Community and Tourism Linkages

A major aspect of mountain community development through tourism will concern how strongly these two sectors are linked. This section attempts to shed some light on the link between tourism and community development by addressing import leakages. Imports are considered to be purchases made by local households and lodges from outside the area. The higher the degree of imports, the higher will be the leakage, implying a low level of saving of tourism income. Although not all types of purchases can be made locally, many perishable items can be produced locally to cater to the tourists. Moreover, purchases made by households are not considered here due to lack of information. As has been discussed in Chapter 2, for sustainable mountain development, tourism and community development should complement one another (area 6 in Figure 5).

The case study areas are heavily dependent on agriculture. As a result, the dependency of lodges on imports for food supplies to cater to tourists will provide some idea of the linkage between tourism and community. Lodge owners derive their income from tourists by providing them with services. They are required to purchase a variety of items from the local community and perhaps from other areas to cater to tourists, unless they are able to draw on their own sources. In the latter case, too, imports of basic food items should be low. Even though many lodge owners may supply different food items from their own (i.e., local) sources, some items nevertheless will have to be purchased. Thus lodge owners were asked to provide information on the share of expenditure for different items by source of purchase (local or import) in order to understand lodge dependency on the local community in catering to tourists. The results are summarised in Table 4.56.

Rice is a prime food item required for catering to tourist needs. In Ghorepani, lodges indicated that all purchasing of rice took place in Pokhara or other towns or areas. Ghorepani does not produce its own rice. In Ghandruk, households do cultivate rice but, as implied by local households and indicated by lodge owners, purchasing is done in Pokhara. Of the total expenditure for rice by lodges in Ghandruk, local purchases account for only three per cent, as against 97 per cent through imports.

Lodge owners in Ghorepani spend more on imported flour than lodge owners in Ghandruk. Flour is processed from grains locally if flour mills exist. Value-added is generated which can be retained in the community. Flour mills can thus be seen as a part of community development, generating not only value-

added but also employment. From this point of view, the linkage between community development and tourism is stronger in Ghandruk than in Ghorepani, as 48 per cent of expenditure for flour accrues locally. In Ghorepani, the local purchase of flour accounts for only about four per cent.

Bread requires flour, and its preparation generates employment and value-added. Specialised techniques as well as technologies are required, and they in turn affect community development. In Ghandruk, 48 per cent of the expenditure by lodge owners accrues to local bread makers, and, in Ghorepani, this percentage was much lower (15%), indicating a weaker linkage here between tourism and community development in Ghorepani than in Ghandruk.

Vegetables can be cultivated in almost any place. From the angle of vegetable production, the link between tourism and community development in both areas appears to be relatively stronger than in the above cases discussed. In Ghandruk and Ghorepani, local purchase of vegetables accounts for 79 and 85 per cent of the total expenditure for vegetables respectively, as reported by the lodge owners. Similar responses were obtained in the case of meat and furniture expenses. In other items, such as eggs, milk, and fruits, both areas heavily rely on imports. Again, items such as cloth, drinks, jam, and butter have to be imported, since they cannot be produced cost effectively in areas like Ghandruk and Ghorepani. However, items such as eggs and milk have the potential to be produced locally.

Based on the information presented above, the link between tourism and community development is not very strong. Many items, such as eggs, milk, and fruits, can be locally produced, but such does not appear to be happening. If the market for these products did not exist, lodge owners would not be importing these items. Imports of these items add to the cost which tourists have to pay. In addition, such purchases of imports are leakages which the community could retain if they were to be produced locally. The scope for exploiting tourism for local community development can be widened, given that about 50 per cent of the GT purchase a large part of their food needs in Pokhara. If perishable food items can be developed locally and their supply is assured, it is very likely that tour operators will opt for local purchases, since the availability of such items locally will save them the cost of transporting purchased food to the area.

