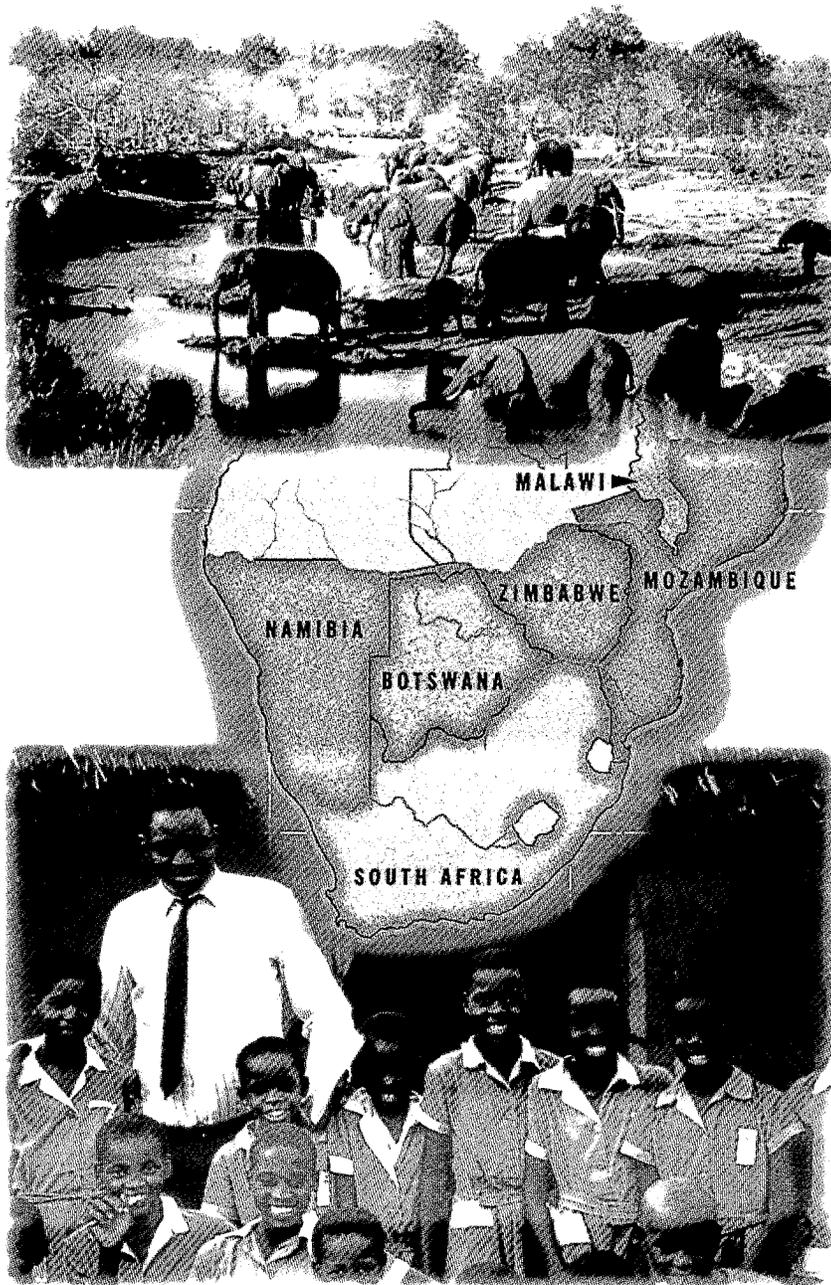


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# RURAL DEVELOPMENT and CONSERVATION in AFRICA

STUDIES IN COMMUNITY RESOURCE MANAGEMENT

PROCEEDINGS OF A SEMINAR TOUR  
Sponsored by Africa Resources Trust



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This publication contains the proceedings of a seminar series, sponsored by **Africa Resources Trust**, which brought a delegation of conservation and development experts from Southern Africa to North America from June 15-29, 1996. This publication was made possible through support provided by the U.S. Agency for International Development/Zimbabwe under the terms of Grant #690-0251-4-00-9001-00. The opinions expressed herein are those of the authors and do not necessarily express the views of USAID.



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**Cover Photos**

Elephants in Mana Pools National Park, Zimbabwe

*Photo Credit: Steve Thomas, Zimbabwe Trust*

Headmaster, Mr. Siwela, and students at CAMPFIRE-supported Mlevu Primary School, Tsholotsho Communal Area, Zimbabwe

*Photo Credit: Christine Lippai, ART*

**Cover Map**

The Southern Africa Region

*Source: Southern Africa Research and Documentation Centre*

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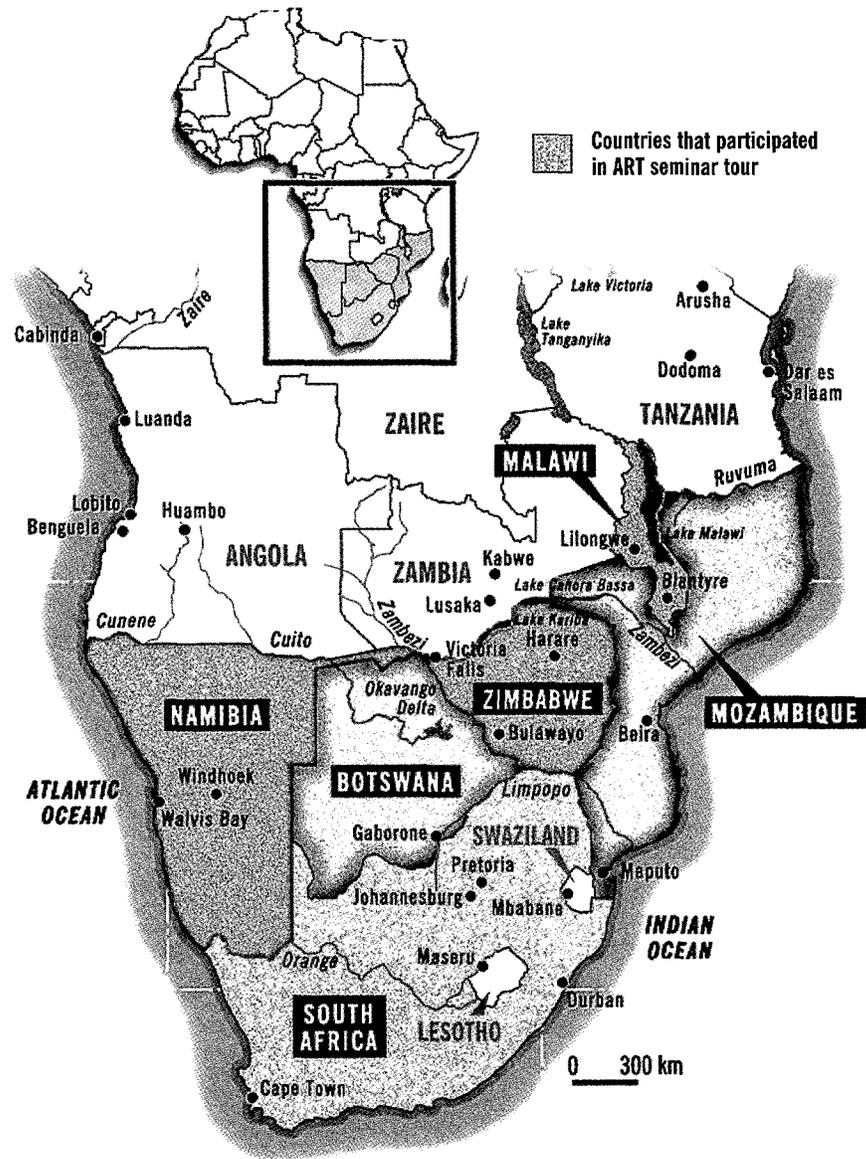
## Table of Contents

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Acknowledgments	iii	<b>V. Summary of Questions and Responses</b>	45
List of Acronyms	iv	<b>Appendices</b>	
<b>I. Introduction/Synopsis of Seminar Papers</b>	1	A. List of Delegates	54
<b>II. Setting the Scene</b>		B. Program of Seminar Tour Events	55
Colonialism and the Disentitlement of Communities <i>Matthew Matemba</i>	7	C. Abstracts/Summaries of Case Studies from North America	56
Land Use Conflicts and Wildlife Management <i>Hector Magome</i>	10	1. The Alligator: A Prime Example of Ecosystem Management <i>Johnnie Tarver</i>	56
Program Sustainability: The Need for Regulated Trade and Markets <i>Dr. Jon Hutton</i>	14	2. Return of the Beaver in the Northeastern States <i>Gordon Batcheller</i>	57
The View from the Village <i>Abraham Sithole</i>	17	3. Sustainable Use in North America: Lessons from Seven Case Studies <i>Richard Parsons</i>	58
<b>III. Case Studies from Southern Africa</b>		<b>List of Illustrations</b>	
Botswana: The Role of Wildlife in Developing Sustainable Land Use Management <i>Sedia Modise</i>	19	Map of Southern Africa	ii
People and Parks: Rehabilitation in Mozambique <i>Baldeu Chande</i>	25	Crop biomass: Wild and domestic herbivores	11
Zimbabwe: The Development/Conservation Link <i>Taparendava Maveneke</i>	28	Comparison of land-use options for Madikwe	13
The Elephant's Importance to CBCD: The CAMPFIRE Example <i>Taparendava Maveneke</i>	31	Map of protected areas in Botswana	20
Crocodile Management: An Example of Sustainable Use <i>Dr. Jon Hutton</i>	33	Map of livestock biomass in Botswana	21
<b>IV. Dualistic Tenure of Communal Resources in Zimbabwe</b>		Map of wildlife biomass in Botswana	22
<i>Simon Metcalfe and Vimbai Vudzijena</i>	37	Map of protected areas in Mozambique	26
		Distribution of revenues, Kanyurira, Guruve	29
		Income from trophy fees in eight districts	32
		Community hall, Chilacho	48
		Bore hole, Hwange Communal Land	52

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# SOUTHERN AFRICA



SOURCE: Robert Maruziva, University of Zimbabwe, Department of Geography, for Southern Africa Research and Documentation Centre (1994), in *State of the Environment in Southern Africa*

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**Acronyms**

<b>ART</b>	Africa Resources Trust
<b>CAMPFIRE</b>	Communal Areas Management Programme for Indigenous Resources
<b>CASS</b>	The Centre for Applied Social Sciences, University of Zimbabwe
<b>CBCD</b>	Community-Based Conservation and Development
<b>CHA</b>	Controlled Hunting Area, Botswana
<b>CECT</b>	Chobe Enclave Conservation Trust, Botswana
<b>CIDA</b>	Canadian International Development Agency
<b>CITES</b>	Convention in Trade of Endangered Species of Wild Flora and Fauna
<b>CWF</b>	Canadian Wildlife Federation
<b>CWS</b>	Canadian Wildlife Service
<b>DNFFB</b>	National Directorate for Forestry & Wildlife, Mozambique
<b>ESA</b>	U.S. Endangered Species Act
<b>FAVDO</b>	Forum of African Voluntary Development Organizations
<b>GEF</b>	Global Environment Facility
<b>IUCN</b>	The World Conservation Union

<b>IUCN-ROSA</b>	IUCN-Regional Office for Southern Africa
<b>IIED</b>	International Institute for Environment and Development
<b>LTC</b>	Land Tenure Commission, Zimbabwe
<b>NGO</b>	Non-governmental Organization
<b>NRM</b>	Natural Resource Management
<b>ODA</b>	Overseas Development Administration (Great Britain)
<b>PVO</b>	Private Voluntary Organization
<b>SACIM</b>	Southern Africa Centre for Wildlife Marketing
<b>SADC</b>	Southern African Development Community
<b>SASUSG</b>	Southern African Sustainable Use Specialist Group
<b>SEED</b>	United Nations Sustainable Energy & Environment Division
<b>UNDP</b>	United Nations Development Programme
<b>USAID</b>	United States Agency for International Development
<b>VIDCO</b>	Village Development Committee, Zimbabwe
<b>VCC</b>	Village CAMPFIRE Committee, Zimbabwe
<b>WRI</b>	World Resources Institute
<b>WWF</b>	World Wildlife Fund

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**SECTION I  
INTRODUCTION**

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Southern African countries are beginning to experience remarkable successes with the community-based conservation and development (CBCD) approach to biodiversity conservation and rural development. CBCD, one component of a comprehensive conservation strategy in Southern Africa, incorporates local proprietorship rights and responsibilities, and develops local knowledge and management techniques in development and conservation programs. This approach enables people to utilize and benefit legally from both subsistence and commercial uses of wild species.

Human benefit from wild resources depends on access to legitimate local and international markets for wildlife products. Because international markets for these products are highly susceptible to consumer opinion, the public needs to understand how regulated trade in wildlife products can benefit both conservation and rural development in Africa. Such an understanding can help sustain demand for these products in legal markets.

To address the public need for knowledge about CBCD, a delegation of experts from governments and non-governmental organizations (NGOs) in Botswana, Malawi, Mozambique, Namibia, South Africa and Zimbabwe participated in a seminar tour held June 15-29, 1996, in Washington, DC, New York City, and Ottawa, Canada.

Sponsored by the Africa Resources

Trust (ART), the tour took the Southern African delegation to the two federal capital cities and the UN headquarters city to meet with key policy makers, government officials, and representatives of environment and development NGOs, academia, the media, and other interested groups to publicize the successes and constraints of the CBCD approach. The primary objectives of the seminar tour were:

- To inform the North American public and policy makers of the goals and progress of CBCD strategies in Southern Africa;
- To address controversies surrounding the sustainable use of wild species and ensure a balanced debate;
- To help sustain CBCD initiatives in Africa by strengthening access to international markets;
- To develop partnerships and support networks for CBCD in North America;
- To provide an opportunity for North Americans to share concerns and expertise directly with Southern African resource managers.

The delegates reported on interactions and conflicts between wildlife and people in Africa, and the resulting attempts by Africans themselves to address conservation and development challenges. They did not try to comprehensively represent wildlife management on the continent. Moreover,

they sought to avoid the controversies that arise when interest groups draw Africans into debates over isolated issues such as international trade in ivory. Such narrow debates detract from comprehensive conservation and development strategies and undermine regional unity.

The tour demonstrated that Southern Africans share a common goal: the evolution of an effective and mutually reinforcing conservation and development strategy. The synopsis below highlights the themes of the strategy, which are fundamental to the CBCD approach to ensuring successful conservation. In brief these themes are as follows:

- The people who can best manage the wildlife resource are those who live with it on a daily basis.
- The conservation of wild species and habitat will succeed in the long run only if it can generate revenue as an economically competitive form of land use.
- The value of wildlife must be enhanced if it is to become an economically competitive land use. This value depends on the availability of markets for wildlife products.

Sections II, III, and IV of this report provide more detailed accounts of CBCD in the form of the delegates' presentations, which ART has condensed and edited. Section V summarizes many of the major questions raised by the seminar audiences and the delegation's responses to them.

## Synopsis of Seminar Papers

A consensus is emerging in Southern Africa on the future of conservation strategy for the region. This strategy encompasses multiple tools and approaches ranging from the maintenance of protected areas to CBCD practices that rely on local communities. Each approach is adapted to social and economic environments at the local level.

The strategy acknowledges that biodiversity needs to be protected while rural people are provided opportunities to share the benefits of sustaining natural resources. It further accepts that the use of wild resources is a reality of everyday life in Southern Africa. Therefore, we must strive to make it sustainable by creating appropriate policy, legal, and economic incentives.

Africa is portrayed as a continent of exotic jungles, grassy plains, and plentiful wildlife, a vision that was created by foreign explorers and colonialists and sustained by the media. Only when civil wars and crises intrude through the media does the world remember that people actually inhabit the continent and rely upon its natural resource base for food, shelter, medicine and commerce. The belief that wild resources should not be used on the poorest continent in the world is unrealistic.

CBCD blends modern cost-benefit strategies with traditional African management, especially the communal sense of responsibility toward natural resources. Under the CBCD approach, those who live with wildlife and who will determine its future gain an incentive to ensure that it remains abundant. CBCD has been designed to take

account of the historical context of the African experience and to accommodate traditional approaches to wildlife management.

In the first seminar presentation, Mr. Matthew Matemba, Director of the SADC Wildlife Technical Unit, reviewed the traditional resource management approaches and the damage done to them during the colonial era when African communities were disenfranchised from their natural resources.

In pre-colonial times, resource ownership in most of Africa was based on a communal view of property in which land, animals, plants and other natural resources belonged to the community as a whole. Africans relied on these resources for food, clothing, shelter and medicine. Elaborate social mechanisms governing use and access to resources prevented over-harvesting and excessive consumption.

