Evaluating Eden Series No 9

STORIES FROM EDEN

Case studies of Community-Based Wildlife Management

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1. Introduction

Evaluating Eden

The *Evaluating Eden* initiative evolved from a previous study in 1994 by IIED which reviewed mainly African wildlife management literature and CWM initiatives and analysed top-down and participatory approaches. The study was published as "*Whose Eden? An Overview of Community Approaches to Wildlife Management*". *Whose Eden?* highlighted the fact that most donors accept CWM as the 'right' approach, but that this support is often based on untested assumptions and in response to a) the realisation that most countries lack the resources to enforce conservation laws; b) a generally increasing recognition that top-down approaches are morally unacceptable; c) a search for economic development options that would not result in biodiversity loss. However, the study also noted that there was very little empirical evidence demonstrating whether, in fact, such initiatives have succeeded in achieving their goals and that research was urgently required on the environmental, social and economic impacts of community wildlife management. For example, has the abundance of wildlife increased in a particular area as a result of a CWM initiative? Have household economies improved and can this be attributed to a CWM initiative? The *Evaluating Eden* research programme was established to move beyond the literature, to extend the geographical scope of Whose Eden? and to provide a global perspective on the impacts and achievements of CWM.

The *Evaluating Eden* project aims to address three overall research questions:

1. What has CWM achieved for wildlife and for people?
2. How do social, political, economic and environmental factors influence the efficacy of CWM?
3. What are the key characteristics of successful CWM and how can these be spread?

The overall findings of the project are presented in the *Overview Report* to this series (Roe et al 2000).

In the first phase of *Evaluating Eden*, desk-based reviews of the status of CWM were commissioned in eight regions: West Africa, Central Africa, East Africa, Southern Africa, South Asia, South East Asia, Central America and South America. In addition two country reviews were carried out in Australia and Canada, providing an additional and valuable perspective to the project. The regional teams then went on to explore some of the issues raised in these reviews in a series of case studies based on original fieldwork.

Some of the case studies are included in the various regional reports that have been published in this series. Others have been published as discussion papers by IIED or research partners. More remain unpublished and available only as "grey" literature. The purpose of this volume is to provide the reader with detailed summaries of all the *Evaluating Eden* case studies and to point them in the direction of further information.

What is CWM?

We interpret community-based wildlife management (CWM) as the regulated use of wildlife populations and ecosystems by local 'stakeholders'. Local stakeholders may be a village, or group of villages; an individual, or group of individuals with a shared interest in the resource. The important factor is not how the community is defined, but the fact that stewardship over wildlife resides at the local rather than the state level.

Our definition of CWM encompasses or overlaps with a number of similar terms and approaches (Table 1.1).

Table 1.1: CWM – related terms and definitions

Term	Definition
Community-based conservation	Conservation by, for and with the local community(Western and Wright 1994).
Community conservation	A broad spectrum of new management arrangements by people who are not agents of the state, but who, by virtue of their collective location and activities are critically placed to shape the present and future status of these resources, so as to enhance the conservation of natural resources and the well-being of local people and communities (Barrow and Murphree 1999).
Protected area outreach	Protected area outreach seeks to enhance the biological integrity of parks by working to educate and benefit local communities and enhance the role of a protected area in local planning (Barrow and Murphree 1999).
Collaborative management	*Collaborative management:* seeks to create agreements between local communities or groups of resource users and conservation authorities for negotiated access to natural resources which are usually under some form of statutory authority (Barrow and Murphree 1999).
Collaborative management/co-management/joint management	"a partnership among different stakeholders for the management of a territory of set of resources" (Renard 1997).
Co-management	"The sharing of power and responsibility between government and local resource users." (Berkes, George and Preston, 1991). "The active engagement of communities and outside local beneficiaries in the collaborative management of de facto open access resources by local support agencies and central resource institutions" (De Cosse and Jayawickrama, 1996). A partnership by which two or more institutional actors collectively negotiate, agree upon, guarantee and implement a fair share of management functions, benefits and responsibilities for a particular territory, area or set of natural resources. (Borrini-Feyerabend et al (forthcoming)
Co-management (or protected areas)	"The substantial sharing of protected areas management responsibilities and authority among government officials and local people" (West and Brechin, 1991).
Joint Forest Management	"Collaboration in forest management between agencies with legal authority over state-owned forests and the people who live in and around these forests" (Fisher, 1995).
Community-based natural resource management	The sustainable management of natural resources through returning control over, or responsible authority for these resources to the community (Barrow and Murphree 1999).

CWM occurs within and around protected areas and on communal or private land outside of protected areas. It can be consumptive (eg. trophy hunting) or non-consumptive (eg. photo-tourism), subsistence (eg. non-timber forest product collection) or commercial (eg. trade in wildlife or wildlife products), traditional (eg. protection of sacred landscapes) or non-traditional (eg. game ranching) (Table 1.2).

Table 1.2: A diversity of approaches to CWM

Type of Approach	Case Study Examples
Strict protection	Community game guards (Namibia) Protection of Macaws (Cofan community, Ecuador) Protection of nesting sites (Kokkare Bellur, India)
Ecosystem restoration and / or conservation	Forest regeneration (Bhaonta-Kolyara Arvari catchment, India) Forest conservation (Mendha (Lekha) and Jardhargaon, India Gashaka Gumti National Park (Nigeria) Mamiraua Sustainable Development Reserve (Brazil)
Consumptive use	Sustainable plant use (Mendha (Lekha) and Jardhargaon, India;. Mkambathi, South Africa) Sport/trophy hunting (CAMPFIRE, Zimbabwe; Sankuyo, Botswana; Madikwe, South Africa; Hushey Valley, Pakistan) Wildlife trade (Rattanakiri, Cambodia) Game ranching (Northern Territories, Canada) Turtle egg harvesting (Ostional, Costa Rica) Community fisheries (Laos PDR; Rekawa, Sri Lanka) Collection of NTFPs (Dwesa, South Africa) Captive breeding of Iguanas for pet trade (Nicaragua)
Non-consumptive use	Vicuña fibre harvesting (Peru) Non-consumptive tourism (Western Serengeti, Tanzania; Annapurna, Nepal) Sale of guano (Kokkare Bellur, India)
Genetic resource use	Kani tribe, (India)

References

Barrow E and M Murphree (1999) *Community Conservation from Concept to Practice: a practical framework*. IDPM, University of Manchester.

Berkes, F, George, P. and R. J. Preston (1991) "Co-management", *Alternatives*, 18, 2:12-18

Borrini-Feyerabend, G; M. Pimbert and A Kothari (forthcoming) *Co-management of Natural Resources: Learning-By-Doing Throughout the World*. IUCN, Gland and IIED, London

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Fisher, R.J. (1995) *Collaborative Management of Forests for Conservation and Development*, IUCN, Gland Switzerland.

Renard, Y (1997) Collaborative management for conservation. In Borrini-Feyerbaend (ed) *Beyond Fences: seeking social sustainability in conservation*. IUCN, Gland.

Roe, D., Mayers, J., Grieg-Gran, M., Kothari, A., Fabricius, C. and Hughes, R. (2000) *Evaluating Eden: Exploring the Myths and Realities of Community-Based Wildlife*, Management Evaluating Eden Series No 8. IIED, London

West, P.C. and S.R. Brechin (eds.) (1991) *Resident Peoples and National Parks*, University of Arizona Press, Tucson, Arizona.

2. Central and West Africa

Central and West Africa covers a vast area with a correspondingly wide array of agro-climatic conditions: from coastal plain and inland delta to desert and highland tropical forest. This variety is reflected in the range of habitats and wildlife found throughout the region. The region also supports a large and heterogeneous mix of 'communities', incorporating a range of different groups and interests according to wealth, access to land, authority, gender, age etc. The region's vast rural population, together with their governments in many areas, depends on a declining natural resource base. Wildlife use and conversion of forests to agricultural land, together with large-scale commercial activities (e.g. logging, mining, oil exploitation, and plantations), have all taken their toll on wildlife populations and biodiversity in general.

Most countries in the region have inherited a legal system established by former European colonies, which centralised land rights and ownership of wildlife in the hands of the state. This situation persists today. In many parts of the region, rights to use wildlife are seriously curtailed by the state; throughout Central Africa, wildlife hunting is officially banned unless specifically permitted by licence. In some countries, traditional hunting rights may be recognised within modern law, but hunting for commercial purposes is generally considered illegal unless officially licensed. In reality, modern (*de jure*) laws are often subordinate to customary management regimes, due to the lack of capacity of the state to enforce regulations, in which case management is guided by customary law. For example, the widespread practice of selling bushmeat throughout the region demonstrates the general lack of regard for wildlife legislation and the lack of capacity for governments to impose it.

Since the 1980s, decentralisation processes fuelled by international has been an important driving force behind the support for community management of natural resources. However, the degree to which genuine decentralisation is taking place is not consistent across the region. The role of the donor community in influencing the development of community wildlife management in the region is fundamental, both directly in their support of international conventions, and indirectly in the drive towards decentralisation and good governance. Donor funds have effectively allowed community wildlife management to compete with other wildlife resource management strategies throughout the region. The majority of formal CWM initiatives as recognised by the state tend to be donor-funded initiatives in wildlife management around protected areas. However, the support for policies, national and international, that demand greater local participation and equity in natural resource management has lead to increasing donor support for local-level CWM initiatives and the emergence of local NGOs.

Despite this, it is clear that the vast majority of initiatives in the region described as CWM are not undertaken by, with and for the community. However, a range of levels of community participation within wildlife management operates in the region. At one extreme is CWM around protected areas and at the other community management of wildlife resources in the absence of external

intervention[1], although the majority of initiatives identified by the *Evaluating Eden* project, lie somewhere in between. In these cases, the extent of community participation in defining wildlife management varies, but as a general rule, communities can make management decisions only on the condition that they contribute to conservation objectives.

Even if it were possible to identify a 'community' as a recognisable entity, communities are just one of a number of key groups with a stake in wildlife utilisation. Other groups include the private sector; the government; the conservation lobby; and the donor community. The extent to which communities participate in all aspects of wildlife management from decision-making, to regulating, to sharing in both the costs and benefits of wildlife management, depends ultimately on the balance of power between the different stakeholders and the relative value placed on a resource by those groups.

For more information see:
Abbot, J. et al (2000) *Promoting Partnerships: Managing Wildlife Resources in Central and West Africa*. Evaluating Eden Series no 4. IIED, London
Hakizumwami, E (2000) *Community Wildlife Management in Central Africa: A Regional Review*. Evaluating Eden Discussion Paper no 10,. IIED, London.
Zeba, S (1999) *Community Based Wildlife Management in West Africa: A Regional Review*. Evaluating Eden Discussion Paper no 9. IIED, London.

Case Study 1: Kilum-Ijim Forest Project, Cameroon

The Kilum-Ijim Forest Project was established in 1987 to conserve the Kilum-Ijim Forest, which covers about 20,000 hectares in the centre of the North West Province of Cameroon, in the Bamenda Highlands. Kilum-Ijim constitutes the last significant remnant of Afro-montane forest in West Africa. The biggest threat to the forest is the pressure to clear the forest for agricultural production, as well as encroachment by grazing. Preventing encroachment into this forest is therefore a priority both for conserving the forest and ensuring a sustainable supply of forest products for the local communities. About 200,000 people live within a one day-walk to the forest, which is used heavily for various products, the most important being fuelwood, medicines, honey and building materials.

To ensure long-term conservation of the Kilum-Ijim Forest, while improving local livelihoods in ways compatible with maintaining the forest, the Kilum-Ijim Forest Project established a community-based management system for the conservation and sustainable use of the forest, made possible by the 1994 Forestry Law which enables local communities to benefit from forest management.

A Community Forestry Unit exists within Ministry of the Environment and Forestry (MINEF), which is charged with developing community forestry throughout the country. A manual which interprets the 1994 Forestry Law sets out the practical steps required to establish and manage community forests. However, the procedures to establish community forests are lengthy and complex and there remain inconsistencies and difficulties in interpretation. The Forestry Law and the Manual need to evolve in response to the field experiences of those pioneering their implementation – such as the Kilum-Ijim Forest Project.

The Kilum-Ijim Forest Project shows how the forestry legislation can help to reconcile the different priorities and histories of *de jure* and *de facto* institutions concerned with managing commu-

[1] These extremes are not necessarily mutually exclusive.

nity forests. It also shows the importance of working through and with existing institutions, such as traditional administrations and forest user groups, wherever possible. Around the Kilum-Ijim Forest, new and traditional institutions have considerable skills and experience in managing community-based projects, such as schools and roads. These provide an important baseline from which the management of community forests can draw. Furthermore, the structured nature of society among the Kom, Nso and Oku cultures facilitates decision-making and the implementation of rules and regulations.

The Project shows that the establishment of community forests is a journey in developing capacity amongst government, traditional and community-based institutions to work together towards more participatory forms of management, with a more equitable distribution of rights and responsibilities. The technical management of the forest is likely to fall into place only when the institutional boundaries have been negotiated to the mutual satisfaction of all stakeholders.

Source: Hakizumwami, E., and Fuchi, E. 2000. "Laws And Livelihoods in Kilum-Ijim Forest: Implementing The New Forestry Policy In Cameroon To Promote Conservation With Development" in *Promoting Partnerships: Managing Wildlife Resources in Central and West Africa*. Evaluating Eden Series No. 4., IIED, London.

Case Study 2: Okapi Wildlife Reserve and Garamba National Park, Democratic Republic of Congo

The Okapi Wildlife Reserve, within Ituri Forest, and Garamba National Park provide an opportunity to compare areas where conservation agencies have actively supported community wildlife management (the Okapi Wildlife Reserve) with areas where there have been no 'community conservation' projects (Garamba National Park). The case study explores how local people and institutions use and manage wildlife, how important wildlife resources are to local livelihoods, and whether these resources can create the required incentives for developing local systems of conservation management. The wartime conditions that have affected the region for several years provide an important context to this investigation.

A number of central findings are common to both sites but important differences also exist. These are mainly ecological or relate to the local management capacity, but they highlight the importance of looking at the local context in determining the viability of community wildlife management. It is important that these experiences are translated into recommendations for conservation policy and practice.

The value of wildlife resources

Both the Okapi Wildlife Reserve and the Garamba National Park have a high abundance of large mammals, which can be explained, in part, by the long term commitment of national and international conservation agencies to wildlife protection.

This abundance of wildlife makes a significant contribution to the local economy around the protected areas and has enabled a sophisticated commodity chain for bushmeat to develop, with several social groups competing for access to the benefits of wildlife. This commodity chain is highly organised and constitutes a form of wildlife management in the absence of any intervention by conservation agencies. The high economic value of wildlife resources provides an opportunity

for financially sustainable wildlife management by local institutions, including traditional administrations and specific user groups, such as fishing guilds.

However, war has devastated the local economy and increased poverty in the area. The widespread availability of automatic weapons has greatly increased wildlife offtake from the protected areas. De-militarisation (arms recovery and withdrawal of military personnel) is the highest priority for both conservation and development agencies. In addition, many traditional leaders are recognised by, and have support from, local populations and are well placed to de-militarise their constituencies.

Local capacity to manage wildlife sustainably

The communities around the Ituri Forest and Garamba National Park are heterogeneous. Access to the benefits of wildlife resources depends on a number of factors: wealth, gender, ethnic diversity, forced and economic migration, and complex power relationships between various social groups. This poses a significant challenge to the establishment of a cohesive strategy for community wildlife management.

Traditional authorities differ at Garamba and in the Ituri. Most of the populations around Garamba are characterised by well-established Zande leadership, whereas the loss of effective local leadership has been especially acute in the Ituri. An understanding of the history of traditional systems of authority is essential when assessing the current capacity of local administrations to manage wildlife. Community wildlife management initiatives that have excluded traditional administrations have had limited success.

Various administrations have a stake in wildlife management but are answerable to different constituencies. For example, traditional authorities are answerable to local populations and ruling clans, civil administrations to provincial authorities, and wildlife managers to the headquarters of the national wildlife agency, the Institut Congolais pour la Conservation de la Nature (ICCN), in Kinshasa. Lack of collaboration and communication between these various administrative sectors impedes the development of shared objectives for managing wildlife. However, a *partnership* between the state and traditional authorities can provide an effective framework for sustainable wildlife utilisation. Appropriate incentive mechanisms for financially and ecologically sustainable wildlife management can be envisaged through carefully planned fiscal de-regulation, and the sharing of wildlife management responsibility and benefits between local and national authorities.

Source: Tshombe, R., Mwinyihali, R., Girineza, M. and de Merode, E. 2000. "Decentralising Wildlife Management in The Democratic Republic Of Congo: Integrating Conservation And Development Objectives in A Country At War", in *Promoting Partnerships: Managing Wildlife Resources in Central and West Africa*. Evaluating Eden Series No. 4., IIED, London.

Case Study 3: Transition Zone to the West Region Biosphere Reserve, Niger

Management of sparse wildlife resources in areas of high human population density is a challenge facing much of the Sahel. Niger is home to the last, small population of giraffes in West Africa. They constitute a vital element of regional biological diversity and are an indicator of the way it is changing. But the giraffes live in an unprotected natural environment in direct contact with rural communities. This contrasts with much of the continent's wild animals, which now live in national parks and other protected areas.

The giraffe habitat, the tiger bush, also provides important natural resources to a large human population. As annual agricultural harvests are unpredictable due to climatic conditions, food security can be difficult to achieve. Herding in the tiger bush is an important standby, but tensions over land tenure are becoming more acute. It is important to look in detail at this imbalance, exploring the trade-offs between farming and animal husbandry, and the safeguarding of the giraffes and their habitat. The Wildlife (giraffes) Environment and Land Management Project in the Kouré and north Dallol Bosso Region, also known as PURNKO, has explored this trade-off: although originally focused on giraffe conservation, it has evolved to work with local people to promote sustainable management of natural resources.

The findings from this study can be classified as incentives and disincentives for community management of the giraffes:

Incentives

- A new rural development policy promotes decentralised and integrated management of natural resources.
- The giraffes are becoming a symbol of national pride.
- Since 1996, Niger has been following a programme of administrative decentralisation. To complement this, the PURNKO project has established a decentralised decision-making body.
- Gazetting the giraffe zone as a Biosphere Reserve means that the giraffe has greater legal protection – national and international.
- The local population seems to share an interest in protecting the tiger bush, for their own livelihoods and for the giraffes. The PURNKO project has introduced methods of agricultural intensification and soil and water conservation to improve productivity on existing farmland and prevent encroachment into the tiger bush.
- Community members have been involved in developing a monitoring system for understanding the giraffes and their ecology.
- Giraffe-based tourism offers employment opportunities for local people.

