

# 6. Protected areas and community development

## Section 1

### Introduction

Wildlife conservation and protected areas in many countries will only be sustainable if local communities become an integral part of conservation efforts and benefit economically from those efforts (MacKinnon 2001). Linking conservation and development is particularly pertinent for the Lower Mekong countries, where population pressures and economic forces can and do conflict with conservation and protected area programs.

Protected areas are often among a country's most remote and agriculturally marginal land. Their remoteness had the effect of contributing to their protection, since they were inaccessible and viewed as economically unproductive. Human use of these once-remote areas is increasing, however, as a result of increased population growth in traditional communities, migration, and settlement. These factors are frequently the result of problems and policies in other locations (Brandon 1996). Both protected areas and the lands around them face increasing degradation as a result of large-scale development projects, expanding agricultural frontiers, illegal hunting, logging, firewood collection and uncontrolled burning.

Conservation and development are linked. Protected areas can provide development opportunities for communities (Furze et al. 1996). In many cases, some forms of commercial resource use are entirely compatible with the goals of protected areas. Protected area status can increase national and international profiles, which can lead to greater development assistance for alternative energy, agro-forestry, sustainable agriculture and fisheries. Protected areas are a powerful magnet for international development aid efforts and government programs (Stevens 1997). Employment can be created by preferential PA hiring policies. Opportunities for tourism development often increase with protected area designation (Stevens 1997).



More and more, protected area managers are required to support the development of communities in and surrounding their reserves. Local solutions – that take into account the needs and desires of local people and conservation goals – are being developed. PAs will succeed in realising their conservation objectives only to the extent that the management of the land surrounding them is compatible with the objectives of the protected area. This typically involves protected areas becoming parts of larger regional schemes.

## Section 2

### Empowering local communities

#### Integrated Conservation Development Projects

**Achievement: Empowerment of local communities has been demonstrated to be an effective conservation tool.**

The term “Integrated Conservation Development Project” (ICDP) has been applied to a diverse range of initiatives with a common goal: linking biodiversity conservation in protected areas with local social and economic development. ICDPs are important in the Lower Mekong countries for several reasons:

- they offer the potential to mitigate the rapid loss of biodiversity from protected area networks;
- their goal is to provide benefits to local people based on equity considerations; and
- they now attract most of the international funds available for biodiversity conservation.

Nepal’s conservation areas have been the focus of some of the world’s most promising efforts to link development with protected areas. Some areas are managed in coordination with national and international non-government organisations (NGOs) and the Department of National Parks and Wildlife Conservation. They are based on grassroots conservation and participatory rural development (Stevens 1997).

Nepal’s Annapurna Conservation Area Project (Box 1) demonstrates that partnerships can be used to effectively manage areas that are environmentally and culturally sensitive. It shows that revenue raised from protected areas can make an important contribution to community projects. It also demonstrates the benefits of taking a landscape approach to conservation instead of considering protected areas in isolation from local people and development.

#### Box 1. The Annapurna Conservation Area

The Annapurna Conservation Area is one of the most geographically and culturally diverse conservation areas in the world. About 118,000 rural farmers live in the region, most of them poor. Although tourism has become important to the local economy, it has led to serious environmental problems. Forests have been cleared to provide fuel for cooking and heat for visitors. Expanding agriculture, water pollution, poor sanitation and litter on trekking routes have accelerated, compounded by a rapid growth in the resident population. Improving tourist development while safeguarding the environment was the focus of a royal directive in 1985. In response, the Annapurna Conservation Area was gazetted in 1992. The area allows multiple uses, including hunting and collection of forest products. Visitor fees are used for local development and management authority has been delegated to the village area (Stevens 1997).

With the establishment of the project, high priority was given to reducing the environmental impact of trekkers and increasing local economic benefits from tourism. The initiative has made significant progress in motivating a sceptical local population to participate in resource decision-making. A

kerosene regulation has substantially reduced deforestation; training programs have reduced the adverse impacts of tourism and improved the livelihoods of lodge owners (Brandon 1996).

