

MEDICINAL BASKET OF HIMACHAL PRADESH UNDER THREAT

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With increased popularity of herbal based formulation and medicinal systems in COVID-19, the demand for many endangered and local herb species has increased unexpectedly. Both domestic use and illegal exports to international pharmaceutical market are rising, posing a threat of extinction for many endemic species. Due to such unskilled collection, more than 60 medicinal plants in Himachal Pradesh have been categorized in red list. However, International union for conservation of nature and natural resources (IUCN), has labelled 27 such plants as vulnerable and 12 have been marked as critically endangered. Over exploitation of medicinal resources, unskilled agriculture, over grazing, poor regeneration techniques for conservation, lack of cultivation practices of wild medicinal plants at native habitats and climate change are the major factors behind the declining population status of these plants.

INTRODUCTION

Himachal Pradesh is a predominantly mountainous region and considering as one of the major hotspots constituting many endemic species of wild plants. Currently, the state has 36 protected region including 31 wildlife sanctuaries, 5 national parks, along with 3 Ramsar wetland and 1 biosphere reserve site.

The gaddis, Gujjars, Spitians, Lahoulis, Kinnaure and Pangwalas are predominant communities in remote areas from ancient times that completely relies on local plants for treatment of diseases. About 60 species (27 vulnerable, 21 endangered and 12 critically endangered) are listed in Red data book and 131 species are selected as near endemics.

The state harbours many unique plant species confined to the region such as *Achillea wilhelmsii*, *Astragalus munroi*, *Jatropha curcas*, *Picrorhiza kurroo*, *Bergenia ciliata*, *Plantago major*, *Rosa webbiana*, *Dactylorhiza hatagirea*, *Podophyllum hexandrum*, *Nepetalongia bracteata*, *Cotoneaster microphyllus*, *Aconitum heterophyllum*, *Polygonatum verticillatum*, *Gloriosa superba*, *Megacarpoeapolyandra*, *Primula denticulate*, *Bistorta affinis*, *Pedicularis bicornata* etc. These are considered the most unexplored of the plant species. Several plants in recent years are highlighted in term of smuggling, such as *Trillium govanianum* (nag chatri), *Commiphora wightii* (guggal) and *Berberis aristata* (kashmal) are uprooted and explored in an unskilled manner.

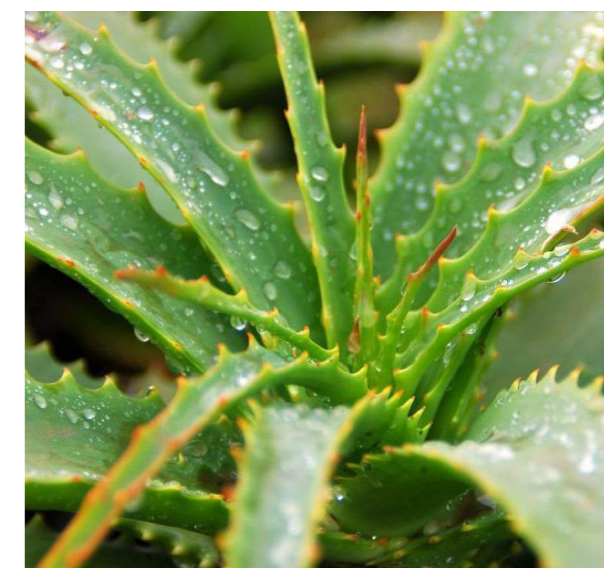
More than 65 % geographical areas come under forests section in Himachal Pradesh. Out of 45,000 species reported from country, many as 3300 species and considered as 95% of the endemic species confined in Himachal Pradesh.

CONSTRAINTS AND REMEDIES OF MEDICINAL PLANTS:

Various constraints in medicinal sector are emerging in recent years including reliable information on their distribution, invisible or illegal local markets, indiscriminate harvesting management, lack of proper exploration practices, information as germplasm source and poor processing practices. Moreover, certain remedies for conserving medicinal plant are:

- Identification of native habitats and new regeneration.
- Strategies, enhanced participation of local communities for cultivating wild plants.
- Selection of Local sites, biodiversity awareness and conservation practices.
- Governmental linkage within markets, sustainable use of resources and good infrastructure facilities for cultivation and marketing.

Many species have been confirmed to be unlisted and unexplored due to their habitat specific city, climate vulnerability, poor conservation strategies and unavailability for every community. Non-timber fodder products or herbal medicinal plants are valuable resources to the people living in remote areas of Himachal Pradesh. Although, it constitutes a small portion of forest ecology but acts as an integral financial tool for local communities. Gathering of grasses, resins, waxes, gums, galls, leaves, flowers, roots, nuts, fruits by unestimated, unpaid workers and under counting of people make this informal and unorganised sector for livelihood strategies.