Disincentives

- Niger has been characterised by political instability since independence and has a history of centralised control of natural resources.
- The decentralised decision-making body is not legally recognised and it may be difficult to link it to the formal decentralised administration.
- The Biosphere Reserve was created without full consultation with local people and it is possible that they will not support it.
- It is difficult to stretch the benefits from 74 giraffes over a much larger local human population. The distribution of the benefits from giraffe-based tourism has so far been highly skewed towards a few individuals in one village. Additionally, the population of giraffes and other wildlife is too small to consider consumptive use, such as hunting.
- Although there is little competition between domestic livestock and the giraffes for forage, farmers prioritise their own livestock over the giraffes during periods of forage or water shortage.
- The high-density population living in conditions of sparse natural resources means that it is difficult for local people not to overexploit the resources of the zone. The sale of bushmeat and firewood and the clearing of arable land are means of subsistence that are incompatible with protecting the giraffes. Furthermore, the high population growth rate, one of the highest in Niger, means that resource conflicts are likely to intensify in the coming years.

Despite many factors favouring a community-based approach, the low numbers of giraffes, and the increasing demands of the growing population, mean that the giraffes are unlikely to provide direct benefits to the 45,000 inhabitants living in the giraffe zone. However, the giraffes provide an entry

point for rural development that tries to meet the needs of both the human and wildlife populations. This is being achieved through an integrated conservation and development approach, helping to support rural livelihoods in ways that are compatible with maintaining the tiger bush, such as through increasing agricultural productivity and promoting soil and water conservation activities on existing farms. Additionally, the decentralisation programme in Niger offers opportunities for ensuring that the needs of rural people living in the giraffe zone are represented and that the economic benefits from giraffe tourism can be distributed throughout the zone.

The giraffes also act as a catalyst for promoting national, regional and international interest in developing activities that support human and wildlife populations. Responsibility for the protection of Niger's giraffe population should rest at the highest national level and also with the international community. If these stakeholders are committed to the conservation of these giraffes, then weight must be thrown behind the creation of incentives for villagers to show restraint in their use of natural resources. Ultimately, conservation of the giraffes depends on providing tangible and immediate development opportunities for local people that promote sustainable use of their natural resources, particularly the tiger bush.

Source: Sani, M. M. and Barning, N.M. 2000. "Broadening The Focus: Linking Wildlife Conservation To Rural Development In Niger", in *Promoting Partnerships: Managing Wildlife Resources in Central and West Africa*. Evaluating Eden Series No. 4., IIED, London.

Case Study 4: Gashaka Gumti National Park, Nigeria

Gashaka Gumti was designated as a Game Reserve in 1973. The vegetation of the region includes both montane and lowland rainforests, savannah woodlands and montane grasslands, and biodiversity levels are correspondingly high. Local people living inside the game reserve at this time were allowed to stay, subject to certain restrictions. Areas of land, known as 'enclaves', were set aside and demarcated to accommodate these farmers and pastoralists. However, during Nigeria's economic downturn of the 1980s, management of the game reserve deteriorated and conservation authorities all but abandoned the enclaves to local people, and forests and wildlife within the enclaves deteriorated during this period.

Gashaka Gumti was subsequently declared a National Park in 1991 with responsibility for its management vested in the National Park Service (NPS) and a variety of other major stakeholders including traditional authorities, local and state government, and national and international conservation NGOs. When the Park was created, the NPS recognised that for reasons of political and economic expediency resettlement of enclave communities was not feasible, at least for the present time. However, there is no legal framework to support community wildlife management and so the long-term future of the park's enclaves is placed in some doubt. The enclaves still retain a very high economic value for pastoralists and enclave communities are keen to work with the NPS and to be seen to support a conservation agenda in order to avoid eviction. However, uncertainty over their future makes working with enclave communities difficult.

Enclaves allow people living inside a protected area to continue to practise their traditional livelihoods. Whether or not enclaves enhance or detract from the national park's biodiversity is not certain. It does appear, however, that collaborative management of the enclaves has been relatively successful despite the lack of appropriate legislation. Although wildlife population numbers remain relatively low, rates of deforestation and illegal livestock grazing have both declined, although immigration in certain enclaves needs to be controlled more effectively. Enclaves clearly enhance the cultural value of the national park and significantly increase its potential for tourism.

The National Parks Decree was revised in 1999. The revised decree empowers each National Park Management Committee to deliberate upon the long-term future of enclaves, although the National Parks Board must subsequently approve any recommendations made by the committee. If, as expected, Nigeria's most recent experiment with democracy is successful then national parks will be increasingly compelled to prove themselves more accountable to the concerns and needs of local people. More integrated approaches to management, such as that currently being tried at Gashaka Gumti, will increasingly become the norm.

Source: Dunn, A., Mamza, J.U., Ananze, F.G. and Gawaisa, S. G (2000). "Sticking to the rules: working with local people to conserve biodiversity at Gashaka Gumti National Park, Nigeria", in *Promoting Partnerships: Managing Wildlife Resources in Central and West Africa*. Evaluating Eden series no. 4., IIED, London.

3. East Africa

The East African Region is one of great biological richness. A range of climatic and geographical characteristics give rise to habitats ranging from coral reefs to miombo woodlands, and afro-montane forests to deserts. The semi-arid areas support spectacular wildlife populations for which Kenya and Tanzania are famous internationally. The spread of agriculture into these area has taken up space formerly available to wildlife, and has resulted in habitat change and the truncation of important ecosystems. Such closure threatens the well being of these spectacular populations and the ecosystems themselves. There are many other threats to the region's biodiversity, including the requirement to satisfy the needs of rural communities that are growing at over 3.5 per cent per annum. The management of this rapid growth represents one of the most important challenges East Africa faces.

Community conservation is a relatively "new" phenomenon in East Africa in the sense that it is only now being embodied by conservation authorities, NGO's and others as the long term method to involve local people in taking more responsibility for their natural resources on a sustainable basis. Advocacy of community-based conservation has been driven by several perceptions: the importance of areas outside direct state control for biodiversity conservation; the impotence of the state agencies to manage conservation areas; the potential for cost-effective local management, using informal social pressure and sanction, and drawing on detailed local knowledge of ecological dynamics; and local communities enhanced motivation to conserve natural resources when conservation is of direct economic benefit to them.

Protected area outreach programmes, primarily in relation to savanna national parks, have been the dominant model adopted in the East Africa region. Less attention was given to forest parks, wetland and marine systems, although this is now changing. From the protected area outreach focus, arrangements for collaborative management and community-based conservation have evolved in recognition that community conservation is more than outreach, but has to relate to livelihoods and sustainable use.

With the increasing focus on decentralisation and on creating local level conservation responsibility, community based conservation activities are now evolving quite rapidly. However, despite the good intentions of institutions concerned with community conservation, it is unclear whether there has been any real handing over of ownership and responsibility for natural resources and their management to local communities. There also remain real obstacles to the sound management of natural resources. The continuing weakness of government institutions, hampered by low wages and corruption is an important factor, and this is exacerbated by structural adjustment. The lack of land use planning and ongoing uncertainty over land tenure is also important. Secure tenure over land and natural resources, including wildlife and trees, or clear rights to their use is of crucial importance, if rural people are to manage their resources. As a result ownership, control of and access to land and resources is becoming the single most contentious issue in East Africa.

The region is now poised for progress in community conservation. A number of significant policies are in place, which has been given added impetus and focus by declining government budgets and structural adjustment polices forcing retrenchment. Community arrangements for the management of natural resources are now a necessity not a luxury.

For more information see: Barrow, E., Gichohi, H. Infield, M. (2000) Rhetoric or Reality? A review of community conservation policy and practice in East Africa. Evaluating Eden Series No 5. IIED, London and IUCN, Nairobi.

Case Study 5: Western Serengeti, Tanzania

The Serengeti ecosystem spans 25,000km^2 of north western Tanzania and south western Kenya, and contains a variety of vegetation types and wildlife species, but the prominence of plains mammals is key for tourism. This comprises game viewing and hunting, and constitutes a major source of revenue for the governments. The area comprises a number of state-administered protected areas, such as the Serengeti National Park, Maasai Mara National Reserve and Ngorongoro Conservation Area, established by the colonial government before independence, and which largely prohibit human habitation or use of resources. There are other, less strictly managed, conservation areas, such as the Grumeti, Ikorongo and Kijereshi Reserves, where some utilisation and game cropping is allowed. In addition, there are communally and individually used lands, including the Ikoma Open Area, which are outside the ambit of government protection, falling instead under a number of management regimes, where land and natural resource use is allowed within the limits of national law. Human populations in the Serengeti have utilised land differently, in the west forming dense populations of smallholder agriculturalists, and in the east existing in more pastoralist communities. Throughout the ecosystem are also small groups of hunter-gatherers.

The focus of this case study is the western area of the Serengeti, outside strict government protection and including the Ikoma Open Area. It is one of the most densely settled parts of the Serengeti, and in recent years population growth has created a substantial increase in pressure on land use, and in particular, a spread of agriculture. This in turn has resulted in severe conflicts over land use for agriculture and for wildlife.

The Western Serengeti provides almost US$1.4 million per annum to the Tanzanian government, which is generated through park entry fees, a percentage of bednight fees and a percentage of hunting and trophy fees, observer fees and handling charges. The money goes to the parastatal Tanzania National Parks Authority (TANAPA), the Wildlife Department and the District Councils, which ultimately remit revenue to the national treasury. There is some trickle down of these funds: TANAPA contributes towards development projects in villages around the Serengeti National Park through the Support to Community Initiated Projects (SCIP) initiative which focusses on the construction or maintenance of community infrastructure with some small enterprise support. However, the government expenditure on SCIP and managing wildlife and protected areas is far less than revenues accrued, and thus government receives a net gain. In addition, the Serengeti Regional Conservation Strategy operates a community hunting scheme, where a quota of wildlife is assigned to each village in the Western Serengeti, and this is cropped by the Wildlife Department. The meat is sold to households at low prices, and the money generated goes to a Village Natural Resource Fund (VNRF), which is managed and used by the Village Council.

Additional benefits of living next to a conservation area to the local populations include the availability of domestic energy, construction materials, grazing, foods and medicines in the wildlife habitats, and the illegal hunting opportunities. It is estimated that 60per cent of households regularly

consume or sell bushmeat[2], and that sales may be equivalent to one third the average farm income.[3]

However, the direct and indirect costs of wildlife to the agricultural communities is high. It is estimated that up to one third of households in the case study area regularly lose an average of a quarter of their harvests (cassava, maize, millet, sorghum, vegetables, beans and potatoes) to wild animals,[4] which may be equal to nearly US$0.5 million. In addition, the opportunity costs associated with land use for wildlife may be US$0.5 million. Presented another way, individual benefit sharing from the government generates an indirect US$2.5 per household per annum, while wildlife related direct costs are US$155 per household per annum for communities living on the boundaries of the restricted areas. Wildlife conservation, then, is seen as economically unviable and an unnecessary burden – an attitude that seems unlikely to change until wildlife can be integrated into local livelihood systems.

Integrating Wildlife into Local Livelihoods

A number of innovative community-private sector partnerships have developed in recent years, as a result of the private sector enterprises wishing to elicit community support for conservation, and sustainable use of resources. One such arrangement involves private hunting companies directly compensating villages for use of their land for hunting, thus giving the Village Councils more control over expenditure, and more money than the government sponsored SCIP and VNRF schemes.

In another move, the Wildlife Department introduced a voluntary levy on tourist hunting, which the hunting companies use for community development and anti-poaching expenses, such as demarcating clear wildlife areas, financing anti-poaching teams, and offering rewards for anti-poaching information. In addition, villages are given culling licences and a share of the game meat from tourist hunting. The aim is to involve local people in wildlife management, and to make wildlife a resource that will provide returns in the long-term through conservation, rather than short-term gains through destruction. Although at present confined to the Maswa Game Reserve, Makao Open Area and the Ngorongoro District, this could provide a model for other areas, and based on existing pilot projects, could generate more than US$ 12,500 per annum per village – 19 times more than that generated under SCIP.

Supplying tourist establishments with foodstuffs is a means of generating income from the wildlife industry. A number of hotels and lodges in the Serengeti National Park do provide a market for agriculturalists in the case study area, although this market could be extended greatly if more establishments bought local produce. Allocation of community cropping quotas has also created new markets for local populations, mainly in game meat, but also in hides and skins, although again, this is a limited means of income generation, partly because the quotas are only operating in less than half the villages in the Western Serengeti.

Income can also be generated through wildlife if villages negotiate the lease of some of their land. Some tourism companies lease land from villages, and undertake to provide some casual employment for villagers, others have written into their lease agreements that they will source foodstuff from the village, while others include a percentage of bed night levies in the lease payment.

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2 Enjen Olsen, A.K. 1998. Overview of the Communities Surrounding the Ikorongo / Grumeti Game Reserves. SRCS Workshop Report, Ministry of Natural Resources and Tourism. Wildlife Department, Morogoro

3 Kauzeni, A. and Kiwasila, H. 1994. Serengeti Regional Conservation Strategy: a Socio-Economic Study. Institute of Resource Assessment, University of Dar es Salaam

4 SRCS pers comm

However, the most empowering initiative comes in the form of private companies involving community members in the management and utilisation of wildlife, by instituting individuals as management trainees. Ultimately, this gives local people a wider range of options in decision making around how land is used for their economic gain, and can change the perception of wildlife from a burden to something that is economically viable in the long term.

All of these innovations mentioned attempt to change local people's perceptions of wildlife, recognising that without local co-operation, conservation is extremely difficult. Unless communities can see a direct economic gain from wildlife that exceeds the costs to them, conservation seems unlikely. However, all these schemes are in their infancy, piloted in a few villages, and while projected figures suggest that they have high money-making potential, this has not been realised yet.

Lessons Learned

- Activities which deplete wildlife include unsustainable resource utilisation, poaching and clearing natural habitat for agriculture.
- Little can be done to decrease the negative opportunity costs of agricultural land given up to wildlife, so there should be a focus on other income generating projects.
- The role of government in increasing the local value of wildlife is limited, as benefit-sharing generates negligible revenue. However, the government could play a more facilitative or enforcement role for innovations from other sources, such as the tourist levy mentioned above.
- Private sector initiatives such as direct payment of fees for land use, the promotion of wildlife-related markets, and the development of joint management projects do have the potential for increasing the local value of wildlife, although they do not compensate for opportunity costs. However, these initiatives may simply be replacing the existing top-down governmental model of conservation, and unless they directly increase landowners' control over the management of their own resources, local communities will remain dependent on these external agencies.
- Conservation approaches must remain flexible, since local populations may further increase and demands for land similarly escalate, and these changed circumstances require changed strategies.
- All efforts should be aimed at getting communities to be willing and able to conserve wildlife, and this is about empowering them to decide how to use and manage wildlife for their own economic gain.

Source: Emerton, L. and Mfunda, I. 1999. *Making Wildlife Economically Viable for Communities Living Around the Western Serengeti, Tanzania*. Evaluating Eden Discussion Paper No. 1. IIED, London.

Case Study 6: Mount Kenya Forest, Kenya

Mount Kenya Forest is one of the largest and most commercially important forest areas in Kenya, and one that deserves protection because of its exceptional biodiversity, including the presence of threatened species. It is a major water catchment area, giving rise to two of Kenya's five rivers, and supplying a substantial part of the population with water, irrigation and hydroelectric power. Yet it is also one of the most threatened forests in the country due to its valuable timber reserves, and the large human population that lives on its boundaries: more than 20,000 people live within the 1.5km deep area surrounding the forest, and their demand for settlement and agricultural land is high.

Prior to colonial settlement, the forest was utilised by tribes, who managed the resources through clearly defined areas, functions and utilisation rules. However, with colonial rule, the forest was declared Crown Land, and exploitation of resources by indigenous people was restricted by the state. Logging was allowed though, and extensive use of the timber began, used for railways and for white settlement purposes. Some plantations were begun, but these included exotic species. In

1932 the forest was declared a protected area, managed by the parastatal Kenya Wildlife Service, which still granted extensive logging opportunities. The 1942 Forests Acts and 1957 Forestry Policy specified how local populations could use the forest for subsistence, but management remained in the hands of the state. Commercial logging, which continued after independence in 1963, and demands for land which resulted in excisions being made into the Forest Reserve, both contributed to substantial degradation of the forest. This continued into the 1980s, despite a ban on exploitation of the forest, and the introduction of heavy policing. It was only in the 1990s that community-based forms of conservation were initiated, and consultation begun around planned joint management of the forest and development projects to decrease communities' reliance on forest products. A new forestry policy, drafted by the Ministry of Environment and Natural Resources, recognises that forest management and conservation requires the participation of local populations. As a result there is now more joint forest planning between government and communities, and local participation in forest management and decision-making bodies.

Economics of forest conservation

The economic benefit of conserving the forest is valued at US$77 million, (71per cent of which is in the form of a watershed protection), while each of 40,000 households are estimated to reap resources valued at US$300 per annum (from grazing, medicines, fuelwood, charcoal, timber, honey, wild food and hunting). There are broader benefits to the one million people – subsistence and commercial agriculturalists, pastoralists and fisherfolk – who live in downstream catchment areas, and to the Kenyan population who depend on the hydroelectric power. Further non-quantifiable benefits include carbon sequestration, micro-climate regulation, possible future use of forest species and products, and local cultural values. By contrast, the alternative value of the forest as agricultural land is valued at US$72 million per annum, sufficient for approximately 8,000 households.[5]

The local population is dependent on the forest, although the above figures show that conservation brings a net loss to them. At the same time the Forest Department does not have the means to police the illegal utilisation of resources, thus community-based conservation would seem the obvious route. However, there are additional constraints on community conservation that negate the benefit: wild animals damage trees, and crops both in and outside the forest and there is the opportunity cost of the forest – that land could be used for agriculture. Together, these account for more than the income generated by the forest, and thus conservation has no net economic gain for the local population. This is compounded by the fact that the communities have no management role in or legal use of the forest resources, and face penalties for use if caught. The state policy of protection of the forest denies the possibility of co-operation with communities for conservation. However, the revenue derived from the forest – both to the state and to local people could be increased substanmtially in a number of ways:

- Local communities could use the forest for bushmeat, medicines, poles, and fuel.
- Financial support could be made available for forest-saving or forest resource-substituting technologies, which would act as an incentive for conservation.
- Local communities could also generate revenue from commercial loggers if they were allowed to trade and manage rights to forest areas.
- Commercial timber companies presently pay very low produce fees and royalties and these could be increased, or land use allocated through competitive auction or license bid arrangements. Tripling of stumpage fees – as recommended by the World Bank – and collecting all royalties, instead of the estimated current 30per cent could double the revenue of the Forest Department, and off-set the direct costs of conservation.
- A visitor entry fee to the National Park and Kenya Forest Reserve, and levies on camping and

[5] Emerton, L. 1997. An Economic Assessment of Mount Kenya Forest. Report prepared for EU by African Wildlife Foundation, Nairobi

staying in cottages there could potentially generate the Forest Department US$127,000 per annum, which is almost half the present conservation expenditure.
- The Forest Department requires more financial autonomy, so that the budget it is allocated by national government is more linked to its actual earnings.
- Indigenous timber felling and sale could be reinstated, and before the ban on indigenous timber use, this had a market value of almost US$5 million. If timber use was controlled, less would be extracted, but this nevertheless constitutes a substantial potential source of income.
- Downstream water users include pastoralist, agricultural and fishing populations, and commercial and urban users such as large-scale cash croppers, irrigation schemes, hydropower damns, city dwellers and urban industries. The water and electricity parastatals that sell this water and generate electricity pay nothing to protect upstream water catchments, and conservation revenue could be collected by a small levy on existing water and power charges.