Therefore, scope for further linking tourism with community development does exist. What is called for is enhancing local production activities, the production base and cross-sectoral linkages. Such links not only promote tourism and

community development directly, but also generate multiplier effects in the community. It should, however, be noted that not all leakages can be avoided, since many tourist needs require the purchase of commodities that are not locally produced. Nevertheless, the above results do indicate that, despite the unavoidable purchases that have to be made of imported items, there is scope for developing production of a variety of foodstuffs, which will help minimise such leakages. Also, in order to account for the leakages more fully, it is essential to have information on household purchases of different commodities. Such an understanding of imports generated by the local community will help identify areas that can be strengthened to promote the link and generate multiplier effects.

Furthermore, only those households that operate lodges reported direct links with tourism, and only 10 per cent reported an indirect linkage. Thus, in an overall sense, the results do not indicate that tourism and community development complement one another strongly. ACAP's programmes are concentrated more on conservation, community development (mostly social), and tourism awareness, with little attention being paid to income-generating schemes related to local production systems such as agriculture, livestock, and cottage industries. Although tourism has generated a small market for local surpluses, the fact is that efforts to increase such surpluses have not been adequately promoted, as indicated by the small percentage of households reporting having surpluses or selling surpluses to the tourist market. The perceived impact of tourism on agriculture, livestock, and horticulture has been found to be low; the majority of households perceived no change or no effects in the study area. This is also confirmed by the lodge owner survey: the majority of owners import vegetables and milk from outside the community.

The forward linkage of agricultural and non-agricultural activities in the study area is low, but the backward linkages of tourism, especially with community development, are also weak. This was indicated by the poverty of indirect houshold links with tourism. Although households did perceive benefits from tourism, these benefits are mostly in the form of employment, namely portering, so that a strong link between tourism and community development appears to be lacking. ACAP has not addressed income-generating issues adequately in the area; to improve this link, income-generating projects need to be emphasised and developed. Not only can this induce more saving, but indirect benefits of tourism can also be further enlarged, and this will provide stronger support for community development.

Assessment of Carrying Capacity

This section will address qualitatively the carrying capacity of the case study areas based on the discussion above and in earlier chapters. The methodology described in Chapter 2 will be utilised for the purpose. In Chapter 2, HER, MCD, and MTD were discussed at length, and it was shown that when carrying capacity considerations are invoked, the scope for community and tourism development tend to narrow. This, however, is not to say that possible benefits will reduced, only that unsustainable practices that do not promote the conservation of HER should be discouraged. There are potential benefits from promoting productivity of the existing resource base as well as community-level production activities. Scope also exists for using external knowledge to promote different dimensions of community and tourism development as well as to conserve HER. External factors that do not appear to be relevant suddenly come into picture once carrying capacity is considered and the mountain environment's linkage with the external world is taken into account. Additionally, areas that have potential uses can be further exploited to enhance mountain development. These are some of the issues that will be addressed in this section.

It was indicated in Chapter 2 that the carrying capacity of a complex environment, such as the Annapurna region and the case study areas, cannot be easily analysed without simplifying assumptions. As a result, it was indicated that a critical factor approach should be taken in order to understand and evaluate the carrying capacity. Critical factors are those that promote or encourage positive or negative inducements to conserve and/or develop HER, MCD, and MTD. The critical factors identified were critical areas, critical resources, critical institutions, and critical behaviour. For community and tourism development to be carried out within the carrying capacity of the mountain environment is also equally important. The last chapter has already discussed the two aspects of community and tourism development, and here only the carrying capacity will be discussed. Reference to Figure five will be made in the analysis.

Past activities have induced unsustainable features in different parts of the region. Stated differently, human activities as manifested in critical behaviour have induced encroachment into critical areass, and critical resources have either been directly or indirectly threatened (area 1 in Figure 5). The lack of critical institutions and infrastructure reinforced this situation. In other words, the situation in the Annapurna environment (HER) was already crossing carrying capacity limits (areas 4 and 5). It was with a view to improving the

carrying capacity - to reducing stress on the fragile ecosystems and improving the resource base and the quality of life of the mountain people - that ACAP was created.

