

Chapter 6

Issues, Opportunities and Recommendations

Major Issues

A number of major issues were identified during the course of the study. These are discussed below in more detail. Clearly many of the major issues are interlinked, but for the sake of simplicity, they are discussed under major headings.

Ownership

The transfer of ownership of bee cliffs from indigenous communities to government departments, in particular the Forest Department, has had a major negative impact on bee populations in many areas of Nepal. The indigenous groups have a long tradition of identification with and sustainable exploitation of the bees as a resource. The techniques they developed and the general practices of harvesting they used ensured that bee populations were maintained, in particular they were not aimed at maximising short-term gain, but only at harvesting and enjoying what was available without destroying the basis for hunting.

In contrast, where the Forest Department has control of cliffs, the right to harvest honey is allotted to contractors. Generally this is on a 'first come first served' basis, rarely does the allotment take into account factors like prior ownership, traditional honey hunting family, use of appropriate techniques that will protect the bees existence in the long-term and so on. The department's employees have little knowledge of the importance of the bees for ecosystem function, neither are they encouraged to care about this.

The contractual arrangements are generally weak, fuzzy, and exposed to corrupt practices. The whole approach encourages over-exploitation of the bees, and if the practice is not changed or better regulated must inevitably lead to a decline in the bee population. The government receives income based on the amount of honey harvested, and thus has a vested interest in the short-term in maximising the harvest. Clearly over-exploitation of the bees will lead to a long-term reduction in revenue flow, but few central or local government departments are able to think or act according to such long-term concepts. In the (prevalent) situation of corruption the local officials receive a gratuity in cash or kind for giving the contract, and this too the

contractor must cover from his profit. The higher the potential profit, the higher the gratuity that can be offered. Furthermore, the contractors hire local labourers to actually harvest the honey on the basis of harvest sharing arrangements, and this also encourages unethical hunting practices and production of honey of degraded quality. The contractors and their agents have hardly any awareness about the importance of biodiversity conservation and have only commercial motives for harvesting the honey. Generally they have a short-term approach; there is no gain to be made from using slower more skilled techniques that leave part of the brood comb on the cliff, or leaving some nests untouched, to ensure that the bees will be there another year – as there is no guarantee that a particular contractor will be allowed to harvest that cliff in another year.

The use of contractors has increased the value of wild honey as they are more efficient at marketing. But the contractors are replacing the traditional honey hunters so that the latter rarely benefit. One of the main reasons that traditional honey hunting is declining is the increasing hold that contractors have on harvesting cliff honey.

The impact of contractual arrangements can be estimated to some extent by comparing the situation in parts of Nepal where these are prevalent with that in Kaski. In Kaski, contractual arrangements through the Forest Department are uncommon. This may be attributed to the collective life style of the Gurung community, which does not allow external agents to intervene in their way of life. In the other districts where preliminary studies were carried out, we found that contracting out of nesting areas by local forest authorities was widespread – and the bee populations were falling as a result.

This phenomenal change in ownership from indigenous groups to central government has exposed bees to indiscriminate commercial exploitation and disturbed the centuries old local practice, which was economically viable and socially acceptable. It is also depriving the indigenous honey hunters of their livelihoods and cash income.

Loss of bee forage

As mentioned in Chapter 3, the forage opportunities for bees are being reduced both as a result of clearing of formerly pristine areas to use as cropland, and because species that are not useful for the bees are being promoted for forest exploitation and regeneration. Present afforestation efforts seem mostly to be based on solutions that appear to be simple and effective, but in terms of ecosystem function do not replace the vegetation lost through felling. Areas planted with fast growing easily cultivated species like *Alnus* and *Ficus* provide the appearance of regeneration, but they do not provide the habitat necessary to maintain many native species of animals and insects. At the same time, locally established slow growing forest plants are deprived of the opportunity to multiply and prosper. The failure to use a holistic approach in forest and other land use planning is based to a great extent on a lack of knowledge of the intricate mechanisms involved in ecosystem functioning and the wider impact resulting from changes in species composition and land use.

The promotion of *Alnus* and *Ficus* species in the forests has not only reduced forage opportunities for the bees, it also appears to have had an impact on the texture, flavour, and composition of the honey (personal observation and comments of honey hunters).

