

Continuing with the series of monthly seminar a talk on “Sustaining Demand for Himalayan Medicinal Herbs: Role of Conservation Assessment & Management Prioritization” under the theme “*Managing Forests and Forest Products for Livelihood Support and Economic Growth*” was delivered by **Dr. Vaneet Jishtu, Scientist-D**, Forest Ecology & Climate Change Division, on **29 April, 2019**. All the Scientists, Forest officers, Researchers and Technical staff of the institute were present during this seminar.

Dr. V.P. Tewari, Director, HFRI chaired the proceedings of monthly research seminar. Dr. Rajesh Sharma, Group Coordinator Research welcomed the Director and all the participants and highlighted the importance of Himalayan Medicinal Herbs and their sustainability. He gave overview of the topic on which entire talk revolved around and requested all to actively participate in the discussion and provide valuable suggestions at the end of the presentation.



Dr. Vaneet Jishtu deliberated upon various issues related to the Himalayan medicinal herbs: their status as per the demand and supply of resources and sustainability in the long run. Dr. Jishtu made his presentation based on the findings of the study conducted by ICFRE for Demand and Supply of Medicinal Plants in India during 2016 during which huge data was generated from 692 Domestic Herbal Units, 2450 Rural House Holds (surveyed in 15 randomly selected States to estimate consumption of herb resources), 34 herbal mandis and over 150 trader’s interviews across the country, with the main purpose of assessing diversity of entities traded, value addition, pricing and wastage. He informed that extensive field visits undertaken to personally contact a large number of cultivations and wild collection clusters to study trade chains and arising issues. The study recorded 242 plant species in high annual trade, which excluded 57 species that are cultivated for purposes other than medicinal use, 7 species cultivated for aromatic oils and 4 species for which availability of plant sources could not be verified. The major supply source for the herbs was the forests, with the Himalayan forests accounting for 1/3rd of the supply. Even today, nearly 72 % of the species in high demand continue to be sourced from the wild.



Dr. Jishtu informed that various species are being used as substitutes and adulterants, and the major groups include the *ashtavarga*, *talispatra*, *shankpushpi* and *daru haldi*. Dr. Jishtu pointed out the major groups/ entities of supply gap which included the *ashtavarga*, *dashamoola*, *jivanti*, *asoka chhal*, *shankpushpi* and *himalayan herbs*. With regards to the conservation status of medicinal plants, he informed that the increasing annual consumption levels of wild collected medicinal herbs accompanied by the general habitat degradation has caused a sharp decline in their wild populations. Thus, the dwindling wild populations of such species have become a cause of concern from conservation and

sustainable utilization point of view. He also highlighted two cases of highly destructive extraction for *nag chhatri* and *van lahsun*. Further, he pointed to the demand for new plant species like burans, chuli, nag chatri, van lahsun, van haldi, kakar-shinghi and anar dana from the himalayan region. With regards to sustainable conservation, the presenter highlighted the NGOs and community's role in sustainable harvesting practices from the region including Ladakh.

The presenter recommended promotion of commercial cultivation of medicinal plants, good post-harvest practices and infrastructure, and the management of wild resources (both *in situ* - MPCAs; threat assessment - CAMP Workshops; JFM and *ex situ* - Botanical Gardens/Arboreta; monitoring of conservation efforts).



The presentation also focussed on the rapid threat assessment of medicinal plants through conservation assessment and management prioritisation (CAMP) process. He explained in detail the various categories of threat as per the IUCN (Current version adopted by IUCN in 2000 (version 3.1) applicable for assessments w.e.f. January 2001). He highlighted the CAMP outcomes with respect to India, the main points of which are below:

- ✓ Threat assessment exercises has been undertaken in 19 states
- ✓ Such assessments have resulted in categorising 344 MPs as threatened at the regional/national/global level. Many of these continue to be in active commercial trade, putting further pressure on their wild resource
- ✓ A consolidated inventory of MAPs in commercial demand worked out under the study includes 100 species that have been assessed as threatened [36 Critically Endangered and 64 Endangered] regionally, nationally or globally.
- ✓ Interestingly more than 50% of species assessed as CR are sourced from the Himalayan region.

