resources by resident communities. Funding to support the development of these plans will be provided under the project. KCS may be an appropriate organization to facilitate the development of these management plans with central and district authorities.

(c) Case Studies - Case studies illustrating the utility of land-use planning in the growth and development of Botswana will be developed and used in training programs, in conjunction with MLGL for DLUPUs and District Officers for Lands. These case studies will convey the historical context in which certain land-use policies have been formulated, the means by which they have been applied, the planning benefits that accrue when proper planning procedures and implementation are followed, and, conversely, the environmental, economic, and social costs that arise when they are not. Cases will be chosen from the natural resource (conservation, management, and development) land-use category.

(2) Applied Socio-Economic Research Support and Marketing Studies

Much of the applied socio-economic research necessary to monitor the progress in meeting the objectives of the project and to assess the impact of activities on intended and unintended beneficiaries will be undertaken by social scientists. A fund is provided under the project to assess the impact of project activities as necessary. In addition, project funds will support studies exploring the international markets for wildlife products. Illustrative topics that might be included under the applied socio-economic research element include:

- o identification and analysis of culturally determined rights, responsibilities, and practices relating to environmental, social, and economic resources;
- o identification and analysis of micro-level individual, household, and community motivational and decision-making factors, including the domestic economy, pattern and phasing of different economic activities, and the range of options individuals perceive as open to them;
- o investigation of center-periphery relationships in bureaucratic, legal, and administrative structures with their inherent conflicts over resource control; and
- o the current role of women in natural resource management and their perceived needs, constraints, and opportunities.

4.1.4 Environmental Education

The rehabilitation and sustainable management of Botswana's wildlife calls for a considerable degree of public understanding, support and action. Conservation of the resource base and viable community activities stand no chance of succeeding without popular and active involvement of all Botswana. This can only be achieved through a comprehensive and effective program of environmental education that reaches all levels of the population.

The decline of wildlife populations and ecosystem degradation are largely due to the continued prevalence of certain attitudes toward cattle and

cattle-ownership, and to ignorance of the connections between overgrazing and land degradation. If people become thoroughly aware of the threat to their land, soil and water, and of the potential economic value of veld products and wildlife, they will be more likely to be receptive and to actively participate in resource management and utilization.

Planners and educators are becoming increasingly aware of the need for environmental education. The Sixth National Development Plan calls for research into "the development of a national environmental education programme for all educational levels and branches", while the proposed National Conservation Strategy emphasizes the importance of environmental education and describes possible activities which can be undertaken by both governmental and non-governmental organizations.

To date, however, there have been no systematic attempts to introduce a strong environmental education component into the school curricula or in the teacher training programs. Also, although some NGOs are providing aspects of environmental education to the public, their efforts are beset by several major problems. Their programs are fairly narrow in scope, and only loosely coordinated with one another. Most of their activities center around certain areas, usually Gaborone, and thus do not effectively reach the rural Batswana. In addition, participation by Batswana in these NGOs is virtually absent, limiting their credibility and long-term sustainability.

The strategy to be adopted in providing a comprehensive environmental education program to all sectors of the community relies on the existing infrastructure, but strengthens its capabilities so that it can support the new environmental dimension.

Presently, education in Botswana is dispensed through formal and non-formal systems, with the formal system, which deals almost exclusively with youth, receiving the largest share of effort and expenditure (approximately 97 percent of the education budget). Non-formal education, dispensed by the Department of Non-formal Education and other agencies (governmental and non-governmental), constitutes the only means of reaching the remainder of the population. The adult out-of-school population is numerically large and is thus a critical component in the development process.

Specific environmental science courses are offered only by the Department of Environmental Science at the University of Botswana. There is no provision in the rest of the education system for courses in environmental science to be included in the existing curricula, although some environmental topics are included under Science and Social Studies in the primary school curriculum. Therefore, the strategy proposed here will carry out a needs assessment study of the existing curriculum, then systematically integrate environmental education into the current school subjects, and finally provide pre-service and in-service environmental education for teachers to implement the new course material. There will also be a need to develop appropriate teaching/learning materials.

The strategy to incorporate an environmental dimension into non-formal education will be to provide support (mainly training and material resources) for some of the agencies and organizations which have the capability to provide environmental education to various sectors of the community. This assistance will support expansion, improvement, and coordination of their programs. The objectives of the environmental education element of the project are to:

- o carry out a needs-assessment study to determine the environmental education priorities;
- o incorporate environmental education into the primary and junior secondary curricula;
- o incorporate environmental education into pre-service and in-service training for primary and junior secondary teachers;
- o provide environmental education to the newly literate through the Department of Non-formal Education;
- o strengthen the Outreach Program so that Action magazine can be systematically distributed throughout the school system and outreach materials disseminated to the education centers, teacher training colleges, and to the Educational Radio Broadcasting Unit;
- o assist to incorporate environmental education into educational radio programs;
- o strengthen the Wildlife Education Unit extension services; and
- o provide funds for the development of environmental education materials which highlight Botswana issues.

The target population groups for the environmental education component of this project will be:

- o primary and junior secondary level school children (Grades 1-9);
- o lecturers and student teachers of the four primary teacher training colleges (Francistown, Lobatse, Serowe and Tlokweng) and of the junior secondary teacher training college (Molepolole);
- o curriculum designers at the Curriculum Development Center;
- o practicing primary and junior secondary school teachers;
- o education officers, assistant education officers, and field education officers;
- o literacy tutors (20) and literacy assistants (3000);

- o staff of the Education Broadcasting Unit; and
- o the general public.

The implementing organizations for this project component are the Ministry of Education (Department of Curriculum Development and Evaluation, the Department of Primary Education and Teacher Training, the Department of Secondary Education, and the Department of Non-formal Education), the Ministry of Commerce and Industry (Department of Wildlife and National Parks), and an NGO (Kalahari Conservation Society).

Department of Curriculum Development and Evaluation - This department, charged with the responsibility for ongoing curriculum review and reform, was established on the basis of the recommendations of the National Commission on Education (NCE) Report, 1977. Specifically, it seeks to: improve the quality of education, giving initial priority to the primary level curriculum; direct and coordinate substantial revisions in the curriculum at the intermediate (and eventually, senior secondary levels); implement changes in the assessment and examination system; plan for adequate provision of appropriate teaching/learning materials; and strengthen support services for the development and production of appropriate teaching/learning aids and educational radio broadcasts.

Department of Primary Education and Teacher Training - This department has the responsibility for primary schools, and for pre-service and in-service training of primary school teachers. Four teacher training colleges (Lobatse, Francistown, Tlokweng and Serowe) provide preservice training, and a network of regional Education Centres are used for in-service training. One of these, the Maun Education Center, is specializing in environmental education.

Department of Non-formal Education - Through its literacy program, this department has built up an extensive network of literacy tutors (20) and literacy assistants (3,000).

Department of Secondary Education - This department is responsible for secondary schools, including junior secondary. Presently, a team of approximately 20 field education officers, specializing in various subjects, carries out in-service education through a coaching system.

Department of Wildlife and National Parks - The Wildlife Education and Extension Section of this department uses wildlife as a starting point in creating awareness of other conservation issues. It carries out extension and interpretation activities for all levels of the general public through exhibits, talks, conferences, and slide/film shows.

Kalahari Conservation Society - One of the main aims of this non-governmental organization is to promote knowledge of Botswana's rich wildlife resource and its environment through education and publicity.

Eight activities are included under the Environmental Education element of the project: (1) Resident Technical Advisor; (2) Needs Assessment Study; (3) Curriculum Development; (4) Pre-Service and In-Service Teacher Education; (5) Environmental Awareness through Functional Literacy; (6) Outreach Program Support; (7) Wildlife Extension and Education Section (DWNP) Support; (8) Materials Development. Each activity is described in detail below.

(1) Resident Technical Adviser

The project will provide long-term technical assistance to the Ministry of Education over two years. The responsibilities of the curriculum development/training specialist will include the following:

- o to conduct a needs assessment of the environmental education program;
- o to assist in curriculum development in collaboration with the Coordinator of Project Outreach (KCS);
- o to design and conduct pre-service and in-service workshops for teachers in environmental education; and
- o to assist in the preparation of reading materials on environmental issues for the newly literate and to train literacy trainers in their use.

In support of the technical assistance activity, the project will fund: (i) a Resident Technical Advisor to work with all training and materials development aspects of the environmental education component, to assist with the procurement of resources for the teacher training colleges and Education Centers, and to conduct the needs assessment study; and (ii) a micro-computer with hardware/software to support the work of the technical advisor.

2. Needs Assessment Study

In order to identify priorities and strategies for environmental education in Botswana, three months of a technical advisor's time will be funded to carry out a needs assessment study, which will provide a clearer picture concerning:

- o The existing environmental education content of the primary and junior level curriculum and areas where it needs to be integrated into the formal education system through the junior secondary level;
- o The existing resources for environmental education and the kind and amount of educational materials and other resources which are required;
- o Alternative ways in which environmental education can be achieved for the different target groups and their relative effectiveness;

- o Existing non-formal education programs conducted by both governmental and non-governmental agencies; and
- o Possibilities for cooperation between the organizations involved in formal and non-formal environmental education.

Specific outputs of the activity will include the following:

- A list of learning outcomes identified as priorities for environmental education in relation to Botswana's main environmental issues.
- An analysis of the primary and junior secondary school curriculum in terms of existing environmental education content, and identification of subject areas where it can be integrated.
- A list of existing environmental education resources (materials, manpower, facilities) and identification of needed ones.
- Identification of existing agencies involved in environmental education (formal and non-formal), other ones which could be involved, and alternative ways for effective delivery to different target groups in the population, and for cooperation between organizations, involved in formal and non-formal environmental education.

3. Curriculum Development

There is general agreement that instead of developing a separate course, environmental education should be integrated into the existing subjects of the school curriculum for both primary and junior secondary levels. This will be undertaken through the services of the Resident Technical Advisor described above, in collaboration with the Coordinator of Project Outreach, and individual subject curriculum designers. The project will fund the activities of the referenced individuals, including workshops and seminars for training curriculum designers in environmental education approaches, methodology and integration techniques and environmental education resource materials for the library at CDU.

As a result of project funded activities, the project will achieve the following outputs:

- An environmental education dimension integrated into every subject in the primary and junior secondary level curriculum.
- An environmental education dimension integrated into specific subjects in the curriculum of teacher training colleges for both primary and junior secondary teachers.
- Environment education radio programs, as part of the programs produced by the Education Broadcasting Unit.

- An environmental education reference section within the library of the Curriculum Development Unit (CDU).

