

A Review on Survey of High Valued Medicinal Plants of Swat

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Abstract: A survey was executed to amass information regarding indigenous medicinal plants of Swat a district of KPK during June to August, 2014. Approximately 20 shopkeepers and different other peoples related to medicinal plants were selected and questionnaires were filled by them. The effort was endured to pool indigenous knowledge, with details of their local names, prices, the amount used in whole year which are imported from foreign or exported from other parts of the country. It was observed that only a small group of people had proper knowledge regarding medicinal plants and their use. It was also observed that the elder generation was more aware and familiar with medicinal plants than that of younger generation. Various Pansar shops and Hakeem of the area were visited and details were amassed from them regarding the uses of medicinal plants. For easy identification, 270 numbers of plants were in our questionnaire, in which about 128 were from different parts of Pakistan. According to our survey 35 to 50 items are collected from Swat locally. About 23 items are imported from Afghanistan, 107 from India, 18 items from Iran and 8 items from china respectively. Items from some others countries were also imported like South Africa, Rome, Saudi Arabia, England, Spain, Dubai and turkey respectively. All these 40 medicinal plant items of Swat are being utilized to cure different diseases and for other purposes. Some are utilized singly while others are used in blend. Similarly, certain plants are considered useful in only one specific disease, where as some have multiple uses. The current study was multidimensional in results that comprise conducting a scientific based study to know the impact of human on flora within their traditional value and norms of dealing with it.

Keys words: Swat • Survey • High valued • Medicinal plants

INTRODUCTION

Medicinal plants are essential therapeutic sources of treating different diseases at local level. It is estimated that 80% inhabitants of developing world rely on traditional medicines. It has been reported that 600 to 700 species are used for medicinal purposes in Pakistan [1]. Those plants, which produce definite physiological response in the treatment of various illnesses, among human beings and animals are called medicinal plants. Or in other words medicinal plants referred to those plants of which leaves, stems, flowers, roots, bark, bulbs, buds, seeds and fruits are used for both medicinal and aromatic purposes. It formed a large group of economically

important plants. Whereas several hundred different geniuses are used medicinally, most of which are used in herbal remedies and in indigenous systems of medicine; where the whole plant or leaves, bark and their extracts are used. There is much smaller number of plants from which individual active constituents are isolated and are used as medicines, either alone or in combination and used as precursors for drug synthesis. China is one of the leading countries that systematically amalgamated herbal medicines into natural health systems. Medicinal plants are of great interest as pharmaceutical industries depend in part on plants for the production of secondary compounds. Medicinal and aromatic plants constitute great economic and strategic values for Indo-Pak

subcontinent. It has been estimated that about 30% of pharmaceuticals are derived from green plants and this percentage has risen considerably in recent years. Important examples of modern drugs from plants include morphine and codeine from *Papaver somniferum*, atrophin and hyoseyamine from *Atropa acuminata* Royle ex Lindl and digoxin from *Digitalis purpurea* [2]. Since time immemorial aromatic plants have played a productive role in human life. The Egyptians became skilled perfumers over 5000 years ago and they taught the techniques of perfumery to the Hebrews. Medicinal and aromatic plants species are inextricably linked to one another chemically by their effects on humans [3]. The flora of Pakistan comprises of 4950 species of which 600 are used for medicinal purposes, one way or the other. This system of medicine was introduced by the Greco-Arabic society, a practice using medicinal plants dating back to approximately 2500 BC.

In Pakistan research is being conducted mainly in universities and that too as ethnobotanical listing of resources. The local communities of different regions of Pakistan have centuries old knowledge about traditional uses of the plants occurring in their areas. These plants are used to treat almost any kind of disease from headache to Stomachic to cut and wound [4]. The trade and uses of medicinal plants along with their derivatives has declined in many industrialized countries because of allopathic medicines when introduced due to their quick action.