Colonial rule modified communal ownership or customary tenurial rights and led to private ownership or state control of most lands and resources. Principles that had evolved in Europe were transposed to Africa, furthering the dispossession of land and resources from Africans. As they began to accumulate private property, regard for the communal well-being diminished. People were evicted from their lands so that protected areas could be created. Access to resources such as wildlife, which had long been a mainstay of local economies, was outlawed. The guiding principle for the conservation approach imposed upon Africa by the colonialists was that natural resources belonged to God and by inference, to the state. Thus, any utilization of wild animals by community-

based households was outlawed.

These prohibitions caused many rural people to become hostile toward the enforcement authorities as well as toward the wildlife – which had been transformed, in their perceptions, from an asset to a liability. When African nations gained independence, many of the new governments continued the protectionist philosophy and expanded the resource management regimes introduced during colonialism. This intensified the alienation of communities from their traditional access to natural resources. Principles of local democracy were set against state regulations. (For more details on the historical context, see Mr. Matemba's paper., p. 7)

It is now clear that this protectionist model of conservation has failed. Wildlife populations throughout Africa declined precipitously through the 1970s and 1980s. A key cause of that decline was the land-use conflicts between wildlife and rural people, an issue explored in the seminar presentation by Mr. Hector Magome of South Africa's National Parks Board. Wildlife habitat was decimated as lands outside of protected areas were taken for agricultural or pastoral activities. Rapidly increasing human populations and widespread poverty, particularly in the marginal, dry regions where wildlife proliferates, have exacerbated the struggle between people and wildlife. People frequently kill wild animals in an attempt to protect themselves and their lands. They turn to poaching as a means to survive, either by supplementing their diets with bush meat or generating cash by sale of wildlife products for international markets.

The future of wildlife is threatened even within protected areas. While some 23% of Southern Africa's total land area is devoted to protected areas (making it the most comprehensive protected area system in the world), it is increasingly clear that many governments are struggling to maintain the system and to meet its conservation goals. Southern Africa's governments face multiple demands on their limited and often declining budgets. Many needs, such as health, education and basic social services, take priority over wildlife conservation.

Yet the countries of Southern Africa have evidence that CBCD strategies can address the land use conflicts in rural areas. Studies have shown that if properly managed and marketed, wildlife has a comparative advantage to cattle and agriculture on semi-arid rangelands in certain marginal environments. Wildlife makes wider and better use of the available vegetation and has many marketable uses, including meat production, safari hunting, photo-tourism, and sale of wildlife products. (For more on land use conflicts, see Mr. Magome's paper, p. 10.)

CBCD programs must have reliable markets for these products if they are to survive, according to Dr. Jon Hutton, Director of Africa Resources Trust. The region's ability to develop and expand its programs is hampered by the difficulties of gaining access to the international markets and by the instability in those markets which are subject to fluctuating public opinion regarding products such as ivory (and those resembling ivory such as warthog tusks or hippo teeth). The Southern African countries are seeking support in shaping the international

influences that affect the sustainability of CBCD programs.

The general public — potential consumers — in North America and Europe fails to appreciate the real and potential impact of international policies such as CITES, and domestic legislation such as the U.S. Endangered Species Act. If inappropriately administered or subject to political pressure, these laws could close down certain CBCD program markets, such as sport hunting. (For more details on international trade and marketing, see Dr. Hutton's paper, p. 14.)

The CBCD approach is based on the needs and priorities of communities, according to Mr. Abraham Sithole, vice president of the CAMPFIRE Association and representative of the CAMPFIRE communities of southeastern Zimbabwe. He described the economic and psychological costs of living with wildlife such as crop raiding, trampling, depletion of water resources, and even loss of human life. CBCD communities receive compensation for these costs. CAMPFIRE has restored rights over natural resources to some 600,000 of Zimbabwe's poorest people while collecting total revenues of more than \$6 million between 1989 and 1994, much of it in cash dividends used for local projects including roads, schools, and clinics.

Moreover, community wildlife management gives local people a chance to apply their knowledge of resources such as soils, waters, woodlands and grazing lands. Through wildlife management programs, these other common property resources can also be better managed. (For Mr. Sithole's presentation, see p. 17.)

The rationale behind the CBCD approach is that if a positive value is placed on wildlife and benefits are returned to the immediate community, then it is in the community interest to avoid species extinction. Conserving elephant rangelands provides an overarching protection to wildlife habitat. Increases in the elephant population in Southern African countries, where trophy hunting is allowed, provide evidence to support this argument. The white rhinoceros is a case in point. When South Africa allowed live trade in white rhino and regulated hunting, it created an economic incentive for management of the species. South Africa now exports white rhino to Kenya.

Case studies presented during the seminar tour demonstrate the economic benefits that communities can reap from CBCD. Mr. Sedia Modise, of the National Parks and Wildlife Department of Botswana, described the national wildlife conservation policy which divides the country into administrative units, each zoned for a type of resource management and managed by a legally constituted community trust.

One of these units is the five-village Chobe Enclave Conservation Trust (CECT) adjoining the Chobe National Park in Botswana. CECT has sub-leased resource use rights to safari companies, receiving benefits including game meat and annual proceeds from safari hunting that have risen from \$12,000 in 1993 to \$100,000 in 1996. (For Mr. Modise's case study, see p. 19.)

Other communities in Botswana have followed the Chobe example and formed the required community trusts

that sublease to safari operations. In addition, some communities are using other natural resources to augment wildlife benefits, as in Gwela where the community collects marula fruit to produce commercial beverages.

Mr. Taparendava Maveneke, Chief Executive of CAMPFIRE in Zimbabwe, described CAMPFIRE's decentralized management, which is a fundamental operating principle of CBCD. CAMPFIRE has devolved administrative authority to the district and sub-district levels where committees are accountable to the local people who elected them. CAMPFIRE committees have been set up in 26 of 57 Rural District Councils. Zimbabwe's Ministry of Local Government gives them administrative guidance.

Decentralized management, in conjunction with resource benefits, leads to institutional development at the community level, another strength of CBCD programs. Local institutions are built through a participatory process in which the critical element is choice. Communities have to establish the institutions themselves to make them sustainable and legitimate with the guidance of modern (democratic) and traditional (customary) leadership. Under CBCD institutions, communities make decisions about contractual arrangements with safari operators, market values for resources, and uses of the proceeds. This adaptive management process fosters a sense of community ownership of the CBCD program. The more the community participates, the more likely it is that the program will be sustainable. (For Mr. Maveneke's case study, see p. 28.)

Community participation has also

been a strong motivating force in rehabilitating a huge protected area in Mozambique where wildlife populations were devastated during the long civil war, according to Mr. Baldeu Chande of the Gorongosa-Marrromeu Emergency Rehabilitation Programme. Local people rejected the program initially because they associated it with past prohibitions on access to and use of natural resources. However, the program team promised to allow offtake of timber, fish, honey, and medicinal plants, as well as some agriculture on the national parklands and cooperated with the community to conduct a traditional ceremony that communicated this strategy to the ancestors. The team also hired demobilized soldiers and other local people as game scouts. Now the community is cooperating with the team to apprehend people who are jointly defined as “poachers.” (For Mr. Chande’s case study, see p. 25.)

These case studies from Botswana, Zimbabwe, and Mozambique reveal that CBCD programs work through a series of interlocking policies and administrative levels, ranging from a rural community’s decisions about wildlife utilization, to a national wildlife management framework (tenure and trade), to international trade agreements with producer and consumer states. For case studies of the sustainable use of individual species in the region, see p. 31 (the elephant) and p. 33 (the crocodile).

North American sustainable use case studies, presented during the seminar tour and condensed and edited by ART, appear in Appendix C. See p. 57 (the beaver), p. 56 (the alligator), and p. 58 (summary of seven case studies).

While the delegates agreed on the essential CBCD strategies, they said countries of Southern Africa cannot be expected to reach consensus on all issues, particularly those regarding international markets. Foreigners sometimes cite the lack of agreement between East Africa and Southern Africa regarding safari hunting policy, for example, as if it undermined the arguments of Southern Africans. However, the nations of Europe or of Asia are not expected to present a united front to the world on any issue. Africans too need the leeway to develop policies that work best in the local and national context.

The delegates presented substantial evidence that CBCD programs return benefits to the community, thus playing a role in improving the quality of rural life. They promote development of institutions and human capacity at the local level, thus building pride and self reliance. Further, CBCD plays an important role in easing land use conflicts and conserving biodiversity. CBCD programs still seek help from Western organizations, however, to influence public opinion and keep open markets for wildlife products.

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## SECTION II SETTING THE SCENE

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### Colonialism and the Disentitlement of Communities

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The truth can be told at last. Africa was not the fabled Garden of Eden described so emotionally by the European explorers of old. Nor was it the fearsome place of marauding hordes of savages. It was and still is the home of normal people attempting to eke out an existence within the constraints of their environment. At times conditions were harsh and food became scarce, but there were also times of plenty when life was good with wild animals to hunt and delicious fruits to harvest. What changed this scenario? A major factor was the impact of colonialism on the African continent.

During precolonial times, land, animals, plants and other natural resources were owned communally. Systems of ownership were frequently locally based, small-scale processes with a defined clan membership. Use and access to resources was governed by a multitude of intricate social mechanisms that worked contrary to monopolistic tendencies and overuse. These social mechanisms frequently relied upon ceremonial processes and economic systems of barter and recipro-

ty that inhibited large-scale accumulation of wealth (perhaps with the exception of cattle). The result was communities that rarely indulged in excessive or wasteful consumption.

Traditional healers, or sangomas, were the ecologists of precolonial times. Their dedication to the study of their local environment and well developed understanding of plants, animals, climate and soils enabled them to direct their society's use and to prevent overuse of species and other natural resources.

Despite the constraints of precolonial times, many communities flourished and thrived. Research indicates that as communities grew to numbers exceeding local environmental capacity, groups migrated to less stressed environments. In some cases communities of over 20,000 relocated when resources were depleted.

Colonialism, however, introduced many changes in African communal lifestyles. The colonial factors of change included:

- The radical modification of customary tenorial rights to provide for extensive state and private rights,
- The imposition of Western legal state-based processes and laws,
- The introduction of state regulated protectionist strategies of wildlife management,
- The introduction of a cash economy and new agricultural practices, and

- Conditions favorable to rapid population growth.

### **Tenure**

The modification of tenurial and ownership rights is one of the most significant factors in creating conflict among individuals, communities and authorities over the use of natural resources. This has been the conclusion of both the IUCN Southern Africa Sustainable Use Specialist Group and the Regional Natural Resources Management Programme Conference (Kasane, Botswana, 1995) of the Southern African Development Community. The drive towards individual ownership of land and other resources, as introduced by the colonial powers, has had a profound effect in destabilizing the equity-creating mechanisms that indigenous communities developed over millennia. (For more details on tenure, see paper by Simon Metcalfe and Vimbai Vudzijena, p. 37.)

Granting individual rights encouraged individuals to accumulate certain property and resources without regard for the well being of others. In addition, macro level ownership of large tracts of land by new state governments alienated resources from communities that had traditionally had access to them. Meanwhile, government control over huge areas of land and its reallocation to individuals eroded the norms and values of the traditional resource management systems.

In Africa, colonialist systems often disregarded existing African social structures and cultures. Though the European replacements benefited some Africans, their maladaptation to an African context more frequently resulted in unfavorable situations. In

most instances the patronizing approach of the colonial powers prevented communities from participating in decision-making processes or forming partnerships to create satisfying solutions to issues.

### **New Laws and Legal Systems**

The introduction of Western-based legal systems in Africa created great turmoil within indigenous communities. With their own finely tuned social processes and values based on communal welfare and restitution, communities were thrown into internal conflict and confusion. Previously, issues had been resolved through consensus in communal meetings, a system which instilled a sense of discipline in society. The new laws were quite different, however, requiring systematic proof of user rights and ownership.

The concept that created the greatest disenfranchisement and disenfranchisement was that natural resources, particularly wildlife, were deemed God's domain and were to be administered by the state. This resulted in communities being stripped of their right to legally use natural resources. They were also frequently evicted from large areas designated for 'protection and preservation.' These strategies predictably resulted in alienation and conflict. The International Institute for Environment and Development (IIED) concluded that "the difficulties arise from the fact that conservation, as advocated by Westerners, is completely alien to people who have been living in symbiosis with nature for thousands of years" (IIED:1994:13).

### **National Parks and Reserves**

Based on policies and perceptions

regarding hunting and resource use that evolved in Europe, the colonial powers decreed certain areas to have a special status that protected all fauna, flora, and ecosystems. Often these were areas where indigenous communities traditionally hunted or grazed their livestock. Again, people were dispossessed of their land and resources, forced to hunt the animals illegally and branded as 'poachers.' The question arises: Who were the real poachers – those who took animals or those who took land? This process of disentanglement persists today with the creation of new parks and reserves around the world.

There is no doubt that the new government systems were based in part on good intentions. Again, the problem was often the manner in which change was introduced. Local people were not considered part of the solution, resulting in a situation in which they no longer valued natural resources because they belonged to the state. It has become increasingly clear that the top-down approach to wildlife management, which emphasizes strict protection of species and habitat, does not always achieve its stated objectives and frequently results in increased abuse.

#### **Transformed Economies**

The introduction of cash economies was another factor in the alteration of indigenous African lifestyles. This new manner of measuring productivity and effort encouraged individuals to leave their traditional places of toil and sell their labor to enterprises such as mines and commercial farms. Sale of labor in return for cash effectively destroyed the subsistence economy that had supported traditional ways of life. The men were often absent from

home for long periods, sometimes years, while they labored in the colonial-based cash economy. This left the women in a position of extreme hardship. Many families left the land to live near the source of employment, disorienting themselves in the process.

The new system, where the nation state and the market economy superseded the rural communities, encouraged dissonance between the individual and the community in terms of rights and responsibilities. The fragile balance between liberty and equality is manifested by who gains access to valuable natural resources.

In addition to the changing economy, a more formalized approach to farming was introduced that involved the demarcation of land into individually owned portions. Commercial farms required large tracts of land to make effective use of Western technology. To satisfy the colonial hunger for large farms, many indigenous communities were forcibly moved into marginal areas. This resulted in environmental degradation of marginal lands that were unsuitable for agriculture, but rich in government-owned natural resources.

#### **Conclusion**

The scenario presented may initially sound both radical and reactionary. However, many eminent ecologists and natural scientists worldwide are now recognizing it as reality. One cannot disregard the role of modernization in improving the lot of African people, but the picture must be balanced. Understanding the forces that have created the current state of conservation in Africa allows us to reevaluate our perceptions of socio-ecological

processes. It enables us to develop fresh new approaches to managing our natural resources based on a more equitable view of tenure and resource ownership. Situations of dominance can be replaced by true partnerships and, most importantly, communities can reap significant benefits and regain a sense of stewardship by managing their natural resources. It also provides us with the courage to return the rights over local natural resources to indigenous communities and assist in renewing their capacity to manage them sustainably for the common good. Once more, they will be the rightful owners of nature's bounty and captains of their own destiny.

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#### Land Use Conflicts and Wildlife Management

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When Africa was colonized, Africans lost their right to utilize wildlife. The management of wildlife was then enforced through restrictive, heavy-handed laws, Western ethics and attitudes that originated during medieval times in Britain and Europe. These restrictive laws were mostly applied to rural Africans. Collinson (1992:2) summarized this scenario as follows:

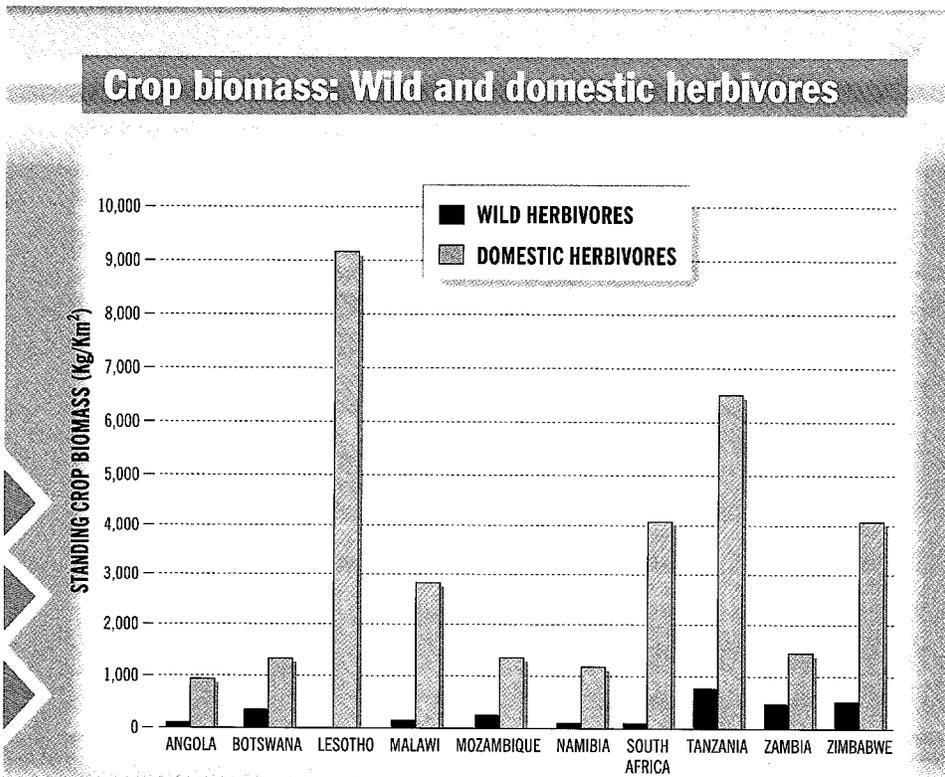
“Whilst the colonisers could enjoy wildlife by way of either sport hunting or visiting national parks, the colonial laws denied the tribal people access to wildlife resources. This applied even to tribes who had, through the centuries, relied on wildlife resources for their subsistence. However, of greatest importance, the colonial approach to wildlife conservation neglected to take into account the many conservation laws, ethics and taboos that had long been entrenched in African tribal cultures and traditions.”