4. Preservice and In-Service Teacher Education

There are plans to change the present two-year certificate course to a three year diploma course for teacher training colleges. Work will soon begin on the development of the mechanism through which the change will take place, and extensive work will go into the development of new curriculum and materials. The integration of environmental education should take place from the beginning of this effort. Thus, workshops to introduce environmental education to teacher educators and to provide an opportunity for studying ways to make it a meaningful part of the new pre-service teacher education program will be implemented.

The major responsibility for primary level in-service education is carried by regionally-based education officers, assistant education officers, and education-center coordinators, and for junior secondary in-service education, by field education officers. Special environmental education workshops will be implemented to train the trainers. These will be largely facilitated through the Maun Education Center and will be targeted to (1) teacher college tutors; (2) Education Officers, Assistant Education Officers, and Education Center Coordinators; and (3) Field Education Officers. The workshops will be designed and conducted by the Resident Technical Advisor provided under the project. The project activity will also fund environmental education resource materials (books, games, teaching/learning kits) for the libraries of the teacher training colleges, and for each of the Education Centers (with special attention to the Education Center at Maun which has been identified as a center for environmental education).

As a result of the activities funded under the project, the following outputs will be achieved:

- Environmental education components in various subjects taught at teacher training colleges for primary and for junior secondary teachers.
- Introduction of environmental education into the existing in-service education programs for primary teachers at the regional Education Centers, and as part of the coaching in-service program for junior secondary teachers.
- Improved environmental education reference materials at the libraries at Serowe, Francistown, Tlokweng, Lobatse, and Molepolole Teacher Training Colleges.

5. Environmental Awareness Through Functional Literacy

The literacy learning groups (approximately 3,000) provide a good forum for promoting environmental awareness. By expanding their program of literacy and numeracy to include conservation issues, the program will be more relevant and the participants will gain a greater understanding of their environment. Workshops, focusing largely on conservation topics and teaching methodology, will be implemented initially for 20 literacy tutors who, in turn, will help to train the literacy assistants. Appropriate teaching/learning materials will be produced by the materials production section of the Department of Non-formal Education. In addition, writers' workshops will be conducted to assist staff in the materials production section of the Department of Non-formal Education to integrate environmental education into teaching/learning materials for the literacy program. The activities will assist in achieving the following outputs:

- Measurable increased environmental education awareness by literacy tutors and assistant literacy tutors.
- Specially produced reading materials, which highlight environmental issues, for neo-literates.

6. Outreach Program Support

Through the Outreach Program, various kinds of environmental education materials, including Action Magazine (an environmental education magazine for youth), and radio scripts may be obtained. This project activity will support material development workshops and, through the present Coordinator, ensure that these teaching/learning materials will be disseminated throughout the country. The project will support a vehicle and operating costs for the Coordinator of the Outreach Project; and workshops for curriculum designers, staff of the Educational Broadcasting Unit, and selected teachers in materials development. Project funded activities will contribute to the following project outputs:

- Outreach materials, including radio scripts, adapted for use in formal and non-formal environmental education programs in Botswana.
- A Teachers Handbook for Environmental Education and other teaching/learning materials produced by the CDC with assistance from the Outreach Coordinator.
- A special edition of Action magazine with focus on wildlife resource utilization in Botswana.

7. Wildlife Extension and Education Section (DWNP) Support

This unit of the Department of Wildlife and National Parks, which is responsible for extension and interpretation services, will be strengthened as follows:

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- o A needs assessment to examine ways in which wildlife utilization and community extension skills and concepts can be better reflected in DWNP training and recruitment. Based on the recommendations of the needs assessment and on DWNP requests, the mission can explore future training activities, including short in-service courses, workshops.
- o Short term environmental education courses, designed and implemented through the Section, for the Wildlife Education Section's education officers; and
- o Purchase of equipment for extension and interpretation work. This equipment will be used primarily to support extension services in the rural areas with wildlife resource utilization schemes.

Project funded activities will result in achievement of the following outputs:

- a cadre of extension officers with special training in environmental education.
- needs assessment of training requirements and recruitment policies of game scouts and mid-level DWNP staff.

8. Materials Development

During the development of the proposed National Conservation Strategy, nine crucial environmental education issues were identified. Support will be provided to KCS for the development of audio-visual materials, i.e. eight 30-minute video programs addressing those issues.

4.1.5 Regional Communications and Exchange of Information

Results and lessons learned from project activities will be disseminated both within Botswana and at a regional level over the six-year life of the project. To facilitate this process, it will be necessary to have a series of meetings and reciprocal visits by Department of Wildlife and National Parks (DWNP) personnel and others involved in the project (e.g. staff of various Ministries, KCS, the facilitating contractor, CORDE, the proposed Natural Resources Conservation Trust, and other governmental and non-governmental organizations involved in project activities). Coordination of the meetings and information dissemination will be done by the facilitating contractor.

The SADCC Wildlife, Forestry, and Fisheries Sector Coordinating Unit in Malawi will serve as the central clearing house for regional information exchange and the planning of seminars, workshops, and conferences. The project includes funds to enable individuals engaged in project activities to travel to meetings arranged by the coordinating unit as well as by departments or organizations within individual countries. At least one formal meeting will

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be required each year to review progress on overall project implementation within Botswana, as well as within the two other countries included in the regional project. Some overseas travel will be funded for selected project professional staff to attend conferences on wildlife utilization and ecosystem management that may be sponsored by other donors or academic institutions.

Dissemination of information will be facilitated through the exchange of reports and publications. The results of research by local NGOs assisting project implementation in the target communities, for example, will be exchanged with other groups within Botswana and circulated to counterparts in Zambia and Zimbabwe. Data generated by research on the elephant population in Chobe and Ngamiland Districts will be shared with staff of Zimbabwe's Department of National Parks and Wildlife Management, who will be conducting parallel research on elephants in Hwange National Park in Matabeleland North Province. A suggested forum for this exchange is the existing technical subcommittee on the elephant population. Status reports on progress in Botswana will also be prepared and presented at the annual meetings sponsored by the SADCC Coordinating Unit in Malawi. Project funded activities will result in the following outputs:

- o In-country workshops on topics related to community based resource utilization (e.g. tourism, game ranching)
- o Participation by host government staff and staff of Botswana NGOs at periodic meetings.
- o Professional presentations and papers based on research and project implementation completed by staff of various organizations involved in project activities.

4.2. Project Implementation

4.2.1. Project Budget

The Project Budget appears as Table 4.1. through Table 4.11.

4.2.2. Implementation Schedule

The proposed project implementation schedule appears as Table 4.12.

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Table 4.1.

USAID/BOTSWANA
SOURCES AND USES OF FUNDS
(IN US \$)

	U S A I D		GOVT OF BOTSWANA		TOTAL	LC	GRAND TOTAL
	FX	LC	FX	LC			
I. COMMUNITY BASED RESOURCE UTILIZATION	1,268,000	1,800,000			1,268,000	1,800,000	3,068,000
II. PLNG & APPLIED RESEARCH	700,000				700,000		700,000
III. CONSERVATION EDUCATION	397,000	400,000		477,000	397,000	877,000	1,274,000
IV. PROJECT MANAGEMENT	1,438,160	350,000		536,000	1,438,160	886,000	2,324,160
V. REGIONAL COMMUNICATION	200,000	100,000			200,000	100,000	300,000
VI. AUDIT	80,000				80,000		80,000
VII. CONTINGENCY (5%)	336,658				336,658		336,658
VIII. INFLATION (5%)	330,182				330,182		330,182
GRAND TOTAL	4,750,000	2,650,000		1,013,000	4,750,000	3,663,000	8,413,000

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Table 4.2.

GOVERNMENT OF BOTSWANA
 HOST COUNTRY CONTRIBUTION
 (U.S. Dollar Equivalent)

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
COUNTERPART STAFF						
SALARIES/BENEFITS*	35,000	35,000	20,000	20,000	20,000	130,000
OTHER STAFF TRAINED*	35,000	35,000	35,000	35,000	35,000	175,000
PER DIEM/SUBSISTENCE*	10,000	10,000	10,000	10,000	10,000	50,000
OFFICE SPACE/UTIL/MAIN*	30,000	30,000	30,000			90,000
SUPPLIES/OFFICE EQUIP*	10,000	10,000	5,000	5,000	2,000	32,000
HOUSING--GOB/USAID POOL	150,000	150,000	75,000	60,000	60,000	495,000
VEHICLE MAINT/OPERATIONS+*	5,000	8,000	8,000	10,000	10,000	41,000
TOTAL	275,000	278,000	183,000	140,000	137,000	1,013,000

*IN-KIND SUPPORT

*+IN-KIND SUPPORT AND VEHICLES ADDED TO GOB POOL AFTER CONSULTANTS DEPART

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Table 4.3.

USAID/BOTSWANA
USAID PROJECT EXPENDITURES
BY PROJECT ELEMENT

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
I. COMMUNITY BASED RESOURCE UTILIZATION	795,000	878,000	855,000	415,000	125,000	3,068,000
II. PLNG & APPLIED RESEARCH	210,000	165,000	150,000	65,000	110,000	700,000
III. CONSERVATION EDUCATION	253,500	231,000	147,000	112,500	53,000	797,000
IV. PROJECT MANAGEMENT	320,000	323,500	339,150	377,100	428,410	1,788,160
V. REGIONAL COMMUNICATION	50,000	55,000	60,000	60,000	75,000	300,000
VI. EVALUATION/AUDIT			35,000		45,000	80,000
VII. CONTINGENCY (5%)	81,425	82,625	79,308	51,480	41,821	336,658
VIII. INFLATION (5%)	85,496	86,756	83,273	54,054	20,603	330,182
GRAND TOTAL	1,795,421	1,821,881	1,748,730	1,135,134	898,834	7,400,000

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Table 4.4.

USAID/BOTSWANA
 DETAILED EXPENDITURES BY PROJECT ELEMENT
 COMMUNITY BASED RESOURCE UTILIZATION

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
DEMONSTRATION PROJECTS	300,000	325,000	325,000	250,000	100,000	1,300,000
VELD PRODUCTS PROJECTS	50,000	125,000	200,000	100,000	25,000	500,000
TECHNICAL ASSISTANCE	275,000	400,000	300,000	45,000		1,020,000
VEHICLES	100,000					100,000
OPERATING COSTS	25,000	28,000	30,000	20,000		103,000
OFFICE/FIELD EQUIPMENT	45,000					45,000
TOTAL	795,000	878,000	855,000	415,000	125,000	3,068,000

Table 4.5.

USAID/BOTSWANA
 DETAILED EXPENDITURES BY PROJECT ELEMENT
 PLANNING AND APPLIED RESEARCH

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
ENVIRONMENTAL MANAGEMENT PLANNING & CASE STUDIES	150,000	150,000	100,000	50,000	50,000	500,000
BASE-LINE/RESEARCH/MARKETING STUDIES	60,000	15,000	50,000	15,000	60,000	200,000
TOTAL	210,000	165,000	150,000	65,000	110,000	700,000

Table 4.6.

