

The Annapurna Conservation Area Project: A Case Study of an Integrated Conservation and Development Project in Nepal

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Introduction

Traditionally, national and international conservation efforts have tended to rely on strict protection through the establishment of national parks and other protected areas. The communities surrounding or located inside a protected area, however, have often borne the costs and rarely received the benefits associated with such protected areas. Consequently, the local people usually have little vested interest in ensuring protection of biological resources within the protected area. In the case of Nepal and of other countries, local people were either removed from the park during its establishment or evicted upon implementation of its management plan. Hence, strong objections to the establishment of protected areas were raised by local people. Decades of experience gained by the conservation community in Nepal necessarily highlights the fact that the conservation only makes sense when local people get something that they need and value in return for the establishment of the park.

The Annapurna Conservation Area Project (ACAP), an undertaking of the King Mahendra Trust for Nature Conservation (KMTNC), the largest non-governmental environmental organization of Nepal, addressed this need some nine years ago. A novel practice in itself, ACAP is an attempt to consider environmental problems within the Annapurna region holistically, using a "bottom-up" rather than a "top-down" approach. The Annapurna Conservation Area (ACA) covers some 7,600 km² and supports more than 100,000 inhabitants along with different kinds of flora and fauna. Sixty to 65 percent of the total trekkers pouring into Nepal visit this area, amounting to about 45,000 trekkers and their supporting staffs annually.

In order to effectively manage the area, ACAP has been conducting a variety of community-based activities, with conservation education and extension at the heart of its programs. ACAP is establishing different local committees for the management of the region's rich and unique natural and cultural heritage mixing tourism with a variety of sustainable community development activities. In ensuring sustainability, ACAP focuses upon people rather than any particular species of flora and fauna, and necessarily plays a catalytic role to achieve this goal, namely conservation for development.

The Annapurna Conservation Area Project

Conservation programs started in Nepal in 1970 when His Late Majesty, the King of Mahendra, initiated the establishment of a park and protected areas system. The National Park and Wildlife Conservation Act was promulgated in 1973 and in the same year the Royal Chitawan National Park was declared as the country's first national park. The main objective was to protect endangered species like rhinoceros, tiger, gaur and elephant. Then a series of national parks and wildlife reserves was established within the next decade resulting in 12 national parks and wildlife reserves by 1984 in different regions of the country, from the mountains to the Terai. These protected areas constituted over 7% of the total area of the country. Today Nepal enjoys having 15 protected areas including two conservation areas and one hunting reserve constituting about 14% of the total land area.

At present law enforcement and protection are shared by the Department of National Park and Wildlife Conservation (DNPWC) and the Royal Nepal Army (RNA). The presence of RNA has both positive and negative impacts; the positive being an increase in wildlife in some protected areas because RNA has been successful in deterring poaching. DNPWC records and survey results, where available, show that populations of many mammals have increased greatly within reserves. This includes the tiger and

rhinoceros in Chitawan, black buck in Guleria, ungulates near Bardia, wild buffalo in Koshi Tapu and tahr and musk deer in Sagarmatha and Langtang national parks (Heinen and Yonzon 1994). On the negative side, fuelwood demands have increased in an already fuelwood deficient area, adding more pressure to the natural resource base due to the presence of military personnel (comprising 160 company and 600 battalion men). Besides, the RNA protection unit takes up about 50% of the department's annual budget (Banskota 1990).

A national park or wildlife reserve has been defined as an area set aside for conservation and management of the natural environment, including fauna, flora and landscape elements (National Parks and Wildlife Conservation Act 1973). It excludes the indigenous inhabitants who have been settled there for ages. The existing act provides a long list of activities that are prohibited in the national parks and reserves, including cutting of trees, collecting of fodder, hunting and so forth. During the establishment of the national parks, the indigenous inhabitants were either evicted or were excluded from the management plan (e.g., Sagarmatha and Langtang). In all of the mountain parks, objections were raised during their establishment (Upreti 1987), when local residents feared the central government would confiscate their traditional access right to resources. Obviously they had witnessed the consequences and were victimized when a new forest law nationalized all the forest in 1957. It obviously failed and the forests were finally "given back" to the communities in the 1970's, but this act did not completely restore the trust of the local people towards their government. Hence it is still the attitude of the villagers living in and around national parks and reserves that nature is being taken care of by the government, and that they can go ahead and abuse the surrounding lands - actions that isolate national parks and reserves as "islands" of habitat which are subject to increasing threat of insularity.