In short, protectionist strategies, as they are currently constituted, often brought about the opposite of their presumable intent. Debarred from

using wildlife legally, even on the driest, most marginal land, rural Africans had no alternative but to turn to domestic livestock and crops for their survival, creating the “cow and plough tragedy.” In most Southern African countries the crop biomass of domestic livestock far exceeds that of wildlife. (See graph below for comparison of the two in 10 countries of the region.)

The harsh realities of living in rural Africa are often ignored. Southern

Africa is primarily a semi-arid region frequently plagued by famine and poverty. Much of the region is unsuitable for agriculture, but more and more marginal land is being cleared and cultivated. Wild land has disappeared where wildlife was not allowed to compete with subsistence agriculture on an economic basis. Where cash crops are concerned, the situation is worse. Huge tracts of land are irreversibly degraded by inappropriate use.



SOURCE: Cumming and Bond, 1991.

Domestic plant-eating animals have considerably more standing crop biomass (measured in kgs per sq km) than their wild counterparts do in the countries of Southern Africa. Biomass is the amount of living matter in a unit of habitat.

Wildlife requires extensive use of natural areas in order to survive. Although the area set aside for wildlife in the Southern Africa region is reasonably large, more land is required for wildlife to meet its biological needs than is available. Thus, wildlife frequently competes with other land uses.

Although wildlife areas do satisfy important needs including a recreational outlet, educational and research opportunities, international status and conservation of both biodiversity and heritage, these benefits mean little to poverty-stricken rural communities (Collinson 1992a). As stated by Stuart-Hill and Grossman (1993), if alternative forms of land use better serve the immediate needs of impoverished communities, then it is difficult and perhaps even morally questionable to try and dissuade people from engaging in such activities. They further state that this pragmatic approach need not imply that conservation should be pursued only if it is profitable, or that financial and economic interests should take precedence over and compromise sound principles of wildlife management. Differing needs can be met by having different categories of protected areas, some strictly protected (for biodiversity goals) and others zoned for sustainable consumptive use by rural communities. In this way conflict can be reconciled.

Given increasing rural populations, the consequent need for more land, and the undisputed survival needs of people, the key question is how to reduce conflict between rural people and wildlife outside protected areas. How do we achieve the goal of improving the quality of life of rural people

while conserving wildlife? The solution revolves around the need to increase the value of wildlife. This value can be realized in the short term through trophy hunting and the sale of wildlife products in areas outside protected reserves. These uses are important in the Southern Africa region and have provided a foundation for ecotourism.

Most people argue that ecotourism has the potential to compete successfully against any form of land use with respect to wildlife resources. The author shares this view. Ecotourism, however, has a time lag between initiation and realization of its full potential. In addition, other key factors have to be in place. For example, the personal safety of tourists has to be guaranteed. Good infrastructure, in particular, good roads and health facilities, are required, but rural areas usually have the lowest priority for such developments.

Therefore, the conservation of wildlife in Southern Africa depends on the benefits accruing to rural communities who often have to give away land for wildlife habitat. Wildlife, if properly valued and marketed, can be used more profitably than either cattle or crops in some regions. This potential could lead to the maintenance of natural wildlife resources and could stop or even reverse the destruction of land. There are firm data which show that both the return on investment and the net revenue per acre is greater for wildlife than for cattle in the vast semi-arid areas of our region, despite the fact that livestock is often heavily subsidized. For example, an evaluation of land use options for the Madikwe Game Reserve in the North West Province of South Africa shows far

greater returns from wildlife tourism than from cattle ranching for the local community and the Government. The reserve was developed purely on the basis of socio-economic returns to the residents of the province. (See table below for comparison of returns from the two land uses options.)

In many cases, if the right management mechanisms are in place, we can return the management of wildlife to rural communities so that they can reap direct benefits, ending, or at least ameliorating the conflict between man and wildlife that is endemic in rural Africa. In this way we can create (and have created) incentives that dramati-

cally increase the likelihood that rural people will be at least tolerant of the wildlife and protected areas around them. This in essence, is the focus of CBCD. The concept is based on the principle of empowerment and participatory decision-making. It is a process which allows communities to see wildlife resources as their own.

In Southern Africa, community-based conservation and development (CBCD) has already proved in some areas to be capable of offering a win-win solution. The goals of developing rural communities can be achieved without destroying the wildlife resources. However, for CBCD to

### Comparison of land-use options for Madikwe

	Ranching	Wildlife tourism
<i>Jobs created</i>	80	1,214
Cost per job	\$50,000	\$8,333
Wages paid (per annum)	\$160,000	\$2,433,333
Capital cost to Government	\$1,516,667	\$3,450,000
Capital cost to Private Sector	\$2,500,000	\$5,916,667
Recurrent cost to Government (p.a.)	\$33,333	\$333,333
Net income to Government (p.a.)	\$26,667	\$1,613,333
<i>Return on public investment</i>	0.43%	15.79%

NOTE: Currency figures are in U.S. Dollars because this paper was presented to North American audiences. Original table expressed currency in South African Rand. The exchange rate used was 1 U.S. \$ = 3 SA Rand, the highest rate for 1992.

SOURCE: Collinson, 1992b.

In certain areas of Southern Africa, wildlife tourism returns more to the community and the Government than ranching does, as indicated in this table showing social and economic quantifiable variables for Madikwe Game Reserve, North West Province, South Africa.

work, rural communities have to be empowered in some way. In the Southern Africa region, this process was facilitated by giving rural communities some ownership of wildlife including decision making. This long-term process has already begun to bear fruit. Apart from realizing tangible benefits from wildlife, rural communities have also gained self respect, which promotes self reliance and develops other latent abilities.

The harvesting of wildlife resources is based on the principle of harvesting the surplus, thereby ensuring sustainability. However, sustainability is also related to availability of sustainable markets. This is why the support of countries who use products generated through CBCD is critical to the sustainability and success of these projects.

In conclusion, the aim is to conserve our spectacular wildlife in the way best suited to the economic and cultural conditions of our region, and in the way that has the best chance of success. In this approach, development of rural communities with the objective of improving their quality of life may lead to them appreciating and supporting the need to conserve and protect wildlife resources.

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#### Program Sustainability: The Need for Regulated Trade and Markets

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The motivation behind the growth and success of CBCD programs such as CAMPFIRE and the expansion of wildlife production systems includes such non-economic factors as empowerment (resource entitlements), restoration of traditional culture, simple self reliance and self respect. In most cases, however, the driving force behind these reforms is economic. It arises from the value of natural resources that people control and sell for a profit. These natural resources have always had an economic value, but until recently it was not captured by local communities, but by governments and the private sector alone.

Ecotourism has proven to be one method that local communities can use to capture the economic value of natural resources. Photo-tourism, often clas-

sified under this heading, is one of the fastest growing industries in Southern Africa, if not the world. However, photo-tourism is not a panacea. There is both a place and time for photo-tourism. The physical setting is all important in the tourist market which puts a premium on high scenic beauty and abundance of wildlife species and populations.

There are many such places in Southern Africa, but much of the wildlife habitat consists of miles and miles of scenically-challenged woodland or semi-arid savanna. In these areas sport hunting tourism can establish economic value. Further, photo-tourism requires a stable, peaceful country with reliable infrastructure (health, transport, communication). Much of the wildlife habitat is not found in such an environment (e.g. Mozambique, Angola). Safari operators and their clients tend to take risks and venture to these places while the majority of photo-tourists are not.

Another difficulty with photo-tourism is its potential for negative impact on rural communities. Tourist leases often require exclusive access to areas where tour operators do not want people walking, dogs wandering, cattle grazing, and the rest of community life. What is marketed is an idyllic Africa which exists only in brochures. Tourism can leave a large cultural footprint. The capture of tourist revenue also requires a land lease structure which enables communities to benefit from tourist rents. Not all African governments have satisfactorily established this enabling framework.

Recreational hunting, on the other hand, can be a high-value, low impact

tool that directly empowers and enriches rural communities. Hunting can be granted in short-term, low-risk concessions which require less capital and give a quicker return. At this time, the direct and sustainable harvesting of resources is more rewarding for local communities than other forms of eco-tourism in Southern Africa.

The above scenario is not presented to argue that sport hunting is good and photo-tourism is bad, nor the opposite. It is to make the point that Africa should keep its options open because there is a place for both approaches. In fact, they can complement each other. In Southern Africa, however, we find ourselves defending sport hunting, while photo-tourism is thrust on us as a panacea. Most important, from our perspective, is for local communities to want to conserve wildlife habitat. Anything which supports that option should not be circumscribed on the basis of a minority moral position that is basically Western in origin.

#### **End Uses of Wildlife Products**

When harvesting species, we recognize three end uses for the products:

- Subsistence
- Barter/trade at the national level
- International trade

Except among the most extreme animal rights advocates, subsistence use is rarely controversial (although, interestingly, it often leads to unsustainable harvests). On the other hand, national and international markets often are controversial. We only have to witness the anti-trade campaigns related to whales, animal pelts (fur), birds, rhinoceros, and elephant.

Many CBCD programs rely for their existence on a few high value export products (e.g. sport hunting trophies). CAMPFIRE, for example, derives 90 percent of its revenues from safari hunting, with the elephant as the most valuable species. The community wildlife programs of southern Africa therefore have a direct vested interest in the international trade of wildlife products. Since international wildlife trade is controlled by the CITES, it should be no surprise that CBCD proponents and practitioners have a particular interest in this Convention. Though a number of Southern African countries have criticized the way CITES has been politicized, all are members and give it their full support.

The Southern African paradigm, in which wildlife harvesting and trade are essential elements of both conservation and rural development, requires a supporting regulatory framework at the international level. Unfortunately, CITES has become highly politicized in recent years and susceptible to the influence of special interest groups that are philosophically opposed to the killing of wild animals and implacably opposed to sustainable use and trade. At the national level the problem is often worse. A number of countries, including the USA, have domestic legislation which is stricter than CITES. If inappropriately administered or subject to political pressure, those regulations could close down essential markets. The dilemma we face is that on the local level we are advocating community empowerment to manage and utilize wildlife, while on the international level that option is threatened.

Several vital issues are at stake, over and above the emotionally charged

issue of whether humans have the right to manage elephants and trade in their products:

- Should wildlife be regarded as a natural resource of the range state it inhabits?
- Should local communities be entitled to some benefit from these resources to balance the costs they bear?
- How are these benefits best expropriated from the ecosystem?
- What is the role of national legislation regarding wildlife property rights?
- What is the role of the international consumer of wildlife products?
- What is the role of CITES?
- Is wildlife better managed and conserved by a sustained use or a protectionist approach, particularly in a setting of rural poverty but strong community ties?

Other countries have the right to help protect foreign species. If they do not fully consult with and support the affected nations, however, their protective legislation may exacerbate the demise of the species that it intends to save. Such is the case with many laws that destroy legal markets and devalue natural resources. The fundamental question is, "What makes trade an asset and what makes it a liability in terms of achieving a balance of conservation and development goals?"

### **The View from the Village: The Community Perspective**

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Zimbabwe's CAMPFIRE program is a relatively new model of natural resources management. It was initiated by a few radical development and conservation workers who were disillusioned with the failure of Western styles of wildlife management. As community leaders, we preferred a wholly African method of conserving and managing natural resources. However, we have been pragmatic enough to accept a new model resulting from a well-considered fusion of traditional and European ideas. Certainly the present approach is proving far more motivational to local communities than the old state-driven protectionist approach.

CAMPFIRE has taken strides to restore natural resource use rights to 600,000 of the poorest people in Zimbabwe. This is accomplished through political structures stretching from the village committee, through district councils, to cabinet level.

CAMPFIRE is a 'conservation with benefits' movement. By making wildlife profitable, it attempts to maximize the pace of rural development while simultaneously providing local communities with incentives to conserve wildlife. Between 1989 and 1994, CAMPFIRE earned US\$6,054,198. Meanwhile, wildlife management results in the con-

servation of other interrelated natural resources such as soil, water, woodlands and arable grazing. This is because outside the protected areas, wildlife does not live in isolation but shares the same rangelands as communal livestock and people.

### **Our Experiences**

Living standards in Africa are among the lowest on the globe and easing the scourge of poverty is a priority. Developing nations do not have the alternative of a strong industrial base. Job opportunities are scant and the only way out of poverty is through the sustainable local management of natural resources.

After a century of watching the decimation of our animal and plant species, our dream of being masters of our environment is being restored to some extent. Around Chiredzi, which is my home district in Zimbabwe, the economy is based on the utilization of natural resources. It is this commonality that binds us to nature, holds us together as a community, and guards against misuse of the resources.

My experience as a community leader in natural resources management has given me optimism that if communities are given enough leeway (i.e. stronger and clearer property rights and the means to capture wildlife-based revenues), they can bear the torch in shaping a conservation model for the future.

### **Benefits of Community Management**

Under CBCD programs, both local communities and biodiversity can benefit. Benefits to local communities include:

- Clarity on rights and responsibilities to wildlife resources,
- Improved allocation of access to resources,
- Improved management,
- Increased household incomes,
- Accelerated training and empowerment, infrastructural development (e.g. schools, clinics, community halls)
- The opportunity to use knowledge, commitment, and interests that would otherwise be wasted, and
- Better access to nutritious foods (e.g. meat).

Conservation of biodiversity is also enhanced under CBCD because income from natural resources conservation can supplant or supplement that from agricultural activities. People have a long-term and a short-term interest in maintaining these resources. It becomes obvious that if local people mismanage their natural resources, their future and that of their children will be uncertain.

Living with wildlife can be difficult and at times expensive. Costs can include loss of crops and occasionally life itself. By attaching an economic value to animals, we feel our crop losses can be recovered. In addition, one way to soothe the feelings of the bereaved is for them to derive some benefit from the risky lives they lead. Ultimately, CAMPFIRE is changing attitudes toward wildlife as it provides some assurance values. We now regard elephants as our cattle rather than simply as dangerous intruders.

Local support is apparent from the dramatic decline in localized poaching.

Now people regard wildlife as part of their wealth and there is less incentive to poach. When poaching does occur, the community is responsible for sanctioning the offender.

We are very aware of the value of wild lands. African culture inculcates in us the belief that destroying wildlife is tantamount to rebelling against our ancestral spirits, which attracts the maximum penalty. Thus, we fear being alienated from our spirits. We can never utilize our animal and plant species to the point of extinction. Our native upbringing bars us from even attempting to do that.

### **SECTION III**

## **CASE STUDIES FROM SOUTHERN AFRICA**

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### **Botswana: The Role of Wildlife in Developing Sustainable Land Use Management**

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All ethnic groups found in present-day Botswana have throughout their historical development made extensive use of wildlife and plants as food, clothing, medicines, weapons, fuel or utensils. In the past, the leaders of these groups were the custodians of all natural resources. They decided what plant or animal species could be harvested and when hunting would be allowed. The use of spears and bows/arrows limited the number of animals that could be killed in any hunt.

With the advent of modern civilization, commercial trade in animal products was introduced; by the 1800s, foreign hunters had filtered into Botswana. The new values placed on animals eroded the authority of traditional leaders and hunting became unregulated, resulting in the wanton destruction of wildlife. By the 1900s, many species had been exterminated in much of their range. The introduction of guns further compounded the problems of abuse and over-exploitation of animal species. To safeguard the welfare and continued existence of

wildlife, the colonial administrators introduced certain controls, including a system to license all hunters, designate certain animal species as royal game not to be touched by local people, establish national parks and game reserves in traditional hunting grounds, and deny local communities access to these "sacred places." The rules and regulations that were introduced favored the colonial masters, thus alienating local communities from their wildlife.

