

Classifying medicinal plant collectors: their approach and attitude

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Medicinal plant collection from the Himalayas is a key conservation issue that involves extraction of plants from the wild by collectors. While the word collectors is generalized, not all collectors are the same. In this paper, three types of collectors namely, professional, opportunist, and user have been identified. They have been compared with respect to how they perceive medicinal plants and what their approach is. Of the three categories, only the users consume the plants at source, while the other two are involved in trade. This is clearly reflected in the difference in their value chain. It has also been realized that while professionals and opportunists are buyer-driven, the user is producer-driven. Subtle differences between the three with respect to twelve parameters have been presented in the paper. Thus, a conservation and management policy that not only focuses on plants but also, diversity of people, is the need of the hour.

Keywords: Conservation, extraction, Himalaya, medicinal plants, plant collectors.

The context

THE Himalayas, a global biodiversity hotspot, abounds in plant diversity with as many as ~1800 plants of medicinal importance¹. These species, in addition to being used locally, are traded as raw materials for many drugs/medicines. Considering that only a meagre area is under medicinal plant cultivation², almost 90% of the plant species in trade are sourced from the wild³. Thus, high altitude regions of the Himalayas are the hubs of raw material collection. From here, they are transported to multiple destinations and ultimately end up in the production lines of pharmaceutical industries⁴⁻⁶.

The concern

Illegal and rampant extraction of medicinal plants from the wild continues to be a major threat to the survival of many high value medicinal plant species in the Himalayas⁷. This has often led to local extinction of many highly traded plant species⁸. The magnitude of this trade can be judged from the fact that as much as 30% of the total income of poorer households in some parts of the Himalayas comes from the sale of plants collected from the wild^{9,10}. More than a whopping three hundred thousand households are engaged in the collection of medicinal plants in Nepal Himalaya alone¹¹. The income earned

from it makes the family happy – what has now been reflected as ‘gross happiness index’ in many Himalayan areas¹². The ever-increasing demand of medicinal plants has further added to the pressure. Demand for herbal products is growing at a rate of 15–25% annually and it is estimated that by 2050 trade in medicinal plants will be close to US\$ 5 trillion¹¹. Thus, while resources are declining, their demand is increasing.

The focus

The Himalayas contribute significantly to the trade in medicinal plants with a large number of collectors involved in the process. Studies on this aspect have been carried out in various parts of the Himalayas^{4,8,9,13-17}. Few studies have also documented patterns of medicinal plant collections^{6,18,19}. It has been identified that collectors collect plants and seek cash flow^{20,21}. While working on high altitude medicinal plants of the Himalayas and their collection, it was realized that not all medicinal plant collectors are the same. They differ in their approach, views and perception. Though this is of high conservation and management importance, much has not been reflected on the same. Consequently, the present article focuses on identifying types of collectors and analysing how different collectors perceive medicinal plants.

The primary data and information has largely been sourced from the alpine regions of the western Himalayas. This includes the states of Himachal Pradesh, Uttarakhand and Jammu and Kashmir. The data collected during medicinal plant surveys of the western Himalayas has already been presented and reported^{6,17,18,22-24}.

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Table 1. Characteristics of different types of medicinal plant collectors

	Professional	Opportunist	User
View	Commodity of trade	Additional Income	Drug/cure
Approach	Maximize economic returns	Leisure based, club with other activity	Need-based
Coverage	Large spatial spread, often outside village jurisdiction	Limited coverage guided by associated primary activity	Mostly around villages
Efforts	Dedicated	Limited	Dedicated
Implications	Heavy impact, local extinction	Limited impact	Minimal impact
Collection	During peak growing season	When opportunity strikes	When required
Client	Traders	Middle men	Self (household need)
Awareness	Aware of market demand	Limited and follow the professional	Use and conservation
Concern	Little	Concerned	Highly concerned
Gender	Male	Generally male, occasionally female	Male and female
Age group	16–40 years	30–60 years	50–70 years
Value chain	The national market	The local market	The local healer

Information and views presented here are based on 15 years of primary field surveys (2001–2016) and interactions with around 800 medicinal plant collectors.