Tourism and unethical hunting practices

Irresponsible human predation is on the increase. According to the honey hunters, tourists with climbing gear have been seen visiting nesting areas and hunting the honey indiscriminately, destroying bee populations in the process. The extent of this activity cannot as yet be determined. In the areas covered by the ICIMOD project, honey hunters are now trying to protect their sites using 'social fencing' and the project is trying to raise awareness among outsiders of the impact of such activities.

The influx of tourists trekking the Annapurna circle route has also stimulated interest among tourists and tour operators for watching honey hunting events. Honey hunters are tempted to perform outside the normal season and cycle, and the tourists use modern climbing gear to accompany them, often damaging the cliff face and nesting sites in the process. Tourists, tour operators, and inexperienced hunters do not realise the importance of leaving a brood portion to ensure re-clustering of the disturbed bees. These activities further threaten bee survival, as does the slow drift of modern equipment into the hands of the honey hunters themselves, which also presents a temptation to take more nests than can be sustained. Local climbing gear always guaranteed reduced pressure on bee cliffs due to its insecure design and materials.

Decrease in the number of *Apis laboriosa* colonies: population decline

There was clear evidence that the *Apis laboriosa* population in Kaski was declining, in terms of reduced nest numbers and abandoned sites. Circumstantial evidence collected during the preliminary survey indicated that the same is true across Nepal, and that the situation may be even worse in some areas.

A number of factors were identified that are likely to be contributing to the population decline, although the extent to which each is responsible cannot yet be ascertained. The problems include the following, already discussed above:

- overexploitation as a result of the changes in ownership and resultant contractor system with its emphasis on short-term commercial gain;
- overexploitation as a result of staging events for tourists;
- destructive and unethical practices including taking entire nests instead of leaving a brood portion and taking all nests on a cliff, associated with both the preceding points and often the result of ignorance and/or lack of a long-term perspective;
- loss of foraging possibilities due to loss of native forest and undergrowth species as a result of conversion of pristine areas to cropland, changes in cropping patterns, and afforestation with inappropriate species;
- loss of nesting sites as a result of soil erosion and landslides caused by loss of vegetation cover and (faulty) construction of roads and tracks; and a further problem not previously mentioned
- the effect of parasites introduced along with the non-native *Apis mellifera*.

The problem of bee parasites and bee diseases is one that affects all the indigenous bees, and has been studied in more detail for the Himalayan hive bee, *Apis cerana*. In many areas the European honeybee *Apis mellifera* has been introduced by development and government agencies in an attempt to increase honey production, and as a result of a failure to realise the importance of bees for pollination and their essential role in maintaining plant biodiversity and servicing the natural ecosystem. This introduction has led to the spread of new parasites and diseases among the indigenous bees, including among *Apis laboriosa*. For example, Allen et al (1990) reported the identification of *Melissococcus pluton*, a pathogenic agent of *Apis mellifera*, in *Apis laboriosa* colonies. This exotic parasite seriously affects *Apis laboriosa*, which has no natural resistance to it. The extent to which other infectious agents have had an impact is still unknown.

Lack of a new generation of traditional honey hunters

We did not find a single young man among the cadre of honey hunters in Kaski, a strong indication that the profession in its traditional form is dying out with the present generation. All the honey hunters we interviewed had started in their youth, thus there must previously have been a much broader spectrum of ages in the group. Asked about this, villagers told us that young people are not interested in taking up the traditional honey hunting profession. A number of reasons were given.