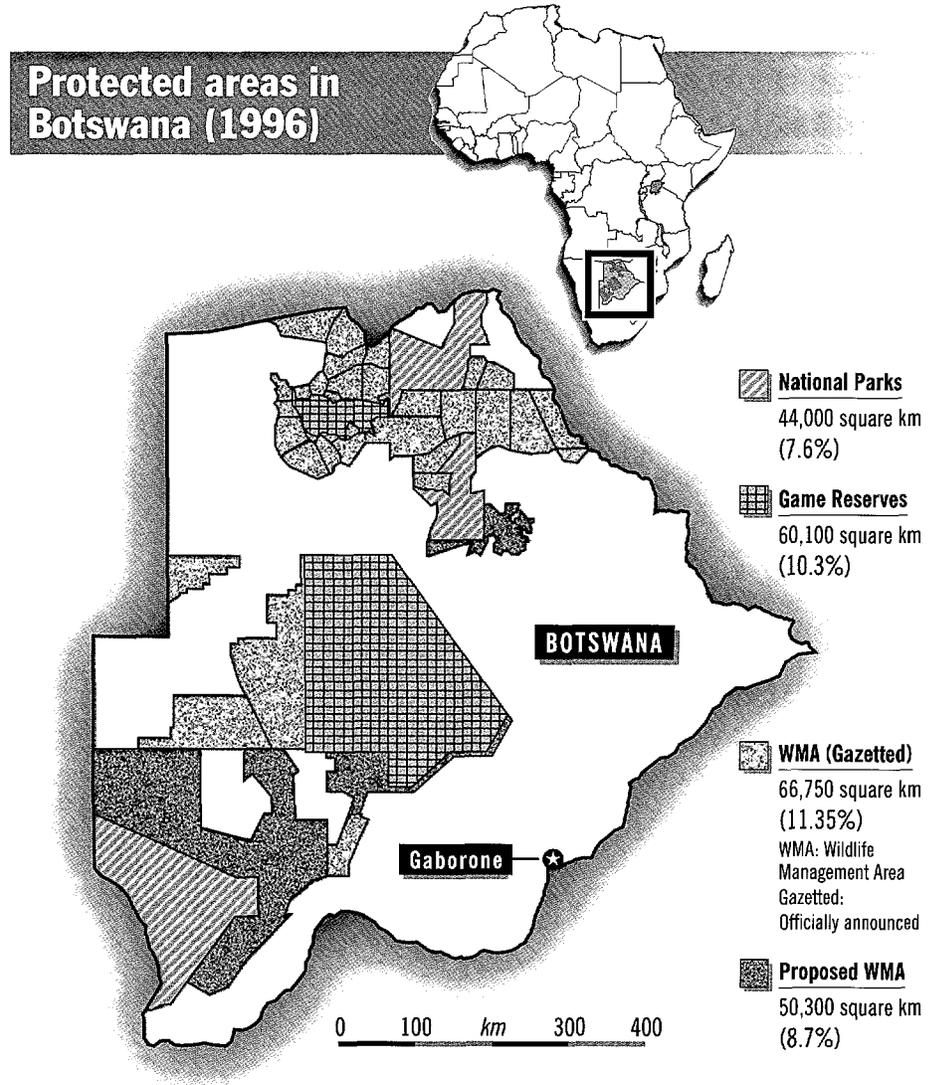
At independence the new government continued to maintain and expand the management system introduced by the colonial administration. The central government continued to control wildlife resource management with no consideration of local communities. Preservationists believed that wildlife anywhere was a world heritage to be preserved at all costs. This notion was not well received by local communities who seemed to be the only ones paying the opportunity cost of sustaining this world resource. The top-down management system, which emphasizes strict protection of species, has not served the desired conservation ideals well. In line with the worldwide conservation thinking today, Botswana is in the process of integrating and reconciling conservation needs with human development activities by involving communities in the management of wildlife resources and providing direct and tangible benefits that the communities can associate with wildlife.

**Land-Use Practices in Botswana**

Some 37% of the surface area of Botswana is set aside for the conservation of wildlife. (See map below.) As the human population increases, the amount of land required to support that human population also increases. In Botswana, if wildlife has no

economic value, people choose economically better options for land use.

Catastrophic decline in wildlife populations has resulted from this displacement of wildlife by the increasing human and livestock populations, cor-don fences that impede migration to

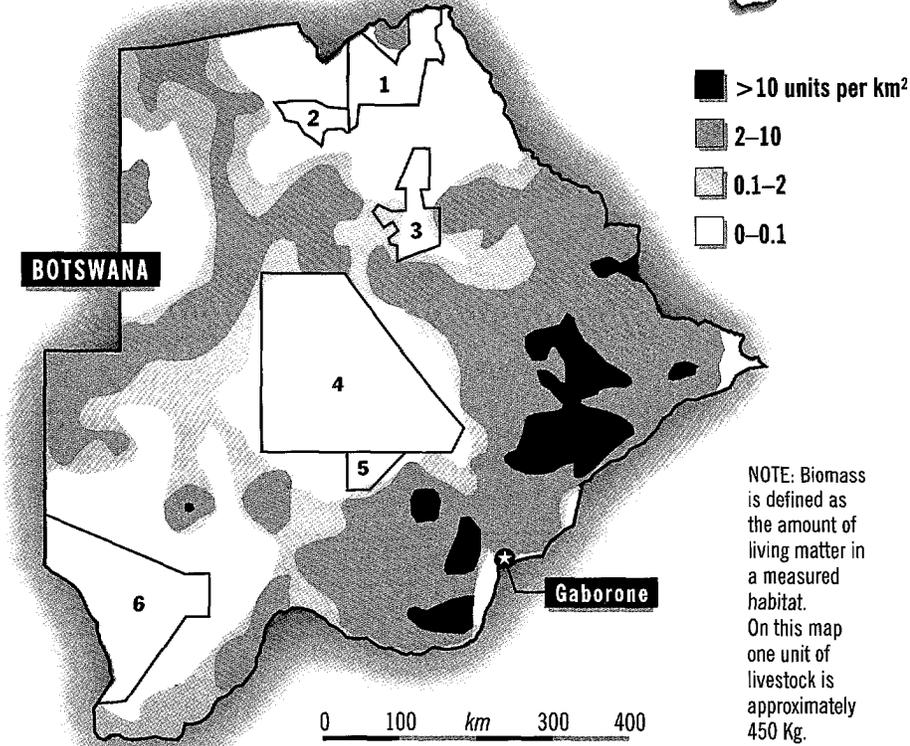


and from pastures and water sources, and recurring cycles of drought. For example, wildebeest in southwestern Botswana are reported to have declined from an estimated 260,000 animals in 1979 to barely 15,000 today. Increasingly, many species are found

in significant numbers only within protected areas. (See biomass maps, below and on page 22; contrast livestock and wildlife.) Elephant populations, on the other hand, have grown from an estimated 50,000 animals in 1987 to over 80,000 animals today.

### Livestock biomass in Botswana

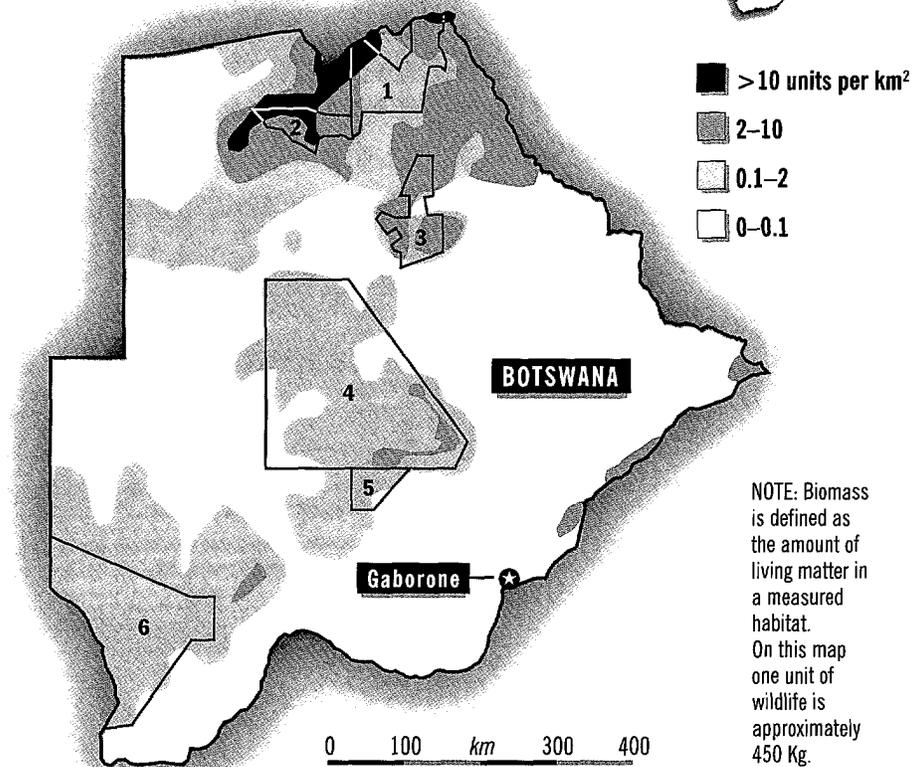
- 1) Chobe National Park
- 2) Moremi Game Reserve
- 3) Nxai Pan/Makgadikgadi National Park
- 4) Central Kalahari Game Reserve
- 5) Kutse Game Reserve
- 6) Gemsbok National Park



SOURCE: Botswana Dept. of Wildlife and National Parks

## Wildlife biomass in Botswana

- |  |                          |
|--|--------------------------|
| 1) Chobe National Park                 | 5) Kutse Game Reserve    |
| 2) Moremi Game Reserve                 | 6) Gemsbok National Park |
| 3) Nxai Pan/Makgadikgadi National Park |                          |
| 4) Central Kalahari Game Reserve       |                          |



SOURCE: Botswana Dept. of Wildlife and National Parks

Effectively returning custodianship of natural resources to local people and giving them a greater say in wildlife management can link conservation

with income generating rural development systems, thus showing that wildlife is an asset, not a liability. The Government of Botswana considers

this approach to be the only realistic option for redressing declines in wildlife populations and supporting a broad-based diversification of the rural economy.

### **CBCD Programs in Botswana**

In 1986 the Government of Botswana promulgated the Wildlife Conservation Policy which was aimed at developing a wildlife-based industry to benefit rural people and lead to long-term wildlife conservation through sustainable utilization. The Tourism Policy of 1990 also recognizes that revenues generated through nature-based tourism should be returned to the rural economy. To enable implementation of these policies, the country has been divided into 150 Controlled Hunting Areas (CHAs). These are administrative units which are assigned wildlife utilization quotas and subsequently zoned for a particular form of resource management such as commercial multi-purpose areas, commercial photographic areas, or community managed multi-purpose areas.

Commercial or community operators allocated any CHA are given resource management rights to those CHAs together with security of tenure through 15-year leases. This should improve management and conservation of those resources. Benefits will be derived not only from receipt of lease/rental payments by safari operators, but also from employment creation, handicraft markets, game meat from hunting parties, and the power to decide how to distribute both hunting quotas and the benefits to communities. The community's interests are managed through an accountable and legally constituted Community Trust that also holds the lease agreement.

Community Trusts have three options: managing the CHAs themselves, sub-leasing the resource use rights to a safari company for a fee, or entering into a joint venture partnership with a safari company by holding shares.

The lack of expertise and capital among communities and the initial conditions of the lease agreement have so far favored the adoption of the second option. The fairest and most transparent process of selecting a lessee or joint venture partner is through an invitation to tender. A Technical Committee comprising central and local government officials assesses and ranks the technical proposals of all tenders received, which are then submitted to the traditional public meeting for a final decision on selection of a lessee or joint venture partner. The Tribal Land Board has to ratify this decision.

An example of this system in operation is the Chobe Enclave Conservation Trust (CECT), which represents five villages adjoining the Chobe National Park. CECT was the first community area to be granted a quota in 1993. The Community Trust has, by sub-leasing resource use rights, received benefits of US\$12,000 in 1993, \$27,000 in 1994, \$77,000 in 1995, and \$100,000 in 1996.

Additionally, from the 1994 season, the Tribal Land Board made about \$3,350 from lease agreements and the local District Council, \$12,000 from license fees. Local communities receive 50% of all carcass meat and preference in any employment opportunities.

Following the example of CECT, two other communities have formed the

required community structures and have been allocated the resource use rights for their respective CHAs. Sankuyo Community has subleased its resource use rights to commercial safari operations for 1996 at \$90,000, and Beetsha/Seronga Community has subleased at \$110,000. A number of requests to replicate these efforts are outstanding elsewhere in the country.

Communities are also encouraged to utilize other natural resources in the community-managed CHAs to augment the benefits from wildlife-related activities. The most notable example of this option is Gweta, which is also a joint venture partnership between a Community Trust and the private sector. Gweta is involved in collecting marula (*Sclerocarya birrea*) fruit to produce concentrate for fruit juice punches, soft drinks, and alcoholic beverages. Indications are that 12,000 tons of fruit will produce 1,000 tons of fruit concentrate, create about 600 jobs, and inject \$350,000 into the local economy, estimated to rise to as high as \$5 million per annum once processing moves to the community area. This Community Trust is also investigating the feasibility of bottling spring water to supply safari operators and supermarket chains.

#### **Conservation Benefits of CBCD Programs**

CBCD programs create new economic opportunities and use a basket of benefits to offset the costs of living with wildlife and the loss of rights to manage wildlife.

By offsetting these costs, a new partnership can be generated in which communities feel that they have a role in conserving a resource which contributes to their well being. If this part-

nership is successful, then wildlife will be conserved through active management and the range available to wildlife could more than double in size. Communities cannot, of course, change overnight from State supervision and licensing to active take-over of management. A dialogue has to develop so that parties to this plan can understand each other's position. The Government cannot be expected to hand over management responsibility to communities it does not honestly feel are capable of accepting the challenge. In the same light, communities cannot suddenly be expected to gratefully see and understand what Government is now offering. Just as officials must adjust to the poacher becoming a gamekeeper, so must the community adjust to the policeman becoming a development partner. CBCD programs are expected to contribute to rural development by reducing rural-urban migration through employment creation in rural areas, diversification of the rural economies, an improved standard of living, increased revenues to local government authorities through taxation and license fees, and empowerment of marginalized communities. From the natural resource perspective, CBCD programs are expected to lead to sustainable resource use, recovery of declining wildlife populations, appreciation of the natural environment, and a greater economic value for wildlife.

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### **People and Parks: Rehabilitation in Mozambique—The Case of the Gorongosa/Marromeu Region**

*Presented by:*

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The Gorongosa/Marromeu region of central coastal Mozambique lies between the lower Pungue and the Zambezi rivers. (*See map on page 26.*) Species and ecosystem diversity in this region are probably the highest in Mozambique. The area includes one national park, one buffalo reserve, two forest reserves, two areas of *vigilancia* (areas under supervision), four hunting concessions, and some undesignated areas with a high carrying capacity for large mammals.

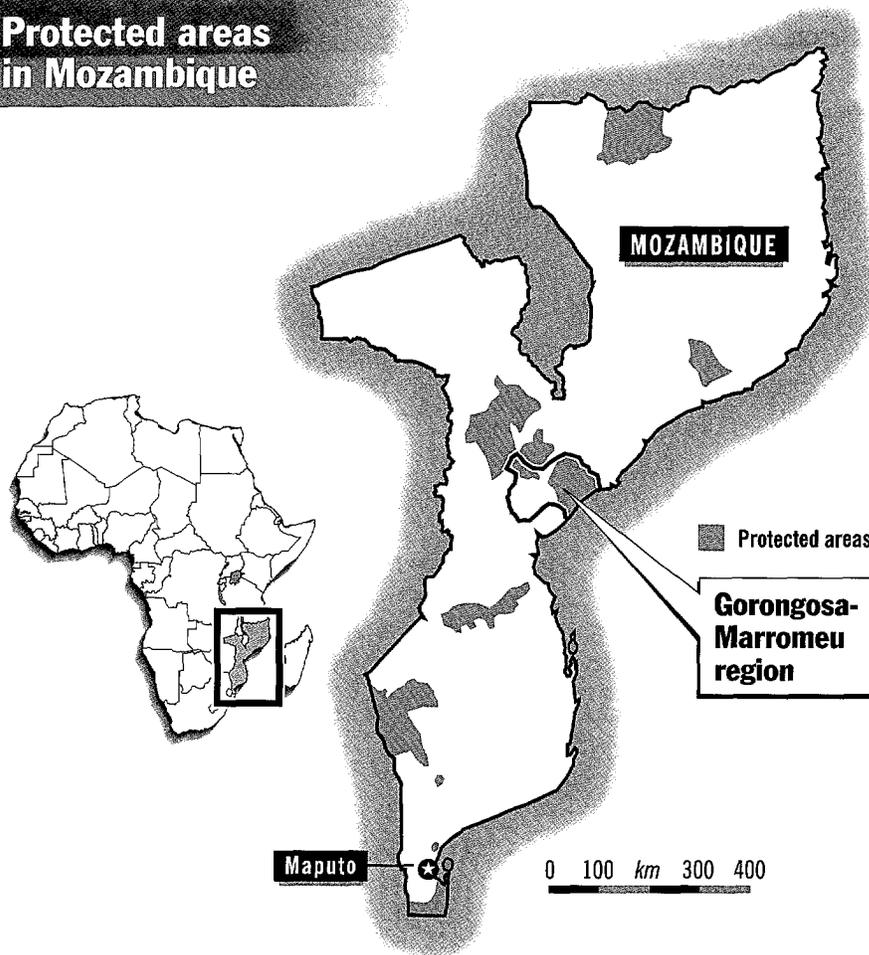
Beginning with the colonial era and into the early 1980s, the state controlled the exploitation of wildlife and forest resources. Deprived of a resource which they had traditionally had the right to utilize, local people turned against conservation policies and formed alliances with poachers.

