

# Medicinal plant conservation in the Himalaya: lessons from the field

Alan Hamilton

Plantlife International Salisbury UK

## Abstract

Through its Medicinal Plant Conservation Initiative, Plantlife International is currently supporting community-based projects on conservation of Himalayan medicinal plants in Pakistan, India (3 sites), Nepal and China. With the Ethnobotanical Society of Nepal, Plantlife organised a regional workshop on *Identification and Conservation of Important Plant Areas (IPA) for Medicinal Plants in the Himalaya* (with participation also from Bhutan). Participants at the workshop agreed that community-based approaches must form the basis of medicinal plant conservation in the Himalaya and that local knowledge is a sure foundation for developing improved management. Reports from field projects supported by Plantlife indicate that stages in engaging communities in conservation often include awareness-raising, institutional development (e.g. formation of forest user groups), identification of key places and species for improved management, and adoption of adaptive management. The identification of priorities for conservation should take into account different perspectives – those of scientific botanists and traditional doctors; men and women; subsistence users and commercial collectors, etc. Religion (which has close links with traditional medicine) has been a potent force for conservation traditionally in the Himalaya. Modern conservation initiatives will benefit from recognition of the key roles that religious leaders and traditional doctors can still play.

The conservation of medicinal plants is a major conservation issue in the Himalaya (Thomas et al., 2005). In September 2006 Plantlife International together with the Ethnobotanical Society of Nepal organised a regional workshop at Kathmandu on *Identification and Conservation of Important Plant Areas (IPAs) for Medicinal Plants in the Himalaya*. Experts from 5 Himalayan countries presented reports for their countries and there were additional presentations from several organisations working in Nepal. IPAs are sites of international significance for the conservation of global plant diversity that are recognised at the national level.

IPAs are identified through the use of one or more of 3 criteria – presence of threatened species, exceptional botanical richness and presence of threatened habitats (Anderson, 2002, Plantlife, 2004). The analyses presented at the regional workshop tended to place most emphasis on the ‘threatened species’ criterion, recognising two types of threatened species – narrow-range endemics and popular species threatened by commercial trade. Narrow-range endemics are considered under threat because of their vulnerability to the casual clearance of their habitats, as well as to climatic change (predicted to be particularly severe in the H

The research, with separate studies in each country, resulted in the recognition of a string of provisional IPAs scattered along the length of the Himalaya (Radford and Hamilton, in press). All countries reported a severe shortage of information, which is why the sites must be regarded as provisional. Many IPAs have undoubtedly been missed. Perhaps the main conclusion that emerges from this research is that conservation of medicinal plants should be promoted at many places in the Himalaya.

There was evidence presented at the workshop that protected areas can benefit the conservation of medicinal plants in the Himalaya, although there was recognition too that protected areas in the Himalaya are difficult to manage, given their rugged topography and remote locations, and shortages of staff. Apart from recommending improved management (which will critically depend on making appropriate agreements with local communities), the IPA results suggest that it would be useful to review the distribution of protected areas along both the latitudinal and altitudinal axes of the Himalaya. A good coverage along both of these

dimensions will help ensure that the genetic diversity of medicinal species is conserved and provide resilience to the flora in the face of the certainty of rapid climatic change.

It was recognised by everyone at the workshop that community-based approaches are fundamental to the conservation of Himalayan medicinal plants. Plantlife is currently supporting 6 community-based projects in the Himalaya to promote the local conservation of medicinal plants and to develop and test conservation methodologies (see [www.plantlife.org.uk](http://www.plantlife.org.uk)).

Several important stages in community-based conservation of medicinal plants are starting to emerge from these case-studies (see also Hamilton, 2004, Hamilton and Hamilton, 2006):

- Correct introduction to the community.
- Awareness-raising within the community about the value of conserving medicinal plants.
- Stakeholder analysis, especially identification of individuals and groups with special interests in medicinal plants.
- Identification of priority places and species requiring improved management (from both local and scientific perspectives) (Lama et al., 2001, Law and Salick, 2006).
- Establishment of clear property rights (medicinal plants may be on private, communal, government or indeterminate land).
- Resource management plans that consider all community interests.
- Adaptive management, using indicators appropriate for local monitoring.
- Promotion of cultivation, especially for commercial species.
- Where there are protected areas or forest reserves, appropriate agreements between the community groups and the responsible agencies.
- Where plants are sold, appropriate agreements with traders or industry providing incentives for sustainable use.

