

STATUS AND POTENTIAL USE OF MEDICINAL PLANTS IN TAJIK AND AFGHAN BADAKHSHAN

Aziz Ali* and Anzurat Akobirshoeva**

Aga Khan Foundation of Afghanistan

Aziz.Ali@akdn.org ; anzurat2003@mail.ru

Badakhshan geographically located at the junctions of Asia's mightiest mountain ranges- the Himalaya, Karakoram, Hindu Kush and Tien Shan, harbors rich floral and faunal diversity. The affinities with different mountain ranges and high vertical relief of Pamir Badakhshan offer diverse habitats to different variety of species thus supporting unique and rich biodiversity.

Medicinal plants are important natural resource in Badakhshan that play a vital role in the maintenance of human health, especially in poor communities where even relatively low-priced western medicines remain prohibitively expensive. Despite the long tradition of usage of medicinal plants, their proven efficacy and lack of affordable alternatives, the availability of many of these plants is in jeopardy. Various factors are responsible for diminishing the valuable plant resources in Badakhshan but nearly all have human origins. Studying traditional herbal medicine, their status and usage pattern in Badakhshan is thus crucial as this region has rich history of medical traditions and most of which are associated with plants.

Through this study conscious efforts have been made to document the indigenous knowledge of medicinal plants which has passed down from generation to generation as safe and natural remedies to a number of human ailments in both side of *Panj* and *Ammu* Rivers. Moreover, information regarding past and current status of the medicinal plants; their trend in natural habitat have been recorded and documented through individual interviews, group discussions and personal observation in the field.

It is pertinent here to mention that this study covers the preliminary information on the current status and use of medicinal plants by local inhabitants of Badakhshan. Major information regarding usage pattern of drug plants was collected from Rushan and Shughnan/Khorog districts of Gorno Badakhshan Autonomous Oblast (GBAO) and Zebok, Ishkashim Wakhan and Baharak districts of Afghan Badakhshan. The paper touches comparative analysis of usage pattern of medicinal plants in Afghan and Tajik Badakhshan besides identifying and documenting the commonly used herbal remedies and preparation of different recipes by local folks.

The field investigation with 186 individual respondents, 60 % of whom were women, revealed that in Tajik Badakhshan local people use 92 different species of plants belonging to 34 families and 60 genera. However, the situation is quite different in Afghan Badakhshan, there the number of medicinal plants and usage was found comparatively low i.e. 20 species of plants belonging to 14 families and 18 genera were used against various human ailments. This may be because of lack of information regarding the medicinal values of different species of plants or because of accessibility issue as much of the plant resource and vegetation covers in Afghan Badakhshan have been removed by the local populace for fuel and fodder purposes. This needs to be further investigated in a separate study.

Status and potential use of medicinal plants in Tojik and Afghan Badakhshan

* Regional NRM Coordinator, AKF Badakhshan ; ** NRM Area Officer Ishkashim, AKF, Badakhshan

The study further reveals that there is common understanding on herbal remedies among the people of both parts of Badakhshan around certain plant species for specific hygienic approach to make recipes and use of medicinal plants against a number of human ailments. This is reflected in the ways of collection of plants, drying and storing; preparation of recipes/medicine and administration. It is also noted during the field survey that the vernacular names of plants often varies from district to district and village to village in both sides of Badakhshan. The local and scientific names of the common medicinal plants having similar usage in both Tajik and Afghan Badakhshan are given in the table below:

