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Traditional Use of Herbs, Shrubs and Trees of Shogran Valley, Mansehra, Pakistan

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Abstract: This paper is based on the results of an ethno-botanical research conducted in Shogran valley (Hazara). Information on local names, traditional medicinal uses and occurrence of the herbs, shrubs and trees has been presented. A total of 77 species of herbs, 12 species of shrubs and 18 species of trees were recorded that are used medicinally and for other purposes. Among herbs *Ajuga bracteosa* Wall. ex Bth., *Convolvulus arvensis* L. , *Geranium nepalense* Sweet, *Geranium wallichianum* D. Don ex Sweet, *Mentha longifolia* (Hk.) Huds., *Podophyllum hexandrum* Royle, *Potentilla nepalensis* Hk., *Torilis nodosa* (L.) Gaertn., *Valeriana jatamansi* Jones and *Viola canescens* Wall. ex Roxb. are the most common. *Podophyllum hexandrum* is vulnerable due to over exploitation.

Five species of shrubs and 12 species of trees are collected for sale in the local market as well as in other parts of the country. *Juglans regia* L. is found vulnerable in this area due to utilization of its different parts for different purposes. *Melia azedarach* L. is found under pressure of being used as fuel wood. Wild fruits such as *Ficus carica* L., *Diospyrus lotus* L., *Morus alba* L., *Pyrus communis* L., *Pyrus pashia* Ham. ex D. Don. and *Prunus persica* (L.) Batsch. require in situ conservation in the area for future germplasm source.

Key words: Herbs, shrubs and trees, traditional uses, Himalayan region, Shogran valley, Mansehra (Hazara Division), NWFP, Pakistan

Introduction

Shogran valley is situated 21 km away from Balakot towards East. It can be traced between 34° 40′ SN latitude and between 73° 30′ WE longitudinally on the map. It lies 2325 meters above sea level. Shogran formation consists of dolomite, limestone and quartzite. The area under investigation posses, different topographic conditions of plane and hilly tracks. Rainfall occurs in monsoon and winter, the average being 2500 mm per year. The total average annual precipitation both at Balakot and Naran are almost the same. Snowfall starts at the end of November and continues till the end of February. The highest maximum and lowest minimum temperature recorded are -30.3 °C in June and -3.0 °C in January and December. Shogran valley is under pressure because of illegal extensive tree cutting, forest fires, unplanned grazing and wild life hunting.

Shogran valley has never been explored before ethnobotanically, so it was necessary to record the traditional uses of plants in this valley before the information is lost. Plants are used as medicine from ancient times. Motley (1994) declared *Acorus calamus* (Araceae) to have a rich ethnobotanical history dating back possibly to the time of Moses in the old Testament of the Bible and in early Greek and Roman medicines Sweet flag. It was thought to be indigenous to India and spread along trade routes, had been valued for its rhizome and fragrant oils which have been used medicinally, in alcoholic beverages, as a fragrant essence in perfumes and oils, and for insecticidal properties. Current research investigates Sweet flag's value as an insecticide antibacterial and antifungal plant.

Khattak and Ahmed (1990) compared the vegetation on the north and south facing slopes of Margalla Hills and reported the presence of *Pinus roxburgii- Apluda mutica- Quercus indica* community on the north facing slopes and *Acacia modesta- Woodfordia fruticosa- Dodonaea viscosa* community on south facing slopes.

Pei (1991) reported that crude plant drugs found in markets in North Western Yuman in China consist of as many as 584 species.

Khasbagan (1990) reported traditional knowledge and experience of Mongolians in utilizing plants for tea. According to him, there are 20 species of plants that are used as traditional tea, the parts used are roots, stems, leaves, flowers, fruits and seeds. Singh and Maheshwari (1990) described the vital and significant role played by the economic plant wealth in the economy and health care system of the tribes in Tharus, Uttar Pradesh, India.

Bye *et al.* (1991) reported that there is a medicinal, ceremonial and poisonous perennial herb *Datura lamosa* (Solanaceae) in Mexico. This plant is feared and respected by indigenous people with in its range. Bhattarai (1992) presented information on veterinary medicines, used by the rural farmers of central Nepal. He described 60 empirically accepted prescriptions involving 58 plant species along with detailed recording of dosage and administration.

Sudarsanam (1995) revealed 106 plant species exclusively used by herbalists for different diseases of their domestic animals in Tayalaseena, Andhra Pradesh, India.