Allopathic drug treatments started to reveal dangerous facet outcomes. If used for remedy of one disease sickness, gives impermanent relief from it but give rise to another accordingly. That is so because they aim on the treatment of signs and symptoms of disorder in preference to its motive whilst, while herbal medicines aim at the remedy of each signs and causes of disease or sicknesses that is why they don't have any side effects.

Other disadvantages of allopathic medicines are their non-availability in faraway regions (remote areas) and excessive prices. About 70% of Pakistan's total population lives in villages which depends upon agriculture and livestock for their livelihood. Most of the villages are remote and have little access to their necessities like education, health and also to the facilities of transport. Even if the facility of hospital is available, majority of the people are simply too poor to afford the price of modern-day remedy, via scientific medicines.

With the conversion of natural areas into cultivated fields, many wild areas had been added under cultivation, which had been once the rootage of medicinal plants. In other areas, these plants were over exploited. Both the cases led to depletion of the supply sources. Resultantly, major plants of important medicinal values become extinct forever. The North-Western mountain ranges of Pakistan are fascinating to tourists for scenic beauty, hazardous mountain terrains, snow clad peaks and landscapes of high altitude vegetation. This area has great attraction for anthropologists to study the cultural and social behavior of tribes and plants role on the life of the people. These features make it most suitable for ethno-botanical study. Besides, the mountain ranges abound rich in flora, fauna and represent the important floristic region of the country. This region is regarded as prime center for evolutionary development of a number of endemic medicinal and economic plants e.g., *Artemisia*, *Viburnum*, *Rheum*, *Bergenia*, *Lonicera*, *Sophora*, *Saussurea*, *Aconites*, *Primula* and *Orchids*. At present this natural resource is not utilized according to resource availability. As a result, a number of pharmacopoeias plant species became scare due to detrimental extraction by inhabitants. Besides this, there are many other plants, utilization as income generation activities of the area. The livelihood dependence of rural communities on forest resources like grazing land, fuel wood, timber and medicinal plants are well established. Due to poor status of the community, they are not much motivated towards protection and management of forest products. Natural resources based income generation activities such as cultivation, sustainable harvesting of drug plants from forest and subsequent post-harvest process for drying, grading and storing etc, are urgently required in the hamlets. In most of the villages, there are herbal medicine practitioners whose knowledge of medicinal plants care respected and accepted within the communities. In recent years, these herbalists faced a couple of problems to keep their tradition alive. Due to improper and non-scientific plant identification, less availability of plant material in the forests lacks of interest to continue such knowledge and practice of herbal medicines in their family members are major factors responsible for erosion of traditional knowledge. It resulted in the threat of extinction of several drug plant species. There are few educational institutes where they are studying practical implications of medicinal plants. Major reason of use of plants as medicines is that medicinal plants contain synergistic

and/or side-effects neutralizing combinations [5]. Thus, the present study was therefore conducted to find out the floristic composition, current status of indigenous medicinal, aromatic and economic plants growing in the area and also prefects of endemic of these medicinal and aromatic plants species that need in-situ conservation of sustainable stylization heavy potential and income generation activities for rural communities.

Study Area Description: District swat lies from 34°34' to 35°35' North latitude and 72°08' to 72°50' East longitude. It is bounded on the North by Chitral district and Ghizer district of northern areas on the East by Kohistan and Shangla district on the South by Buner district and Malakand protected area and on the West by lower Dir and upper Dire district. The total area of the district is 5337 km². Most of the Swat valley have been visited for ethno-botaical studies and are rich valley in medicinal plants. Its altitude ranges from 6000 to 12000 feet from main sea level. Slope is moderate to steep. Gullies and rills type of erosion are common. Perennial water is available but not properly managed. The total area of the valley is 24149 acres. Out of 24149 acres 15601 acres are protected forest. While 2723 acres are communal lands, 2025 acres are barani (rain fed) agriculture land and 1289 acres are irrigated land.