A number of economic conditions for community forest conservation are indicated:
- Non-forest sources of subsistence, income and employment need to be improved if communities are to be economically enabled to engage in conservation.
- Natural resources must generate some income which outweighs the costs associated with it. Communities need some rights over, or stake in, ownership of the forest if economic gain is to regarded as a long-term possibility and conservation is to become meaningful. Arrangements such as leases, franchises and/or partnerships with other government, non-governmental, private or community organisations could facilitate this economic incentive to conservation.
- There are a range of market failures in forest products that need overturning to ensure that the forest is a source of income. Commercial forest products, downstream water consumers and recreational visitors all benefit from the forest, but pay little or nothing for this. Thus forest producers – the Forest Department and local communities – do not benefit economically from the conservation of the forest, while the forest consumers – loggers, downstream users and tourists – incur very few costs of use, and it is in their interests to exploit the resources as they can.

Source: Emerton, L. (1999). *Mount Kenya: the Economics of Community Conservation*. Evaluating Eden Discussion Paper No. 4. IIED, London.

Case Study 7: Lake Mburo National Park, Uganda

Historically, the area that is now that Lake Mburo National Park (LMNP) was used by Banyankole *Bahima* pastoralists. Rinderpest and tsetse fly epidemics lessened the potential for livestock, allowing for a flourishing of wildlife, but this attracted hunters. In an effort at conservation, the land was declared a Controlled Hunting Area in the 1930s. In 1964, a game reserve was established around the lake in the area, where cultivation was allowed, but no pastoralist activity, and this led to conflict between the reserve authorities and local pastoralist populations. When the LMNP was created in 1982, 4,500 families were evicted from the area, without compensation. Under the new government in 1986, people were encouraged to return to the area, and by 1987, 60per cent of the Park area had been allocated for settlement.

In the 1990s, the government embarked on a new conservation approach, that was intended to benefit local people. As part of the new approach, the Lake Mburo Community Conservation Project (LMCCP) was established in 1991 (since renamed the Community Conservation for Uganda Wildlife Authority Project -CCUWA) which contributes 20per cent of gates fees to community development projects through a Support of Community Initiated Projects (SCIP) fund. Initially, the types of development projects funded were individual in nature – for example, bee keeping, crafts and tree nurseries – but this has changed to incorporate broader community development and agreements on resource allocation within the Park including fishing, traditional medicines and access to

water in times of drought. Increasingly, the CCUWA has become involved in resolving human-wildlife conflicts, arising mainly from crop damage by wild animals. Between 1994 and 1996, USh 91 million was spent on community development projects, although not all parishes benefited. In 1997, the CCUWA allocated USh 27.9 million to community development, and undertook to be more equitable in terms of benefiting all parishes.

CCUWA activities involve work with communities in parishes that border the Park, amounting to a population of 51,000, over an area of 2,000 km^2. A range of ethnic groups live in this area, which, although distinctive, are becoming increasingly homogenous in their activities. It is now common practice to combine livestock rearing with cultivation, and earn some income from off-farm activities including petty trading, casual labour, beer brewing and charcoal burning.

Costs associated with conservation

The costs of the LMNP to local communities include damage to crops and herds by wildlife, the opportunity cost of land devoted to wildlife and restrictions on resource use. The costs of wildlife damage, including crop destruction, livestock kills and transmission of disease to herds, is calculated as the sum of production lost as well as time and inputs required to guard crops and livestock against damage, and can be estimated at USh 375 million. Opportunity cost of land is calculated on a pastoralist and a mixed farming basis, and is equivalent to USh 137 million to pastoralists, and USh 6.6 billion to mixed farmers.[6] Resource use restrictions are calculated as costing local communities USh 226.4 million, based on 1994 figures of those households expressing a desire to use the Park resources.[7]

On balance, although local people benefit from development projects, they face a net loss of USh 528 million per year, comprised mainly of land and resource opportunity costs, and this is set to rise as land use demands increase, and livelihood strategies change: these are the people subsidising wildlife conservation. Revenue from tourism is not likely to increase greatly in the future, and the external funding will not continue for ever, hence the sustainability of the Park has to be questioned. Revenue could however be increase in a number of ways:

- In terms of balancing the opportunity costs, greater benefit should accrue to the local populations. This could be arranged through increasing rights to sustainably use the Park, such that communities do not feel excluded from land which they used to use.
- At a national level, there is currently no centrally allocated channelling of funds to the UWA. This could be challenged on the basis of the Park presumably being thought of as a national benefit worth conserving.
- Additional private sector financing could take the form of direct income earning arrangements – through cropping, hunting or tourism – or investment or charitable contributions. Incentives to investment in the LMNP could be initiated, and these could be made more attractive by tax relief options on contributions, and the establishment of endowments, foundations and trusts, as well as sponsorship and advertising deals. Of course, this would require active support from government.
- There is an imbalance in Park income generation and expenditure, and this could be corrected if viewed in terms of the global benefits the Park creates. Payment for these benefits could be negotiated with other governments, for example, for global carbon offsets, or with industry, in the form of biodiversity prospects or debt-for-conservation swaps.

Source: Emerton, L. (1999) *Balancing the Opportunity Costs of Wildlife Conservation for Communities around Lake Mburo National Park, Uganda*. Evaluating Eden Discussion Paper No. 5. IIED, London.

6 Extrapolated from Potterton, A. and Rubagyema, P. 1998. Field Notes from an Economic and Socio-Economic Survey of the Community Living Around Lake Mburo National Park, Uganda. Penroche Development Services and Policy Research Group, Nairobi

7 Marquardt, M. Infield, M. and Namara, A. 1994. Socio-Economic Survey of Communities in the Buffer Zone of Lake Mburo National Park. Lake Mburo Community Conservation Project, Kampala

4. Southern Africa

In Southern Africa, a variety of factors have played a key role in shifting conservation policy and practice away from state-controlled protectionism and towards CWM. These include:

- The pressure to promote development by using wildlife in rural areas.
- A lack of resources for law enforcement inside protected areas and the desire to conserve wildlife populations outside protected areas.
- Pressure for land reform.
- Political expediency and a recognition by governments that rural voters are important.

The model that has emerged entails:

- Allowing communities access to natural resources from which they previously had been barred.
- Sharing revenue from the use of natural resources (through a variety of ways that include hunting or consumptive use, tourism or non-consumptive use along with various forms of harvesting resources such as thatch grass and firewood) with communities.
- Making conservation pay for costs of wildlife management as well as community development programmes.
- Involving communities in decision making.
- Recognising communities' historical rights of tenure to resources and land.

Dialogue and participation are now the expected norm in Southern Africa, and the expectations amongst communities and politicians are high. Recent evidence, however, suggests that there are serious flaws in the way the CWM model is being applied and implemented and that many obstacles still need to be overcome, for example:

- Different role players have incongruent goals;
- Project managers use the same strategies in very different contexts;
- Achievements fluctuate within a short space of time, but initiatives are still evaluated and judged in 'snap-shot' fashion;
- Communities are complex and change constantly but project cycles do not take this into account;
- Local knowledge is often imperfect, because of people's historical alienation from nature;
- Well-meaning preservationists create problems by limiting local peoples' ability to market certain resources such as elephant products;
- A sense of custodianship is in many instances absent amongst local communities;
- Local governance is in many instances extremely weak;
- Donors insist on investing in the building of new institutions, which invariably become centres of conflict in communities;
- The financial benefits of CWM are over-estimated and consequently over-sold to communities and donors;

• Non-financial benefits are underestimated but may eventually become the main impetus for CWM in many instances.

For more information see:
Fabricius, C.,Koch, E. and Magome, H.(2000) Community Wildlife Management in Southern Africa: Challenging the assumptions of Eden . Unpublished report to the Evaluating Eden project. IIED, London.
SASUSG (2000) Community Wildlife Management in Southern Africa. A Regional Review. Evaluating Eden Discussion paper no 11. IIED,London.

Case Study 8: Communal Conservancies, Namibia

A decline in wildlife numbers during Namibia's colonial era was brought to a halt on freehold land as a result of changes in legislation that gave white farmers conditional ownership over certain species of game and rights to use others. The result was an 80per cent increase in wildlife on freehold land and the development of a multi-million dollar wildlife industry. A number of freehold farmers began cooperating in the management of wildlife on adjoining properties and formed common property resource management institutions called conservancies. On communal land however, residents had very little legal access to wildlife and partly due to poaching by South African officials and military personnel and local people, wildlife populations consistently declined. An exception was in the Kunene Region (formerly Kaokoland and Damaraland) where a community-based conservation programme with emphasis on local empowerment, helped to halt the decline in wildlife numbers. Following the independence of Namibia from South Africa in 1990, the new government carried out a number of surveys to assess the attitudes of communal area residents to wildlife, identify problems and seek joint solutions. As a result, the Namibian government introduced policy and legislation to give the same rights over wildlife to communal area farmers that were already enjoyed by freehold farmers. In order to gain such rights, communal area residents have to form a conservancy with clear boundaries, a legal constitution, a representative management committee and registered members. Despite some significant differences between freehold and communal land, the institutional framework for communal and freehold conservancies is similar, closely following the design principles of common property resource management institutions.

Communal area conservancies face a number of problems in becoming established, including: the definition of community and of conservancy boundaries; competing interest groups within communities; competition between new conservancy institutions and established institutions; differences in scale between appropriate social units and resource management units; uncertain land tenure, and unequal levels of support available to assist all the communities wishing to form conservancies.

A number of communities have found pragmatic ways to overcome these problems. These have included: managing to resolve long-standing land disputes with neighbours; subsuming internal differences in order to gain common benefits; and redefining their relationships with existing and emerging institutions at a number of levels. The government has also played a mediating role in assisting with conflict resolution. However for some communities, dealing with these issues has meant long delays in forming their conservancies. While the government has put in place a suitable environment for conservancies to form, it remains to be seen how they will perform in practice.

Early community-based conservation work in Kunene Region and the experience with freehold farmers has shown that individuals and communities are not driven solely by financial profit.

Communities' motivations for managing wildlife include livelihood diversification to minimise the many risks associated with an uncertain environment, and cultural values placed on wildlife.

It is too early to measure impacts of conservancies on wildlife or local livelihoods. However, impacts on wildlife from early community-based conservation activities in Kunene Region have been significant with flagship species such as the desert-dwelling elephants and black rhino recovering well. There are indications of positive trends beginning to develop elsewhere and conservancies are expected to build on these. Income generation and material benefit has so far been small, but probably sufficient to demonstrate that wildlife can contribute to rural development. Early income generation activities included bed night levies from tourism lodges (e.g. US$8000 distributed to 370 households in Caprivi in 1996) and benefits from hunting (e.g. US$25,000 worth of meat and US$3000 from the sale of skins in Kunene Region in 1993). Subsequent contracts between communities and private sector operators have yielded larger sums (e.g. more than US $116,000 to the Torra Conservancy and local residents from a tourist lodge from 1996 to 1998, and US$30,000 to a San community from trophy hunting in 1998.). Even small injections of cash into poor and marginalised communities can make a relatively large impact.

Communities have also received a number of non-financial benefits which include: new, adaptable institutions with a defined and committed membership; accountable leaders and a participatory decision-making process that includes women; new skills; integrated resource management systems; experience and confidence in dealing with outsiders; recognition from neighbours and outside authorities and increased pride through increased control over their own resources and livelihoods. Furthermore, the continued existence of wildlife (or in some cases its return) is valued highly for cultural and aesthetic reasons.

A number of similar policy and legislative changes in other resource sectors provide the opportunity for conservancies to gain rights over other resources and develop integrated resource management systems at community level, although a lack of coordination between government departments threatens to impede progress.

The development of community-based conservation in Namibia has been evolutionary and dynamic, at both community and national policy level, and many of the conditions necessary for the development of viable common property resource management institutions are now in place.. It is difficult to judge success or failure as conservancies are only now becoming operational. Much will depend upon the extent to which conservancies can fit into nested levels of decision-making and defend their rights at higher levels. Conservancy management committees will also need to remain accountable and responsive to their members.

Much of the progress made so far has been due to the following critical factors:

- Availability of "light-touch", high quality facilitation to assist a number of communities. Such facilitation needs to become more widely available to avoid the development of a few elite "five-star" conservancies that succeed while many more falter and fade.
- Development of local level "projects" simultaneously with work at national level to create the enabling framework.
- Donors providing significant assistance but not allowing their agendas to dominate the process.
- Internal development of the conservancy approach from a joint recognition of problems and solutions between communities, government and NGOs rather than external imposition.
- Evolution of the approach over a long period of time (starting from a community-game guard programme over nearly 17 years) enabling it to adapt and grow with changing circumstances and opportunities.

Source: Jones, B. (1999) *Rights, Revenues and Resources: The problems and potential of conservancies as community wildlife management institutions in Namibia*. Evaluating Eden Discussion Paper No. 2. IIED, London.

Case Study 9: CAMPFIRE, Zimbabwe

Zimbabwe's Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) is now over ten years old and has been a critically important learning experience for Southern Africa in a rapidly changing world. The CAMPFIRE project has developed from three key pilot project sites (Masoka village, Mahenye village and Nyaminyami District) into a fully fledged social movement articulated at international, national, district, ward, village and household levels and involving 36 of Zimbabwe's 57 districts. 12 of the districts are high potential districts for wildlife. 185 local communities representing 200,000 households in wildlife producing wards are involved. Several million people live in the participating districts and therefore the project has a potentially large constituency.

The basic assumption of CAMPFIRE is that in arid or semi-arid areas, land use involving cropping and/or cattle grazing may cause environmental problems, such as deforestation and erosion, and economic difficulties, such as low yields and lack of development. If these land-use strategies are combined with community management of wildlife, greater environmental, economic and sustainable rewards ensue.

Legally, devolved user rights over wildlife on communal land were conferred on the Rural District Councils by an amendment to the Parks and Wildlife Act of 1982, and this allows them to manage and benefit from wildlife. Funds are generated from the concession leasing of hunting, safari and tourism, and trophy and bednight fees in communal lands. Contracts are drawn up between Rural District Councils and private sector operators, and the Councils withdraw a management fee, of a maximum 35per cent, and levy of 15per cent, then direct the money to wards and villages, where it is used for community development projects or distributed to households in dividends.

The discourse surrounding the "birth" of CAMPFIRE revolved around "community-based wildlife management" – homogenous communities living on the borders of national parks and safaris were capable of wildlife control and management. Initially, concerns around internal dynamics of communities, and pressures created by external political and economic forces were ignored. The assumption that communities should manage resources by and for themselves was gradually questioned however, and it became clear that the many stakeholders involved in wildlife management, (the state, national politicians, the private sector, international wildlife lobby groups, local level politicians, and the communities) have varied and possibly opposing interests, and a new ("adolescent") phase of "co-management" emerged.

Since 1995 CAMPFIRE has been viewed as a "middle-aged" social movement – missing out the crucial stage of adulthood. It is at this stage where many of the flaws of the programme could, and should, have been ironed out – i.e. mechanisms should have been developed to ensure the devolution of ownership to the ward and village level, thereby breathing life into the 'community-based' part of the programme. Instead the state, at its various levels, retained control and ownership, and District Councils remain the seat of 'Appropriate Authority' over wildlife.

As a socio-political movement, there are a number of key loci of power and decision-making. At an international level, donor agencies, the United States Congress (influenced by the public and lobby groups), CITES and international wildlife lobby groups all have an influence on CAMPFIRE. Nationally, policy and implementation decisions are central to the development of the programme, since it is there that devolution decisions lie. The CAMPFIRE Collaborative Group, designers and

implementers of the programme, act as an interface between communities and donors, policy makers and politicians, and they also command some power over outcomes, which may be in direct opposition to the government's. Locally, Rural District Councils and District Administration also influence outcomes, and there are allegations of corruption and embezzlement of funds. Within communities, power is not diffuse, and often sits with leadership: elites, chiefs, democratically elected authorities such as the councillors or Village Development Committee members, or religious functionaries. Lines of patronage then, run from the local to the national level, with the ruling ZANUPF government attempting to impose centralised control on remote villages and peoples.

Impacts and Achievements

The greatest achievement of CAMPFIRE has been the broad scale of implementation of the project. The large number of districts, wards and villages belonging to the project have created the political space in which wildlife and wildlife habitat have become important human development issues. Without the project, it is unlikely that this complimentary land use management strategy would have been considered. However, because of contradictions and flawed assumptions, the large scale of the project is also a major weakness as many problems concerning bureaucracy, equity and political sustainability remain unresolved.

The benefit from wildlife utilization at the household level is highly variable and sparsely populated wards and districts adjacent to protected areas have the potential to earn more income than those which are densely populated and removed from the core biodiversity areas. In 1996 89,475 households received disbursements under the project, and others have benefited from projects such as schools, clinics and grinding mills.

The ecological impact of CAMPFIRE is difficult to ascertain, because of differing methods of data collection, as well as intermittent drought, population movements and other environmental factors. Despite this, a number of studies report that elephant populations have not been affected by CAMPFIRE activities and CAMPFIRE has cause a decrease in poaching of other species. However, monitoring of this has been insufficient. Overall, in 1980 12 per cent of Zimbabwe's land was devoted to wildlife management, all within officially protected areas. By 1999, 33 per cent of total land in Zimbabwe was under wildlife management or had wildlife management as one of its key activities. The CAMPFIRE programme and the establishment of conservancies on private land have been responsible for this change in land use strategy.

CAMPFIRE has been involved in institutional capacity building at provincial and community level, and has contributed to accountability of local government systems.
Communities have been empowered to manage their resources collectively and articulate their development needs through the programme. Local level challenges to District Councils, and the general paradigm of democracy within which CAMPFIRE was conceived, have had positive democratic spin-offs in Zimbabwe. However, there are allegations of corruption at national, regional and local levels. As just one example, CAMPFIRE associates earn salaries of US$ 60,000, twice the current levies raised by District Councils[8].

Current and previous scrutiny of CAMPFIRE points to one major analytical critique: that the CAMPFIRE movement needs to rigorously accept the ultimate goal purpose and spirit of the fledgling project: the devolution of legal rights and management functions to local (village) level in order to foster the sustainable management of wildlife by people affected by wildlife.