An entry fee has been collected from tourists since 1989. Revenue passes directly to the PA and is used in community development projects. The community benefits from increased control over tourism and from revenue generation for community development projects, such as bridge and trail repair, agricultural extension, and women's programs. Community health and sanitation benefits include health clinics; mobile vaccinations and health education, latrines and rubbish pit construction and improved water supply. Area committees monitor and help manage environmental resources as well as environmental education and tourism education programs (Brandon 1996).

### Joint Forest Management

The benefit of empowering local communities has also been demonstrated by India's Joint Forest Management initiative. Indian forest policies have undergone dramatic changes over the past ten years; for 100 years previous to that policies emphasised the nationalisation and commercial use of much of the country's forests. The forest rights and responsibilities of communities continued to erode after independence, as was reflected in the National Forest Policy of 1952: "the accident of a village being situated close to a forest does not prejudice the right of the country as a whole to receive the benefits of a national asset."

Policies began to change in 1980. Growing concern over India's environment led the government to pass the *Forest Conservation Act*. During the 1980s, however, deforestation levels still reached alarming levels; less than 10 per cent of the nation possessed good forest cover. Planners, foresters, researchers and NGO leaders increasingly recognised that state forest departments were not able to protect forest resources unilaterally (Poffenberger 1996). Subsistence forest products were becoming scarce among India's estimated 300 million rural resource users, whose rights and responsibilities were limited or nonexistent.

In the 1980s, without waiting for supportive policies or judicial decisions, thousands of communities began protecting their degraded forests (Box 2). Village leaders recognised the environmental crisis confronting them. Communities formed village-based forest protection groups and halted cutting and grazing, which often initiated rapid regeneration of the natural forest. In June 1990 a National Joint Forest Management resolution was passed, supporting the rights and responsibilities of forest communities in the management of public forests (Poffenberger 1996). By 1996 between 10,000 and 15,000 communities across India had joined this grassroots forest protection movement with minimal cost to the government. In 1998 a National Forestry Policy was passed that "envisages... that forest communities should be motivated to identify themselves with the development and protection of forests from which they derive benefits." In many areas, flora and fauna that had disappeared from these habitats have begun to return.

#### **Box 2. Community forest management in India**

The community forest management program in Haryana involves communities living at the foothills of the Shivaliks, the lower Himalayas, which are along the most environmentally degraded hill ranges in the world. Logging for high-quality timber, increased grazing and firewood pressures had left the hills bare. In the late 1970s the people of Sukhomajiri village began taking responsibility for their local environment. They looked at alternative sources of livelihood to reduce their dependence on the forest. With dramatic regeneration of vegetation and other benefits, such as increased production and availability of fodder, other villages began to follow suit.

The program has encouraged communities to protect and manage forests on a sustainable basis for their own benefit. Gender, equity and benefit distribution is important to the program. Villages have benefited from an increased supply of forest produce, such as fodder grasses, bhabbar grass, irrigation water and bamboo. This has led to increased income at the household level. Local management of the forests has led to enhanced tree and grass cover in the forest areas. It has also improved soil moisture, reduced the silt load, and reduced water runoff from the catchment, which has resulted in reduced flooding (Varalakshmi 1998).

### Indigenous protected areas

In Australia the recent development of the Indigenous Protected Area program highlights the benefits of empowering local communities. The program followed the granting of native title to Traditional Aboriginal Owners. They enter into a voluntary agreement to promote biodiversity and cultural resource conservation. "Aboriginal and Torres Strait Islander Australians have managed their lands for tens of thousands of years. Land is central to their lives and well-being. It provides an economic base, it underpins indigenous history, innovation and culture, and is fundamental to spiritual beliefs" (Environment Australia 2002).

The goal of the program has been to encourage partnerships between government and indigenous land managers. These partnerships support the development of a comprehensive, adequate and representative system of protected areas that is consistent with international protected area classification. The partnerships also help indigenous people establish and manage protected areas on their estates.

Funding is available through the program for traditional owners to develop management plans (in developing the plan the relevant IUCN category (Chapter 1) for conservation management is defined). Plan implementation involves initiatives such as weed and feral animal control, cultural heritage conservation and establishment of infrastructure to control visitor access. Funding is also provided for monitoring the effectiveness of the on-ground works. The Indigenous Protected Area Program is making a considerable contribution to the National Reserve System in Australia, with the development of new protected areas on aboriginal-owned land in a range of ecosystems across Australia (Environment Australia 2002).