The marked contrast between limited resources outside the park and more abundant resources inside became evident as pressures on resources intensified. People are increasingly willing to risk fines or imprisonment in order to satisfy their basic need for fodder and fuelwood, thereby threatening the very diversity even inside a protected area. At least four people were killed during such conflicts in Chitawan National Park and many were wounded (C.P. Gurung pers. comm.). Endangered species like rhinoceros, tiger and snow leopard are being poached in national parks and reserves even after decades of protection (Heinen and Leisure 1993). The very nature of national parks and reserves is based upon the western concept of primarily protecting the flora and fauna. Although more than two decades have passed since the establishment of the Nepal's first national park, park/people conflicts remain a burning issue to this day.

Conservation must include human needs in the case of a developing country like Nepal where the majority of people are rural and depend heavily on resources within or near protected areas. Without people, the mountain park cannot exist and vice versa in the long run. For instance, 1,500,000 hectares of cultivable lands have been created on mountain and hill slopes and if these terraces were abandoned, they would collapse under the torrential downpour of monsoon rains (Shrestha, 1990). It is in this context that the development of national parks and protected areas has to be conceptualized at a higher level, namely through economically viable and environmentally sound development programs.

Equally important is the need for an effective implementation program that involves the full participation of the local people. It is on this basis that the "Conservation Area" concept emerged in the Annapurna area: people of many different ethnic backgrounds live within ACAP's 7,600 km², and all are inextricably linked to emerging social and economical problems. In the spring of 1985, His Majesty the King issued a royal directive in which management of the area was given to KMTNC with financial assistance from World Wildlife Fund-USA. Accordingly, three experts: a geographer, park specialist and anthropologist, were assigned to develop a guiding management strategy, thereby pioneering the conservation area concept described above. ACAP was implemented in September 1986 and aimed at protecting and

managing the area by reducing environmental degradation due to poverty, population growth and, more recently, the influx of more than 85,000 tourists and their supporting staffs, by integrating the region's economy and ecology. Relying heavily on local participation, ACAP began to establish village conservation committees and implement other grassroots approaches that integrated sound resource management into the traditional framework (Gurung 1990). The project policy was to move slowly and cautiously, and a pilot program was first established in Ghandruk over an area of about 200 km². In 1990 it increased the area to about 1,500 km² and finally in 1992/3, conservation/development activities were expanded to cover the full area.

Goals, Objectives, Strategies, and Programs

The main goal and objectives of the project are to protect the natural and cultural environment of the Annapurna region and to bring about its sustainable development within the context of the motto, "Conservation for Development."

Sustainability

Issue: Several outside funded projects have been initiated to address conservation issues, but none have continued for a long time. A good example is the failure of the joint US-Nepalese Resource Conservation Project. One drawback of these projects was that they lacked the concept of sustainability within their policy framework. Thus, when the donor agencies left, the projects mostly collapsed, thereby wasting time, energy and resources with little or no improvement in the village ecology and economy.

Approach: ACAP has learned a lesson from such past mistakes and has thus focused on ensuring sustainability (particularly in terms of the financial aspect), once funding from outside donors ceased. ACAP started collecting entry user fees (US\$13 per person) from all of the international trekkers who visit the area. Up to now a substantial amount has been collected (over NRs 50,000,000) which has been deposited in an endowment fund, the interest of which is to be used once special funding is terminated, thereby putting no financial burden on either the government or poor local people. A similar approach is also applied at the community level where local people are trained and/or provisions are made for the community projects to continue. A visible example is the community-run Ghandruk health post (which has an endowment fund of Rs 300,000) and the electric power plant which is being run independently by the community.

Environmental Dependencies and Alternatives

Issue: Rural people are heavily dependent upon natural resources such as forest and pasture lands due to the very nature of their traditional agriculture, trans-human livestock grazing, and poverty: over 90% of their energy needs are provided by forest resources. The more remote regions like Manang and Mustang suffer from food deficits. Local populations are growing at an annual rate of 2.5% and exerting continued pressure upon the degrading natural resource base, while trekking tourism adds further to the negative impacts on the forest. Steep slopes, high erosion potential and landslides further aggravate the complexity of environmental management. A basic problem is that no alternatives to traditional resources are available to the local people, or if available, cannot be afforded in most cases (Gurung 1990).