Bhandary *et al.* (1995) described 98 medicinal preparations, involving 69 plant species used by the Siddis people of Uttar Kannada, Karnataka, India, based on ethnobotanical field study.

According to Khan and Rajput (1995); Nasir and Rafiq (1995); and Shah (1996), the climax vegetation is dominated by herbs and small shrubs. These include *Polygonum, Stellaria, Arenaria, Delphinium, Potentilla, Geranium, Primula, Nepeta, Astragalus, Artemisia, Aconitum, Lonicera, Taraxacum* and *Saussurea*.

Unandr *et al.* (1995) tested a number of species of the genus Phyllanthus (Euphorbiaceae) for their efficacy as antivirals, partly on the basis of references to traditional usage for the treatment of diseases possible having a viral origin.

Ahmad and Sirajuddin (1996) reported 48 plant species having medicinal uses from Swat which are used by local people for cure of various diseases.

Bukhari (1996) reported that in National Park Machayara Muzaffar Abad, Azad Kashmir, the folk–lore for treating various diseases, included 69 plant species as crude drugs.

Goodman and Ghafoor (1992) conducted ethnobotanical study in Baluchistan province of southwestern Pakistan and collected information about 114 plant species used by nomads and village dwellers for mutational, utilitarian and medicinal purposes; and a total of 56 species prescribed or dispensed by herbalists or herbal doctors residing in population centers.

Leporatti and Lattanzi (1994) studied 27 medicinal plants ethnobotanically in Makran (Southern Pakistan).
Kannada, Karnataka, India, based on ethnobotanical field study.
The aim of present work was to identify and explore the natural resources, investigation of their importance for local livelihood, conducted related market survey to assess economic values of the traditionally used herbs.

Materials and Methods

During the field survey plant specimens were collected and arranged according to their voucher specimen numbers with their traditional uses by the inhabitants and preserved in the herbarium of Quaid-I-Azam University, Islamabad (ISL). Interviews were taken and observations were made. Interviews of about 155 informants including local inhabitants and herbalists (Hakims) on random basis. Questionnaires were adopted for interviews. The outcome of the results were rechecked and compared with literature. Analysis of the data was done and indigenous knowledge was documented.

Results

Seventy-seven species of herbs belonging to 30 families were found to be used by the people of the valley are given in Table 1.

Table 1:

Botanical Name	Family	Common Name	Occurrence	Parts used	Traditional uses
Herbs					
Pistacia integerrima J.L. Stewart ex Brandis	Anacardiaceae	Bohey neela	Common	Galls and bark	Antiseptic, jaundice and chronic wounds.
Foeniculum vulgare Mill.	Apiaceae	Sonph	Uncommon	Leaves and seeds	Diuretic, digestive, aromatic, laxative, Phrodisiac and stimulant
Torilis arvensis (Huds.) Link		Atra batra	Uncommon	Leaves and flowers	For curing the snakebite.
Torilis nodosa (L.) Gaertn.		Sultani butty	Uncommon	Leaves.	For liver.
Achillea millefolium L.	Asteraceae	Kuttay haddy	Not Common.	Whole plant.	Bone pain, heart diseases, stomach pain , menstrual period .& stop internal bleeding and heat born.
Artemisia indica Willd.		Matura	Rare	Whole plant	Stomach problems, nappy rash and antistutter, irritated eyes& for long and healthy hairs.
Artemisia roxburghiana		Garrotra	Common	Whole plant	AnthelmintictandBesser remittent fever
Artemisia laciniata Willd.		Bella	Common	Whole plant	Blood purification, chest diseases, worms in stomach and spleen problems.
Aster molliusculus (DC.) Clarke		Taverra	Common	Flowers	"Kushtas" to strangthen the body and amenorrhoea.
Chrysanthemum leucanthemum L.		Phol	Common.	Whole plant	Liver disorder and headache.
Cirisum arvense (L.) Scop.		Kandehara	Uncommon	Leaves	For vomiting
Conyza bonariensis (L.) Cronq.		Gulava	Common	Whole plant	Urine problems
Conyza canadensis (L.) Cronq.		Mechry khur	Common.	Whole plant	Astringent, diuretic, hemostatic, stimulant, dysentery, diarrhea and uterine hemorrhage.
Saussurea heteromalla (D. DON) Hand- Mazz.		Butt peva	Common	Seeds and Leaves	Carminative, for wound, and the burnt part of the body.
Taraxacum officinalis Webber		Hund	Very common	Roots and Leaves	Diuretic, chronic disorder of kidney & liver, constipation & jaundice, for fermentation
Xanthium strumarium L.		Katula	Common in waste places	Leaves	long-standing malarial fever, and for skin diseases.
Impatiens balsamina L.	Balsaminaceae	Barh til	Common	Whole plant	Tostrengthen theinternalbodyparts.
Nonea edgewvorthii DC.	Boraginaceae	Kangher	Common	Leaves	Curing cough and respiratory problems
Onosma chitralicum I. M. Johnston		Gudder garah	Common	Roots	To cure the wound
Trichodesma indicum R. Br.		Kulang kallen	Very common	Whole plant	Snakebite, diuretic, Depurative, (L.) swelling and joints, for dysentery, to cure hematuria.
Cannabis sativa L.	Cannabinaceae	Bung	Very common	Leaves and flowers	Sedative, anodyne, and Narcotic, anti-lice, drink for their narcotic action and refrigerant. Astringent tonicantidiarrhoeic,causesdyspepsia cough, hyperpyrexia and insanity.
Chenopodium album L.	Chenopodiaceae	Bathwa	Very common	Whole plant	Laxative,anthelminthic,liverdisorder and enlarged spleen, jaundice, urinary diseases and rheumatism.
Chenopodium ambrosioides L.		Kath chohey	Common.	Whole plant.	Anthelmintic, piles and for stomach problems.