USAID/BOTSWANA
 DETAILED EXPENDITURES BY PROJECT ELEMENT
 WILDLIFE CONSERVATION

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
NEEDS ASSESSMENT						0
OFFICE EQUIPMENT						0
WILDLIFE CENSUS--AIRCRAFT CHARTER						0
TOTAL	0	0	0			0

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Table 4.7.

USAID/BOTSWANA
 DETAILED EXPENDITURES BY PROJECT ELEMENT
 CONSERVATION EDUCATION

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
TECHNICAL ASSISTANCE						
RESIDENT TECH. ADVISOR	100,000	100,000				200,000
COMPUTER	5,000					5,000
CURRICULUM DEVELOPMENT						
WORKSHOPS	5,000	5,000	5,000	5,000	5,000	25,000
REFERENCE MATERIALS	10,000	10,000				20,000
PRINTING AND PRODUCTION	1,000	1,000	1,000	1,000	1,000	5,000
PRE- & IN-SERVICE TEACHER EDUC						
SKILLS WORKSHOPS	15,000	20,000	35,000	25,000	25,000	120,000
REFERENCE MATERIALS	21,000	21,000	21,000	14,000	9,000	86,000
ENVIRONMENTAL EDUCATION						
WRITERS WORKSHOPS	5,000	5,000	10,000	5,000	5,000	30,000
PRINTING AND PRODUCTION	2,500	2,500	2,500	2,500		10,000
LITERACY WORKSHOPS	5,000	5,000	5,000	5,000		20,000
OUTREACH SUPPORT						
VEHICLE	25,000					25,000
OPERATING COSTS	4,000	4,500	5,500			14,000
MATERIAL DEVELOP. WORKSHOPS	3,000	5,000	5,000	5,000	3,000	21,000
WILDLIFE & EXTENSION EDUCATION SECTION						
SEMINARS/WORKSHOPS	5,000	5,000	10,000	5,000	5,000	30,000
STUDY TOURS	2,000	2,000	2,000			6,000
WILDLIFE CLUBS						
COORDINATOR						
EQUIPMENT						
DESK-TOP PUBLISHER						
VEHICLES						
OPERATING COSTS						
MATERIAL PRODUCTION--VIDEOS	45,000	45,000	45,000	45,000		180,000
TOTAL	253,500	231,000	147,000	112,500	53,000	797,000

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Table 4. 8.

USAID/BOTSWANA
 DETAILED EXPENDITURES BY PROJECT ELEMENT
 PROJECT MANAGEMENT

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
PROJECT DIRECTOR	100,000	110,000	120,000	130,000	140,000	600,000
DEPUTY PROJECT DIRECTOR	90,000	100,000	110,000	120,000	130,000	550,000
ADMIN. ASST & ACCOUNTANT	45,000	49,500	54,450	59,895	65,885	274,730
VEHICLES (1)	25,000					25,000
OFFICE/FIELD EQUIPMENT	15,000	15,000				30,000
OPERATING COSTS	5,000	5,000	6,300	19,930	43,923	80,153
OFFICE SPACE	25,000	27,500	30,250	33,275	36,603	152,628
HOME OFFICE SUPPORT	15,000	16,500	18,150	14,000	12,000	75,650
TOTAL	320,000	323,500	339,150	377,100	428,410	1,788,160

Table 4. 9.

USAID/BOTSWANA
 DETAILED EXPENDITURES BY PROJECT ELEMENT
 REGIONAL COMMUNICATION

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
TRAVEL	15,000	20,000	20,000	20,000	25,000	100,000
CONFERENCES/WORKSHOPS	35,000	35,000	40,000	40,000	50,000	200,000
TOTAL	50,000	55,000	60,000	60,000	75,000	300,000

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Table 4.10

USAID/BOTSWANA
ILLUSTRATIVE FINANCIAL PLAN
NATURAL RESOURCES MANAGEMENT PROJECT
PROJECT 690-0251

PROJECT ELEMENT	CURRENT YEAR OBLIGATIONS		FUTURE YEARS OBLIGATIONS		TOTAL	
	A.I.D.	GRANTEE	A.I.D.	GRANTEE	A.I.D.	GRANTEE
I. COMMUNITY BASED RESOURCE UTILIZATION	2,528,000	136,000	540,000	100,000	3,068,000	236,000
II. CONSERVATION EDUCATION	605,500	200,000	155,500	37,000	761,000	237,000
III. PROJECT MGMT/TECH. ASST.	982,650	400,000	805,510	140,000	1,788,160	540,000
IV. REGIONAL COMMUNICATION	165,000		135,000		300,000	
V. PLNG & APPLIED RESEARCH	525,000		175,000		700,000	
VI. AUDIT	35,000		45,000		80,000	
VII. CONTINGENCY (5%)	243,358		93,301		336,658	
VIII. INFLATION (5%)	255,492		74,690		330,182	
GRAND TOTAL	5,340,000	736,000	2,024,000	277,000	7,364,000	1,013,000

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Table 4.11.

Implementation Schedule - Botswana

	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.6	PACD
PROJECT MANAGEMENT							
Solicitation prepared and advertised	x						
Selected Contractor operations begin in country	x						x
Commodities procured		x					
Completion of T.A. recruitment	x						
CBRU							
Pilot projects begin	x						x
Veld Products trials begins		x					x
Applied research begins		x					x
Environmental Planning begins	x						x
Technical assistance on board in DWNP		x					
CONSERVATION EDUCATION							
Resident Technical Advisor on board			x				x
Needs Assessments (Curriculum Department & DWNP)	x	x					
Workshops (4)							
- Curriculum development							x
- Teacher Training							x
- Functions literacy							x
- Wildlife Extension/Education Section							x
Construction of Maun Visitors Center		x					
Video production	x	x	x	x	x	x	x
Regional Liaison							
Regional Liaison	x						x
Audit							
Audit				x			x
Regional Evaluation							
Regional Evaluation				x			x

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4.2.3. Methods of Implementation and Financing

This grant will be implemented using the standard operating procedures which have been established between the Government of Botswana and the USAID mission for bi-lateral grant agreements. Specifically, the project will be obligated by a grant agreement signed by the Government of Botswana and USAID. The grant agreement will authorize USAID to negotiate a competitively awarded contract with an NGO or contractor who will be responsible for the administration of certain aspects of this project. The balance of funds will remain under the control of the Government and will be committed and disbursed upon the mutual concurrence of USAID and the Government.

The grant will contain in Annex 1 a detailed project description which will provide: 1) a comprehensive project narrative; 2) an overall project budget; and 3) a project budget reflecting estimated expenditures by project year. Annex 1 will describe the responsibilities of all parties under the grant and will be supplemented by a project implementation letter which will amplify specifically how the project will be administered and implemented.

Project oversight will be provided by an implementing committee composed of participants from the Ministry of Finance and the other Ministries involved in implementation of this grant, USAID, and the implementing NGO or contractor. This committee will be responsible for reviewing the contractor's annual workplan and budget and will provide policy guidance, as required, to the contractor. The committee will be responsible for establishing with the contractor and USAID, annual goals and objectives. The contract will require that the contractor submit quarterly operational and financial status reports to the Government of Botswana, USAID/Botswana, and USAID/Zimbabwe. In addition, an annual workplan will be submitted to all parties to the agreement at least 60 days prior to the end of each operating year. This workplan and budget will be reviewed by the implementing committee to ensure its consistency with the goals and objectives of this project as well as the policy guidance provided by the implementing committee.

The contractor, using the approved workplan as amended by the quarterly reviews, would have authority and responsibility for managing the project. Day to day operational decisions and implementation would be administered by the contractor without further review by either USAID or the Government of Botswana.

USAID/Botswana will have responsibility for project management while financial accountability for this multi-country regional project will remain with USAID/Zimbabwe. This will facilitate regional project reporting responsibilities, ABS preparation, and Congressional reporting. Payments to the contractor or NGO will be through a Federal Letter of Credit or direct payment. Both of these procedures are approved methods of financing. A Federal Letter of credit will be utilized only with a U.S. NGO while direct payment will be utilized only with a local or U.S. profit-making contractor.

The USAID Regional Commodity Management Officer will develop the specifications with the host country agencies to permit the USAID to order

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vehicles through the Regional Procurement Services Office in Tokyo. Other commodities will be purchased by a PSA under the REDSO/ESA/IQC/PSA. The REDSO/ESA/RCMO will develop a detailed procurement plan to be followed by USAID and the Government of Botswana agencies participating in the project early in FY 1990.

The contractor will be responsible for procuring all necessary supplies and leasing of all necessary equipment through competitive procurement procedures. In addition, the contractor will be responsible for providing suitable candidates who will furnish short- and long-term technical assistance to the Government of Botswana.

The Contractor will provide grants to local NGOs or other implementing groups who will implement pilot projects in community based resource utilization. The Contractor will be responsible for ensuring that these organizations have adequate management and accounting systems in place to safeguard U.S. government funds. Funds provided to these groups may be advanced, but the Contractor will hold ultimate responsibility for financial accountability.

The Contractor or NGO will also be responsible for disbursing funds to small entrepreneurs, local NGOs, or other companies to develop veld product projects or to test the viability of such activities. Funds for these activities will be provided on a cost-reimbursement basis unless the Contractor justifies the necessity of providing funds on an advance basis. The Contractor will be responsible for ensuring the financial viability of each of the proposed activities or projects as well as its compliance with the guidelines established by the implementing committee prior to disbursement of funds to the implementing group. Funds provided for both pilot projects and veld product projects will be committed under a sub-grant or sub-contract using approved AID procedures.

In addition, the Contractor will be responsible for identifying short- and long-term technical assistance needs in wildlife conservation. It is anticipated that the contractor will be able to arrange most of this technical assistance from within the SADCC region. Logistical support as well as housing and furnishings will be provided for all long-term consultants under the USAID Field Service Office from the Government of Botswana housing pool maintained by the USAID. Charges for these services will be disbursed from the government grant. To the extent these support services are not available, the Contractor will provide for such and charge the project accordingly.

Project management will be the responsibility of the Contractor. Funds for a project director, deputy, and necessary support staff (secretary, accountant, personal assistant) have been provided under the project. Logistical support (housing, furnishings, customs clearance, etc.) will be arranged through the USAID Field Service Office. Costs for such will be charged to the project. The Contractor will be responsible for providing all other logistical arrangements (travel, allowances, etc.).

Project funds have also been budgeted for travel and conference/workshop attendance by Government employees. These funds will be obligated as part of

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Table 4.12.