Soil Analysis: Analysis of the soil samples shows that soil class is sandy loam. Soil samples were collected from three alpine pastures. The results showed that grazing have no significant impacts on the texture of soil. Most of the soils are within a pH range from 4.5 (considered strongly acidic for soils) to 8.5 (medium alkaline). The best growth for the greatest variety of plants takes place within a 6.0 to 7.0 pH range (slightly acidic to neutral). Some plants thrive in an alkaline environment while other prefers more acidic soils.

NPK Values: The nitrogen content in soil is mostly of organic nature (90) resulting from the decay of dead plants and animals, plant residues and faces and urine of animals, etc. nitrogen bound to soil humus and is responsible for maintaining soil fertility. The level of nitrogen is greater as compared to phosphorus and again the ratio of phosphorus is smaller as compared to Potassium. This increase of nitrogen can be linked with the livestock urine and feces. Survey of the area shows that there is a lot of fresh water springs which give rise to

various streams. Besides so man about 25 springs are present round about Miandam that fulfill the drinking and irrigation requirements of the area. An overall decrease has been produced in the water level of all the springs.

Climate: Climate of the Swat valley is severely cold in winter and moderate in summer. Summer and autumn are usually dry, with monthly rainfall below 50 mm, except in July, when rainfall may average higher than that. August and September are the most pleasant months. The area is cold in winter, forcing about half of the population to migrate with the bulk of their livestock. Average snowfall is 423 cm.

Forest: Forest is moist temperate. The forests are chir pine forest, moist temperate and dry temperate along with different species of grasses, medicinal and aromatic plants. The rangeland is private owned or communal. The owners give communal rangeland on rent to nomadic grazers.

Major Professions/Economic Activities: Main profession of the people in the valley is agriculture, followed by business, forestry related businesses and services. Joint family system is observed in the valley. Besides, the main profession, people also have some subsidiary occupation like people related with NTFP, fuel-wood and timber trade and other small professions like grazers (immigrants). Barbers, goldsmith and carpenters are also there. For further details: about 60% Agriculture, 20% Business, 20% Services, 10% Forestry, 10% others. In the past agriculture was the only source of subsistence. Now people are cutting trees from forest (slipper and fuel-wood selling).

MATERIALS AND METHODS

Keeping in view of the rapid appraisal survey of the swat, meeting and discussion with Divisional Forests Officer (DFO) wildlife and ranger forest departments were undertaken for collection of information about configuration of the study area reputed for rich biodiversity of indigenous vegetation and medicinal plants. A survey on the high valued medicinal plants of the swat area was conducted during August 2014. All the general information like forest resources, map, various lists and other essentials of the investigated area were given by Pakistan forest Institute and Forest Department Swat. The area was divided into different sites and

frequent visits were made. Questionnaire was used as a tool for the collection of information. The questionnaire was dividing into two parts. First one contains personal information like name, address and contact number. While the second parts contain the list of about 270 medicinal plants items name, according to which the detail will be given like amount use in a year, from where it is extracted, where it is exported and price per kilogram. For the convenience of local people all the questionnaire is written in Urdu.

Pre-Test: A pre-test was conducted to improve the questionnaire and do required amendment in the questionnaire. For this purpose, the nearby two shops were selected and the required changes were done in questionnaires.

Field Survey: All the details are collected through questionnaire from various peoples and shopkeeper, dealers of medicinal plants who sell or buy them or use them in medicines. Questionnaire was distributed in them and teaches them the way how to fill them it. All the people from whom the details are collected are aged so that they can give us proper details. Different sites are visited on different day due to convince. All the people are given full time as they want to fill the questionnaire so the full details are taken from them. After two or three day's questionnaire of all the areas are collected and examine at that time so that no detail can be left blank.

Research/Survey Tool: The following tools and instruments were used during the survey work especially in field: Questionnaire, Computer, Calculator, Digital camera and other accessories.