Botanical Name	Family	Common Name	Occurrence	Parts used	Traditional uses
Convolvulus arvensis L.	Convolvulaceae	Arrly	Common	Whole plant	Purgative, threadworms "Chanone" skin & to remove dandruff
Cicer arietinum L.	Fabaceae	Kanthy	Common	Leaves and fruit	Stomache disorder
Desmodium microphyllum (Thunb.) DC.		Chatayal butty	Uncommon	Leaves	Cough and flu problems.
Geranium nepalense Sweet	Geraniaceae	Kurry jur	Common	Whole plant	Curing injured or diseased joint bones & fresh wound.
Geranium pratense L.		Koath	Common	Roots	Liver problems.
Geranium rotundifolium L.		Guddy Baadshah	Common	Roots	Chronic fevers
Geranium wallichianum D. DON ex Sweet		Rattan Jot	Common	Whole plant	Toothache, jaundice, kidney, spleen problems, irritating eyes and to cure bachache.
Hypericum perforatum L.	Hypericaceae	Gangly chay (shin chay)	Uncommon.	Whole plant	Diuretic, to cure depression, as a green tea in the past.
Ajuga bracteosa Wall. ex Bth.	Labiatae	Tharubra	Common	Whole plant	Jaundice, hypertension and throat sore & malarial fever.
Calamintha umbrosa M.Bieb.		Ruttry	Common	Roots	Rheumatic pain.
Calamintha vulgaris (L.) Druce		Shalley	Common	Leaves	Irritating eyes.
Mentha longifolia (L.) Huds.		Pudena	Common	Leaves and roots	Carminative, aromatic, stomachache, stimulant, mouthwash, dyspepsia. gastric, vomiting & anthelmintic problems.
Nepeta erecta (Bth.) Bth.		Langroo	Uncommon	Whole plant	Curing the internal injuries
Salvia plebeia R. Br.		Surroganda	Common	Leaves	Scorpion bites
Salvia santolinifolia Boiss.		Dubry	Uncommon	Fruits	Stomach and intestinal problems.
Thymus serpyllum L.		Bezori butty	Common	Roots	Stomachache, ulcer, and for internal wound
Boehaavia procumbens L.	Nyctaginaceae	Buss khapra (It set)	Common	Bark and roots	Scorpion bite.
Jasminum officinals L.	Oleaceae	Phulwari (Chambeli)	Common	Whole plant	Diuretic, emmenagoue, anthelmintic, headache, skin irritation & allergy, curing ringworm. weak eyes, scorpion sting. ulceration or eruptions in the mouth. For make perfume.
Oxalis corniculata L.	Oxalidaceae	Khat khurulla	Common	Whole plant	Stomach trouble, refrigerant, for worms, to clean rusted vessels & for scorpion sting.
Oxalis pescaprae L.		Harvi	Common	Bark	Whooping cough.
Plantago amplexicaulis Cav.	Plantaginaceae	Chamchi pather	Uncommon	Roots	To stop vomiting in infants
Plantago lanceolata L.		Asmagol	Un common	Whole plant	Sore wounds, bruises and Inflamed surface, to othache Dysentery, drastic, purgative mouth disease and chicks
Plantago major L		Chacmalla	Common.	Seeds	Tummy, constipation and intestinal problems
Podophyllum hexandrum Royle	Podophyllaceae	Bun khakhary	Uncommon	Whole plant	Diabetes, joint pain, jaundice and heart problems.
Polygonum amplexicaule D. DON	Polygonaceae	Maslohar	Common	Whole plant	Dysentery, heart problems, fever, menstruation, leucorrhoea and curing ulcer.
Polygonum aviculare L.		Moharry	Common	Whole plant	Emetic & purgative used against wounds and bleeding.
Polygonum barbatum L.		Tray kanna	Common	Leaves	Fish poison & fluo problems
Polygonum capitatum Ham.		Pashahor	Common	Whole plant	Fever, eye diseases and chronic diarrhea
Polygonum hydropiper L.		Chamba	Uncommon	Whole plant	Dryness of throat & to stop vomiting.
Polygonum lapathifolium L.		Andolly butty	Common	Whole plant	To cure skin problems.
Polygonum nepalenses Meissn.		Neel kundy	Common	Whole plant	Different kinds of pains
Polygonum plebejum R.Br.		Deela	Common	Whole plant	Pneumonia & in bowel complaints.
Polygonum posumbu Hami. ex D. DON		Changlli	Uncommon	Whole plant	Irritation of respiratory organs
Polygonum rumicifolium Royle		Marah shalora	Common.	Whole plant	Fever and diarrhea
Polygonum viviparum L.		Khakharry	Common	Whole plant	Thread worms of children
Rumex dentatus L.		Khatembul	Common	Leaves	Diuretic, astringent & strengthen the stomach, also used for abortion.
Androsace mucronifolia Watt	Primulaceae	Kakorra	Uncommon	Leaves	For swelling, & urinary problems.
Androsace rotundifolia Hardw.		Marcholla	Uncommon	Leaves	Stomachache & skin diseases
Primula farinosa L.		Arkhar	Uncommon	Leaves	To regulates body functions & increase immunity
Adiantum capillus veneris L.	Pteridaceae	Alphy butty	Common	Whole plant	Diuretic, cough, expectorant, fever, & gynecological problems of women.
Ranunculus laetus Wall. ex H. & T.	Ranunculaceae	Lal butty (Rutty buty)	Common.	Whole plant	Children fever, it reduces the harmful effects of smoking, purifies the blood & for removal of intestinal worms.