The review discussed in Chapter 3 noted various programmes initiated by ACAP to improve the overall carrying capacity of the area. ACAP began its programme by focussing on three key areas, namely, community development (area 2), tourism development (area 3), and conservation (which is an element of HER, MCD, and MTD). Although no strict definitions of these concepts have been made by ACAP, there does appear to be an understanding of their role in its programmes. There are elements of the critical factor approach outlined in Chapter 2 in those parts of ACAP programmes that address carrying capacity. However, viewing the mountain environment as potentially rich in HER and tourism as a spur for local community development does not appear to have become adequately engrained. The different areas identified in Figure three provide the basis for evaluating this issue. This section will therefore deal with three separate but interrelated issues relating to carrying capacity of the Annapurna region. First, ACAP's approach to overall development in terms of critical factors will be addressed, second, the 'mountain development' perspective will be discussed, and finally, an assessment of the overall carrying capacity will be conducted.

Critical Area

ACAP's focus on the three areas of community, tourism development, and conservation, and the different programmes and polices initiated under it all deal with the critical factors. The formation of zones is a first step in defining critical areas. Different areas had already experienced different degrees of degradation and deterioration, and, depending on their status, the areas were classified into different management zones (Chart 2).

This identification of the management zones, although still broad, nevertheless should be followed in defining safe minimum standards to regulate types and volume of resources exploited by the host as well as the tourist population. Regulations governing hunting and the gathering of medicinal plants are two forms of safe minimum standards, in this case the safe minimum has been defined as a total ban.

If critical areas and safe minimum standards are defined without addressing the needs of the local people, the very purpose of delineating such areas would be defeated. However, the formation of such critical areas takes into

Chart 2: Management Zones in the Annapurna Region

Management Zones	Features	Management Implications
Special management zone	Selected areas of the greater Annapurna region which are being threatened by human (host & visitor) impact; they include Chamrong (Annapurna Sanctuary), Ghandruk-Chamrong-Ghorepani forest, Manang, Tilicho Lake, Chaune Forest.	High priority. Extensive monitoring of all aspects of tourism and environment, and a full-scale effort to develop and reverse trends.
Intensive management zone	Area of human settlement on southern slope, characterised by intensive agricultural and human activities.	Conservation education. All potential commercial development to be continuously assessed; encouragement of traditional management systems for forests and pastures.
Protected forest and seasonal grazing zones	Below wilderness zone and above intensive use zone.	No slash-and-burn agriculture. Restrictions imposed on collection of dried fuelwood, fodder, litter and timber, and a ban on hunting. Harvest of medicinal plants only for ritual, personal, or village purposes is allowed.
Wilderness zone	Upper elevation limits on seasonal grazing, roughly above 15,000 ft.	No development. Full protection.
Biotic and anthropological zone	Natural area where the influence of modern technology and outsider influence have not been noticeable on the traditional way of life.	Full exclusion of foreigners from the area other than those conducting scientific studies.

consideration local people's need for firewood, fodder, and other resources (HER).

The protected zone lies within two hours' distance from main settlements. In this zone, households are allowed to collect fodder, but tree harvesting for firewood or timber collection is not permitted. The semi-protected zone is a further distance away from settlements (two to four hours). In this zone, households are allowed to collect only dead wood, and tree felling or fodder collection is not permitted. The 'use zone' is the farthest distance away from settlements (at least four hours), and there tree felling is permitted after permission is obtained from the CDC.

Whether this critical area concept or zonation is effective depends on how households benefit from it. Programmes focussed on conserving critical areas are likely to be successful if the host population perceives the benefit from doing so. This perception of 'benefitting from' is perhaps the decisive factor in inducing participation of the local community, without which rural development programmes are unlikely to be successful. External intervention generally fails if such intervention does not bring positive benefits to the host population. The Forest Nationalisation Act was such a case in point, and, despite government regulation, forests are being degraded at an unprecedented rate. Tourism development likewise can be successful only if the host population perceives it will bring them benefits. Therefore, this study presupposes the perceptive ability of the host and visitor populations to understand carrying capacity, ACAP intervention, and the role of tourism. Based on the case study areas, it can be said that the host population perceives benefits from the critical areas. However, whether other households in other villages also perceive benefits still remains to be answered.