During the brutal 16-year civil war, Gorongosa/Marromeu was the epicenter of opposition activities for Renamo (the resistance movement). Soldiers and displaced people hunted to satisfy their basic needs, drastically reducing wildlife populations. Conflicting claims prevented wildlife authorities from establishing control until 1994, two years after the peace agreement.

The difficulties in reconstructing Gorongosa/Marromeu have included landmines buried during the war, people residing in the park, and poaching with locally made and illegal firearms. Wildlife, forest management and infrastructure were destroyed and large mammal populations were greatly reduced. Moreover, disruption of local social structures during the war left communities unable to meet their basic food production needs. Since 1992, however, the Government of Mozambique has been committed to reintroducing management to promote rural development in the area.

In 1995, the Gorongosa/Marromeu Integrated Natural Resources Management Area was established as an emergency program (financed by the European Union) to involve local communities in bringing unsustainable use of wildlife and forests under control. It was also meant to promote and improve other forms of sustainable resource use and develop a framework

## Protected areas in Mozambique



for private sector development. The program established an anti-poaching unit and negotiated with local communities to gradually involve them in the management of forests and wildlife. Experiments are underway to determine the schemes which will best satisfy food security, conservation and development needs.

### Implementation Strategy

The wildlife populations of Mozambique are found in the poorest and least developed regions. Because local people bear the costs of living alongside wildlife, they should be the major beneficiaries of wildlife and forest use. In accordance with this strate-

gy, an 18-month rehabilitation program was developed and presented to the local leaders. Initially the communities refused to accept the program, fearing that hunting, fishing, and farming would be prohibited. They were asked to cease hunting in the protected areas to enable the animal populations to increase. As an alternative, people could harvest fish, honey, forest products, medicinal plants, and sustainably produce food crops, some cash crops, and palm wine for commercial purposes.

In addition, timber rights in adjacent areas are leased to communities which are using handsaws (chainsaws are prohibited) to harvest timber for sale to logging companies. A low quota has been established until more data are collected on sustainable use of the timber resources. This activity has encouraged people to move to the forested areas on the park periphery, so that the central area can recover. Today many more animals can be seen as compared to one year ago.

The local people gradually began to accept the program as they realized a new philosophy was being introduced. They then asked for assistance and cooperation to hold a major traditional ceremony to inform their ancestors about the new strategies. If the program failed to keep the commitments, the ancestors would make trouble. The ceremony was held and attended by leaders of all the communities surrounding the park.

As part of the new program, hunting concessions are allocated to private safari operators. A program management team is mediating the relationship between the operators and local communities to ensure that everyone

will benefit from utilization of wildlife. At this stage the safari operators have agreed to give any meat from trophy hunting back to the local communities and to develop social infrastructure such as primary schools, clinics, bore holes, and commercial facilities.

In return, the local communities are helping to control commercial poaching. With their support, demobilized local soldiers and others recommended by traditional leaders have been recruited to serve as scouts. At first the team worked with the police to intercept poachers but eventually they were armed and became independent of the police. After six months, local cooperation was such that no one could enter the park without the program team's knowledge.

Gorongosa/Marrromeu's potential is unknown and no zoning plan has been developed to avoid conflicts between uses. Activities are underway, however, to produce a plan to protect biodiversity, water catchment values, private sector investments, and development needs of local communities. Because the Government of Mozambique does not formally regulate these initiatives, proposals have been presented to the Government and Parliament to develop legislation that involves local communities in managing and benefiting from resource use.

The emergency program has faced many constraints including legal problems and shortages of trained staff since its inception in 1995. In addition, the wildlife populations have been too low to guarantee an acceptable level of tourism. Also, no financial assistance has been received for a pilot program for local community-based management of natural resources.

Nevertheless, these constraints have not altered the belief that if local communities see no reasonable value in wildlife resources, the extinction of species will accelerate. Expensive and sophisticated anti-poaching teams cannot counter that reality.

### **Zimbabwe: The Development/Conservation Link**

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In the context of this paper, development is viewed as a collective transformational process that aims to qualitatively improve the lifestyles of communities. For a “developing” country such as Zimbabwe, this phenomenon focuses on the general alleviation of poverty, particularly in rural areas. It also means that development intervention by state and non-governmental organizations is biased toward the rural sector where the majority of our population resides. Conservation is defined as a purposive approach to managing natural resources undertaken by organized communities or development organizations with a view to benefiting from these resources. It is inextricably linked to economic and institutional development.

Use of natural resources becomes the incentive for the communities to look after natural resources. CAMPFIRE is mainly involved in the sustainable uti-

lization of renewable resources such as wildlife, forests and water, with some communities venturing into mineral exploitation.

A brief historical analysis is important in order to understand the linkage between conservation and development in Zimbabwe. During the colonial era, natural resources exploitation was vested in the central government. This scenario had the following consequences:

- Natural resources were an asset for the central government; rural communities were excluded from utilization of this asset.
- With the use of natural resources criminalized, local people had no option but to exploit them unsustainably.
- The state’s draconian regulations to contain the illegal harvest of natural resources increased mistrust between local people and state administrators.

In the early 1970s the government introduced legislation to allow large commercial farmers to utilize wildlife on their farms. To legalize this approach, the Parks and Wildlife Act was amended in 1975 and custodianship of wildlife was vested in the individual farmer. Farmers began to conserve wildlife since it could be marketed through hunting or tourism, and they were the beneficiaries. Farmers now perceived wildlife as a profitable form of land use in areas where conventional agriculture was not viable. Since then, the land acreage devoted to wildlife has increased. Although this legislative initiative benefited commercial farmers only, it proved that wildlife conservation would be more effective

if the landowner derived substantial economic benefits.

The major environmental management developments in communal (or rural) areas of Zimbabwe occurred in the early 1980s. When the CAMPFIRE Programme was unveiled in the districts of Guruve and Nyaminyami in 1988, many related rural development issues were identified:

- Rural communities can appreciate the value of natural resources only if

there are corresponding benefits or incentives which offset the costs of living with wildlife.

- Local institutional development is a prerequisite for effective management of natural resources. CAMPFIRE relies upon democratic institutions with high levels of accountability and careful consideration of culture.
- CAMPFIRE must emphasize the importance of demand-driven training at the local level in basic

### Distribution of revenues, Kanyurira, Guruve

Amount	Use	Beneficiaries
\$17,500	Household dividends	Household members
\$10,000	Improving local school	School staff and pupils
\$1,375	Football club	Unemployed young men
\$25,000	Clinic construction	Entire community
\$625	Women's club	Local women
\$3,750	Anti-poaching unit	Safari operators and community
\$4,375	Fence maintenance	Small-scale farmers
\$5,000	Other expenses	Community
\$5,998	Contingency	Entire community
\$3,125	Proposed drought relief	Drought relief recipients

NOTE: Currency figures are in U.S. Dollars because this paper was presented to North American audiences. Original table expressed currency in Zimbabwe dollars. The exchange rate used was 1 U.S. \$ = 8 Zimbabwe \$ (1994).

SOURCE: CAMPFIRE

CAMPFIRE revenues in Kanyurira ward of Guruve District were used for diverse purposes, benefiting a variety of groups within the community in 1994.

bookkeeping, project management, leadership development and development of local bylaws. Since the training is multidisciplinary, many agents have participated (Department of National Parks and Wildlife Management, Ministry of Local Government, Rural and Urban Development, Zimbabwe Trust, World Wildlife Fund, CAMPFIRE Association, and ART).

- Decentralized and accountable management is supported by local game scouts, game guards, game monitors and district CAMPFIRE officers selected by the local communities.

As a community-based conservation and development initiative, CAMPFIRE has had successes because it is based on the following:

- Local demands and knowledge systems are respected.
- Determination of development priorities is left to the people, which creates a learning system through adaptive management. Local empowerment in development is the only sustainable way rural communities can manage their development. (See table on page 29 showing distribution of CAMPFIRE revenues in Kanyurira ward.
- Expanding the base for participatory activities in the community in turn sharpens local skills.

CAMPFIRE's major success has been in the wildlife sector but many districts are now engaging in community-based tourism. However, we have no illusions that CAMPFIRE can be based on non-consumptive tourism only; the two types of tourism will have to be jointly implemented.

With regard to participation, steps are being taken toward further legislative reforms to empower structures below the ward and sub-district levels. Vehicles for discussion include a national consultative debate on environmental law and the Land Tenure Commission report. Community empowerment is a process that needs patience and gradual understanding of local demands.

While CBCD is localized in its generic development, it can be negatively affected by externalities in the form of constrained international markets. Thus a favorable international environment is needed to market domestic products. Wildlife products such as ivory, elephant hides, and other trophies are important for generating incomes for rural people and must be marketed abroad. In turn, the local people will conserve the wildlife, strengthening the conservation/development link.

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### **The Elephant's Importance to CBCD: the CAMPFIRE Example**

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CAMPFIRE's significant contribution to wildlife management has been its capacity to face the human/wildlife conflict and seek ways to resolve it. Large species such as elephants or lions cause damage in the form of crop destruction, predation of livestock, and in extreme cases, loss of human life. In rural areas of Zimbabwe, local people must develop survival strategies particular to drought-prone areas. The presence of elephants that destroy crops only adds to the plight of local people. It is thus important that species such as elephants contribute to the survival needs of such people. Wildlife is a cost to rural people but the marketing of its products is a sure way to generate financial resources, turning cost into benefit. The CAMPFIRE philosophy is that those who live with the resources can best do the conservation.

There are two main sources of legal consumptive elephant products:

- Marketed international sport hunting;
- Problem animal control (PAC) which occurs when the conflict between particular elephants (usually young bulls) and rural farmers becomes intolerable. In extreme cases, a particular elephant that keeps harassing farmers can be shot. About 50 per annum are taken through PAC in the entire CAMPFIRE Programme, which provides habitat for about 10,000 elephants. Since 1989 the products from these elephants, hide and ivory, have been banned from international trade by CITES. Rural communities, therefore, now have stockpiles of the products from approximately 400 elephants. It is the ivory from these elephants that is not lucrative at present and which CAMPFIRE communities wish to trade. These stockpiles are identified as separate from those of government-owned ivory which generally are the result of culling operations conducted for population control.

The commercial trade in ivory has been banned since 1989, but trophy hunting has been permitted. Although trophy export is permitted by CITES, it is constantly threatened by domestic legislation, particularly because of pressure from animal rights organizations in the USA. Should export of elephant trophies be jeopardized, then the entire CAMPFIRE program would be severely threatened. We believe that is what these groups want, not just because they hold elephants in such high esteem but because they basically disagree with sustainable use of wildlife. Sustainable use is a cornerstone of the Biodiversity Convention and thus the issue is greater than man-

agement of elephants alone; it goes to the heart of the World Conservation Strategy.

Sport hunting in Zimbabwe has been based on the quota system to achieve sustainable offtakes. Available statistics indicate that trophy hunting contributes 90% of CAMPFIRE's income and elephants, 64% of this, while the

rest is derived from other species such as buffalo, antelope, and smaller animals, and from tourism. Safari operators who lease hunting concessions from Rural District Councils pay concessions and trophy fees, the majority of which come from elephants. (See table below showing revenues from elephant trophy hunting fees in relation to total revenues from trophy hunting.)



### Income from trophy fees (1992)

District	Total (US \$)	Elephant (US \$)	% from elephant
Bulilima Mangwe	\$35,583	\$35,583	100%
Gazaland	\$40,255	\$36,496	91%
Gokwe	\$62,846	\$36,496	58%
Guruve*	\$93,506	\$26,450	28%
Hurungwe*	\$113,676	\$66,518	59%
Muzarabani	\$50,000	\$9,124	100%
Nyaminyami*	\$104,771	\$29,526	28%
Tsholotsho	\$126,741	\$124,088	98%

\* Includes sport-hunted "problem elephants" that safari operators take because they threaten people's fields.

NOTE: Currency figures are in U.S. Dollars because this paper was presented to North American audiences. Original table also expressed currency in Zimbabwe Dollars. The exchange rate used was 1 U.S. \$ = 5.48 Z \$ (1992).

SOURCE: I. Bond, "Personal Economic Analysis of Elephants' Contribution to Trophy Hunting Incomes."

Revenues from elephant trophy hunting comprise a high percentage of the total trophy revenues in many CAMPFIRE communities, as indicated above.

If elephants were removed from trophy hunting quotas, CAMPFIRE would be negatively affected and poor rural communities would be deprived of income. In terms of conservation, the rural people would cease to appreciate the importance of elephants, which would undermine elephant conservation. In terms of sustainability, elephant trophy hunting quotas are set at 0.5% of a given population. On average, elephant populations increase at 5-7% per annum. This in effect means that only small, valued populations are hunted.

Elephant trophy hunting is patronized by clients from the USA, Germany, Spain, Austria, South Africa, and other countries. The location of major markets in these countries means that if markets were closed, CAMPFIRE, and consequently the rural poor, would be disadvantaged.

CAMPFIRE Association, as a representative of the producer communities, opposes any protectionism or animal rights that prescribes that elephant hunting is inhumane. We feel that it is more inhumane to leave rural communities suffering from abject poverty. The animal rights movement is a luxury that we cannot afford in developing countries such as Zimbabwe, where we have managed our elephant populations well, as demonstrated by the increase in the number of elephants.

CAMPFIRE views the campaign by animal rights groups as a form of environmental fundamentalism. These groups oppose even sound elephant management practices such as culling in favor of elephant birth control. Their eventual objective is a ban on elephant trophy hunting.

The animal rights groups are involved in media dissemination on the elephant populations in Southern Africa, which disregards well-researched data. They deny that elephant populations in Southern Africa are healthy and this propaganda is meant to support the continued ban on all elephant products. Elephants are just like any other natural resources that should be traded for the benefit of the people. As long as there is sustainable management, CAMPFIRE will continue to urge exploitation of natural resources, including elephants.

### **Crocodile Management in Zimbabwe: An Example of Sustainable Use**

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The Nile crocodile (*Crocodylus niloticus*) probably causes more human fatalities than any other wild animal in Africa. Males regularly grow to 5 m and can weigh more than 500kg, allowing them to pull down and drown adult Cape buffalo, domestic stock or humans with equal ease. With frequent drought in the semi-arid lands of the region, people and crocodiles increasingly come into contact around water holes and rivers. These animals are not popular with farmers and villagers. Therefore, it is difficult to justify their

conservation on scientific or aesthetic grounds.

Surprisingly, however, large numbers of crocodiles persist throughout East and Southern Africa because conservation of the crocodile has been based largely on a commercial harvest for its leather. This may seem like an oxymoron. Indeed it is often said that the commercial use of species is incompatible with their very survival. The example of the Nile crocodile suggests just the opposite.

#### **Who Decides?**

The sustainable use of the Nile crocodile in Africa was pioneered in Zimbabwe in the 1960s and 1970s, but is now widespread throughout the region from Ethiopia through Kenya and Zambia to South Africa. The idea arose from strictly pragmatic considerations and the question, "Who decides?"

Crocodiles were hunted to very low levels in the 1940s, 1950s and in some places, the 1960s. This is a resilient species, however, and numbers began to recover quickly once hunting pressures were removed, either because of national legislation (as in Zimbabwe) or because hunting was no longer economic. In an era of rapidly increasing human populations, it was then obvious that crocodiles and people would one day come into a situation of serious conflict, a prediction which has been fulfilled all over East and Southern Africa. It would have been easy and must have been tempting to treat the crocodile like many other animals and give it full protection.

Fortunately, some far-sighted individuals in the wildlife service saw that the

answer to the question "Who decides?" should be, "the people." In the case of the crocodile, protection was not going to help a voracious predator of humans and their livestock in the long run.

As a result, many crocodile populations are left unmolested within national parks and other protected areas, but many more are subject to annual harvest for an international market. This harvest has been going on for 30 years in some cases. All the while, crocodile populations have been increasing. Depending on the situation, the harvest gives a conspicuous economic incentive to landholders, local authorities, fishermen and the national government to conserve important breeding populations of crocodiles and to tolerate their depredations.

It is the high value of the crocodile skin which drives this process.

#### **Management**

It may seem incongruous to claim that harvesting of crocodiles now leads to their conservation while the harvest of the 1940s-1960s led to their decimation. The difference is that the current harvest is strictly regulated and monitored, while the earlier one was uncontrolled. Good management has been the key to success.