RESULTS AND DISCUSSIONS

We prepare the questionnaire about 270 different medicinal plants items which are imported or exported from following places in which some are locally available and are send to different parts of our country while some are also received from different cities of our country. About 128 items are collected from different areas of Pakistan. In which according to our survey 35 to 40 items are collected from swat locally on large scale. About 23 items are imported from Afghanistan, 107 from India, 18 items from Iran and 8 items from china respectively. Items from some others countries are also imported like South Africa, Rome, Saudi Arabia, England, Spain, Dubai and turkey respectively. Total number of medicinal plant item that are present in swat according to our survey are 66 in which about 40 are that which are send or exported to other area or countries on large scales. In Pakistan Lahore is main market while china as export country. Their price starts from Rs: 50 to 10,000 in local market while their price varies from time to time. The results of the species recorded from the Swat and nearby areas of Swat are documented in Table 3 and 4.

Table 1: Mean monthly climatic data of Swat valley.

Month	Mean Temperature (C°)		Precipitation (mm or cm)?	Relative Humidity (%)
	Maximum	Minimum		
January	11.2	-2.39	111.37	69.69
February	12.07	-1.28	172.56	69.20
March	16.23	3.09	242.22	66.37
April	22.41	7.76	167.86	57.36
May	27.59	11.56	88.05	47.87
June	32.52	15.66	51.26	14.71
July	31.38	19.29	145.75	60.31
August	30.24	18.54	159.79	69.17
September	29.04	13.60	81.84	64.14
October	25.05	7.62	53.73	59.50
November	19.54	2.55	50.70	59.46
December	13.83	-8.86	19.75	67.43
Annual	22.63	7.09	1415.87	65.89

Table 2: Plants recorded and their medicinal uses by the local inhabitants.