Botanical Name	Family	Common Name	Occurrence	Parts used	Traditional uses
Ranunculus muricatus L.		Chaho	Common	Whole plant	For periodic fever
Ranunculus scleratus L.		Tali garri	Common	Leaves	For ear pain
Duchesnea indica (Andr.) Focke	Rosaceae	Baddy meva	Common	Fruits	Laxative, consumed as vitamin "C" & for strengthening the body.
Fragaria vesca L.		Khal merch	Common	Whole plant	Digestive, for back pain problems & reduces the effects of vomiting
Geum urbanum L.		Bohay	Uncommon	Roots	For fever
Potentilla nepalensis Hook.		Mammhar	Uncommon	Roots	For fever, blood purification and stomachic problems
Scrophularia moniliformis Penn.	Scrophulariaceae	Pathar butty	Uncommon	Roots	Blood pressure, dandruff, headache, long & healthy hair
Verbaseum thapsus L.		Guddy kund	Common	Whole plant	Cough, lungs, fever, antiseptic, pulmonary disease & to stop bleeding aphrodisiac and narcotic healing the wounds. Also used in diarrheic & dysentery of cattle.
Solanum miniatum Bernh. ex Willd.	Solanaceae	Katch match	Common.	Shoots	For skin, jaundice
Solanum surattense Burm. f.		Khalari	Very common	Whole plant	Cough, aphrodisiac, heart and liver diseases
Urtica dioica L.	Urticaeae	Karry	Common	Leaves	Anthelmintic, diuretic, regulating the menstrual period & to stop bleeding.
Valeriana jatamansi Jones	Valarianaceae	Mushk bala	Common.	Rhizomes and roots	Carminative, aromatic used in hysteria and epilepsy cholera, dysentery, also used in milk clotting and butter formation.
Viola canescens Wall. ex Roxb.	Violaceae	Banafsha	Very common	Whole plant	Constipation, cough & stomach problems
Shrubs					
Berberis lycium Royle	Berberidaceae	Sumbal	Not common	Whole plant	Dysentery & sore throat, cathartic, diuretic, dyspepsia, jaundice, and other liver disorders. The fruits are edible which, is cooling, laxative, antispasmodic and for treatment of pharyngitis, improve the internal wound, throat pains, diabetes, bone fractures, as eye lotion, mouth diseases like "Chall".
Daphne mucronata Royle	Thymeleaceae	Lucky loony	Very common	Root and fruit	Purgative, fruit is considered as a good dye for leather
Daphne oleoides Schreb.	Kutty lal	Common	Fruits		For rheumatism.
Duranta repens L.	Solanaceae	Kanulla	Common	Seeds	Dysentery, stomach and backbone pains
Jasminum officinals L.	Oleaceae	Phulwari (Chambeli)	Not common	Whole plant	Diuretic, emmenagoue, anthelmintic, skin, headache, weak eyes, scorpion sting, curing ringworm, ulceration or eruptions in the mouth, ears in otorrhoea. Flowers are used to prepare perfumes.
Myrsine africana L.	Myrsinaceae	Pundy pun	Not Common	Leaves and branches	Stomach problems
Rubus ellipticus Smith	Rosaceae	Garacha	Common	Fruits	Purifies the blood & very effective for heart patients.
Rubus pedunculosus D. Don		Karwarva	Common	Fruit	Improve the blood circulation in side the vessels
Sarcococca saligna (Don) Muell.		Sheha	Common	Leaves	Laxative, blood purifier & overcoming muscular pain.
Vitis trifolia L.	Vitaceae	Neela tari	Common	Roots and leaves	For body weakness, bandage, pain in chest and back, smoked for the relief of headache, fever, also used as insecticide and pesticide.
Vitis vinifera L.		Dakh	Common	Fruit	For digestion
Ziziphus hysudrica Hole	Rhamnaceae	Barry	Common	Leaves and whole plant	Used on boils and scabies, blood purifier, fever and intestinal worms, dysentery and diabetes
Trees					
Acacia farnessiana (L.) Willd.	Fabaceae	Kikar	Common	Stem and branches	Diarrhea, dysentery and diabetes & very powerful for eradication of throat problems. Wood is used in the construction of houses, agricultural tools and also for fuel purposes.