The collectors

High altitude regions of the Himalayas are used by collectors for the extraction of medicinal plants. Based on their characteristics, three categories of collectors are easily identified. They have been named as the professional, the opportunist and the user. Of the total collectors with whom interactions were held ($n = 800$), 81% ($n = 648$) were professional and 15% ($n = 120$) were opportunist. The remaining were user ($n = 32$). Professional collectors who were involved in collecting plants in the area were at least 5 times more than the opportunist collectors. When compared to users, the proportion of professionals was 20 times higher. Thus, with respect to number, professionals form a major proportion of medicinal plant collectors. These three types of collectors differed in their characteristics and ethos. Their characteristics with respect to twelve parameters that include their views on medicinal plants and approach for collection are presented in Table 1.

Professional

Majority of the collectors belonged to this category. They view medicinal plants as a commodity. For them, collection is a business and thus, they put in extra effort to maximize monetary returns (Figure 1). Since profit was the prime guiding force, professionals covered a large area and ventured into much interior areas. They spent considerable time in the field and consequently collected a larger quantity of raw material. Mass collection of plants in huge quantity surely impacts the population of the targeted species. Local population decline of species in areas of heavy extraction is a testimony to this^{8,24}. Professionals are guided by the market and collect plants that

are most sought after by traders. This way, they are aware of the market demand. Over the years, the collection focus has shifted from *Jurinea dolomiæa* to *Picrorhiza kurrooa* and now to *Trillidium govianum*^{6,18,23}. Although the *professionals* did point out that they now have to travel farther distances to collect plants when compared to a decade earlier, they are little concerned about the status of plants. Irrespective of age and stature of the plant, they collect as much raw material as possible. Maximum benefits are reaped only during the growing season of plants (May to September) and hence they are active only during this time. The rest of the year, they focus on other activities. Usually, professional collectors were observed to be arduous males between 16 and 40 years of age.

Opportunists

As the name indicates, they collect plants when the opportunity strikes. Their sole motive is not collection, and thus unlike professionals who are focused, opportunists are at leisure and club extraction with much more important livelihood activities (Figure 2). Livestock grazers, fuel-wood and fodder collectors were observed to indulge in this activity. Few guides who helped during the surveys also turned out to be opportunist collectors. Additional income is the prime motive of collection and thus they put limited effort and do not venture into the deep and interior. Owing to limited efforts, their ecological impacts are also limited. Since their collection is minimal, they sell it to middle-men and not directly to traders. As their activities are somewhat linked to the market, they prefer to follow the professional with respect to prioritizing species for collection. They show concern for their surroundings, as it is not a one-time activity for them. These collectors are generally male, but females also carry out this task. Many of the household activities like fuel-wood/fodder collection are perceived to be the job of females in the Himalayas. Thus, while on the job,

they may also collect plants. Males usually combine this activity with livestock grazing. Generally, the opportunists varied from 30 to 60 years in age.

Users

The category defines people who collect medicinal plants for self or community use. Unlike the other two (professional and opportunist) whose aim is money, the users' aim is drug and human welfare. They may indirectly earn from it by seeking favours in response to the treatment provided. They recognize the curative properties of plants and generally collect it when the need arises (Figure 3). A small quantity (200–500 g dry weight) is generally

present in their homes most of the time. They do not cover long distances to get the plants but are happy to get a little from nearby areas. However, owing to inherent characteristics of some plants occupying unique niches, they may have to cover a substantial distance. Still they do not venture deep. They are far more concerned about the conservation status of plants and follow self-laid norms to extract them²⁵. They usually collect mature plants only. The user category is represented by both males and females who are traditional healers of the area. They are usually far more aged, somewhat between 50 and 70 years.