METHODS OF FINANCING AND IMPLEMENTATION			
<u>PROJECT COMPONENT</u>	<u>METHOD OF IMPLEMENTATION</u>	<u>METHOD OF FINANCING</u>	<u>TOTAL</u>
COMMUNITY-BASED WILDLIFE UTILIZATION	Direct Contract with facilitating contractor with sub-contracts to local NGOs or firms	Letter of Credit or Direct payment	\$ 2,700,000
Pilot Project Fund			(1,300,000)
Veld Product Fund			(500,000)
Economic Research/ Marketing Studies Management Planning & Cases Studies	Project Implementation Letter, direct contract, or grants with NGOs		(900,000)
WILDLIFE CONSERVATION	Direct Contract with facilitating contractor	Direct Payment	\$ 20,000
CONSERVATION EDUCATION	AID Direct Contract with facilitating contractor; PILs to Government; direct contract or grant	Direct Payment or Reimbursement	\$ 797,000
REGIONAL LIAISON	PILs and invitational travel orders	Direct Payment	\$ 300,000
Workshops			(200,000)
Travel			(100,000)
PROJECT MANAGEMENT	Direct Payment	Direct Payment	\$ 2,836,160
AUDIT	Direct Contract	Direct Payment	\$ 80,000

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the host government grant and will be committed using invitational travel orders or PILs. Funds for these activities will be disbursed on a direct reimbursement basis.

Non-Federal audits (NFAs) will be provided under the regional indefinite quantity contracts managed by RIG/Nairobi or under a direct contract awarded by REDSO/ESA. Evaluation will be handled under regional funds obligated under the USAID/Zimbabwe bi-lateral grant agreement. Evaluation will be done on a regional project-wide basis under a direct contract or indefinite quantity contract work order arranged by USAID/Zimbabwe at the end of year 3 and at the end of the project.

4.2.4. Administrative and Monitoring Arrangements

(a) A.I.D. Responsibilities

Responsibility for project management will rest with USAID/Botswana, while financial accountability will remain with USAID/Zimbabwe. An officer in the Mission's Office of Agricultural Development and the designated USAID/SADCC liaison officer will oversee project implementation, continuous monitoring of all project activities, drafting of Project Implementation Letters (PILs) and Project Implementation Orders (PIOs), and quarterly Project Implementation Reports.

USAID/Botswana will solicit from the DWNP, the Ministry of Education, and the selected facilitating contractor a coordinated first year operating plan. The plan is to contain a description of the proposed activities to be carried out, objectives for the year, resources required for their achievement, and how these will be deployed during the year.

The USAID/Botswana Project Manager will also arrange and supervise external project evaluations and audits in year 3 and year 6. The Project Manager is responsible for the review of the results with Mission, the Government of Botswana Implementing Committee and for taking corrective actions as necessary.

(b) Implementing Agency Responsibilities

Responsibilities of the Steering and Implementation Committees, facilitating contractor, Department of Wildlife and National Parks, other Ministries, local NGOs, and District authorities are clearly outlined below. A full-time Social Scientist will be hired. This individual will conduct baseline studies and other socio-economic data collection and analyses in the target areas. Results will be used to monitor project impact and success in reaching the lowest levels of the communities involved.

DWNP using aerial surveys will monitor changes in the wildlife population, habitat, and level of illegal poaching activities. This information will be used to inform off-take quotas, project revenues from wildlife, and to measure the effects of the wildlife management component. (For a complete discussion of monitoring and evaluation see the Evaluation and Audit Plan.)

DWNP, the Ministry of Education, and local NGOs, among other institutions, are expected to cooperate in the dissemination of its research and of the lessons learned through seminars, reports, and publications. In addition, staff relevant institutions will attend regional workshops on community-based resource management and utilization.

(a) Steering and Implementing Committees

As illustrated in the diagram below, all project activities, including the community based resource utilization and conservation education components, will be coordinated and monitored by an Implementing Committee composed of representatives from those institutions having direct responsibility for implementation, including relevant Ministries (e.g. MFDP, MCI, MLGL, Education, Agriculture, etc.), USAID/Botswana, the proposed contractor, and other organizations as appropriate. The Chairman of the implementing committee is elected by the members. This committee provides oversight of all project activities, with the implementing agencies making periodic progress reports.

There will also be a Steering Committee at the Ministerial Permanent Secretary level, for which the Ministry of Finance and Development planning will propose membership. USAID/Botswana will be a member of this committee. Dependent on decisions taken by government, the existing Natural Resources Technical Committee (NRTC) may act as the Steering Committee. The Steering Committee will be charged with coordination among ministries, proposing recommendations for revisions in policy, negotiations with USAID/Gaborone concerning significant changes in project activities, and other responsibilities as appropriate.

(b) The Facilitating Contractor

A facilitating contractor, contracted by and to the USAID/Botswana Mission, with the concurrence of the Government of Botswana, will provide services to assist in the implementation of the project. The work of the contractor will complement the policy setting, technical support, and oversight responsibilities of government agencies such as the Department of Wildlife and National Parks (DWNP), who will not be direct beneficiaries or otherwise receive assistance under the project until such time as the project authorization is amended to permit such support.

The terms of reference for the contractor and the relevant terms of reference for the Wildlife Utilization unit are outlined below to illustrate the complementarity and the responsibilities of each organization.

Terms of Reference for the Facilitating Contractor

- o To report to the Government of Botswana, through the Implementing Committee, and to USAID/Botswana, on project activities, project progress, and expenditures.
- o To prepare an annual workplan and budget to be submitted to the implementing committee and approved by the Government of Botswana and USAID.

- o To provide a funding mechanism for support to community based wildlife utilization projects, development of veld products utilization, and socio-economic research proposed by communities and district councils, potentially through local NGOs.
- o To provide long-term technical assistance, including (1) a social scientist; (2) a resource economist; and (3) two field extension officers.
- o To provide the first level of administration and monitoring of resource utilization projects.
- o To determine if projects approved by the Director of the DWNP meet the criteria for funding jointly agreed to by the Government of Botswana and USAID/Botswana and, jointly with the DWNP, to propose these activities for approval by the implementing committee.
- o To strengthen local NGOs by providing support, upon request, in project definition, proposal writing, organizational development, and project management.
- o Proposed Terms of Reference (related to Community Based resource Utilization Activities) of the Wildlife Utilization Unit, DWNP
- o To promote the concepts and activities of wildlife utilization to district authorities and communities.
- o To provide technical support and undertake feasibility studies of proposed projects.
- o To advise the Director of the DWNP in the selection of projects for funding.
- o To provide the first level of technical oversight of community based resource utilization projects.
- o To suggest, as needed, revisions in project policy and implementation to the implementing committee.
- o To collaborate with responsible departments involved in the use of veld products (e.g. those in the Ministry of Agriculture).

The project design team found that, at this time, none of the local NGOs have the necessary scope and management capacity to act as the facilitating contractor. Therefore, the project will provide an outside organization to act in the role of facilitating contractor. However, one of the primary functions of the proposed contractor is to strengthen a local NGO to assume this role by the completion of the project. The contract will be competitively bid following standard USAID procedures. Representatives from the Government of Botswana will be represented on the selection committee. The proposed contractor should meet, at a minimum, the following criteria:

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- o Experience collaborating with host-country governments, indigenous NGOs, and USAID Missions throughout Africa;
- o Particular experience regarding wildlife activities in Botswana, specifically community based resource utilization projects, including the identification of wildlife utilization projects for the Government of Botswana;
- o Extensive experience managing and administering wildlife related activities and small grants in developing countries; and
- o Demonstrated leadership in the field of natural resource development and conservation.

(c) Local NGOs

A number of local NGOs, many of which are currently promoting conservation of the resource base and utilization of wildlife or veld products, work in the rural sector of Botswana. Within the implementation framework, these institutions will undertake community development activities with local communities and district authorities. These NGOs will consult with the DWNP Wildlife Utilization unit on the technical aspects of wildlife veld product utilization projects. The NGOs, in collaboration with district authorities, may then apply for funding under the project. Given the objective of strengthening a local NGO to assume the responsibilities of the facilitating contractor by the completion of the project, it is expected that one of the NGOs described below will assume an increasingly important role in the implementation of activities over the life of the project. An illustrative of selected local NGOs active in wildlife and veld product utilization projects follows:

Cooperation for Research, Development, and Education (CORDE) supports production groups throughout Botswana in a wide range of activities (e.g. horticulture, food processing, dairy, crafts, and wildlife utilization, among others). CORDE assists groups to develop the necessary skills and capabilities for success by providing organization and management advice, researching production opportunities and requirements, providing training in problem solving, planning, accounting and other skill areas, and assisting in marketing where necessary. The CORDE approach involves all actors in the design and implementation process thus ensuring a high degree of commitment and resolve from every worker-member. CORDE is currently collaborating with the Wildlife Utilization Unit in the DWNP to implement a game ranching scheme in Ghanzi District and a cooperative hunting and handicraft scheme in Southern District. Ninety percent of the groups CORDE works with are women's groups, with the majority of the remaining 10 percent being mixed women and men.

Kalahari Conservation Society (KCS) is dedicated to the conservation of Botswana's environment. Its aims are to promote knowledge of Botswana's wildlife resources through education and publicity, to encourage and finance conservation research and management planning, and to promote and support

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policies of conservation towards wildlife and its habitat. Projects have included a computerized license program assisting the DWNP, environmental impact assessments, development of management and land use plans, and aerial surveys. Most recently, KCS is considering becoming involved in the implementation of wildlife utilization projects.

The Natural Resources Conservation Trust (NRCT) of Botswana is a NGO proposed by the Draft National Conservation Strategy. Its objectives are to: (1) promote the enhancement of the natural and social environmental resources of Botswana; (2) facilitate cooperation among existing NGOs engaged in natural resource conservation; (3) promote the formulation and implementation of conservation projects at the village level; and (4) enhance public awareness of conservation through training efforts and information dissemination. Efforts are currently being made to finalize the constitution and the deed of trust so that the NRCT can be registered.

Botswanacraft Marketing Corporation promotes income-generating activities and provides rural households, primarily women, with access to income by supporting the development, production, and marketing of crafts. Botswanacraft is also concerned with product design and development, training rural residents to improve quality and production, and with issues related to the utilization of raw materials.

Thusano Lefatsheng is engaged in rural development through agricultural research, extension and marketing. The organization aims to meet the needs of rural people for alternative sources of income by developing new cash crops and techniques and extending these to producers. Thusano Lefatsheng conducts research and extension on the exploitation of veld products, their domestication, processing and marketing. Efforts to date have focussed on the grapple plant.

(d) District Councils and Communities

The district authorities and communities have the primary responsibility for identifying, designing, and implementing resource utilization projects. The framework outlined above provides technical and administrative support to the community, but it is the latter who must determine its own development priorities and the path it will take. Thus, in some cases, District Councils will propose activities for funding through the DWNP without a direct link with a local NGO.