Source: Hasler, R (1999) *An Overview of the Social, Ecological and Economic Achievements and Challenges of Zimbabwe's CAMPFIRE Programme*. Evaluating Eden Discussion Paper No 3. IIED, London

8 Royal Netherlands Embassy. 1998. "Combined Review of Strategic Support through Zimtrust to CAMPFIRE and Institutional Support to CAMPFIRE". Arcadis, Euroconsult, Harare

Case Study 10: Madikwe Game Reserve, South Africa

The Madikwe Game Reserve covers 75,000 ha. of the northern region of the North West Province, land that previously fell under the auspices of the Bophuthatswana homeland. After degradation by cattle farming, an independent consultant was commissioned to assess the most appropriate land use for the area, and two options were considered under this: extensive cattle ranching with some irrigated agriculture; and a wildlife tourism project that included the big five – elephant, rhino, buffalo, lion and leopard. It was estimated that tourism development would generate a 15 per cent net return on investment, compared to only 0.43 per cent in cattle ranching. In addition, it was thought that tourism could produce more jobs than ranching, stimulation of the local economy would be better, diversification of the local agriculture-based economy was a positive move, and that the government could generate substantially more money through tourism.

Madikwe was created with three assumptions: that wildlife tourism was the best use of the land; the conservation value of the land would be increased by this type of tourism; and that villages surrounding the area would benefit financially from it. The tourism initiative was designed as a tripartite partnership between the Parks Board, private sector and local communities, all contributing equally . Three villages in the area were to form the community input: Lekgopung, Supingstad and Molatedi. The Reserve was created in March 1991, and within a year over 8000 animals had been released into the Park and most of the basic infrastructure was in place.

The Parks Board manages the project, and ensures that plans, objectives and policies are adhered to. It facilitates the involvement of the other two partners, and is the principal partner. The private sector is the economic engine of the project, without which there could be no conservation or community development. The "community" is the weakest partner, primarily due to lack of tenure and uncertainty about rights and obligations. Indeed, it has been argued that the only options open to local people are employment and business opportunities in the reserve while meaningful participation in wildlife management seems remote. Recognising the weakness of the three communities, the Parks Board raised money to ensure effective participation through capacity building, but this led to further allegations of top-down imposition, and to conflict between the three villages, and between them and other villages in the area.

Madikwe needs to generate US$ 1million per annum to cover the costs of management, and an unspecified amount to cover the costs of community development. To achieve this, approximately 15 lodges are required, with between 500 and 700 beds, but this level of investment is not happening. In addition, the predicted financial returns on investment were found to be too high, and have subsequently been lowered from 15per cent to 2per cent, and it is estimated that it will take 30 years for full income generating capacity to be reached. This time scale is too long to be an incentive to a poor community. There may be some economic benefit in the next 10 years, although to bring unemployment down to par with the rest of the province (33per cent), a total of 707 jobs have to be created. Clearly, this is dependent on the fate of tourism in South Africa and in the North West province in particular.

Lessons Learned

- It must be questioned whether South Africa can attain community participation in conservation without first addressing the pressing issue of land reform.
- In order to allow greater community management and control, the elected representatives of communities must participate in all decisions that affect them, and this should be discussed with villages as single units, not an homogenous whole.
- Building relationships based on trust and transparency may be more important in gaining support

from communities than (the promise of) material benefits.
- Never make false, or even unrealistic, promises about what a protected area can deliver, and be open about the time lag factor.
- Within communities are various groupings with different agendas, and these need to be recognised at the outset, as they can undermine projects.
- Communities are influenced by the politics and prevailing culture of regional and national levels.

Source: Magome, H., Grossman, D., Fakir, S. and Stowell, Y. (2000) *Partnerships in Conservation: The State, Private Sector and the Community at Madikwe Game Reserve, North-West Province, South Africa*. Evaluating Eden Discussion Paper No. 7. IIED, London.

Case Study 11: Mkambati Nature Reserve, South Africa

This case study analyses the prospects for community wildlife management (CWM) for communities who neighbour Mkambati Nature Reserve. In this area, an ambitious Spatial Development Initiative (SDI) project, which hinges around eco-tourism, and with a significant component of community participation, is proposed. Although wildlife is present in the Mkambati Reserve, it is not the sole attraction, and the ecotourism scheme is premised largely on the scenic beauty of the area. Nevertheless, wildlife and other wild resources do play a role in the present and proposed tourist industry, and also in the livelihoods of local people – predominantly through illegal use rather than structured participation in conservation based enterprises. Furthermore, many of the problems currently being experienced in relation to the establishment of the SDI are reminiscent of those encountered in wildlife management projects elsewhere. In this case study, therefore, the SDI stands as a proxy for a community wildlife project.

There have been no community-based wildlife management initiatives to date in the Reserve, although the potential for them exists. But in the context of competing policy and implementation initiatives (there are three main policy initiatives of the post 1994 democratic government which relate to Mkambati: land reform; nature conservation; and the Spatial Development Initiatives), CWM will be seen as only one form of tenure or socio-economic improvement, and as such, may not be accorded priority.

Although there is no formal CWM initiative, the Reserve is used by the communities, and they do manage resources there, although this takes place outside official systems and structure. The Reserve is of benefit at household and individual level, rather than at the community or collective level, and this is unlikely to change in the future, even under a SDI project, as the balance of informal and formal tenures will not disappear. It also seems unlikely that the current mixed livelihood strategy will change, and the present joint dependence on nature conservation, ecotourism, agriculture, resource extraction, forestry and other activities will continue. A CWM initiative should aim to enhance these, not diminish them or aim to disaggregate them.

There is, however, no evidence that external authorities have the experience to deal with CWM in Mkambati, as well as the complexities of resource tenure and power dynamics. The politics of land in Mkambati have evolved in this context of complex systems of livelihoods, a reliance on land-based resources, and an ambitious government policy of land reform and conservation. These politics have created an intricate web of power relations, structured by intense competition between organised groupings and their allies. Central to the competition is a dispute over definitions of the Mkambati 'community'. The Khanyayo people formed the Khanyayo Mkambati Development Forum (KMDF) a legal entity required to carry forward their historical claim to the land. Another

grouping centres around a Joint Monitoring Committee (JMC), which developed out of local ANC political action and demands relating to the Reserve in 1992. The demands revolved around issues of land ownership, but also reflected local concerns of employment, education and management of the Reserve. The JMC promised to carry forward the Khanyayo community's claim to their land, but the Khanyayo leadership perceived this to be taking over their role, and starting to withdraw their support for the JMC. It transpired that the JMC has also lodged a claim for the land, and a meeting between the KMDF and the JMC to resolve the issue ended with guns being pulled. Later, the JMC seemed to form an alliance with the Thaweni Tribal Authority, although this only lasted while it served the interests of an ambitious local business and political elite. The result of these power plays over the past five years has simply been an impasse. There are few tangible benefits for the groups involved and no movement towards SDI, or resolution of the land claim.

Wildlife management must always be seen in these larger contexts. The prospects for successful community based schemes will depend crucially on how wildlife tenure articulates with other resource tenures, on how it impacts on rural livelihoods considered holistically, and on the relationships which exist between local and non-local institutions. The evidence from Mkambati contradicts the argument that the main actors lack the capacity to make CWM initiatives work. What matters more is whether they perceive the incentives and have the social and political will and skill to succeed with CWM. At this stage it seems that the prospects for CWM initiatives are mixed.

Source: Kepe, T., Cousins, B and Turner, S. (2000) *Resource Tenure and Power Relations in Community Wildlife Contexts: The Case of Mkambati Area on the Wild Coast of South Africa*. Evaluating Eden Discussion Paper No. 16. IIED, London.

Case Study 12: The Makuleke Land Claim, South Africa

The Pafuri Triangle lies in the northern-most corner of the Kruger National Park (KNP), South Africa, and borders on both Zimbabwe and Mozambique. As such, it forms part of a potential transfrontier conservation area, and it also contains up to 75 per cent of the biodiversity of the KNP, which is South Africa's largest wildlife park. The Makuleke community was forcibly removed from the Pafuri area in 1969, under the apartheid government, and settled 50km away, to the south west. The democratically elected government passed the Restitution of Land Act 1994, and as a result, the community made a restitution claim to resettle on their land in the Pafuri Triangle.

The community formed the Makuleke Communal Property Association (CPA), a legal entity in the land claim negotiations. It wanted to regain ownership of lost land, and maximise community benefit from the land through development, in return undertook to maintain the conservation status of the land.

The National Parks Board (NPB) is a statutory body that acts as the custodian of South Africa's national parks. It was this organisation that was given the responsibility for negotiating a settlement with Makuleke, although the land claim was actually lodged with the Department of Land Affairs (DLA). The NPB wanted to settle the claim without setting a precedent, since it was believed that if the Makuleke claim was successful, a number of other communities would also claim land in the Kruger National Park (KNP), and that would have dire consequences for the Park, for conservation, and for strategic plans relating to a transnational tourism project.

Negotiations around the land claim began between the community and the NPB in 1994, prompted by a private sector suggestion of a tourism lodge on the land. Protracted negotiations and horse-

trading ensued, including a diamond-mining operation on land adjoining the Pafuri Triangle, an alternative claim to the land by a different community, and increasing media attention on the project: mistrust and suspicion clouded the terrain. An official claim was lodged with the Land Claim Commission (LCC) in October 1996, and this marked the end of the informal bargaining between the Makuleke and the NPB, and the beginning of a rigorous and formal negotiations process, under the auspices of the LCC.

During this negotiating time, the assistance from two other organisations – the Legal Resources Centre (LRC), an NGO providing free legal services, and Friends of Makuleke (FoM), a group of external role players, whose composition the community had actually decided upon – were important in the Makuleke's ability to negotiate their interests. The FoM acted as a link between the community and outside role-players, and resulted in creating a more positive image of the community as serious conservationists. In addition, in 1997 the NPB was coming under increasing media and political pressure to settle the claim, and internal changes and restructuring had an effect on their ideology: in time they shifted from an insistence on ownership to a position of custodianship of biodiversity. The claim was finally settled in April 1998: the KNP was to be extended by 5000 hectares, and this land was to be incorporated into the Makuleke region of the KNP, as the Pafuri Triangle was subsequently known.

The most significant outcome was the restructuring of power relations between the community and the Park, such that now both parties are able to implement the agreement as equal partners. The Makuleke community have regained ownership of the land, and for conservation purposes are bound into a contractual agreement with the South African National Park (SANP) (the renamed NPB). The land is managed by the KNP, under the direction of a Joint Management Board, where decisions are made by consensus. The Makuleke, in exchange, gain exclusive commercial rights to the area. This can be seen as an agreement between equals, and is one that explicitly provides for biodiversity conservation. In addition, clear boundaries exist as to the role of both parties, and for example, there will be no SANP involvement in community development or commercial ventures, and the agreement is structured so that ongoing negotiation between the two parties is inevitable. It has been hailed as "world class" by some observers, and has attracted donor and private sector interest.

Source: Steenkamp, C. and Uhr, J. (2000) *The Makuleke Land Claim: Power Relations and Community-Based Natural Resource Management*. Evaluating Eden Discussion Paper No.18. IIED, London.

Case Study 13: Dwesa and Cwebe Wildlife and Marine Reserves, South Africa

South Africa's Land Reform Programme provides the legislative framework for seven communities living next to a protected area situated along the coastline of the former Transkei – formerly an 'independent homeland' – to increasingly assert their rights to the land and resources in the area.

For the subsistence-orientated AmaXhosa and their forebears who have been occupying this area for over 1000 years, the indigenous forests, grasslands and seashore are highly valued resources in sustaining their agrarian lifestyle. A socio-economic profile of the communities reveals the levels of impoverishment and the deplorable condition of social services. This context provides an insight into the role of the natural resource base in sustaining local livelihoods. However, the establishment of the protected area led to the erection of a fence line between the communities, the forests, grasslands and the coast. Wildlife associated with the reserve is listed.

Stakeholder perceptions

Communities and reserve managers differ in how they view the relationships between people and resources. Resource managers are of the opinion that the demand for resources outstrips the supply and that therefore they should enjoy greater protection. Perceived high population growth is seen as an issue. Their goal is to see greater protection although they are not particularly active in pursuing it. This is partly as a result of their disempowerment. Communities view the resource base as adequate to meet local needs and feel that the population is relatively stable and that greater use should be made of the resources. Both agree on the need to link the protected area to sub-regional economic development. Communities feel that increased levels of local employment in the reserve will lead to greater protection of resources. Their goal is to achieve greater control over the resources and the land. Actions towards achieving this goal have included protests, land claims, negotiations and networking.

Scientists stress the scientific value of the resources in the reserve. They are generally non-supportive of resource utilisation from the PA. Their position is based on: 1) their desire to have access to 'undisturbed' ecosystems as 'benchmarks' against which to measure ecological change occurring elsewhere, and 2) their perception that local circumstances would prohibit effective management from taking place leading to a greater degree of 'open access'. Population pressure and the size of the demand are perceived as threats. Their goal is to achieve greater protection for the reserve and to secure the resources as scientific research sites. This they pursue through making use of their status in society, their institutional power and their access to policy development processes.

There are also differences between the perceptions of a land-orientated NGO and an environmental NGOs. The former stresses the existence of traditional ecological knowledge and the need to revitalise it. It believes that stronger land tenure is vital if communities are to take more control of the resources. In consequence its actions comprise organisational support to the communities and active representations to key government players. The environmental NGO, on the other hand perceives the land claims as a threat to the integrity of the country's protected area network and has the goal of averting restitution. It uses its access to senior decision-makers to stress technical reasons (international conventions, existing legislation) why restitution should not take place.

Government departments are generally united in the perception that the area requires special development intervention. Different perceptions exist within departments, often as a result of the coexistence of bureaucrats who served under the apartheid government and former liberation movement activists. An enforcement orientated lobby exists who generally share the sentiments of the scientists. This lobby has made effective use of the media in calling for greater protection. The rest of the government role-players are generally divided into those who support the notion of CWM based on land ownership and those who, in the face of conflicting interests, are unwilling to commit themselves either way.

The greatest divergence in perceptions are related to the issue of land ownership which has also proved the most difficult issue to resolve. The protracted nature of the process and its inability to deliver action on the ground has thus far had negative socio-economic and biological outcomes in the study area, although some local political benefits have resulted.

Source: Timmermans H (1999) *Power relations and their impacts at Dwesa and Cwebe Wildlife and Marine Reserves – South Eastern Seaboard, South Africa*. Unpublished report to the Evaluating Eden project, IIED, London

Case Study 14: Okavango Region, Botswana

During the 1980s the Government of Botswana prioritised expansion of the livestock industry and the water industry that supports it over wildlife. When it was recognised that this was reducing wildlife populations, the government changed emphasis, and at the national policy level, has been promoting development that creates incentives for sustainable use and conservation of natural resources. In 1992, the Wildlife Conservation and National Parks Act was legislated in Botswana. This initiated a move from central government control of wildlife and other natural resources, and provided concessions to allow communities living in, or adjacent to wildlife areas, a greater role in management of these resources. Since that time, Wildlife Management Areas have been set up and projects such as the USAID funded Natural Resource Management Program (NRMP) have been established.

The NRMP works on the basis of communities forming themselves into a legal entity, a CBO, based on a constitution and having elected a management or leadership group. They choose between sub-leasing the land for hunting and photographic tourism purposes, or using it directly. Once this is completed, a lease is awarded to the community, and although they have some autonomy with regards to management, they have to work within the limits of an area specific management plan, which includes a government quota for hunting. There are three communities that have these lease plans (although more are planned), two of them being Sankuyo village and Khwai village, and these two villages have been compared for the purposes of this case study.

The Sankuyo village, on the south eastern terminus of the Delta, has approximately 350 residents, with livestock being the most important livelihood means. The vegetation is mixed scrub and broken woodland, and it is a very dry area, not having flooded for a year. After they were awarded land in March 1996, the community immediately chose to sub-lease their land in a joint venture agreement, and this has generated P2 million in three years. Although they have received USAID support for training and leadership development, there remain problems of a poorly defined power hierarchy, weak leadership and misuse of power. It seems that power rests with a few young educated members of the community, who do not sit on the management structure, and this creates tensions with the older generation. Most operational decisions are made by the joint venture partner (JVP), and as a result, there has been a focus on benefits and not the management of natural resources.

Khwai village is situated in one of the primary game and tourist areas of the region, and hunting and foraging are important forms of subsistence and social cohesion for this population. They also completed their lease agreement in March 1996, but, in contrast to Sankuyo, decided to use the land themselves, planning to build and run their own photographic and hunting operation, using their existent skills, and learning from their own mistakes. They believe that “self management is critical to long-term success, no matter how long it takes”. Benefits accruing are limited in this community, coming in the form of thatch grass and reeds which are sold, meat from the hunting quota and subsistence fishing, although some people are employed in an adjacent tourist lodge. The primary leader is a respected and educated outsider, and other members of the management committee are quite young. Acceptance of the leadership structure has been difficult, and the absence of local skills and resources to carry out their plans is leading to delays and frustrations.

In both communities, after three years of CBNRM, there is a strong perception that natural resources are not benefiting them, and therefore responsibility for management does not lie with them, but with the government. Benefits are perceived only in material terms, and since these are not broad-based, many people in the communities perceive there to have been no benefits: only around 40 per cent of people in the villages perceive some financial or social benefits.

When individuals in Sankuyo were asked to explain the purpose of CBNRM, only 10 per cent mentioned resource management. Of the remainder, 14 per cent did not understand the term and 76 per cent reported that it was aimed at improving living standards and bringing employment. In the same village, 44 per cent of people surveyed stated dissatisfaction with the project, and 29 per cent were unable to comment due to lack of information. Others reported increased community conflict as a result of it (52 per cent claim negative changes as a result of CBNRM), and exploitation by the joint venture partner. Indeed, although P2 million has been generated by the Sankuyo joint venture agreement, the majority of this has remained in the hands of a minority (16 per cent) of the commnity.

Much internal conflict seems to have occurred in both villages, partly created by the existence of a management committee. As explained above, the youth hold more power, although in Sankuyo, they are not on the committee. A similar disjuncture between power and position of authority exists in Khwai village. This issue creates unease around traditional leadership and authority, since it seems that this is being eroded in favour of the youth. Hence 'community management' is difficult to achieve power is diffuse and representation of all interests is weak.

It is noted that at the time of writing the Sankuyo and Khwai projects had only been established for three years, so it is premature to evaluate their success. It is still assumed that as the projects mature, and benefits start to accrue from wildlife, attitudes towards wildlife will improve. However, issues of conflict, though, need to be addressed now, in the early years. Particularly, the multifaceted dimensions of power need further interrogation if conflict is to be minimised.It may also be important to consider local cultural discourse on leadership: leadership in the western sense is not necessarily valued, and this may have an impact on the concept of 'community management'.

At this stage, the Botswanan CBNRM framework should be viewed as a guideline for projects, and not a blueprint, since all projects are unique and require context specific interventions.