Approach: The basic human need is to meet the increasing demand for fuelwood, timber and fodder, and in the absence of alternatives forests and wildlife are disappearing along with biodiversity in general. Demands can be reduced through direct interventions to encourage conservation and the use of more efficient technologies (World Bank 1992:47). ACAP's strategy for this problem is multifaceted: for example, forest management by conservation and development committees (CDCs) is promoted in each distinct, traditionally allocated unit area.

Committees in each village development committee (VDC), the smallest political administrative unit, and sub-CDCs from each village or ward are given full responsibility to manage, protect and utilize forests within their jurisdiction, using indigenous forest management systems that have evolved through trial and error over hundreds of years. In addition, ACAP has introduced new practices, including multiple use of forests, marketing finished products rather than crudely sawn planks, and guarding areas where illegal actions have taken place in the past. Harmful forest activities are discouraged. For example, Buddhists in ACAP's northern areas keep at least one torsyo (prayer flag pole) per household, for which the finest and the most slender young trees are felled. In some places, the torsyo are replaced three times annually with deleterious effects on forest regeneration. One such place is Chame in Manang district (225 of the finest trees used to be cut this way by the 75 households), but ACAP motivated the village through its political and religious leaders or lamas to replace prayer flags only once a year, convincing them that the older a torsyo is, the better. Tree nurseries have been established in each sector of ACAP. Currently there are 18 such nurseries capable of producing 116,649 seedlings (ACA, 1994), out of which 9 nurseries are private. More nurseries are being established in Manang, Jomsom, Bhujung and Lo-Manthang. Seedlings are planted in private as well as community lands for fuelwood, timber and fodder purposes.

Simple alternative energy technologies developed by ACAP are being implemented widely and very successfully. Improved smokeless stoves which are designed to use less fuelwood are being widely introduced in both households and hotels. A back-boiler water heater is another simple technology that reduces fuelwood use by at least 30-40% (Gurung 1992). In the past, lodges used separate fireplaces for heating hot water for hot baths favored by tourists. Back-boiler water heaters can be adapted to existing stoves with only slight modification, saving energy and time devoted to fuelwood collection. Over 200 such back boilers had been installed by 1992 and an additional 84 were installed during fiscal year 1993/94 (ACAP 1994). Now at least one locally trained alternative energy assistant who can manufacture complete back boilers is working in each sector of ACAP.

Since back boilers and improved stoves are based on the forest resources, solar water heaters have also been introduced. However, these are expensive, and it has taken some time to convince hotel owners to use them. At present, the major hotel owners along the route, hosting the greatest number of tourists, have installed solar water heaters with ACAP's assistance. Kerosene depots have also been opened in different sectors. Eight kerosene depots are currently being operated by community-based committees operating under the aegis of lodge management committees. They provide kerosene to hotels, organized trekking groups and households on a regular basis and at a cheap rate. However, since kerosene is imported from India, changes in the geo-political situation may affect the availability of the kerosene. In 1989 and again in 1991, the depots had to be shut down, creating a big problem.

To overcome these factors, ACAP realizes that its alternative energy resource must be based upon a renewable resource available from within the country, and accordingly is installing small micro-hydroelectricity plants for cooking, lighting and heating purposes. Two community-owned micro-hydroelectricity schemes are already functioning in Ghandruk and Sikles. Five sites are either under investigation or construction: two in Lo-Manthang, one in Manang, one in Bhujung and one in Tikhedunga (Ghandruk). Under this program, low-wattage electrical cookers are being introduced to areas with electricity.

Grass Roots Approach

Issue: Certain human behavior and activities are the root cause of continued environmental degradation and loss of biodiversity, whether resource decisions made at the individual, community or national level. Experience has repeatedly shown

that "top-down" or large-scale projects rarely succeed, especially if the local people are not consulted or involved in project design and implementation.

Approach: The best option for addressing environmental degradation lies in a system of local community-based resource management with built-in safeguards against over-utilization. Indigenous knowledge and skills are key resources that should be used in conjunction with modern techniques in the effort to craft sustainable conservation programs. ACAP has learned from other failed projects the consequences of not considering the vital role that local people must play, and consequently places their interests and needs first. It has ensured local participation from planning to implementation, with at least a 50% local contribution, either in the form of labor or cash. Communities are most motivated when they realize that the work or project is their own, i.e., when they have ownership of the activity. Committees help guide such activities, with its members being selected by the villagers themselves. The main committee is known as the Conservation and Development Committee or CDC; under each CDC there may be other committees, such as a lodge management committee, mother group committee, electricity management committee, health post management committee, and gompa management committee, each of which are responsible to the main CDC. The kerosene depot committee works closely with the lodge committee and is responsible for the efficient distribution of kerosene and/or bottled gas.

