

# COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT

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## Summary

Community-based natural resource management refers to the collective use and management of natural resources in rural areas by a group of people with a self-defined, distinct identity, using communally owned facilities. The focus of CBNRM is not merely wise management of natural resources. As important, if not more so, is the need for community development, local self-government, and the creation of local institutions for managing common property resources. Although such resource management has financial benefits to communities, these are often overestimated. There are nevertheless a number of cases where high-value resources are being used by small communities with significant financial benefits. The most important benefits of community-based natural resource management are non-financial: the empowerment of people in rural areas, conservation of biodiversity, and the development of more secure livelihoods and the reduction of risk. Community-based natural resource management initiatives can easily lead to the overuse of natural resources if there is no control. For

resource use on communal land to be sustainable, strong institutions and rules that govern the use of the resources need to exist, and monitoring needs to take place. Here local or traditional knowledge can make a considerable contribution. Outside facilitators or resourceful, altruistic individuals are often important in assisting communities resolve conflicts and negotiate better deals for themselves. Donor funds are useful in the early stages of initiatives, as “seed funds,” but there is a danger that projects can become too dependent on donor funding and that donor money can be abused by communities and facilitators or nongovernmental organizations. Communities who practice good natural resource management should be rewarded by being given more secure access to resources and benefits that match the quality of their management. International policies such as the Convention on Trade in Endangered Species need to be formulated with caution, so that communities who look after their resources can continue utilizing and benefiting from them.

## 1. Introduction

Community-based natural resource management (CBNRM) refers to the collective use and management of natural resources in rural areas by a group of people with a self-defined, distinct identity, using communally owned facilities.

The aims of CBNRM are to:

- obtain the voluntary participation of communities in a flexible program that incorporates long-term solutions to problems arising from the use of natural resources.
- introduce to natural wildlife resources a new system of group ownership and territorial rights for the communities resident in the target areas. The management of these resources should be placed under the custody and control of resident peoples.
- provide appropriate institutions under which resources can be legitimately managed and exploited by local people for their own direct benefit. These benefits can take the form of income, employment, and production of venison.
- provide technical and financial assistance to communities that join the program to enable them to realize their objectives.

The focus of CBNRM is not merely the wise management of natural resources. As important, if not more important, is the need for community development, local self-government and the creation of local institutions for the management of common property resources.

These and similar principals have been eagerly embraced by governments, donors, nongovernmental organizations (NGO), conservation agencies, and, of course, rural communities. Without exception, provincial and national governments have begun building the concepts of CBNRM into their policies and strategies. There are few exceptions: even in the last remnants of Eden, conservationists are adapting to the new move away from centralized control. CBNRM became the dominant conservation and development paradigm of the 1990s and its principles have been confidently adopted by international aid agencies and lending organizations.

## **2. Benefits of Community-Based Natural Resource Management**

In the end, the achievements of CBNRM can be measured only by the capabilities attained by communities through wildlife management.

### **2.1. Financial Benefits**

Substantial financial profits have rarely been made from natural resources, and the benefits to individuals are often overstated. Many CBNRM initiatives have no knowledge of markets and no economic planning and this generates false expectations. In South and Central America and Southeast Asia, CBNRM is a complementary activity that supplements people's incomes and activities rather than being the mainstay of their economy. Most communities in Latin America, southern Africa, and Southeast Asia appear to regard wildlife hunting as a social rather than an economic activity.

Another problem with large numbers of people sharing benefits is that although the size of the collective benefit can run into tens or even hundreds of thousands of U.S. dollars, the individual or household benefits are very small. Even in the widely acclaimed CAMPFIRE (Communal Areas Management Programme for Indigenous Resources) project in Zimbabwe, the average annual benefit to households is about Z\$250 (less than US\$7) per annum.

There are, however, important exceptions, and the following characteristics seem to make a difference:

- the unit value of the product
- the level of extraction versus level of replenishment
- the availability of a reliable market
- the opportunity cost of land and labor
- the number of people laying claim to or sharing the benefit
- the level of government cooperation
- the potential for intra-community conflict, often precipitated by power struggles.

High-value species such as turtle eggs, parrots, shrimp larvae, etc. can be profitably managed and harvested for a specific market, for example in South America. In West Africa and Canada, trade in bushmeat (meat of wild animals) is important and people derive substantial income and protein from it. In Canada's northwestern territories, it is estimated that indigenous communities can add about 10% to their income from wildlife, and the average Inuit consumes about 200 kg per year of wildlife meat. Hunters in the Arctic earned between Can\$10 000 and Can\$15 000 from hunting, while the replacement value of bushmeat to Inuit households is estimated to be more than Can\$7 000 per annum.

The vicuña wool project in Peru is one of the few profitable initiatives in that region because of the high price of wool, the low potential for conflict with the main form of land use (grazing by alpacas, llamas, and sheep), and the added value given through handicrafts.