Source: Boggs, L..P. (2000) *Community Power, Participation, Conflict and Development Choice: Community Wildlife Conservation in the Okavango Region of Northern Botswana,* Evaluating Eden Discussion Paper No. 17. IIED, London

5. South Asia

CWM in South Asia is, in a sense, natural resource management come full circle -from a traditional regime of community management based on customary practices and knowledge, to one in which the state and/or private sector forces took over common property, to one in which the community has once again come to play a major role.

All the countries of the region have gone through a history of state take-over of common property resources. Though this had started happening with the increasing dominance of centralised rulers centuries back, it was greatly consolidated during the colonial regimes that held sway in most countries of the region. Even after these countries gained independence, centralised resource management regimes continued, and in some cases were even further strengthened. The resulting alienation of local communities from their own resource base, coupled with inappropriate economic and development policies, tremendous increase in demand for natural resources, erosion of traditions and practices of conservation, and other factors, have been responsible for the massive decline in wildlife and wildlife habitats all across the region.

State-led conservation policies, focusing on legal enforcement and the declaration of supposedly human-free protected areas, have helped to a limited extent to stem this rot, but have created further problems of alienation amongst local populations. A number of factors have led, in the last few decades, to the realisation that state institutions are not capable of conserving or sustainably managing resources on their own, and that people's participation is essential. These include:

- Continuing decline in wildlife species and habitats, despite a plethora of laws and policies and substantial state spending on conservation;
- Weak official mandate for conservation agencies, especially in the face of conflicts between commercial/industrial development and conservation;
- Increasing hostility amongst the public, or at best increasing indifference, towards conservation programmes…especially created by a conservation model which did not take into account community needs, customs, and rights;
- Increasing grassroots agitation for a decentralised polity, for greater voice in local and national decision-making regarding natural resources, and for recognition of traditional rights to these resources.

This realisation has also been influenced by the slowly growing evidence of communities being able to conserve wildlife and ecosystems, with or without state support. This has resulted in changes in policy (including legal regimes) governing natural resources in all countries of the region, with significant changes taking place in forest policy in Nepal and India, coastal policy in Sri Lanka, wildlife policy in Nepal, and so on. Even though these changes are mostly yet in process, communities and NGOs and even some government officials have already attempted to implement decentralised wildlife/habitat management models.

Though well under way, CWM in South Asia continues to face serious hurdles. These include resistance from entrenched bureaucracies (such that even in the famous Joint Forest Management programme in India, true sharing of powers is rare), reduced capacity in communities to manage natural resources, inequities in decision-making and benefit-sharing at all levels, destructive economic and developmental policies, and difficulties in creating livelihood security for communities. The next few years of CWM in South Asia will have to contend with these challenges if it is to become a sustainable and long-term trend.

For more information see: Kothari, A., Pathak, N. and Vania, F. (2000) *Where Communities Care: Community-based wildlife and ecosystem management in South Asia*. Evaluating Eden Series No 3. IIED, London.

Case Study 15: Forest, Soil and Water Conservation in Bhaonta-Kolyala Villages, Rajasthan, India

The Arvari catchment is situated in Alwar district of Rajasthan, western India. The area is a part of the Aravalli range that extends from Rajasthan to Delhi. The region is dry, receiving less than 600 mm of rainfall annually. Over the last few decades severe droughts have hit many of the villages in this district. There are 70 villages in the Arvari catchment. The main livelihood strategy in this semi-arid region is a combination of intensive rainfed cultivation and animal husbandry.

Water conservation in this area has traditionally involved trapping water during the short rainy months by constructing a series of small dams and tanks (*johad*). *Johads* require regular maintenance. It is also important that the slopes of the hills remain forested to avoid soil erosion which silts the ponds. In the years following independence, over-dependence on the Indian state for irrigation caused the villagers to neglect johad maintenance. At the same time excessive tree felling in the hilly areas not only stripped the area of forest cover but also increased soil erosion and silting of johads. Over the last 15 years or so, some 200 water harvesting structures have been built in the catchment area by villagers and a local NGO, Tarun Bharat Sangh (TBS). These structures have replenished ground water and increased the water table, enabling the Arvari to flow perennially again.

The twin villages of Bhaonta-Kolyala have a combined population of a little under 600, and are spread over about 1200 hectares. They have had a prominent role in this initiative, in particular in combining water harvesting with forest conservation and other rural reconstruction work. The villages are set in the flatlands at the foot of the Aravali hills, which are (or at one point were) covered by dry deciduous or scrub forests. These forests are mostly on land belonging to the State Forest Department.

Towards Community-Based Conservation

The impetus for conservation in Bhaonta-Kolyala built up following an awareness march with the slogan "build *johads*, save forests", and was organised by TBS in the late 1980s, during a campaign which linked forests, soil and water. According to the villagers, while there had earlier been a sense of collective solidarity in the village, there had been little collective organisation or action. In order to carry out the agenda of forest and water conservation, a co-ordinating body, the *gram sabha* (village assembly) was formed. It is an informal body that addresses the common needs and aspirations of the village community. It has an open membership, with a 22-member decision-making body that represents all the hamlets in the two villages. The *gram sabha* has the right to make

changes in regulations and enforce penalties. The body, however, is not recognised by the state and has no formal legal authority.

In the last decade, 17 water harvesting structures have been built here, with technical help and 75 per cent of the cost provided by TBS. The villages contributed 25 per cent of the cost, in the form of labour, materials, or money. The decision to protect forests, in parallel with the water harvesting work, involved admitting past mistakes and a commitment to regulate forest use. The *gram sabha* formulated rules which took into account the needs of the village community and the sustainable use of the forest. Since overgrazing and tree-felling for fuel and timber were perceived to be the prime reasons for forest degradation, shepherds were asked not to cut any trees while their goats were grazing. The community has also tried to lower the number of goats in the village. Extraction of dry and fallen wood is allowed for fuel.

After 10 years of successful forest protection, TBS suggested that the forest should be held as an example of successful community conservation. It was therefore declared a *Bhairon Dev Lok Van Abhayaranya* (Bhairon Dev Peoples' Sanctuary) in October 1998. According to TBS workers, the declaration of the sanctuary represents an ideological alternative to the state-centered wildlife conservation policy followed by the Forest Department.

Impacts of the Initiative

Several hundred hectares of forest have regenerated, and there has been a slow revival of some wild animal populations. Herbivores are reported to have increased, and villagers report the occasional presence of two leopards. Whilst these leopards have been taking goats, there does not yet seem to be any ill-feeling among the villagers towards them. Indeed, elders welcome it, claiming that the disappearance of tigers and other predators from the forest was the reason behind forest depletion. They maintain that the presence of predators will inhibit people from going into the forest unless absolutely necessary.

According to the villagers, the most visible change is the presence of water, indicated by the recharged wells and greenery in the village. The villagers say that since 1990 there has been a rise in agricultural productivity and two crops can be easily taken in a year. This is believed to be a result of both the water harvesting and the regenerating forests. Livestock have also become more productive due to the increased availability and security of fodder. Out migration has also decreased with an increase in agricultural and pastoral production.

Involvement of local communities from the beginning of the conservation initiative helped instill a sense of pride and ownership in the initiative. It also resurrected the sense of collective and individual responsibility toward natural resources, and was a process of empowerment. The people of Bhaonta-Kolyala now feel confident to assert their rights to, and de facto control over, natural resources, even though there is no governmental recognition of this. Though the village still relies on TBS as a major support structure, over the years it has also evolved its own strong leadership. This comprises of individuals who are articulate and educated, and can negotiate with relevant authorities like the Forest Department; and elders, who continue to play the important role of enthusing the village community.

The initiative continues to face a number of challenges. Chief amongst these is inter-village conflict around an increase in the incidents of tree felling by the neighbouring villages. Since the *gram sabha* of Bhaonta-Kolyala has no legal authority over the forests, they can not enforce forest protection regulations on the other villages in the area. While TBS continues to play an important role, villagers feel that the Forest Department should also be more active. There are also some problems of intra-village inequities, with complaints from the 'lower' Balai community that their interests have been

compromised due to conservation measures. They want to use unclaimed land to form another hamlet, but the *gram sabha*'s decision has been to use the land for water harvesting. This discontent, as yet very muted, could have a bearing on the CWM effort in the future, and needs to be squarely addressed.

Source: Shresth, S. with Devidas, S. (1999). *Forest Revival and Traditional Water Harvesting: Community Based Conservation at Bhaonta-Kolyala, Rajasthan, India*. Kalpavriksh, New Delhi / Pune and IIED London.

Case Study 16: Forest Conservation at Jardhargaon, Uttar Pradesh, India

The village of Jardhargaon is located in Tehri Garhwal District of Uttar Pradesh, northern India, at an altitude of 1500 metres and access to this village involves a 3km trek. Jardhargaon's population is about 3000 spread over 17 settlements situated at quite a distance from each other. Agriculture and cattle rearing are dominant in local livelihoods, while the forest is also an important source of sustenance in terms of fodder, fuelwood, fruits, leaf litter, medicinal plants and timber. On the higher ridges of the village is forest (technically belonging to the Forest Department), primarily of oak and rhododendron trees. Below the village is forest land, designated *Civil Soyam*, consisting primarily of pine trees and grassland, which is legally under the village.

Towards Community-Based Conservation

A couple of decades ago, the heavy dependence on fuelwood and fodder from the forest, along with other factors, led to indiscriminate felling of trees by the villagers. The resulting erosion of forest cover led to shortages of fuel and fodder, soil erosion, and deterioration of soil fertility. It was in this context that the community initiative to protect the forests was taken in 1980.

The late 1970s and early 1980s were the peak periods of activism of the Chipko movement, the famous Himalayan struggle to protect natural forests against contractors and other forces of destruction. Jardhargaon came under its influence, primarily through the active involvement of one of its residents, Vijay Jardhari. He, along with like-minded individuals in the village, succeeded in mobilising the villagers to protect their forests. The constitution of the *van suraksha samiti* (VSS, or Forest Protection Committee) was the first step in this direction. The VSS comprises around 10 members, chosen by common consensus in a meeting of the gram sabha (village assembly), which consists of all the adult members of the village.

The VSS has evolved a set of rules governing the use of forests and hillsides. These include:
- Total ban on cutting of green wood.
- Regulation of the distribution of dead wood to the needy for house construction and firewood.
- Regulation of the amount of wood sold to people for house building and weddings.
- Prohibition of commercial sale of minerals and stones mined from the village.

In addition, a section of the *Civil Soyam* forest (meant for village use), has been declared by the VSS as bandh van (closed forest), and is used for regulated grass-cutting. This area is closed from August to December to allow the grass to regenerate during the monsoons. When it opens, one member from each family is allowed to cut one head-load of grass per day. Most of the grass cut during this season is stored for the dry months. During the monsoons there is enough grass in the vicinity of the houses for the cattle to graze.

The VSS appoints forest guards who are paid a salary to ensure compliance with the rules. Violators are fined, though one of the problems is the lack of uniformity in collection of fines. Propelled by growing unease due to some difficulties in enforcing the rules of the VSS, some villagers asked the district administration to constitute a *van panchayat* (VP, or forest council) for Jardhargaon. This is a government-sponsored body, created to protect the *Civil Soyam* forest land, and is headed by a sarpanch (village council head) chosen by the villagers. However, the VSS continues to exercise de facto control over the management of the Reserved Forest; indeed, most villagers are sceptical of the VP because of its government links and insist that its role be restricted to the *Civil Soyam* area.

Impacts

After almost 18 years, the results of the VSS are apparent. What was once a degraded slope above the village has now turned into several hundred hectares of dense mixed forest. A diversity of oak (*Quercus incana*), burans (*Rhododendron arboreum)*, horse chestnut (*Aesculus indica*), pine (*Pinus roxburghii*) and other species are present. In places, especially further away from the village, the forest is amongst the best in the region. Villagers report that wild boar, deer species, tiger, leopard, and bear have reappeared, and a recent survey of birds revealed nearly 100 species including two pheasant species.

The initiative has had crucial socio-economic and political results: availability of fodder and dry fuelwood is assured, and water sources have improved. But perhaps more importantly, villagers have developed a sense of pride and empowerment, so much so that they are firm on not allowing the government any foothold in the control of forests protected by them.

Lessons Learned

- There appears to be a critical need for some kind of formal authorisation from the state, without taking total control. Indeed, the Forest Department continues to enjoy ownership of the Reserved Forests under law, but has no effective control over them.
- There are potential threats from macro-level events, such as the proposed creation of Uttarakhand (the hill districts of Uttar Pradesh) as a separate state. This could lead to greater exploitation of natural resources for achieving quick economic development, though it could also lead to greater opportunities for local empowerment to manage natural resources.
- The role of an enlightened leader is critical. However, these qualities are not common; the issue of a second line of leadership is therefore looming large. The presence of young people is therefore encouraging.

Source: Suryanarayanan, J. and Malhotra, P. with Semwal, R. and Nautiyal, S. (1999) *Regenerating Forests, Traditional Irrigation and Agro-biodiversity: Community Based Conservation in Jardhargaon, Uttar Pradesh, India*. Kalpavriksh, New Delhi/Pune and IIED, London.

Case Study 17: Natural Resource Management at Mendha (Lekha) Village, Maharashtra, India

Gadchiroli district of Maharashtra state is in a region famous for both its biologically diverse dry deciduous forests and its tribal communities. In the late 1970s the government proposed an ambitious hydroelectric project in the adjoining Madhya Pradesh State. There was strong opposition to this project, which was eventually shelved, but this opposition gave roots to a very strong movement towards tribal self-rule in the region. Mendha (Lekha) was one of the villages where the process towards self-rule gained momentum and is today very successful.

Mendha (Lekha) is spread over two small and closely situated *tolas* (hamlets). The total human population is estimated at around 400, composed of the Gond tribe. The total area of the village is about 1900 hectares, nearly 80 per cent of which is forest. The livelihood of the inhabitants is comprised of subsistence farming, non-timber forest produce collection, and daily wages from manual work.

Prior to 1960, the forests in this area were managed by the local people as common property, and the overall charge rested with the tribal landlords. In the 1960s the forests were taken over by the Indian government and classified under the *Indian Forest Act of 1927* as Protected Forests. These were also labelled *Nistar* Forests, an administrative category under which state-owned forests were assigned to villagers for biomass requirements. However, after the government take-over, these forests came increasingly to be seen as a source of state revenue: from charcoal-making, stone quarrying, timber and bamboo extraction, and leasing bamboo patches to the paper industry. Subsequently, these forests were converted to Reserved Forests (a stricter category under the *Forest Act*), without the knowledge of the villagers, in an effort to assert greater government control. The restrictions on local resource use gradually increased and a system of payment of bribes to the lower staff of the FD became a common phenomenon.

These developments catalysed the villagers into attempting to take back control over the forests. The community organised itself into a unit and took some important decisions, including:
- All domestic requirements of the village would be met from the surrounding forests without paying any fee to the government or bribes to the local staff. This would be accompanied by rules for sustainable extraction, including strict prohibition of any commercial use of timber.
- No outsider, government or private, would be allowed to carry out any programmes in the village or the forests without the permission of the village organisation.

The village formed a *gram sabha* (village assembly) consisting of at least two people (one male and a female) from each family. Social ties and sanctions are so strong that the decisions taken by the *gram sabha* prevail over any other official or unofficial orders. All outsiders (government officials, researchers, NGOs), who intend to carry out any activities in the village or the adjoining forests have to present their plan in the *sabha* and seek its permission. The village *van suraksha samiti* (VSS) or Forest Protection Committee, also deals with forest related decisions. Such is the reputation of the VSS that the local Forest Department staff agree that forest protection in the village is no longer their job. In addition, Mendha (Lekha) has also established *abhyas mandals* (study circles). These informal groupings act as forums for frank and in-depth discussions on various issues ranging from immediate village problems and their solution, to wildlife conservation, and experts on relevant subjects are invited from outside the village. This interaction and exchange of information helps in the making of informed decisions during the *gram sabha* and VSS meetings.

Through these institutional structures the villagers have been able to achieve greater organisation, establish good relations with sensitive government officials and non-governmental agencies, and succeed in facilitating inter-departmental co-operation among various government agencies functional in the area. For example, joint meetings have been organised between representatives of all the government functionaries in the area and the villagers, at the initiative of the gram sabha. These meetings facilitated a face to face dialogue with these agencies and resulted in a pooling of resources for certain developmental activities in the village.

Impacts

A series of positive social and political impacts have resulted from the process:
- Villagers have realised that rights to natural resources or developmental processes can only be asserted if they have the capacity to take management responsibility.

- The crucial role of information, adopting transparent and open decision making processes, and assuming social and ecological responsibility, have been demonstrated.
- Empowerment has meant that the village is respected in official circles. Government and non-government people come to the village, instead of calling the villagers to their offices, and discuss with them on equal grounds and often in their language.
- A democratic and transparent process of decision-making and implementation has left little space for misunderstandings and fragmentation.
- Almost equal status for women in the decision-making process has been achieved.
- A good example has been set for the surrounding villages, which have low economic status and whose forests are in the last stages of degradation. Mendha (Lekha)'s self reliance and better quality of life has sent out good signals, and many villages now wish to work in the same direction.
- Financial transactions have been managed with confidence, with bank accounts for the *gram sabha* and other institutional structures, and managed by the villagers themselves.
- Livelihood security has been ensured to all villagers, be it through access to forest resources or employment opportunities. This includes forest based industries like honey collection.

Positive impacts have also been felt on forests and wildlife:
- There has been a revitalisation of the importance of forests in the lives of the local population.
- The villagers have undertaken a number of soil and water conservation initiatives, including a water harvesting dam near the forest.
- A decision has been taken not to light fires to the forests, and to help with fire control.
- The villagers now have fixed rules about resource extraction, with penalties for those who do not abide by these rules.
- A vigil is kept against illegal activities.
- The forests have been protected from commercial activities, such as extraction of bamboo by the paper mill.
- The village has managed to get involved in a Joint Forest Management (JFM) arrangement with the FD.
- Encroachments by the villagers in the surrounding forest area have largely been stopped.

Although villagers have *de facto* control over matters in the village, this is not backed up by legal authority. However, there may be potential for gaining such legal recognition through existing and proposed laws and policies, and these need to be seriously explored. In the absence of statutory recognition, the sustainability of the initiative very heavily depends upon the various informal support structures, such as outside individuals, sympathetic officers, and dedicated village members. Substantial changes in any of these could affect the initiative's future. Considering that a large part of the villagers' energy goes into livelihood activities, it is sometimes difficult to sustain the fervour for forest protection activities, especially if there are no immediate threats. A proactive outside agency, especially a state agency, could play an important extension role to keep the momentum going.

Source: Pathak, N. with Gour-Broome, V. (1999). *Tribal Self-Rule and Natural Resource Management: Community Based Conservation in Mendha (Lekha), Maharashtra, India.* Kalpavriksh, New Delhi/Pune and International Institute of Environment and Development, London.