The Ngaanyatjarra Indigenous Protected Area Project is an example of the program's potential benefits. Ngaanyatjarra Council represents 2,000 traditional owners of 250,000 sq. km of Western Australia (about three percent of the country's total area). The area is largely free of modern development and disturbances because of its extreme isolation and climate.

Traditional owners have maintained continuous association with their land and have led wholly traditional lifestyles until as recently as 1984. The conservation values of the land exist because of traditional management. What is seen as important is not to document traditional land practices, but to ensure that they continue. Indigenous Protected Areas allow managers to do the following:

- recognise the need to conserve culture as well as plants and animals;
- maintain Ngaanyatjarra control and value their traditional knowledge;
- provide an additional relevance for traditional knowledge through a career structure;
- give traditional owners access to the resources of conservation agencies, including libraries and databases, scientific and technical advice, mapping and GIS expertise, interpretive signage, plants and equipment, academic works, and accredited training (Noble 2001).

The empowerment of the Ngaanyatjarra council and the establishment of a PA also carry a strong message to wider Australia that conservation values exist on lands as a consequence of indigenous land management, and that today's traditional owners maintain their association with the land (Noble 2001).

## Defining communities

How is community defined? Who defines it? It is simplistic to speak of “community” even in a single settlement; villages can be sharply divided socially, economically, and politically when there are competing interest groups. Many members — particularly women and minorities — may not participate in decision-making. Indeed, sometimes people find the very idea of acting as a community alien in societies and settlements where conservation has been traditionally carried out by individual households, kin groups or neighbourhoods (Furze et al. 1996).

Many question whether communities really exist and whether the people within them have shared interests and consensual decision-making processes. To overcome these challenges, action research methodology is increasingly being used in designing management programs for protected areas. It provides a learning process approach to implementation. It also contributes to increased trust and cooperation, and develops a sense of ownership by involving people in decision-making (Furze et al. 1996).

Action research is a collaborative process through which “a group of people with a shared issue or concern collaboratively, systematically and deliberately plan, implement and evaluate actions” (Fisher 2000). When action research is applied to community development and PAs, it has the following advantages:

- providing a learning process approach to implementation in situations where there are many unknowns and where the process needs to be developed through action. In other words, it gives an opportunity to act without having all the unknown factors worked out in advance;
- involving a range of stakeholders and providing opportunities for them to work together, contributing to increased trust and cooperation; and
- engendering a sense of ownership among various stakeholders through involvement in the decision-making process (Fisher 2000).

Many of the approaches to working with communities (including action research) have evolved from a long history of rural development programs. Many protected areas are located in rural areas and are part of a broader social, economic and political system. In a management sense many resource issues are, at least in part, rural development issues.

## Establishing ICDPs that work

**Challenge: “Nearly a decade after ICDP approaches were first popularised, successful and convincing cases where local peoples’ development needs have been effectively reconciled with PA management are still notably lacking” (Wells et al. 1999).**

In a review of ICDPs in Indonesia, Wells et al. identify four elements that must be in place for ICDPs to succeed:

- a strong local management and protection capacity, staffed by people able to exercise judgement and deploy resources in a flexible manner. This will enforce regulations and generate benefits for local communities;
- outside management or control of projects that is based much more on the management of outputs than on attempts to manage inputs (although inputs cannot be ignored);
- performance indicators (for biodiversity this requires much more research), which should be developed by an independent agency; and
- skills in mainstream management and in building collaborative alliances with the variety of stakeholders who influence the use of land in and around PAs. (Wells et al. 1999).

Wells et al. (1999) suggest that ICDPs have very limited ability to address the main threats to most protected areas. In ranking the threats to the 21 PAs covered by the study they found that direct threats from local communities ranked well behind road construction, mining, logging concessions and sponsored immigration. Most ICDPs have very little influence on economic planning or land-use decision-making.

**Challenge: It is difficult to achieve coordination and cooperation between communities and peoples to meet regional resource management and conservation objectives.**

While focusing on communities may be crucial to developing on-the-ground conservation action, wider political, economic, and ecological issues must be addressed as well (Stevens 1997).