There are now 24 CDCs with 360 members and some 54 sub-CDCs. There are 19 LMCs, 7 KDCs, 17 HPMCs and 124 mother groups within ACA. And more are being formed from local incentives in recently opened Stage II areas. These independent committees are functioning very smoothly and are self-g geared towards being financially sustainable.

Catalytic Role-Playing

Approach: Often programs in a developing country are duplicated due to lack of coordination, resulting in wasted energy, time and resources with the majority of the population remaining deprived of basic facilities such as drinking water, health care and education.

Programs: His Majesty's Government and various national and international agencies have and are implementing many development and conservation projects within the same region. ACAP's aim is not to duplicate or take over these, but rather to work closely with other projects to improve the quality of life for the local inhabitants (Gurung 1990). Currently, ACAP works with an Australian project, the Lumle agricultural research project, and CARE, as well as other local level projects. In this regard, it acts as a lami or "matchmaker" in facilitating or attracting outside resources to fulfill local needs, or attracting donors for the often illiterate and ignorant villagers who do not know how to approach the donors or acquire such resources or financial assistance. An excellent example of this function is the work of students from the "Global Route" programs of the US, who built two day-care centers and one health post in Manang in 1994/95.

Multiple Land-Use Concept

Issue: The mixed farming system so widespread in the ACAP region depends upon the maintenance of a delicate balance between resources and use. Such factors as migration, constant population growth and over-utilization of wildland resources, particularly due to the recent influx of tourists, are of special concern in this regard.

Approach: The multiple land use concept or integrated approach is an important element of ACAP's overall philosophy, and the project attempts to integrate tourism, farming, forestry and biodiversity conservation. However, each sector usually emphasizes a set of related programs, such as tourism management and conservation in

Manang, Ghandruk and Jomsom; agroforestry in Lwang and Sikles; heritage conservation in Lo-Manthang, and poverty alleviation in Bhujung, with an overall goal of "conservation for development." Advantages are many: unlike the government-run programs, in which separate departments exist for the management and supervision of various activities, ACAP conducts such programs simultaneously, thereby convincing people that it is more responsible and more thoughtful of their needs and problems.

Conservation Education and Extension Program

Issue: One of the main problems in engendering participation for conservation is the view local people have of conservation being antithetical to development. Efforts to involve local people in nature conservation will not succeed over the long-run unless they are convinced such actions are in their own economic and cultural self-interest as well. Until recently, there have been no formal or organized conservation education programs in Nepal to address this need.

Strategies and Programs: ACAP views its Conservation Education and Extension Program (CEEP) as being at the heart of the overall programs. CEEP was introduced not only as a program for diffusing ideas or appropriate technologies, but also as a means to bring about a change in the prevailing attitudes that would lead to the wise use and management of natural resources.

For the execution of CEEP, ACAP has identified three target groups: children in the village, the adult population and international visitors. Such activities as home visits and extension, village mass meetings, mobile camps (with multi-disciplinary teams), clean-up campaigns, study tours, regular conservation education programs at schools, producing different pamphlets, booklets and films, are undertaken.

Sustainable Community Development

Issue: Meeting basic human needs constitutes the most powerful determinant of people's attitudes and consequently their behavior toward the environment, so that it is not surprising that poverty leads to destructive actions such as deforestation or soil erosion. People may appreciate the consequences of their actions, but lack the power or resources to act otherwise. The future viability of Annapurna hinges upon local people's willingness to cooperate and enact sustainable resource utilization practices, which in turn is related to the ability of the area to provide the local communities with benefits that are concrete enough for people to want to maintain the area as a protected area. Previous experience has taught ACAP that in the absence of such provisions, the efficacy of even the "bottom-up" method will be limited.