- Young people now had different opportunities and preferred to take up paid work as porters, guides, and small service providers, for example. The most ambitious now dreamed of going to the oil rich Gulf States, and needed cash to pay the agents who could arrange jobs in these areas.
- Honey hunters earned little for their efforts, and young people laid a greater emphasis on cash income
- There was a risk to life and uncertainty in honey hunting that young people no longer accepted
- The productivity of the honey cliffs was declining, thus there were less opportunities for honey hunters
- The increase in literacy meant that young people tended to look outward and rely less on the values and traditions imparted by the village elders
- There had been a change in the definition of bravery: honey hunting was no longer seen as one of the best ways of impressing others with bravery

Although as a whole honey hunters are respected for their bravery, honesty, and skill, this respect is not translated into actual remuneration – and young people tend to be less interested in 'status without pay' than their forefathers. Clearly the failure of honey hunter's sons to follow in their father's footsteps is only one aspect of the massive changes taking place across Nepal as traditional ways are left behind and the younger generation looks to different values and role models. This change is naturally most marked in those areas that are most remote, and until very recently were still relatively untouched by outside society. Knowledge and skills that have been handed down from parent to child for centuries, are being lost within the space of a single generation. Previously, the communities that lived in the areas where there are honey cliffs were cemented together by their need to survive and their dependence on each other. Nowadays this is breaking down, with increased interaction with the outside world, better communication and infrastructure, job

opportunities, increased possibilities and need for cash income, and greater possibilities for migration. As people become self-sufficient, the spiritual and socio-cultural importance of honey hunting is declining and cash income is becoming the most important factor influencing ways of living.

If young honey hunters cannot be recruited, the traditional system will die out, bringing the danger of increased exploitation of the bee nests using modern methods by people with little understanding of the importance of the bees and no knowledge of or interest in sustainable methods of harvesting.

Economic and marketing issues

The indigenous honey hunters and the communities who gather the honey are not benefiting from the increased market price of either the intoxicating red honey or of regular *Apis laboriosa* honey. This is due mainly to their lack of marketing knowledge and skills. They sell to middle men, and it is the middle men who profit from the increased prices. These communities are benefiting to some extent from honey hunting tourism, but this benefit could be offset by irreparable damage being done to the bee colonies. To be of real long-term benefit, honey hunting tourism needs to be regulated by empowering the stakeholders with knowledge and information.

Pollination and other eco-services

Both the agrobiodiversity, and the natural floral biodiversity in the higher altitude areas of the Himalayas are dependent to an unmeasured but probably great extent on the presence of *Apis laboriosa*. In these areas, pollination and other eco-services are mainly provided by this bee species, which has evolved to work under conditions of low oxygen and low temperatures. It is the only bee that forages at these high altitudes, and it forages intensively. It seems likely that a reduction in the numbers of *Apis laboriosa* could have a marked effect on the maintenance of local flora, as well as on the pollination of cultivated plants. Loss of *Apis laboriosa* could nullify much of the effort made by HMG and other development players in the field of poverty alleviation, as most of the inhabitants still depend on forests and agriculture, and these depend on pollination. The precise impact on the eco-function of the biological system is difficult to ascertain, however. It is hoped that further studies will throw more light on the situation.

Opportunities/Needs

Apis laboriosa has an important role to play in the Hindu Kush-Himalayas both in maintaining biodiversity and in maintaining livelihoods. The bee contributes to maintaining floral diversity by acting as an important pollinating agent for many native plants. It has a number of crucial roles in maintaining mountain livelihoods. It pollinates cultivated plants, and *Apis laboriosa* honey and other bee products are an economically valuable commodity. In Nepal, traditional honey hunting provides a potential means for promoting community-based eco-tourism. This could provide significant economic benefits for mountain communities and could play an important role in preserving honey-hunting traditions.

Recommendations¹

A series of recommendations were made at the end of the study period on the basis of the information obtained during the survey and the extended discussions with local honey hunters, activists, and others. Essentially the recommendations are concerned with ensuring the conservation of *Apis laboriosa*, and with helping the honey hunter communities to maintain and profit from their traditional practices. The reasons for some of the recommendations are elaborated after each point.

- *Develop a locational database and introduce collective monitoring by local communities and concerned agencies (like the Forest Department and VDCs)*

All conservation efforts require a clear base of data that allows success, failure, and need to be measured and monitored. In the case of *Apis laboriosa*, this means knowing where the bees are located, how many colonies are present on individual cliff sites, and noting changes over time. GIS mapping of the honey cliffs is recommended as an effective and easily visualised way of recording the status of bee populations, and of relocating them in studies of trend over time. Monitoring by the locally concerned parties will help raise awareness and support the feeling of ownership which is a necessary prerequisite to positive action.