The way forward

Recognizing that there exists a diversity of collector types, and a diverse set of value chains, a multipronged strategy is required. Restricting extraction and promoting cultivation should not be the only measures. While our prime target may be the professional collectors, the strategy should also focus on awareness, community involvement, viable alternatives, and good collection practices from the wild. A possible approach may include an amalgamation of the following:

- Awareness: There is no doubt that collectors are aware of one or more aspects of the plants such as the market, uses, growing time, localities, etc. What they probably lack is a holistic view and associated consequences of extraction. This factor should be built into awareness plans and interwoven with the cultural dimensions of residing community. The uniqueness of the area in supporting these plants that are seldom found elsewhere, may be emphasized. Harnessing the potential of educational institutes in the vicinity of



Figure 1. A group of professional collectors. They would camp in the sites for long duration, devote almost 12 h a day on medicinal plant collection. They view plants as commodity. Since it is an arduous and risky job, mostly young people are involved in it. Note the collected material spread on rocks for drying.



Figure 2. An opportunist collector. He has combined medicinal plant extraction with livestock grazing. His primary aim is not plant collection. However, he still has market and profit in his mind.



Figure 3. A couple belonging to user category. They collect plants for self use as medicament. Most of the traditional knowledge holders are aged and hence this group is represented by relatively old people.

such collection sites will certainly add to the efforts. Their proactive role in such a programme would be more than welcome.

- Community involvement: Stakeholders' perspective and their involvement, right from inception of conservation and management programmes, may greatly benefit. A sense of ownership brings about subtle changes that are hard to perceive in isolation. Use of primary field knowledge of the three collector types for conservation such as on niche, distribution, market, use and properties is an important component of such programmes. Young people, who are a major proportion of the professional collectors should be amongst the target group while users can actually be the resource persons or mentors.
- Alternate options: Use of alternate plant species for medicinal purposes has been suggested and it continues to be a good option. However, use of alternate plant parts has not been much looked into. Interestingly, a study on *Picrorhiza kurrooa* has shown that, both its leaves and rhizome contain the active constituent 'picroside'²⁶. Its underground parts have mostly been used as drug. Uprooting of roots and rhizome causes death of the plant. On the other hand, harvesting of leaves does not have a deadly effect. Further, a large amount of leaf biomass is available as opposed to underground parts. This should now be factored into while designing conservation and management strategies.
- Good collection practices: It has now been realized that commercialization has led to breaking of traditional collection practices that in the past ensured survival of species. While revival of traditional practices is desired, guidelines for sustainable collection of medicinal plants from wild should be followed (Fairchild's new version guidelines). They should be tuned to local and regional environment.
- Recognition/honour: Appreciation and reinforcement provide the much-needed boost and support for delivering on time. It would be worthwhile to set up awards for villages/communities that have noticeably impacted the mind set and thereby ensured conservation of resources. Details of these can be worked out based on requirements and response.
- Strengthening local institutions: In many Himalayan areas, local institutions such as van panchayats, mahila mangal manch, yuva sangathan, etc. exist. These institutions usually target social wellbeing and environment. How such local platforms and forums can be a means of communicating and ensuring plant conservation is something to be looked into.

Conclusion

It is seen that medicinal plants in the Himalayas are collected by three major types of collectors. Owing to how

they perceive medicinal plants, their approach is also different. Of the three categories, only the users consume the plants at source, while the other two are involved in trade. This is clearly reflected by the difference in their value chain. It is also realized that while professionals and opportunists are buyer-driven, the user is producer-driven. On the other hand, the opportunists and professionals do not use the collected material directly as such. They indirectly benefit out of it. While degradation of resources does affect the professional collectors, the opportunists take it easy. Coping with the situation, the professionals move on to another area for collection, where the population of plants is high. In the process, they have a wider and more detrimental effect. Of the three types of collectors identified, users are the only ones that are highly concerned about the diminishing resources. They follow self-laid norms for extraction. It is but natural, since they are the prime users and any population decline would directly affect their recognition and stature. These people occupy a special position in society because of their knowledge. However, people belonging to the category of users are declining. Eroding traditional knowledge, availability of pharmaceuticals in the market, and declining resources are some of the reasons for this. On the other hand, the professional collectors are making hay without bothering about the resource decline. A multiple and innovative conservation and management policy that not only focuses on plants but also people is required.

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