Botanical Name	Family	Common Name	Occurrence	Parts used	Traditional uses
Aesculus indica (Wall. ex Camb.) Hook.fil.	Hippocastanaceae	Bun khore	Not Common	Fruit and leaves	Stomach, brain, pains of men & animal's stomach pain. Wood is usedformakingfurniture,agricultural appliances, and household utensils and as a timber wood.
Crataegus songarica C.Koch	Rosaceae	Bun changlli	Not Common	Fruit	Heart diseases.
Diospyros lotus L.	Ebenaceae	Amloke	Common	Fruit and bark	Boils and tumors. Also used as fuel wood and making furniture.
Ficus carica L.	Moraceae	Rhumbul	Common	Whole plant	Laxative while latex soothes the bee sting for skin. Wood serves as a fuel wood, Milky juice of green fruit and leaves are used to destroy warts. Ash is used in snuff.
Ficus virgata Wall. ex Roxb.		Phag	Common	Fruits and leaves	Laxative, demulcent & for bladder diseases, to soften the arteries. Branches serve as fuel wood.
Morus alba L.		Toot	Common	Leaves, stem, bark and fruit	Diaphoretic, emollient, anthelmintic andastringent.gargleininflammation of throat, cooling and laxative, sore throat, dyspepsia and melancholia. Leaves are also fed to silk worms. Leaves serve as fodder for cattle. Wood yield timber, for making furniture, also used as fuel wood.
Grewia villosa Willd.	Tiliaceae	Tammer	Not Common	Whole plant	Fiber collected from sticks is used in making ropes. Leaves are used as fodder for cattle.
Juglans regia L.	Juglandaceae	Khore	Common	Bark, leaves, fruits and whole plant.	Aphrodisiac Eczema and intestinal worms. The wood is very valuable for furniture, woodcarving, as "Dandasa" for cleaning teeth and gums. cosmetic for colouring lips. Teeth cure and swollen gums, detergent & anthelmintic to cure wounds. considered good for brain. Wood is used as firewood.
Melia azedarach L.	Meliaceae	Drake	Common	Whole plant	Emmenagoueandresolventtorelieve nervous headaches, hysteria, rheumatism, spleen enlargement, diabetes. Multiple purposes such as furniture fodder, timber, ornamental,construction,agriculture implements, boxes, sports and packing crate equipment. "Surma" to clean the eyes, applied to promote the growth of healthy seedlings in the field, to kill lice and to cure eruptions of the scalp, carminative for animals, anthelminthic, it is said to be medicinal, especially in curing fever.
Pistacia integerrima J.L.Stewart ex Brandis	Anacardiaceae	Bohey neela	Not Common	Bark, fruit and leaves	Chronicwounds,jaundice,antiseptic, fodder for cattle, wood yield timber, which is used for making furniture, branches serve as fuel wood.
Prunus armeniaca L.	Rosaceae	Khobani	Common	Fruit, leaves and wood	Fruits are edible which are dried by the local people and sold in the market. The seeds are eaten. Leaves are used as fodder. Branches serve as fuel wood.
Prunus persica Benth. & Hook. f.		Arro	Common	Fruit, leaves and wood	Fruits are edible. While branches serve as fuel and leaves are used as a fresh fodder.
Pyrus communis L.		Nakh	Common	Fruit, leaves and wood	Fruits are edible&laxative, fuel wood & as fodder.
Pyrus pashia Ham. ex D. Don		Batangi	Common	Fruit, leaves and wood	Laxative, febrifuge, sedative and astringent. Fuel wood ,agricultural implements & fodder
Rhododendron arboreum Smith Ericaceae		Naara	Common	Flowers and leaves	Skin diseases, for the babies who always fear, as ornamental