Critical areas are not only those that manifest negative impacts and, hence, need protection. Critical areas that offer comparative advantages in developing new products should also be identified in order to enhance benefits to the community. The opening of the eco-tourism circuit in the Sikles region is a case in point. Identifying critical areas requires assessing values of HER and promoting new products, but within the carrying capacity. In a large area such as the Annapurna region, there are potentially many critical areas where exploitation can generate positive benefits to mountain communities. The need to assess critical areas in terms of benefit generation does not appear to be adequately understood. Although from a tourism perspective the existing areas visited by tourists may not exhibit signs of congestion, they are perceived as doing such by the visitors. As the percentage of visitors who perceive

congestion increases, the (social) carrying capacity will be impaired and the benefits to the local people will decline.

Another critical area is the identification of poverty pockets. Poverty needs to be better addressed, and poverty pockets need to be identified as critical areas, since people from these areas will encroach on the resources to meet their basic needs. Who the poorest of the poor are, where they are located and what comparative advantage these areas have need to be evaluated. Some of these areas may have adequate HER for developing new tourism products to help mitigate poverty. There do appear to exist programmes directed towards poverty mitigation by identifying the poorest of the poor.

While it appears that the identification of critical areas has begun in a limited way, a great deal of work still remains to be done. In order to mitigate poverty and develop new products, to define safe minimum standards etc, the identification of critical areas becomes an important concern. Critical areas currently appear to be viewed only on the basis of their negative characteristics; their positive characteristics, as reflected in the value of HER, still remain to be assessed in order to promote community and tourism development. It is therefore necessary for ACAP to begin developing new products and new areas and to integrate these products and areas into community development (areas 2 and 6 in order) not only to enhance the carrying capacity of the overall region but also to avoid development that is unsustainable (areas 3 and 5), such as that which may result through overcrowding.

Critical Resources

Critical resources are those which experience relatively greater stress and are relatively more sensitive to increased human interference and thus need protection. Also, critical resources are those that are important for the daily needs of the local people but for which supply is scarce. The first type of critical resource is generally associated with some critical area and includes rare and endangered flora and fauna. Defining critical areas and protecting them implicitly protects some critical resources. Thus, in a sense, a critical area is a complement to a critical resource.

Some success is being achieved in protecting such critical resources, as indicated by the increasing frequency of depredation of livestock and raids on crops by wildlife. The host population has perceived that, in general, wildlife is more protected than before. However, this issue of crop raids and livestock

depredation has not been dealt with, and an increasing number of villagers have to put up with the problem. If the latter continues and its frequency increases, households are likely to take action to protect their crops and livestock from wildlife, with the results that unwanted critical behaviour (trapping, poisoning, hunting, and poaching) may increase. Appropriate incentive and disincentive mechanisms need to be devised to address this problem, as discussed below. It can be quite safely argued that critical areas have promoted the critical resources and hence contributed to the improvement of the biophysical carrying capacity.

However, this improvement in the carrying capacity cannot be considered to be sustainable, unless the question of why critical areas had to be defined in first place is addressed. Areas have turned into critical areas due to encroachment by people out to fulfil their basic needs directly or indirectly. Without addressing the issue of human needs met from HER, long- term sustainability is unlikely to be achieved.

Among the natural resources required to meet the daily needs of people, it is primarily food, firewood, and fodder which are becoming scarce. Gradual encroachment on forests to clear land for agriculture and exploit other resources has serious implications for the entire environment, including micro-ecosystems. ACAP's nursery-related programmes, afforestation programmes, seedling distribution, and introduction of kerosene depot, fuel-efficient technology, and electricity are all factors that help reduce stress on the critical resources (forest) and improve the carrying capacity. The introduction of electricity and fuel-efficient technology are examples of how external knowledge and technology (area 12 in Figure 3) can be internalised to enhance the carrying capacity of the mountain areas. At the same time, efforts made to replant areas and improve forest management enhance the carrying capacities in areas 1, 2, 3, 4, 5, and 6. The success of technology and forest management in reducing stress on one critical resource, namely, firewood, has had a multiplier effect on forest conservation and hence increased biomass.