S. No.	Botanical names	Local uses
1.	<i>Aconitum</i>	Uses as a general tonic especially for physically weak children.
2.	<i>Aconitum Violaceum</i>	It is highly poisonous and administering as such may cause death or mental problems. Its rhizomes are tied in the intestine of sheep or goat and boiled thoroughly in milk. The milk is discarded and the rhizomes are crushed and taken against rheumatism and arthritis.
3.	<i>Aesculus indica</i>	Fruits and seed are used as anthelmintic particularly in kids and horses.
4.	<i>Ajuga bracteosa</i>	Decoction of the plant or its powder is locally swallowed with water before breakfast for the treatment of throat sore and purifying blood. It is also used in epilepsy and is also considered as coolant.
5.	<i>Ajuga parviflora</i>	Decoction of the plant or its powder is locally swallowed with water before breakfast for the treatment of throat sore and purifying blood. It is also used in epilepsy and is also considered as coolant.
6.	<i>Artemisia brevifolia</i>	The decoction of Artemisia shoots is considered as anthelmintic.
7.	<i>Berberis lyceum</i>	The dried bark from the roots or its decoction is used as tonic and in nephrological complaints. Its use as astringent in gynecological disorders is recognized. Also, used as topical antiseptic and is tied upon the fractured bones for healing and is also considered as a general body tonic.
8.	<i>Berberis jaeschkeana</i>	The dried bark from the roots or its decoction is used as tonic and in nephrological complaints. Its use as astringent in gynecological disorders is recognized. Also, used as topical antiseptic and is tied upon the fractured bones for healing and is also considered as a general body tonic.
9.	<i>Bergenia ciliata</i>	Locally the powdered root is boiled with water for an hour after this the remaining gum like substance is applied on the cut wound for healing purposes. It is also considered as blood purifier.
10.	<i>Bistorta amphixicaulis</i>	Its roots and rhizome are considered as a general body tonic.
11.	<i>Bunium persicum</i>	Locally it is mainly collected for commercial purposes, only.
12.	<i>Caltha alba</i>	Its young leaves are used as potherb and are sold in the market for handsome earnings. It is said to be laxative in nature.
13.	<i>Cedrus deodara</i>	During summer two-to-three drops of the deodar oil (Ranzra) are taken within a glass of whey as coolant and blood purifier. Also, widely referred for topical use in dermatitis and dermatophytosis.
14.	<i>Cichorium intybus</i>	Its powdered root is taken with a glass of milk for the treatment fever. Whole plant is used and sold in the market as a potherb.
15.	<i>Colchicum luteum</i>	Its fried corms are used for arthritis and rheumatism. Both its rhizome and seed are sold for its precious uses in the drug markets
16.	<i>Dioscorea deltoidea</i>	It is collected and sold in the drug market. Traditionally its juice is applied in hair to kill lice.
17.	<i>Diospyros lotus</i>	Its fruit are edible and also sold as dry fruit. It is antidiarrhea in function.
18.	<i>Ephedra Gerardiana</i>	Decoction of its shoot is used as expectorant and febrifuge.
19.	<i>Geranium wallichianum</i>	Its dried shoots are mixed with egg, fried and used as tonic.
20.	<i>Heddera nepalensis</i>	Decoction of its leaves is taken in the morning to reduce diabetes.
21.	<i>Hyoscyamus niger</i>	Seeds are applied to the teeth to relieve toothache.
22.	<i>Hypericum perforatum</i>	Tea of its shoots is considered as a stimulant and sedative.
23.	<i>Isodon rugosus</i>	Leaves when chewed relieve toothache.
24.	<i>Juhlans regia</i>	Dry fruit is considered as nerve tonic, stem and root barks are used for teeth and gum cleaning.
25.	<i>Juniperus communis</i>	Dried leaves are used as smoking medicine. Its smoke is believed to cure the effect of evil eyes.
26.	<i>Mentha longifolia</i>	The decoction of shoots is used in dyspepsia, dysentery and vomiting.
27.	<i>Mentha spicata</i>	Its carminative and used in various gastric disorders. Also, it is used as a more common spice.
28.	<i>Morchella conica</i>	Fried and eaten in the breakfast for its delicious taste. It is considered as a general body tonic.
29.	<i>Morchella elata</i>	Fried and eaten in the breakfast for its delicious taste. It is considered as a general body tonic.
30.	<i>Morchella esculenta</i>	Fried and eaten in the breakfast for its delicious taste. It is considered as a general body tonic.
31.	<i>Paeonia emodi</i>	The powdered rhizome of <i>Paeonia emodi</i> are fried in ghee and taken twice a day after meal, which is considered as a general body tonic, particularly in backache.
32.	<i>Phytolacca latbenia</i>	Young shoots are used as potherb and are thought to be nerve and heart tonic.
33.	<i>Podophyllum emodi</i>	Locally it is collected and is sold for precious cash earning in the drug market.
34.	<i>Primula denticulata</i>	The powdered flowers are applied in ophthalmia, which is considered to improve eyesight and control eye diseases.
35.	<i>Quercus dilatata</i>	The fried acorns are eaten for curing the urinary problems, particularly in kids.
36.	<i>Quercus semicarpifolia</i>	Its unripe fruits are edible when fried and are locally considered as a general tonic.
37.	<i>Reheum</i>	Locally the dried root powder is mixed with ghee and applied to burns. It's a topical antiseptic.
38.	<i>Rosa webbiana</i>	Its fruit is edible. Locally the fresh ripened fruit of <i>Rosa webbiana</i> is used as antispasmodic agent.
39.	<i>Rubus ellipticus</i>	Its ripened fruit is used to strengthen digestion.
40.	<i>Rubus sanctus</i>	Locally its ripened fruit is used to strengthen digestion.
41.	<i>Rumex dentatus</i>	Locally the leaves of <i>Rumex</i> are warmed and applied on the wounds for their healing.
42.	<i>Rumex nepalensis</i>	Its leaves are cooked as a tasty potherb. Also the warmed leaves are applied to wounds for healing.
43.	<i>Salvia moerchrupiana</i>	The warmed leaves are used as topical insecticide. It is tied upon the chronic swellings to release pus.
44.	<i>Saussurea lappa</i>	Its dry root is applied to chronic ulcers. When fried with egg it is used as anti-spasmodic.
45.	<i>Skimmia laurifolia</i>	Its leaves are burnt as incense and to expel evils and evil eyes.
46.	<i>Sorbaria tomentosa</i>	Its inflorescence is mixed with the rapeseed oil and applied to the skin of babies to remove rashes.
47.	<i>Thymus linearis</i>	Decoction of its shoots is considered as a remedy for pain, fever, cough and cold.
48.	<i>Ulmus wallichii</i>	Young flora buds are used as potherb and are locally considered as laxative and general tonic.
49.	<i>Urtica dioica</i>	Smoke of this species cures asthma. It is also cooked as potherb.
50.	<i>Valeriana himalayana</i>	Locally its rhizomes are used as nerve tonic and for curing epilepsy.
51.	<i>Valeriana jatamansi</i>	Locally its rhizomes are crushed and used as nerve tonic and for curing epilepsy.
52.	<i>Viburnum grandiflorum</i>	Locally the fresh fruit of <i>Viburnum nervosum</i> is eaten for the curing of stomachache.
53.	<i>Viburnum nervosum</i>	Locally the fresh fruit of <i>Viburnum nervosum</i> is eaten for the curing of stomachache.
54.	<i>Vila biflora</i>	Used for throat sore and is collected for earning cash.
55.	<i>Viola canescens</i>	This species is collected only for earning cash.