Scientific Name of Plants	Tojiki Name of plants	Afghani Name of Plants
<i>Berberis heterobotrys</i> E. Wolf	thirb, rithb, zirgul, zelol, zirk	zargul
<i>Berberis integerrima</i> Bunge	thirb, rithb, zirgul, zelol zirk,	zargul
<i>Ephedra intermedia</i> Schrenk et C. A. Mey	amojak, zimojak khaoma zagoza	modrag
<i>Hippophae rhamnoides</i> L.	khinshuth, chung, angat	gulgutak
<i>Glycyrrhiza glabra</i> L.	muthq, sus, shirinbiya	malakhch, shirinbuya
<i>Peganum harmala</i> L.	ispand, sipandar, sipand, hazorispand	ispand
<i>Macrotomia euchroma</i> (Royle) Pauls.	kipikh ,pikh-pikh, shiqorgiyoh	surkhchuk, surkhshuk, surkhchub
<i>Mentha asiatica</i> Boriss.	pudina, wuthn, withm, wern, hulba	pudina
<i>Nepeta glutinosa</i> Benth	murmisek, shikastsband, kudandag	khichofgarth, khichefgarth, khichofkhar,
<i>Primula macrophylla</i> D. Don	bunafsha	guli bunafsha
<i>Pyrethrum pyrethroides</i> (Kar.et Kir)B. Fedtsch. ex Krasch	spurgak	kakhchiver
<i>Rumex crispus</i> L.	shulkha	shalkha
<i>Ziziphora pamiroalaica</i> Juz.	jambilak, valodolwokhak	jambilak, gowid
<i>Bunium persicum</i> (Boiss.) B. Fedtsch	zira	zira

These plants are used for treatment of different human organs. For example, musculoskeletal organs are treated with species of *Berberis* and *Nepta glutinosa*; cardiovascular organs – *Mentha*

Status and potential use of medicinal plants in Tojik and Afghan Badakhshan

* Regional NRM Coordinator, AKF Badakhshan ; ** NRM Area Officer Ishkashim, AKF, Badakhshan

asiatica, *Ziziphora pamiroalaica*; digestive organs – *Pyrethrum pyrethroides*, *Rumex crispus*, *Bunium persicum* and *Mentha asiatica*; respiratory organs – *Glycyrrhiza glabra*, *highmoritis* – *Macrotomia euchroma*; teeth – *Ephedra intermedia*; reproductive organs- *Ephedra intermedia*, *Nepeta glutinosa*; skin – *Hippophae rhamnoides* and *Peganum harmala*; sensory apparatus – *Primula macrophylla*.

Some variations in usage of medicinal plants by Tajiks and Afghans were also recorded during the field survey. For example *Artemisia* sp.- “*krishk*” are used in Afghan part for skin diseases, while in Tajik part *Artemisia vulgaris* is used for treatment of musculoskeletal organs and the second one is not used at all. Zardak- *Daucus carota* L. is used by Afghan people for dysentery and by Rushani for hypertension, and abdominal problems. Local Afghan inhabitants use the seeds of *Plantago major* L. for skin disease while Rushani use its leaves for digestive disorders as well as for wounds. Such differences also reflected in the use of *Ribes yanczewskii* Pojark, and *Rosa achburensis* Chrshan. The fruits of first are used by Afghan for hepatitis and the same part of plants and leaves are used by Rushani for hypertension and cold. The fruits of *Rosa achburensis* are used for cough by Afghans and hypertension, cold, anemia by Rushani in Tajik Badakhshan.

Moreover, the similarities and differences are not only seen in the treatment of certain human ailments and diseases, but also in the method of preparation of recipes and administration of therapeutic preparations, like Afghan people boil the stem, leaves and flower of *Ziziphora pamiroalaica* in water and milk, while Rushani infuse it in boiled water, or Afghani take in the decoction of *Berberis* with milk, while Rushani use it with water). Among all plants listed above four species- *Artemisia vulgaris*, *Berberis heterobotrys*, *Berberis integerrima* and *Macrotomia euchroma* are used in Rushan for ethno-veterinary purposes and one species - *Peganum harmala* is used in Afghan Badakhshan for the same purpose.

About the current status of medicinal plants the individual interviews, group discussion with communities and field observations in both parts of Tajik and Afghan Badakhshan reveal that medicinal plants resource was abundant in the region some 15 -20 years back. However, over the years these precious resources are depleting at alarming rate because of natural/climatic factor like prolong drought and biotic pressure. Because of the ever increasing human population more and more lands are brought under cultivation and build up area and natural vegetation are removed from the mountain slopes for fuel and fodder purposes and the fragile mountain slopes become more prone to erosion and land degradation. Thus the natural habitat of these plants deteriorates and the very survival of some of the most precious medicinal and aromatic plants in this region is in jeopardy.