There are certain issues raised by researchers and development professionals regarding ACAP's forest management practices. The first issue concerns whether ACAP management techniques and silvicultural practices are appropriate for improving the structure, composition, and biomass productivity, i.e., carrying capacity, of the forest. Forest yield can be increased through use of silvicultural practices such as thinning of new growth to improve overall tree growth, release cutting of overgrown trees, thinning of favoured species, and harvesting to encourage regeneration of certain species. Sophisticated

management techniques, however, require a high degree of compliance and are difficult to enforce in the absence of effective social control mechanisms. ACAP is currently focussing on social control before introducing more technical silvicultural practices. More technically trained and experienced staff are needed to conduct such silvicultural practices. Furthermore, it is not appropriate to practise silviculture without promoting biomass growth.

Also, on the socioeconomic side, carrying capacity will be very much strengthened if food supplies can be improved, since a large percentage of the population in the area experience food deficits. This aspect of critical resources, namely food, does not appear to have received much attention so far. This will undermine the overall sustainability and carrying capacity of the area, and efforts made in other areas may be seriously jeopardized. A strong link between community and tourism development is unlikely to be fostered if tourism continuously has to depend on imported food and the local community's potential to produce food is not improved.

An important element of enhancing the carrying capacity of the area has been the introduction of new technology and knowledge. Such intervention increases the dependence of mountain communities on the external world, which has implications for the carrying capacity (areas 7, 8, 10, and 11). But using a critical resource, such as water, to harness electricity is to be encouraged.

The price of the different technologies still appears to be a constraint. The use of such technologies by lodges in Ghandruk has not spilled over to households. The high price is a constraining factor, and, given the large majority of poor and subsistence households in the area, a wider adoption of such technology may not be forthcoming. Accessibility is another factor that adds to the price of imported fuels or technology. Ultimately, a wider use of electricity must be developed and emphasised, to be followed by a wider dissemination of firewood-saving technology.

Poverty and conservation can go hand in hand, mutually reinforcing one another under certain conditions. If poverty is exacerbated in mountain communities, their link with the external world is seriously jeopardised and their access to new knowledge and technology seriously curtailed (area 12). Thus, without programmes that aim to improve their incomes, poverty cannot be mitigated, and so, also, their access to external knowledge and technology cannot be enhanced. Although critical resources, such as fuel-efficient technology and electricity, help promote conservation, they would be useless

if households cannot afford to use them. Poverty is the main factor constraining their use. Reliance on kerosene may be unavoidable, but it is an external critical resource and its continuous promotion may not be a sustainable option relative to electricity. Income-generating activities in the ACAP region, aside from lodge operations, are seriously lacking. This has been discussed already in the context of community and tourism linkages and in that of leakages. If this linkage is not developed, all the efforts made by ACAP can be seriously retarded. Thus, from the critical resource point of view, the overall carrying capacity of the ACAP region is still vulnerable, as a large majority of the people do not have access to such resources.

Critical Infrastructure

Infrastructure is necessary for tourism development, but it alone is unlikely to improve the carrying capacity of the mountains if local people's infrastructural needs are not adequately addressed. Although a large majority of households in the case study area did indicate satisfaction with infrastructural development, aside from the case study areas the status of infrastructural development is not known, but it may be presumed to be relatively poor.

The infrastructure that has been considered involves social concerns in most cases. However, critical types of infrastructure to promote economic growth that can be driven by HER remain to be either addressed or realised. At this stage it is useful to link critical resources that can be exploited to promote development and critical infrastructure. Often such critical resources remain unutilised because of the lack of accessibility, affordability (production units), and markets.[5] HER need to be used to provide income and employment to the mountain people. Local people have no option but to continue use of HER, as development has not been able to mitigate poverty and generate new opportunities in these remote areas. On the one hand, poverty mitigation in the region requires accelerated use of resources, and, on the other, their increasing use has accelerated their deterioration. Furthermore, in areas where tourism is prevalent, tourism is believed to have added to the problem. However, the dilemma nevertheless remains, for mountain development will require increasing use of HER, which further increases the conservation challenges. Besides other things, the lack of critical infrastructure is a major obstacle to harnessing these resources that can improve the overall carrying capacity of mountain areas. An example is the case of the Ghandruk hydro-electricity