Conservation of plant diversity has to be based on knowledge and motivation. Religion has played a major role in traditional conservation in the Himalaya and there are still numerous sacred sites and landscapes (Anderson et al., 2005, Pei Shengji, 2001, Pei Shengji, 1998). There is no surer foundation for conservation of medicinal plants in the Himalaya than that provided by the exceptional knowledge and social standing of traditional doctors. Herbal doctors – the botanists of the Himalaya – have traditionally been concerned that they collect medicinal plants in sustainable ways. Most people rely mainly on herbal medicine in the Himalaya, which is home to four of the world's great medical traditions – Ayurveda, Chinese, Tibetan and Unani. There are also numerous more local medical traditions, such as those associated with the Bai, Dai, Lahu, Naxi, Qiang and Yi minorities in China.

Millions of Himalayan residents depend on the harvesting of wild medicinal plants for an income. There is generally very little cultivation. An estimated 323,000-470,000 households (2.6 million people) are engaged in the collection of wild medicinal plants for sale in Nepal (Olsen et al., 2000). Medicinal plants are economically so important in Uttarachal that this Indian state now calls itself the *Herbal State*. Estimates of the percentage of income received from the sale of non-timber forest products (NTFPs) in the Tibetan Autonomous Prefecture of northwest Yunnan (China) range between 25-80%, the most lucrative commodity being *mastutake* (*Tricholoma*), a medicinal/culinary mushroom (Salick et al., 2006). Medicinal plant collection for the market is especially significant as an economic activity for the very poor, particularly those living at high altitude. Much of the income of such people can come from the sale of wild medicinal plants.

Unlike collection for local health use, collection for trade is often destructive, the reasons including: an urge to collect large quantities to compensate for low prices; ignorance of 'proper' methods of collection; and open access tenure regimes that mitigate against taking much care for the future. It has been calculated that 36% by volume and 51% by value of the total commercial harvest of medicinal plants in Nepal is undertaken destructively (Olsen, 2005).

Achieving sustainability in the trade in wild medicinal plants will require the development of appropriate management systems at local level. There are ways that the herbal industry can help. The basic requirement is to forge agreements between industry and producers (collector or farmer associations), specifying guaranteed and fair prices for good quality sustainably produced material. Unfortunately, very little has so far been achieved, though there are scattered examples of better practice. The company Dabur Nepal reports that it is making efforts in this direction in Nepal, while WWF-Pakistan has facilitated progressive agreements between communities at Swat and Qarshi Industries, a pharmaceutical company based on Unani Medicine. The Asia Network for Sustainable Agriculture and Bioresources (ANSAB) in Nepal has developed exceptional experience in helping communities to organise themselves for sustainable production of wild commercial species (Subedi, 2006). Certification (FSC, organic) has been achieved for wild collected plants in some cases where the produce is exported to Europe.

Governments have a major role to play in the conservation of medicinal plants in the Himalaya through developing policy frameworks supportive of conservation. There are several aspects, covering such fields as the rights of communities in relation to protected areas, joint forest management as regards forest reserves, recognition of traditional medicine, and standards in the herbal industry.

Community-based field projects, facilitated by non-governmental organizations (NGOs) and botanical institutes, will be very helpful for developing and testing approaches and methodologies for the conservation of medicinal plants in the Himalaya, and the identification of best practice. Recommendations from field experiences should prove helpful for developing government policy. Much can be gained through regional collaboration between the Himalayan countries, with their diverse policy environments and experiences in conservation. Some issues will require direct collaboration (e.g. unsustainable cross-border trade).

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