There is strong evidence that the killing of mature breeding animals in the earlier period quickly decimated populations. Technically known as 'ranching,' the current harvest is usually restricted to eggs that are collected and hatched, and the young animals raised on licensed farms for slaughter once they reach an economically attractive size. This is usually at 1-2 m in length and at 3-4 years of age.

In essence, the farmers' breeding stock is the wild population and at the very least, they have a vested interest in seeing that this stock is maintained in a healthy state. Through a range of mechanisms, this incentive can be extended from local communities all the way up to the national government.

This system of management was developed based on common sense and 'adaptive management.' While there is now a wealth of knowledge on the Nile crocodile, the research was undertaken after the programs were introduced and had already proven their value. The key to this management system is monitoring and the ability to modify and adapt as experience accumulates. Monitoring itself need not be complex either. All that is needed to ensure sustainability is a measure of whether the population is increasing, stable or declining.

#### **The Importance of Trade**

Trade drives the conservation of the Nile crocodile, but it is neither unregulated nor unrestricted. Since the mid-1970s, trade in wildlife products has been controlled through CITES. Many argue that the example of the Nile crocodile demonstrates the success of this Convention. To some extent, this is true and if CITES did not exist it would have to be invented.

Management of crocodile resources is greatly assisted by a sympathetic and tailor-made international regulatory system for trade that helps keep out illegal or unregulated skins. But this system came into place only because of pressure, often very unpopular pressure, from African nations for the Convention to become more flexible.

One important fact that should be

considered is that although the Nile crocodile was placed on CITES Appendix 1, trade was never completely stopped but continued through a system of 'reservations' (a kind of opt-out clause). As a result, the new management system arose in a situation where trade was possible. If trade had been impossible, there would have been no incentives to try new systems of management based on conservation through sustainable use.

#### **Conclusions**

The Nile crocodile is an important example of how economic commercial harvesting of a wild species can contribute to and even drive its conservation. The important lessons are:

- There is no need for comprehensive research before starting a successful scheme.
- CITES is helpful, but an Appendix I listing can be an impediment to progress.
- The important features of sustainable use are monitoring and adaptive management.

## SECTION IV

### DUALISTIC TENURE of COMMUNAL RESOURCES in ZIMBABWE:

#### Lessons from the CAMPFIRE Programme

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Between the desire to preserve customary tenure and the impulse to modernize lies the dilemma of the present land reform policy debate. One system emphasizes security, equality and community; the other, productivity, social differentiation and individuality. The social security of the communal resident is based on belonging to a group and having an inalienable right of access to share tribal land. This is at odds with the security some economists envisage based on an expanding economy with rising levels of real income. To be acceptable to a majority of rural people, any change from the traditional communal system must provide greater security for all. The benefits of change must be greater than the advantages lost in the process.

Tenure systems define who can (and cannot) do what with a particular property and under what circumstances. Further, tenure defines a relationship between people, not just between people and physical property. That property may be farm land, grazing land, forest land, a river, a fishery, wildlife, or some other resource, including minerals. Tenure is not just about owning land but encompasses a 'bundle' of rights and responsibilities for a range of renewable and nonrenewable

resources. Each resource has particular physical qualities and technical constraints on its use, yet fits into an integrated ecosystem.

Any comprehensive communal tenure policy, and attendant institutional framework, must assure community interests like food and social security, and enable individuals to access resources and accumulate wealth. Policy makers in Zimbabwe are attempting to address this issue and raising the possibility of balancing traditional and statutory approaches. Land resources in Zimbabwe, and throughout most of Africa, are administered through three overarching tenure systems: state, traditional and private. In Zimbabwe, and elsewhere, the State has legally co-opted traditional tenure. However, the State is seriously challenged by customary authorities. Unless the two systems can be reconciled, the political will to establish a communal land reform policy will not exist.

#### **The Communal Tenure Issue in Zimbabwe**

The cardinal feature of traditional (customary, tenure, before its gradual erosion under the impact of colonial policies and population pressure, was its consonance with traditional land-use systems. These, in turn, were well adapted to ecological limitations. Under communal tenure, at least in theory, all members of a community had a right of access to land for cultivation, pastoralism, hunting, fishing, and

residence. Social or family organization was intimately linked with exploitation of the land. Geography could be seen in terms of social organization: land as a genealogical map.

The highest authority in the customary tenure system of the Shona people of Zimbabwe was the chief who was basically a territorial ruler. The tribal area was subdivided into semi-autonomous wards, each under a hereditary headman. Each ward was a geographical and kinship unit containing a number of villages. The villages (kraals) were groups of households whose members were related by family ties, the kraalhead being the head of the family. Land was held by the community but an individual's rights were always secure. Grazing land was common property.

The security enjoyed by tribespeople was based on an inalienable right to share in tribal land. More than a means of production, land represented a hereditary right to belong to a community. However, the fact that communal land customarily had no market value did not mean that it was freely accessible to anyone. An allocation procedure based on kinship and local conventions recognized and rationed the finiteness of land and natural resources.

The strengths of customary tenure should be recognized:

- Customary tenure has prevented significant speculation and land-grabbing by not allowing a land market to develop.
  - Its strengths are much clearer in regard to the ownership and management of commonage than of cropping lands.
  - Authority over and management of common property resources were united. Collective decisionmaking was effective and rules were enforced.
  - Above all, customary tenure consolidates the cohesion of the group, whether a simple kinship group or the whole village.
- Customary tenure also has disadvantages:
- It does not conform well to the statutory system of property rights and the land market.
  - It provides limited tenure security based on community membership, not individual title.
  - This uncertainty can discourage conservation and improvement of natural resources, as individuals externalize the cost of conservation to the community.
  - It does not encourage the credit and investment necessary for development, as land is not taken as capital to be owned.
  - It can perpetuate clan rivalries and tribal divisions.
  - It is patriarchal and clashes with the democratic ideal of gender equality.
  - In short, customary tenure impedes the ascendance of individuality through land accumulation and the formation of a landowning class.
- The system has been flexible and resilient enough to survive the racial land apportionment process of settler domination.
  - It has vigor today within democratic and bureaucratic local authorities.

### Dualistic Tenure

The twentieth century witnessed the formal demise of customary tenurial systems through the alienation of land to private and state sectors. Along with the introduction of bureaucratic regulatory powers, this development has undermined the traditional management of the common natural resource base. The colonial system co-opted traditional authority into district administration, with management responsibilities over specific resources divided into specialist technical and regulatory agencies.

Colonial attempts at communal land reform focused on moves toward granting farming rights (cropping land) while retaining communal grazing. These attempts failed largely because the government lacked legitimacy, planning communal reform within a racial national land policy framework. These contextual flaws do not exist today. Representation of the people exists at local and central levels. Communal land tenure reform can take place in relation to reform of the commercial land tenure system, and communal interests can participate in the policy formation process.

So far, however, post colonial governance has featured the further ascendance of bureaucratic governance based on co-management by 'democratic' local and central government. Democratic local authorities have formally replaced customary authorities. Despite the law, which has the local authorities as communal land authorities, custom and a sense of community are still the organizing principles of communal land.

Today Zimbabwe's communal areas are characterized by:

- High population pressure,
- High rates of overstocking,
- Small farms in comparison to the large-scale sector,
- High levels of environmental degradation,
- Low productivity,
- Life based on cultural and traditional practices, and
- Dual resource governance systems, comprising elected and traditional institutions.

### The Problem of Split Authority

As long as communal land resources are both formally state and informally customary lands, authority and management will be compromised and open access tendencies will thrive. This dualism in control of access to rural resources is common in Africa. Both the CAMPFIRE program and the recent Land Tenure Commission have had to address it.

The fracture in authority at the community level manifests itself throughout government-promoted natural resource management programs.

- In the Zambezi Valley, in-migration of settlers, deemed illegal by local authorities, continues unabated. Traditional leaders directly challenge the statutory system by granting access to land. Unplanned settlement in the area threatens to fragment the landscape and drastically dilute the resource supply to human demand ratio. Unless local communities can enforce exclusive access, the possi-

bility of sustainable development is severely undermined.

- The same symptom of dualism is seen in the management of the artisanal fishery of Lake Kariba. In their efforts to regulate the fishery, the local authorities have usurped the authority of *sabukas* (kraalheads) and the tendency toward open access has increased. Without the support of traditional authorities, the state is attempting to grasp at control beyond the reach of its effective power.
- The Agriculture Department has attempted to manage livestock grazing by establishing grazing communities of livestock owners under statutory development committees. In reality these committees cannot effectively demarcate grazing areas without input from the local kraalhead.

The ambiguities of statutory policy and practice allow traditional authority to re-emerge as a source of power responsive to local needs. Rural communities need a supportive framework for resource ownership and utilization. This is a broad governance and civil society agenda, as the management of the rural resource commons concerns the ordering of society and the role of the economic market to stimulate development. Both community (customary authority) and private sectors may seem fragile in comparison to the State, but the regulatory authority of the State is nowhere more illusory than in regard to what actually happens on the ground.

### **The Challenge to Balance Authority Over Communal Resources**

Internationally, the need to decentralize natural resources management to clearly bounded local communities is widely advocated. Communities should be involved in planning and implementing projects and enhanced economic benefits of resource use should accrue directly to them. Unfortunately, these good intentions often fail to achieve sustainable natural resources management and utilization. The actual outcome is often the co-option of local elites and leadership for derived programs. Decentralization can mean just another bureaucratic obstacle in natural resources management.

The question of how to balance dualistic authority is extremely challenging to national governments whose own authority is based, sometimes tenuously, on democratic principles. The Land Tenure Commission in Zimbabwe has recommended strongly that the government recognize the traditional village, constituted under the village headman, as the basic unit of social organization in communal areas. Members of the traditional village should be given formal perpetual rights, jointly, to land and all resources in the village. A schedule of members would be maintained, and the village would have rights to include or exclude new members. The Commission also recommended the disbanding of the State-supported village committees. Traditional institutions would replace statutory ones.

Thus, communal land would no longer be State land; having joint title, the village could then sub-title residential and arable land while retaining the

commons as village property. The government has not yet accepted this recommendation.

### **Lessons from CAMPFIRE**

Articulating good intentions for the local governance of communally utilized natural resources is easier than creating new institutional arrangements that will really modify individual and national government behaviors. The sources of "value" in natural resources have to be clear and institutional arrangements are needed which recognize and distribute part of that value to those who undertake the hard work of resource management and conservation. This requires that we address questions of how to value resources, define policy, design property regimes, institute legal structures, decide equity, and arbitrate differences and disputes.

### **CAMPFIRE's Conceptual Thrust**

The right to use wildlife was removed from communal people in the earliest phase of colonial government. CAMPFIRE, introduced by the government through the National Parks Department in 1989, focuses on communal tenure for wildlife. The State, which removed the right to wildlife from chiefs and communities, has returned it to local authorities. CAMPFIRE's intent, however, is to establish communally-based wildlife management regimes through institutions based on wildlife property rights and by motivating those tenure-based institutions through the market values that wildlife resources generate.

If the village was the basic unit of communal tenure, then the natural resources within the village would con-

stitute its natural capital. All members of the village could participate in a village natural resources corporation. Users of village resources such as farmers, irrigators, and livestock owners, would account to the producers (owners) of primary resources. Such a natural resource jurisdiction would amount to the district consisting of a cooperative association of land (natural resource) units. Apart from being an administrative unit, the district would serve as a natural resource cooperative based on village membership, coordinated by ward and district. Arable lands and household stands could have individual titles nested within the community property of the village.

Grazing lands for livestock, for example, could be a private group property, leased from the village resource company (public group property). The public company could allocate grazing shares to the private enterprise at the village level. Each resource needs particular rules of access. Wildlife for example, is mobile and can move from village to village. A stream may rise in one village but flow through many others. Forage resources are not evenly distributed by village. Those villages with key forage resources like a vlei (wetland) or river may not be able to keep them exclusively for themselves. The management of each resource needs a specific set of arrangements. Inter and intra village decisionmaking is time-consuming but necessary and would be greatly facilitated by the legal recognition of common property institutions.

### **The Centrality of Resource Ownership and Use**

The present wildlife management policy in Zimbabwe introduces the con-

cept of sustainable use and encourages integration of conservation and development objectives. Essentially, sustained use of wildlife necessitates two conditions:

- Clearly defined property regimes: Who is entitled to what?
- Established use values for natural resources: What is wildlife worth?

The combination of clear resource entitlements and trade in wild species provides a positive economic incentive to develop and conserve wildlife as a land use. Zimbabwe, through its 1975 Parks and Wildlife Act, and through CAMPFIRE, has attempted to re-empower local communities with valuable wildlife use rights. As long as wildlife was state property, the communal people could not invest in it. As communal property, wildlife can compete with domestic livestock for a place on the rangelands.

CAMPFIRE is controversial at home and abroad:

- Nationally because it advocates the devolution of authority over wildlife to the lowest accountable level of rural community, and
- Internationally because it encourages unfettered trade in wildlife species.

Ownership of wildlife without trade would provide little incentive for conservation. Trade without focused ownership is insufficient to ensure sustainability.

Two fundamental principles are involved:

- The unit of proprietorship (tenure) should be the unit of production, management and benefit. It should be as small as possible.

- Those who live with the resource should benefit from its value through trade. Management and benefit should be positively co-related.

Zimbabwe's CAMPFIRE program depends on the international sport hunting trade, particularly on the trade in consumptive uses of the elephant. The right to trade has had to be vigorously defended in the face of international pressure. At the global level an ideological struggle persists between utilizationists and preservationists. The use school believes that unless wildlife outside protected areas is a positive land use option, it will lose its habitat to monospecies production systems, which is contrary to what both ideologies support.

#### **Strengths of CAMPFIRE**

- The principle of empowerment of communities over resources was established by devolving State control over wildlife to districts who further devolve those rights to communities.
- The land use potential of wildlife has been advanced by placing high values on wildlife through consumptive and non-consumptive utilization.
- Community-level institutions have evolved and indicate the capacity to organize themselves effectively.
- CAMPFIRE has demonstrated the validity of devolution of tenure over common property resources, which informed the Land Tenure Commission recommendations.
- The combination of resource regimes and valuable resources has provided incentives for improved management. Indicators of this are:
  - The development of com-

mon property institutions, the process of which is internally driven;

- Improved land use planning and management of the village commons;
- Improved returns on forage use; and
- Improved social infrastructure, welfare, household and food security.

### Weaknesses of CAMPFIRE

Two key factors account for most of CAMPFIRE's weaknesses: Its attempt to empower communities with tenure over only one resource in a holistic bundle, and its inability to directly address the dualistic authority issue.

Consequently the following problems are manifest:

- No overall tenurial (property rights) framework exists for integrated village common property resource regimes.

Wildlife legislation supports districts not villages. Formal authority is with districts, technical control with sectoral agencies, management control is with villagers.

Consequently, a framework exists to enclose the wildlife commons, but not the livestock grazing lands.

- Authority over resource access is split between statutory and customary authorities.

Resource boundaries and loyalties to basic units of social organization can conflict. Conflicts can elevate local transaction costs, as consensus is not easily forthcoming.

- Authority over resource management decisions is split at the

intra and inter village level depending on the particular resource tenure niche in question.

Key resources are not evenly distributed so carrying capacity varies between villages. In times of resource pressure, villages well endowed with forage resources cannot enforce exclusion and must allow access to other villages.

- Jurisdiction over resource access can be confused between the different tiers and sectors of statutory governance.

Clear rights and responsibilities at various levels of social organization do not exist. The technical input of sectoral agencies undermines rather than supports community-based management. Management decisions can be compromised to prevailing social, economic, and political forces. This is particularly true with regard to livestock management, which manifests differential ownership. Decisions favor the owners rather than the rangelands or equity considerations.

- The sustainability of the wildlife resources market is questionable compared to livestock and agriculture.

Whereas sport hunting and increasingly non-consumptive tourist markets have been reliable so far, the consumptive market is vulnerable in the medium term due to external pressures.

### Conclusion

The CAMPFIRE Programme's introduction of statutory common property institutions to rural communities was a struggle because of the inherent contradictions between statutory and customary tenure systems. The Land

Tenure Commission addressed this dilemma by saying:

“CAMPFIRE is a qualified success and demonstrates probably the most important recommendation of the Commission. That is, that rural communities can own and utilize resources effectively and sustainably, provided there are clear benefits to the community and the community is empowered through local level institutions.”

and also observed:

“Local level institutions administering tenure have been characterized by conflicts particularly between the traditional authority and ‘elected’ leadership.”

The LTC recommended, *inter alia*, that:

“The experience from CAMPFIRE confirms the need for greater empowerment of communities over the conservation of their environment. It also confirms the need to create administrative and institutional mechanisms that are legitimate, effective and accountable in the control of land use and natural resource utilization.”