Table 3: Plants found in Swat valley only.

<i>Artemisia maritime</i>	<i>Cannabis sativa</i>	<i>Mentha sylvestris</i>	<i>Erigeron stocksianum</i>	<i>Echinops echinatus</i>
<i>Euphorbia wallichii</i>	<i>Thmus serphyllum</i>	<i>Plesmonium sp.</i>	<i>Rumex hastats</i>	<i>Adhatoda vesica</i>
<i>Candollea sp.</i>	<i>Kickxia ramosissima</i>	<i>Dodonaea visosa</i>	<i>Olea cuspidate</i>	<i>Iris bookeriana</i>
<i>Tb/hapsia sp.</i>	<i>Scutellaria sp.</i>	<i>Indigofera gerardiana</i>	<i>Melia azadirachta</i>	<i>Acacia catechu</i>
<i>Pegamum barmala</i>	<i>Salvia moorcroftiana</i>			

Table 4: Plants found in other nearby areas of Swat.

<i>Plantago lanceolata</i>	<i>Oxalis corniculata</i>	<i>Frageria indica</i>
<i>Mentha sylvestris</i>	<i>Cuminum cyminum</i>	<i>Chenopodium album</i>
<i>Sorbus tomentosa</i>	<i>Potentilla gerardiana</i>	<i>Sonchus maritimus</i>
<i>Artemisia maritime</i>	<i>Viola serpens</i>	<i>Taraxacum officinale</i>
<i>Gymnosporis sp.</i>	<i>Indigofera gerardiana</i>	<i>Wulfenia sp.</i>
<i>Rosa sericea</i>	<i>Arisaema sp.</i>	<i>Gernanium wallichianum</i>

Table 5: Common medicinal plants found in the study area.

<i>Podophyllum emodi</i>	<i>Viola serpens</i>	<i>Mentha sylvestris</i>
<i>Valeriana wallichii</i>	<i>Chenopodium album</i>	<i>Cuminum cyminum</i>
<i>Thymus serphyllum</i>	<i>Taraxacum officinale</i>	<i>Salvia moorcroftiana</i>

CONCLUSIONS

From the list of plants occurring in the above mentioned localities it is evident that the mentioned plants of medicinal importance occur in commercially exploitable quantities (Table 5).