Approach: Most of the area is very remote and basic facilities are lacking, thus creating severe hardships for its inhabitants. To win the heart of the local people and lure them into the mainstream of conservation, ACAP has been helping local communities by providing them with financial and technical assistance for community development. However, for most of the community development projects it initiates and implements, at least 50% of the cost should be contributed by the community benefitted in order to ensure lasting commitment and concern for the project by the local people: ACAP's policy is one of "no free lunch." Many schools, bridges, trails, health posts and drinking water programs have been built or supported in terms of materials. For example, 20 village schools were upgraded within the fiscal year 1993/94. In addition, many trails, bridges and toilets have been built or upgraded. In certain instances, an endowment fund has been created in Manthan, Ghandruk and Bhujung to run the health posts. Fund interest is used to purchase required medicines and to pay a small salary to the staff. Health post support programs of ACAP have been very popular in places like Lo-Manthang, where people formerly died even when attacked by diarrhea or gastric problems.

Women in Conservation and Development

Issue: As 50% of the area's population are women, their participation in conservation and development is important. Since its initiation, ACAP has acknowledged the necessity of determining the defining characters such as gender, class, power, ethnicity, and religion of the primary stakeholders. Often, women comprise one of the most important stakeholder groups, for they collect fuelwood and fodder or keep the surroundings clean. Unless, and until, this huge mass can be mobilized, the achievement of ACAP's goal is doubtful.

Approach: Women's participation has been emphasized since project inception through the formation of "mother groups." According to a provision in ACAP's mandate, when forming CDCs, at least one committee member should be female. In order to highlight the role of women, a separate body was created within the ACAP program from 1990, supervised by a female development officer. At least one assistant level female staff is now active in each sector, looking after the program. The Women's Development section looks after activities like adult literacy, day care centers, sanitation and income generating schemes. During 1995 in Manang alone, 11 mother groups were organized and the result, particularly in sanitation, was very promising. Regularly every Saturday, or twice a month, the village streets are cleaned. Altogether 124 mother groups with 1,488 members are active and functioning well in the entire conservation area, out of which 78 mother groups have been registered. More are being formed as the demand from other villages increases with implementation of the Project's Phase II.

The mother group raises funds by organizing folk dances, selling grasses from their plantation areas, and even penalizing card players and excessive drinkers, and using the funds for community affairs. In terms of income generating activities, the mother groups have played a great role, and some of the enterprises established by trained women's groups within ACA consist of five tea shops, one Gurung display room, two well-run lodges, 11 poultry farms, one goat raising program, one rabbit farming program, one camping site, one laundry and shower room, and three consumer shops.

Tourism Development

Issue: Under UNCED's Agenda 21, Chapter 13 (Sustainable Development in Mountain Regions), tourism is identified as one of the key activities for providing alternative livelihood opportunities for mountain people. In a context where the pressure of population and activities on natural resources has risen consistently for the last decade, tourism development offers considerable prospects for alternative gainful employment and income generation.

On the other hand, in the Annapurna region, rapidly growing tourism is exerting pressure on the environment which, in fact, is the very basis for such mountain tourism in the first place. The ACAP region is visited by 60-65% of the tourists who travel to Nepal, and in 1993/94 this amounted to 43,331 visitors in the Annapurna region. Estimates show that on average one trekker brings at least twice the number of support staff. Although this volume of tourists is not as large as that of some European destinations (Salzburg with an area of 8,000 km², for example, hosts 1,500,000 tourists per year) (Uitz 1993 quoted in Shrestha 1994), the overcrowding effect in mountain base camps or along popular routes can be more pronounced and well publicized.

The situation is further exacerbated by the fact that the majority of the trekkers tend to be seasonally and geographically concentrated in three areas: the Annapurna Sanctuary, Thorong Phedi and Gorepani village, a major trail intersection. Owing to prevailing weather patterns, more than 60% of visitors come during four months of the year, in October to November and March to April (Gurung and Coursey 1994).

Over 700 tea shops and lodges have been built to cater to tourists, whose needs are

much greater than local standards. More are being constructed; for example in Manang about three lodges are being built annually (Gurung 1995). Deforestation is one of the most acute problems due to the influx of tourism, although with the import of virtually all food and housekeeping the local economies are inflated. Inadequate sanitation facilities and indiscriminate practices by tourists, trekking groups or lodge owners have left many areas with bio-degradable waste materials. Besides, tourism, as a messenger of outside values and behavior, tends to affect the local cultural values and attitudes.