Botanical Name	Family	Common Name	Occurrence	Parts used	Traditional uses
Ricinus communis L.	Euphorbiaceae	Arand	Not Common	Seed, root, bark and leaf	Emetic in narcotic poisoning, purgative, swellings purgative, constipation, boils swelling and to relieve pain of the joints, healing wounds and sores, toothache, applied on breasts of women to increase the milk secretion, labour pain for early delivery (people's practice), to kill bed bugs, ears, if they are invaded by insect's, eye in conjunctivitis & skin diseases
Ziziphus mauritiana Lam.	Rhamnaceae	Ber	Common	Fruits and leaves	Joshanda, blood purifier, fever and intestinal worms, & dysentery.

Discussion

Mountain areas in different parts of the world are at different levels of influence by human activities. The people of Shogran valley are largely dependent on the nearby forests for their food, shelter, fuel, fodder, health care and other cultural purposes. These people have preferred the use of local herbs on account of non-availability of modern facilities. They have learnt to utilize local herbs, shrubs and trees in different ailments after centuries of trails. Pei (1992) reported that total number 25,000 or 10% of plants species in Hindu Kush Himalayan are known to be useful for various purposes.

It is well-established notion that man from its civilization is dependent on forest flora for health, food and shelter (Mehrotra, 1989; Motley, 1994). Environmental and biotic factors i.e. unplanned grazing, wood cutting, natural and planned forest fires, heavy winds and frosts have been reported as serious threats for forests flora of various valleys of the world (Caceres *et al.*, 1991; Jain and Sahn, 1994; Khan and Rajput, 1995; Nasir and Rafiq, 1995 and Shah, 1996), which are noticed to be similar to Shogran valley of Pakistan.

According to the views of local people more than 70% remote areas people of Shogran valley depend upon medicinal plant and the rest have changed their life style as they obtain their earning from the urban areas and have an access to get modern health facilities from the city. Old people frequently mentioned the multiple uses of plants. Senior women are expert in knowledge of plants for curing various ailments in children and women diseases.

Hocking (1958) estimated that in early 1950 up to 84% of The Pakistani depend on traditional medicines for all or most of their medicinal needs. While Hussain (1987) reported that in Pakistan nearly 5 % of the drug presently used in medicines are prepared synthetically from petrochemicals based raw materials.