**Achievement: Addressing the livelihood needs of local communities has led to successful conservation initiatives.**

Following Zimbabwe's independence in 1980, the country's Department of National Parks and Wildlife Management followed up on the new government's attempts to redress discriminatory legislation. It introduced the Communal Areas Management Program for Indigenous Resources (CAMPFIRE), which was aimed at involving local communities in wildlife management. CAMPFIRE is based on the premise that, if communities receive economic benefits from wildlife, they will change their attitudes and want to conserve and manage it.

CAMPFIRE focuses on establishing the conditions in which resources can be legitimately managed and sustainably exploited by resident communities (Murindagomo 1990). Although it includes all natural resources, its emphasis is wildlife management in communal areas, particularly those lands adjacent to protected areas, where people and animals compete for scarce resources. Since 1989 CAMPFIRE has engaged more than a quarter of a million people in the practice of managing wildlife and reaping the benefits of using wild lands (CAMPFIRE website).

CAMPFIRE allocates wildlife property rights to community district councils. Allocation is subject to certain responsibilities, including endorsement by community members and implementation of a wildlife management plan. This has allowed councils to manage and profit from hunting and viewing tourism; this results in a dividend to households as well as fund wildlife management and community development activities (Furze et al. 1996).

Masoka Ward in northeast Zimbabwe, near the border with Mozambique, was one of the country's poorest regions. It was one of the first wards to join CAMPFIRE, and by 1994 was earning over Z\$600,000 from a safari hunting concession. The money was used to build a health clinic, pay game guards and even fund a football team. Each of the roughly 140 households received more than four times their annual income for drought relief, either in cash or maize (CAMPFIRE website).

Most CAMPFIRE profits are generated through leasing trophy-hunting concessions to foreign hunters. A considerable proportion of its revenue comes from elephant hunts. The elephant population in Zimbabwe has doubled during the last 20 years but decreased in the rest of Africa. The benefits to community from wildlife use undertaken in a managed and locally regulated manner may ensure its long-term conservation.

### Non-timber forest products

**Achievement: Harvesting of non-timber forest products (NTFPs) and wildlife in park buffer zones has provided sustainable livelihoods for local communities.**

A sustainable NTFP project was established in Lao People's Democratic Republic; although its primary objectives were social well-being and development, it also contributes to forest conservation (MacKinnon 2001). Establishing positive connections between conservation and development is essential in Lao PDR, as 10 per cent of villages are located inside protected areas. Lao government policy dictates that these communities not be removed from PAs (Chape 2001).

Between 1995 and 2001, IUCN implemented the Sustainable NTFP project, with a primary focus of developing sustainable and economically viable approaches to the use of NTFPs in forests outside protected areas. It was decided to include activities in Xe Bang Nouan, Dong Hua Sao and Xe Pian protected areas,

since NTFPs were being harvested there. Although the project was designed to promote sustainable rural livelihoods for forest dependent communities and to develop the NTFP sector in the national economy, it also resulted in conservation benefits. The project identified models of sustainable use of NTFPs that contribute to poverty alleviation, forest and biodiversity conservation, land-use planning and allocation, substitution of shifting cultivation and industrial development (Chape 2001).

In the Arafak Mountains Nature Reserve in Papua the World Wide Fund for Nature (WWF) worked with local communities to provide alternative income-generating activities in order to reduce the need to extend gardens within the reserve. One project involves farming of birdwing butterflies, whose larvae feed in secondary forest adjacent to the reserve. Villages harvest the live pupae, which are sold to a marketing centre; no adult butterfly can be caught or sold. Since only some pupae are harvested, wild populations are able to replenish themselves. With careful control of collection and marketing by the committees and a local NGO, butterfly farming should be sustainable. It is directly linked to protection of the nature reserve, where wild butterflies spend most of their lives, yet it provides local people with a cash “crop” that is lightweight to transport and yields high returns without damaging the natural forest (MacKinnon 2001).

**Challenge: The assumption that NTFP production is intrinsically sustainable may be incorrect.**

Although some NTFPs (e.g. cardamom and honey) can be cultivated without destroying their capacity to reproduce, in other cases harvesting removes the reproductive capacity (Fisher et al. 1997).