(e) Peace Corps

Peace Corps is not expected to play a role in project implementation. However, qualified volunteers matched with appropriate host-country personnel could enrich the effort by providing skills in community development, handicraft production, processing of wildlife products, and marketing, among other skills.

4.2.5 Procurement Plan

The services to be provided for this component of the project will be procured through a competitive request for proposals (RFP) issued by A.I.D. Services will include a six-seven person technical assistance long-term management team and home-office support services. The Contractor will manage a number of subcontracts with indigenous non-governmental organizations (NGOs) for activities under the pilot projects, veld products and environmental management sub-activities, subcontracts for various baseline data studies, and other long- and short-term technical assistance in the areas of economics, sociology, artisinal training, education and outreach coordination. The technical assistance will be staffed out with locally-hired (i.e. Botswana) personnel to the maximum extent practicable.

It is anticipated that supplies will be procured both through the above-described technical assistance (TA) contractor and directly through AID in Washington (M/SER/OP) or a Regional Contracting Office. The personal computers, office equipment and the charter of a Botswana aircraft will be procured through the TA contract. Vehicles, reference materials for the Maun Education Center, and a desk-top publisher, and audio-visual equipment and camping equipment for the wildlife clubs will be procured via PIO/Cs issued to M/SER/OP or RCO. The TA Contractor, however, will be responsible for inspection, acceptance, customs clearance and distribution of all procured supplies.

The exact requirements for supplies cannot be determined until the project implementation stage when the TA contractor has had the opportunity to provide necessary inputs to the structure of the proposed activities. It will be advantageous for USAID to consult RCMO as soon as possible after signing of the Proag to ensure that relevant commodity related issues have been addressed, such as development and review of specifications, and choice of procurement methods for the mix of commodities to be procured.

Periodic evaluation services will be provided through a technical assistance contract let for overall project evaluation through USAID/Zimbabwe or, at the discretion of USAID Botswana, from its PD&S or other local resources.

Non-federal audits (NFAs) of the TA contract will be provided via regional indefinite quantity contract (IQC) work orders or institutional contracts let by REDSO/ESA; at the end of the contract year No. 3 and at the of the project.

Procurement Timetable

A. At Time of ProAg Signing:

- o PIO/T for TA contract signed
- o Commodity specifications reviewed by RCMO and PIO/C(s) for supplies to be purchased by AID signed

- o All necessary source/origin/nationality waivers signed
- B. 90 Days After Issuance of PIO/C(s): Supplies procured
- C. 120 Days After Issuance of PIO/T: TA contract awarded
- D. 150 Days After Issuance of PIO/C(s), PIO/T: Supplies and TA begin to arrive in Botswana
- E. 180 Days After Issuance of PIO/T: Aircraft charter in place, other supplies to be procured by Contractor or ordered
- F. 240 Days After Issuance of PIO/T: Final supplies arrive in Botswana

4.3. Project Analysis Summaries

4.3.1 Technical Analysis

Botswana is in the process of gazetting nearly 20 percent of its land area as Wildlife Management Areas (WMAs). Much of this land provides vital linkages between protected areas and between areas of key habitats and seasonal refugia of migratory animals. Much of this land is devoid of perennial surface water or has little, or unsuitable, groundwater, and has a low potential for livestock development. This land does, however, have a high potential for wildlife utilization programs involving rural poor. Open access to the resource, excessive hunting, cordon fences, and drought have, over the last decade, resulted in greatly depleted wildlife populations in most GMAs. Existing management structures and systems have not worked.

There are strong ecological arguments to suggest that the productive and sustainable use of these arid rangelands will ultimately depend on how effectively the wildlife resources are managed. Given the meager resources of the Department of Wildlife and National Parks (DWNP) in relation to the enormous area of land it has to manage, the involvement of rural communities and district authorities in resource management and protection offers the only hope of rehabilitating the wildlife resource base. This project seeks to strengthen the capacity of the DWNP's Wildlife Utilization Unit and local non-governmental organizations (NGOs) to service a growing interest in wildlife utilization at the district and community level. The technical assistance proposed should meet this expectation.

Because of the inherently low densities of wildlife compared to other parts of the region, extensive, low-input systems of wildlife management will be needed. Existing rural communities with their local knowledge and experience are well placed to provide this type of management and harvesting once given appropriate incentives, guidance, and training. Safari hunting and non-consumptive tourism are also very appropriate for most potential project

areas except perhaps in Southern District where populations are presently greatly depleted and livestock dominate the ecosystem.

The elephant population of Botswana, which it shares with western Zimbabwe, is the largest in the sub-region. The joint population presently numbers approximately 80,000 elephant, with some 75 percent of these living in Botswana. The population is growing at 4-5 percent per annum, which provides a doubling time of about 15 years. The Government of Botswana intends to stabilize the population at existing levels by culling. The expertise to carry out this type of operation exists within the region and is available to the Government. Both for the management and the protection of the resource, it is vital that elephant numbers, distribution, mortality rates, and effects on habitats are monitored regularly. Provision by this project of funds for an aircraft and pilot to be at the disposal of DWNP staff to carry out these surveys twice a year is probably the best insurance that the essential data for management and protection of the resource will be available.

4.3.2 Social Soundness Analysis

(1) Introduction

The social soundness analysis was prepared on the basis of a review of the extensive documentation in the cultural, socioeconomic and politico-legal dimension of a contemporary Botswana society, together with discussions held with government administrative personnel, district council authorities and local traditional and elected leadership in possible pilot project areas. Annex III presents a detailed discussion of: (a) cultural and historical context; (b) the policy environment ("national policy perspective" and "constraints in the policy environment"); (c) frameworks for community-based wildlife management ("social, administrative and geographical space"); (d) an illustrative model; (e) project impacts, analyzed in terms of beneficiaries and sectional interests; (f) potential constraints and problems; (g) implementation issues; and (h) diffusion potential.

(2) Major Findings

The project is considered feasible in the current policy environment in Botswana, the socio-legal context being permissive and the general policy direction, while containing constraints, being generally supportive to the decentralized proprietorship of natural resources. No major cultural impediments exist and the project components are responsive to the economic and self-management aspiration of the target populations, which are both generally disadvantaged in the development process and are also located in areas rich in wildlife resources. The project will thus, contribute to the attainment of equity principles in Botswana society.

The analysis suggests criteria necessary for the selection of communally-based natural resource management units, which include: (a) a scale small enough to provide cohesive social and management processes; (b) a territorial base for

proprietorship large enough to contain wildlife resources of significant economic value; and (c) location in district authority jurisdiction supportive of devolution in proprietorship to community levels. A review of possible project sites indicates that these criteria can be met in a number of instances, although it is considered premature to suggest specific designations at this stage. This should be a first-phase project activity in implementation.

Communities and households in relatively remote but wildlife-rich areas of Botswana are likely to be the principal beneficiaries, both economically and in terms of strengthened capacities for local self-governance. Government and district authorities will also benefit, since devolution of resources can provide for more cost-effective administration and increased political legitimacy at these levels. Within communities, the interests of women and economically marginalized categories such as semi-nomadic "remote area dwellers" have been considered and it is suggested that project implementation should give special attention to the problems and potential presented.

Potential constraints and obstacles are also considered. These are in part legislative and institutional, and current structure, while permissive for the project design, will have to be adjusted for the full potential of the project to take place. The obstacles are in part also political, in that certain sectional elite interests may resist trends towards devolution of resources. It is considered that the project will, through augmenting local capacities to articulate community inspiration, contribute to an effective resolution of the issues resolved. It is also suggested that in the implementation phase an adaptive and evolutionary strategy be adopted, to include larger community-based land use planning and community-based extension activities. The diffusion potential of the project is high, with potential for replication throughout many rural areas in Botswana.

(3) Conclusion

In summary, the analysis finds that the project will address the needs of disadvantaged but wildlife-rich communities in Botswana, building on social dynamics currently present and providing more effective management and utilization of wildlife resources in pilot project areas. The model is replicable throughout Botswana, going beyond sustainable wildlife utilization to encompass the broader management of natural resources and to augment the development of capacities for local and community governance.

4.3.3 Institutional and Administrative Analysis

The institutions involved in implementing the Natural Resources Management Project in Botswana include (1) the Department of Wildlife and National Parks (DWNP) of the Ministry of Commerce and Industry, (2) the Curriculum Development Unit, the Department of Primary and Teacher Education, the Department of Secondary Education, and the Department of Non-Formal Education in the Ministry of Education, (3) a number of local NGOs (including the

Kalahari Conservation Society, Co-operation for Research, Development, and Education, the Forestry Association of Botswana, and Thusano Lefatsheng), and (4) district and local-level institutions, including district councils, land boards, village development committees, and tribal authorities. It has also been proposed that a contractor be engaged to administer part of the project. This contractor could be a non-government organization or another institution which has had experience in implementing community-based natural resource management projects in Africa.

There is already a model in Botswana for the kinds of implementation and administrative arrangements which have been proposed for this project. Interministerial bodies comprising representatives from the Ministries of Commerce and Industry, Local Government and Lands, Mineral Resources and Water Affairs, and Agriculture have overseen projects involving natural resource development in several parts of the country. There is also a precedent for a non-government organization working in conjunction with central government ministries and district officials in the drawing up of land use and management plans.

The assessment of the institutional and administrative capacity of Botswana government institutions, local non-government organizations, and district and local level bodies reveals them to be fully capable of implementing this project. At the same time, it is clear that additional management and technical assistance will be necessary in order to ensure that existing institutions are not overtaxed by the additional administrative and financial responsibilities which this project will entail. One of the goals of this project is to increase national organizational and managerial capacity to implement community-based natural resource management programs. It is anticipated that indigenous institutions in Botswana will have the ability to sustain key activities beyond the life of the present project.

The analysis of the implementing capabilities of DWNP suggests that although significant progress has been made in expanding staffing levels, additional actions are necessary in order to ensure that the department will be able to undertake additional responsibilities in wildlife management and community utilization of wildlife resources.

The implementing organizations for the environmental education component of the Natural Resources Project include several departments in the Ministry of Education, the Wildlife Education Unit in DWNP, and two non-government organizations, the Wildlife Clubs of Botswana and the Kalahari Conservation Society. The institutional and administrative analysis of these departments found them to be fully capable of implementing the project. Some technical assistance will be required under the project to provide support to the agencies involved in environmental education.

Non-government organizations are playing an increasingly important role in Botswana's development. New initiatives have been made on the part of NGOs in the 1980s to promote production oriented and income generation activities as well as provide information to the public and a wide range of development issues.