Adiantum capillus- veneris is a very important herb. This herb is either given to those pregnant women who have the problem at the time of delivery or given to those who have no children. Also the women use this plant for many other gynecological problems particularly amenorrhoea. Caceres *et al.* (1991) detected 100 plants used in Guatemala for the treatment of dermatophytoses. *Convolvulus arvensis* is affectively used for skin diseases in this valley. It is also used for washing hair to remove dandruff. There are very few plants, which are useful for burns. *Sassurea heteromala* is used to cure wounds and the burnt parts of the body. However *Ajuga bracteosa, Chenopodium album, Geranium nepalense, Podophyllum hexandrum, Potentilla nepalensis, Torilis nodosa, Taraxacum officinale, Valeriana jatamansi* and *Viola canaescens* are the most commonly used medicinal plants of the valley.

Ranunculus muricatus is used for the treatment of gout and asthma (Baquar, 1989). Hence this plant may be conserved and further propagated for the people of the area. Similarly *Ranunculus laetus* is used to reduce the harmful effects of smoking. This plant may also be protected and conserved.

For sustainable development of forest besides spontaneous generation of fallen seeds this, serves as natural source of germplasm. There is a need to supplement this natural source with the introduction and multiplication of agro-forests like *Eucalyptus* and Popular plants. Maintaining the continuity in supply of fruits, in early 80s' a successful exercise was made by Government of Pakistan. In this exercise Government developed a model fruit farm and introduced exotic germplasm of apple, apricot, pears and khubany at a private farm in Shogran valley. This orchard is successfully bearing fruits since early 90s'. If such projects were launched in the valley on large scale, it would prove a reliable source of farm income besides beautificatioin of the landscape.

Use of herbal tea for the treatment of different diseases is being popular in many parts of the world. *Hypericum perforatum* is used as a herbal tea for the treatment of depression. The tea of *Polygonum amplexicaule* is used to cure dysentery and heart problems in the valley.

The Himalayan Region is the largest mountain system in the world with uncounted and unique wild resources. The interaction between the mountain people and the natural system through history has helped in maintaining the richness of species, communities, and genetic materials in both productive system and wild lands of the mountain environment. However, the rich biodiversity of this region is being destroyed due to human actions in the last few decades. Understanding the indigenous knowledge of mountain people in relation to biodiversity resources management is one of the key issues for sustainable development of the Himalayan Region today (Pei, 1994).

Ethnobotanists, herbalists and other practioners of traditional medicine are engaged in finding the new sources of drug and some are interested in searching out the drug from the plants which are nontoxic and edible by the local population. Wild fruits used, as a medicine is a good example of such practice. For instance, *Diospyrus lotus, Ficus carica, Juglans regia, Morus alba, Pyrus communis, Prunus persica* and *Pyrus pashia* have been discovered from this valley.

Plant species were reported, out of which 29 species were not reported earlier as medicinal plants (Kaul, 1990; Pei, 1991; Khan, 1989).

During research project in Shogran valley it was investigated that the seeds of *Aesculus indica* are locally used as vermifuge and anthelmintic. Its shoot provide fodder, its branches are used for making fences, its wood is used for making plough, small and large decoration pieces and a variety of household utensils. Similarly, some most useful and characteristic plants of the valley are worth mentioned *Berberis lycium* and *Melia azedarach* is useful for diabetes, *Daphnae oleoides* is used for rheumatism, *Jasminium officinalis* is used for mouth

ulceration, *Rhubus* species are useful for heart problems. *Sarcococca saligna* is utilized for muscular pain. *Melia azedarach, Rhododendron arboretum* and *Ricinus communis* are used to treat skin diseases. *Vitis trifolia* is used as an insecticide and pesticide.

The involvement of female (50-60%) in agriculture for assisting the male varies depending upon the profession of male members. People who have business are not fully dependent on agricultural means. They usually lease their land for cultivation. However, their females are actively involved in livestock management at house holds level. People of the valley weather they are land owners or tenants are actively involved in agriculture.

The use of non timber forest products like wild fruits and flowers for food, handicraft making, mates and dry-decoration pieces from leaves, and rope making from bark of plants should be encouraged and properly managed by the local social welfare organization for sustainable use of their natural resources for benefit of the local people and protection of ethnobotanical culture.

Some birds are associated with plants and in the valley nightingales eat the fruits of *Melia azedarach*. However this plant specie is under pressure due to over exploitation for fuel wood and other domestic uses. Depletion of this plant from the valley might affect the population of nightingales from the area.

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