Using NTFPs to increase income generation does not necessarily reduce pressure on the resource. On the contrary, it often increases local demand, thus worsening pressure on the resource.

In many cases the intensive resource extraction promoted by development projects will lead to the depletion of resources over time. Any type of collecting activity will affect both the species harvested and the forest community where it is found. In many parts of the tropics utilisation of forest products may already be unsustainable. Research in Sarawak has shown that hunting of some species is unsustainable even when it is only done for subsistence (Bennett and Robinson 2000). In South East Asia many plant products, such as rattans, gaharu (incense wood) and ironwood, are being overexploited (MacKinnon et al. 2001).

It is unrealistic to expect perhaps ten percent of the total landscape to conserve all of its biodiversity, and to fulfil the needs of local communities (Bennett 2000). Unsustainable levels of extraction will result in neither aim being met. Biodiversity will decline. Local people will be tied to a declining resource base; the low levels of harvesting required for sustainability will not allow them to meet their basic needs, let alone their increasing aspirations. Unless planners and managers accept the biological limitations of PAs, their mission will be muddled, and both local people and biodiversity will continue to lose (Bennett 2000).

## Collaborative management

**Achievement: The evolving field of collaborative management of PAs has demonstrated some of the advantages of having government agencies and local communities combine their skills and knowledge.**

The term “collaborative management” refers to a partnership by which various stakeholders agree on sharing the management and responsibilities for a protected area. By working together, agencies and communities can provide an effective force for protected area management. Communities can provide specialised knowledge of and skills in the ecological and socio-economic environment.

In 1994, Uluru Kata Tjuta National Park in Australia became the second national park in the world to be listed as a cultural landscape under the UNESCO World Heritage ranking. Indigenous knowledge within the community benefits management of the reserve, as illustrated by the case of fire management. Fires, whether lit by people or started by lightning, are part of traditional management. The traditional owners

(Anangu) are taught from a young age about the proper way to burn according to the *Tjukurpa* (the Anangu system of law, religion and philosophy).

After non-indigenous people arrived, large uncontrolled bush fires began to occur because traditional burning practices had been discouraged. The Anangu usually burn in the cool weather or after heavy rains, so that fires can be controlled. This traditional knowledge is now incorporated, through collaborative management, into fire management planning for the park.

**Challenge: Collaborative management must achieve a balance between the aspirations of the local community and the goals of managers and park users in order to protect the natural and cultural values of a protected area.**

Local communities are often required to forgo many development options in accepting protected area status over their lands. The challenge is to provide economic benefits to communities through the management process. This has been achieved through rental payments, employment within the administration and associated activities, such as tourism.

In Cambodia urgent efforts are needed to address the threats to tigers from rapid habitat loss and hunting pressure. A community-based tiger conservation project has developed. Its goal is “to conserve biodiversity by promoting local education and participation in conservation of tigers as an umbrella species” (Smith and Maltby 2001).

The project, which was put in place at the request of local people, aims to promote societal choice by reestablishing connections between the people and the government after two decades of poor relationships. Local people are involved in management and government officials have participated in seminars to set biodiversity priorities.

Although this community-based initiative is primarily aimed at conservation, it recognises that a balance between use (i.e. hunting of non-endangered species) and conservation of the tiger’s extensive habitat is essential to meet long-term conservation objectives.

Benefit sharing is indirectly addressed by the salaries paid to locally-hired wildlife technicians. The technicians are recruited from among local hunters; they monitor tiger and human activity. Local knowledge is the key to success. Hiring local hunters provides the initiative with crucial local knowledge and helps in communication efforts. The tiger conservation units also facilitate the involvement of development NGOs who are not otherwise represented in these remote regions (Smith and Maltby 2001).

In Australia’s Kakadu National Park, Aboriginal people make up approximately 50 percent of full-time and 60 percent of casual employees, and several major Aboriginal-owned tourism ventures have been established. Even after 20 years of collaborative management, however, most Aboriginal employees remain at the lower employment levels. The major economic benefits flow to non-indigenous park management staff and non-indigenous business enterprises associated with the park. Even if Aboriginal employment levels increase significantly within the park the majority of Aboriginal people associated with the park are likely to remain unemployed and welfare-dependent.