5 See Banskota et al. (1994) for an exposure of this issue in the context of the Manaslu area of northern Gorkha's Himalayan environment.

infrastructure, which uses HER, namely water, and has played a critical role in promoting the carrying capacity of the Ghandruk area. This one critical component of the infrastructure has strengthened conservation, reduced dependency on firewood, and promoted the quality of tourism. Other infrastructural development that can promote economic growth and conservation therefore needs to be identified, assessed, and developed in order to enhance the carrying capacity of the area from a socioeconomic point of view.

Critical Institutions

An important part of community development has been the formation of grass-roots' institutions. Such institutions have been formed to protect HER and promote both MCD and MTD. Many ACAP activities are carried out through local institutions. ACAP itself is the critical institution in the area, for without ACAP the various programmes and successes in the area would not have been possible. Although it is extremely difficult to predict whether institutions, once formed, will be sustainable or not, these institutions are currently playing a critical role in their communities. Simply forming institutions alone is not going to suffice, since their role in promoting conservation and development has to be understood and assessed. If problems emerge (e.g., wildlife protection and livestock depredation), it is the local people who need to solve them. How these institutions address problems, how decisions are made, who participates in the decision-making, etc, all these things need to be understood and improved for the institution's survival. Simply pumping resources into rural areas without developing local management capabilities is unlikely to achieve development. Human resources can be developed, but they need to be organised to promote social capital, which is equally important for sustainable development. Local institutions, such as those being formed by ACAP, are, therefore, considered to be critical institutions and need to be monitored and evaluated periodically in order to resolve problems and enhance the management capabilities of local areas. In this aspect of institutional development, ACAP has been able to create some critical institutions, but since it has no follow-up programmes of monitoring and evaluation, the effectiveness of these institutions cannot be assessed.

The strong link between community development and tourism will also depend on improving the status of women. Women in the mountain areas have shown their capabilities as good managers of lodges and households, as well as of natural resources. Income-generating activities that enhance women's income will not only help women improve their overall status but can also bond

community and tourism linkages. In this respect, too, ACAP appears to have made a breakthrough, based on the results from the case study area. However, the lack of information prevents one from generalising about the role and effectiveness of the critical institution in the greater Annapurna area. At the national level, a critical institution such as that discussed in Chapter 2 (also see Chapter 8) does not exist, and so the dissemination of ACAP successes elsewhere and the adoption by ACAP of successes from other areas of the country have perhaps been constrained. Furthermore, overall monitoring of MCD and MTD in the context of sustainable mountain development in the Annapurna region is lacking because of the absence of such an institution.

Critical Behaviour

Human behaviour is considered to be critical if it directly or indirectly, negatively or positively, modifies nature or promotes development. Although the study has not been able to focus adequately on critical behaviour, there are some lessons already learned in this area that can be documented. And a discussion of critical behaviour would perhaps be incomplete without discussing economic incentives and economic disincentives.

Economic incentives motivate desired behaviour, while discouraging behaviour which is not desired. The main objective of incentives is to smooth out the uneven distribution of the costs and benefits of conserving and developing the mountain environment and to use them as a policy tool for correcting market failure. Economic incentives can be broadly classified into direct and indirect incentives.

Direct incentives can be either in cash or in kind. Direct cash incentives include fees, royalties, rewards, grants, income support, subsidies, loans and daily wages, whereas direct cash disincentives include penalties and fines. Direct incentives in kind, on the other hand, include food-for-work programmes, material and goods donated to protect area management, timber concessions etc, whereas direct disincentives in kind might include elimination of use rights or confiscation of land and jail sentences, etc.

Some portion of the entry fee to conservation areas needs to be ploughed back into the community development and conservation activities as an incentive for developing the area. This situation has been pioneered by ACAP; the conservation area fee collected from visitors is used directly to carry out development activities in the area. An endowment fund has been created from this conservation fee.