Case Study 18: Bird Conservation in Kokkare Bellur, Karnataka, India

Kokkare Bellur village is situated about 80 km from Bangalore, in Mandya District, Karnataka state, southern India. Kokkare Bellur is a typical dryland village of Southern India and has cultivated fields, fallow fields, cactus hedges and trees – old and new – in the fields and the village. These include *Tamarindus indica, Ficus bengalensis, Ficus religiosa*, and others.

For six months of the year, from December until June, Kokkare Bellur is inhabited by spotbilled pelicans (*Pelecanus philippensis*) and painted storks (*Mycteria leucocephala*) which have migrated in their hundreds, from the lakes of South Karnataka. They nest in breeding colonies on the tall trees in the very heart of the village. It is not understood why the storks and pelicans, both exclusively fish-eaters, persist in breeding in Kokkare Bellur, which is several kilometres from any substantial waterbody. However, they have been coming here to breed for many generations – according to village legend, for hundreds of years. A commemorative stone in the village appears to refer to the breeding place's existence several centuries back, and the very name of the place, *kokkare*, means stork.

The people of Kokkare Bellur do not attribute any 'godly' status to the birds, but have always offered them protection, believing that they bring them good fortune with the rains and the crops. They are proud of their long association with the birds, which they nickname 'daughters of the village'. At its most basic, the villagers' protection of the birds takes the form of a benevolent tolerance of these noisy, smelly annual visitors. Once the season starts there is a ceaseless cacophony from the young birds, and an all-pervading fishy stench of droppings right in the villagers' backyards. In the past, if the pelicans chose to nest in a tamarind tree, some villagers were even prepared to sacrifice their crop rather than scare off the nesting birds. In addition the birds provided a kind of cash resource in the form of guano from the birds. People scooped out deep pits under the trees and allowed the droppings to accumulate. When mixed with silt from nearby lakes this provided a ready-mixed compost, and had the beneficial side-effect of preventing the ponds around the village from silting up.

However, during the past two decades the growing pressure of population has led to increased demand on the trees as a resource for cooking, animal fodder, and fruits for sale, and the villagers inevitably have become less hospitable to the storks and pelicans. About two tons of foliage are used by the villagers every day for fuel and fodder, and a new-found preference for brick houses instead of the traditional mud buildings means large-scale use of wood for kilns. Humans are now in direct competition with the birds for resources, and this has caused a decline in the number of birds nesting at Kokkare Bellur.

The lakes and tanks where the pelicans forage are also undergoing constant, if gradual, changes, induced by fertiliser and pesticide inflow, and the conversion of traditional fisheries to commercial ones. Pelicans are at the top of the aquatic food chain and are thus extremely susceptible to pesticide loading. Yet another danger is that of poaching, as some communities like to eat pelican flesh. Thirty years ago, according to the villagers' estimates, there were more than 1000 pairs of pelicans; today, the number is about 160.

Bird Conservation Efforts

During the early 1980s, the Forest Department put a protection order on the nesting trees, under the *Karnataka Tree Protection Act*. The owner of such a tree could only fell it if it was diseased or dead, however, when a powerful local farmer felled a tree no punishment ensued. The Forest Department later proposed to make a compulsory purchase of every tree used for nesting, but the villagers

refused. A compromise was eventually reached, whereby villagers are offered annual compensation for trees used for nesting, thus providing an incentive not to chop down the trees. However, the value of the compensation is meagre, and in the case of the more valuable trees, only a fraction of the value of the crop or lopping returns.

It is difficult to ascertain the value of the compensation scheme. On the one hand, the extra income to the owners of trees is undoubtedly an incentive not to cut them down. The implementation of such a scheme gives the Forest Department a tangible role in the conservation of pelicans and means they keep proper records of the trees used for nesting. On the other hand, as soon as financial transactions are involved, the system becomes open to abuse by the more powerful members of the community who try to get both compensation and benefit from their crops. The effectiveness of the scheme depends on the integrity of the local forest guard, who can be manipulated by the powerful and is not trusted by the weaker members of the community.

Since 1994, a local environmental group, Mysore Amateur Naturalists (MAN), has been actively involved in the conservation of pelicans and their habitat in Kokkare Bellur. One member of MAN has been involved in the village, promoting the re-establishment of harmony between birds and humans. A grass-roots action group, *Hejjarle Balaga* (Pelican Clan), consisting largely of young people from the village and led by members of MAN, runs a conservation pen for 'orphan ' chicks which fall from their nests and would otherwise perish on the ground. The chicks are eventually returned to the wild where they join their naturally raised siblings without any problem of re-adaptation. The approach of *Hejjarle Balaga* is to combine and link care for the human community with conservation and protection of the birds and so tree planting, (including a nursery to grow saplings), educational activities and a weekly health clinic for the people of Kokkare Bellur have also been introduced. In this way it is hoped that the villagers' traditional pride in the birds may be revived and the dwindling numbers at Kokkare Bellur reversed.

This "lateral" approach to conservation – winning trust through a health clinic, as has been done by MAN – appears to have been reasonably successful in this case. In the 1998 season *Hejjarle Balaga* successfully intervened to protect the pelican colony nesting on a tamarind tree belonging to a farmer who had wanted to harvest the tamarinds during the nesting season. There is also obviously a critical role for a catalyst, in this case a dedicated worker from an outside NGO who has chosen to more or less take up residence in the village, and has, through sheer hard work and patience, won the trust of many of the villagers. The formation of *Hejjarle Balaga* has focused villagers' attention on the plight of the pelicans, and helped generate some employment opportunities – which could be increased further for example by developing ecotourism (many ornithologists visit the village), selling local produce, acting as guides, reviving cultural occasions associated with the birds, and so on.

Source: Manu, K. and Jolly, S. (1999) *Pelicans and People: The Two-Tier Village of Kokkare Bellur, Karnataka, India*. Kalpavriksh, New Delhi/Pune and IIED, London

Case Study 19: The Ibex Conservation Plan, Hushey Valley Conservation Area, Pakistan

Hushey Community Conservation Area (HCCA) is in Ghanche District of Baltistan, Northern Pakistan. Internationally famous for its mountaineering and trekking opportunities, and a candidate for a World Heritage Site listing, it covers an area of 800 km2 in the Karakoram range of mountains. It falls under the cold desert mountain ecosystem, where average rainfall rarely exceeds 200 mm, most of the precipitation being in the form of snow between November and March. The total human

population here is 976 (in 1995) and total cultivated land is 240 ha. The main sources of livelihood are single crop agriculture and livestock, augmented more recently by ecotourism. Most men work as porters and guides for the tourists, while the women are involved in livestock rearing and agriculture.

Hushey is one of three villages inside the Central Karakoram National Park (CKNP) -declared by the government in 1993 to protect its unique ecosystem. Hushey valley has also been declared a Community Conservation Area (CCA) by the local government. This category, however, does not have any legal standing.

Hushey Valley contains prime habitat for snow leopards (*Panthera uncia*) and wolves (*Canis lupus*), and supports a good population of asiatic ibex (*Capra ibex*). The villagers claim that their numbers have gradually been declining over the last few years, primarily because of hunting by outsiders. Such incidents have increased in recent times because of a four-wheel drive road to the valley and easy availability of firearms. In addition, ibex habitat is threatened by overgrazing and low productivity of the pastures. The villagers have livestock grazing and property rights, and declaration of a NP has thus created a conflict situation (Ahmed *et al* 1995).

Towards Community-Based Conservation

At the time of declaring the CKNP, the Government of Pakistan entrusted IUCN-Pakistan with the responsibility of preparing a management plan. This was largely based on the discussions during this workshop, strongly recommended local people's participation and benefit sharing, and stressed that such participation should be from the stage of micro planning at the village level. Hushey village was selected as one of the pilots for the IUCN's *Maintaining Biodiversity with Rural Community Development Project*. The project was designed to address two main causes of resource degradation:over-exploitation of natural resources for subsistence needs; and lack of clear tenure over natural resources. It also aimed to demonstrate that conservation of biodiversity can be achieved or enhanced by providing rural communities with the technical skills to manage wild species and habitats for sustainable use.

An Ibex Conservation Plan has been developed by the village and IUCN which includes a monitoring system, wildlife tourism and a provision for 'sustainable' trophy hunting. In December 1995, 'sponsorships' of Hushey Village, and two other villages were auctioned at the annual convention of Safari Club International (SCI) in the United States. Under this sponsorship programme, the successful bidders agreed to support conservation plans for the ibex, with the understanding that they would have 'first rights' to trophy-sized animals once the plan had been approved by the District Conservation Committees and government permits obtained. A trophy hunt was authorised in December 1997. Two American hunters came for this, and the community received a total of US$10,500. The Village Conservation Committee decided to divide this money between buying electricity poles, the Village Conservation Fund (VCF) and household dividends – each of the 120 households receiving Rs1700. This decision sent a very clear message to the community that Ibex conservation can bring economic benefits to all. In 1996, the Hushey community was also granted permission to collect a conservation fee from tourists, though this has not yet been implemented, pending the preparation of an overall plan for the CKNP.

Other components of the Plan include increasing the productivity of fields and pastures by building a water channel. This will not only improve the wildlife habitat in the area but will help improve the livelihood of the people. To reduce the damage caused by livestock grazing, a system of rotational grazing along with zoning of the valley is to be adopted. The project is also helping women to produce and market local handicrafts, and has initiated a youth organisation to manage tourist

waste along major trekking routes. Ibex viewing opportunities for tourists will be enhanced and promoted, and in addition, the tourists and the trekkers will be discouraged from using firewood. Fuel-efficient cooking systems will be tried in local villages, and 30,000 trees have been planted on communal and private lands.

The future success of the Hushey initiative is critical for community-based conservation in the area, as it will be used as a model for the whole of CKNP and its adjacent communities.

Source: Raja, N.A., with Ibrahim, M., Ali, R. and Aslam, M. 1999. *From Alienation to Ownership: Conservation and Development in the Hushey Valley, Pakistan*. Kalpavriksh, New Delhi/Pune and IIED, London.

Case Study 20: Prawn Farming at Rekawa Lagoon, Sri Lanka

Unemployment in the coastal areas of Sri Lanka has necessitated vigorous development programmes. These, however, have had adverse impacts on coastal natural resources. Coastal habitats, such as brackish-water mangroves, lagoons and estuaries, have been over-exploited, degraded and altered to a high degree through human pressure. In north-west Sri Lanka, large-scale destruction and alteration of brackish-water coastal habitats have been catalysed through their conversion into farm ponds for the culture of the exported tiger shrimp, *Penaeus monodon*. Effluents from prawn farms pollute brackish waters, making farmed prawns susceptible to diseases such as White Spot. Though the long-term unsustainability of such prawn farming techniques has been proved time and again, no long-term management measures have been adopted to stem this environmental mismanagement and biodiversity destruction. The high investment return of this export-oriented industry and the short-term profit motives of large-scale farmers (mostly businessmen from outside), have precluded the switch to more environmentally-friendly management methods.

Destructive prawn farming would also have occurred at picturesque lagoon of Rekawa, on the south coast of Sri Lanka, were it not for resistance from the local community and an innovative programme to bring them benefits which are in tune with the local natural resources.

The Rekawa lagoon has a community of traditional fishermen who engage in a shrimp fishing using *kraal* traps (a passive trap made from thin panels of bamboo), cast nets, and gill nets with the aid of traditional non-mechanised boats. Predominantly *Penaeus indicus*, and lesser quantities of *P. monodon*, are harvested by this close-knit, conservative fishing community. In 1995 the *Enhancement of Rekawa Lagoon Prawn Fishery Project* was launched by the Universities of Colombo (Sri Lanka) and Millport (Scotland). The aim of the project was to enhance the available stock of lagoon shrimp, rather than rely on intensive and chemically-dependent farming. Through awareness programmes, the Rekawa Lagoon Fishermen's Cooperative Socity (RLFCS) learnt that good quality lagoon water was required for rapid shrimp growth and that conserving ecological linkages, such as the mangroves, was essential. Using experimental fishing, RLFCS gauged the growth of the shrimps and imposed fishing restrictions on themselves so that harvesting was carried out when shrimps had reached a size that commanded a high market price. The RLFCS now stores the shrimp catch in a community freezer to sell it direct to consumers, whereas it was traditionally sold to itinerant middlemen at the landing sites. Periodically, the community reviews the status of their lagoon shrimp resources and adopts resource management practices through regulating fishing gear and fishing effort.

Impacts of the Initiative

The stock enhancement was both economically viable and socially beneficial to the community. It yielded increased income, as well as increased social cohesion, and boosted the community's confidence to become an empowered social unit that could directly solicit government grants for developmental purposes. This empowerment has led to the establishment of other institutional structures such as the Rekawa Development Foundation (RDF), that now serves as a focal point for advancing the socio-economic interests of the community. The RDF has already attracted funds and has commenced several programmes for the improvement of the social well-being of the Rekawa community, such as restoration of water tanks, construction of toilets, child care units, provision of boats and housing, and facilities for schooling and women's self-employment programmes.

Mangrove conservation has been enhanced, and the community has also become interested in protecting the nesting spots of threatened sea turtles. Brick kilns that were earlier a cause of coral reef destruction have been stopped.

However, some major constraints and weaknesses remain. It has not yet been possible to identify and evolve mechanisms to ensure the sustainability of the initiative beyond the life of the formal project, for example, through prudent use of foreign funds and expertise, and the enhancement of a long-term planning and management capacity in local community members. This lack of sustainability was seen in late 1998, when community members asked the University of Colombo team to once again assist in stock enhancement of the lagoon. The project team had hoped that the community would be able to do this by itself through savings from the earnings of previous years. Further training particularly in business planning and management is required to ensure the long-term success of this initiative.

Source: Ekaratne, S.U.K., Jinendradasa, S.S., Abeysisrigunawardana, M.D., and Davenport, J. (1997). *Coastal Conservation Through Enterprise: A Case Study of Rekawa Lagoon, Sri Lanka*. Kalpavriksh, New Delhi/Pune and IIED, London.

Case Study 21: Annapurna Conservation Area Project, Nepal

The Annapurna Conservation Area (ACA), Nepal's largest protected area, is located in the Annapurna mountainous region in west central Nepal. This region contains some of the world's highest snow peaks (over 8000m), and the world's deepest valley: the Kali Gandaki River between the Dhaulagiri and Annapurna range. The region has a precipitation range from 250mm to 3000mm, and an altitudinal range of 1,000m to over 8,000m. Such diversity of climatic and other conditions has supported a wide range of ecosystems and species, including 22 different forest types. Rare and threatened animals include snow leopard (*Panthera uncia*), musk deer (*Moschus moschiferus*), Tibetan argali (*Ovis ammon*), Tibetan fox (*Vulpes vulpes*), and Tibetan wolf (*Canis lupus*).

ACA is home to a population of about 40,000 people of different cultural groups who are heavily dependent on forest resources to meet their daily needs. The most common occupation is farming, although a small number of people (many former Gurkha soldiers) more recently have become lodge-owners. Heating and cooking energy, wood for construction and fencing, fodder for domestic animals, wild fruits and vegetables, medicines, fibres for ropes and cloth, bamboo for weaving, and many other products and services come from the forests.

In 1985, King Birendra made an unofficial visit to the Annapurna region and issued a directive to strike a balance between tourism, economic development and nature conservation. The King Mahen-

dra Trust for Nature Conservation (KMTNC), Nepal's largest conservation organisation, took on the role of implementing the King's directive and the Annapurna Conservation Area Project (ACAP) was subsequently initiated.

Empowerment of local people to enjoy rights and responsibility for managing forest resources was considered fundamental by the project. To achieve this, ACAP has adopted three guiding principles:

1) *People's participation*: The project involves local people in the planning, decision-making and implementing processes, and delegates responsibilities to manage the conservation area through various local institutions.
2) *Catalysts or match-makers*: ACAP acts as a *lami* (matchmaker) to meet the needs of the inhabitants and to manage over 100,000 annual visitors (foreign trekkers with their Nepalese support staff).
3) *Sustainability*: Only those projects and programmes which people can manage after the external support is withdrawn are supposed to be implemented. In every initiative, communities are motivated to contribute in kind to programmes to ensure continuation of optimal management of the schemes.

ACAP's primary long-term objectives are:

- To conserve the natural resources of the ACA for the benefit of present and future generations.
- To bring sustainable social and economic development to the local people.
- To ensure that tourism has minimal negative environmental impact and delivers maximum local benefits.

ACAP's programmes have been executed in phases, enabling it to expand its working area gradually. In 1986, the programme was implemented in Ghandruk as a pilot project covering, only one Village Development Committee (VDC). By 1990, its coverage had expanded to 16 VDCs in an area of 1,500 km^2. ACAP was officially gazetted in 1992 and given the authority to manage the designated Conservation Area for the next 10 years. The Conservation Area Regulations enacted by the Nepalese government in 1996 gave further legal authority to ACAP.

Impacts

The project's most immediate and visible results have been in reducing the environmental impact of foreign visitors and increasing the local economic benefits from tourism, although the concentration of tourism benefits in the hands of a section of the population is another area of concern. Many of the region's people are not benefiting from the project, as there are as yet weakly developed linkages between conservation and livelihoods other than ecotourism. There is a critical need for inputs into more productive (but ecologically sustainable) agriculture, jobs based on the area's natural resources, and so on.

The project has helped in the creation of strong village institutions, and general social empowerment. Other benefits include greater educational and health inputs, more skill development, livelihood opportunities and decision-making powers for women, greater infrastructure development, and so on. Several community development works (for drinking water, education, and communication) have also been completed. Earlier underprivileged sections of the communities have been given special attention, which may have narrowed traditional inequities relating to natural resources.

However, the project is not without its problems. One of these is the lack of co-ordination between traditional forest use boundaries between villages, and the more conventional administrative (ward

and VDC) boundaries. ACAP uses the latter, and has therefore unwittingly created a conflict situation in some areas. There is also the issue of potential contradictions between ACAP regulations and conflict-resolution mechanisms, and the traditional mechanisms such as the *mukhiya* (village head) system of customary rules and conflict-resolution. The recent imposition of a government functionary to resolve disputes (which appears to have been done despite ACAP's reluctance) has further intensified this problem.

Even some of the positive impacts have had negative side effects – for example with improvement in forests and control over hunting, wild animal populations have increased leading to crop damage and livestock depredation. There is therefore increasing talk of allowing controlled hunting.

The overall ecological, economic, and social benefits of ACAP are however without doubt substantial. So visible are these that ACAP is now being used as a model for other initiatives, such as at Makalu-Barun in Nepal, and is cited internationally as a successful example of co-management of a protected area. Experience of over a decade in ACAP is restricted to a few villages, and as it expands into other villages within the Conservation Area, a number of challenges will have to be confronted. ACAP has limited humanpower, and it will not be possible to give every part of the vast ACA its full attention. Issues of local inequities influencing the decision-making process and the distribution of benefits, lack of co-ordination with some of the government departments active in the area, will crop up, as they already have in the villages covered so far. Most important will be the problem of lack of employment opportunities, forcing large-scale out-migration of young people. Linking up conservation and development activities will therefore need to be a major focus. An attitude of learning by doing, however, seems to be prevalent in ACAP, which should allow it to be flexible and adaptive, and to face these challenges.