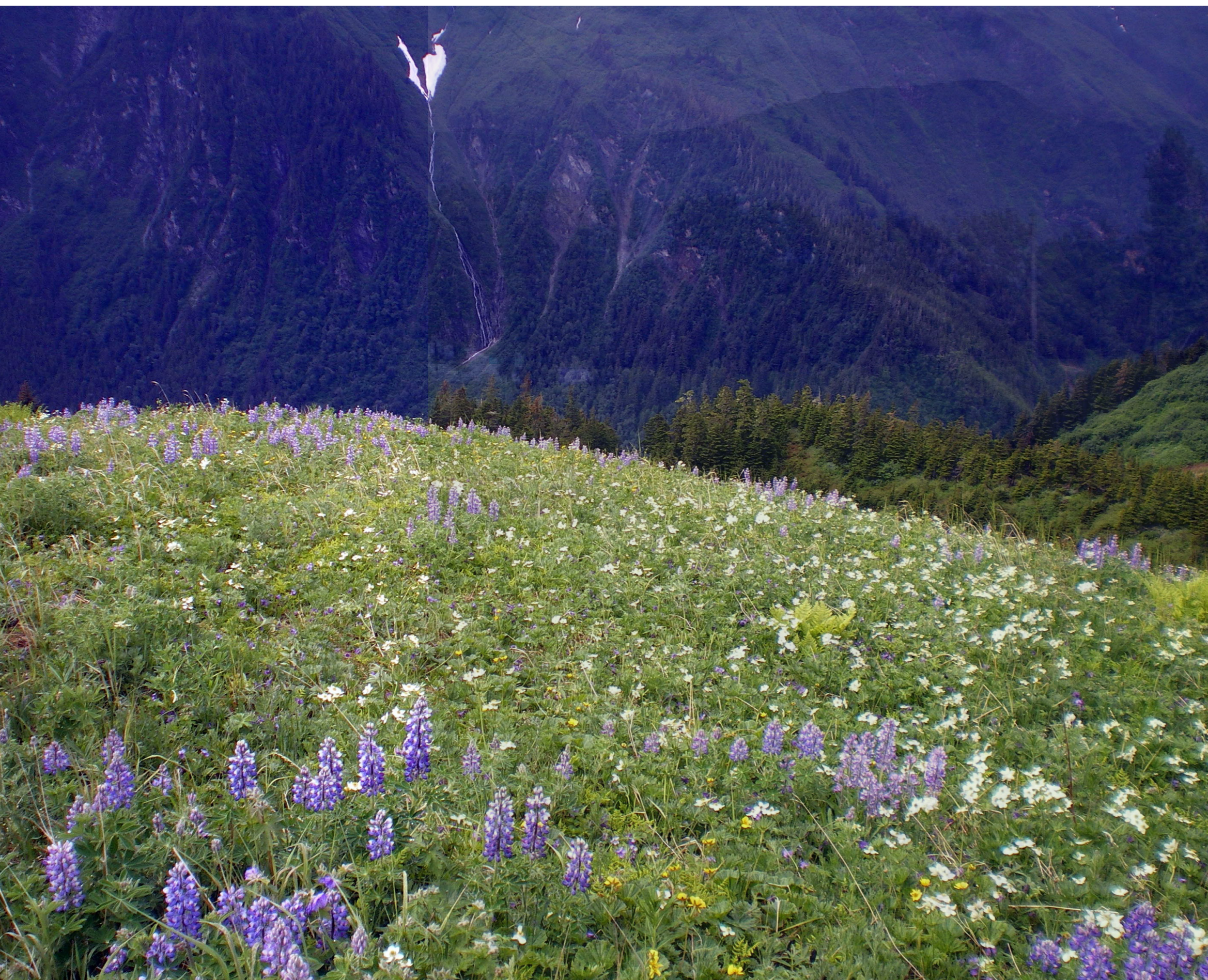


ILLEGAL TRADING OF MEDICINAL PLANTS:

The illegal trade of endangered medicinal plants increased due to high demand in national (Delhi, Amritsar and Kolkata) and international markets (Nepal and China). In India, total demand of medicinal herb was 512000 mt. estimated to be 7000 crores in year 2014/15, however a report brought out by ICFRE on herbal trade expectedly reach upto 20,000 crore in 2020. National medicinal plant board and National ayush mission categorised the subsidies percentage in term of cultivation and trading of wild species such as 30% (*Bergenia ciliata*, *Acorus calamus*, *Artemisia annua*, *Centella asiatica* and *Bacopa monnieri*) 50%

(*Acacia catechu*, *Gloriosa superba*, *Hippophae rhamnoides*, *Gmelina arborea*, *Crataeva nurvala*, *Atropa belladonna* and *Zanthoxylum alatum*) and 75% (*Aconitum ferox*, *A. heterophyllum*, *Aquilaria agallocha*, *Nardostachys jatamansi*, *Picrorhiza kurroa*, *Podophyllum hexandrum*, *Swertia chirata*) subsidies. Recently, the permit fee of the 90 medicinal plants have been specified by Himachal government to check the illegal smuggling such as *Dactylorhiza hatagirea* (₹6000/quintal), *Wild allium* (₹10,000/quintal), *T. govanianum* (₹8000/quintal), *Morchella esculenta* (₹10,000/quintal), *Acconitus heterophyllum* (₹10,000/quintal),

Commophora wightii (1000/quintal) at local markets. However, some other medicinal plant with high market demand harvested from high altitude regions are *Valeriana jatamansi* (₹90-120/Kg), *Pistacia integerrima* (₹50-100/Kg), *Picorhiza kurrooa*(₹250-280/Kg), *Nngelica glauca*(₹120/Kg) and *Aconitum heterophyllum* (₹315-500/Kg).



CONCLUSION:

Overexploitation of tribal herbs by pharmaceutical markets has pushed more than 55 plants to the verge of extinction. Government of himachal Pradesh launched had created a conservation program on establishing the herbal gardens in 2015 at different climate regions. The unrelenting and unskilled extraction via local communities put many species in the Red data list. Valuable attempts of Himalayan research group (HRG) for conserving *Saussurea costus* (kuth), *inula racemosa* (pushkarmol), *swertia chirata* (chirayata) published in recent years. The serious competition in villages to fulfil the demand of agents and local suppliers during collection season cause harvesting of immature plants at flowering or root extraction without evaluating the chance of seed formation, regeneration capabilities and population status. Habitat loss and continuous extraction creates threats over natural resources will leads to extinction. Moreover, the imbalance of such type in forest ecology leads to livelihood problems for communities that solely dependent on local forest resources.