A number of non-government organizations in Botswana could undertake community based wildlife utilization activities and carry out research projects. An examination of the objectives, staffing patterns, and institutional capacity of the various NGOs in Botswana indicates that some of them could provide useful assistance to rural communities under the Project.

A number of district and local institutions, both traditional and modern, which will be involved in project implementation in Botswana. Modern local government institutions include the District Administrations, the District Councils, the Land Boards and Subordinate Land Boards, district-level committees (e.g. the District Development Committee) and local level committees (e.g. Farmers Committees). The most important modern governmental institutions at the local level are the Village Development Committees (VDCs). VDCs are voluntary, multipurpose organizations which meet periodically to discuss development issues and plan and implement community projects.

One of the crucial issues relating to local institutions in the project is that relating to resource management capacity at the local level. It is clear that central and district government authorities will have to allow local communities to have greater control over their natural resources and be able to benefit from revenues derived from wildlife utilization activities. Finally, since traditional authorities (e.g. chiefs and headmen) continue to play important social roles in rural Botswana, efforts will need to be made to include them in the project planning and implementation process.

Table 4.14.

DATA ON EXPLOITATION OF FAUNAL AND INSECT SPECIES BY TYHA WOMEN IN THE NATA RIVER REGION, 1976

	No.	Percentage
No. of women interviewed	52	100
No. of women who gathered wild foods in 1975-76	43	82.7
No. of women who collected mopane worms (<u>Gonimbrasia belina</u>)	32	61.5
No. of women who collected <u>mogogoro</u> (mopane worm chrysalids)	30	57.7
No. of women who collected tortoises	22	42.3
No. of women who captured leguaans (iguanas)	17	32.7
No. of women who collected guinea fowl eggs	7	13.5
No. of women who killed birds	1	1.9
No. of women who killed small antelopes	6	11.5
No. of women who killed large antelopes	2	3.9

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Table 4.15.

Types of plants exploited by remote area populations in Botswana

Scientific Name	Common Names	Description and Uses	Seasonality
<u>Acacia giraffae</u>	camelthorn, mogotlo (Setswana), //ah (!Xo), go (Kua), /una (!Kung)	tall tree (up to 10 m); pods eaten, also gum	all year; pods fall in the dry season
<u>Adansonia digitata</u>	baobab, mowana (Set- swana), #m (!Kung), nyim (Tyua)	huge tree (up to 20 m) with thick trunk; fruits, seeds and sometimes shoots are eaten	fruits available from May-October
<u>Bauhinia macrantha</u>	coffee bean, machancha (Se- swana), #en/e (Kua), /en (G/wi)	meter high shrub with long pods containing beans; roasted, ground, boiled into coffee	ripens January- June, found stored a year after harvest- ing
<u>Boscia albitrunca</u>	shepherd's tree, motlope (Setswana), //one (Kua), n/oni G/wi, za (!Kung)	medium-sized tree (up to 10 m) evergreen; has small pale berries which are eaten raw; leaves chewed to relieve thirst	berries ripen January-May
<u>Citrullus naudinianus</u>	gemsbok cucumber, mokopane (Setswana), tsha (!Kung), nkxa (Kua), ka: (G/wi)	melon on vine with long runners sprouting from a bitter meter long tap root; melon eaten raw or dried and pounded up; seeds are roasted	November-August with peak in February-May
<u>Citrullus vulgaris</u> Schrad. (or <u>Colocynthus citrul-</u> <u>lus</u>)	tsama melon, mokate (Setswana), d/un (Kua), n#a (G/wi) n//an (G//ana)	melon on vine attached to deep mass of roots, annual plant similar to cultivated species	ripens April-June, cut into strips and dried, stored for several months

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Table 4. 15. (cont...)

Scientific Name	Common names	Description and Uses	Seasonality
<u>Coccinia rehmannii</u>	magapa (Setswana), /a (G//ana), g/a: (G/wi), gaba (Kūa), /ga (!Kung)	vine with large tuber; tuber eaten as are small fruits from vine; tuber must be cooked	year-round but usually collected in dry season; fruits November-May
<u>Cucumis hookeri</u>	spincy cucumber, monyaku (Setswana), nʔo'no (G/wi), nʔ enu (Naron), mʔibi (Kūa)	creeping annual vine with shallow roots; cucumber-like fruit eaten raw or roasted	April-June
<u>Grewia flava</u>	raisin berry, moretlwa (Setswana), kxum (Kūa), kxam (G/wi)	woody shrub with small sweet berries, either eaten raw or pounded up and eaten with porridge	ripens November-March, stored year-round
<u>Hyphaene ventricosa</u>	fan palm, vegetable ivory palm, mokolwane (Setswana), /hani (!Kung)	bushy palm which grows in clumps; sap made into wine, fronds used for basket manufacture; heart eaten roasted	October-December for fruit; other products available year-round
<u>Ochna pulchra</u>		small tree with shiny leaves; sour black fruits roasted and eaten	November-February
<u>Raphionacme burkei</u>			year-round; sometimes transported to camp and replanted
<u>Ricinodendron rautanenii</u>	mongongo nut, mokongwa (Setswana), /um (Tyua), //''xa (!Kung)	tall tree growing on dune crests, has nut with outer fruit cover, boiled, nut roasted and eaten	fruit ripens April-November, nut available all year

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Table 4.15. (cont...)

Scientific Name	Common Names	Description and Uses	Seasonality
<u>Sclerocarya caffra</u>	marula (Setswana), gai (!Kung), !kaba (Tyua)	tall tree with yellow or green fruits; fruit eaten raw, dried and stored	fruits available December-January
<u>Strychnos cocculoides</u>	monkey orange, mogorogorwana (Setswana), n'lo (!Kung), d//ao'a (Kūa), d/ua	medium-sized tree with large yellowish-brown hard-shelled fruits; fruit eaten raw	November-June
<u>Terfezia pfeilli</u>	kui-zum (Kūa), kuche (G//ana) kutsi (G/wi)	Kalahari truffle, fungus which grows below ground, eaten boiled or roasted	November-March
<u>Tylosema esculentum</u>	morama (Setswana), /oi (G//ana), //odu (Kūa), tsi (!Kung), /xwi (G/wi)	beans in pods on long vines which grow from an edible underground tuber, beans roasted, tuber also roasted	bean ripens April-May, tuber used year-round
<u>Vangueria infausta</u>	wild medlar, mmilo (Setswana), bīro (Tyua)	medium-sized shrub with small yellow fruits which are eaten raw	December-March; formed into cakes and stored year- round
<u>Vigna dinteri</u>	kxam/ca (Kūa), om/i (G/wi)	a climbing vine with a long root with potato- like growths, eaten raw or roasted	used in dry season (May-August/September)

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NATURAL RESOURCE MANAGEMENT PROJECT

**USAID Project No. 690-0251
SADCC Project No. 5.0.18**

MALAWI COMPONENT

5. SADCC/Malawi Project Component Description

The concept of community-based management of resources, still in its infancy, faces numerous legal, administrative, and technical problems. Its development will require a much better understanding of the issues and implementation of action programs at the national and regional levels. In 1988, SADCC adopted a "Regional Natural Resources Policy and Development Strategy", which emphasizes the importance of sustainable utilization of wildlife and the need for providing economic returns to local communities. The A.I.D. funded Natural Resources Management Project complements SADCC's natural resource objectives. The project is consistent with the SADCC Programme of Action, specifically, the SADCC project entitled "Regional Development of Community-based Management and Utilization of Wildlife Resources in Marginal Areas" (SADCC Number 5.0.18). The SADCC/Malawi component is comprised of two principal activities: Project Coordination, and Project Monitoring and Evaluation.

5.1. Project Elements

5.1.1. Project Coordination

To ensure the achievement of SADCC regional objectives, SADCC representatives and A.I.D. representatives agreed that the individual country programs must be coordinated at the regional level. It was further decided that the Sector Coordinating Unit for Forestry, Fisheries and Wildlife of SADCC will assist in the dissemination throughout the SADCC region of results and lessons learned from implementation of project funded utilization and management of wildlife activities in participating SADCC member states. Drawing upon results of project activities in three SADCC countries, Botswana, Zambia and Zimbabwe, the SADCC Sector Coordinating Unit will: compile baseline information; monitor changes that occur; and assemble data on wildlife resources, rural communities, and government and non-government institutions.

The objective of project coordination efforts is to foster a better understanding and technical knowledge of local, national, and international actions required to ensure that benefits accrue to local communities from wildlife utilization and conservation. Funding will be provided to the SADCC Sector Coordinating Unit through the Government of Malawi for purposes of carrying out research, analysis, and publication of results, and for conference planning. The project will fund dissemination of documents through the SADCC technical representatives in each member government and through annual workshops to be held in each of the last four years of the project (1992-1995). Each workshop will be held in a different participating country and will offer opportunities for presentation of papers, discussion, and field observational visits.

The project will also provide assistance for the SADCC Coordinating Unit to organize liaison visits and technical seminars, and to service the Project Coordinating Committee. As a result, the project will both, integrate country-specific components and strengthen the institutional capacities of SADCC to address issues of natural resource utilization on a regional basis.

5.1.2. Project Monitoring and Evaluation

The project will be subjected to two sets of monitoring and evaluation processes to be funded from the SADCC/Malawi Component. The first is the continual, internal evaluative exercise where information about the results of the application of community based resource utilization will be monitored on a continual basis. The records will be available to all interested parties and will serve as a source of information for external project evaluators.

The second form of monitoring will examine progress towards targets and planned outputs, one to be conducted at mid-term and the other shortly before the Project Assistance Completion Date. The evaluation plan includes four critical points for in-depth research to assess the achievement of planned outputs: (i) baseline studies against which to measure change over time; (ii) an implementation review; (iii) a mid-term evaluation; and (iv) a final impact evaluation.

The baseline studies will be undertaken on a country-specific basis, and will involve two types of baseline studies: (a) data on wildlife populations and their habitats in Botswana, Zimbabwe, and Zambia; and (b) socio-economic data on the residents and institutions of the project target areas. Given that the patterns of use of the natural resource base by wildlife and human populations are interrelated, the results of the baseline studies must be shared and data requirements modified as needed.

The mid-term and final evaluations will be conducted on both a regional and a country by country basis in the four countries in years three and six, respectively. The mid-term evaluation will assess progress made to date in achieving planned outputs in the four participating countries. The evaluation will include a preliminary comparison of the validity of the models being pursued, taking into account differences in national policies and socio-economic contexts.