Source: Krishna, K.C., Basnet, K., and Poudel, K.P. (1999). *People's Empowerment Amidst the Peaks: Community Based Conservation at Annapurna Conservation Area, Nepal*. Kalpavriksh, New Delhi/Pune and IIED, London.

6. South East Asia

Long-established traditional uses of wildlife by indigenous groups historically occurred throughout much of South East Asia and forest wildlife continues to contribute an important source of protein and revenue for many that live in and around the forests of the region. This is particularly so in Indochina and parts of Indonesia and Papua New Guinea. In most parts of the region, these activities have been much curtailed by recent land use changes, forest loss and by social and demographic changes.

Social disruption caused by such conflict and mass migration of peoples have often undermined the fundamental premises on which community-based approaches to resource management are often based – settled populations, homogeneous community and ethnic composition, established resource tenure systems and institutional structures at the local level. At the village level, the sense of 'community' is often particularly weak or even absent in post-conflict areas, such as parts of Cambodia. Local institutions such as village committees, savings and credit groups, village co-operatives are often completely absent.

Recent wildlife management activities that have involved or been driven by local stakeholders reflect the rapidly changing context of the region. Firstly, there has been emphasis on finding domestic and international markets for wildlife through exploiting its potential for trade (either as live animals or as skins, bones and trophies etc.) and tourism. China comprises an enormous and growing market for wildlife products, and fuels wildlife trade and capture throughout the region – particularly in Laos, Cambodia and Vietnam. Wildlife-related tourism comprised a growing sector prior to the regional economic crisis – although rather few initiatives are 'community managed' and most are driven by large private sector companies or state agencies.

Secondly, considerable efforts are being made to involve stakeholders in protected area management and to link biodiversity conservation with development activities (for example, through so called Integrated Conservation and Development Projects). These efforts are pushed by external actors, particularly international conservation organisations and donors.

Whilst the shortcomings of protected areas are now reasonably well known within the region, the potential benefits that community-based approaches might bring are less recognised. With the notable exception of wildlife harvesting by (rapidly disappearing) indigenous forest users, there are few (if any) examples where CWM can be shown to have brought long-term benefits to either people or wildlife resources, much less both, and there have been few attempts to harness market values as part of a sustainable use strategy.

Case Study 22: Participatory monitoring in Lao P.D.R.

When the Lao People's Democratic Republic (PDR) protected area system was established in 1993, people living in the areas that were declared protected were not expected to leave their homes but were encouraged to become involved in conservation of the area. This approach was base on two premises:

1. That participatory management is not a goal in itself but a means to achieving a conservation goal; and
2. Local people are seen as assets to the protected area (PA), because of their knowledge of ecology and historical ecological perspective, and the fact of their presence presents a conservation opportunity.

The Protected Areas and Conservation Sub-Programme of the Forest Management and Conservation Program (FOMACOP) was established in 1995 to assist in the management of four protected areas: Xe Pian, Donh Phou Vieng, Phou Hin Poun and Xe Sap. The WWF-Thailand Programme Office was contracted to provide baseline survey information, upon which management decisions could be based.

The initial surveys were conducted to inform PA staff and outsiders of the nature and extent of local resource use, including attitudes to, perceptions and patterns of conservation, and to offer a more complete understanding of the ecosystem, including abundance and distribution of resources and trends and local taxonomies, based on local knowledge. A Participatory Biodiversity Assessment (PBA) was employed for this purpose, engaging local people in discussions about habitats, wildlife and ecology, resources and land use, and cultural factors affecting these. through the use of participatory methods and techniques.

The second phase of the study involved returning the results of the initial surveys to the communities, involving them in the analysis, and gaining a better understanding of their knowledge. This was considered important for a number of reasons: it leads to better co-operation; it creates a shared understanding of the meaning of the results, and that can lead to joint decision-making based on agreement on conservation principles; and it can develop a sense of ownership and pride within the communities. This stage involved the use of graphic forms of information about species, habitat and abundance, including photographs, posters and lists, and also involved the use of topographic maps to indicate village and habitat locations.

The post-survey discussions resulted in the decision to conduct ecological monitoring – of focal species and habitat types. Data was collected through two means: village logbooks, and joint monitoring teams (JMTs). Logbooks are filled in by individuals who make sightings of wildlife, or who notice signs of their presence. They contain information about focal species sighted, as well as other agreed information, such as location, habitat, number of animals sighted, estimates of animals if signs are noticed, observer, and date. Important to this methodology is the idea that actual numbers of wildlife are not attained, but an index of relative abundance or absence is achieved. Usually, one person or a small group takes responsibility for the logbook, although all village members can be shown how to use its tabular format.

JMTs are made up of locally chosen local naturalists, as well as PA staff and other outsiders, and their role is to conduct follow-up surveys on focal species and habitats, and eventually, field monitoring. This overcomes limitations of the village logbook method relating to individuals' skills in identifying species, and variability in detecting habitat and substrate conditions.

Five indicators can be tracked through JMT monitoring: presence / absence of species at particular locations; change in spatial distribution of species; proportion of high quality habitat occupied by species; change in frequency of transect segments with signs of species; and change in encounter frequency of signs / sightings of species. Changes in these indicators may be the consequence of changes in environmental or species-specific density-dependent factors, human threats, human resource use or management actions. It is important to be able to distinguish between these, and it is expected that the combined logbooks and JMT data, accumulated over successive years will assist in this process.

The level of attention and follow-up that PA staff are able to give to logbook monitoring will be a factor in determining the long-term success of the project.
The PA staffs' perception of the usefulness of logbook data will also affect the ultimate success of the project. It has been found that they like the logbook tabular structure, as they find it clearer than the more anecdotal accounts they are accustomed to hearing from villagers. As yet, management decisions are not being made, the project is still in the baseline survey phase (although logbook and JMT monitoring constitute co-management agreements). The results of the data collection will, in the future, give rise to the possibility of collaboration and joint decisions, and this more tangible effect of the project may also improve its sustainability.

Source: Steinmetz, R. (2000) *Ecological surveys, monitoring, and the involvement of local people in protected areas of Lao P.D.R.* Evaluating Eden Discussion Paper No. 13. IIED, London.

Case Study 23: Co-Management of Mekong River Inland Aquatic Resources, Lao P.D.R.

The people of the Khong District, Champasak Province in the southern part of Lao People's Democratic Republic (Lao PDR or Laos) have traditionally recognised access to fisheries and other aquatic resources as a fundamental right, and have fished for subsistence purposes for generations. However, in the last few decades, populations have increased, leading to more fishing, and non-natural fibre gillnet and cast nets are in common use and fishing has become an income-generating activity – the existence of motorised boats making this a necessity to cover fuel and maintenance costs. In addition, easy access routes to markets and access to block ice and coolers for storing fish have led to a further increase in fish catches.

In January 1993 the Lao Community Fisheries and Dolphin Protection Project (LCFDPP) was established – a government project that assisted villages to establish co-management regulations to sustainably manage and conserve inland aquatic resources. Much interest was shown in the project, and plans to extend the programme were developed by the District and Province Agriculture and Forestry departments, in collaboration with LCFDPP. Leaders are advised to meet with all villagers to draft a list of co-management regulations that they favour. After a consultation process, these regulations become village law, although changes can be made after the agreement has been brokered, since this is seen as an important part of adaptive management.

Between December 1993 and August 1998, a total of 63 villages in Khong established sets of regulations to conserve and sustainably manage aquatic resources in the mainstream Mekong River, swamps, streams and paddy fields, including:

- *Fish Conservation Zones*: these are essentially year or part-year no fishing zones, that are established by individual villages, or in conjunction with neighbours to form a greater area. As a result of these, villagers have reported increase in stocks of over 50 species of fish, and an increase in catch.

- *Bans on stream blocking*: at the beginning of the rainy season, many species of fish enter the small (seasonal) tributaries of the Mekong River, and migrate up them to enter wetlands and paddy fields to spawn. Basket traps have been used in the last decades to catch fish on this migratory voyage. It is believed that there are more fish for catching at the end of the rainy season as a consequence of this ban.
- *Bans on 'water banging' fish*: also in recent years, some people have set small-meshed gill nets in shallow water, and used a pole with metal end pieces to bang the water and river bed to scare the fish into the gill nets. This is considered to disadvantage those who do not do it, and scare fish away more generally.
- *Bans on spear fishing with lights*: this is done at night, and can result in large catches. Various reasons are given for disagreeing with this method of fishing, but probably the most important is that it discouraged people from walking round the village at night, when they are able to steal chickens, ducks and fishing gears.
- *Juvenile fish conservation*: this relates to snakehead fish (*Channa striata*), which are caught while very young with fine-meshed scoops or baskets. This is thought to be very wasteful because whole shoals can be caught before they have a chance to develop.
- *Frog conservation*: eating frogs is a recent phenomenon in Khong, although not in other parts of Laos, and so they are captured to eat and to supply distant markets. Frog harvesting is usually allowed at the end of the rainy season, when they have spawned, although there remain bans on harvesting tadpoles. However, variation in rules on this resource is greater than on any other.
- *Paddy field regualtions*: regulation of fishing in paddy fields is done to protect the fish and frogs there, but also the rice.
- *Fishing in other village areas*: although fishing is allowed in other resource management territories, it is usually restricted to certain scales and types of fishing activities.
- *Pond management*: mostly, harvesting is restricted until the pond has naturally dried up, although there are variations in different villages.
- *Bans on explosives, chemicals and electricity fishing*: this is a ban imposed by the government in the whole of Laos.
- *Miscellaneous regulations*: every village is slightly different in its regulations, due to local conditions and resources.

It is generally up to local headmen to organise regulation implementation, and unity and low level stratification of lowland Lao rural communities contributes to this function. However, in practice, it seems that enforcement is only emphasised in the first year of implementation. In later years enforcement is not necessarily needed, because people can often see the results of the bans, and/or there are increased stocks of fish, negating the need for strict prohibition in use. A system exists however punishing regulation violators, and it is an important principle that any monies accrued from fines become communal property. A final stage of violation results in legal action being taken, although many headmen are reluctant to invoke this.

Monitoring and evaluation are important components of any natural resource management programme, and this happens both formally and informally. In 1997, LCFDPP invited two independent monitors to evaluate the co-management programme, and they worked with project officials, district government officials and villagers from randomly selected communities. On the basis of this, a second evaluation took place between September 1997 and March 1998. This was successful in strengthening co-management systems, and provided information on the status of the project. It also galvanised local leadership into greater awareness of the need to evaluate, and the development of self-evaluation strategies. LCFDPP also piloted a fish conservation zone (FCZ) monitoring project, that aimed to generate data on the success of the FCZs, and use this as a basis for planning. Villagers have reported that these have resulted in increases in stocks of over 50 fish species.

It is unclear how applicable these lessons are to other parts of Laos however, where communities are more heterogeneous, and community change more evident. Flexibility, it seems, is the most important aspect of this model if it is to be replicated.

Source: Baird, I.G. (2000) *Towards Sustainable Co-Management of Mekong River Inland Aquatic Resources, including Fisheries, in Southern Lao P.D.R.* Evaluating Eden Discussion Paper No. 15. IIED, London.

Case Study 24: Community-Based Fisheries Co-Management and Protected Areas Management, Lao P.D.R

In October 1993 Laos established 18 National biodiversity Conservation Areas (NBCAs), and another two in 1995, covering almost 12per cent of the country in protected areas. Kokpadek and Chan are two villages that lie outside the Khong District NBCA, although local populations rely on natural resources within the Conservation Area. They have established a fish conservation zone (FCZ), and jointly manage it. In Khong indigenous ecological knowledge (IEK) is used extensively by government and local people to determine management strategies. This knowledge suggests that the Mekong River is considerably reduced in size during the dry season, and many fish have to congregate in its deep pools, thereby increasing their vulnerability to humans. The FCZs recognise this, and this is the basis for no-fishing zones.

A rotating system of guarding the FZC from poaching has been set up, particularly in the dry season. Positive results were observed in less than a year: larger fish were being seen, and well as some rare and endangered species. Relatively sedentary species, such as *Pangasius pleurotaenia, Helicophagus waandersii* and others, had increased in number, leading to greater catches and larger incomes. These observations lack scientific rigour, but villagers' IEK cannot be ignored.

The villagers also claimed in 1999, that increased catches had resulted in significant improvements in their management of terrestrial wildlife and nearby forest resources. Up to 60 per cent of working adults from Kokpadek previously migrated in search of seasonal employment in the dry seasons, because fisheries offered them little opportunity for generating income. After the establishment of the FCZ, this had decreased to 10 per cent, and this was perceived to have had positive social benefits, particularly for families. An alternative income generation option was hunting and trading wild animals, birds and reptiles, and cutting and sawing timber, and these activities have decreased to what is thought to be sustainable levels. As a result, the forest is thought to be improving, and wildlife populations are on the increase, and this is a source of pride for people.

Extensive discussions with villagers have revealed that previously fishing was not the main livelihood strategy, as there were not always enough fish to feed a family, and other resources had to used to generate income. Now, however, people are reporting becoming small-scale 'professional' fishers, which implies that conservation leads to more fish. In addition, fishing is a less time-consuming activity than timber felling and sawing, and hence a lifestyle shift has occurred. These benefits are exceptional in Khong, and no other villages report such changes. Virtually all though, have reported increased fishing catches.

Lessons for Protected Area Managers

There are a number of reasons why PA managers should focus on fish as the basis for establishing co-operative management of resources:

- Fish are of fundamental value to the villagers, as they are eaten every day, by all ages, genders and classes. Wildlife has less familiarity and can be threatening, and people have far less IEK regarding large mammals and large and rare birds. Thus fish constitute the resource likely to generate the most participation.
- Keystone fish habitats are often easier to identify and protect than keystone wildlife habitats, particularly in the dry season when fish are confined to a relatively small habitat. Wildlife is more migratory and therefore conserving small areas of forest is unlikely to have a large impact.
- Fish are easier to observe and monitor than wildlife.
- The quick reproductive cycle of fish allows for tangible results of management to be discerned, in some cases, in a year. Because this leads to more food, the value of conservation is easy to see.
- Villagers will desist in utilising forest resources unsustainably if they have sufficient quantities of easy-to-catch fish.
- If villagers have had a positive experience with co-management of fish, due to the above reasons, they are more likely to respond favourably to a suggestion of co-management of wildlife.

Yet, a number of obstacles remain:
- Unless an atmosphere of trust and mutual understanding exists between protected area staff and villagers, co-management is not possible. This is particularly true of the PA staff's attitude towards IEK.
- Institutional constraints exist: the co-management partner is sometimes the Department of Forestry, or the Department of Livestock and Fisheries, and these two departments differ with regards to knowledge of fishing and wildlife. A more inter-disciplinary approach is needed by both.
- There is a lack of documented information about aquatic resources in the Lao and Khmer languages.
- Migratory fish are more difficult to manage than sedentary ones, and interventions are more likely to benefit sedentary ones. Co-ordination of a number of communities may allow for greater monitoring and control over the migratory species.
- Co-management initiatives have the potential to increase conflict over resource use.

Source: Baird, I. (2000) *Integrating Community-Based Fisheries Co-Management and Protected Areas Management in Lao P.D.R.: Opportunities for Advancement and Obstacles to Implementation* Evaluating Eden Discussion Paper No. 14. IIED, London.

7. Central America

While most of Central America has a tropical climate, its altitudinal range and two distinctive rainfall regimes generate a variety of ecological zones and ecosystems, which give rise to the astonishing biodiversity of the region. A broad division can be made between the Pacific Basin which is characterised by dry tropical forests and the Caribbean basin which is mostly rainforest. The higher population density in the Pacific basin has meant considerable environmental degradation such that remnants of the dry primary tropical forests can only be found in a small number of protected areas.

Throughout the region there has been a high level of miscegenation between indigenous people and European colonisers. In Costa Rica, Panama, Belize and the Dominican Republic indigenous people constitute less than 10 per cent of the population. Moreover, most rural communities other than those of indigenous groups, are relatively new having been formed only in the last 50 years. Thus, traditional knowledge of wildlife management, acquired through centuries of co-evolution between human beings and their environment, is present in only a handful of isolated areas.

In all countries wildlife is considered to be public property and its exploitation is therefore regulated only in special cases. But most of the species commonly exploited are listed in one of the CITES appendices, and thus are subject to government regulation.

CWM is a popular activity throughout the region but is rarely the main activity of local families, who usually regard it as a means to generate much needed income to supplement subsistence farming. The most commonly exploited species in the dry areas are garrobos (*Ctenosaura similis*)[9], iguanas (*Iguana iguana*) and sea turtles. But most of the more valuable species in terms of sources of animal protein for the local communities, have almost disappeared from these areas. In the rainforest areas, the range of species is wider, reflecting both a higher level of species richness and a much better level of ecosystem conservation. Animal species exploited in these areas include white-tailed deer (*Odocoileus virginianus*), bush pigs (*Tayassu tajacu*), tepezcuintle or paca (*Agouti paca*), iguana (*Iguana iguana*) and crocodiles (*Caiman crocodilus*). Plant species include several non-timber resources and some valuable timber species (*Swietenia spp, Cedrela spp., Cordia sp.*, among others).

In recent years two new markets have emerged: pets and tourism. Most of the activities aimed at the pet market are poorly regulated and could not be classified as "managed or sustainable. In almost every country of the region, many new initiatives are underway to conserve and improve wildlife populations as a way to attract tourism, focusing on activities such whale watching and bird watching.

At present NGOs and externally funded projects are the driving forces behind CWM. Participation, empowerment, and a clear mandate to withdraw once the process reaches a certain degree of consolidation are now their priorities.

9 An iguana-like animal common in coastal areas of Central America.

For further information see: Gutierrez, I., Ortiz, N. and Imbach, A. (2000) *Community Wildlife Management in Central America: A Regional Review*. Evaluating Eden Discussion Paper No 12. IIED, London

Case Study 25: Management of Turtle Eggs in Ostional, Costa Rica

This case study examines the experience of a *campesino* community on the Pacific Coast of Costa Rica where an entire community changed from being illegal traffickers of marine-turtle eggs to having legal permission for their extraction and marketing.

The community of Ostional is located in the canton of Santa Cruz, Cuajiniquil District, Guanacaste Province, Costa Rica, in Central America. The town is located along a 3.5 km coastal zone, and about 80 per cent of the town is located within the Wildlife Reserve of Ostional territory. The Ostional Wildlife Reserve was created to protect a nesting beach for the sea turtle *Lepidochelys olivacea*, known in the region as *tortuga lora* (parrot turtle) or *tortuga carpintera* (carpenter turtle). The declaration of the Reserve was a joint effort between the community of Ostional, the Wildlife Bureau, and the Sea-Turtles Programme of the University of Costa Rica.