## Ecotourism

**Achievement: Ecotourism is one of the fastest growing tourism sectors throughout the world. It can provide an alternative livelihood that is based on sustainable use and can bring clear conservation benefits.**

This increase in nature oriented tourism has coincided with a worldwide concern about biodiversity conservation. There has been an explosion of conservation-oriented travel services catering to tourists. Ecotourism has been seen to provide local people with economic alternatives to encroachments into

protected areas. In remote areas it can be a source of employment for people who otherwise would have few alternatives but dependence on wildlife and protected areas.

Royal Chitwan National Park in Nepal was placed on the World Heritage list in 1984 in recognition of its focus on people and park in harmony and its contributions to the replication model of conservation and sustainable development (UNESCO). Nature-based tourism to Royal Chitwan National Park is responsible for direct employment of about 1,000 people in hotels and lodges and another 500 as guides, labourers, Thau dancers, restaurant employees and shopkeepers. The seven concessions within the park also provide jobs for local communities outside the park, employing about 635 people in 1993. Nepal's National Parks and Wildlife Conservation Act was amended to ensure that 30-50 per cent of the park's tourism revenues are used for development projects that benefit local communities.

**Challenge: There are inherent dangers in promoting tourism in protected areas.**

Decision-makers may be more interested in the park's economic gain than in its conservation benefits. If tourism is not profitable there may be the tendency to look for more profitable land uses. If the area is in high demand, decision-makers may promote inappropriate developments. Park managers must always keep the main purpose of the park in mind, especially when it has been established to protect vulnerable and valuable natural resources. Park management has to weigh impacts against potential benefits.

**Challenge: Although large numbers of visitors bring economic benefits, they also have social impacts on local communities.**

Local communities do receive benefits from tourism, but these benefits are most frequently in the form of seasonal or low-paying jobs. In Tangkoko DuaSaudara in Indonesia, the major tour company receives 47 per cent of the benefits; hotels receive 44 per cent and guides receive only 7 per cent (20 per cent of which goes to the head reserve guard). Guides and food are usually brought from the provincial capital, and few benefits are retained at the local level (Kinnaird and O'Brien 1996).

At the local community level, ecotourism may generate increased revenues, provide for more infrastructure (such as roads and electrical generation) or support community projects (such as schools and health clinics). These benefits may be offset in the eyes of local communities, however, by the disruption of daily lives and the resulting cultural changes. These changes include loss of privacy, damage to cultural sites, restrictions in hunting and gathering, and a sense of responsibility for the welfare of guests over whose activities they have little control.

At Uluru-Kata Tjuta National Park, most visitors' goal is climbing to the top of Uluru (Ayers Rock). On arrival, visitors are provided with information about the cultural significance of Uluru and are requested not to climb. In spite of this, most of them do make the climb and each year some suffer injuries or die as a result. This lack of respect for local wishes, and the loss of life, causes distress to Aboriginal people.

**Achievement: Areas of high conservation value often support the economic development goals of surrounding communities.**

In many areas, meeting development objectives requires sound environmental management and habitat protection; this also benefits protected areas.

The Dumoga-Bone National Park in northern Sulawesi was established to protect 300,000 hectares (ha) of forest as part of a major irrigation scheme funded by the World Bank. "As a model for linking conservation with regional development it offers some interesting lessons in exploiting synergies and development financing" (MacKinnon and Wardojo 2001). The park protects the watershed of the Dumoga River, which irrigates 11,000 ha of rice fields cultivated by 8,500 farmers. Protection of the watershed, ensuring constant and regular water flow and reducing sedimentation in the irrigation canals, justified the park on economic grounds.

The effective watershed protection provided by the park supports the irrigation scheme. As a result, rice production increased dramatically in the Dumoga valley, and north Sulawesi moved from being a net rice importer to a net exporter. Both biodiversity and development goals were achieved (MacKinnon and Wardojo 2001).

### New approaches

Achievement: New models and approaches to protected areas and conservation are being developed. The original model for protected areas evolved from three basic ideas:

- preservation for conservation;
- preservation for scientific research; and
- preservation to provide access for tourism.

The idea that national parks are unpeopled sanctuaries — almost sacred places, set apart and unaffected by environmental impacts, resource exploitation and the society surrounding them — is a myth.