Clear rights and responsibilities over the natural resource commons at the lowest level of community organization, combined with focused incentives are indicated. The LTC recommended that legislation should comprehensively recognize customary community

land rights at the community level and be linked with the statutory authorities at the district level. This addresses the contradiction between the CAMPFIRE policy (empower communities), and the law (local authorities). It would provide the framework within which all environmental legislation could operate. Authority over the bundle of tenurial rights would be clear and access to tenurial resource use niches could be legitimately negotiated.

The complex relationships among communities, the State, the natural resource base, and the economic market are being worked through in an ongoing policy reform process. There is still a long way to go.

Recommending a good policy is not the same as implementing it, but is a positive start. CAMPFIRE is more than a community-based wildlife marketing project. It is central to the evolution of sustainable community-based natural resource property regimes: institutions with clear resource entitlements and internalized cost/benefit management decision-making on the ecological and economic levels. The LTC recommendations would allow CAMPFIRE to approximate its “ideal type.”

## SECTION V

### SUMMARY of QUESTIONS and RESPONSES

This section of the report presents a summary of audience questions and delegation responses presented during the seminar tour. They appear under the following headings: Community Participation and Tenure; International Trade and Marketing; and Program Sustainability.

ART does not imply that these are the only answers to the questions. Each country approaches the challenges of conservation and development according to its own social context and natural environment. Experiments are ongoing. As with any development strategy, the questions are not fully answered; the solutions are evolving.

#### Community Participation and Tenure

##### *How is community defined for purposes of CBCD?*

The concept of "community" is hard to define. However, that does not mean communities do not exist. The sense of belonging to a rural community in Africa gives meaning to life and must be nurtured in a modern world that exalts individual private or state property rights to natural resources. The concept should be placed in a social and institutional continuum of individual, family, community, state, and global governance. Communities must be locally determined. Self definition can be a difficult and complex process, however, because a community is a conglomeration of groups with social and economic differences based on wealth, land, livestock, age, gender, genetics and other factors. A community's strongest identity often emerges during adversity.

A community needs a controlling core interest such as cultural values, kinship net-

works, or indigenous knowledge to bind itself as a cohesive unit. The community, of kind or of interest, can be the most efficient means of social organization for certain types of activity. Being the responsible proprietor of the local natural resource base is an important example. The community, more than the individual or the state, can attempt to balance the problems of living within our common means.

Communities need to reinforce their connections with their past (customary culture) and their future (statutory culture). Traditional structures, such as communal tenure arrangements, however, should be balanced with more modern development concepts such as egalitarian, market-based, state-regulated systems which emphasize the cost/benefit approach used by CBCD programs. Community, as a concept, can help define who pays the cost of living in a particular environment, who should benefit, and by how much, when and where.

##### *How have the CBCD programs addressed the split between communal and modern tenure?*

The state generally realizes that it cannot govern everything. It has to be strategic. In Africa, the only possible approach to a continual process of land reform that balances access and equity issues is to work with the people. To the question of "Who should own the wildlife on your lands?" local communities would unanimously respond that the land should be theirs. The issue becomes finding a structure with the authority and management capacity to do the job. The perception of wildlife and other natural resources as common property reinforces an effective local identity which already has a strong cultural basis,

but that has had its wildlife expropriated.

CBCD programs attempt to balance communal rights to resources, and responsibility for their conservation, with the modern form of tenure which incorporates statutory property rights. Under communal tenure, all members of a community had a right to access to land, at least in theory. CBCD programs advocate a collaborative agreement between individuals, communities, and government, in which the government recognizes "community" as a closed membership group with private property rights over the commonage. It should be the community that makes and enforces rules related to resource access. Should a community wish to utilize traditional institutions like the chieftaincy, so be it. Tenure—the access to resources—is tantamount to government in a rural setting. The linkage between central and local government with regard to land-based resources is critical. CBCD programs focus on managing the rural commons, of which wildlife is a fascinating exemplar.

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*Is the use of traditional tenure appropriate in our age of technological innovation?*

The positive side of modern technology with regard to wildlife is that it is making wildlife more manageable and marketable. Southern Africa now has a thriving market in live wildlife translocations, photo-tourism, wildlife products, and sport hunting. The negative side is that wildlife habitat is being fragmented as growing populations of humans seek livelihoods. Many communities still have strong identities and if given unequivocal land rights, they would rationally decide on appropriate land use. Given the demand of the tourist industry, those communities with good resources would conserve and market them. The fact that we live in the modern age is an asset to those parties with exclusive access to scarce resources. The word "traditional" should not confuse. Most adults in most vil-

lages are literate, and the children are mostly at school, some away at university. Tradition adapts constantly; it only seems a big thing when it has been oppressed, as with access to wildlife.

Secure tenure is not a panacea for the problems of rural poverty, but without it there seems little hope at all. What CBCD programs do is clarify the role of individuals, groups, communities, and governments. In the process they also ask questions about the international wildlife industry. Complementary assistance, such as government programs and extension capital and credit, is still necessary to these programs.

---

*Is it always feasible to reintroduce the old social structures?*

The point is not so much to reintroduce structures as to allow communities to define their own social organization and effectively link it to the national statutory system. In many areas it may not be feasible to reintroduce traditional community management systems and values. Many South Africans, for example, now live in peri-urban areas; they no longer adhere to the traditional power structure of chieftaincy. Community leaders are more likely to emerge through personal charisma and skills.

Traditional authority is patriarchal, which raises problems in the modern system with regard to women's rights, and land access and inheritance. These issues have to be addressed locally as well as nationally and internationally.

We are not arguing for a reactionary or romanticized approach but rather for one that is working well in communities all over the continent. In particular, we are talking of management of common natural resources like wildlife, trees, and rivers. It is neither traditional nor modern, but rather combines both types of institution.

The legal recognition of community tenure for natural resources would reinforce both community and resource management.

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*Can land titles be used for purposes of security or collateral in obtaining loans and credit?*

If a community had exclusive title to a valuable renewable natural resource like wildlife, then it is feasible. What is unlikely is that a community could be made to forfeit its land if it defaulted on a payment. The credit giver would have to make a risk judgment. As things stand throughout Southern Africa, few, if any, communities are sufficiently incorporated legally to be able to secure loans on the basis of their wildlife assets.

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*How do CBCD programs address the issues of equity among different groups (women, immigrants) within communities, particularly the issue of access to program benefits? Do women participate in decision-making regarding the allocation of benefits?*

All stakeholders need to participate in decision-making. Distribution of cash to a household does not mean that all members of a household benefit equally. Cash opportunities affect men and women differently. CBCD programs recognize that it is vital to investigate and respond to women's needs, especially because women are a major user of natural resources such as firewood and water and are more interested in efforts to conserve those resources. It is possible for CBCD programs to be affirmative in their approach with regard to training opportunities, and through advocacy of equity and gender considerations; it is not appropriate for CBCD programs to directly influence local decisions on access rights.

The Center for Applied Social Science

(CASS) at the University of Zimbabwe, which has conducted research on gender issues in CAMPFIRE, has found that women's participation in CBCD decision-making has improved considerably since the early years of CAMPFIRE (late 1980s and early 1990s).

The experiences of programs in Botswana, Namibia, and elsewhere, reflect changes in gender roles occurring in the region. In the past women did not commonly attend or actively participate in community meetings, but they are gradually becoming more active in community decision-making, partly as a result of CBCD programs. In Namibia it is found that women are very active in participating in projects focused on the management of the resources which they depend on daily.

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*How do communities participate in the wildlife benefits?*

Given secure access to wildlife resources, the community can determine the use and distribution of benefits. Part of the necessity for secure community property rights is to allow the community to be a corporate body, like a company with shareholders, where members have rights to conservation benefits and a responsibility to pay conservation costs. Where sources of cash income are scarce and poverty is widespread, even small economic returns can make key differences in a community.

The key is to allow revenue to be captured locally by a community willing to take responsibility for the costs. Where this has happened, protective game fences have been built, water points have been protected, and schools and clinics have been established. Common income leads to common endeavor and a collective effort to uplift the livelihoods of members of the community. Further, jobs are created through the investment in wildlife management programs. The income from one such

PHOTO: Christine Lippai, ART



**Community hall, Chilacho, Ward 7, Zimbabwe, supported with CAMPFIRE revenues.**

position may support an extended family.

In addition, the spinoff benefits are considerable. Communities that place their leaders at the helm of programs and make decisions about program management and benefit dispersal initiate or reestablish patterns of self governance that carry over into other community endeavors. Some CAMPFIRE communities, for example, have begun to advocate for cooperatives to start small-scale industries or to run mining operations.

In Botswana, communities can choose from several legislatively mandated options for joint ventures or partnerships with safari companies. After three or four years of leasing their rights, communities acquire skills in participatory decision-making and management.

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*What percentage of the total take from a safari hunt, for example, does a community actually receive?*

Communities with good wildlife or tourism industry assets generally make agreements with private sector operators to finance and manage the marketing aspects. Both photo-tourism and safari hunting operations depend on excellent management. At present, joint ventures, leases, and concessions seem to be the main approach to marketing. For example, a CAMPFIRE community would tender a hunting concession for a given period, say three years, which would lay out the offtake quota (as approved by National Parks) and the rules regarding payment, behavior and monitoring. The community would select a bidder based on the offer. Factors apart from highest bid could be considered, such as the operator's reputation. The operator would guarantee a price to the community and would then have total responsibility for management costs and benefits. The gross revenue from running the safari concession would have to cover the operator's costs, taxes, and concession fees, and most of the foreign currency would be surrendered to the Ministry of Finance. The value of the community concession is approximately

one-third of gross revenue. The operator pays costs and taxes and makes a profit from the remaining two-thirds.

From the one-third of gross revenue the district level of community can levy a maximum of 15% for administrative overhead; spend a maximum of 35% on wildlife management (game guards, fencing, water points, transport, training, etc.), and must return a minimum of 50% to the community from which the wildlife was hunted. Therefore, the community has direct access to half of the concession fee which amounts to about 17% of gross revenue.

Photo-tourism is more complicated. Here the tour operator would negotiate a lease from the district. The operator would want a lease of a minimum of 10 years or more if substantial infrastructure was going up. The district would negotiate a ground rent and a percentage of turnover, like a bed night levy. Tourism has a long lead time compared to hunting. In addition, it favors the most idyllic places and ignores the rest. It does not distribute income very well as a result.

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*What is the role of foreign governments and organizations in building community participation?*

Foreign assistance, investment in training, transport, technology, and infrastructure are needed to help build physical and human resources for institutional development at the local level. By subsidizing the initial investment costs, development assistance has allowed otherwise unavailable wildlife benefits to flow to communities. This process has really helped the motivational aspects of CBCD programs. The CBCD programs in Southern Africa are supporting a major developmental activity which is setting the pace for the continent as a whole. In addition, foreign organizations and government agencies play a key role in influencing the international policy that enables these programs to exist.

**World Trade and Marketing**

*Why do Southern African countries need consumptive use of wildlife?*

*Why can't communities rely on non-consumptive tourism (i.e. cultural or photographic tourism)?*

Non-consumptive use of wildlife, such as photo-tourism or eco-tourism, is not appropriate in many circumstances because of a lesser return on the resources. Many areas are inaccessible to tourist groups and lack the infrastructure (roads, airports, hospitals) to support these types of tourism. Southern Africa has discovered that eco-tourism is not necessarily the best development solution, in part because of the country's inability to protect tourists from crime. In Botswana, communities have found that the main beneficiaries of eco-tourism are U.S. businesses. Moreover, some Africans view eco-tourism and cultural tourism as more intrusive on local cultures than safari hunting.

Moreover, consumptive use, mostly safari hunting, brings greater economic benefits to the community. Ninety percent of the net income in CAMPFIRE programs comes from safari hunting, with 64% of that from the elephant.

Consumptive use attracts vocal opposition, often because many Westerners find that killing animals is contrary to their moral and ethical codes. Proponents of CBCD programs point out that animal rights have little relevance to the lives of people for whom sustainable use of natural resources may be an economic necessity.

Some CBCD programs are finding that a blend of consumptive and non-consumptive use provides greater economic benefits to communities and keeps resource use options open.

*What type of assistance can organizations in the West provide to help Southern Africa strengthen CBCD programs?*

The region needs technical and financial support from development and conservation agencies and organizations to improve access to international markets.

In addition, the development and conservation communities in North America and Europe can facilitate negotiations between governments on infrastructure projects which can help draw tourists to rural areas. These agencies could then support the development of positive and sustainable eco-tourism markets.

Foreign governments need to consult with Southern African countries when conducting activities that affect the African markets, such as developing or amending legislation or listing species as endangered.

Americans need to understand the often extreme economic circumstances that drive the need to develop and secure markets in Southern Africa. Southern Africans, on the other hand, need to understand the political and social context that drives attitudes in the West such as the widespread antagonism toward hunting.

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*What is the view of CITES and other international regulatory mechanisms from the perspective of CBCD programs?*

The delegates expressed support for CITES as an important vehicle for regulating world trade in wildlife products, even though it has become over-politicized. They emphasized that they did not come to North America to discuss any single product such as ivory. Such a single issue focus sparks controversy which diverts attention from the overarching issues such as the need for sustainable use.

The delegates argued that international markets should not be closed to countries, whether the commodity is oil, minerals, or wildlife products. They consider the listing of the elephant on Appendix I of CITES as interference in the world trade of ivory. No accompanying mechanisms were developed which anticipated the growth in the elephant population should their populations be well protected. If trade is wrong and culling is inhumane, what are the positive management options which can link conservation with development objectives? No consideration was given to the daily struggles of local communities to defend their resources against elephants and other wild animals.

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*What is the role of SACIM (Southern Africa Centre for Wildlife Marketing)?*

Four countries (Botswana, Malawi, Mozambique, Namibia) signed onto the SACIM cartel in 1991. The objective of SACIM is to establish a producer cartel for wildlife products, including ivory. This acknowledges that the range states have a responsibility to ensure the source and sustainability of their renewable wildlife products. The cartel has come together to account for their own production and to attempt to coordinate the trade in valuable wildlife products from Southern Africa. SACIM no longer focuses on ivory alone; it is also concerned with other wildlife products. The cartel would be accountable to CITES, and to the Southern African Development Community, as well as to national governments.

**Program Sustainability**

*How can we ensure that commercial use remains at sustainable levels, particularly since international markets have led to over-exploitation of species in the past?*

The fundamental issue is that when property rights to a product (such as wildlife) are not well defined, corruption often occurs. Once it is clear who controls the product, theft is more easily prevented. The downfall of elephant populations in some parts of Africa was a consequence of inadequate property rights; poaching was merely a symptom. Cattle rustling in the USA is not a big issue because the farmer owns the livestock and the state backs the farmer's rights in law. In Africa, governments claimed ownership of wildlife over the heads of rural communities but were unable or unwilling to protect their property. The root problem was not trade or poaching but clear, enforceable property rights. When governments support their communities, trade is an asset which reinforces the landowners' motivation to manage sustainably. Whereas individuals may desire a "windfall" profit, communities desire to reproduce themselves in a sustainable way.

Further, when protective policies are implemented, supply often grows, as exemplified by the case of the crocodile in Zimbabwe. The trade in crocodiles peaked and declined after World War II due to excessive hunting. With private use rights and proper support and regulation of the trade, however, the crocodile population grew and the industry revived, with exports rising from 3,000 in 1980 to 25,000 in 1995. (For more on the crocodile in Zimbabwe, see p. 33.)

*Will the rapid increase in human population lead to an unsustainable*

*use of resources as pressure for use increases?*

Population growth means greater demand for resources. Whether that demand is sustainable is a big question. Unless and until rural communities are able to define themselves in relation to their resource base, they are in no position to face the challenge. Trade-offs are inevitable: for example, if livestock is more useful than wildlife, a community will opt to have domestic species (private property) on their common rangelands. However, if wildlife can compete with or complement livestock, then communities will conserve wildlife habitat. This is the crux of the "use it or lose it" argument.

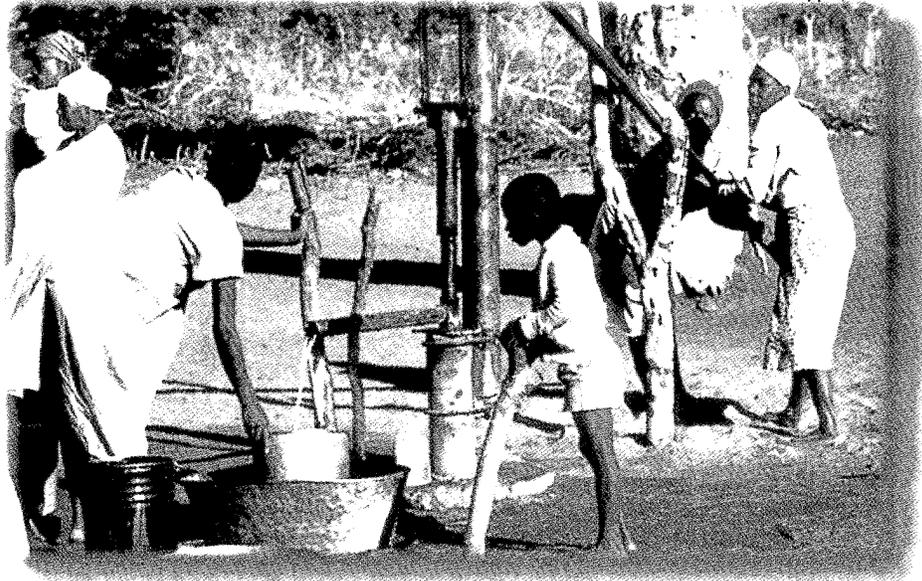
The communal property management approach gives communities incentives to limit the immigration of people into the community. Moreover, population growth in African countries is likely to decelerate, as it has elsewhere in the world, with the expansion of economic development. If poverty continues in the areas inhabited by wildlife, and trade in wildlife is blockaded, then wildlife will be replaced with other uses.