Approach: ACAP believes that tourism, if properly managed, can bring great benefit to the land and people of the Annapurna region. This has been demonstrated most clearly in the Ghandruk and Chhomrong areas. Here, rather than a necessary evil, tourists are regarded as partners in fulfilling the goals of biodiversity conservation, culture revitalization and also in bringing about sustainable development.

Various activities that help tourists as well as lodge owners are being conducted, including periodic lodge owner training and awareness camps. Many kerosene and gas depots have been opened and operated, particularly in heavily impacted areas. To highlight ACAP's philosophy, information centers are there for the tourist to inform them of ACAP and the local environment or culture. Through regular slide/video shows and other pamphlets and booklets, the local populace as well as international visitors are made aware of the linkage between conservation and development. Certain fee charges from the lodge owners' income go to the community, so as to develop positive feelings among those who are not directly benefitted from tourism.

From 1993 onwards a separate model eco-tourism project was launched in the Pokhara-Sikles-Ghalekharka region, and funded by Asian Development Bank, the Philippines and the Tourism Department of HMG. Moreover, Developing Women's Entrepreneurship in Tourism is underway to encourage women to develop entrepreneurial skills.

Miscellaneous Activities

Research: Scientific research and baseline surveys are very important to support the implemented conservation and development projects and to track their success. Several research programs have been conducted within ACA, including a floristic survey and the Biodiversity Conservation Data Project, not to mention several small scale surveys like hotel and household surveys. The prime examples of large scale research programs include a study of blue sheep and snow leopard. A wildlife management plan has also been prepared for the entire region and more management research has been emphasized. A detailed survey of medicinal plants for possible commercial cultivation within the region has been completed.

Agricultural and Livestock Development: Agricultural development is concerned with the improvement of traditional practices along with the incorporation of new, appropriate methods. It is mainly concentrated in Sikles under the Integrated Agricultural Development Project (IADP) and in Lwang under the Agro-Forestry and Community Development Program (AFCDP). Different demonstration farms for vegetable production have been established, not only in Sikles and Lwang, but also in Manang, Bhujung and Lo-Manthang. Some 41 nurseries (out of which 31 are private) were operated during the fiscal year 1993/94 (ACAP 1994). A variety of programs concerned with livestock and poultry have been ongoing in different sectors, and training and workshops are also arranged regularly.

Shortcomings of ACAP

A major problem encountered during project implementation has centred on crop and livestock depredation by wildlife that is not as easy to resolve, as villagers fear that ACAP might take over the forest, and local unwillingness to accept certain changes in forest policies. Occasionally VDC and CDC members have had personality

clashes, but these are often resolved in mutual understanding. However, people/wildlife conflicts are still a hot issue, and hence this matter is dealt with in more detail in this paper.

ACA represents a highly diverse region, as it bridges the western and eastern Himalayan elements as well as the Tibetan elements with an invasion of Indian elements from the south; within short distances of a few kilometers there is a wide range of habitats ranging from luxuriant wet, mesic forest to dramatic dry alpine steppe shrubland and grassland. Most animals listed under Nepal's Schedule II (that can be legally harvested) are thus found in the region, with some in need of protection according to Heinen and Yonzon (1994).

Some of the last remaining snow leopards dwelling in the remote northern alpine habitats within ACA are still being poached. A few months ago a snow leopard was killed in upper Lo-Manthan in retribution for its killing livestock, and the carcass was paraded through the streets and money was collected for the hunter, considered a hero by many local residents. In upper Manang a snow leopard was killed for the same reason in autumn last year. Habitat for the very rare panda (population in Nepal estimated at about 250 on average) is also slowly shrinking due to grazing, hunting and other kinds of human activities, as in lower Manang. The very important musk deer are still being commercially poached for their valuable musk. Snares are repeatedly found by ACAP field staff and villagers in Manang and Mustang. Subsistence hunting is also being practiced illegally throughout the southern belt, as most inhabitants are very poor and even the sale of a pheasant fetching Rs. 100 is considered valuable income in the absence of other alternative sources of cash.

This should not imply that wild animals are being indiscriminately destroyed within ACA, but rather that their future would be bleak were proper policies not established to encourage conservation or sustainable use. The food chain concept is too complex for an illiterate villager to understand, and besides, villager enmity towards predators (snow leopards, common leopards and wild dogs) and crop competition (Himalayan black bear, monkeys and barking deer) is a very obvious and major constraint to conservation of these species. Many ACAP staff involved in extension programs are repeatedly asked the same question: why are you protecting such harmful animals? The villagers apparently do not believe ACAP's explanation that a natural balance of prey/predators solves these problems in the long run.