The first national parks were modelled on Yellowstone National Park in the United States, a concept that has dominated the creation and development of national parks and PAs throughout the world. This model has been unable to accommodate the massive growth of global tourism and the limitations of its global application, particularly in the developing world.

Historically in protected areas, the rights of communities to resource use on their traditional lands have been curtailed, with little or no consultation, to preserve the scenic or aesthetic values of non-indigenous people and to protect flora and fauna.

Activities within and outside protected areas need to be managed to foster the vitality of local communities, while maintaining the long-term health and viability of catchments and ecosystems. Agencies need to develop partnerships with local groups and individuals.

### Biosphere reserves

The biosphere concept is one approach to management at a landscape scale. Biosphere reserves are intended to do the following:

- preserve genetic resources, species, ecosystems and landscapes;
- foster sustainable economic and human development; and
- demonstrate what can be done in relation to local, national and global issues of conservation and sustainable development (UNESCO 2000).

Biosphere reserves are organised into three inter-related zones: the core area, the buffer zone and the transition area (UNESCO 2000). The buffer zone and transitional zones can provide critical support of sustainable development.

### The ecosystem approach

The Can Gio ecosystem in Vietnam is the first Mangrove Biosphere Reserve in the world. Restoration of the mangrove forest ecosystem was necessary to recreate a green belt around Ho Chi Minh City after nearly all the forest was destroyed by herbicides sprayed by American forces during the U.S.-Vietnam war (Smith and Maltby 2001).

Forestry staff have worked with the people of Ho Chi Minh City to restore the mangrove forest over 22 years (Smith and Maltby 2001). Since restoration efforts began both flora and fauna have show yearly increases. Smith and Maltby identify four factors as key to the success of this ecosystem restoration:

- supportive government policies;
- commitment of forestry staff;
- contribution of local people to forest planting and protection; and
- financial support and extension work to help forest residents generate income.

The project illustrates the key elements of the ecosystem approach. It simultaneously addressed conservation, equitable sharing of benefits and sustainable resource use. Local people made a vital contribution to forest planting and protection, and the government allocated forest land to them. In return for protecting the forest, residents were allowed to harvest seafood. The benefits enjoyed by local people are increasing significantly, which motivates them to contribute. While a goal of the project was economic benefits, the total number of species was one of the criterion for measuring its success (Smith and Maltby 2001).

**Challenge: Involving local communities needs to be seen as an integral part of good management.**

New approaches to protected areas – based on recognition of local community rights and on consultation, co-management, and indigenous management – are jeopardised by entrenched, old-style conservation attitude that sees protected areas as fortresses. Such thinking continues to influence the activities of governments, national parks and forestry departments, as well as conservation and development organisations (Stevens 1997).

**Achievement: Protected area agencies are changing to reflect new approaches to conservation.**

The need for agencies to look beyond the boundaries of the reserve system and form partnerships with communities has been reflected in reviews and restructures. A review of the New South Wales National Parks and Wildlife Service stated that the “future of conservation lies in building more effective and cooperative relationships with communities to achieve conservation outcomes alongside sustainable development” (Visions 1999). A key objective of the service has been to encourage and facilitate greater community involvement in, and responsibility for, the conservation of natural and cultural heritage in New South Wales. The review identified integrated landscape management as a high priority.

One way to achieve this goal is the development of Voluntary Conservation Agreements. These are joint management agreements between a landholder and the Minister for the Environment that encourages the conservation of natural, cultural and/or scientific values in an area of land. A voluntary conservation agreement can be made with private land-owners, local councils or people leasing land from the government.

Agreements are initiated on a voluntary basis. The terms of each agreement are negotiated between the landholder and the service, which works on behalf of the Minister. The agreement is placed on the title of the land so that the values are conserved by all future owners (NPWS 2002).

## Conclusion

The global experience provides numerous examples of approaches to involving communities in protected areas. Partnerships need to be in place to achieve long-lasting integration of conservation and development. The empowerment of local communities has led to successful protected area outcomes; biosphere reserves provide examples of conservation management on a landscape scale with strong community involvement. If protected areas are to succeed they should be planned and managed with the involvement of local people so that local rights over and access to natural resources will bring commitment to their effective conservation.

## Section 3

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