Recommendations: The survey indicated that, the study area has plenty of medicinal plants to treat wide spectrum of human ailments. In the past, no attention was given to document the medicinal plants of this district, Medicinal plants and their sustainable uses are a part of social life and culture of economically backward locals of far flung villages of district. It was evident from the survey that knowledge of medicinal plants was limited to traditional healers, herbalists and elderly persons in rural areas. Since traditional healers are very old and they are trying to transfer their knowledge to their children or male child. That's why in many clinics of Hakims non-qualified young boys were found practicing. Lack of interest about the medicinal plants and their folk uses was found among the younger and relatively modern generation due to various reasons. They think that the use of medicinal plants is an old fashion which is no more applicable in their daily lives. One reason may be that they remain very busy in their teenage to get knowledge in colleges and universities where they don't found any scope for such occupation. After completing their education, they want to do attractive and luxurious office jobs in the city. It is due to this reason a pace is created between them and ethno-medicinal uses of plants as well as their use in

herbal domestic remedies. The study also revealed that certain species of medicinal plants are exploited by the local residents who are unaware of importance of conservation of ecosystem. While on the other hand some species of medicinal plants are used on very small scale and only few traditional healers know about them, while local people are not fully aware about their medicinal importance/uses. The study also concluded that even though the accessibility of allopathic medicine for simple and complicated diseases is available, many people in the studied parts of the district still continue to prefer the medicinal plants especially for the treatment of some simple and common diseases such as cold, cough, fever, headache, skin diseases, jaundice, diabetes and teeth infection. Trade and supplies of crude herbal drugs are erratic in the market. It is due to many reasons. The people living in villages think that the collection of medicinal plants is a part time job. Anyone who needs to earn some money starts the collection of medicinal plants from the wild. After they get 2-3 bags full of these crude drugs, they sell them in the main market of the city at nominal price. Most of the villagers supplying these plants are not professionals. That's why sometimes large quantity of medicinal plants is available in market while in other parts of year a particular plant is completely unavailable. Prices move up and down similarly with the fluctuation of demand and supply. This situation not only affects the business of crude herbal dealers but also create difficulties and problems for consumers seeking those plants. It is because of this reason that the quality of herbal drugs available in the market is not very good as

ordinary and nonprofessional villagers cannot do to processing and drying of medicinal plants like experienced and knowledgeable professionals. In the last one can say that there is not consciousness regarding long-term implications of over harvesting of medicinal plants in rural areas of the district where the wealth of medicinal plants is found naturally. The condition of medicinal plant of the area of improved the general conditions related to the medicinal plants in Swat district.

The Medicinal plant branch of Pakistan Forest Institute was established keeping in view the same objective to document, preserve traditional knowledge and to develop authentic literature about medicinal plants, their folk uses in different areas of the country and to find the ways how to develop this resource by increasing cultivation, marketing and improving other aspects related to medicinal plants. Local health traditions, the social life and culture of backward villager, are valuable reference points and group discussions involving villagers, elder people, Hakims, Young people of the area and surveyors must be arranged to get maximum knowledge about different folk uses of the particular indigenous plant from different local people having different experiences. This knowledge forms basis for the exploration of new life saving drugs against deadly diseases. Recent trend of doing practice by non-qualified sons of renowned and famous traditional parishioners is a very serious problem. Government should take action to solve this problem according to the rules and regulations. To reduce the dangers expected to ecosystem in coming years and the conservation and sustainable use of the habitats of these plants as well as for ensuring continued availability of these plants in wild state. It is suggested that domestication of high valued and more demanded plants should be initiated by the villagers in their home yards.

The people of the area are dominantly poor. They are looking forward towards the Government for their well-being. It is the duty of Government and NGOs to work together, establish demonstration plots and convince the farmers to cultivate medicinal plants in their fields which are of course more profitable than traditional crops. Farmers will only cultivate medicinal plants when they will find any market for their crop where they can sell it. It may be very difficult for government and NGOs to do all this job alone. Politically influential people of the area should be involved in all the phases of promoting medicinal plant wealth for the area and to convince the people about cultivation of medicinal plants as income generation activities of the area.

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