The mid-term evaluation is intended as a tool to plan for the remainder of the project, with the evaluation team and project implementors jointly reviewing and modifying the objectives and expected outputs. In addition to reviewing change in terms of the data collected during the baseline studies, the mid-term evaluation will:

- o Assess the validity of assumptions made during project design;
- o Assess the degree to which target groups are receiving revenues and other benefits from wildlife utilization activities;
- o Gauge the efficiency and effectiveness of the collaborative arrangements between implementing agencies;
- o Assess the effects of changes in national and international policies regarding wildlife use on community based resource utilization, as well as the reverse: the effects of the demonstration projects on national policies;

- o Assess the capability and capacity of local institutions for self-management and self-determination regarding natural resource utilization;
- o Identify causal factors if the project is not achieving the expected outputs; and
- o Recommend changes in design and produce a status report on plans to incorporate additional target areas, if appropriate.

The final impact evaluation team will collect data for comparison with that in the baseline studies, as well as with the data generated and the conclusions and recommendations made during the mid-term evaluation and at other points during the project implementation. At the regional level, the evaluation will compare the different models being applied in each country and make hypotheses regarding their effectiveness and impact on community residents, given the differing political, economic, environmental, and cultural contexts. The coordination and information dissemination roles of the SADCC Coordinating Unit in Malawi will also be assessed.

5.2. Project Implementation

Figure (Fig. 1) illustrates the relationships among the SADCC Unit (as Technical Sub-Committee), the three governments implementing the project within their local communities, USAID, and other implementing agencies. Dissemination of analytical data and lessons learned will take place through a periodic newsletter, by dissemination of documents through the SADCC technical representatives in each member government, and through annual workshops to be held in each of the last four years of the project (1992-1995). Each workshop will be held in a different country, and will offer opportunities for presentation of papers, discussion and field observation.

5.2.1. SADCC Sector Coordinating Unit

The implementing agency responsible for the SADCC/Malawi Component of the Natural Resources Project is the SADCC Sector Coordinating Unit for Forestry, Fisheries, and Wildlife located in the Department of National Parks and Wildlife (DNPW) of Malawi's Ministry of Forestry and Natural Resources.

Under the regional Natural Resources Management project the SADCC Coordinating Unit will establish a Project Coordinating Committee on which the SADCC Coordinator, USAID as SADCC Cooperating Partner, the three participating states, and any contracting agencies or non-governmental grantees will be represented. The Project Coordinating Committee is to be chaired by the SADCC Coordinator for Forestry, Fisheries, and Wildlife. The Project Coordinating Committee will collaborate closely with the Project Implementing Committees in each of the participating states to implement the Regional Communication and Exchange of Information activity of the project.

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In response to a need for transport and fuel to facilitate project coordination, the project will provide a four-wheel drive vehicle and funds for fuel costs during the six-year life of the project. The Department, which has its own staff of mechanics, will maintain the vehicle and provide a driver. The vehicle will be registered as a Government vehicle and will be subject to regulations as to its use. It will be available to the Project Adviser according to his needs.

5.2.2. Project Adviser

The Chief National Parks and Wildlife Officer will supervise a Project Adviser funded by the project. The Project Adviser will be a specialist in data collection and analysis and will also serve as secretary of the Project Coordinating Committee. The DNPW will ensure administrative and logistical support, including secretarial services. The Adviser will share an office with a Planning Officer who will assist in the work of the project and, in the process, become familiar with computer analysis of data. The Department Chief has also indicated his intention to request an additional staff member to help coordinate the SADCC program as the number of projects under implementation expands.

The Project Adviser must possess the following qualifications: (i) experience in data collection and analysis; (ii) familiarity with management of wildlife and community-based wildlife activities; (iii) experience in organizing workshops and seminars; (iv) experience in publication of specialized newsletters, reports, and papers; (v) ability to coordinate effectively the interests of a number of governmental and non-governmental organizations engaged in a common effort; and (vi) experience in working in government departments and international development agencies.

The Terms of Reference for the Data Collection and Analysis Specialist who will serve as Project Adviser in the Department of National Parks and Wildlife are as follows:

1. Review data available to SADCC relating to management and utilization of wildlife in the SADCC region, drawing upon (a) the published literature, (b) government reports, (c) unpublished materials, and (d) information in the files of the SADCC Coordinating Unit and of member governments.
2. Assist the SADCC Unit in collecting additional data to fill gaps in the data base from public and private sector sources.
3. Develop the specifications for procurement of computer, desktop publishing, and other equipment required for data compilation, analysis, and dissemination.
4. Draw together the results of conferences, discussions, and meetings on wildlife management and community-based utilization activities such as those of the Training Seminar sponsored by FAO under SADCC Project No. 5.0.12 and the planned World Bank seminar on utilization of wildlife resources.

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5. Assist in establishment of a standardized data collection and monitoring system in conjunction with the participating countries, and other specialists and potential users as appropriate.
6. Enter data on wildlife and commodities utilizing wildlife in order to establish baseline information and provide periodic updates to discern trends and patterns.
7. Assist in the analysis of such data in order to project the impact of trends on wildlife conservation and management, the ecological status of the region, the socioeconomic status of rural communities engaged in such management, and the institutional structure and capacity of organizations involved in wildlife related activities (e.g., District Councils and wildlife management committees).
8. Compile reports and publications on the results of the research and management activities, as well as disseminate periodic information sheets to the SADCC member countries.
9. Organize an annual workshop for SADCC participants (the first to be held in 1991) to discuss the results of analysis of wildlife management in general and community-based wildlife management in particular, the present and potential impact of community management of wildlife on conservation and incomes, and recommendations on principles and procedures to be followed in the future.
10. Assist the Technical Coordinator for Wildlife in liaising with SADCC member countries and responding to requests for information and assistance from these countries.
11. Prepare annual work plans and assist in the management and administration of project activities, including the preparation of project implementation letters, keeping records on disbursements, and liaising with the SADCC Cooperating Partner.
12. Serve as Secretary of the Project Coordinating Committee, and liaise with the national project coordinator committees in Botswana, Zambia, and Zimbabwe.
13. Maintain minutes of meetings of the Project Coordinating Committee and the various national project coordinating committee meetings.
14. Assist the mid-term review team and the evaluation team which will examine project implementation in the third and final years of the project.
15. Assist the SADCC Technical Coordinator in planning tours to project areas for SADCC representatives and personnel of departments and non-governmental organizations involved in national and local-level project activities.

16. Draft policy guidelines for the SADCC Coordinating Unit in the areas of wildlife management, conservation, and promotion of community-based income generation and institution-building activities.
17. Organize periodic meetings of the Project Coordinating Committee to review progress under the project.
18. Identify major issues in community-based wildlife management and conservation, in conjunction with participating organizations, and organize meetings or symposia on these issues (e.g., problems of elephant conservation and management, grassroots economic development activities, and methods for strengthening local institutions).

5.2.3. A.I.D. Responsibilities

USAID project administration, including assistance with procurement of vehicle and office equipment, will be provided by USAID/Zimbabwe under the direction of a USAID Officer of the Agricultural Development Office, who will be the drafter of the initial (and subsequent substantive) Project Implementation Letters (PILs). The Assistant Agricultural Development Officer of USAID/Zimbabwe will monitor the work of the Project Adviser according to agreed terms of reference and in relation to the other components of the project. USAID/Zimbabwe will also serve as the authorized accounting services station for all project components and will be responsible for management and contracting for evaluation assistance. Vouchers are to be submitted for payment to the Controller, USAID/Zimbabwe.

5.2.4. Project Implementation Schedule

The proposed project implementation schedule appears as Table 5.1.

5.2.5. Project Budget

The project budget appears as Table 5.2. through Table 5.9.

FIG.1: ORGANIZATION OF REGIONAL NATURAL RESOURCES MANAGEMENT PROJECT

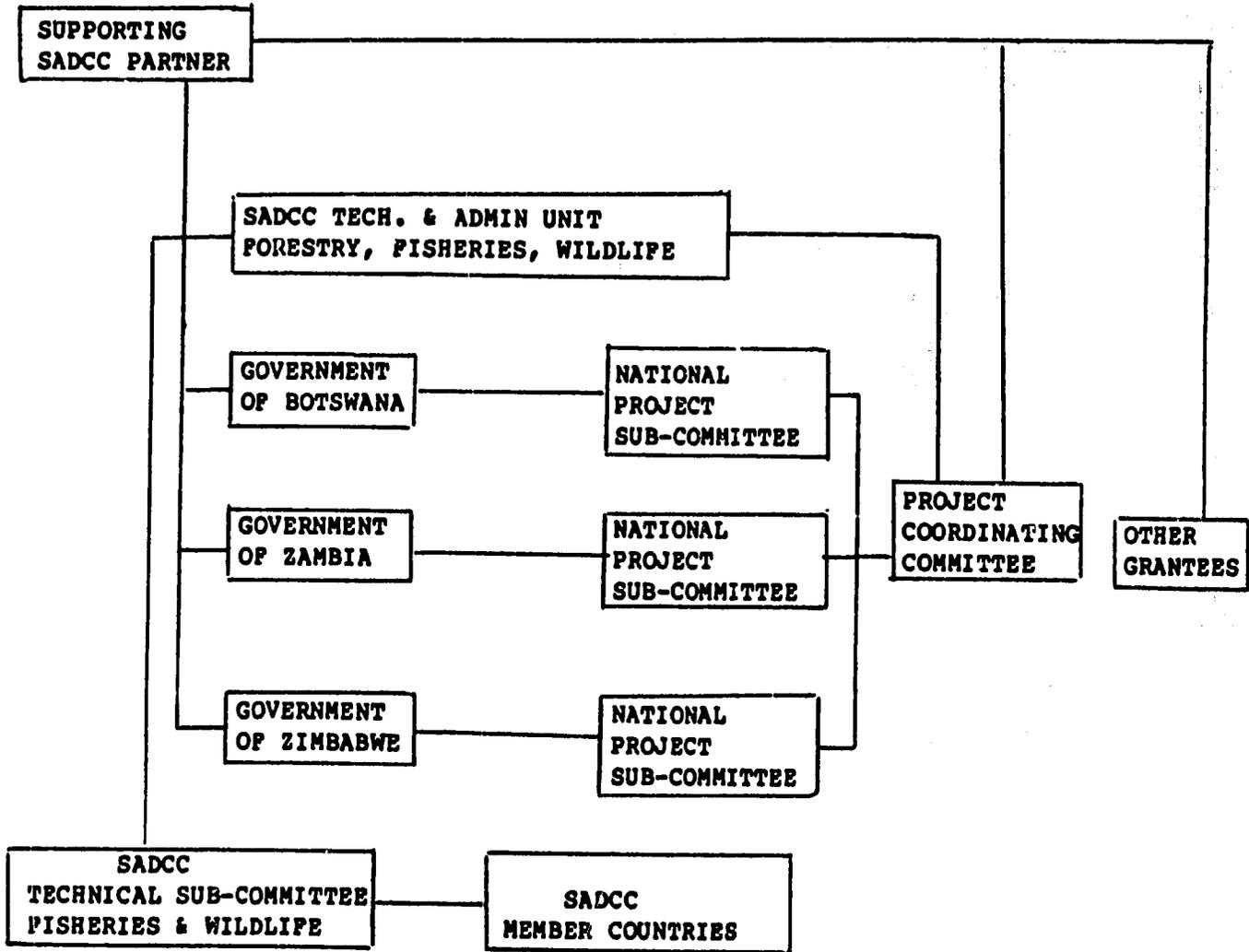


Table 5.1.