Another profitable project is a cochineal (*Dactylopus coccus*, Homoptera) breeding initiative in Botswana, where small communities breed the insect on prickly pear for commercial food companies as a food dye (it produces a bright red fluid when crushed). Two hundred and thirty San families earn US\$600 a month from this—the highest unit benefits from CBNRM recorded in the survey. In the same activity (cochineal breeding) in Peru, peasants receive only a small proportion of the total benefit of US\$2.6 million per annum because of the strong role of the commercial sector and government.

Many of the initiatives are highly dependent on external funding and donor grants and most of the projects would not be viable without substantial donor contributions. One of the key unanswered questions is should donor funds be regarded as “hand-outs,” or are they an indication of international willingness to pay (i.e. a component of the project’s earnings)?

The benefits of employment in nature-related businesses are underestimated. In many instances, the local people feel that the most important benefit is secure employment rather than entrepreneurial opportunities. In Central America, community guards earn good incomes from guarding turtle eggs while Namibian game guards receive substantial benefits from anti-poaching patrols. There are, of course, examples of substantial earnings in the tourism industry, but in many tourism case studies these benefits to individual households are overestimated.

Protected area entry fees are an important source of income for communities in East Africa. In Uganda, communities living adjacent to national parks receive 20% of the gate fees while the Kenya Wildlife Service share 25% of their entry fees with neighboring communities. In the Richtersveld National Park, the first “contractual park” in South Africa, communal grazers receive rental fees for land inside the park by contractual arrangement, without much cost to themselves. The main problems with lease fees and gate fees is deciding who should share in the benefit: because there are no management inputs, benefit sharing on the basis of differential management inputs is not relevant. This might lead to a culture of handouts for zero responsibility, which has been shown in other initiatives to be unsustainable. Most of the initiatives that focus on tourism as a revenue generator are in their infancy, and little information could be found about income and profits to communities. Initial indications are that these benefits are overestimated and that they accrue to only small sections of the community.

## **2.2. Non-Financial Benefits**

Invariably, the most important benefits from CBNRM are non-financial. A survey of its non-financial benefits in Namibia lists a host of different sources of non-financial benefits such as community empowerment, more secure livelihoods, cultural benefits, improvements to the natural resource base, and benefits to society as a whole.

In all the initiatives surveyed, two important spin-offs were evident: political empowerment, and the development of organizational and leadership skills. In Nicaragua, one of the main benefits to communities who participated in Iguana harvesting and management initiatives was that they obtained a greater understanding of sustainable use, markets, and institution-building than those who did not participate in

the projects. Another benefit was the improved availability of meat and other resources for self-consumption that improved habitat management practices brought. In the Philippines, communities have received certificates to recognize their ancestral land rights, while communities at Dwesa and Cwebe in South Africa have won a land claim in a protected area some years after insisting on participating in a joint management committee. Arguably the most important achievement of Zimbabwe's CAMPFIRE project has been its potential to transform rural politics, and the fact that it has become a social movement with massive membership in rural Zimbabwe.

### **2.3. The Cost to Communities of Community-Based Natural Resource Management**

It should be recognized that while local communities in many instances pay the bulk of the cost of conservation, the benefits are often experienced by governments and visitors. The cost of living with wildlife includes damage to crops and livestock, the opportunity cost of land, the opportunity cost of being separated from neighboring communities, and the cost of lack of access to resources because of agreements. At Bharatpur National Park in India, the cost of conservation to local people (in the form of lost opportunities) was estimated as US\$60 000 per year in 1996, but the benefits went almost entirely to private tourism operators and government. The cost of participation and the opportunity cost of labor are often overlooked, as is the fact that participation often precipitates new conflicts in communities. At the Richtersveld National Park in South Africa, communities participate passively in the management of the park because they would like to minimize the cost of participation.

### **3. Characteristics of Sustainable Community-Based Natural Resource Management**

CBNRM has a number of distinguishing criteria that differentiate it from other forms of natural resource use. These criteria also represent the factors that distinguish between *sustainable* communal resource use and *unsustainable* use.

The tragedy of the commons refers to a particular type of uncontrolled communal property management system (open access) where individuals try to gain as much as possible, in the short-term, without taking longer-term needs and the needs of the group into account. In an open access situation, resources invariably become degraded through overuse by individuals who put their own interests first. Some of the mechanisms that can be put in place to improve the sustainability of common property resource use and avoid an open access system are discussed below.

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### **Biographical Sketch**

Christo Fabricius is a fifth-generation South African. He has 12 years experience as a conservation scientist in South Africa and spent two years in London with the International Institute for Environment and Development (IIED) as coordinator of the Evaluating Eden project. He is policy advisor to South African National Parks, DEAT, DWAF, the Working for Water Project, and the GTZ Transform project. He is currently associate professor and head of the Dept of Environmental Science at Rhodes University, South Africa.