He further elaborated the earlier efforts of HFRI in conserving wild medicinal plants in the region. In the end, Dr. Jishtu summed up his talk by stressing for a systematic and rigorous assessments of threat of extinction, of a taxon, which requires large inputs of time and money. He asserted that the CAMP process is essential for initiation of conservation actions without much delay and this process should be a regular feature – time bound, and the governments' needs to come forward with a policy. He also emphasised on prioritisation of species for conservation programmes. Dr. Jishtu also stressed that BSI should take new initiative to bring out a new publication as per the latest IUCN guidelines as there is long gap since the three volumes of the Indian Red Data Book of Indian plants were published by BSI (enlisting only around 60 medicinal plant species), whereas IUCN suggests 12.5% of the plants to be red-listed. Dr. Jishtu ended his presentation with a note to respect

community relationship with nature and hence involve local communities in the sustainable utilisation and conservation of wild medicinal plants.

During the course of discussion, **Dr. V.P.Tewari, Director**, queried about the problems related to medicinal plants. Dr. Sandeep Sharma, in response, highlighted the marketing issues of medicinal plants. He also cited long gestation period of medicinal plants and reducing it a challenging task. Dr. Tewari emphasised that research should focus on reducing the gestation period of medicinal plants and told that site specific a/i content of medicinal plants should be worked out with the help of existing facilities available in the institute or in collaboration with other research institutes. He also said that stability of a/i content of medicinal plants should be look into, as with more vegetative growth a/i content is less in certain medicinal plants, as a result more quantity of medicinal plants are needed to meet the desired a/i content. Dr. Tewari also emphasized the cultivated medicinal plants have less a/i content compared to those growing in the wild.



Dr. Sandeep Sharma, also informed about the project being implement by the institute on multi-location field trials of medicinal plants with regard to site specific a/i content.

Sh. P.S. Negi, Scientist-C added that screening and selection of seeds sources also need to be carried out for other species of cold desert like *Betula utilis*, *Fraxinus xanthoxyloides*, *Elaeagnus angustifolia* etc.

Outcomes of the seminar:

A. Identification of research needs: During the course of discussion, it was agreed that, in future, research must revolve around:

- ✓ Field surveys for monitoring population information since there is a lack of reliable field data on the subject.
- ✓ Life history studies for selected threatened species.
- ✓ Conserve and develop some important group of plants like the Ashtavarga and Rhododendron groups with immediate actions.
- ✓ Inventory and mapping of the highly threatened medicinal herbs.
- ✓ Standardization of nursery, planting and cultivation techniques of important medicinal plants/herb species of H.P. & J&K, especially of Cold Desert areas.
- ✓ Studies on ecological aspects of important medicinal herbs.
- ✓ Phyto-chemical studies of important medicinal plants of the region.

B. Formulation of future strategies/ road map:

Looking at the gaps and shortfalls in the Demand and Supply sector of the Himalayan medicinal herbs, HFRI may take up research projects keeping in view the followings objectives:

- ✓ **Management** of Wild Resources (Threatened Medicinal & Aromatic Plants).
- ✓ Research on **nursery & planting techniques** of important medicinal plants of the region.
- ✓ Research programmes/studies on **good harvest practices**.
- ✓ Establish **repositories** of herbal raw drugs for record and ready reference/authentication.
- ✓ **Phyto-chemical** studies of important medicinal plants of the region.
- ✓ **Bio-prospecting** studies for select threatened wild medicinal plants.
- ✓ **Capacity Building** of the frontline field staff of the State Forest Department, primary producers/collectors, traders, etc.

C. Networking research options identified: HIMCOSTE, SFDs, DIHAR, SKAUST, IHBT, FRLHT and Universities.

D: Future research directions discussed for implementation and opportunities for funding:

Proposal for conducting a CAMP workshop for Himalayan medicinal plant species may be sent to ICFRE and other funding agencies like MoEF & CC, NNRMS, Tribal Development Departments, SFDs.

In the end, Dr. Rajesh Sharma, Group Coordinator of Research thanked **Director, HFRI**, the presenter and all present in the seminar for their active participation.