Some medicinal plant species like *Ferulla* sp (*hing*), *Glycirrhiza glabra* (*shirinbuya*), *Bunium persicum* (*zira*), *Polygonum coriarium* (*Grig.*) *Sojak* (*mest, toron*) and *Rheum maximowiczii* Losinsk. (*wadar, chukri*), are being over exploited on both sides of Badakhshan, as observed during the field visits. In many instances even school children were seen collecting and selling plants along the roadside without knowing the time of collection, part used as medicine and the active ingredients in the plants. *Bunium persicum* (*zira*), which was once the mountain cash crop for the people of Afghan Badakhshan, is now very sparsely available and with the passage of time its population is drastically decreasing from its natural habitats. Same is true with *Nepta glutinoza* (*khichofgarth, kichefkharg, khichofkhark*) and *Rosa species* which are being ruthlessly over exploited in both parts of Badakhshan particularly in Rushan area.

Status and potential use of medicinal plants in Tojik and Afghan Badakhshan

* Regional NRM Coordinator, AKF Badakhshan ; ** NRM Area Officer Ishkashim, AKF, Badakhshan

To sum up and conclude the major reasons of medicinal plants depletion in Badakhshan region are as under:

1. Lack of awareness among the communities regarding the importance of medicinal plants for their livelihoods and sustenance.
2. No clear government policy for conservation and management of non timber forest produce (NTFPs)
3. Over exploitation and unsustainable harvesting of medicinal plants from their natural habitat
4. Removal of vegetation cover from the mountain slopes for fuel and fodder purposes
5. Prolong drought and desiccating windy situation in the region
6. Over grazing of pastures and rangelands by locals as well as nomads



Over exploitation of *Rheum* and *Polygonum spp* in Tajik Badakhshan



Over exploitation of *Shirin boya (Glycerrhiza glabra)* roots in Afghan Badakhshan

Status and potential use of medicinal plants in Tojik and Afghan Badakhshan

* Regional NRM Coordinator, AKF Badakhshan ; ** NRM Area Officer Ishkashim, AKF, Badakhshan

Suggestions for conservation and sustainable management of medicinal plants in Badakhshan

Because of rising health consciousness among people especially in developed countries majority of the people are turning to organic/natural products in their daily lives and to herbal remedies against a number of ailments. Promotion and processing of plant-based products are given a fresh impetus in developed and developing countries. Thus there is niche for Medicinal Plants and associated products in the national and international markets. The existing market trend demands that the important and marketable medicinal plants and their habitat should be conserved, promoted and sustainably managed for the benefits of the mountain communities. Few suggestions in this regard are being given hereunder:

1. Community awareness regarding importance of conservation of medicinal plants should be created through trainings/conferences and developing promotional materials in local languages/dialects.
2. There should be clear government policy regarding conservation and management of medicinal plants and other NTFPs.
3. Over exploitation of medicinal plants by the locals as well as by nomads should be controlled and there should be proper pre and post harvest management training for the people who involved in this business.
4. Deforestation, ruthless cutting of trees and uprooting of shrubs from mountains should be checked.
5. On-farm cultivation of select marketable medicinal plants should be encouraged to reduce pressure on natural/wild medicinal plant resource.
6. There is nexus between the natural resource and poverty/ livelihoods; in case of medicinal & aromatic plants it needs to be demonstrated through small projects involving local communities.
7. There is a need to link the traditional experience on herbal remedies with modern medicine so that necessary research can be initiated to test verify the indigenous knowledge and practices with herbs.
8. Further research is needed on the subject especially in Afghan Badakhshan to explore the hidden treasure of medicinal plants to the outside world.
9. The indigenous knowledge passed down from generation to generation on medicinal plants, in both parts of Badakhshan, should be documented. This will help to revive and record the diminishing traditional knowledge of plants and recurring it to local communities. In this way the orally transmitted knowledge can be conserved as part of living cultural and ecological systems helping to maintain a sense of pride in local cultural knowledge and practice, and reinforcing links between communities and the environment, so essential for conservation (Aziz Ali, 2005).