Fines and penalties can be used to discourage the illegal behaviour that depletes resources (poaching). The effectiveness of fines, however, depends on the size of the fines and the enforcement level. Fines and penalties can also serve as incentives if some portion of them is returned to villagers for conservation and development activities. The provision of cash compensation for the damage caused by wild animals is also deemed important for conserving the mountain environment. For example, in the case of endangered species, land owners could be compensated for the costs they incur from having to restrict land use in order to protect species' habitats. Villages can be compensated for crops damaged by wild animals, but this has not happened in ACAP, as already stated.

Subsidies are negative taxes to support activities that operate at a loss - possibly due to market failure - while still meeting community needs. Subsidies may be granted for those activities that generate positive externalities which can serve as important incentives for conserving environmental resources. Subsidies should be granted to activities that promotes conservation.

National NGOs can play an important role in providing grants for specific community activities (of relatively short duration) which may provide a foundation for changes in behaviour. Such direct cash incentives are important for promoting the supply of locally-produced goods and their linkages with tourism. They, however, do not appear to have been initiated in ACAP.

Indirect incentives involve applying fiscal measures (e.g., tax exemption or allowances, price support, insurance, guarantees, and tariffs), provision of services (e.g., conservation education and community development programmes), and social measures (land tenure, training, education, information, and building up institutions). ACAP provides some indirect incentives for conservation through supporting a number of community development activities, including conservation education, whereas little attention is paid to direct incentives to household income-generating activities.

In order for all these incentives to function effectively, some degree of regulation, enforcement, monitoring and feedback is required. Incentives should be granted on a flexible basis and in view of changed conditions. For example, entrance fees for protected areas/parks may need to be increased to keep up with inflation, or the quality of the community's services to be improved. Specific entrance fees should be charged on the basis of operating expenses, interest, and amortisation of investment in order to ensure efficient management of the area, including maintenance costs. The entry fee for

conservation areas tests the willingness to pay on the part of the tourist and may in fact fall far short of such tourist willingness. Any entry fee for conservation areas, such as that covered by the ACAP, that results in few visitors should, however, be discontinued if it produces less revenue than the cost of collecting such fees. The concept of marginal opportunity costs should be used as a tool for determining incentives appropriately.

It is equally important to modify perverse incentives that may be counterproductive. Incentives are perverse when they stimulate behaviour which tends to deplete environmental resources or retard development. Such perverse incentives are often instituted by an authority such as ACAP. For example, agricultural incentives provided in the form of subsidies are becoming a major constraint to the viability of agriculture and other sectors, and also have had a negative impact on environmental resources. It is thus essential to replace such perverse incentives with new incentives. Incentives should, in any case, be designed with great care and fine tuned to the marginal opportunity cost.

Since the community is the place where most incentives necessarily have their impact, it is important to devise different forms of incentives at the community level within the context of local social organisations (or critical institutions). However, for incentives to function well at the community level they need to be supported by appropriate policies at the national level.

Economic incentives at the community level generally involve one or more of the following:

- assigning management responsibilities to local institutions;
- strengthening community-based resource management systems;
- designing pricing policies and taxation to promote conservation; and
- introducing a variety of property rights and land tenure arrangements.

Conservation incentives at the community level should be designed to address the following objectives:

- to conserve traditional knowledge about the use of HER and to reestablish common property management institutions;
- to compensate local people for possible income lost through restrictions imposed on the use of protected biological resources or damage caused by wild animals;
- to reduce agricultural pressure on marginal lands; and

- to build up the institutional capacity of the community to promote conservation and development.

ACAP has attempted to revive the traditional forest management system through establishing forest management committees which comprised of local leaders and the community at large. These committees (renamed Conservation and Development Committees) have the overall management responsibility for conservation and development. Although ACAP has addressed a number of incentives by assigning management responsibility to local grass-roots' institutions, a great deal of work still remains to be done in this area. This includes the provision of more direct incentives for income-generating activities, compensation mechanisms for losses caused by wildlife, poverty-focussed programmes among the poorest of the poor, etc. Besides the general focus on social programmes, income-generating activities need, in particular, to be greatly emphasised.