Obviously, the ACAP's approach regarding the conservation of the region's wildlife has not been adequate. Such actions as capturing the offending animal (young ones particularly) and bringing it to the ACAP office show that local people in the region have not well understood ACAP's philosophy behind protecting wildlife. (A cub was captured in Sikles and given to the ACAP office before being transferred to the Central Zoo in Kathmandu.) The main issue appears to be that ordinary people only understand the value of conserving a patch of forest in terms of its providing a prime source of fodder, fuelwood and timber but not in terms of protecting wild animals that dwell in the same forest tract.

The very policy of ACAP that says the focal point should be people has overlooked the need for wildlife management. Forests have been protected to fulfill the fuelwood, timber and fodder demands of local communities; a massive reforestation program has been launched, and ACAP has been so busy with afforestation and plantations or community development works (constructing taps and bridges, for example) that it has not given sufficient thought to scientific wildlife management or biodiversity conservation. Nor has it tried to resolve livestock and crop depredation, the very issue that always brings about visible people/wildlife conflict.

Snow Leopard Conservation Actions

ACAP established its Manang regional headquarters office in 1993. Besides resource

conservation and sustainable rural development, its staff attempted to address the question of snow leopard conservation for several important reasons: (1) The snow leopard is seen as a keystone species of the Nyeshang and Nar-Phu valley ecosystem, and (2) the killing of snow leopards by local herders in retaliation for livestock depredation was known to have been very intense during in the 1980's and early 1990's, to the point that local snow leopard populations were threatened. In developing the community-based snow leopard programme, the office was guided by two key factors:

*Traditional Nyeshang society is very cohesive, which provided ACAP with several options, either coordinating its work through an existing committee, or letting local people decide for themselves whether to create a new committee or not. They chose to establish a special committee.

*Since Buddhism is the prevailing religion of local people, the killing of wildlife is not readily sanctioned, and ACAP was therefore able to harness and promote this worthwhile custom during its snow leopard conservation awareness campaigns (undertaken in 1993-94). These were part of a comprehensive extension programme that involved mobile video shows, public meetings and group discussions, as well as household-level visits.

Actions to date: In the autumn of 1994-95, ACAP managed to implement a ban on hunting of blue sheep by the Royal Nepalese Army in the valley through ministerial level negotiations. A 12-member snow leopard conservation committee was formed in the Nyeshang valley, consisting of two members from each village of the six Village Development Committees (VDCs). Typically, members consisted of influential shepherds or herders and an elected member from the local VDC. The sum of Rs 100,000 was deposited in a Snow Leopard Conservation Endowment Fund, with the interest accruing for use in projects approved by the new snow leopard conservation committee.

During 1995-96, the lama from Phu village was honoured in a public meeting for his outstanding snow leopard conservation work, specifically the banning of snow leopard hunting in the Phu valley. He was awarded Rs 4,000 and a silver brass shield imprinted with images of snow leopard and its prey, the blue sheep. An additional Rs 75,000 was deposited in the Nyeshang Valley conservation fund, and a pair of pure Tibetan mastiffs were introduced from the lower Manang area to serve as guard-dog breeding stock for the Nyeshang herders. During 1996-97, more money was deposited in this fund (Rs 190,000), in addition to a new fund to support the work of the snow leopard committee in the Nar-Phu valley (Rs 50,000).

In Manang, ACAP allocated Rs 85,000 as a matching fund for the local musk deer conservation committee. In a self-initiated proclamation made late in 1994, the local Manang village committee cancelled a long-standing tradition of offering a bounty to those local people killing a snow leopard (worth up to Rs 4,000 per animal). In this regard, it is worth noting that the village authority was more powerful than the district committee. In recognition of these actions, ACAP co-funded the development of water holes in two pastures in tandem with the VDC annual budget. Livestock guarding and herding was also strengthened, especially in Bragka and Khangsar villages by expanding the number of communal herders available for guarding all village animals. These shepherds are paid partly from the interest accruing in the endowment fund established by ACAP.

Musk deer conservation committees have been formed in Manang and Pisang villages, whose inhabitants independently raised Rs 85,000 and Rs 120,000 to support the committee's activities. Each enacted its own rules and regulations, which encouraged local residents to remove any snares they found in the forest.