In large turtle colonies, many nests dug by early nesting turtles are destroyed by later arrivals leaving the eggs susceptible to predators. The Associación de Desarrollo de Ostional (ADIO) capitalises on this fact, extracting eggs that are likely to be destroyed or predated under natural circumstances. Research has shown that this extraction does not endanger the population. Extraction is carried out on the main nesting beach during the day, in the first 36 hours after arrivals begin. All the associates of ADIO participate, in teams of women and men, and the teams have specific tasks. Both men and women eventually transport the bags of eggs to the collection centre, where they are sold cheaply, so that other eggs from other beaches cannot compete with those of Ostional on the market. In addition, the community undertakes tasks that improve the conditions for turtle reproduction: beach cleaning; protection of the beach so that no illegal egg collection occurs; and protection of the new-born turtles against predators. All the associates receive the same payment for their work, including the directors, and this payment forms the main source of income for all 215 community members involved.

Ostional is the only project, worldwide, where legal exploitation of turtle eggs is allowed, and this contributes substantially to the community's livelihood. There is an inherent sustainability to the project, because the eggs are an abundant, renewable resource, for which there is a demand in the national market.

Impacts

Although there has been a certain degree of tension within the community as a result of changing power relations, overall the inititiave has resulted in significant positive impacts:

- Environmental impacts: the community is committed to keeping the beaches clean, taking care of nests and protecting turtle hatchlings.
- Economic impacts: the initiative is the only source of income for most of the inhabitants of the reserve. It has also generated collective income which has contributed to community development projects. A portion of the income is reserved for the elderly and disabled in the community.
- Social impacts: the initiative has increased access to training and encouraged greater community organisation. Equal opportunities are provided to both men and women.

Source: Imbach A. and Guttierrez, I (2000) *Evaluating Eden Initiative: Central America and Dominican Republic*. Unpublished report to the Evaluating Eden Project, IIED, London.

Case Study 26: Management of Green Iguanas in Nicaragua

This case study examines the experience of two communities, the Reparto Alemania Federal and Luis Andino on the northern Pacific Coast of Nicaragua, a tropical savannah region, characterised by a six month dry season and an annual precipitation of almost 1,500 mm.

In Reparto Alemania Federal, an initiative to raise green iguanas was established in 1992 both as an alternative source of income to mangrove use – thereby reducing pressure on the forest resource – and to contribute to iguana conservation in the area. Green iguanas were identified as a suitable species since they are common in the mangroves close to the settlements, are highly tolerant of human handling, and local people already use them for meat and skins. Initially, it was intended that the iguana meat and skins would be sold locally. However it was soon realised that iguana production for consumption purposes is not commercially viable because of high production costs. International pet sales were rapidly seen to be more valuable, so captive breeding sites were established.

For the first three years the initiative progressed well and technical support was gradually withdrawn as the community proved capable of managing a commercially viable operation. However, a change in the international market for pet iguanas resulted in decreased demand and the communities eventually abandoned the activity in mid-1998, leaving only the project's infrastructure.

A similar initiative was established by the Lucrecia Lindo shrimp women's group of Puerto Morazán, in 1992. It was successful during the rainy season, but during the very hot dry season, high mortality of iguanas ensued. This, combined with the fact that the water for the iguanas had to be transported 300m from the lagoon shores, and the women's other priorities, resulted in the project being abandoned. In early 1993, the project was transferred to the Luis Andino community, where there were better climatic and social conditions. The dry season saw a successful start, but during the rainy season the breeding site was flooded, and in addition, the breeding site was over half a kilometre away from the group of workers, which made attention to the animals difficult.

In 1994, several group members transferred the nursery to a member's house and in 1995 production and sales went well, which stimulated the group to evaluate and try a new reproductive cycle. A 1996 evaluation of the project showed some encouraging economic, social and technical results, and it was considered possible for the group to assume the responsibility for production if they were given technical assistance when required. However, in that same year, a steep fall in the price of iguanas occurred, caused by a flooding of the market, and the group did not succeeded in recovering their investment, nor had they earned enough to finance another productive cycle. Despite the economic situation, the group requested credit to continue with the activity, and in 1997, it achieved the highest production registered in the zoological nursery since 1993 (2685 iguanas). However, further price reductions due to an over-supply of iguanas to the market meant that harvests still did not cover production costs, and in 1998, the members decided to sell out to the larger producers, to recover part of their investment.

Although the iguana initiatives were not successful in the long-term for the communities involved they did have a number of positive impacts:

- While the initiatives were active the extraction of forest resources diminished considerably. In the community of Luis Andino, those involved in the project extracted firewood for home consumption only, and devoted themselves to alternative activities, such as the small-scale growing of crops.
- Community management of the green iguana offered some protection to wild populations largely

as a result of a clear change of attitude among the campesinos involved.
- For both groups involved, once the iguana initiatives had ended, they still refrained from cutting mangroves and developed other alternatives.
- From the economic viewpoint we can conclude that the production of green iguana may be economically profitable only for the purpose of breeding as pets for export, and only in the periods of good prices. Market fluctuation, caused especially by variations in the international markets, is a factor directly affecting the economic benefits obtained by the communities, and becomes an important reason for adopting or abandoning the activity

Source: Imbach A. and Guttierrez, I (2000) *Evaluating Eden Initiative: Central America and Dominican Republic*. Unpublished report to the Evaluating Eden Project, IIED, London.

8. South America

The great latitudinal span of South America, which stretches from 10º North to 55º South, provides one of the most diverse environmental ranges on the planet, offering tropical, subtropical and temperate climates. The wide climatic variability is further enhanced by the great Andes range along the western edge of the continent, which reaches altitudes of more than 6.000 meters above sea level. These factors all results in high environmental heterogeneity, such that almost every natural habitat in the world is found within the borders of the region.

Pre-Hispanic indigenous societies achieved high levels of population density. Many of them, in particular, the Incas, were notable for their sophisticated knowledge about the natural resources of the territories under their control with which they managed to increase and diversify their production. The value of wildlife in the evolution of native cultures on the continent is indisputable, as a source of protein, hides, ornaments, medicines, ritual and magical objects amongst others as well as forming part of the dynamic and complex man-nature relationship.

The Conquest deprived the indigenous people of their land and the right to use resources, while European colonization brought with it the intensive production of foodstuffs based on introduced plant and animal species, thus transforming the economy, modes of production, power relationships, and the way that the inhabitants of this continent related to their environment. The Spanish and Portuguese envisioned Latin America as an immense deposit of very valuable raw materials, some of them quite exotic and attractive for the European bourgeois, thus generating an extensive export industry of wild products which continued right up to this century.

The extensive exploitation of wildlife led many countries of the region to implement conservation policies that discourage and prevent wildlife use and management. This generated legislation prohibiting use, especially in commercial activities exploiting wildlife. Other conservation policy focused on the creation of national parks, where flora and fauna could be protected.

More recently government policy has focussed on captive breeding and use management strategies, such as vicuña breeding in Peru, fox hunting in Argentina, where the state promotes and encourages resource use to benefit needy rural communities. The Ecuadorian government has opened the door for co-managing parts of protected areas with indigenous communities through the signing of agreements in which rights and duties are explicitly established for the use and protection of the resources of the area. National policies also favour the non-consumptive use of wildlife by fostering ecotourism.

The future of CWM in the region, with respect to public policy will be heavily influenced by the following issues:

- Although several countries have generated processes of participation and decentralization of governmental action, through major changes in political structures and reinforcement of indigenous and other ethnic minorities movements, obstacles to community involvement in wildlife resource management and decision-making nevertheless still exist.
- Governments greatly undervalue wildlife. In general, agencies responsible for administering wildlife resources report to other resource management agencies. Because of the lack of any economic rationale behind the wildlife management issues, it is not surprising that other activities such as livestock or forestry are granted a much greater importance.
- There is clearly a lack of capacity to enforce current legislation. This is especially true in those territories located in remote rural areas, far removed from the urban and commercial centres.

For more information see:
Ortiz von Halle, B. and Mazzucchelli, S. (2000). *Community Wildlife Management in South America: A Regional Review*. Evaluating Eden Discussion Paper No 8. IIIED, London.
Lichtenstein, G., Mazzucchelli, S and Oribe, F. (2000) *Evaluating Eden: Assessing the Impacts of Community Wildlife management – South America*. Unpublished report to the Evaluating Eden Project, IIED, London

Case Study 26: Vicuña Management in Peru

Vicuñas (*Vicugna vicugna*) are wild camelids that inhabit high regions of the Andes, between 3000 and 4600 metres. Vicunas occur, among other places, in the biogeographic region of the Puna, a fragile habitat characterised by low annual rainfall, high daily temperature range, and low primary productivity. The main threat to the habitat is desertification, which is due to overgrazing and lack of proper management. The Peruvian Puna is inhabited by indigenous communities that live in most cases below the poverty line. Household economies utilise mainly family labour for subsistence-oriented agriculture and livestock herding. Given this context, income generated from the sustainable management of vicuna has significant potential to boost the local economy.

Vicuñas are prized for their fine fleeces which has driven them to the verge of extinction due to illegal hunting. Although the Incas are known to have developed techniques for harvesting the fibre from live vicuñas, until recently, a common practice was to kill the animal in order to get its fleece. As a result, the vicuña population in Peru declined drastically in the 1960s and 70s, while political unrest in the 1980s interrupted conservation attempts. The vicuña was subsequently listed on Appendix 1 of CITES with accompanying restrictions on international trade in vicuña fibre and products.

When political stability was regained in Peru, considerable efforts were made to restore the vicuña population. Government authorities realised that the armed park-guard model was inadequate for providing extensive protection from poaching and that peasant communities, on whose land the vicuñas lived, had to receive benefits if they were to participate in conservation. Since 1992 communities have been given progressively more control, starting with use rights and stewardship and passing to property rights over the vicuñas – although this does not extend to sale of the animals on an open market. In view of these efforts, in 1994, the CITES restrictions on export of vicuña fibre were relaxed and Peru was authorised to export fibre sheared from live animals.

Management techniques

Until 1995, vicuñas were managed in the wild, only captured to be shorn, and then released. Andean populations use a traditional, Inca method to capture vicuñas communally by surrounding them and driving them towards a funnel shaped mesh. Once inside the funnel, vicuñas are taken one by one, shorn and then released. A government agency, CONACS, provides technical assistance in this

process. The fibre produced is stocked and sold by the National Vicuna Society in a public auction. An international consortium has successfully won all the auctions so far. The price paid for the fibre has decreased from US$ 520/kg in 1994 to US$ 377/kg in 1998 (including the royalties).

In 1996, the CONACS started developing a programme of *Corrals for the Sustainable Use of Vicuñas* (MUS). The programme consists of installing large corrals (12 km in perimeter) on communal land from which domestic livestock has been removed. Communities pay US$ 22,000 for a corral which effectively encloses between 250 and 1000 vicuñas, which are then available for shearing. Communities pay for the corrals in cash – by getting a loan from the government – and/or surplus vicuñas, which are valued at US$ 1000. CONACS then sells these vicuñas on to other communities with few animals who are interested in participating in the project.

A comparison of the sustainability of the management in the wild versus management in corrals reveals the following results:

Management in the wild	**Management in corrals**
Ecological dimension	
• Does not divide populations • Supported by sound scientific research • No impact on the environment • There is no repopulation programme	• Vicuna populations are divided when placed in corrals, so the genetic flux and dispersal are limited • Ecological and environmental impact has not been studied • Considering the low carrying capacity of the habitat (0.3 vicunas/ha), placing more than 333 vicunas per corral may have a negative impact on the environment (increase desertification) and population growth • The repopulation programme is carried out without sanitary or genetic controls. There is a risk of genetic homogenisation
Socio-economic dimension	
• It is economically feasible even paying wages to community workers • It represents a medium to high risk investment to the communities with potential high profits • By generating jobs it stimulates the local economy • No opportunity cost	• It is only profitable if the price of the fibre remains the same and without paying interests on the loan. The benefit is significantly less than in the case of management in the wild (US$45,000 vs. US$257,754 in ten years). • Since the community have to buy the corrals, it represents a high risk investment with low profits • It does not stimulate local economies • Opportunity cost of not being able to use the land for other economic activities.

The findings suggest that management of vicuñas in the wild is a better alternative to management in large corrals. The economic viability of corrals for communities is questionable, especially when they have less than 250 vicuñas. The magnitude of the benefits obtained by a community is directly related to the number of vicunas that it possesses, and the amount of land available. As the bargaining power of the communities relies on their number of vicunas, neighbouring communities with

few vicunas would benefit from collaboration. The development of ecotourism in the region and the production of vicuña handicrafts could also significantly increase the economic benefits obtained.

Source: Lichtenstein, G., Oribe, F., Grieg-Gran, M. and Mazzucchelli, S. (1999) *Community Management of Vicunas in Peru*. Unpublished report to the Evaluating Eden Project, IIED, London.

Case Study 27: Mamirauá Sustainable Development Reserve, Brazil

Mamirauá Sustainable Development Reserve (MSDR) is Brazil's largest protected area, covering1,240,000 hectares. The Mamirauá Project was started in 1983, to assure the survival of the endemic white uacari (*Cacajao calvus calvus*). Subsequently, the project started working with the local communities and by 1996 legislation was changed in order to allow the sustainable use of natural resources by the local communities. MSDR was created only after a long process of working with the local communities and strengthening community participation and organisation.

Ultimately, the aim was to conserve the biodiversity of the flooded forest – *varzea* – and this was envisaged as happening through improving the living conditions of the local communities, through economic alternatives, environmental education, and a reduction in out-migration. In 1996, as a result of extensive research, a Management Plan for the Reserve was developed by a team of scientists, and this was agreed with the local communities. The Management Plan includes rules and recommendations for the sustainable use of wildlife, fish and timber resources. It prohibits fishermen from outside the immediate area operating in the Reserve, and developed a zoning scheme for the Reserve lakes.

Following the dictates of the Management Plan incurs an opportunity cost for the local inhabitants, so health and extension projects were implemented to contribute to the acceptance of its rules, and projects to generate alternative sources of income were initiated. These include ecotourism, sustainable timber harvesting, agriculture, handcrafts, and co-operative fishing.

Impacts

The main impact of the creation of the Reserve on wildlife has been the cessation of fishing by outsiders from towns and cities such as Manaus – although fishing by residents of nearby towns still continues. Members of the resident communities and from the Fishermen Colony of Tefé have noted that there are more fish as a result,. However, illegal hunting and egg collecting have continued to occur and the rules of the Management Plan appear to be largely flouted. It is thought that this is due to a well established black market allows sale of the products, while people are not yet deriving economic benefits from the alternative projects. Enforcement of the management plan is weak with few resources available to sufficiently police the Reserve. However, resource extraction does appear to have been reduced in the Focal Area of the Reserve – where the Project operates – compared to the Subsidiary Area –where the Project has not yet been implemented.

The main social impact of the project, according to members of the community of Jarauá, has been improvement in their health conditions. According to the Extension team, an important result was getting communities organised to achieve certain goals, such as to work together with municipalities to get schools built, or to organise co-operatives for fishing.

Lessons Learned

The experience of the Mamirauá Project has generated some useful lessons that may be applied to other CWM initiatives:

- It is extremely difficult to get participation of local people without providing economic or social incentives.
- Providing tangible benefits for local people (e.g. health facilities) also helps build confidence and rapport between the donor, project and local people.
- It is difficult to involve local people in voluntary vigilance.
- It is difficult to limit access and use of open access resources to local communities – hence, a sense of ownership is crucial for community based-protection.
- Sound scientific research should inform the Management Plan.
- It is advantageous to build on existing political structures and organisations (e.g. Movement for the Preservation of Lakes) to develop a scheme for community participation.
- Feasibility studies of economic alternatives is vital.
- Working with local stakeholders to decrease possible conflicts is necessary.
- A supportive legal framework is critical.

Source: Lichtenstein, G., Oribe, F. and Mazzucchelli, S. (1999) S*ustainable Use of Resources in Mamiraua Reserve, Brazil*. Unpublished report to the Evaluating Eden Project. IIED, London.

Case Study 28: The Cofan Ecotourism Project, Ecuador

The Cofán-Zábalo territory is located in the north-western Ecuadorian Amazon. The Cofán territory was given to the Zábalo Community through a formal agreement signed in May 1992, between the Ministry of Agriculture and the Indigenous Communities of Cofán Nationality Association (former ACOINCO, at present OINCE). The agreement was for the use and conservation of natural resources in the Cuyabeno Wildlife Production Reserve, governed by a Ministry of Agriculture Management Plan. The Reserve protects the Cuyabeno river system which has more than 14 lagoons as well as the low basin of the Aguarico River and its tributaries. The area is rich in aquatic mammals and is also a tourist attraction, and as such has experienced rapid growth. However, the Reserve is facing serious problems at present due to the oil exploitation that has been undertaken in the area.

Zábalo families regularly hunt to obtain food, and the most important species are the wild pig, *Tayassu pecari*, and the monkey, *Lagothrix lagotricha*. The one animal that the community has stopped hunting is the peccary (*Tayassu pecari*), which is important for ecotourism. Community members also subsist through fishing and small parcels of agriculture.

The leader of the Zábalo Cofán community is an American – Randy Borman – who grew up among the Cofanes, spent some time at university in the USA, then returned to the area. He led a relocation process of a group of families, forming the Zábalo Community at the Aguarico River. His Northern links have facilitated the development of an ecotourism project that the community is now involved in. Groups of 6 to12 tourists stay in the Reserve for several days where they can experience both the biodiversity of the forest and the Cofan culture and their ancestral knowledge.

This programme was established through a joint venture between 10 Zábalo community members and the Transturi Tourist Company located in Quito. The profits are divided equally: 50 per cent for Transturi and 50 per cent for the Cofan partners. This agreement with Transturi benefits the community, as they no longer have to advertise their services, either nationally or internationally, and can concentrate on improving their services when visitors do arrive. With regards to the time they dedicate to tourism and the impact of this in their community, they have concluded that a visit of one group per month is the economic and social optimum.

The tourist project is administered directly by a local council, which maintains a community income fund. The total income is about US$ 50,000 per year of which 90 per cent represents profits generated by tourism. The Zábalo community maintains links with the other Cofan communities through the OINCE. There are 23 families in the community at present, and there is little out-migration. Education, however, is the source of much concern: the government pays for a teacher, but the quality of education is very low.

Lessons Learned

One of the most useful elements of the Zábalo experience has been the definition of a specific niche in the tourism world. Another was the decision to generate an operation that was designed and carried out by members of the community. The strategic alliances with the private sector for the advertising of the package has been another innovative element that gave the Zábalos a mutually beneficial relationship with the private sector. However, the key role that Randy Borman has played will be difficult to replicate, and the role of this initiative as a model for Amazonian rural development is therefore questionable.

Source: Ortiz von Halle, B (1999) *Cofanes Ecotourism Project In Ecuador*. Unpublished report to the Evaluating Eden Project, IIED, London