- *Raise awareness of the importance of conserving *Apis laboriosa* and of actions that threaten the bee population, and build the capacity of honey hunters and government departments to conserve the bee and encourage conservation-based sustainable harvesting*

Local communities are aware of how 'wrong' actions, like overharvesting, can have a negative effect on bee populations because of their centuries old mutually beneficial relationship. They also have a traditional concern to maintain the balance of nature, although often unaware of the precise reasons and implications; for example that bees are responsible for pollination. As traditions become less valued, and centuries old practices lost, there is a danger that even local communities will cease to conserve the local resources. Furthermore, outsiders, including government departments have little understanding of the intricate balances between mountain flora and fauna, and the major impacts on mountain biodiversity that well-intentioned but uninformed 'development' activities can have. They have no knowledge of the importance of *Apis laboriosa*, seeing the bee simply as a producer of a high valued honey, and thus as a source of income. To initiate the conservation process, efforts are needed to educate government and non-government institutions so that they could understand the voice of the community, and to increase the knowledge of local communities so that they can base their conservation approach not only on tradition, but also on a well-founded knowledge of impacts.

APPA is a promising tool to support this; the results of the field test of this approach in Taprang village were promising.

¹A recommendation on the conservation of *Apis laboriosa* was also made by the sixth AAA conference suggesting that "legislation regulating honey hunting coupled with participatory resource management introducing sustainable cropping from wild colonies needs to be undertaken" (AAA 2002).

- *Support and promote an advocacy campaign to ensure that local communities are given ownership and usage rights over their local honeybee cliffs*

The transfer of bee cliff ownership from local communities to the government Forest Department in many parts of Nepal has led to overexploitation of the bee and has weakened the institution of honey hunting at the village level. A similar situation was faced for forests, with widespread degradation where there was no feeling of ownership. The introduction of community forestry as a response – where management responsibility and usage rights are given to local communities – has been one of Nepal's most successful development initiatives. The communities guard their forests and regulate the extraction of forest products. Provided with ownership and knowledge, communities are likely to do the same for their bees. However, this issue has so far failed to attract the attention of NGOs and conservationists. Advocacy campaigns need to be run to convince forestry policy makers to give local community user groups the same rights over honeybee cliffs that communities have over their forests.

- *Ban the use of modern climbing gear for honey hunting*

The use of climbing gear and sophisticated equipment by tourists and local people during honey hunting events can cause damage to the cliff face, enables honey hunting by people who have no knowledge of the correct approach to avoid irreparable damage to the bee population, and tempts even the experienced to harvest more than is sustainable in the desire for short-term gain. Use of climbing gear should be banned unless and until an effective way can be found of regulating the harvest, for example by only licensing those with proven knowledge and limiting the amounts harvested to a given proportion of nests on a cliff and insisting on the brood portion being left, and implementing an effective system of fines and punishment. Advocacy groups and conservationists, like BEENPRO, should involve local honey hunters, tour operators, and policy makers, in calling for a ban on modern climbing equipment.

- *Educate tour operators, conservation advocacy groups, and local communities about the role of *Apis laboriosa* and the potential harm that can result from uninformed and overenthusiastic activities by tourists; support the establishment of 'green' bee-based tourism*

'Bee tourism' is a potentially gentle method of helping communities profit from *Apis laboriosa*, and of maintaining the tradition of honey hunting. However, ignorance can lead tourists to destroy the resource that they have come to see, and to those organising them allowing this to happen. An education campaign is urgently needed to ensure that all those involved in giving tourists a honey-hunting experience are aware of the potential long-term impact of such activities. Support should be given to developing genuine ecotourism approaches to honey hunting. This will facilitate the continuity of local tradition and will benefit bee-based tourism at large.

- *Establish micro-enterprises to develop and add value to Apis laboriosa honey and wax, and develop and facilitate marketing links*

Honey hunters tend to depend on middlemen for sales, and have little knowledge of how to add value to and market honey and wax. In order to ensure that the larger part of the profit remains within the honey hunter communities, these need to be helped in setting up small businesses for processing and in developing marketing approaches. Building up the marketing skills of the honey hunting communities is an important part of the ICIMOD bee project initiative.