*How do CBCD programs affect the rate of poaching?*

Rural poverty is the root cause of both subsistence poaching (for local consumption) and poaching for international markets. When wildlife has an economic value and rural people have proprietary rights to use it, they begin to view wildlife as a form of property similar to cattle. Communities monitor the theft of this property because it is their wealth. Consequently, both types of poaching diminish.

If wildlife remains a state asset, however, then local communities feel little compunction about poaching. The only deterrent is the fear of being caught. Given the budgets that African governments can allocate to

PHOTO: Christine Lippai, ART



**Bore hole, Hwange Communal Land, Zimbabwe, supported with CAMPFIRE revenues.**

law enforcement, that risk is not great. By empowering local communities with valuable resources, the cost-benefit equation becomes local and meaningful.

prices may be seen as an incentive to over-produce, but more realistically they are an incentive to conserve. Whether supply will meet demand is not a critical issue at present.

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*If global markets are opened and demand increases, will the offtake increase to meet demand, eventually exceeding sustainable levels?*

Governments and communities must ensure that offtakes are strictly regulated. A collaborative management approach would ensure that such regulation would be a primary objective. For example, the sport-hunting offtake from elephant herds in Zimbabwe is half of one percent. There is no incentive to deregulate the offtakes because the philosophy of sustainable use is built into the program operations. Southern African countries are not attempting to meet world demand but rather, to alleviate rural poverty. In fact, higher "demand" and more restricted "supply" are better, as they cause "value" to rise. Rising

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*Is sufficient data available about wildlife populations to determine that CBCD will not damage the resource?*

Extensive wildlife surveys have been conducted and much evidence has been accumulated that elephant populations, for example, have increased in countries that have sustainable use programs and have decreased elsewhere. However, the quest for more comprehensive data will probably never be satisfied. The constant demand for more data is based on a limited interpretation of conservation as a biological science. It overlooks the complex socio-economic realities of the CBCD approach.

The Southern African approach is based

on an adaptive management strategy. The assumption is that clear community-based property rights plus adequate resource values will produce a sustainable development process. That assumption is being tested by granting communities rights and allowing them to trade. It is now incumbent on these CBCD programs to monitor the outcome and test their basic assumption. Monitoring is a fundamental part of the adaptive management process.

Problems arise when antagonists deny the adaptive management approach and attempt to assert the precautionary principle, saying that unless the outcome is certain, we should not proceed at all. Given the setting of rural poverty in Africa and the threat to wildlife habitat, that approach is a non-starter. Nevertheless, we constantly have to defend ourselves on the basis that we do not have enough data. Data will never be sufficient unless the continent is colonized by Western academia.

Financial and technical assistance is always welcome but donors must respect that Africans have to test their own hypothesis. After all, it is primarily our problem. If elephants are perceived as a global resource, other countries should be prepared to undertake the massive expenditure of the additional surveying they are demanding. Unfortunately, the suspicion exists in Southern Africa that the demand for information is actually a smokescreen for a moral objection to sustainable use when it involves the consumptive use of and trade in wildlife products.

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*Does the level of transborder wildlife migration make it impossible to accurately assess population and therefore to determine sustainable approaches?*

The extent of transborder migration of wildlife has been exaggerated and is not viewed as a serious management problem. Southern African range states recently con-

ducted a simultaneous elephant survey which involved outside experts; the results were as surveys had predicted. The issue was largely raised by opposition groups who wished to confuse the issue; it is a further example of the attempt to undermine African capacity to manage its wildlife.

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**APPENDIX A**  
**LIST of DELEGATES**

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**Baldeu Chande**

Head of Gorongosa-Marromeu  
Emergency Rehabilitation Programme,  
Directorate of Forestry and Wildlife,  
Mozambique

**Anne Chishawa**

Senior Ecologist, Department of National  
Parks and Wildlife, Zimbabwe

**Dr. Jon Hutton**

Projects Director, Africa Resources Trust

**Dr. Malan Lindeque**

Deputy Director, Ministry of  
Environment and Tourism, Namibia

**Hector Magome**

General Manager, Planning &  
Development, National Parks Board,  
South Africa

**Matthew Matemba**

Chairman, SADC Wildlife Technical  
Coordination Unit; and Director, National  
Parks and Wildlife Management, Malawi

**Taparendava Maveneke**

Chief Executive, CAMPFIRE Association

**Simon Metcalfe**

Technical Advisor, Zimbabwe Trust, and  
Honorary Research Fellow, Centre for  
Applied Social Sciences, University of  
Zimbabwe

**Sedia Modise**

Deputy Director, Department of National  
Parks and Wildlife, Botswana

**Lynda Mujakachi**

Project Coordinator, Africa Resources  
Trust

**Liz Rihoy**

Director, Washington Affairs, Africa  
Resources Trust

**Abraham Sithole**

Chiredzi District Council Chairman and  
representative of southeastern Zimbabwe  
CAMPFIRE communities.

**Vimbai Vudzijena**

Ministry of Agriculture, Zimbabwe, and  
Secretary, Land Tenure Commission of  
Zimbabwe

**APPENDIX B  
PROGRAM of SEMINAR TOUR EVENTS**

**WASHINGTON, D.C.**

*Sunday, June 16:* Briefing on seminar tour

*Monday, June 17:* Briefing by attorney (a.m.)  
Meeting at Africare (p.m.)  
SADC Embassies Welcome Reception (evening)

*Tuesday, June 18* World Bank/FAVDO Seminar (all day)

*Wednesday, June 19* World Resources Institute Roundtable Discussion (all day)

*Thursday, June 20* World Wildlife Fund Meeting on Elephant Management (p.m.)  
International Trade Meeting: Embassy Attaches (evening)

*Friday, June 21* IUCN Sustainable Use Panel Discussion (a.m.-p.m.)

**NEW YORK CITY**

*Tuesday, June 25* UN Development Programme (UNDP) Seminar (all day)

**OTTAWA**

*Thursday, June 27* Canadian Wildlife Service/Canadian Wildlife Federation Seminar (all day)

Meeting at Canadian Wildlife Service (p.m.)

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## APPENDIX C

### ABSTRACTS/SUMMARIES of CASE STUDIES from NORTH AMERICA

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#### **The Alligator: A Prime Example of Ecosystem Management**

*Presented by:*

**Johnnie Tarver**  
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The State of Louisiana is the United States' top producer of alligator products. Located on the Gulf of Mexico, Louisiana is greatly influenced by the Mississippi River which drains two-thirds of the USA.

The alligator industry demonstrates the principle of sustainable use of a wild species to conserve biodiversity. The typical alligator habitat is coastal marshland, 90% of which is privately owned. Landowners and managers use proceeds from the sales of alligator hides, meat, and eggs to manage their marshes as wetlands.

The sustainable use of alligators in Louisiana has been extremely successful. The many benefits afforded by the industry include:

- Protection of wetlands and coastal marshes from development,
- Employment of 25,000 citizens of Louisiana,
- No negative effects on the alligator population, and
- A tightly regulated harvest where poaching is almost nonexistent.

Farm alligators, raised in heated sheds, eat year round and reach market size within a year. Each year 17% of the hatchlings

must be returned to the wild at one year old (3 to 4 ft). The alligators are returned to the same property from which their eggs were obtained so as not to impact genetic diversity. Care is also taken to ensure that runts are not released into the wild.

#### **History**

From 1880 to 1933, 3.5 million alligators were harvested. From 1939 to 1960 the annual commercial alligator harvest was 18,000. At that point the level of alligators was depressed, and the season was closed statewide from 1962 to 1972. Intensive research on the life history of the alligator was conducted; professional management of the resource was instituted; and the alligator was given full legal protection.

The principal parties affected by the alligator industry: the citizenry, particularly landowners, and the law enforcement and judicial systems, began cooperating to develop the framework of the sustainable use program. In 1972 the first experimental harvest was initiated: 59 hunters harvested 1,350 alligators at \$8.10/ft. The experimental harvest was gradually increased. By 1981 statewide harvest was allowed again. The harvest between 1990 and 1995 was 25,000 to 30,000 alligators at an average of \$37/foot, a total of \$10 million in skins and meat.

The Louisiana Department of Wildlife provided stock from state-owned lands to initiate an alligator hatchling supplement program in 1977. Egg collection was first permitted from private lands in 1986. Today Louisiana has 80% of the USA alligator harvest (\$25 million/year). Most of the business goes to overseas markets.

## Return of the Beaver in the Northeastern States

*Presented by:*

**Thomas Decker,**

Massachusetts Division  
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**Robert Gotie,**

NY Division of Fish,  
Wildlife, and Marine Resources

**John Organ,**

U.S. Fish and Wildlife Service,  
Massachusetts

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The present management system of the beaver (*Castor canadensis*) in the Northeastern United States is based on sustained use principles. This semi-aquatic species is a herbivore capable of modifying its own habitat by constructing dams in wetlands and streams. Beaver have a high reproductive rate, low mortality, and long life. In the 17th and 18th centuries, the beaver provided a significant source of income to both Native Americans and European settlers through the strong European-based trade in furs. The use of beaver during this period was unregulated. Simultaneously, and through the middle of the 19th century, beaver habitat was significantly reduced due to agriculturally based land clearing. Beaver were nearly eliminated from most of the Northeastern United States by the mid-1800s. In vast areas of their historic range, they actually were extirpated.

Early in the 20th century, conservation leaders in the USA recognized the need to regulate the harvest of wildlife and establish a scientific wildlife conservation system. By the 1920s, wildlife conservation agencies were established at both the fed-

eral and state levels to monitor the status and use of wildlife. The establishment of these agencies and programs was possible because of financial support from hunters and trappers, via both license fees and excise taxes on equipment. Many laws were enacted to place controls on the harvest of wildlife. These measures were based on the principles of sustained use, including: wildlife has value; the uncontrolled use of wildlife is unacceptable; wildlife is a public resource that belongs to everyone; government intervention is needed to conserve wildlife for future generations; the use of wildlife can be controlled; and wildlife populations can be perpetuated indefinitely while sustained use is occurring.

With the full support of individuals who harvest natural resources, beaver were restored in the Northeastern USA, primarily through the translocation of individual beaver. Due to the earlier decline of agriculture, translocated beaver thrived and expanded. By the 1970s, beaver had been restored to nearly all of the species' historic range in the Northeast. This monumental wildlife restoration program has enhanced regional biodiversity because beaver create wetland impoundments benefiting a wide array of other species. Moreover, the complete restoration of the beaver has once again provided people with the opportunity to harvest the species for fur, meat, and other useful products.

The key components of modern-day beaver management are: a viable market for beaver goods, regulatory controls on the use of beaver, monitoring of use levels, monitoring the status of beaver, and control of damage caused by beaver flooding. (About 15% of all beaver colonies cause economic damage due to flooding; millions of dollars in damages are sustained by people each year.) Clearly, the sustained use model depends on the continued availability of the user. The condition of the fur market, access to that market, and the legal ability to effectively trap are essential ingredients in the perpetuation of this sustained

use success story. Some of these critical factors are in jeopardy. The European Union's Wild Fur Regulation could devastate the international market for beaver and other wild furs. Devastation of the economic motivation for conserving beaver would imperil the continued sustained use of this valuable species.

### **Sustainable Use in North America: Lessons from Seven Case Studies**

*Presented by*

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The IUCN Sustainable Use Specialists Network for North America selected seven species or groups for initial case studies of sustainable use regimes. The basis of the selections was the availability of sufficient data to determine the key factors in sustainability of the use. We wanted information developed from the ground up, that is, from people responsible for or knowledgeable about resource management and conservation on a working basis.

To make comparisons and draw conclusions, we established a standardized framework within which each group of volunteers provided information in six categories: species, ecosystems, uses, benefits, regimes, and evaluation of uses. Below are brief summaries of the findings:

#### **American Alligator**

Population 750,000, up from 200,000 in 1972; occupies 5 million acres of wetlands, primarily coastal marshes; sensitive to salinity; 25,000/yr adults taken for skins; about 55,000/yr eggs taken from wild for farm rearing; complex, intensive regime; primary management at state level within

national and international controls; landowners get economic benefit; use evaluated as sustainable. (For more on the alligator, see page 56.)

#### **Beverly-Qamenerjac Caribou Herds**

Population estimated at 476,000 in two herds, up from 138,000 in 1980; occupies Arctic tundra susceptible to environmental contamination; 16,000/yr taken for subsistence; management cooperative between local, national governments and users organized in management board; use evaluated as sustainable with substantially improved situation since introduction of co-management and role for users.

#### **Sonoran Desert Bighorn Sheep**

Population 2000-2500, up from 900+ in 1976-80; occupies dry, mountainous region where grazing and clearing deplete vegetation; sport hunting on private land is primary use; from 6 to 9 taken annually; regime is primarily federal; benefits go to central government and private landowner, with nothing for local people, research, or management; use is sustainable and could increase but the most productive channels not receiving benefits.

#### **Migratory Waterfowl**

43 species of ducks, geese and swans; population goal is 62 million by 2001; uses are recreational hunting, subsistence, and wildlife observation; 9.7 million/year ducks and geese taken for hunting and 1.5 million for subsistence; users spend nearly \$5 billion/year in USA and Canada; birds highly migratory, dependent on wetlands and highlands; regime is complex with North American Waterfowl Management Plan coordinating treaties and federal and state/provincial management in all three countries; private sector becoming more involved, especially in habitat preservation/improvement on agricultural lands; use evaluated as sustainable.

#### **Beaver**

Virtually extinct in New York in 1895 but

now 100,000; occupy wetlands from Canadian Arctic timberline south to isolated areas along USA/Mexico border; much of original habitat destroyed; regenerated habitat now cut by roads and other development; uses (fur, castor, and meat) provide supplemental income of \$3.4 million/year for rural people in USA and meet socio-cultural needs; use benefits include reduction in flooding damage; beaver population management benefits include habitat improvements for other species; management at state/provincial level. (For more on beaver, see p. 57.)

### Wild Turkey

Estimated at 4.2 million in 1995, up from low of 30,000 at turn of century; occupies forests in USA, northern Mexico, and Ontario; use is for recreational hunting with 550,000/yr birds taken generating \$750 million (excluding license fees) for local/regional economies; management in first half century focused on illegal shooting and habitat improvement; in second half, focus has been state-level trapping and release programs combined with habitat improvement; use evaluated as sustainable.

### Atlantic Cod

Ground feeding fish occupying continental shelf with some populations mostly inshore, some offshore, and some migrating between the two; provided economic framework for European-origin human settlement in parts of northeastern Canada; commercial fishing took 400,000 tonnes/yr in 1800s, rising to 2 million tonnes in 1960s before collapsing.

### Analysis

The situation for each case study was unique with many elements needing individual consideration. Some general conclusions can be drawn as follows:

- Many levels of use are sustainable, ranging from turkey harvest of 550,000/yr out of 42 million and waterfowl harvest of 11.2 million/year out of <62 million to bighorn sheep harvest of 6

to 7 animals/yr out of 2,000+. Cod use, which was unsustainable, rose from 400,000 tonnes/yr to 2 million tonnes/yr.

- Varying levels of management intensity can achieve sustainable use, ranging from moderate for the turkey and beaver, to intensive for alligators and waterfowl.
- Motivations for management and government expenditure vary widely, ranging from wetland and biodiversity conservation in the case of the alligator, to recreation and subsistence with the waterfowl.
- Land ownership and jurisdiction significantly influence management regimes: alligator, beaver, and turkey are private, state; waterfowl are continental, migratory, international; and bighorn sheep are private, national, provincial.
- The involvement of local people varies with each case study situation and may affect conservation. The alligator has high local involvement and impact. The waterfowl has high involvement and impact is high for subsistence use. Direct involvement in waterfowl management is low but indirect support is substantial.
- Cultural circumstances also vary considerably: alligator—local ownership, states' rights, and a hunting tradition; waterfowl—subsistence use and traditional recreational hunting; beaver—trapping as a rural lifestyle; cod—heavy socio-economic and historical factors.