Future needs and priorities: In the future, ACAP hopes to amalgamate the two existing and separate snow leopard and musk deer conservation committees into a single unit to address both issues, and to function as a sub-committee of the

Conservation and Development Committee, the main executive body of ACAP. Given increased interest, a regional committee could be formed, and the program extended not only in the Nar Phu valley but also to Mustang District and northern Gorkha, both of which are now under KMTNC jurisdiction. The strengthening of the herding dog breeding program is another priority, along with the development of educational materials and public awareness programs. The latter could include the distribution of booklets on snow leopard and its prey, as well as environmental awareness camps for school children. Pasture improvements must receive greater focus along with some assistance for enhancing stall-feeding practices. Finally, a status survey of snow leopard and blue sheep should be undertaken in northern Gorkha.

Conclusions

With worldwide loss of biodiversity accelerating in recent decades, awareness has grown of the potentially disastrous consequences that such eventualities will have to the earth's ecological functions and the fulfillment of basic human needs. This trend is especially important in developing countries like Nepal where most local people depend on biological resources to a far greater extent than in the western world. In remote regions like Annapurna, where the people are, and will continue to be for the foreseeable future, dependent upon rural biological resources for food, shelter and income, the maintenance of healthy, productive, and diverse ecosystems will allow them to meet the challenges of the next decades. Hence, the Annapurna region faces enormous challenges in striving to conserve its biological and cultural heritage, while also improving people's standards of living.

Past Perspectives

In past decades, conservation efforts in Nepal tended to emphasize international, scientific values of biological diversity and to focus on areas of high endemic species richness. Accordingly, a series of national parks and reserves were established, but these later became "green islands" struggling within the "human sea." The national parks and wildlife reserves have been, and are still, essential nuclei of the overall strategy to conserve nature. However, the conservationists' view now must extend beyond mere parks and reserves if they are to ensure these will not become simply large open air zoos over the course of the next century. These ideals, therefore, led to the present perspective which espouse a focal point of the conservation in the developing countries toward local people. The very existence of these protected areas depends upon ensuring that direct benefits flow to them.

Present Perspectives

Judging Nepal's overwhelming dependence on biological resources, new and aggressive strategies for biological resource conservation which incorporate local and national values are urgently required; these are the strategies and objectives that ACAP desires to fulfill. There is a new awareness among international donors and the Nepal government that sustainable development and biodiversity conservation are intricately linked. Having witnessed past activities in other parts of the country, ACAP acknowledged some eight years ago that human use of biological resources is fundamental to development in the region. Nature and biodiversity conservation must be made relevant to the Nepalese populace and must be valued in terms of their requirements. Poverty, steady population growth and the impact of outside elements, particularly in the form of tourism, are prime forces eroding biodiversity and leading to ecosystem degradation in ACA. Hence, development (as ACAP has shown) can be a potent force for conservation, provided that economic growth improves the well-being of all local people.

Several programs such as soil conservation, forestry and alternative energy development will have limited impact as long as the present morbidity remains. The pre-condition to the protection of the Himalayan environment is tackling the economic poverty of the Himalayan people (Gurung 1987). Hence, ACAP believes that

major focus of their conservation effort lies with people and not any particular species of flora or fauna (Gurung 1992).

Human activities and ecological functions are intricately linked in complex and far reaching ways. Ecosystem function, wildlife migration patterns, local climate, river flow, seed dispersal, etc., all cover or cross into areas larger than most projects, parks or government administrative zones. Thus, there is no longer room in ACA for development to be implemented through isolated and independent activities without resulting in local, regional or global consequences. Hence, ACAP is attempting to "think globally, act locally."

Ultimate Goal

According to Wells and Brandon (1992), "Although the intention is to involve local people in the design of projects... while local communities may identify the problems which concern them (and which may or may not match the objectives of various projects or donors), true participation is often developed after a project has already been accepted and is under implementation." This is the case with ACAP; since its establishment, it took five years for the project to incubate into the consciousness, gain trust and mobilize people in the pilot area. The ultimate goal is to hand over the management of the area to the indigenous people, and accordingly, ACAP is concentrating upon methodically handing over the management to local people during Stage I. Continued support will be provided during Stage II in order to further mobilize and strengthen local capacity for resource management (ACAP 1994).