Implementation Schedule - Malawi

	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.6	PACD
PROJECT MANAGEMENT							
Solicitation prepared and advertised	x						
Selected Contractor operations begin in country	x						
Commodities procured		x					
REGIONAL DATA COLLECTION, ANALYSIS & INFORMATION DISSEMINATION							
Data Collection and Analysis	x						x
Distribution of Newsletter on Community-based resource utilization	x						x
Organizing annual regional SADCC workshop on community-based wildlife utilization		x	x	x	x	x	
Regional Liaison							
	x						x
Audit							
			x			x	
Regional Evaluation							
			x			x	

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Table 5.2.

USAID/MALAWI
SOURCES AND USES OF FUNDS
(IN US \$)

	U S A I D		GOVT. OF MALAWI		TOTAL		GRAND TOTAL
	FX		FX	LC	FX	LC	
I. TECHNICAL ASSISTANCE	475,000	88,000		227,500	475,000	315,500	790,500
II. COMMODITIES	66,500				66,500		66,500
III. RESEARCH	89,000	30,000			89,000	30,000	119,000
IV. REGIONAL COMMUNICATION	95,500	40,000			95,500	40,000	135,500
VI. AUDIT	510,000				510,000		510,000
VI. CONTINGENCY (5%)	69,700				69,700		69,700
VII. INFLATION (5%)	66,300				66,300		66,300
GRAND TOTAL	1,372,000	158,000		227,500	1,372,000	385,500	1,757,500

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Table 5.3.

GOVERNMENT OF MALAWI
HOST COUNTRY CONTRIBUTION
(U.S. Dollar Equivalent)

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
COUNTERPART STAFF						
SALARIES/BENEFITS*	20,000	20,000	20,000	20,000	20,000	100,000
OTHER STAFF TRAINED*	10,000	10,000	10,000	10,000	10,000	50,000
PER DIEM/SUBSISTENCE*	5,000	5,000	5,000	5,000	5,000	25,000
OFFICE SPACE/UTIL/MAIN*	10,000	10,000	10,000	10,000	10,000	50,000
SUPPLIES/OFFICE EQUIP*	500	500	500	500	500	2,500
TOTAL	45,500	45,500	45,500	45,500	45,500	227,500

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Table 5.4.

USAID/MALAWI
USAID PROJECT EXPENDITURES
BY PROJECT ELEMENT

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
I. TECHNICAL ASSISTANCE	90,000	127,000	132,000	137,000	77,000	563,000
II. COMMODITIES	33,000	14,500	9,000	5,000	5,000	66,500
III. RESEARCH	15,000	23,000	28,000	25,000	28,000	119,000
IV. REGIONAL COMMUNICATION	22,500	26,000	29,000	29,000	29,000	135,500
VI. AUDIT/EVALUATION			250,000		260,000	510,000
VI. CONTINGENCY (5%)	8,025	9,525	22,400	9,800	19,950	69,700
VII. INFLATION (5%)	8,426	10,001	23,520	10,290	14,063	66,300
GRAND TOTAL	176,951	210,026	493,920	216,090	433,013	1,530,000

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Table 5.5.

USAID/MALAWI
DETAILED EXPENDITURES BY PROJECT ELEMENT
TECHNICAL ASSISTANCE

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
CONSULTANT	50,000	100,000	105,000	110,000	60,000	425,000
HOUSING/UTILITIES	10,000	22,000	22,000	22,000	12,000	88,000
VEHICLE	25,000					25,000
OPERATING COSTS	5,000	5,000	5,000	5,000	5,000	25,000
TOTAL	95,000	127,000	132,000	137,000	77,000	563,000

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Table 5.6.

USAID/MALAWI
DETAILED EXPENDITURES BY PROJECT ELEMENT
COMMODITIES

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
OFFICE EQUIPMENT	1,000	500				1,500
DESKTOP PUBLISHING	20,000	10,000	5,000			35,000
COMPUTERS, PRINTERS, SUPPLIES	12,000	4,000	4,000	5,000	5,000	30,000
TOTAL	33,000	14,500	9,000	5,000	5,000	66,500

Table 5.7.

USAID/MALAWI
DETAILED EXPENDITURES BY PROJECT ELEMENT
RESEARCH

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
BASE-LINE STUDIES	10,000	15,000	18,000	15,000	18,000	76,000
OTHER RESEARCH	5,000	8,000	10,000	10,000	10,000	43,000
TOTAL	15,000	23,000	28,000	25,000	28,000	119,000

Table 5.8.

USAID/MALAWI
DETAILED EXPENDITURES BY PROJECT ELEMENT
REGIONAL COMMUNICATION

	FY 89/90	FY 91	FY 92	FY 93	FY 94	TOTAL
TRAVEL	2,500	4,000	4,000	4,000	4,000	18,500
CONFERENCES/WORKSHOPS	20,000	22,000	25,000	25,000	25,000	117,000
TOTAL	22,500	26,000	29,000	29,000	29,000	135,500

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Table 5.9.

USAID/MALAWI
ILLUSTRATIVE FINANCIAL PLAN
NATURAL RESOURCES MANAGEMENT PROJECT
PROJECT 690-0251

PROJECT ELEMENT	A.I.D.	OBLIGATIONS	
		GRANTEE	TOTAL
I. TECHNICAL ASSISTANCE	563,000	227,500	790,500
II. COMMODITIES	66,500		66,500
III. RESEARCH	119,000		119,000
IV. REGIONAL COMMUNICATION	135,500		135,500
V. AUDIT/EVALUATION	510,000		510,000
VI. CONTINGENCY (5%)	69,700		69,700
VII. INFLATION (5%)	66,300		66,300
GRAND TOTAL	1,530,000	227,500	1,757,500

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5.3. Project Analysis Summary - Institutional Context

The DNPW is one of three departments in the Ministry of Forestry and Natural Resources. The conservation and production mandate of this Ministry is driven primarily by the importance of the nation's forests, which provide 90 percent of fuel requirements, serve to protect soils and watersheds, and produce timber for construction and industrial use. The Department of Forestry is charged with halting the degradation of woodlands and forests and ensuring their maximum sustainable contribution to the economy. The Department of Fisheries promotes expanded exploitation of the fish resource. The Department of National Parks and Wildlife concentrates on general preservation of the nation's heritage of flora and fauna for aesthetic, scientific, and educational purposes, protection of threatened species, and promotion of sustainable economic use of biological resources. It manages some 11,000 square kilometers of National Parks and Game Reserves and carries out programs of public environmental education and research. The Department has begun to promote the involvement of local communities in the utilization of wildlife.

The Ministry of Forests and Natural Resources serves as SADCC Coordinator for Forests, Fisheries and Wildlife. Its mandate stems SADCC policy to decentralize responsibility for development of the various economic sectors that are important for reducing dependency and promoting regional cooperation. Each of the three Departments of the Ministry serves as the Technical and Administrative Unit (TAU) for its respective area of expertise and responsibility. In that capacity the Departments have prepared projects for inclusion in the Programme of Action of SADCC and presentation to donors for funding. The SADCC projects in forestry, fisheries and wildlife have been relatively modest in comparison with the programs of such active sector units as the Southern Africa Transport and Communications Commission in Mozambique or the Food Security Technical and Administrative Unit of Zimbabwe. The systems for project proposal and approval are in place, however, and the Department of National Parks and Wildlife has successfully followed the procedures to propose and gain approval for this project.

In 1988 the Regional Natural Resources Policy and Development Strategy, which was drafted by the Ministry, was adopted by the Council of Ministers of SADCC. The policy recognizes, inter alia, that under appropriate management wildlife resources are capable of producing considerable economic return. The Wildlife Technical and Administrative Unit recognizes that the concept of community-based management of natural resources is still at an early stage and that its development involves legal, administrative, and technical dimensions. Thus, it is committed to a coordinating role in the USAID Regional Natural Resources Management Project.

The Ministry of Forestry and Natural Resources is familiar with A.I.D. implementation procedures, as it has been the recipient of assistance through USAID project 690-0215.12, Southern Africa Regional Technical Support, under which \$900,000 was provided to the Fisheries Technical and Administrative Unit to support technical studies, seminars, and workshops for SADCC members.

The Wildlife Technical and Administrative Unit is actively monitoring two SADCC projects within Malawi: (1) Conservation Education, funded by UNDP and implemented by FAO; and (2) Wildlife Research, funded by EEC. The first project to require multi-country coordination is the FAO-sponsored Seminar Training on Integrated Wildlife Resources Use by Rural Communities. The seminar organizer is being recruited, and member governments have been invited to nominate participants in the seminar, which will in effect become the first forum to review the experiences of Zambia, Zimbabwe and Botswana to date and disseminate the concept of community management of wildlife resources.

Examination of the financial status of the Department of National Parks and Wildlife reveals severe budgetary constraints. Current expenditures for 1989-1990 were budgeted at MK 1,630,000. There was, however, a substantial increase in capital equipment and plant purchases in the preceding fiscal year. Staff is adequate for current levels of activity, but more staff will be required for future programs. Among a total of 323 staff, 48 are in administrative posts, 257 in management services, and 18 in research and planning. Several members of staff, including biologists, will return soon from training in the United States. The staff is expected to double within next year following the recent directive of the Life President.

In spite of its commitment to coordination of SADCC Project 5.0.18, however, the Department will not be able to carry out the data gathering and analytic and communications functions without the assistance of a full-time adviser. The adviser will serve outside the established staffing pattern of the Department and will report directly to the Chief Parks and Wildlife Officer. The officer dedicated to SADCC coordination duties will be available to work with the adviser and to prepare to continue the activities when the project phases out. When a number of additional wildlife projects are underway, assignment of additional time to the SADCC function may be necessary. The Chief Parks and Wildlife Officer has indicated his intention to request an extra position for his staff in anticipation of increased coordination responsibilities.

The Department is further constrained by lack of transport and insufficient funds for fuel. The project will provide a four-wheel drive vehicle and funds for fuel costs during the six year life of the project. The Department, which has its own staff of mechanics, will maintain the vehicle and provide a driver. The vehicle will be registered as a Government vehicle and will be subject to regulations as to its use. It will be available to the project adviser according to his needs.